

SENSIBLE SOLUTIONS



Corporate Office

465 South Main Street
PO Box 639
Brewer, Maine 04412
207.989.4824

www.ces-maine.com



**MAINE DEPARTMENT
OF ENVIRONMENTAL PROTECTION**

**NATURAL RESOURCES PROTECTION ACT
INDIVIDUAL PERMIT APPLICATION**

FOR

**SOLID WASTE PROCESSING AND RECYCLING FACILITY
HAMPDEN, MAINE**

Applicants: Municipal Review Committee, Inc.
395 State Street
Ellsworth, ME 04605
207.664.1700

Fiberight LLC
1450 South Rolling Road
Baltimore, MD 21227
410.340.9387

**JUNE 2015
JN: 11293.001**

Application Prepared By:

CES, Inc.
465 South Main Street
P.O. Box 639
Brewer, ME 04412
207.989.4824

Engineers ♦ Environmental Scientists ♦ Surveyors

**MRC, INC. – FIBERIGHT LLC
SOLID WASTE PROCESSING AND RECYCLING FACILITY
HAMPDEN, MAINE**

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NRPA PERMIT APPLICATION FORM

Good Standing Certification

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APPLICATION FOR A NATURAL RESOURCES PROTECTION ACT PERMIT

→ PLEASE TYPE OR PRINT IN **BLACK INK ONLY**

1. Name of Applicant:	1. Municipal Review Committee, Inc. 2. Fiberight LLC	5 Name of Agent: (if applicable)	CES, INC. (Attn: Roger St.Amand)
2. Applicant's Mailing Address:	1. 395 State St., Ellsworth, ME 04605 2. 1450 South Rolling Rd., Baltimore, MD, 21227	6 Agent's Mailing Address:	P.O. BOX 639 BREWER, ME 04412
3. Applicant's Daytime Phone #:	1. 207-664-1700 2. 800-728-9886	7 Agent's Daytime Phone #:	(207) 989-4824
4 Applicant's Email Address Required from <i>either</i> applicant or agent:	glounder@mrcmaine.org	8. Agent's Email Address:	rstamand@ces-maine.com
9. Location of Activity: (Nearest Road, Street, Rt.#)	COLDBROOK ROAD	10. Town:	HAMPDEN
		11. County:	PENOBSCOT
12A. Significant Groundwater well? <input type="checkbox"/> Yes OR <input checked="" type="checkbox"/> No			
12. Type of Resource: (Check all that apply)	<input checked="" type="checkbox"/> River, stream or brook <input type="checkbox"/> Great Pond <input type="checkbox"/> Coastal Wetland <input checked="" type="checkbox"/> Freshwater Wetland <input checked="" type="checkbox"/> Wetland Special Significance <input checked="" type="checkbox"/> Significant Wildlife Habitat <input type="checkbox"/> Fragile Mountain		13. Name of Resource: UNNAMED WETLANDS
			14. Amount of Impact: (Sq. Ft.) Fill: 62,442 Dredging/Veg Removal/Other: 12,735 add. veg removal
15. Type of Wetland: (Check all that apply)	FOR FRESHWATER WETLANDS		
	<input checked="" type="checkbox"/> Forested <input checked="" type="checkbox"/> Scrub Shrub <input type="checkbox"/> Emergent <input type="checkbox"/> Wet Meadow <input type="checkbox"/> Peatland <input type="checkbox"/> Open Water <input type="checkbox"/> Other _____	<i>Tier 1</i>	<i>Tier 2</i>
	<input type="checkbox"/> 0 - 4,999 sq ft. <input type="checkbox"/> 5,000-9,999 sq ft <input type="checkbox"/> 10,000-14,999 sq ft.	<input type="checkbox"/> 15,000 – 43,560 sq. ft.	<input checked="" type="checkbox"/> > 43,560 sq. ft. or <input type="checkbox"/> smaller than 43,560 sq ft., not eligible for Tier 1
16. Brief Activity Description	Construct 144,000 square foot Solid Waste Processing and Recycling Facility, 4,400 linear foot access road, and associated infrastructure on 90 acre parcel accessed from Coldbrook Road in Hampden, Maine.		
17. Size of Lot or Parcel:	<input type="checkbox"/> square feet, or <input checked="" type="checkbox"/> +/- 90 Ac.	UTM Northing: 4957026 M UTM Easting: 511551 M	
18. Title, Right or Interest:	<input type="checkbox"/> own <input type="checkbox"/> lease <input type="checkbox"/> purchase option <input checked="" type="checkbox"/> written agreement		
19. Deed Reference Numbers:	Book#:2838 Page: 171 See Att. 15	20. Map and Lot Numbers:	Map #:09/14 Lot#:35,36,37,39,07
21. DEP Staff Previously Contacted:	Jim Beyer	22. Part of a larger project:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No After-the-Fact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
23. Resubmission of Application?	<input type="checkbox"/> Yes → <input checked="" type="checkbox"/> No	If yes, previous application #	Previous project manager:
24. Written Notice of Violation?	<input type="checkbox"/> Yes → <input checked="" type="checkbox"/> No	If yes, name of DEP enforcement staff involved:	25. Previous Wetland Alteration: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
26. Detailed Directions to the Project Site:	FROM INTERSTATE 95, TAKE EXIT 180 AND TURN LEFT ONTO COLDBROOK ROAD. ACCESS ROAD TO THE SITE IS 0.6 MILES ON THE LEFT.		
TIER 1		TIER 2/3 AND INDIVIDUAL PERMITS	
<input type="checkbox"/> Title, right or interest documentation <input type="checkbox"/> Topographic Map <input type="checkbox"/> Narrative Project Description <input type="checkbox"/> Plan or Drawing (8 1/2" x 11") <input type="checkbox"/> Photos of Area <input type="checkbox"/> Statement of Avoidance & Minimization <input type="checkbox"/> Statement/Copy of cover letter to MHPC		<input checked="" type="checkbox"/> Title, right or interest documentation <input checked="" type="checkbox"/> Topographic Map <input checked="" type="checkbox"/> Copy of Public Notice/Public Information Meeting Documentation <input checked="" type="checkbox"/> Wetlands Delineation Report (Attachment 1) that contains the Information listed under Site Conditions <input checked="" type="checkbox"/> Alternatives Analysis (Attachment 2) including description of how wetland impacts were Avoided/Minimized <input checked="" type="checkbox"/> Erosion Control/Construction Plan <input checked="" type="checkbox"/> Functional Assessment (Attachment 12), if required <input checked="" type="checkbox"/> Compensation Plan (Attachment 13), if required <input checked="" type="checkbox"/> Appendix A and others, if required <input checked="" type="checkbox"/> Statement/Copy of cover letter to MHPC <input type="checkbox"/> Description of Previously Mined Peatland, if required (N/A)	
28. FEES, Amount Enclosed:	\$ 2010.06		
CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2			

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following:

DEP SIGNATORY REQUIREMENT

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor a permit be issued.

CORPS SIGNATORY REQUIREMENT

USC Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry shall be fined not more than \$10,000 or imprisoned not more than five years or both. I authorize the Corps to enter the property that is subject to this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

DEP SIGNATORY REQUIREMENT

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application (see #4 for the applicant and #8 for the agent)."

 Date: June 19th 2015
SIGNATURE OF AGENT/APPLICANT

NOTE: Any changes in activity plans must be submitted to the DEP and the Corps in writing and must be approved by both agencies prior to implementation. Failure to do so may result in enforcement action and/or the removal of the unapproved changes to the activity.



MAINE

Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

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Information Summary

[Subscriber activity report](#)

This record contains information from the CEC database and is accurate as of: Fri Jun 05 2015 08:57:09. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
MUNICIPAL REVIEW COMMITTEE, INC.	19910436ND	NONPROFIT CORPORATION (T13-B)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
06/07/1991	N/A	MAINE

Other Names	(A=Assumed ; F=Former)
COMMITTEE TO ANALYZE PERC, INC.	F

Clerk/Registered Agent

DANIEL G. MCKAY
P.O. BOX 1210
BANGOR, ME 04402 1210

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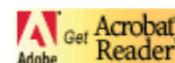
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(\$10.00)

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STATE OF MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions
101 State House Station
Augusta, Maine 04333-0101

May 20, 2015

TRACEY STUART-PAUL
FIBERIGHT LLC
107 FOREST DRIVE
CATONSVILLE MD 21228

ATTESTED COPIES
WR DCN: 2151402230006

Enclosed please find copies of documents recently placed on file with our office. Each copy has been attested as a true copy of the original and serves as your evidence of filing. We recommend that you retain these permanently with your records.

Charter#: 20150853FC Legal Name: FIBERIGHT LLC

FOREIGN QUALIFICATION

DCN: 2151402230007 Page(s)

Total Pages

FOREIGN
LIMITED LIABILITY COMPANY

STATE OF MAINE

STATEMENT OF FOREIGN QUALIFICATION
TO CONDUCT ACTIVITIES

Fiberight LLC

(Name of Limited Liability Company in Jurisdiction of Organization)

F
File No. 20150853FC Pages 5
Fee Paid \$ 250
DCN 2151402230007 QUAL
-----FILED-----
05/19/2015


Deputy Secretary of State

A True Copy When Attested By Signature


Deputy Secretary of State

Pursuant to 31 MRSA §1622, the undersigned limited liability company executes and delivers the following Statement of Foreign Qualification:

FIRST: If the name of the limited liability company in the jurisdiction of organization does not contain one of the words or abbreviations required by 31 MRSA § 1508.1 ("limited liability company" or "limited company" or the abbreviation "L.L.C.," "LLC," "L.C." or "LC" or, in the case of a low-profit limited liability company, "L3C" or "L3c"), the proposed name to be used in this State in compliance with this requirement is: * (If not applicable, so indicate.)

SECOND: If the name of the limited liability company in the jurisdiction of organization is unavailable pursuant to 31 MRSA §1508, the fictitious name under which it seeks authority to conduct activities in the State of Maine is: (If not applicable, so indicate.)

Form MLLC-5 accompanies this application. (See 31 MRSA § 1624.1)

THIRD: Date of formation: 10/3/2007 Jurisdiction where formed: Delaware

Address of the principal office, wherever located:

107 Forest Drive, Catonsville, MD 21228

(physical location - street (not P.O. Box), city, state and zip code)

PO Box 21171, Catonsville, MD 21228

(mailing address if different from above)

FOURTH: The foreign limited liability company is a foreign limited liability company as defined in 31 MRSA §1502.11.

FIFTH: The nature of the business or purpose(s) to be conducted or promoted in the State of Maine is:

Solid waste processing of trash into biofuels

SIXTH: The Registered Agent is a: (select either a Commercial or Noncommercial Registered Agent)

Commercial Registered Agent CRA Public Number: P10098

Michael E. High
(name of commercial registered agent)

Noncommercial Registered Agent

(name of noncommercial registered agent)

(physical location, not P.O. Box – street, city, state and zip code)

(mailing address if different from above)

SEVENTH: Pursuant to 5 MRSA §105.2, the registered agent listed above has consented to serve as the registered agent for this limited liability company.

EIGHTH: The name and business, residence and mailing address of each manager (if any):

NAME	ADDRESS
<u>Craig Stuart-Paul</u>	<u>107 Forest Drive, Catonsville, MD 21228</u>
<u>Richard Golden</u>	<u>3 Drumlin Road, Weston, MA 02493</u>
<u>James Long</u>	<u>PO Box 972, Great Falls VA 22066</u>

Names and addresses of additional managers are attached as Exhibit 1, and made a part hereof.

NINTH: The date on which the foreign limited liability company commenced or expects to commence conducting activities in the State of Maine is 6/1/15

TENTH: Check only if applicable

This is a professional limited liability company qualified pursuant to 13 MRSA Chapter 22-A to provide the following professional services (see 13 MRSA, chapter 22-A for information on what constitutes professional services):

(type of professional services)

ELEVENTH: (Check if applicable)

The foreign limited liability company is governed by an agreement that establishes or provides for the establishment of designated series having separate rights, powers or duties with respect to specified property or obligations of the foreign limited liability company or profits and losses associated with specified property or obligations. Additional information required pursuant to MRSA 31 §1622.2 are attached hereto as Exhibit _____, and made a part hereof.

TWELFTH: This statement of qualification is accompanied by a certificate of existence or such other document that the Secretary of State determines to be suitable for purposes of proving the valid existence of the foreign limited liability company under the law of the State or other jurisdiction listed in item Third. The certificate or other document must not have been issued more than 90 days before the delivery of this statement to the office of the Secretary of State.

Dated 5/11/15



(Authorized Signature**)

Craig P. Stuart-Paul CEO

(Type or print name and capacity)

*The limited liability company name as used in the State of Maine must contain one of the following: "limited liability company" or "limited company" or the abbreviation "L.L.C.," "LLC," "L.C." or "LC" or, in the case of a low-profit limited liability company, "L3C" or "l3c" -- see 31 MRSA 1508. If the limited liability company's name in its jurisdiction of organization complies with 31 MRSA § 1508 with the addition of these words, then no fictitious name filing is required pursuant to 31 MRSA §§ 1622.2.A and 1624.1.

Statement **MUST be signed by at least one **authorized person** (31 MRSA §1676.1B).

The execution of this statement constitutes an oath or affirmation under the penalties of false swearing under 17-A MRSA §453.

Please remit your payment made payable to the Maine Secretary of State.

Submit completed form to:

Secretary of State
Division of Corporations, UCC and Commissions
101 State House Station
Augusta, ME 04333-0101
Telephone Inquiries: (207) 624-7752

Email Inquiries: CEC.Corporations@Maine.gov

Exhibit 1

Part 8 – Managers

Steve Ragiel
2740 Centenary St.
Houston, TX 77005

Philip Sheibley
281 Turtleback Road
New Cannan, CT 06840

Delaware

PAGE 1

The First State

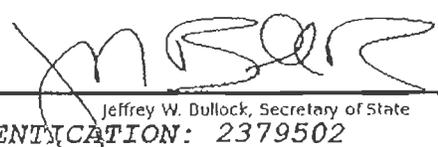
I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "FIBERIGHT LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE FOURTEENTH DAY OF MAY, A.D. 2015.

4434359 8300

150652638

You may verify this certificate online
at corp.delaware.gov/authver.shtml




Jeffrey W. Bullock, Secretary of State
AUTHENTICATION: 2379502

DATE: 05-14-15

ATTACHMENT 1
ACTIVITY DESCRIPTION

ATTACHMENT 1

ACTIVITY DESCRIPTION

OVERVIEW

Municipal Review Committee, Inc. (MRC) and Fiberight LLC (Fiberight) have prepared this joint application to construct and operate a regional Solid Waste Processing and Recycling Facility in Hampden, Maine, to process municipal solid waste (MSW) (the Facility). MRC and Fiberight have partnered together to develop the Facility to manage MSW generated in 187 MRC member municipal communities in north, central, and eastern Maine. The new Facility is needed in part as a result of contracts set to expire on March 31, 2018, between MRC member municipalities and Penobscot Energy Recovery Company (PERC).

PROJECT DESCRIPTION

The proposed project consists of a 144,000 square foot waste processing Facility with associated office space, parking, and access areas and a 30 foot wide paved access road extending from Coldbrook Road approximately 4,460 linear feet. The Facility development site (Site) encompasses approximately 10 acres.

GENERAL EXISTING CONDITIONS

The project Site is located approximately 4,000 feet east of Coldbrook Road, and in an undeveloped area bounded by Coldbrook Road to the west, Interstate 95 to the north, and an electrical utility corridor to the east. The proposed 90 +/- acre project boundary is located within larger parcels owned by HO Bouchard and/or Hickory Hill Development Corporation. The proposed project boundaries are preliminary, and the Applicants have retained an option to acquire needed area in the general vicinity. Access to the Site will be by a proposed 100 foot wide easement corridor generally following an existing gravel access road that extends from Coldbrook Road to the proposed development area.

SITE AND RESOURCE CONDITIONS

Access Road: The proposed 100 foot wide access easement contains a mix of sports fields, agricultural fields, and undeveloped forestlands. The developed portion of the Site adjacent to Coldbrook Road was previously permitted under a Site Location of Development Act (SLODA) permit. The corridor extends from the soccer fields and onto an existing access road that continues to the Bangor Gas pipeline. This existing road crosses a large forested wetland area to access the development Site. Near the middle of the forested wetland is a small intermittent stream bordered by a scrub shrub wetland.

Development Site: The majority of the Facility project area is undeveloped forestland with a mix of uplands and wetlands. Previous activities included timber harvesting and recreational use. The Site was once agricultural fields and has reverted to forest. From the existing gas pipeline on the southwestern corner, the terrain climbs and upland dominates the northern portion of the Site. Here, second growth white pine on moderately sloping upland terrain occurs. Moving south and away from the development Site, the landscape flattens out and is dominated by forested wetland with 25-30% upland inclusions interspersed throughout. These upland islands are generally small and interspersed with wetlands. The forested wetlands south

and east of the main development Site contain two intermittent streams and several vernal pools scattered throughout. Alder scrub-shrub wetlands dominate along the intermittent streams. The streams converge in the southern portion of the Site flow southerly into Souadabscook Stream.

Protected Natural Resources:

Wetlands: The Site is dominated by a large wetland complex, identified as Wetland 15A-1. The upper elevations of this wetland, located in the northeastern portions of the Site, are forested wetlands (PFO1&4E) that are seasonally saturated. Soils in this wetland consisted of an organic or dark mineral surface horizon underlain by depleted and mottled silt loam subsoil. Evidence of hydrology in this wetland consisted of pit and mound microtopography, soil saturation to the ground surface, water stained leaves, and drainage patterns.

Vernal Pools: The vernal pool survey identified a total of 44 vernal pools on the Site. In general, the vernal pools on the Site are natural or natural-modified pools with ephemeral hydrology. Some pools had evidence of impact or modification as a result of the timber harvesting activity on the Site, primarily in the form of skidder or other equipment ruts or roads in the pools. Ditches and rutted areas throughout the Site that contained evidence of amphibian breeding, but did not meet the definition or criteria to constitute a vernal pool, were also identified. Of the 44 vernal pools on the Site, eight pools meet the MDEP Significant vernal pool criteria.

Wildlife Habitat: A review of published wildlife species and habitat data and consultation with State and Federal Agencies was completed. The large forested habitat extending out from the Site to the north is mapped by the Maine Department of Inland Fisheries and Wildlife (MDIFW) as an indeterminate value Deer Wintering Area (DWA). A review of the Site was conducted in March of 2015 with MDIFW Regional Wildlife biologists. Within the access corridor and the proposed development area, it was determined past harvesting activities on the Site had removed much of the softwood component and the residual stands did not currently provide suitable wintering areas.

Rare, Threatened, or Endangered Species: A review in March of 2015 was completed by contacting the MNAP and USFWS to identify potential Listed Species and/or critical habitats. No State listed species or habitats were identified. The USFWS review in March did not indicate any potential for Listed Species. In May; however, the Northern Long Eared Bat (NLEB) was listed as Threatened. Because the Site is within the area where these bats may occur, on-site surveys are being conducted and additional information will be submitted to determine if the NLEB is present.

PROPOSED CONSTRUCTION AND PROJECT IMPACTS

The proposed project includes development of the solid waste processing facility and construction of a 30 foot wide paved access road utilizing the existing footprint of the gravel access road extending from Coldbrook Road to the Site. The proposed road will be located as much as possible on the existing gravel road to avoid and minimize additional impacts to protected natural resources.

The proposed road will alter approximately 29,500 square feet of freshwater forested wetlands, expand an existing crossing of an intermittent stream, and clear vegetation within MDEP and Army Corps regulated vernal pool habitat areas. The impacted wetland areas are dominated by red maple–balsam fir on hydric mineral soils of lacustrine and marine sediments.

The proposed processing Facility development will alter approximately 46,000 square feet of forested wetlands. The alterations are the result of fill and clearing necessary for the Facility. The Facility itself has been located to maximize the use of available uplands and minimize wetland impacts and clearing within vernal pool habitats. Table 1 below summarizes the proposed impacts:

TABLE 1: WETLAND IMPACT SUMMARY	
DEVELOPMENT AREA	IMPACT AMOUNT
Access Road – Wetland Fill	16,729 SF
Access Road – Wetland Clearing	12,735 SF
Access Road – Total Wetland Alteration	29,464 SF
Processing Facility – Wetland Fill	45,713 SF
Processing Facility – Wetland Clearing	0 SF
Clearing within 250FT of MDEP SVP	19,481
Clearing within 750FT of ACOE Vernal Pool	429,417

AVOIDANCE AND MINIMIZATION

Under the Maine Natural Resource Protection Act and Section 404 of the Federal Clean Water Act, the project is required to avoid and minimize disturbance to natural resources and to ensure that no unreasonable impact will occur. The proposed project has been designed to avoid and minimize impacts to freshwater wetlands and protected natural resources to the greatest practical extent. The Alternatives Analysis in Section 2 describes the selection criteria and alternatives reviewed in a regional context and the various factors that were assessed and evaluated in locating the Facility.

Within this Site, several methods were employed to avoid and reduce impacts to protected resources.

Access Road: Within the 100 foot easement, the proposed road was sited to utilize existing developed areas, uplands, and avoid wetlands where possible. This included avoiding large amounts of wetland impacts by utilizing the existing access road and fill areas in place for several decades. An existing stream crossing will be improved and will avoid a new crossing. The road footprint was designed to meet the minimum width allowed by town roadway standards. The initial road alignment was shifted to avoid wetlands, and the fill slopes were reduced from a 4:1 slope to 3:1 to further minimize wetland impacts. These design changes reduced overall wetland impact by approximately 17%.

Processing Facility Site: The proposed processing Facility and associated improvements are designed based on the required capacity needed to process the projected waste volume. MRC has done extensive research to determine these projected volumes and size the Facility appropriately. The Facility development area was located and designed within the available property to avoid impacting wetlands and protected natural resources as much as possible. The facility and infrastructure were situated to utilize the largest area of uplands present. Within this large upland are smaller wetland inclusions. Impacts to these smaller areas were minimized as much as possible. Examples of minimization efforts included keeping the Facility at or near grade as much as possible to reduce fill extensions into wetland areas and reducing fill slopes

along the southern edge of the Site using 3:1 slopes. Impacts were further reduced where possible by siting stormwater structures and improvements within less desirable upland areas that were available, rather than closer to the building or in more convenient construction locations.

ATTACHMENT 2
ALTERNATIVE ANALYSIS

ATTACHMENT 2

ALTERNATIVES ANALYSIS

OVERVIEW

This Alternatives Analysis sets forth why a practical alternative does not exist to the proposed alteration in this application, taking into consideration the purpose and need of the project and avoidance and minimization measures.

Purpose: The purpose of the project is to develop a solid waste processing and recycling facility to provide municipal solid waste (MSW) disposal services to MRC's member communities and other non-MRC communities that have historically relied on Penobscot Energy Recovery Company (PERC) for MSW disposal, and other Maine communities that contract with MRC and Fiberight for solid waste disposal (the "Facility").

Need: MRC and Fiberight (the "Applicants") have partnered together to develop the Facility to manage MSW generated in 187 municipal communities and from other non-MRC communities in north, central, and eastern Maine. In accordance with 38 M.R.S. § 1305, municipalities need to provide "solid waste disposal services for domestic and commercial solid waste generated within the municipality". In addition, solid waste management (such as solid waste disposal services for municipalities) must be consistent with the State's Solid Waste Management Hierarchy (38 M.R.S. § 2101), which sets forth the following order of priority:

- A. Reduction of waste generated at the source, including both amount and toxicity of the waste;
- B. Reuse of waste;
- C. Recycling of waste;
- D. Composting of biodegradable waste;
- E. Waste processing that reduces the volume of waste needing disposal, including incineration; and
- F. Land disposal of waste.

The existing PERC facility, which currently provides MSW services, represents waste processing in the fifth order of priority under the State's hierarchy. Conversely, the proposed Facility utilizes methods of solid waste management that have higher priority in the State's hierarchy, including the conversion of solid wastes to renewable fuels (reuse of waste), sale of recyclables (recycling of waste), conversion of biodegradables (composting), and overall reduction of waste volume. The proposed solid waste management approach would incentivize local waste reduction, reuse and recycling by rewarding these communities that generate less MSW with lower disposal fees. The current PERC approach provides disincentives for local waste reduction efforts by applying a penalty for each community that does not meet its Guaranteed Annual Tonnage (GAT). Moreover, due to expiring disposal agreements, changes in financial arrangements (e.g., expiration of an existing power purchase agreement), and other factors, PERC is not anticipated to be economically viable post-2018. Accordingly, the proposed Facility is needed to (i) ensure that municipalities comply with their obligation under state law to provide "solid waste disposal services for domestic and commercial solid waste generated within the municipality"; (ii) achieve better consistency with the State's Solid Waste Management Hierarchy; and (iii) provide an economically viable solid waste processing facility to serve the solid waste management needs for MRC member and other contracting municipalities.

CRITERIA FOR ALTERNATIVES ANALYSIS

Numerous alternatives were considered and evaluated prior to the selecting the Site for the Facility. Each alternative was assessed for meeting the project purpose and need, taking into consideration avoidance and minimization measures. Specific siting criteria considered as part of this analysis included:

- ◆ Proximity to Waste Centroid;
- ◆ Suitable Site Characteristics (e.g., property size, developable area, access, available utilities, etc.);
- ◆ Willing Landowner, Host Community, and Community Impact;
- ◆ MDEP Solid Waste Siting Regulations;
- ◆ Economic Impact; and
- ◆ Environmental Impact.

Below are more detailed descriptions of each criteria.

Proximity to Waste Centroid: Because the Facility will serve a large regional waste disposal need, it is necessary for the Facility to be located as centrally as practical to the communities MRC serves. Locating a Facility as close to the center of all of their members will minimize environmental and economic impacts by reducing fuel consumption and emissions, traffic congestion, and associated transportation costs. With respect to infrastructure development at a local level, a new regional processing Facility located as close to the center of their members would result in less disruption and minimization of environmental impacts at a local level. For example, if the regional processing facility was to be located significantly further away, local transfer stations and waste management methods would likely change to accommodate additional storage capacity and other infrastructure to reduce potential increased costs associated with transportation. An engineering calculation determined the regional centroid of waste generated by MRC member communities is located in Hampden, Maine.

Suitable Site Characteristics: The Facility must be capable of providing sufficient capacity to accept and process the estimated volumes of waste generated in the MRC communities. Based on current waste generation data, the annual waste capacity proposed to be accepted and processed is estimated to be in the range of 150,000 to 200,000 tons per year. In addition, the Facility must be able to process up to 650 tons/day of waste to account for seasonal variation. To accommodate these volumes of waste, the minimum developable area necessary to accommodate the processing facility and the associated infrastructure requires a development footprint of approximately ten acres with a large in-door area to receive and process waste.

Moreover, a suitable site must also have close proximity to major transportation corridors and be accessible to vehicles transporting solid waste and products derived from the Facility's operations.

Further important development considerations include a site's distance to local residents and other commercial operations in the area.

Willing Landowner, Host Community and Availability of Properties: Development of the Facility will need to have the regulatory approval of the local community as well as a willing seller of properly zoned property.

MDEP Solid Waste Siting Regulations: Because the Facility is classified as a solid waste processing facility, the improvements and development must, among other laws and regulations, comply with the Maine Department of Environmental Protection's (MDEP) Solid Waste Management Regulations (SWMR) in accordance with 06 096 CMR Chapter 409, Processing Facilities. In order to meet the regulatory requirements for licensing, the following key site selection criteria are necessary. The waste handling area at a proposed processing facility may not be located:

- ◆ Closer than 100 feet to the solid waste boundary of an active, inactive, or closed solid waste landfill;
- ◆ Within a 100 year flood plain;
- ◆ In, on, over, or adjacent to a protected natural resource without first obtaining a permit pursuant to 38 M.R.S.A. section 480-A *et seq.*;
- ◆ Closer than 300 feet to off-site water supply wells or water supply springs;
- ◆ Closer than 100 feet to public roads and property boundaries; and
- ◆ Closer than 10,000 feet to any airport runway used by turbojet aircraft, or within 5,000 feet of any airport runway used by only piston-type aircraft, when putrescible waste is to be handled outdoors in an uncovered or exposed condition.

Economic Impact: The cost per ton for MSW is a significant part of MRC member communities' budgets. Alternatives were evaluated based on the potential to provide a disposal cost within the market range. Alternatives above the market range would not be economically viable as communities would default to land disposal (landfilling) which is not as consistent with the State's Solid Waste Management Hierarchy.

Environmental Impact: The potential environmental impact taking into consideration avoidance and minimization of impacts was also evaluated in the site alternative search/analysis.

DETAILED SITE ALTERNATIVE SEARCH/ANALYSIS

The Applicants reached out to Municipal Economic Development personnel within the region for existing developed site suggestions that meet the above criteria, and to gain a sense of the level of interest in developing a solid waste processing facility in any of these communities. Several previously developed sites were provided and considered by the Applicants; however, these sites did not meet the necessary sizing requirements and were very close to residents and commercial operations. As a result, these sites were eliminated from further consideration. Below is a description of the alternatives analyzed by the Applicants:

1. Alternative 1 - No Action

This alternative proposes no action be undertaken. Under this scenario, MRC would not plan for future changes to solid waste handling which would result in a non-regional approach to solid waste management.

- ◆ Proximity to Waste Centroid: If no action is taken, then it is uncertain how MRC member and contracting municipalities will continue to manage MSW due to viability issues with PERC post-2018 and significant increases in solid waste costs, which could, among other things, shift regional solid waste processing/disposal services to regional landfills outside the waste centroid.
- ◆ Suitable Site Characteristics: If no action is taken there are no suitable site characteristics to evaluate.

- ◆ Willing Landowner, Willing Host Community and community Impact: If no action is taken MRC member communities will, to the extent available, utilize existing solid waste processing and disposal facilities to manage solid waste.
- ◆ MDEP Solid Waste Siting Regulations: If no action is taken, no siting requirements would apply.
- ◆ Economic Impact: If no action is taken, MRC anticipates the cost per ton to dispose MSW at the PERC facility will increase beyond the market rate and result in land disposal (e.g., landfilling) instead of processing.
- ◆ Environmental Impact: No action results in the least impact to wetlands and protected natural resource areas by not constructing a new facility; however, it has the largest overall environmental impact in terms of waste management and limited landfill capacity needs.

A “no action” alternative is not practical because it does not achieve the project purpose and need.

2. **Alternative 2 - Utilize an Existing Developed Industrial Site**

MRC evaluated the potential to utilize several existing sites within the region (e.g., former Verso Paper mill located in Bucksport, former HoltraChem facility located in Orrington, Old Town Fuel and Fiber facility located in Old Town, PERC property in Orrington, and the future industrial park in Brewer) to redevelop as the Fiberight facility.

- ◆ Proximity to Waste Centroid: All of these sites are several miles further from the waste centroid than the Hampden site. This would increase transportation costs and associated environmental impacts (fuel consumption, exhaust, traffic movement).
- ◆ Suitable Site Characteristics: Some of these sites would provide suitable area to site the facility. However, the cost to purchase the existing facilities, extend infrastructure in some cases and perform the demolition/retrofitting would not be as economically viable as developing the Hampden site.
- ◆ Willing Landowner, Willing Host Community and Community Impact: Some of the landowners were not willing sellers. Based on discussions with economic development personal and other community leaders, a solid waste processing facility at these locations received much less support than the Hampden site. A willing host community is one of the key components of a successful solid waste permitting process.
- ◆ MDEP Solid Waste Siting Regulations: Some of the siting requirements mentioned above were not met for some of these sites. All of these previously developed sites had residents and/or commercial operations in closer proximity than the Hampden site.
- ◆ Economic Impact: The cost to purchase the existing facilities and perform the demolition/retrofitting would not be as economically viable as developing the Hampden site.

- ◆ Environmental Impact: If any of these previously developed sites met the criteria listed above, the environmental impacts from development would be less. However, all of these sites are several miles further from the waste centroid than the Hampden site which would increase associated environmental impacts (fuel consumption, exhaust, traffic congestion) from the extra transportation.

3. **Alternative 3 - H.O. Bouchard Property Hampden**

This alternative was developed through discussion with the Town of Hampden and the landowner. The town is very supportive of the proposed facility and site development.

- ◆ Proximity to Waste Centroid: The Hampden property provides the closest alternative to the waste centroid and will reduce the overall transportation cost and associated environmental impacts (fuel consumption, exhaust, traffic congestion).
- ◆ Suitable Site Characteristics: The Site provides suitable size for a waste processing facility. This site and property would allow MRC to own a large parcel of land (approximately 90 acres) in order to maintain a significant buffer from local residents and other commercial operations in the area while being adjacent to existing transportation and utility corridors necessary to serve the needs of the project. The site's close proximity to existing infrastructure while affording a significant buffer to neighboring land uses makes this property uniquely situated to serve the overall needs of the Facility.
- ◆ Willing Landowner, Willing Host Community and Community Impact: The landowner (H.O. Bouchard) is willing to sell the size property needed for this project and has entered into an Option Agreement with the MRC. The Community (Town of Hampden) through its Town Council members has made informal public expressions of support for the concept of the proposed processing facility within the Town. The Facility is subject to local regulatory review and approval. Town Council members have expressed an interest, subsequent to the conclusion of the local regulatory approval process, should the Facility gain approval, in working with Fiberight and the MRC to develop a Host Community Agreement. The proposed location is consistent with the Town's Comprehensive Plan and zoning (Industrial) for this area. The Town of Hampden informally expressed a willingness to host a solid waste processing facility. Mutual benefits to community due to future development plans, property seller, operator, owner; close proximity to gas pipeline and other infrastructure and utilities were identified.
- ◆ MDEP Solid Waste Siting Regulations: This would be a viable site to meet the solid waste siting requirements.
- ◆ Economic Impact: The Hampden property will require development of a new site. The costs for development will result in economically viable disposal rates for MRC members.
- ◆ Environmental Impact: The environmental impacts from this site include approximately 73,000 square feet of impact to wetlands and protected natural resources. The proposed facility has been designed to avoid and minimize impacts to the greatest practical extent including utilizing an existing access road and maximizing use of upland areas. See Section 1- Avoidance and Minimization for additional details. The impacted wetlands are previously disturbed forested

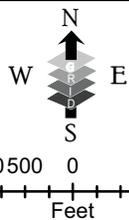
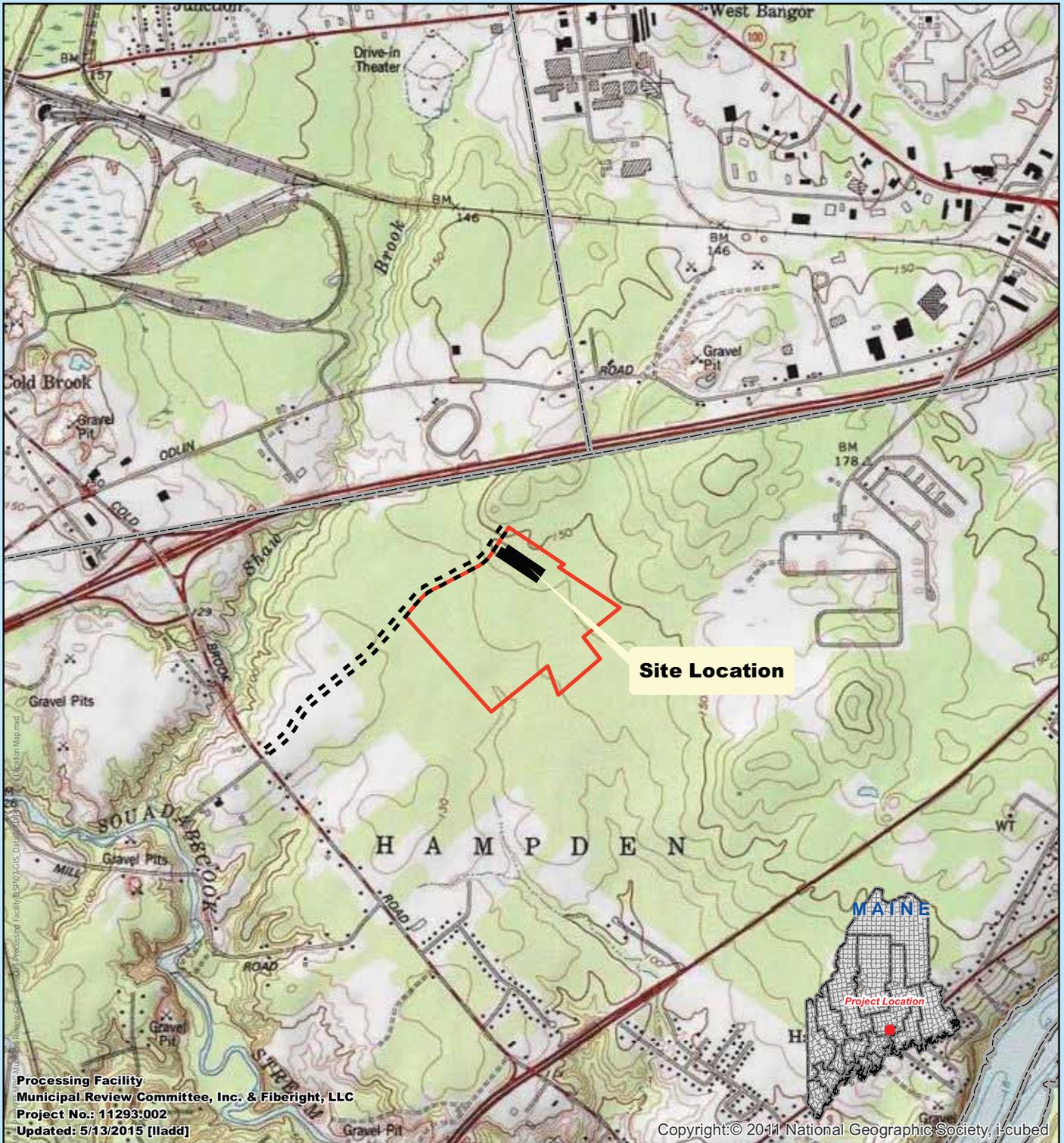
wetlands and are not high value resources. As mentioned above, this alternative would have the least environmental impacts associated with transportation (fuel consumption, exhaust, traffic congestion) due to its location and proximity to the waste centroid.

SUMMARY/CONCLUSION

Of the alternatives investigated, Alternative 3 – Hampden-HO Bouchard Property best met the site selection criteria and will have the least overall cumulative impact on the environment and still meet the proposed project purpose and need.

ATTACHMENT 3
TOPOGRAPHIC MAP

USGS Topographic Map



Legend

- Proposed Road Location
- Proposed Building Location
- ▭ Proposed Facility Property Boundary
- Town Boundaries

MAP NOTES:

- 1: ADMINISTRATIVE BOUNDARIES COURTESY OF THE MAINE OFFICE OF GIS (MEGIS).
- 2: TOPOGRAPHIC MAP IS USGS 1:24,000 TOPOGRAPHIC QUADRANGLE. PUBLISHED BY USGS, 2011. ACQUIRED FROM ESRI, 2015.

ATTACHMENT 4
SITE PHOTOGRAPHS

MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
NRPA

	Photo No. 1
	Photo Date: June 3, 2015
	Site Location: Coldbrook Road Hampden, Maine
	Description: Looking east at typical wetland area by WF-M802 near access road.
Photo By: RST	



	Photo No. 2
	Photo Date: June 3, 2015
	Site Location: Coldbrook Road Hampden, Maine
	Description: Looking east at existing access road.
Photo By: RST	



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
NRPA

	<p>Photo No. 3</p>
	<p>Photo Date: June 3, 2015</p>
	<p>Site Location: Coldbrook Road Hampden, Maine</p>
	<p>Description: Typical Scrub-Shrub wetland complex along access road by stream crossing.</p>
<p>Photo By: RST</p>	



	<p>Photo No. 4</p>
	<p>Photo Date: June 3, 2015</p>
	<p>Site Location: Coldbrook Road Hampden, Maine</p>
	<p>Description: Existing road/ vegetation at proposed clearing area within vernal pool habitat by Station 35+-00.</p>
<p>Photo By: RST</p>	



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
NRPA



Photo No. 5
Photo Date: June 3, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: Typical disturbed forested wetland along access road by WF-M20.
Photo By: RST



Photo No. 6
Photo Date: June 3, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: Forested wetland 15- 1A at end of existing road at pipeline intersection looking southeast.
Photo By: RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
NRPA

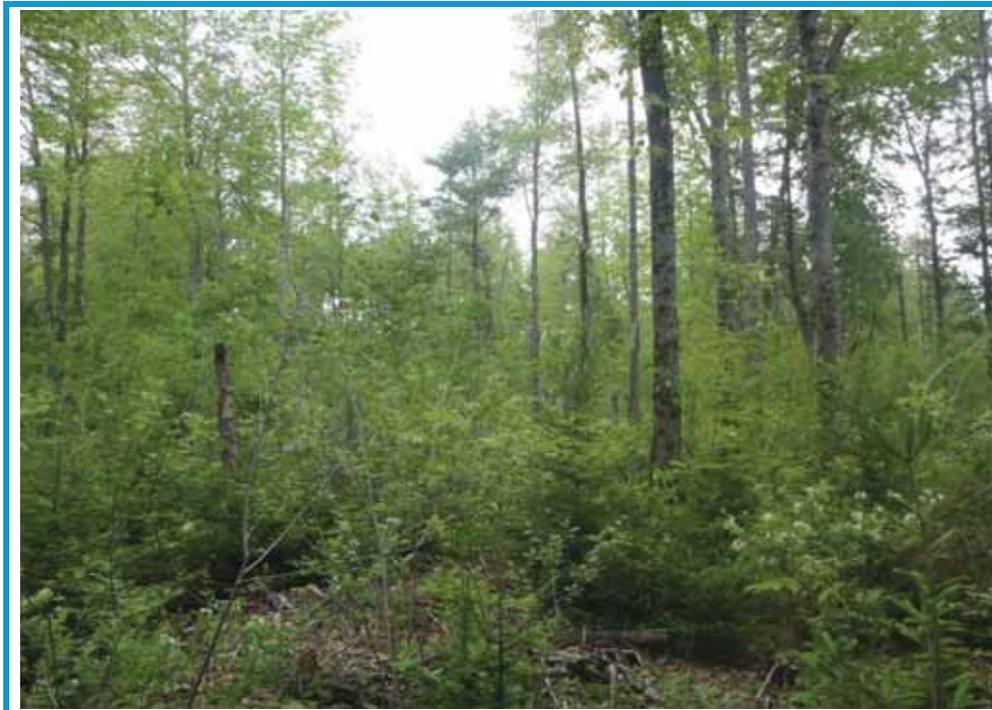


Photo No. 7

Photo Date:
June 3, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
Typical forested
wetland by wetland
point 15-A1-36 near
proposed facility.

Photo By: RST



Photo No. 8

Photo Date:
May 5, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
Typical vernal pool
and associated
wetland complex at
VP-1-15.

Photo By: RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
NRPA



Photo No. 9

Photo Date:
November 10, 2014

Site Location:
Coldbrook Road
Hampden, Maine

Description:
Typical upland
located on the Site.

Photo By: RST



Photo No. 10

Photo Date:
November 5, 2014

Site Location:
Coldbrook Road
Hampden, Maine

Description:
Harvested forestland
at proposed
development Site.

Photo By: RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
NRPA



Photo No. 11

Photo Date:
May 6, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
Wetland 15-1b typical
cut over forested
wetland and rutted
area.

Photo By: JES



Photo No. 12

Photo Date:
June 3, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
Forested wetland near
wetland data 15-A1-73
and proposed facility.

Photo By: JES

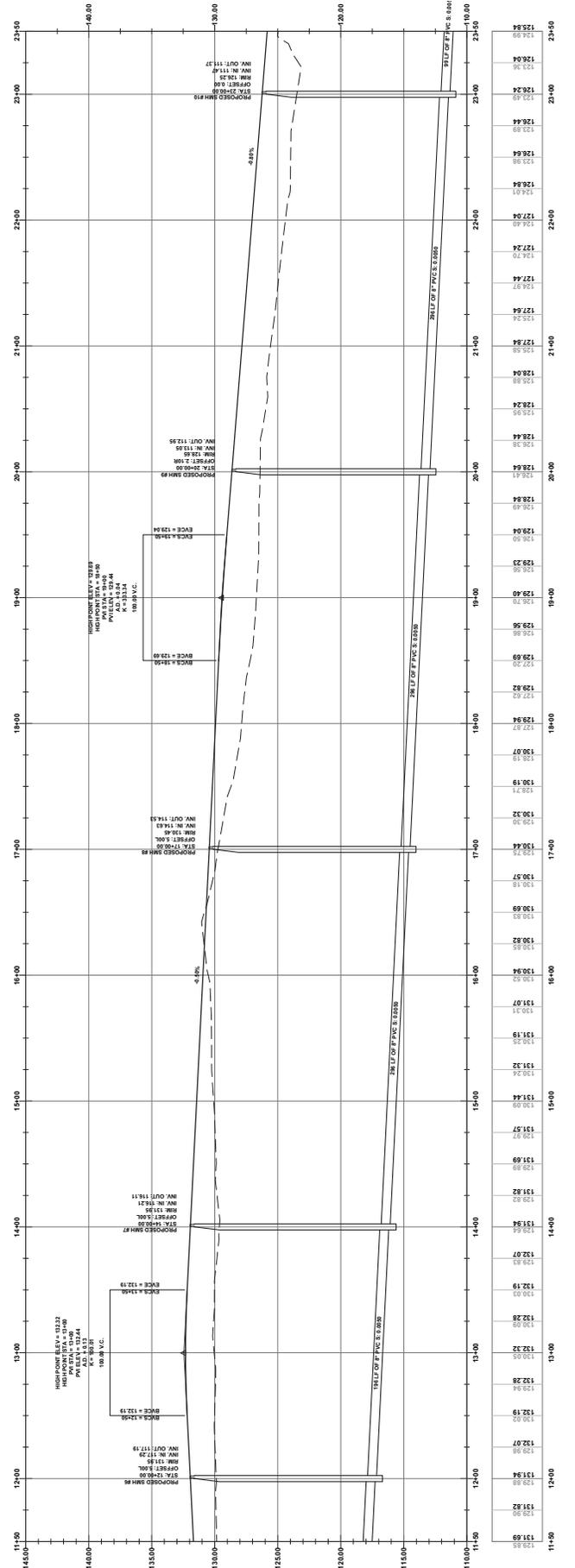


ATTACHMENT 5

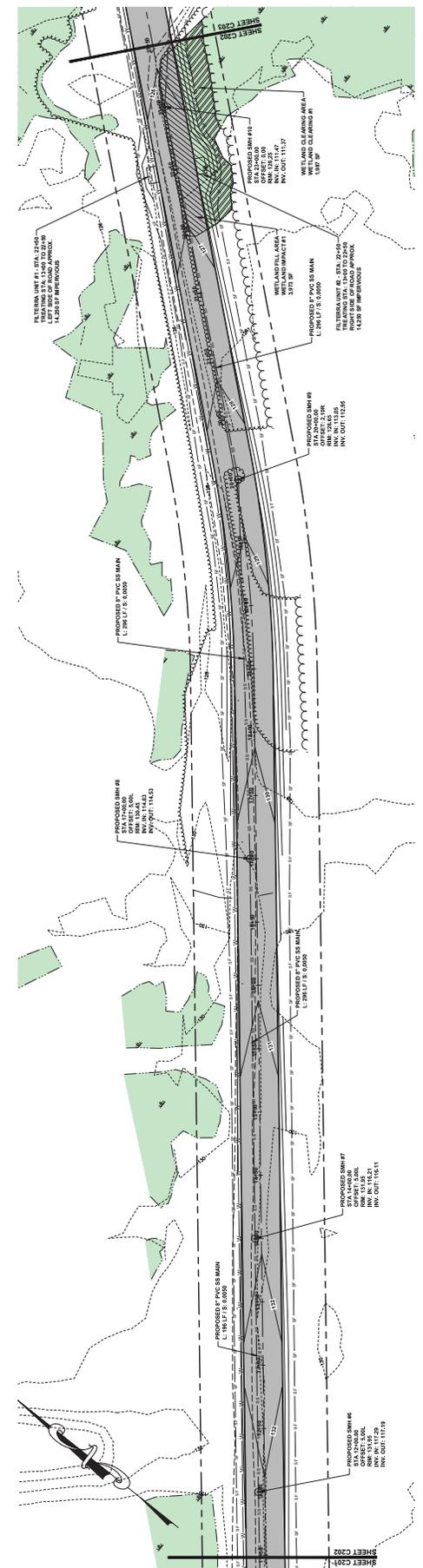
SITE PLANS



PROFILE - STA: 11+50 TO 23+50
SCALE: 1" = 40'



PLAN - STA: 11+50 TO 23+50
SCALE: 1" = 40'



PLAN AND PROFILE
STA: 11+50 TO 23+50

MHC
HAMDEN, MAINE



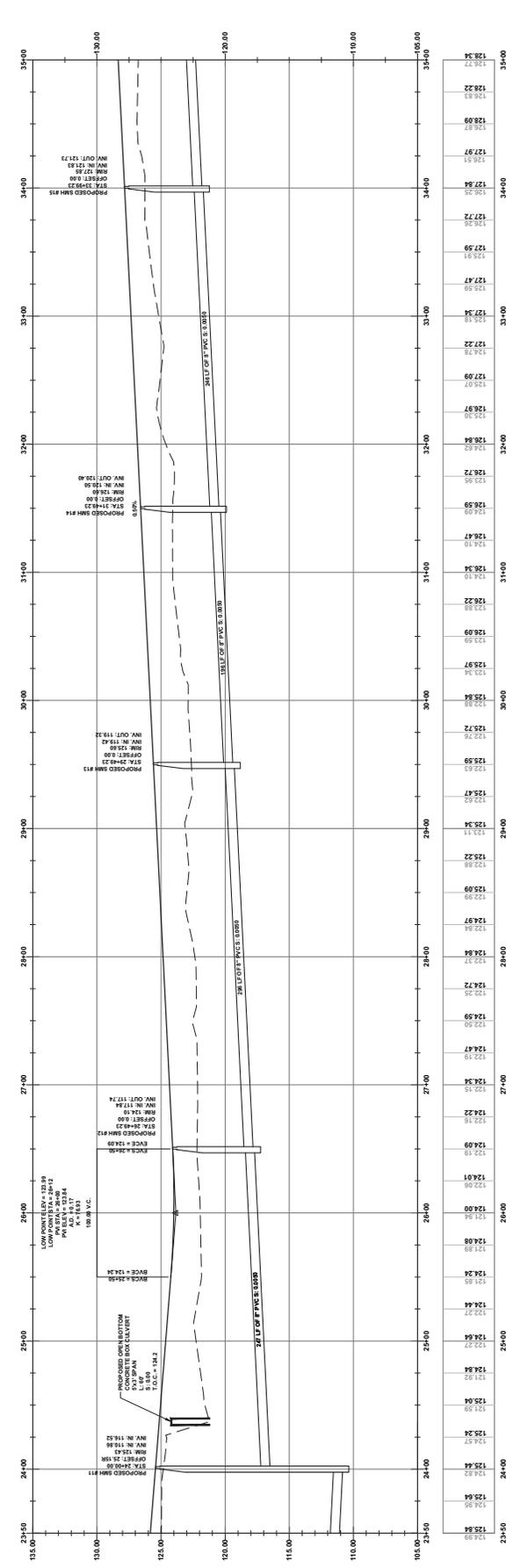
Engineers & Environmental Scientists & Surveyors
 CES INC
 100 South Main Street
 Portland, ME 04101
 Phone: 603-751-4100
 Fax: 603-751-4101
 Website: www.cesinc.com

DATE	2016-03-20
BY	WMB
CHECKED	WMB
SCALE	AS SHOWN
PROJECT	WETLANDS
SHEET	203 OF 203

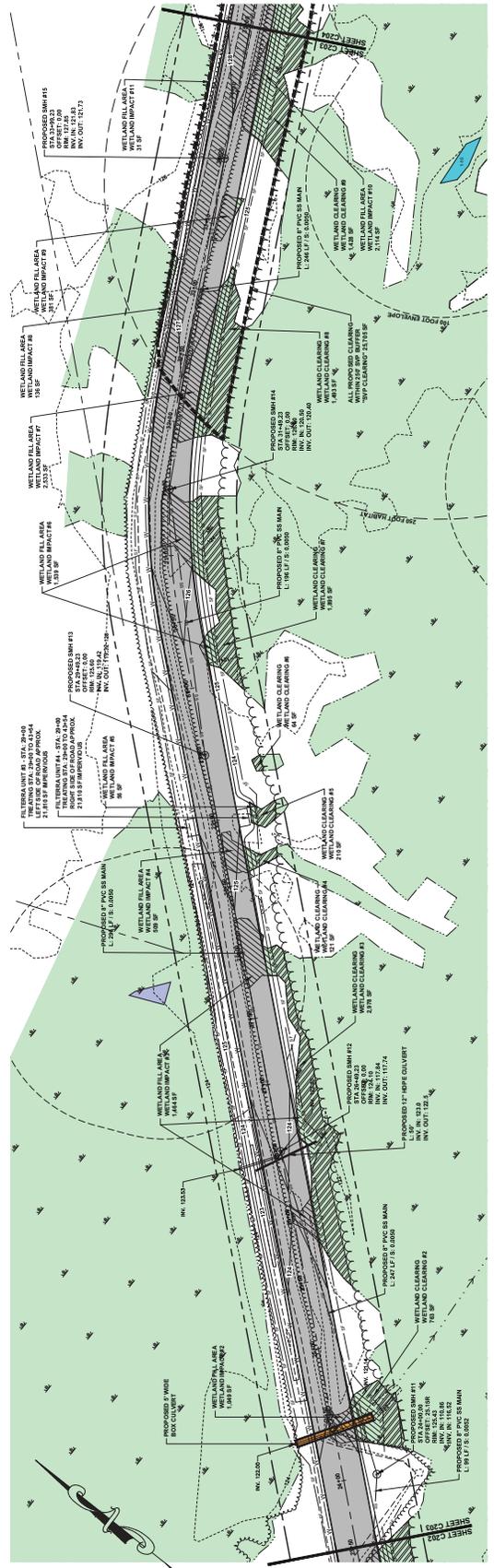


PLAN AND PROFILE
MRC
HAMDEN, MAINE

STA: 23+50 TO 35+00



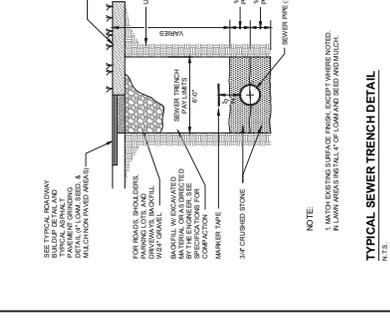
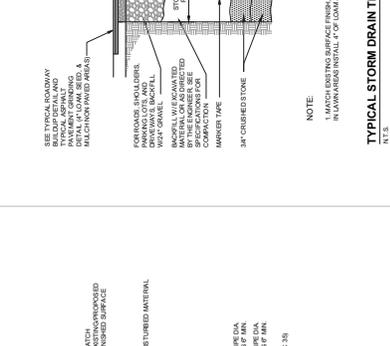
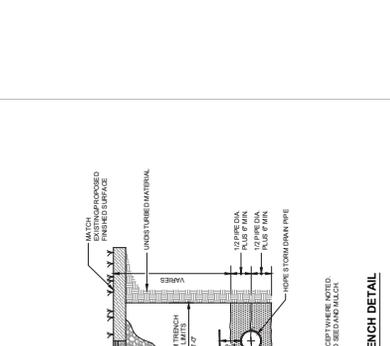
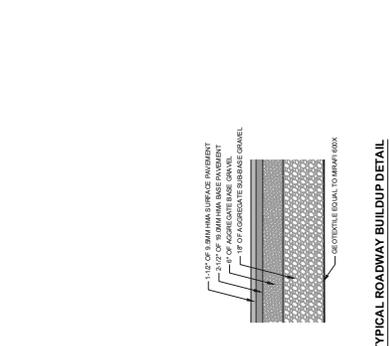
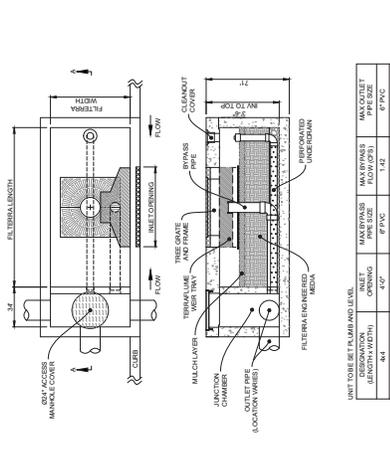
PROFILE - STA: 23+50 TO 35+00
SCALE: 1"=40'



PLAN - STA: 23+50 TO 35+00
SCALE: 1"=40'



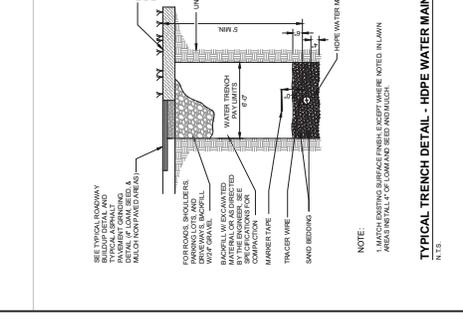
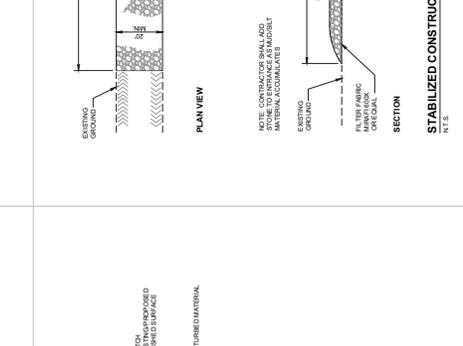
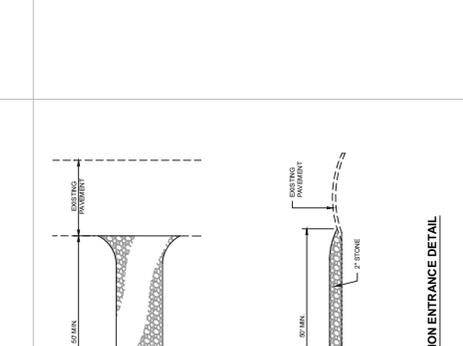
Engineers & Environmental Scientists & Surveyors
CES INC
200 South Main Street
Hamden, ME 04413
Tel: 207-252-2020
Fax: 207-252-2020
www.cesinc.com



FILTRERA DETAIL
 N.T.S.

* CONTACT FILTRERA HOLLOW-CELL OPENINGS ON DIFFERENT AVAILABLE CONFIGURATIONS

UNIT TO BE FILTRATED	MAX. SPACING	MAX. OPENING	MAX. FLOW RATE	MAX. FLOW RATE
GRAVEL	1.00"	1.00"	1.00 GPM	1.00 GPM
GRAVEL	1.50"	1.50"	1.50 GPM	1.50 GPM
GRAVEL	2.00"	2.00"	2.00 GPM	2.00 GPM
GRAVEL	2.50"	2.50"	2.50 GPM	2.50 GPM
GRAVEL	3.00"	3.00"	3.00 GPM	3.00 GPM
GRAVEL	3.50"	3.50"	3.50 GPM	3.50 GPM
GRAVEL	4.00"	4.00"	4.00 GPM	4.00 GPM
GRAVEL	4.50"	4.50"	4.50 GPM	4.50 GPM
GRAVEL	5.00"	5.00"	5.00 GPM	5.00 GPM
GRAVEL	5.50"	5.50"	5.50 GPM	5.50 GPM
GRAVEL	6.00"	6.00"	6.00 GPM	6.00 GPM
GRAVEL	6.50"	6.50"	6.50 GPM	6.50 GPM
GRAVEL	7.00"	7.00"	7.00 GPM	7.00 GPM
GRAVEL	7.50"	7.50"	7.50 GPM	7.50 GPM
GRAVEL	8.00"	8.00"	8.00 GPM	8.00 GPM
GRAVEL	8.50"	8.50"	8.50 GPM	8.50 GPM
GRAVEL	9.00"	9.00"	9.00 GPM	9.00 GPM
GRAVEL	9.50"	9.50"	9.50 GPM	9.50 GPM
GRAVEL	10.00"	10.00"	10.00 GPM	10.00 GPM

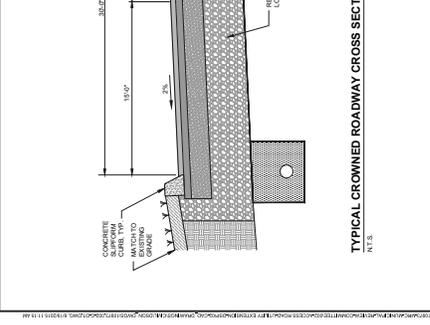
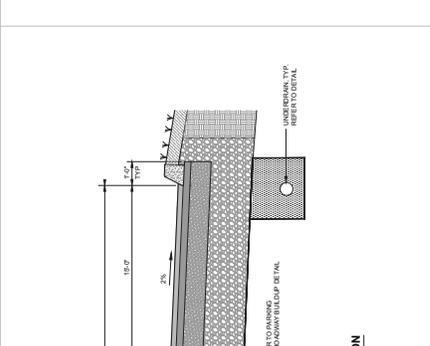
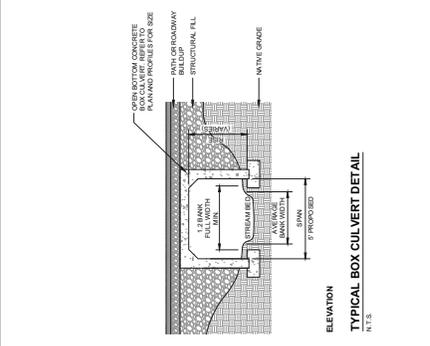
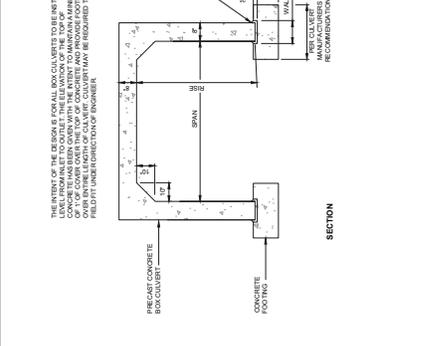


FOUNDATION GENERAL NOTES:

- PRECAST BRIDGE BEAMS SHALL BE DESIGNED AND PROVIDED BY AMERICAN BRIDGE COMPANY.
- WHERE EROSION IS ENCOUNTERED, FOUNDATIONS SHALL BE SUBJECT TO LEAD DESIGNER'S REVISIONS FOR FOUNDATION DESIGN. FOUNDATIONS SHALL BE DESIGNED TO SUPPORT ALL LOADS INCLUDING LIVE LOADS, WIND LOADS, AND SEISMIC LOADS. FOUNDATIONS SHALL BE DESIGNED TO SUPPORT ALL LOADS INCLUDING LIVE LOADS, WIND LOADS, AND SEISMIC LOADS.

FOUNDATION MATERIAL SPECIFICATIONS:

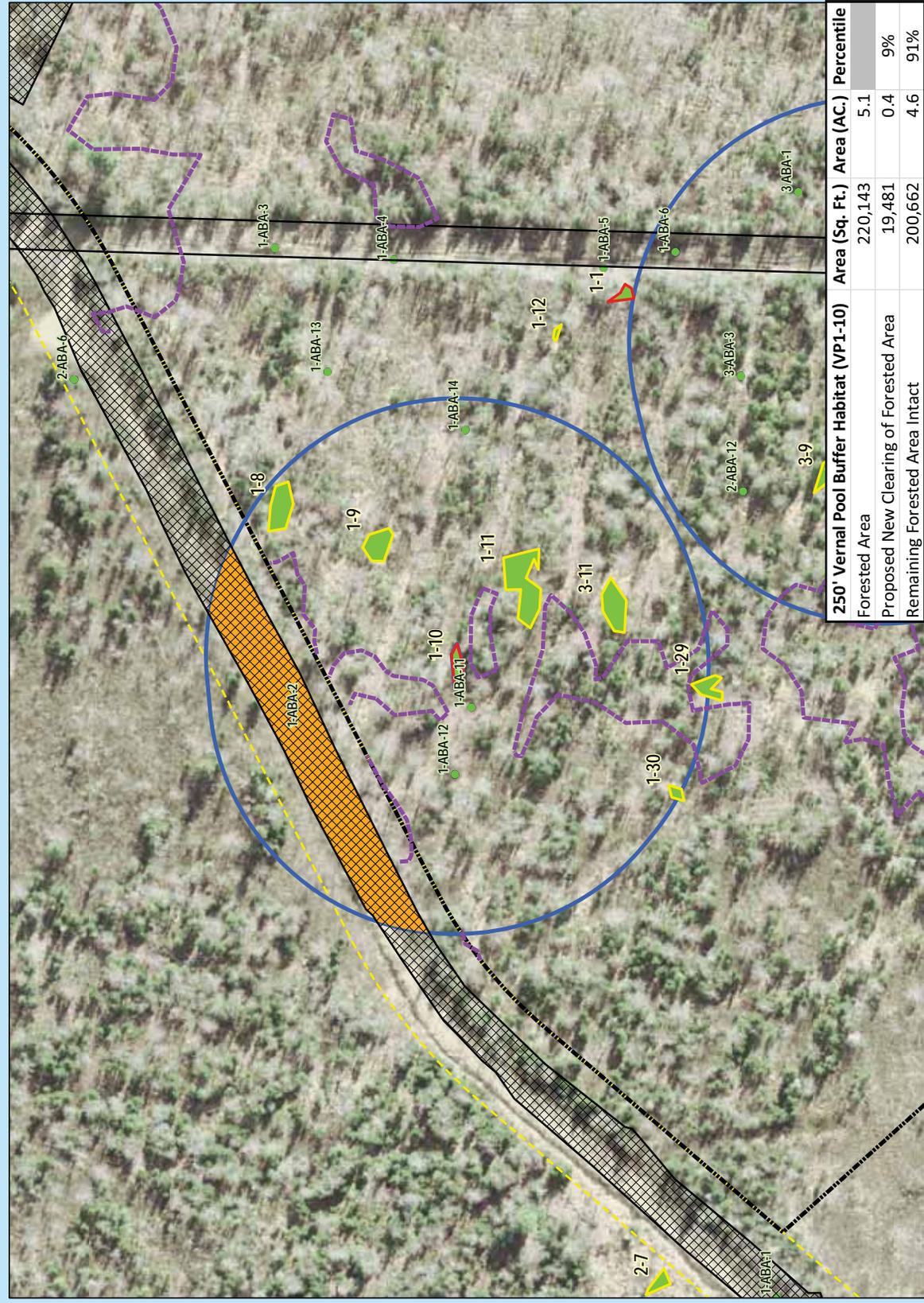
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 - USE 4000 PSI CONCRETE.
 - USE 4000 PSI CONCRETE.
- REINFORCEMENT
 - USE #4 REINFORCEMENT.
 - USE #4 REINFORCEMENT.
- STRUCTURAL FILL
 - USE 3/4" SAND ON GRAVEL.
 - USE 3/4" SAND ON GRAVEL.
- GRAVEL
 - USE 3/4" SAND ON GRAVEL.
 - USE 3/4" SAND ON GRAVEL.



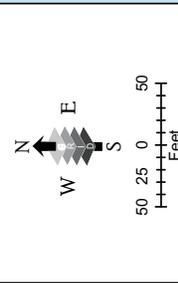


ATTACHMENT 6
ADDITIONAL PLANS

Proposed Clearing Impact within 250-ft of Vernal Pool #1-10



250' Vernal Pool Buffer Habitat (VP1-10)	Area (Sq. Ft.)	Area (AC.)	Percentile
Forested Area	220,143	5.1	
Proposed New Clearing of Forested Area	19,481	0.4	9%
Remaining Forested Area Intact	200,662	4.6	91%



- Legend**
- Property Boundary
 - Proposed Access Road ROW
 - Delineated Streams
 - Wetland Boundaries
 - Vernal Pools
 - Significant Vernal Pools
 - Amphibian Breeding Areas
 - Existing Cleared Areas(s)
 - Proposed Clearing Limits
 - Impacted 250' Vernal Pool Buffer
 - 250' Vernal Pool Buffer



MRC & Fiberright
Waste Processing Facility
Project No.: 10973.002
Updated: 6/23/2015 (Ildad)

MAP NOTES:

- WETLANDS SHOWN HEREON WERE FIELD DELINEATED BY MRC & FIBERRIGHT ENGINEERS AND THE ENGINEERS WETLAND DELINEATION MANUAL AND THE 2012 NORTH CENTRAL AND NORTHEAST REGIONAL SUPPLEMENT (2.0) AND BASED ON A FIELD SURVEY PERFORMED BY MRC & FIBERRIGHT ENGINEERS AND CES INC., APRIL-JUNE OF 2015.
- VERNAL POOL SURVEYS WERE COMPLETED DURING AN APPROPRIATELY TIMED SURVEY IN SPRING 2015 AND IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS AND DEFINITIONS, AND THE MAINE VERNAL 2011 DRAFT POOL SURVEY PROTOCOL.
- SITE FEATURES, INCLUDING WETLAND BOUNDARIES, STREAMS AND VERNAL POOLS, DEPICTED ON THIS PLAN WERE LOCATED UTILIZING A GPS RECEIVER HAVING SUB-METER ACCURACY.
- IMAGERY ACQUIRED FROM ESRI IMAGERY (S0, 3-METER LC-4 IMAGERY COURTESY OF MICROSOFT (2010).
- MAP IS PROJECTED USING MAINE STATE PLANE SURVEY FEET AND REFERENCES THE NORTH AMERICAN DATUM OF 1983 (NAD83).
- NORTH ARROW IS REFERENCED TO GRID NORTH.





ATTACHMENT 7
CONSTRUCTION PLAN

ATTACHMENT 7

CONSTRUCTION PLAN

INTRODUCTION

The proposed project includes construction of a solid waste processing facility, parking areas, and associated access road.

Existing Site Conditions: The site is dominated by undeveloped forestland. An existing 15 foot wide gravel road extends from Coldbrook Road to the project site.

Construction Overview: The construction of the project involves two major phases; construction of the main road, and associated utilities and construction of the processing facility.

Construction Plan: The following sequence of construction would be typical for this type of development.

1. Install erosion control measures.
2. Clear and grub the roadway areas.
3. Install utilities.
4. Construct road and stormwater treatment systems for the road.
5. Clear and grub the processing facility site area
6. Construct buildings, parking areas, and stormwater treatment systems on the site.

At this time, construction is anticipated to begin in the Summer of 2016 and be completed by Winter 2017.

Approximately 3,000 linear feet of the proposed access road is located on the existing roads. These areas are mostly cleared and have existing gravel base and culverts. These cleared areas will be expanded to accommodate the new roadway. The proposed paths follow the existing roads as much as possible.

Operations in Wetlands and Protected Resource Areas: Clearing of vegetation and construction operations in/or near protected resources including within wetlands, Riparian buffers, in and adjacent to Significant Wildlife Habitat and associated Critical Terrestrial Habitat, will be strictly controlled to avoid unnecessary impacts and minimize disturbance to wetlands, water bodies, and sensitive areas. All sensitive areas will be marked and clearly identified in the field prior to construction beginning. By carefully planning the clearing practices, timing, and access routes, the clearing can be accomplished with the least amount of impacts to wetland and protected resources. Any temporary impacts will be restored post construction.

General Principals:

- ◆ Avoid operating in wet weather.
- ◆ Minimize trips and machine operations.
- ◆ Limit clearing and impacts to understory vegetation.
- ◆ Employ appropriate BMPs.
- ◆ Install and maintain erosion control devices.
- ◆ Concentrate traffic and access within uplands and existing roads.

Access Routes: The project will be built from Coldbrook Road using the existing gravel access road and temporary roads/travel corridors within the construction limits as needed.



ATTACHMENT 8

EROSION AND SEDIMENTATION CONTROL PLAN

SEE MDEP CHAPTER 500 STATE STORMWATER PERMIT,
SECTION 04: EROSION AND SEDIMENTATION AND MDEP CHAPTER 409 APPLICATION
ATTACHMENT 18 STORMWATER AND EROSION CONTROL



ATTACHMENT 9
NATURAL RESOURCE REPORT

SENSIBLE SOLUTIONS



Corporate Office

465 South Main Street
PO Box 639
Brewer, Maine 04412
207.989.4824

www.ces-maine.com



NATURAL RESOURCE SURVEY REPORT
OF
PROPOSED SOLID WASTE PROCESSING AND
RECYCLING FACILITY
FOR
MUNICIPAL REVIEW COMMITTEE, INC. – FIBERIGHT LLC
HAMPDEN, MAINE

Applicants: Municipal Review Committee, Inc.
395 State Street
Ellsworth, ME 04605
207.664.1700

Fiberight LLC
1450 South Rolling Road
Baltimore, MD 21227
410.340.9387

JUNE 2015
JN: 10973.002/11293.001

Application Prepared By:
CES, Inc.
465 South Main Street
P.O. Box 639
Brewer, ME 04412
207.989.4824

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Appendix D - Regulatory Information	
Appendix E - Wetland Data Forms	

1.0 INTRODUCTION

CES, Inc. (CES) has completed natural resource surveys for the proposed solid waste processing and recycling facility located on Coldbrook Road in Hampden, Maine (the Site). Natural resources surveys were conducted on the Site in November 2014, and January, May, and June 2015 on the approximately 90-acre parcel and along the access road to the Site.

The purpose of the natural resource surveys was to identify protected natural resources, such as wetlands and streams, which are jurisdictional to State and/or Federal agencies. The primary agencies typically involved in the permitting process are the Maine Department of Environmental Protection (MDEP) and the U.S. Army Corps of Engineers (ACOE).

2.0 METHODOLOGY

Prior to conducting the field surveys, CES reviewed existing Geographic Information System (GIS) data available from the MDEP and Maine Department of Inland Fisheries and Wildlife (MDIFW) and digital aerial photography. This data included significant wildlife habitat information. CES also reviewed preliminary data from the Maine Office of GIS, including National Wetlands Inventory (NWI) mapped wetlands, USDA – Natural Resources Conservation Service soil survey data, and the United States Geological Survey (USGS) 7.5' topographic map for the Bangor, Maine quadrangle.

2.1 Natural Resources Reconnaissance

Preliminary natural resource mapping was completed on the Site in November 2014 to identify approximate areas of uplands and wetlands.

2.2 Wetland Delineation

The wetland delineation process began with a review of the existing NWI data and aerial photography. CES scientists then visited the Site and identified jurisdictional wetlands based on the 1987 ACOE *Wetland Delineation Manual* and the routine determination method as outlined in the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*. The U.S. Fish and Wildlife Service (USFWS) Cowardin classification system outlined in *Classification of Wetland and Deepwater Habitats of the United States* and the 2012 *Regional Supplement* were then used to characterize the wetlands identified.

Wetlands are defined as follows:

“...Areas that are inundated or saturated by surface or groundwater water at frequency and duration sufficient to support and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetland generally includes swamps, marshes, bogs and similar areas.” - [taken from the EPA Regulations listed at 40 CFR 230.3(t)]

The following three parameters are used to determine if a wetland exists: hydric soils; evidence of wetland hydrology; and a predominance of hydrophytic vegetation.

A general walk-through of the Site was conducted to assess and categorize the natural communities present and potential wetland areas. Transects were completed and soils, hydrology, and vegetation were assessed and determined to be wetland or upland. Information gained from these transects was used to delineate the boundary separating upland from jurisdictional wetland based on changes in natural communities, vegetation, soil characteristics, and evidence of hydrology.

Jurisdictional streams were identified using the definition provided in MRSA Title 38 §480-B (9). All natural and artificial watercourses on-site were assessed.

Surveys for vernal pools and other breeding areas (amphibian breeding areas) were completed in the Spring of 2015, and have been reported under separate cover.

2.3 GPS Mapping and Flagging

All features were point located in the field using a sub-meter capable mapping grade GPS. Data was post-processed according to manufacturer's recommended post-processing settings using CORS reference stations. Pink "Wetland Delineation" flags were sequentially numbered and hung along wetland boundaries on the Site. Blue flagging was sequentially numbered and hung along the Spring high water mark of vernal pools.

3.0 RESULTS AND DISCUSSION

3.1 General Project Area Overview

The Site is located on Coldbrook Road in Hampden, Maine as shown on **Appendix A** (Site Location Map). The Site is an approximately 90-acre undeveloped parcel, which is accessed from Coldbrook Road via a gravel access road. The Site is approximately 2 miles north of downtown Hampden and 0.5-mile southeast of the Interstate 95 exit.

The Site is characterized by undeveloped forestland and old agricultural fields. A selective harvest was performed on the Site 10 to 15 years ago; indications of this activity (in particular, haul/skid roads) were observed throughout the Site. Indications of historical agricultural use were also observed on the Site, namely stone walls and foundations; and land which appeared to be drained. The Site is accessed via a gravel road from Coldbrook Road. The Bangor Gas pipeline corridor bisects the Site north to south.

The Site is dominated by a large wetland and stream complex, with areas of upland in the northeast portion of the Site. Uplands on the Site are dominated by red maple (*Acer rubrum*), balsam fir (*Abies balsamea*), white pine (*Pinus strobus*), white ash (*Fraxinus alba*), and quaking aspen (*Populus tremuloides*). Red maple and balsam fir dominate in the forested wetlands on the Site, with smaller areas of scrub shrub alder wetlands along the stream corridors. Topography within the Site consists of flat to gently sloping upland and wetland areas which slope to the southwest. The wetland areas are drained by two streams, which converge and flow southerly to Souadabscook Stream.

According to information provided in the USDA – Natural Resources Conservation Service soil survey, the soils on the Site are dominated by loam and silt-loam textured soils derived from glaciomarine sediment. Areas of shallow to bedrock soil derived from fine-textured till are mapped in the northeast portion of the Site. Hydric soils, which are a component of wetlands, are mapped along portions of the access road and the southern and western portions of the Site.

3.2 Natural Resource Survey Results

3.2.1 Wetlands

The following paragraphs briefly discuss the wetlands found on the Site. Within this discussion, the descriptive wetland classification, based on the Cowardin classification system or the ACOE wetland parameter indicator, follow as capital letters and numbers in parenthesis throughout the text. The Natural Resource Site Plan, included in the NRPA in Attachment 5, shows the location of the wetlands. Representative photographs of each wetland are included in **Appendix B**.

The Site is dominated by a large wetland complex, identified as Wetland 15A-1. The upper elevations of this wetland, located in the northeastern portions of the Site, are red maple-green ash forested wetlands (PFO1&4E) that are seasonally saturated. In these areas, wetland vegetation is dominated by red maple with green ash (*Fraxinus pennsylvanica*) present in the tree stratum. The shrub stratum is dominated by Morrow's honeysuckle (*Lonicera morrowii*), with balsam fir, green ash, red maple, quaking aspen, and balsam poplar (*Populus balsamifera*) present. The herb stratum in the forested portions of Wetland 15A-1 is dominated by dwarf raspberry (*Rubus pubescens*) with goldenrod (*Solidago* cf. *rugosa*), sensitive fern (*Onoclea sensibilis*), green ash, and red maple. Greater than 50 percent of the dominant vegetation across all strata is currently listed as having a regional wetland indicator status of facultative or wetter (Vegetation Indicator 2). Soils in this wetland consisted of an organic or dark mineral surface horizon underlain by depleted and mottled silt loam subsoil. These soils met the requirements of Hydric Soil Indicator A11 (Depleted Below Dark Surface). Evidence of hydrology in this wetland consisted of pit and mound microtopography, soil saturation to the ground surface, water stained leaves, and drainage patterns (Hydrology Indicators D4, A3, B9, and B10). The existing Site access road crosses forested and scrub-shrub portion of Wetland 15A-1. This portion of Wetland 15A-1 is a complex of forested and scrub-shrub wetland with vegetation, soils, and hydrology similar to what is described above.

Portions of this wetland, identified as Wetland 15A-1B are a forested wetland complex, and contain approximately 80% forested wetland with 20% upland inclusions. These upland inclusions were not mapped, due to the size of the inclusions, the complexity of the landscape, and the distance from the proposed Site improvement and associated wetland impact areas. Wetland vegetation, hydric soils, and indicators of wetland hydrology in Wetland 15A-1B were similar to those in Wetland 15A-1. The Bangor Gas pipeline crosses the Wetland 15A-1B wetland complex. Areas of disturbed, emergent (PEM1) wetlands are located along the pipeline.

The lower portions of this wetland are associated with the intermittent streams and identified as Wetland 15A-1C. These wetlands are scrub-shrub alder wetlands (PSS1Fb) which are semi-permanently flooded. In these wetlands, sparse red maple, balsam fir, and green ash may be present in places in the tree stratum. The shrub stratum is dominated by speckled alder, red maple, winterberry (*Ilex verticillata*) and Morrow's honeysuckle, with meadowsweet (*Spirea latifolia*), and balsam fir also present. The herb stratum is dominated by sensitive fern, meadowsweet, dwarf raspberry, and horsetail (*Equisetum* spp.). Soils in this wetland consisted of an organic or dark mineral surface horizon underlain by depleted and mottled silt loam subsoil. In places, the surface organic or mineral surface horizon was eroded. These soils met the requirements of Hydric Soil Indicator A11 (Depleted Below Dark Surface). Evidence of hydrology in this wetland consisted of soil saturation to the ground surface, water stained leaves, and drainage patterns (Hydrology Indicators A3, B9, and B10).

Appendix D contains State and Federal regulatory information pertaining to wetlands. ACOE wetland determination data forms are included in **Appendix E**.

3.2.2 Streams

Two streams were identified on the Site: Stream 15A-S1 is an intermittent, silt, and mud substrate stream that is approximately 24 inches bankfull width. This stream originates in the northeast portion of Wetland 15A-1 and flows to the southeast.

Stream M8-S1 is an intermittent, silt, mud, and clay substrate stream that is approximately 44 inches bankfull width. This stream originates in the southwest portion of the Site, in Wetland 15A-1C, and flows to the southeast. Stream M8-S1 passes through an existing 24 inch culvert under the Site access road.

Streams M8-S1 and 15A-S1 converge in the southern portion of the Site, and flow to the south, into the Souadabscook Stream, approximately 1.3 miles south of the Site.

4.0 SUMMARY

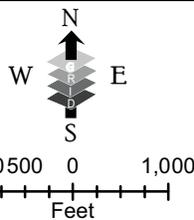
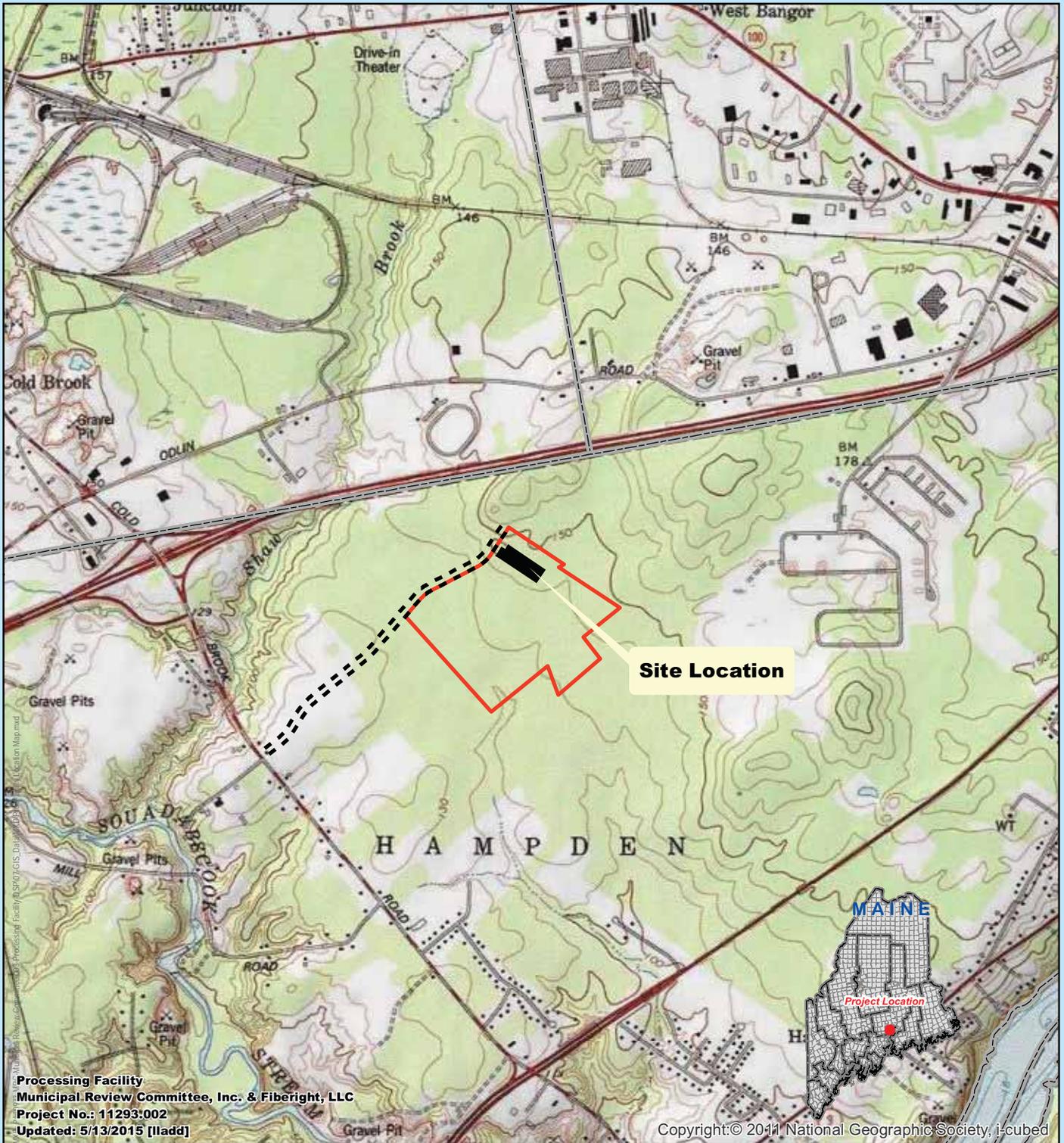
Natural resource surveys have been completed by CES for the Site on Coldbrook Road in Hampden, Maine, as shown on the Natural Resource Plan, included in NRPA Attachment 5. CES identified one jurisdictional wetlands complex on the Site. This wetland complex consists of forested wetland (PFO1&4E), forested wetland/upland complex, and scrub-shrub wetland (PSS1Fb). Two intermittent streams were identified on the Site.

REFERENCES

1. Environmental Laboratory. 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*. ERDC/EL Technical Report TR-12-1, U.S. Army Engineer Research and Development Center, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199.
2. Cowardin, L. M., V. Carter, F.C. Golet, E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page. (Version 04DEC98).

APPENDIX A
SITE LOCATION MAP

USGS Topographic Map



Legend

- Proposed Road Location
- Proposed Building Location
- ▭ Proposed Facility Property Boundary
- Town Boundaries

MAP NOTES:

- 1: ADMINISTRATIVE BOUNDARIES COURTESY OF THE MAINE OFFICE OF GIS (MEGIS).
- 2: TOPOGRAPHIC MAP IS USGS 1:24,000 TOPOGRAPHIC QUADRANGLE. PUBLISHED BY USGS, 2011. ACQUIRED FROM ESRI, 2015.



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APPENDIX B
PHOTOGRAPHS

MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 NATURAL RESOURCE SURVEY REPORT



Photo No. 1
Photo Date: June 9, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of Wetland 15A-1, red maple- green ash forested wetland.
Photo By: JES



Photo No. 2
Photo Date: June 9, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of forested portion of Wetland 15A-1.
Photo By: JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 NATURAL RESOURCE SURVEY REPORT



Photo No. 3

Photo Date:
 June 9, 2015

Site Location:
 Coldbrook Road
 Hampden, Maine

Description:
 View of forested
 portion of Wetland
 15A-1.

Photo By: JES

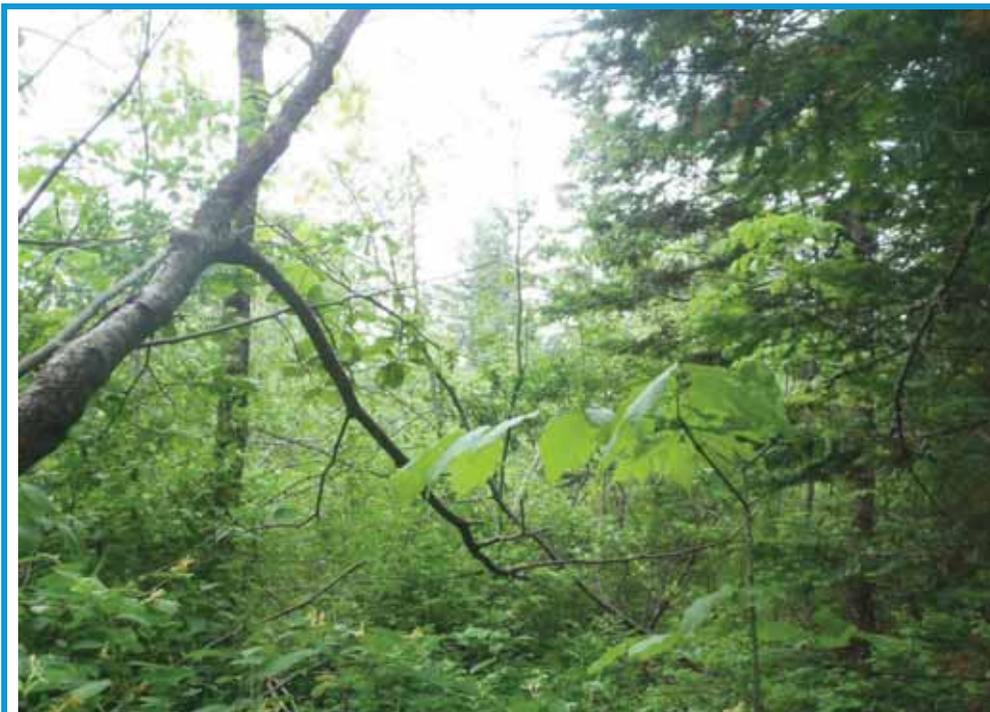


Photo No. 4

Photo Date:
 June 9, 2015

Site Location:
 Coldbrook Road
 Hampden, Maine

Description:
 View of scrub-shrub
 portion of Wetland
 15A-1.

Photo By: JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 NATURAL RESOURCE SURVEY REPORT



Photo No. 5
Photo Date: June 15, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of scrub-shrub alder Wetland 15A-1C.
Photo By: JES




Photo No. 6
Photo Date: June 15, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of forested wetland/ upland complex Wetland 15A-1B.
Photo By: JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 NATURAL RESOURCE SURVEY REPORT



Photo No. 7

Photo Date:
May 14, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of forested
wetland/ upland
complex Wetland
15A-1B.

Photo By: JES



Photo No. 8

Photo Date:
May 7, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of Stream 15A-
S1.

Photo By: RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 NATURAL RESOURCE SURVEY REPORT



Photo No. 9

Photo Date:
May 7, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of Stream 15A-S1.

Photo By: RST

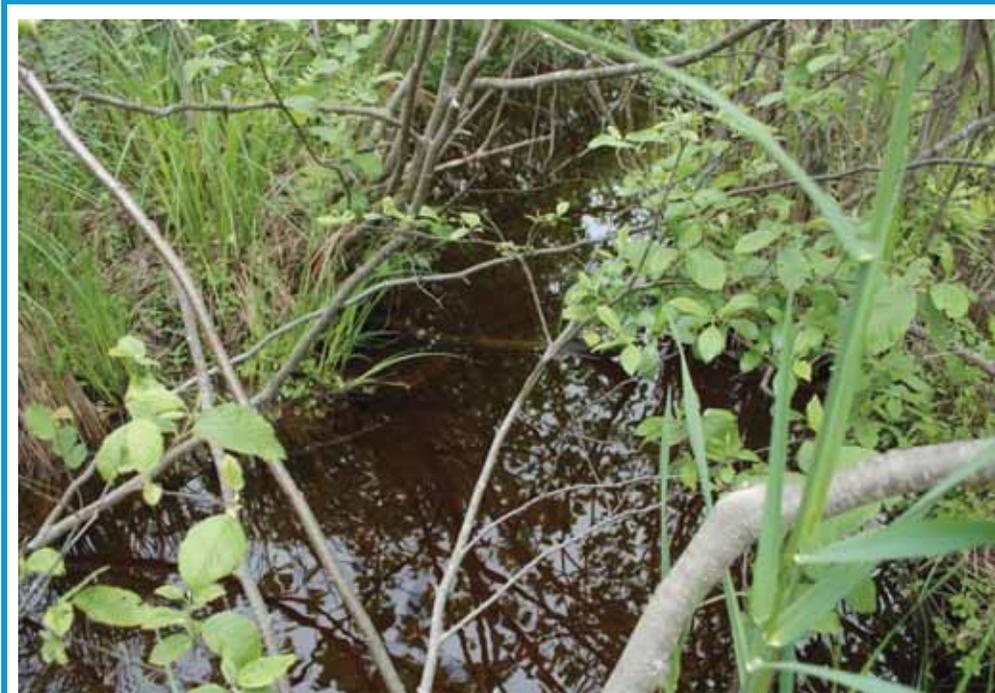



Photo No. 10

Photo Date:
June 4, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of Stream M8-S1.

Photo By: RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 NATURAL RESOURCE SURVEY REPORT

	Photo No. 11
	Photo Date: June 4, 2015
	Site Location: Coldbrook Road Hampden, Maine
	Description: View of Stream M8-S1.
Photo By: RST	



	Photo No. 12
	Photo Date: June 4, 2015
	Site Location: Coldbrook Road Hampden, Maine
	Description: View of scrub-shrub alder wetland surrounding Stream M8-S1.
Photo By: RST	



APPENDIX C
NATURAL RESOURCES SITE PLAN

SEE NRPA ATTACHMENT 5

APPENDIX D

REGULATORY INFORMATION

APPENDIX D

REGULATORY INFORMATION

REGULATORY INFORMATION

Alterations to jurisdictional wetlands and natural resources are subject to Federal, State, and local regulations. Wetlands are regulated by the State of Maine under the Natural Resources Protection Act (NRPA) and enforced by the MDEP according to the Department rules and *Chapter 310, Wetland and Water Bodies Protection Rules*. Wetlands are regulated by the ACOE under *Section 404 of the Clean Water Act*.

1.0 Wetland Regulations

1.1 State Regulations: Under the MDEP rules, a wetland may be classified as a “Wetlands of Special Significance” (WOSS) or not. Wetlands that do not meet the definition of a WOSS are typically eligible for reduced permitting or exemption for minor alteration (less than 4,300 square feet). This exemption may not apply for Federal or local agencies should the wetland contain significant wildlife habitat, such as a significant vernal pool, or wetlands which contain or are adjacent to other important natural resources. Non-WOSS wetland alterations of greater than 4,300 square feet to 14,999 square feet typically require a Tier 1 NRPA Permit. A Tier 1 permit does not require in-depth wetland characterizations, delineation, functional assessment or compensation and mitigation. Tier 2 permits cover alterations of 15,000 square feet to 43,560 square feet (one acre). Alteration greater than one acre or any alteration to a WOSS requires a Tier 3 (Individual) NRPA permit. Tier 2 and Tier 3 NRPA permit applications generally include in-depth wetland delineation, characterization, functional assessment, and compensation and mitigation. Determination of application requirements is often made in consultation with the MDEP Project Manager during a pre-application meeting.

Under the NRPA, any proposed alterations must avoid and minimize impacts to natural resources to the greatest extent. Compensation for impacts to natural resources is typically required when impacts exceed the Tier 1 level.

The NRPA also regulates activity adjacent to certain wetlands. Adjacent is defined as within 75 feet of the wetland boundary. Wetlands containing significant wildlife habitat or 20,000 square feet of open water are two examples. See the NRPA text for complete details.

1.2 Federal Regulations: The ACOE regulates all fill in waters of the United States. Most wetland alterations are permitted through the MDEP as a joint streamlined permit process under the General Permit (GP) issued by the ACOE. Under the GP, application materials prepared for the MDEP generally fulfill ACOE submission requirements. The current GP regulates activities which have “no more than minimal individual, secondary, and cumulative adverse effects on the aquatic environment...”. These activities are separated into Category 1 and Category 2 activities. Activities which meet the Category 1 standard generally require submission of the MDEP permit application or ACOE Category 1 Notification Form. Those activities which do not qualify for Category 1 may qualify for Category 2 review under the ACOE GP. Activities which do not meet the ACOE GP conditions are reviewed as individual permits. Determination of the level of review necessary and application requirements is made based on the activity involved, and often in consultation with the ACOE Project Manager during a pre-application meeting.

Certain wetlands, vernal pools and other significant resources may require additional review under the ACOE individual permit process.

2.0 Vernal Pools - Significant Wildlife Habitat

Vernal pools are also regulated at the local, State, and Federal level, and each has slightly differing definitions and standards.

2.1 State Regulations: Under the MDEP *Chapter 335 - Significant Wildlife Habitat Rules*, Significant Vernal Pools are regulated as Significant Wildlife Habitat under the NRPA permitting process. A vernal pool is defined under the rules as follows:

“A natural, temporary to semipermanent body of water occurring in a shallow depression that typically fills in the spring or fall and may dry during the summer. Vernal pools have no permanent inlet and no viable populations of predatory fish.”

A Significant Vernal Pool is determined based on abundance of egg masses of pool breeding amphibians, the presence of fairy shrimp, or documented use by a listed endangered or threatened species. The abundance criteria are:

- ◆ Forty (40) or more wood frog (*Rana sylvatica*) egg masses;
- ◆ Twenty (20) or more spotted salamander (*Ambystoma maculatum*) egg masses;
- ◆ Ten (10) or more Blue Spotted salamander (*Ambystoma laterale*) egg masses; and
- ◆ Presence of fairy shrimp (*Eubbranchipus spp.*) in any life stage.

The area under State jurisdiction includes the pool depression and 250 foot critical habitat buffer around the pool. Alteration within the 250 buffer may be allowed under a Permit by Rule process, if impacts are not within wetlands, and are less than 25 percent of the habitat area. Alterations greater than this will require an Individual NRPA Permit be obtained.

The State Site Location of Development Act (SLODA) also regulates Significant Wildlife Habitat and Significant Vernal Pools. Under Site Law, a setback of up to 500 feet may be required for ecologically significant wildlife resources within a project that require a Site Permit.

2.2 Federal Regulations: At the Federal level, the ACOE also regulates vernal pools and special aquatic sites under the Maine General Permit (GP). A vernal pool is defined there as follows:

“...Temporary to permanent bodies of water occurring in shallow depressions that fill during the spring and fall and may dry during the summer. Vernal pools have no permanent or viable populations of predatory fish. Vernal pools provide the primary breeding habitat for wood frogs, spotted salamanders, blue-spotted salamanders, and fairy shrimp, and provide habitat for other wildlife including several endangered and threatened species.”

The ACOE regulates activities within 750 feet of vernal pools. The GP requires that disturbance within 750 feet of a vernal pool shall be minimized to the maximum extent possible. It is important to note that the ACOE must have jurisdiction over the project (i.e. wetland impacts are proposed) before buffers are mandated.

APPENDIX E
WETLAND DATA FORMS

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MRC,INC./ Fiberight, LLC City/County: Hampden/Penobscot Cty, ME Sampling Date: 6/3/2015
 Applicant/Owner: MRC,INC./ FIBERIGHT,LLC. State: ME Sampling Point: M802U
 Investigator(s): CES, RST Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA) LRR R, MLRA 141 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N 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 <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: <u>M8-U</u>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

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

Remarks:

BETUVEGETATION scientific names of plants.

Sampling Point: M802U

<u>Tree Stratum</u> (Plot size: <u>35</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>POPULUS TREMULOIDES</u>	10	No	FACU
2. <u>BETULA POPULIFOLIA</u>	30	Yes	FAC
3. <u>ACER RUBRUM</u>	50	Yes	FAC
4. <u>PRUNUS SEROTINA</u>	20	No	FACU
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
		110 =Total Cover	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)			
1. <u>PRUNUS VIRGINIANA</u>	10	Yes	FACU
2. <u>ABIES BALSAMEA</u>	10	Yes	FAC
3. <u>ACER RUBRUM</u>	10	Yes	FAC
4. <u>VIBURNUM CASSINOIDES</u>	5	No	FACU
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
		35 =Total Cover	
<u>Herb Stratum</u> (Plot size: <u>5</u>)			
1. <u>MAIANTHEMUM CANADENSE</u>	70	Yes	FACU
2. <u>VACCINIUM ANGUSTIFOLIUM</u>	20	No	FACU
3. <u>PTERIDIUM AQUILINUM</u>	10	No	FACU
4. <u>ARALIA NUDICAULIS</u>	5	No	FACU
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
		105 =Total Cover	
<u>Woody Vine Stratum</u> (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
		_____ =Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>70</u>	x 3 = <u>210</u>
FACU species <u>150</u>	x 4 = <u>600</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>250</u> (A)	<u>870</u> (B)
Prevalence Index = B/A = <u>3.48</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 or equal to 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 X No

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

SOIL

Sampling Point: M802U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/3						Loamy/Clayey	SILT LM
3-5	10YR 4/2						Loamy/Clayey	
5-12	10YR 4/4						Loamy/Clayey	
12-14	2.5Y 5/3		5Y 5/2	15	D	M	Loamy/Clayey	C/D REDOX
14-22	5Y 5/2		5Y 6/1	25	D	M	Loamy/Clayey	FIRM

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- 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)
- Marl (F10) (LRR K, L)

Indicators for Problematic Hydric Soils³:

- 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)
- 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 (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators 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 X

Remarks:

Data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (<http://soils.usda.gov/use/hydric>)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MRC,INC./ Fiberight, LLC City/County: Hampden/penobscot cty, ME Sampling Date: 6/3/2015
 Applicant/Owner: MRC,INC./ FIBERIGHT,LLC. State: ME Sampling Point: M802W
 Investigator(s): CES, RST Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR R, MLRA 141 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: <u>M8-W</u>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) <u>X</u> Water-Stained Leaves (B9) <u>X</u> High Water Table (A2) _____ Aquatic Fauna (B13) <u>X</u> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) <u>X</u> 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) <u>X</u> FAC-Neutral Test (D5)
--	---

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
---	---

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: M802W

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>35</u>)																				
1. <u>ACER RUBRUM</u>	30	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.7%</u> (A/B)																
2. <u>SALIX SPP.</u>	10	Yes	FACW																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>40</u>	=Total Cover		Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>140</u> (A)</td> <td><u>420</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>80</u>	x 3 = <u>240</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>140</u> (A)	<u>420</u> (B)	Prevalence Index = B/A = <u>3.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>30</u>	x 2 = <u>60</u>																			
FAC species <u>80</u>	x 3 = <u>240</u>																			
FACU species <u>30</u>	x 4 = <u>120</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>140</u> (A)	<u>420</u> (B)																			
Prevalence Index = B/A = <u>3.00</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>PRUNUS VIRGINIANA</u>	20	Yes	FACU																	
2. <u>SPIRAEA LATIFOLIA</u>	10	Yes	FACW																	
3. <u>ALNUS RUGOSA</u>	10	Yes	FACW																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>40</u>	=Total Cover																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>EQUISETUM ARVENSE</u>	30	Yes	FAC	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - 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.																
2. <u>SOLIDAGO RUGOSA</u>	20	Yes	FAC																	
3. <u>RUBUS IDAEUS</u>	10	No	FACU																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	<u>60</u>	=Total Cover																		
Woody Vine Stratum (Plot size: _____)																				
1. _____				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 or equal to 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.																
2. _____																				
3. _____																				
4. _____																				
				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																

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

SOIL

Sampling Point: M802W

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	5Y 5/1						Loamy/Clayey	SILT LM, GLEYED
10-16	5GY 5/1		10YR 4/4	25			Loamy/Clayey	GLEYED

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- 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)
- Marl (F10) (LRR K, L)

Indicators for Problematic Hydric Soils³:

- 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)
- 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 (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators 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:
 Data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (<http://soils.usda.gov/use/hydric>)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MRC,INC./ Fiberight, LLC City/County: Hampden/Penobscot cty, ME Sampling Date: 6/9/2015
 Applicant/Owner: MRC,INC./ FIBERIGHT,LLC. State: ME Sampling Point: A15 1-13 U
 Investigator(s): CES, JES Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR R, MLRA 141 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N 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 <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: <u>A15-1 -13 U</u>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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)
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Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MRC,INC./ Fiberight, LLC City/County: Hampden/Penobscot cty, ME Sampling Date: 6/9/2015
 Applicant/Owner: MRC,INC./ FIBERIGHT,LLC. State: ME Sampling Point: A15 1-13 W
 Investigator(s): CES, JES Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR R, MLRA 141 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: <u>A15 1-13 W</u>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) <u>X</u> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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) <u>X</u> Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>0-3</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: A15 1-13 W

<u>Tree Stratum</u> (Plot size: <u>35</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	15	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>71.4%</u> (A/B)																
2. <u>Fraxinus pennsylvanica</u>	10	Yes	FACW																	
3. <u>Ulmus americana</u>	5	No	FACW																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	30	=Total Cover		Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>7</u></td> <td>x 1 = <u>7</u></td> </tr> <tr> <td>FACW species <u>85</u></td> <td>x 2 = <u>170</u></td> </tr> <tr> <td>FAC species <u>67</u></td> <td>x 3 = <u>201</u></td> </tr> <tr> <td>FACU species <u>48</u></td> <td>x 4 = <u>192</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>207</u> (A)</td> <td><u>570</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>2.75</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>7</u>	x 1 = <u>7</u>	FACW species <u>85</u>	x 2 = <u>170</u>	FAC species <u>67</u>	x 3 = <u>201</u>	FACU species <u>48</u>	x 4 = <u>192</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>207</u> (A)	<u>570</u> (B)	Prevalence Index = B/A = <u>2.75</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>7</u>	x 1 = <u>7</u>																			
FACW species <u>85</u>	x 2 = <u>170</u>																			
FAC species <u>67</u>	x 3 = <u>201</u>																			
FACU species <u>48</u>	x 4 = <u>192</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>207</u> (A)	<u>570</u> (B)																			
Prevalence Index = B/A = <u>2.75</u>																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Populus tremuloides</u>	25	Yes	FACU																	
2. <u>Populus balsamifera</u>	20	Yes	FACW																	
3. <u>Lonicera morrowii</u>	20	Yes	FACU																	
4. <u>Acer rubrum</u>	15	No	FAC																	
5. <u>Fraxinus pennsylvanica</u>	15	No	FACW																	
6. <u>Abies balsamea</u>	15	No	FAC																	
7. <u>Pinus strobus</u>	3	No	FACU																	
	113	=Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5</u>)				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 or equal to 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 <u>X</u> No _____																
1. <u>Rubus pubescens</u>	25	Yes	FACW																	
2. <u>Solidago rugosa</u>	15	Yes	FAC																	
3. <u>Fraxinus pennsylvanica</u>	10	No	FACW																	
4. <u>Acer rubrum</u>	7	No	FAC																	
5. <u>Geum rivale</u>	7	No	OBL																	
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	64	=Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
1. _____																				
2. _____																				
3. _____																				
4. _____				=Total Cover																

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

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MRC,INC./ Fiberight, LLC City/County: Hampden/penobscot cty, ME Sampling Date: 6/3/2015
 Applicant/Owner: MRC,INC./ FIBERIGHT,LLC. State: ME Sampling Point: A15 1-36U
 Investigator(s): CES, RST Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR R, MLRA 141 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N 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 <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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)
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Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): <u>0</u> Saturation Present? Yes _____ No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: A15 1-36U

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>35</u>)																				
1. <u>Acer rubrum</u>	50	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u>Abies balsamea</u>	20	Yes	FAC																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>70</u>	=Total Cover		Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>140</u></td> <td>x 3 = <u>420</u></td> </tr> <tr> <td>FACU species <u>45</u></td> <td>x 4 = <u>180</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>185</u> (A)</td> <td><u>600</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.24</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>140</u>	x 3 = <u>420</u>	FACU species <u>45</u>	x 4 = <u>180</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>185</u> (A)	<u>600</u> (B)	Prevalence Index = B/A = <u>3.24</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>140</u>	x 3 = <u>420</u>																			
FACU species <u>45</u>	x 4 = <u>180</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>185</u> (A)	<u>600</u> (B)																			
Prevalence Index = B/A = <u>3.24</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>abies balsamea</u>	40	Yes	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Fraxinus americana</u>	10	No	FACU																	
3. <u>Lonicera morrowii</u>	15	Yes	FACU																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>65</u>	=Total Cover																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>aralia nudicaulis</u>	10	Yes	FACU	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 or equal to 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.																
2. <u>maianthemum canadense</u>	10	Yes	FACU																	
3. <u>acer rubrum</u>	10	Yes	FAC																	
4. <u>clintonia borealis</u>	10	Yes	FAC																	
5. <u>trientalis borealis</u>	10	Yes	FAC																	
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	<u>50</u>	=Total Cover																		
Woody Vine Stratum (Plot size: _____)																				
1. _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____																				
3. _____																				
4. _____																				
				=Total Cover																

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

SOIL

Sampling Point: A15 1-36U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/3						Loamy/Clayey	SILT LM
3-5	10YR 4/2						Loamy/Clayey	
5-12	10YR 4/4						Loamy/Clayey	
12-14	2.5Y 5/3		5Y 5/2	15	D	M	Loamy/Clayey	C/D REDOX
14-22	5Y 5/2		5Y 6/1	25	D	M	Loamy/Clayey	FIRM

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- 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)
- Marl (F10) (LRR K, L)

Indicators for Problematic Hydric Soils³:

- 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)
- 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 (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators 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 X

Remarks:

Data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (<http://soils.usda.gov/use/hydric>)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MRC,INC./ Fiberight, LLC City/County: Hampden/penobscot cty, ME Sampling Date: 6/3/2015
 Applicant/Owner: MRC,INC./ FIBERIGHT,LLC. State: ME Sampling Point: A15-1-36W
 Investigator(s): CES, RST Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR R, MLRA 141 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation N, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation N, Soil N, or Hydrology N 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 <input type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID: <u>M8-U</u>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4</u> Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>
---	--

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: A15-1-36W

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>35</u>)																				
1. <u><i>Acer rubrum</i></u>	60	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u><i>Fraxinus pennsylvannica</i></u>	20	Yes	FACW																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	80	=Total Cover		Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>100</u></td> <td>x 2 = <u>200</u></td> </tr> <tr> <td>FAC species <u>90</u></td> <td>x 3 = <u>270</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>250</u> (A)</td> <td><u>710</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>2.84</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>100</u>	x 2 = <u>200</u>	FAC species <u>90</u>	x 3 = <u>270</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>250</u> (A)	<u>710</u> (B)	Prevalence Index = B/A = <u>2.84</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>100</u>	x 2 = <u>200</u>																			
FAC species <u>90</u>	x 3 = <u>270</u>																			
FACU species <u>60</u>	x 4 = <u>240</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>250</u> (A)	<u>710</u> (B)																			
Prevalence Index = B/A = <u>2.84</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u><i>abies balsamea</i></u>	20	Yes	FAC																	
2. <u><i>Populus tremuloides</i></u>	20	Yes	FACU																	
3. <u><i>Lonicera morrowii</i></u>	40	Yes	FACU																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	80	=Total Cover																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u><i>Rubus pubescens</i></u>	70	Yes	FACW	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - 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.																
2. <u><i>Acer rubrum</i></u>	10	No	FAC																	
3. <u><i>Carex debilis</i></u>	10	No	FACW																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	90	=Total Cover																		
Woody Vine Stratum (Plot size: _____)																				
1. _____				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 or equal to 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.																
2. _____																				
3. _____																				
4. _____																				
				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																

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

SOIL

Sampling Point: A15-1-36W

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
2-0	10yr 2/1						Muck	Oa
0-4	2.5Y 4/2						Loamy/Clayey	silt loam
4-11	5y 4/2		5y 5/2	20	d	m	Loamy/Clayey	C/D REDOX
11-18	5Y 5/1						Loamy/Clayey	C/D REDOX

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- 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)
- Marl (F10) (LRR K, L)

Indicators for Problematic Hydric Soils³:

- 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)
- 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 (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators 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:
 Data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (<http://soils.usda.gov/use/hydric>)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MRC, INC / Fiberight, LLC City/County: Hampden / Penobscot County Sampling Date: 6/9/2015
 Applicant/Owner: MRC, INC / Fiberight, LLC State: ME Sampling Point: A15 1-73U
 Investigator(s): CES, JES Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR R, MLRA 141 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N 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 <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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)
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Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: A15 1-73U

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>35</u>)																				
1. <u>Abies balsamea</u>	<u>20</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u>Picea rubens</u>	<u>5</u>	Yes	FACU																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>25</u>	=Total Cover		Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>13</u></td> <td>x 2 = <u>26</u></td> </tr> <tr> <td>FAC species <u>105</u></td> <td>x 3 = <u>315</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>178</u> (A)</td> <td><u>581</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.26</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>13</u>	x 2 = <u>26</u>	FAC species <u>105</u>	x 3 = <u>315</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>178</u> (A)	<u>581</u> (B)	Prevalence Index = B/A = <u>3.26</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>13</u>	x 2 = <u>26</u>																			
FAC species <u>105</u>	x 3 = <u>315</u>																			
FACU species <u>60</u>	x 4 = <u>240</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>178</u> (A)	<u>581</u> (B)																			
Prevalence Index = B/A = <u>3.26</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Populus tremuloides</u>	<u>45</u>	Yes	FACU	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - 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.																
2. <u>Abies balsamea</u>	<u>30</u>	Yes	FAC																	
3. <u>Prunus serotina</u>	<u>5</u>	No	FACU																	
4. <u>Fraxinus pennsylvanica</u>	<u>10</u>	No	FACW																	
5. _____																				
6. _____																				
7. _____																				
	<u>90</u>	=Total Cover																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Osmunda claytoniana</u>	<u>20</u>	Yes	FAC	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 or equal to 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 <u>X</u> No _____																
2. <u>Cornus canadensis</u>	<u>20</u>	Yes	FAC																	
3. <u>Trientalis borealis</u>	<u>10</u>	No	FAC																	
4. <u>Acer rubrum</u>	<u>5</u>	No	FAC																	
5. <u>Lonicera morrowii</u>	<u>5</u>	No	FACU																	
6. <u>Fraxinus pennsylvanica</u>	<u>3</u>	No	FACW																	
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	<u>63</u>	=Total Cover																		
Woody Vine Stratum (Plot size: _____)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
				=Total Cover																
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: A15 1-73U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-0							Muck	2 inch Oa
0-3	10YR 2/2						Loamy/Clayey	Bh, friable, granular
3-9	10YR 4/3						Loamy/Clayey	Bw, friable, granular
9-16	2.5Y 5/4						Loamy/Clayey	
16-18	5Y 6/2		10YR 5/6	15	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- 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)
- Marl (F10) (LRR K, L)

Indicators for Problematic Hydric Soils³:

- 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)
- 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 (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators 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 X

Remarks:

Data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (<http://soils.usda.gov/use/hydric>)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MRC, INC / Fiberight, LLC City/County: Hampden / Penobscot County Sampling Date: 6/9/2015
 Applicant/Owner: MRC, INC / Fiberight, LLC State: ME Sampling Point: A15 1-73W
 Investigator(s): CES, JES Section, Township, Range: _____
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR R, MLRA 141 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) <u>X</u> Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) <u>X</u> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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) <u>X</u> Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
---	---

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>7</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
---	---

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: A15 1-73W

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>35</u>)																				
1. <u>Abies balsamea</u>	20	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.3%</u> (A/B)																
2. <u>Populus tremuloides</u>	5	No	FACU																	
3. <u>Acer rubrum</u>	5	No	FAC																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>30</u>	=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Acer rubrum</u>	30	Yes	FAC	Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>80</u></td> <td>x 2 = <u>160</u></td> </tr> <tr> <td>FAC species <u>75</u></td> <td>x 3 = <u>225</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>205</u> (A)</td> <td><u>585</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>2.85</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>80</u>	x 2 = <u>160</u>	FAC species <u>75</u>	x 3 = <u>225</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>205</u> (A)	<u>585</u> (B)	Prevalence Index = B/A = <u>2.85</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>80</u>	x 2 = <u>160</u>																			
FAC species <u>75</u>	x 3 = <u>225</u>																			
FACU species <u>50</u>	x 4 = <u>200</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>205</u> (A)	<u>585</u> (B)																			
Prevalence Index = B/A = <u>2.85</u>																				
2. <u>Lonicera morrowii</u>	25	Yes	FACU																	
3. <u>Spiraea latifolia</u>	20	No	FACW																	
4. <u>Abies balsamea</u>	20	No	FAC																	
5. <u>Populus tremuloides</u>	10	No	FACU																	
6. _____																				
7. _____																				
	<u>105</u>	=Total Cover																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Onoclea sensibilis</u>	20	Yes	FACW	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - 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.																
2. <u>Spiraea latifolia</u>	15	Yes	FACW																	
3. <u>Rubus pubescens</u>	15	Yes	FACW																	
4. <u>Lonicera morrowii</u>	10	No	FACU																	
5. <u>Carex intumescens</u>	10	No	FACW																	
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	<u>70</u>	=Total Cover																		
Woody Vine Stratum (Plot size: _____)																				
1. _____				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 or equal to 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.																
2. _____																				
3. _____																				
4. _____																				
				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
				=Total Cover																

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

SENSIBLE SOLUTIONS



Corporate Office

465 South Main Street
PO Box 639
Brewer, Maine 04412
207.989.4824

www.ces-maine.com



VERNAL POOL SURVEY REPORT

OF

**PROPOSED SOLID WASTE PROCESSING AND
RECYCLING FACILITY**

FOR

**MUNICIPAL REVIEW COMMITTEE, INC. – FIBERIGHT LLC
HAMPDEN, MAINE**

Applicants: Municipal Review Committee, Inc.
395 State Street
Ellsworth, ME 04605
207.664.1700

Fiberight LLC
1450 South Rolling Road
Baltimore, MD 21227
410.340.9387

**JUNE 2015
JN: 10973.002/11293.001**

Application Prepared By:

CES, Inc.
465 South Main Street
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207.989.4824

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1.0 INTRODUCTION

CES, Inc. (CES) has completed vernal pool surveys for the proposed Solid Waste Processing Facility off Coldbrook Road in Hampden, Maine (Site), by conducting appropriately timed vernal pool surveys in April and May 2015 on the Site's approximately 90-acre project parcel.

The purpose of the vernal surveys was to identify jurisdictional vernal pools. Jurisdictional vernal pools are regulated by the U.S. Army Corps of Engineers (ACOE) and by the Maine Department of Environmental Protection (MDEP) as significant wildlife habitat.

2.0 METHODOLOGY

Prior to conducting the field surveys, CES reviewed existing Geographic Information System (GIS) data available from the MDEP and Maine Department of Inland Fisheries and Wildlife (MDIFW), as well as digital aerial photography. This data included significant wildlife habitat information. CES also reviewed preliminary data from the Maine Office of GIS, including National Wetlands Inventory (NWI) mapped wetlands and the United States Geological Survey (USGS) 7.5' topographic map for the Bangor, Maine quadrangle.

2.1 Vernal Pool Survey

Vernal pool surveys were completed on the Site in April and May 2015. Vernal pools and other breeding areas (identified as amphibian breeding areas [ABA]) were assessed and characterized according to the definitions under MDEP Rule Chapter 335: *Significant Wildlife Habitat* and under Section 404 of the Clean Water Act as required by the ACOE. The vernal pool surveys were conducted in general accordance with the current version of the Maine Association of Wetland Scientists *Vernal Pool Survey Protocol* (April 2014). In this respect, a vernal pool is a temporary water body that provides habitat for breeding of amphibians, fairy shrimp, and certain rare, threatened, or endangered species. Amphibian breeding areas are features which support amphibian breeding but do not meet one of the MDEP Rule criteria, such as "natural" or "no permanent inlet or outlet".

CES scientists conducted vernal pool field work on the Site on April 23, May 5, 6, 8, 12, 13, and 14, 2015. Transect surveys were conducted on April 23, May 5, 6, and 8, to identify potential vernal pools and breeding areas on the Site. These areas were identified by the presence of indicator species breeding activity. Two surveys were conducted to account for both the early season and late season timing of the breeding activity associated with vernal pools. Vernal pools were assessed and MDIFW issued vernal pool data collection sheets were completed. Vernal pool boundaries were identified based on the Spring high water mark and located with a mapping grade GPS, as noted in Section 2.2. Amphibian breeding areas were located with one location point in the center of the area, using mapping grade GPS.

2.2 GPS Mapping and Flagging

All features were point located in the field using a sub-meter capable mapping grade GPS. Data was post-processed according to manufacturer's recommended post-processing settings using CORS reference stations. Yellow glo flagging was sequentially numbered and hung along the Spring high water mark of vernal pools. A single flag was hung marking an amphibian breeding area.

3.0 RESULTS AND DISCUSSION

3.1 General Project Area Overview

The Site is located on Coldbrook Road in Hampden, Maine as shown on **Appendix A** (Site Location Map). The Site is an approximately 90-acre undeveloped parcel, which is accessed from Coldbrook Road via a gravel access road. The Site is approximately 2 miles north of downtown Hampden and 0.5-mile southeast of the Interstate 95 exit.

The Site is characterized by undeveloped forestland and old agricultural fields. A selective harvest was performed on the Site 10 to 15 years ago; indications of this activity (in particular, haul/skid roads) were observed throughout the Site. Indications of historical agricultural use were also observed on the Site, namely stone walls and foundations; and land which appeared to be drained. The Bangor Gas pipeline corridor bisects the Site north to south.

The Site is dominated by a large wetland and stream complex, with areas of upland in the northeast portion of the Site. Uplands on the Site are dominated by red maple (*Acer rubrum*), balsam fir (*Abies balsamea*), white pine (*Pinus strobus*), white ash (*Fraxinus alba*), and quaking aspen (*Populus tremuloides*). Red maple and balsam fir dominate in the forested wetlands on the Site, with smaller areas of scrub shrub alder wetlands along the stream corridors. Topography within the Site consists of flat to gently sloping upland and wetland areas which slope to the southwest. The wetland areas are drained by two streams, which converge and flow southerly to Souadabscook Stream.

3.2 Vernal Pool Survey Results

The following section describes the vernal pools and amphibian breeding areas observed on the Site. Egg mass counts given for a vernal pool or breeding area are the highest observed egg mass counts for the noted species. The Vernal Pool Plan, included in **Appendix C**, shows the location of the vernal pools identified on the Site. Representative photographs of each vernal pool are included in **Appendix D**. A Vernal Pool Summary Table is included in **Appendix B**, which gives egg mass counts and brief descriptions of all vernal pools and amphibian breeding areas on the Site. **Appendix E** contains MDIFW Vernal Pool Data Sheets for each vernal pool.

The vernal pool survey identified a total of 44 vernal pools on the Site, identified as Vernal Pools (VP) 1-1 to 1-30, 2-13, 2-17, and 3-1 to 3-11. In general, the vernal pools on the Site are natural pools with ephemeral hydrology. The vernal pools ranged from primarily devoid of vegetation to densely vegetated. In vegetated pools, vegetation consisted of: speckled alder (*Alnus incana*), winterberry (*Ilex verticillata*), meadowsweet (*Spirea latifolia*), sensitive fern (*Onoclea sensibilis*) and sedges and grasses. The substrate in these pools was dominated by mineral soil, leaf litter, with limited organic matter/muck. Some pools had evidence of impact or modification as a result of the timber harvesting activity on the Site, primarily in the form of skidder or other equipment ruts or roads in the pools.

Of the 44 vernal pools on the Site, eight pools meet the MDEP Significant vernal pool criteria. These pools are described below.

VP 1-1 is an ephemeral pool that is natural, with possible modification by construction of the gas pipeline. This VP is primarily devoid of vegetation; meadowsweet, sensitive fern, and winterberry comprised the limited (30%) vegetation cover. Indicator species breeding activity consisted of 7 wood frog egg masses, 4 spotted salamander egg masses, and 100 blue spotted salamander egg masses.

VP 1-4 is a natural, ephemeral pool dominated by winterberry. Indicator species breeding activity consisted of wood frog tadpoles, 3 spotted salamander egg masses, and 77 blue spotted salamander egg masses.

VP 1-10 is an ephemeral, natural pool dominated by meadowsweet and red maple (*Acer rubrum*). This pool contained 9 wood frog, 12 spotted salamander, and 11 blue spotted salamander egg masses.

VP 1-15 is an ephemeral, natural pool dominated by winterberry and speckled alder. Indicator species breeding activity consisted of 27 wood frog egg masses, 27 spotted salamander egg masses, and approximately 53 blue spotted salamander egg masses.

Vernal pool 1-25 is a natural, ephemeral isolated depression dominated by winterberry, speckled alder and sedges (*Carex lacustris*). This pool contained 2 spotted salamander egg masses and approximately 78 blue spotted salamander egg masses.

Vernal pool 3-1 is an ephemeral, natural pool that is primarily devoid of vegetation with some speckled alder growth around the pool edge. This pool contained 14 wood frog, 19 spotted salamander, and 13 blue spotted salamander egg masses.

Vernal pool 3-6 is a natural, ephemeral pool which is dominated by speckled alder and meadowsweet. Indicator breeding species activity in this pool consisted of wood frog tadpoles, 12 spotted salamander, and 27 blue spotted salamander egg masses.

Vernal pool 3-10 is an ephemeral, natural pool that is devoid of vegetation, with some meadowsweet around the pools edge. This pool contained 2 wood frog, 21 spotted salamander, and 50 blue spotted salamander egg masses.

Based on these observations, all breeding areas identified as VPs meet the MDEP definition of a “vernal pool”; vernal pools VP 1-1, 1-4, 1-10, 1-15, 1-25, 3-1, 3-6, and 3-10 meet MDEP biological criteria (egg mass counts) to be considered Significant vernal pools.

The vernal pool survey identified 21 amphibian breeding areas (ABA), which were identified as ABA 1-1 through 1-15, 2-6, 2-12, 2-18, and ABA 3-1 through 3-3. These ABAs are ponded ruts or pools along the gas pipeline, ponded skidder ruts associated with timber harvesting on the Site, and ponded road ditches along the Site access road. These features were identified as ABAs if they contained egg masses during the vernal pool survey.

All VPs and ABAs are jurisdictional if ACOE jurisdiction is triggered on the Site.

4.0 SUMMARY

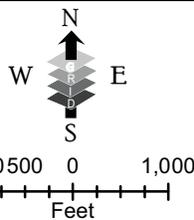
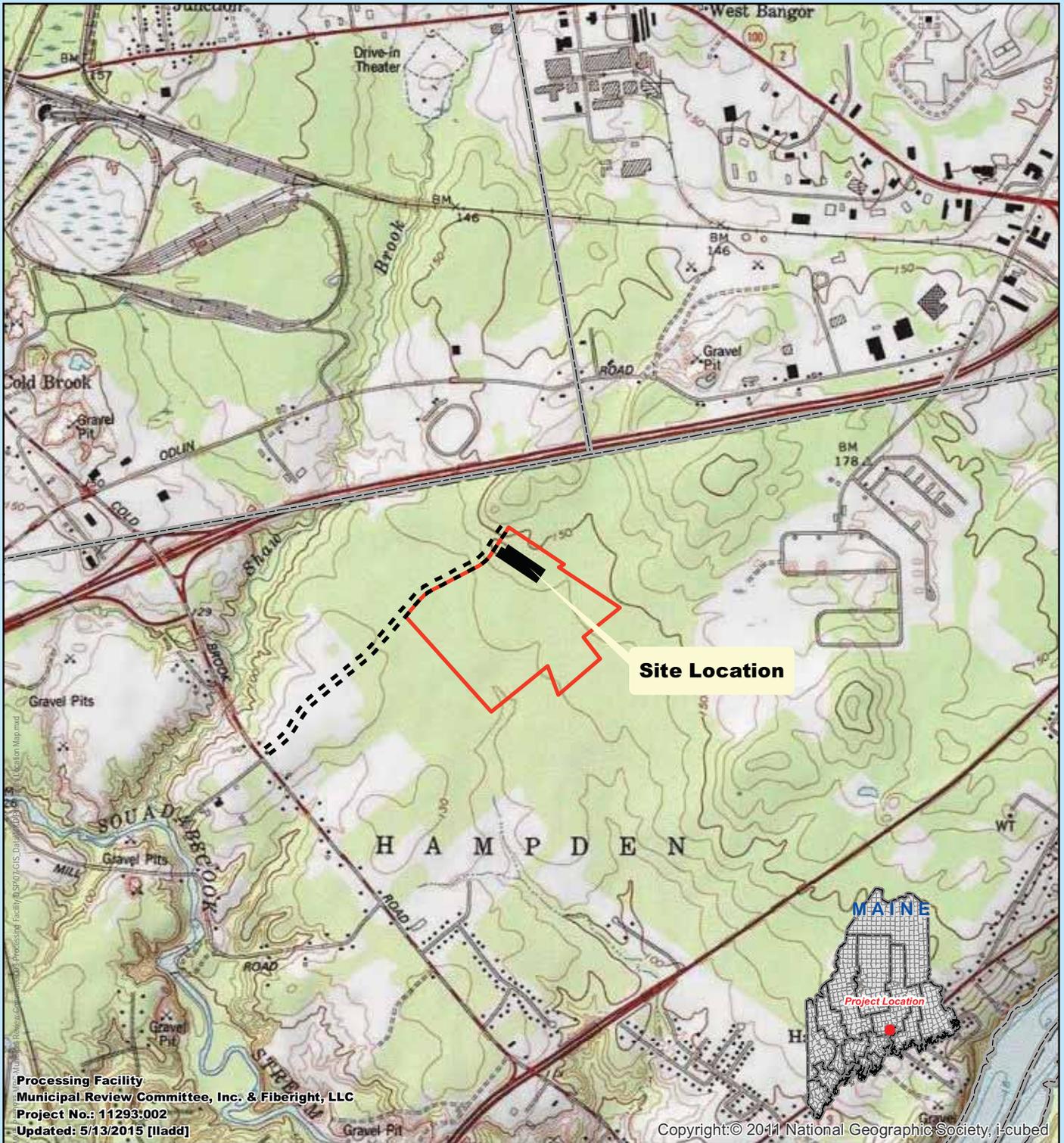
Vernal pool surveys have been completed by CES for the Site located on Coldbrook Road in Hampden, Maine. CES scientists identified a total of 44 vernal pools on the Site; eight of these vernal pools meet MDEP “Significant” standards based on biological criteria. The vernal pool survey identified 21 amphibian breeding areas (ABA). The vernal pools and amphibian breeding areas are jurisdictional if ACOE jurisdiction is triggered on the Site.

REFERENCES

1. Maine Association of Wetland Scientists Vernal Pool Technical Committee *Vernal Survey Protocol*. April 2014.

APPENDIX A
SITE LOCATION MAP

USGS Topographic Map



Legend

- Proposed Road Location
- Proposed Building Location
- ▭ Proposed Facility Property Boundary
- Town Boundaries

MAP NOTES:

- 1: ADMINISTRATIVE BOUNDARIES COURTESY OF THE MAINE OFFICE OF GIS (MEGIS).
- 2: TOPOGRAPHIC MAP IS USGS 1:24,000 TOPOGRAPHIC QUADRANGLE. PUBLISHED BY USGS, 2011. ACQUIRED FROM ESRI, 2015.



M:\D:\11973\MRC\Municipal-Review-Committee\003-Processing-Facility\07-GIS_Data\Map\01-Prop-Facility-Location-Map.mxd

APPENDIX B

VERNAL POOL SUMMARY TABLE

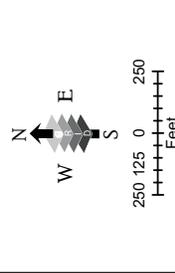
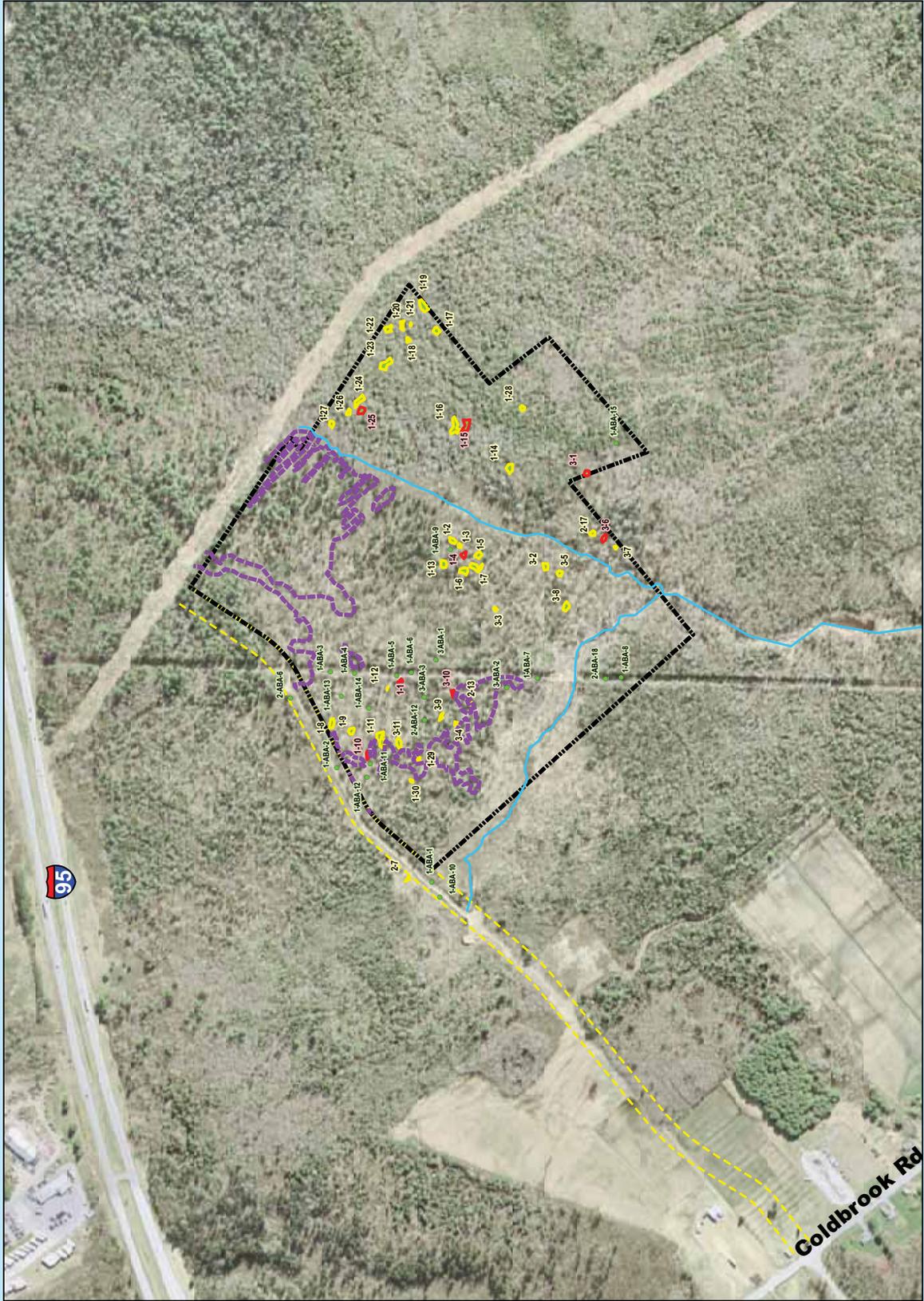
VERNAL POOL SUMMARY TABLE

VERNAL POOL IDENTIFICATION	WETLAND/UPLAND	MDEP DEFN?	MDEP SIGNIF?	ORIGIN	EGG MASS COUNTS			OTHER INDICATOR?
					WF	SS	BS	
1-1	WL	Y	Y	Natural/ modified	7	4	100	N
1-2	WL	Y	N	Natural	1	0	6	N
1-3	WL	Y	N	Natural/ modified	2	8	2	N
1-4	WL	Y	Y	Natural	T	3	77	N
1-5	WL	Y	N	Natural/ modified	2	0	0	N
1-6	WL	Y	N	Natural/ modified	19	16	0	N
1-7	WL	Y	N	Natural/ modified	4	1	0	N
1-8	WL	Y	N	Natural/ modified	5	1	0	N
1-9	WL	Y	N	Natural	7	0	0	N
1-10	WL/ UL complex	Y	Y	Natural	9	12	11	N
1-11	WL	Y	N	Natural/ modified	1	3	0	N
1-12	WL	Y	N	Natural	3	3	0	N
1-13	WL	Y	N	Natural/ modified	11	17	0	N
1-14	WL/ UL complex	Y	N	Natural	2	0	0	N
1-15	WL	Y	Y	Natural	27	27	53	N
1-16	WL	Y	N	Natural	5	6	0	N
1-17	WL/ UL complex	Y	N	Natural	11	7	0	N
1-18	WL/ UL complex	Y	N	Natural	5	9	0	N
1-19	WL/ UL complex	Y	N	Natural	0	2	0	N
1-20	WL/ UL complex	Y	N	Natural	3	17	0	N
1-21	WL	Y	N	Natural	1	0	0	N
1-22	WL/ UL complex	Y	N	Natural	0	3	0	N
1-23	WL	Y	N	Natural	5	6	0	N
1-24	WL	Y	N	Natural	7	19	0	N
1-25	WL/ UL complex	Y	Y	Natural	0	2	78	N
1-26	WL	Y	N	Natural	3	2	0	N
1-27	WL/ UL complex	Y	N	Natural	T	0	0	N
1-28	UL	Y	N	Natural	20	0	0	N
1-29	WL/ UL complex	N	N	Natural	0	0	0	N
1-30	WL/ UL complex	Y	N	Natural	6	3	0	N
2-7	WL	Y	N	Natural	1	0	0	N
2-13	WL/ UL complex	Y	N	Natural	0	2	0	N
2-17	WL/ UL complex	Y	N	Natural	T	0	0	N
3-1	WL/ UL complex	Y	Y	Natural	14	19	13	N

EGG MASS COUNTS							OTHER INDICATOR?	
VERNAL POOL IDENTIFICATION	WETLAND/UPLAND	MDEP DEFN?	MDEP SIGNIF?	ORIGIN	WF	SS	BS	
3-2	UL	Y	N	Natural	0	3	0	N
3-3	WL/ UL complex	Y	N	Natural	5	2	0	N
3-4	WL/ UL complex	Y	N	Natural	0	1	0	N
3-5	WL/ UL complex	Y	N	Natural	1	20	2	N
3-6	WL/ UL complex	Y	Y	Natural	T	12	27	N
3-7	WL/ UL complex	Y	N	Natural	2	6	0	N
3-8	WL/ UL complex	Y	N	Natural/ modified	T	1	0	N
3-9	WL	Y	N	Natural/ modified	9	0	1	N
3-10	WL/ UL complex	Y	Y	Natural	2	21	50	N
3-11	WL/ UL complex	Y	N	Natural/ modified	4	0	0	N
1-ABA-1			N	manmade	0	8	0	
1-ABA-2			N	manmade	7	2	0	
1-ABA-3			N	manmade	2	7	0	
1-ABA-4			N	manmade	10	7	0	
1-ABA-5			N	manmade	0	9	0	
1-ABA-6			N	manmade	0	25	0	
1-ABA-7			N	manmade	11	2	0	
1-ABA-8			N	manmade	0	17	0	
1-ABA-9			N	manmade	1	0	0	
1-ABA-10			N	manmade	1	11	0	
1-ABA-11			N	manmade	2	0	0	
1-ABA-12			N	manmade	2	0	0	
1-ABA-13			N	manmade	4	0	0	
1-ABA-14			N	manmade	1	0	0	
1-ABA-15			N	manmade	1	0	0	
2-ABA-6			N	manmade	0	65	0	
2-ABA-12			N	manmade	0	2	0	
2-ABA-18			N	manmade	8	0	0	
3-ABA-1			N	manmade	2	9	0	
3-ABA-2			N	manmade	1	0	0	
3 ABA-3			N	manmade	5	3	0	

APPENDIX C
VERNAL POOL PLAN

Vernal Pool Survey Plan



- Legend**
- Delineated Streams
 - Wetland Boundaries
 - Vernal Pools
 - Significant Vernal Pools
 - Amphibian Breeding Areas
 - Property Boundary
 - Proposed Access Road ROW



MRC & Fiberight
Waste Processing Facility
Project No.: 10973-002
Updated: 6/24/2015 [rstantamand]

- MAP NOTES:**
1. WETLANDS SHOWN HEREON WERE FIELD DELINEATED BY MRC AND FIBERIGHT ENGINEERS AND THE ENGINEERS WETLAND DELINEATION MANUAL AND THE 2012 NORTH-CENTRAL AND NORTH-EAST REGIONAL SUPPLEMENT (2.0) AND BASED ON A FIELD SURVEY PERFORMED BY VOISE ENVIRONMENTAL INC. AND CES INC. APRIL-JUNE OF 2015.
 2. VERNAL POOL SURVEYS WERE COMPLETED DURING AN APPROPRIATELY TIMED SURVEY IN SPRING 2015 AND IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS AND DEFINITIONS AND THE MAWIS VERNAL 2011 DRAFT POOL SURVEY PROTOCOL.
 3. SITE FEATURES, INCLUDING WETLAND BOUNDARIES, STREAMS AND VERNAL POOLS DEPICTED ON THIS PLAN WERE LOCATED UTILIZING A GPS RECEIVER HAVING SUB-METER ACCURACY.
 4. IMAGERY ACQUIRED FROM ESRI. IMAGERY IS 0.3METER LC-G IMAGERY COURTESY OF MICROSOFT (2010).
 5. MAP IS PROJECTED USING MAINES STATE PLANE COORDINATE SYSTEM (NAD 83) AND REFERENCES THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
 6. NORTH ARROW IS REFERENCED TO GRID NORTH.



APPENDIX D

VERNAL POOL PHOTOGRAPHS

MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
VERNAL POOL SURVEY REPORT



Photo No. 1

Photo Date:
May 13, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-1.

Photo By:
JES



Photo No. 2

Photo Date:
May 13, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-2.

Photo By:
JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
VERNAL POOL SURVEY REPORT



Photo No. 3

Photo Date:
May 13, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-3.

Photo By:
JES



Photo No. 4

Photo Date:
May 13, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-4.

Photo By:
JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 5
Photo Date: May 13, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of VP 1-5.
Photo By: JES



Photo No. 6
Photo Date: May 13, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of VP 1-6.
Photo By: JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
VERNAL POOL SURVEY REPORT



Photo No. 7

Photo Date:
May 13, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-7.

Photo By:
JES



Photo No. 8

Photo Date:
May 6, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-8.

Photo By:
RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 9

Photo Date:
May 6, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-9.

Photo By:
RST



Photo No. 10

Photo Date:
May 12, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-10.

Photo By:
JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 11

Photo Date:
May 6, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-11.

Photo By:
RST



Photo No. 12

Photo Date:
May 13, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-12.

Photo By:
JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
VERNAL POOL SURVEY REPORT



Photo No. 13

Photo Date:
May 8, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-13.

Photo By:
RST



Photo No. 14

Photo Date:
May 8, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-14.

Photo By:
RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
VERNAL POOL SURVEY REPORT



Photo No. 15

Photo Date:
May 8, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-15.

Photo By:
RST



Photo No. 16

Photo Date:
May 8, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-16.

Photo By:
RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
VERNAL POOL SURVEY REPORT



Photo No. 17

Photo Date:
May 8, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-17.

Photo By:
RST



Photo No. 18

Photo Date:
May 8, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-18.

Photo By:
RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 19
Photo Date: May 8, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of VP 1-19.
Photo By: RST



Photo No. 20
Photo Date: May 8, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of VP 1-20.
Photo By: RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 21

Photo Date:
May 8, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-21.

Photo By:
RST



Photo No. 22

Photo Date:
May 8, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-22.

Photo By:
RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 23

Photo Date:
May 8, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-23.

Photo By:
RST



Photo No. 24

Photo Date:
May 8, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-24.

Photo By:
RST



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 25
Photo Date: May 8, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of VP 1-25.
Photo By: RST



Photo No. 26
Photo Date:
Site Location: Coldbrook Road Hampden, Maine
Description: View of VP 1-26.
Photo By:



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 27

Photo Date:
May 14, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-27.

Photo By:
JES



Photo No. 28

Photo Date:
May 14, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 1-28.

Photo By:
JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
VERNAL POOL SURVEY REPORT



Photo No. 29
Photo Date: May 13, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of VP 1-29.
Photo By: JES



Photo No. 30
Photo Date: May 13, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of VP 1-30
Photo By: JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
VERNAL POOL SURVEY REPORT



Photo No. 31

Photo Date:
May 12, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 2-7.

Photo By:
JES



Photo No. 32

Photo Date:
May 13, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 2-13.

Photo By:
JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
VERNAL POOL SURVEY REPORT



Photo No. 33

Photo Date:
May 14, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 2-14.

Photo By:
JES



Photo No. 34

Photo Date:
May 14, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 3-1.

Photo By:
JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 35

Photo Date:
 May 14, 2015

Site Location:
 Coldbrook Road
 Hampden, Maine

Description:
 View of VP 3-2.

Photo By:
 JES



Photo No. 36

Photo Date:
 May 13, 2015

Site Location:
 Coldbrook Road
 Hampden, Maine

Description:
 View of VP 3-3.

Photo By:
 JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 37

Photo Date:
 May 14, 2015

Site Location:
 Coldbrook Road
 Hampden, Maine

Description:
 View of VP 3-4.

Photo By:
 JES



Photo No. 38

Photo Date:
 May 14, 2015

Site Location:
 Coldbrook Road
 Hampden, Maine

Description:
 View of VP 3-5.

Photo By:
 JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 39

Photo Date:
May 14, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 3-6.

Photo By:
JES



Photo No. 40

Photo Date:
May 14, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 3-7.

Photo By:
JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 41
Photo Date: May 13, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of VP 3-8.
Photo By: JES




Photo No. 42
Photo Date: May 13, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of VP 3-9.
Photo By: JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
VERNAL POOL SURVEY REPORT



Photo No. 43

Photo Date:
May 13, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 3-10.

Photo By:
JES



Photo No. 44

Photo Date:
May 13, 2015

Site Location:
Coldbrook Road
Hampden, Maine

Description:
View of VP 3-11.

Photo By:
JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 45
Photo Date: May 13, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of ABA 1-11, typical of the amphibian breeding areas found in the harvested portions the Site.
Photo By: JES




Photo No. 46
Photo Date: May 13, 2015
Site Location: Coldbrook Road Hampden, Maine
Description: View of ABA 1-5. This ABA is typical of the amphibian breeding areas found along the gas pipeline on Site.
Photo By: JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 47

Photo Date:
 May 13, 2015

Site Location:
 Coldbrook Road
 Hampden, Maine

Description:
 View of ABA 1-6. This ABA is typical of the amphibian breeding areas found along the gas pipeline on Site.

Photo By:
 JES



Photo No. 48

Photo Date:
 May 12, 2015

Site Location:
 Coldbrook Road
 Hampden, Maine

Description:
 View of ABA 1-10, the road ditch along the Site access road.

Photo By:
 JES



MRC, INC. - FIBERIGHT LLC, WASTE PROCESSING FACILITY
 VERNAL POOL SURVEY REPORT



Photo No. 49

Photo Date:
 May 12, 2015

Site Location:
 Coldbrook Road
 Hampden, Maine

Description:
 View of ABA 1-10,
 road ditch along the
 Site access road.

Photo By:
 JES



Photo No. 50

Photo Date:
 May 12, 2015

Site Location:
 Coldbrook Road
 Hampden, Maine

Description:
 View of ABA 1-12, a
 breeding area created
 by a skid road in a
 wetland.

Photo By:
 JES



APPENDIX E
VERNAL POOL DATA FORMS



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-1 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512456.0156 Latitude/Northing: 4957613.9906

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

Possibly modified by pipeline construction

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on depth and size of pool, and substrate

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/5, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	7	5	3	3	A	H	T		3	
Spotted Salamander	2	4	3	3	M	A				
Blue-spotted Salamander	53	100	3	3	M	A				
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 70% devoid of vegetation; 30% dominated by meadow sweet, sensitive fern, and winterberry.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-2 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512673.0704 Latitude/Northing: 4957535.3712

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on size and presence of terrestrial vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 40 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/5, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	1	0	3	3			N			
Spotted Salamander	0	0								
Blue-spotted Salamander	6	3	3	3		A				
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool dominated by meadowsweet and winterberry

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments: _____



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-3 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512665.3746 Latitude/Northing: 4957524.3714

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on terrestrial vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 m ft Length: 15 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/5, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	2	0	3				T		3	
Spotted Salamander	8	8	3	3		A				
Blue-spotted Salamander	2	0	3							
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool vegetation dominated by meadowsweet and sedges

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-4 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512650.8563 Latitude/Northing: 4957517.9416

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on depth and terrestrial vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 35 m ft Length: 25 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/5, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	0					Y		3	
Spotted Salamander	0	3		3						
Blue-spotted Salamander	32+	77		3	3	A				
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool vegetation is dominated by winterberry

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-5 _____ MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512651.0772 Latitude/Northing: 4957495.0433

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

Portion may be modified by skid road

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on terrestrial vegetation in pool, depth of pool and substrate

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 35 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/5, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	2	0	3				T		3	
Spotted Salamander	0	0								
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-6 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512626.5368 Latitude/Northing: 4957517.3123

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

Impacted by skid road through pool

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on depth of pool and terrestrial vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 35 m ft Length: 40 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/5, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	19	0	3		A		T		3	
Spotted Salamander	16	12	3	3	M	A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool vegetation dominated by meadowsweet and speckled alder

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments: _____



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-7 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512632.2203 Latitude/Northing: 4957498.9255

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

Portion modified by skid road / skid activity

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on pool depth, substrate, and terrestrial vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 40 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/5, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	4	0	3		A		T		3	
Spotted Salamander	1	1	3	3	M	A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-8 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512389.3444 Latitude/Northing: 4957720.064

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

Pool modified by skid tracks, portions deep

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on depth of pool, limited organic matter, and vegetation growing in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 40 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: green frog

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/6 5/12

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	5	0	3		A		T		3	
Spotted Salamander	1	0	3		M					
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-9 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512377.9205 Latitude/Northing: 4957689.7187

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on depth of organic and presence of vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 m ft Length: 35 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/6, 5/12

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	7	0	3		A-H		Y		3	
Spotted Salamander	0	0								
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only

Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-10 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512340.3444 Latitude/Northing: 4957664.9974

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: upland / wetland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral
(drying out completely in most years) Unknown

Explain:

Based on substrate and presence of vegetation around pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 35 m ft Length: 35 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/6, 5/12

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	9	0	3		A		Y		3	
Spotted Salamander	11	12	3	3	A					
Blue-spotted Salamander	11	11	3	3	A					
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-11 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512366.0308 Latitude/Northing: 4957644.6047

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

Possible skidder disturbance

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on pool size, depth and substrate and presence of terrestrial vegetation in most of pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 70 m ft Length: 30 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 4/23, 5/6, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	1	0	3				Y		3	
Spotted Salamander	0	3		3						
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-12 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512444.0162 Latitude/Northing: 4957634.8418

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on pool depth, size, substrate

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 15 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/6, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	3	0	3		A		0			
Spotted Salamander	1	3	3	3	A	A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-13 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512636.692 Latitude/Northing: 4957548.9934

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

Some impact by skidders

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on pool depth and presence of terrestrial vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 45 m ft Length: 30 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	11	1	3	3	A-H	H	Y		3	
Spotted Salamander	12	17	3	3	M	A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool dominated by meadowsweet and grasses

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-14 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512785.3335 Latitude/Northing: 4957447.7914

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: upland/ wetland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral Unknown
(drying out completely in most years)

Explain:

Based on size, depth, terrestrial vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 40 m ft Length: 50 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	2	1	3	3	M	H	Y		3	
Spotted Salamander	0	0								
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool 90% vegetated, with speckled alder and sensitive fern

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-15 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512851.579 Latitude/Northing: 4957515.2961

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: _____

■ Check all wetland types that best apply to this pool:

- | | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input checked="" type="checkbox"/> Shrub swamp | <input type="checkbox"/> Lake or Pond Cove | <input type="checkbox"/> Floodplain |
| <input type="checkbox"/> Peatland (fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Isolated pool |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on pool depth and size, substrate

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 50 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- | | |
|--|---|
| <input checked="" type="radio"/> Mineral soil (bare, leaf-litter bottom, or upland mosses present) | <input type="radio"/> Organic matter (peat/muck) shallow or restricted to deepest portion |
| <input type="radio"/> Mineral soil (sphagnum moss present) | <input type="radio"/> Organic matter (peat/muck) deep and widespread |

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) | <input type="checkbox"/> Wet site ferns (e.g. royal fern, marsh fern) |
| <input type="checkbox"/> Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) | <input checked="" type="checkbox"/> Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly) |
| <input type="checkbox"/> Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) | <input type="checkbox"/> Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes) |
| <input type="checkbox"/> Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) | <input type="checkbox"/> Aquatic vascular spp. (e.g. pickerelweed, arrowhead) |
| <input type="checkbox"/> Sphagnum moss (anchored or suspended) | <input type="checkbox"/> Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort) |
| | <input type="checkbox"/> No vegetation in pool |

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	27	0	3		H		0			
Spotted Salamander	27	26	3	3	A	A				
Blue-spotted Salamander	33	53	3	3	A	A				
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 50% vegetated with winterberry, and speckled alder
Caddis fly predation on blue spotted salamander masses

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-16 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512849.2349 Latitude/Northing: 4957533.1906

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on substrate, depth, terrestrial vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 40 m ft Length: 80 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	5	0	3				0			
Spotted Salamander	6	6	3	3		A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is approximately 85% vegetated with winterberry and speckled alder

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-17 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512997.1461 Latitude/Northing: 4957562.1816

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: upland/ wetland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on depth, substrate, terrestrial vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 m ft Length: 45 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	11	0	3			H		Y		3
Spotted Salamander	6	7	3	3		A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-18 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512982.6775 Latitude/Northing: 4957605.6873

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: upland/ wetland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on size, depth, substrate, vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 26 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	5	2	3	3	A	H	Y		3	
Spotted Salamander	7	9	3	3	M	A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool about 80 - 85% vegetated, with winterberry and speckled alder

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-19 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 513035.1448 Latitude/Northing: 4957582.8682

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: upland/ wetland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral Unknown
(drying out completely in most years)

Explain:

Based on depth, substrate, presence of terrestrial vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 m ft Length: 50 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	0					0			
Spotted Salamander	2	1	3	3	A					
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 90% vegetated, with speckled alder, winterberry, and grasses

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-20 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 513005.6917 Latitude/Northing: 4957615.5432

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: upland/ wetland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on depth, presence of terrestrial vegetation, substrate

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 50 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	3	3	3	H		Y		3	
Spotted Salamander	3	17	3	3	A					
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 75% vegetated, dominated by winterberry

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-21 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 513006.679 Latitude/Northing: 4957601.9712

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on depth, size, substrate, terrestrial vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 15 m ft Length: 10 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	1	1	3	3	A		N			
Spotted Salamander	0	0								
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is about 50% vegetated with winterberry

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments: _____



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-22 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512999.5445 Latitude/Northing: 4957636.6822

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: upland/ wetland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and
completely in drought years) Ephemeral Unknown
(drying out completely
in most years)

Explain:

Based on substrate, size, terrestrial vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 m ft Length: 50 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland
mosses present) Organic matter (peat/muck) shallow or
restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap
moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern,
lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry,
winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon
fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock
sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage,
jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily,
water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet
or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	0								
Spotted Salamander	3	3	3	3	M	A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 80% vegetated, with sensitive fern and winterberry
Pit and mound areas within pool

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-23 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512944.8405 Latitude/Northing: 4957640.4651

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on depth, substrate, vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 70 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	5	0	3		H		Y		3	
Spotted Salamander	6	4	3	3	M	A				
Blue-spotted Salamander										
Fairy Shrimp ³										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 98% vegetated with winterberry and speckled alder

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-24 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512888.2539 Latitude/Northing: 4957681.0077

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on size of pool and substrate

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 50 m ft Length: 25 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

- Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	7		3		H		Y		3
Spotted Salamander	15	19	3	3		A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

- SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is about 60% vegetated with meadowsweet, winterberry, and speckled alder

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
 Attn: Vernal Pools
 650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only

Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-25 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512873.0028 Latitude/Northing: 4957677.4485

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: wetland / upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on depth, substrate, vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 m ft Length: 40 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	0								
Spotted Salamander	2	0								
Blue-spotted Salamander	35	78	3	3	M	A				
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 90% vegetated with winterberry, speckled alder, grasses

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-26 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512870.337 Latitude/Northing: 4957697.0346

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on depth, substrate, presence of vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 30 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	3	0	3				0			
Spotted Salamander	2	2	3	3	M	A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool vegetation is about 70% vegetated with winterberry

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-27 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512852.1188 Latitude/Northing: 4957723.2957

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral
(drying out completely in most years) Unknown

Explain:

Based on size, depth, terrestrial vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 35 m ft Length: 30 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	0					Y		3	
Spotted Salamander	0	0								
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 95% vegetated, with vegetation dominated by alder and winterberry

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-28 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512878.6323 Latitude/Northing: 4957428.8602

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on size, depth, substrate, terrestrial vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 30 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	20		3		A-H		Y		3
Spotted Salamander	0	0								
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is about 85% vegetated with meadowsweet, alder, and grasses

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-29 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512334.2632 Latitude/Northing: 4957586.9739

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral
(drying out completely in most years) Unknown

Explain:

Based on pool depth and size, presence of terrestrial vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 25 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 4/23, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0						0			
Spotted Salamander	0									
Blue-spotted Salamander	0									
Fairy Shrimp ³	0									

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Wood frogs calling on 4/23

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 1-30 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (R. St.Amand, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512301.554 Latitude/Northing: 4957596.858

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral
(drying out completely in most years) Unknown

Explain:

Based on depth and presence of cat tail in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 24 m ft Length: 15 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 4/23, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	6	0	3		F		T		3	
Spotted Salamander	0	3		3		A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Dominated by cat tails

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only

Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 2-7 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 Name: Hickory Development, LLC Phone: _____
 Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512149.767 Latitude/Northing: 4957601.1304

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral
(drying out completely in most years) Unknown

Explain:

Based on depth of organic matter, size of pool, and presence of vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 5-7 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 4/30, 5/12

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? About 70%

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	1	0	3		M		Y		3	
Spotted Salamander	0	0								
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 2-13 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 Name: Hickory Development, LLC Phone: _____
 Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512421.9668 Latitude/Northing: 4957506.5022

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral
(drying out completely in most years) Unknown

Explain:

Based on depth, substrate, and vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 25 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/13 _____

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)			Tadpoles/Larvae		
	#	Confidence Level ¹	Egg Mass Maturity ²	Observed	Confidence Level ¹	
Wood Frog	0			N		
Spotted Salamander	2	3	A			
Blue-spotted Salamander	0					
Fairy Shrimp ³	0					

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 2-17 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 Name: Hickory Development, LLC Phone: _____
 Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512685.4773 Latitude/Northing: 4957319.2052

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral
(drying out completely in most years) Unknown

Explain:

Based on depth and size of pool, and terrestrial vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 25 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/14 _____

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)			Tadpoles/Larvae		
	#	Confidence Level ¹	Egg Mass Maturity ²	Observed	Confidence Level ¹	
Wood Frog	0			Y	3	
Spotted Salamander	0					
Blue-spotted Salamander	0					
Fairy Shrimp ³	0					

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 3-1 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (A. Pierce, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: H O Bouchard Inc. Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512778.2054 Latitude/Northing: 4957328.7277

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral
(drying out completely in most years) Unknown

Explain:

Based on pool size and depth

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 m ft Length: 30 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	14		3		M		T		3	
Spotted Salamander	19	11	3	3	F	A				
Blue-spotted Salamander	0	13		3		A				
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 30% vegetated around edges with speckled alder

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 3-2 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (A. Pierce, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 Name: Hickory Development, LLC Phone: _____
 Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512664.0501 Latitude/Northing: 4957283.4518

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on pool depth, substrate

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	0								
Spotted Salamander	3	3	3	3	F	A				
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 20% vegetated around edges with meadowsweet

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments: _____



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 3-3 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (A. Pierce, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512567.9006 Latitude/Northing: 4957468.8066

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on pool depth, substrate, and terrestrial vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 15 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/13

b. Indicator abundance criteria

- Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	5		3		M		T		3	
Spotted Salamander	0	2	3		A					
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

- SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool vegetation dominated by winterberry (60%) and 40% bare or grasses

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments: _____



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 3-4 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (A. Pierce, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512390.9011 Latitude/Northing: 4957528.7272

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on size, depth, substrate

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 15 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	0								
Spotted Salamander	1	0	3		F					
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is about 80% vegetated with winterberry, speckled alder, meadowsweet, grasses

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 3-5 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (A. Pierce, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512623.5029 Latitude/Northing: 4957369.6292

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: upland/ wetland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on depth and size

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	1		3		M		T		3	
Spotted Salamander	20	13	3	3	A					
Blue-spotted Salamander	0	2		3	A					
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 15-20% vegetated around edges with meadowsweet

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 3-6 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (A. Pierce, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512678.297 Latitude/Northing: 4957301.3562

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and
completely in drought years) Ephemeral Unknown
(drying out completely
in most years)

Explain:

Based on size, depth, substrate, terrestrial vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 m ft Length: 30 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland
mosses present) Organic matter (peat/muck) shallow or
restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap
moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern,
lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry,
winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon
fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock
sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage,
jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily,
water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet
or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0						Y		3	
Spotted Salamander	12	4	3	3		A				
Blue-spotted Salamander	0	27		3		A				
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is 60% vegetated with speckled alder and meadowsweet

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 3-7 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (A. Pierce, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512664.0501 Latitude/Northing: 4957283.4518

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral
(drying out completely in most years) Unknown

Explain:

based on depth, size, and presence of terrestrial vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 15 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/14

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae					
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹			
Wood Frog	2	0	3		M		0					
Spotted Salamander	6	6	3	3	A							
Blue-spotted Salamander	0	0										
Fairy Shrimp ³	0	0										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is about 30% vegetated with meadowsweet

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments: _____



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 3-8 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (A. Pierce, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512572.3977 Latitude/Northing: 4957359.2854

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

Impacted by skid road

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on depth, substrate, and terrestrial vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 50 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	0					T		3	
Spotted Salamander	1	1	3	3	A					
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 3-9 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (A. Pierce, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512400.3306 Latitude/Northing: 4957551.6434

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (good)
- The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
 Floodplain depression
 Pool associated with larger wetland complex
 Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
 Shrub swamp
 Peatland (fen or bog)
 Emergent marsh
 Wet meadow
 Lake or Pond Cove
 Abandoned beaver flowage
 Active beaver flowage
 Slow stream
 Floodplain
 Isolated pool
 Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

Skid road through portion of pool

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent
 Semi-permanent (drying partially in all years and completely in drought years)
 Ephemeral (drying out completely in most years)
 Unknown

Explain:

Based on size, depth, and presence of terrestrial vegetation in pool

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
 Sphagnum moss (anchored or suspended)
 Wet site ferns (e.g. royal fern, marsh fern)
 Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
 Intermittent inlet or outlet
 Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	9	1	3	3	A	H	Y		3	
Spotted Salamander	0	0								
Blue-spotted Salamander	0	1		3						
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only

Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 3-10 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (A. Pierce, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512436.976 Latitude/Northing: 4957533.249

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent
(drying partially in all years and completely in drought years) Ephemeral
(drying out completely in most years) Unknown

Explain:

Based on pool size, depth, and substrate

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 35 m ft Length: 20 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	0	2		2		H		Y		3
Spotted Salamander	21	19		3	3	F	A			
Blue-spotted Salamander	50	27		3	3	F	A			
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool generally devoid of vegetation - few meadowsweet along edge

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments: _____



Maine State Vernal Pool Assessment Form



INSTRUCTIONS: Complete all 3 pages of form as thoroughly as possible. Most fields are required for pool registration.

Observer's Pool ID: 3-11 MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: CES, Inc. (A. Pierce, J. Szillery)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other CES, Inc. (R. St.Amand)
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Solid Waste Processing and Recycling Facility

NOTE: Clear photographs or digital images of a) the pool and b) the indicators (one example of each species egg mass) are required for nonprofessional observers and encouraged for all observers.

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
 - Name: Hickory Development, LLC Phone: _____
 - Street Address: P.O. Box 249 City: Hampden State: ME Zip: 04444
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. **Location** Township: Hampden

Brief site directions to the pool (using mapped landmarks):

From Interstate 95, exit at Cold Brook Road (exit 180). Go 0.5 miles south on Cold Brook Road. Access road to the Site is on the left.

b. **Mapping Requirements:** At least 2 of the 3 must be submitted (check those submitted):

- USGS topographic map with pool clearly marked.
- Large scale aerial photograph with pool clearly marked.
- GPS data (complete section below).

GPS location of vernal pool

Longitude/Easting: 512359.2283 Latitude/Northing: 4957616.3946

Check Datum: NAD27 NAD83 / WGS84 Coordinate system: UTM-m

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (best)
- The pool perimeter is delineated by multiple GPS points. (excellent)
 - Include map or spreadsheet with coordinates.
 - The above GPS point is at the center of the pool. (good)
 - The center of the pool is approximately _____ m /ft in the compass direction of _____ degrees from the above GPS point. (acceptable)

Maine State Vernal Pool Assessment Form

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression Pool associated with larger wetland complex
 Floodplain depression Other: wetland/ upland complex

■ Check all wetland types that best apply to this pool:

- Forested swamp Wet meadow Slow stream
 Shrub swamp Lake or Pond Cove Floodplain
 Peatland (fen or bog) Abandoned beaver flowage Isolated pool
 Emergent marsh Active beaver flowage Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

Some skidder impact

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale for opinion.

- Permanent Semi-permanent (drying partially in all years and completely in drought years) Ephemeral (drying out completely in most years) Unknown

Explain:

Based on pool size, depth, presence of vegetation

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 50 m ft Length: 25 m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present) Organic matter (peat/muck) shallow or restricted to deepest portion
 Mineral soil (sphagnum moss present) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Wet site ferns (e.g. royal fern, marsh fern)
 Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern) Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
 Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
 Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Sphagnum moss (anchored or suspended) Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
 No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish Bullfrog or Green Frog tadpoles Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
 Intermittent inlet or outlet Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/8, 5/13

b. Indicator abundance criteria

■ Was the entire pool surveyed for egg masses? Yes No; what % of pool surveyed? _____

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae			
	#		Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	4	1	3	3	A	H	T		3	
Spotted Salamander	0	0								
Blue-spotted Salamander	0	0								
Fairy Shrimp ³	0	0								

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy Shrimp: X = present

c. Rarity criteria

■ Note any rare species associated with vernal pools. Observations should be accompanied by photographs (labeled with observer name, pool location, and date).

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments:



ATTACHMENT 10

**NOTICE OF INTENT TO FILE, ABUTTER LIST,
NEWSPAPER AD, CERTIFIED MAIL**

PUBLIC NOTICE FILING AND CERTIFICATION

The DEP Rules, Chapter 2, require an applicant to provide public notice for all projects requiring new or amended licenses from more than two bureaus with the exception of minor revisions and condition compliance applications. In the notice, the applicant must describe the proposed activity and where it is located. "**Abutter**" for the purposes of the notice provision means any person who owns property that is BOTH (1) adjoining and (2) within one mile of the delineated project boundary, including owners of property directly across a public or private right of way.

1. **Newspaper:** You must publish the Notice of Intent to File in a newspaper circulated in the area where the activity is located. The notice must appear in the newspaper within 30 days prior to the filing of the application with the Department. You may use the attached Notice of Intent to File form, or one containing identical information, for newspaper publication and certified mailing.
2. **Abutting Property Owners:** You must send a copy of the Notice of Intent to File by certified mail to the owners of the property abutting the activity. Their names and addresses can be obtained from the town tax maps or local officials. They must receive notice within 30 days prior to the filing of the application with the Department.
3. **Municipal Office:** You must send a copy of the Notice of Intent to File and a **duplicate of the entire application** to the Municipal Office.

See ATTACHMENT 5 – ABUTTERS for a list of the names and addresses of the owners of abutting property.

Attached is a narrative responsive to any significant issues relevant to the Licensing Criteria that were raised at the Public Informational Meeting.

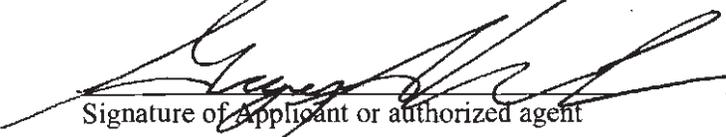
CERTIFICATION

By signing below, the applicant or authorized agent certifies that:

1. A Notice of Intent to File was published in a newspaper circulated in the area where the project site is located within 30 days prior to filing the application;
2. A certified mailing of the Notice of Intent to File was sent to all abutters within 30 days of the filing of the application;
3. A certified mailing of the Notice of Intent to File, and a duplicate copy of the application was sent to the town office of the municipality in which the project is located; and
4. Provided notice of, if required, and held a public informational meeting in accordance with Chapter 2, Rules Concerning the Processing of Applications, Section 13, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town office of the municipality in which the project is located at least ten days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least seven days prior to the meeting.

Two Public Informational Meetings were held on April 27, 2015 and May 5, 2015.
Date

Approximately 66 members of the public attended the Public Informational Meetings.


Signature of Applicant or authorized agent

June 18, 2015
Date

ABUTTER'S LIST

MAP	LOT	NAME / ADDRESS
09	035	H.O. Bouchard, Inc. P.O. Box 249 Hampden ME 04444-0249
	027	
	037	
14	001	Hampden ME 04444-0249
	001-01	
09	035-A	Bouchard Sports Center, LLC P.O. Box 249 Hampden, ME 04444-0249
09	032	Hickory Development, LLC P.O. Box 249 Hampden, ME 04444-0249
	034	
	036	
	038	
	039	
	040	
	042	
14	007	Hampden, ME 04444-0249
	008	
10	011-A	Emera Maine P.O. Box 932 Bangor, ME 04402-0932

PUBLIC NOTICE OF INTENT TO FILE

Please take notice that the Municipal Review Committee, Inc. (MRC) of 395 State Street, Ellsworth, Maine 04605, (207) 664-1700 and Fiberight, LLC (Fiberight), 1450 South Rolling Road, Baltimore, Maryland 21227, (410) 340-9387 are intending to file joint applications with the Maine Department of Environmental Protection (Department) on or about June 22, 2015 pursuant to the provisions of: 38 M.R.S.A., Section 1301 et seq. (Maine's Solid Waste Management Act and implementing regulations); 38 M.R.S.A Section 420-D (Stormwater Management and implementing regulations); 38 M.R.S.A Section 590 (Licensing and implementing regulations); and 38 M.R.S.A. Section 480-A et seq. (Natural Resources Protection Act and implementing regulations).

The following is a listing of regulations under which MRC and Fiberight will seek permits: 06 096 CMR Chapters 400 and 409: Solid Waste General Provisions and Processing Facilities; 06 096 CMR Chapter 310: Wetlands and Waterbodies Protection; 06 096 CMR Chapter 335: Significant Wildlife Habitat; 06 096 CMR Chapter 500: Stormwater Management; and 06 096 CMR Chapter 115: Major and Minor Source Air Emission License Regulation.

The applications are for a proposed municipal solid waste (MSW) processing and recycling facility (Facility) to be located in Hampden, Maine. The proposed Facility will be located on a 90 acre parcel of land approximately one mile to the northeast of the Coldbrook Road and ¼ mile to the southeast of I-95. The parcel will be owned by MRC and the Facility and infrastructure will be owned and operated by Fiberight. To access the Facility site, a 4,620-foot access roadway with utilities located opposite Bryer Lane intersecting Coldbrook Road will be owned and constructed by MRC as part of this project.

According to Department regulations, interested parties must be publicly notified, written comments invited, and if justified, an opportunity for public hearing given. A request for a public hearing, or that the Board of Environmental Protection assume jurisdiction of an application(s), must be received by the Department, in writing, no later than 20 days after the application(s) are accepted by the Department as complete for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comments on the applications will be accepted throughout the processing of the applications.

The applications and supporting documentation will be available for review at the Maine Department of Environmental Protection, Division of Technical Services, Bureau of Remediation and Waste Management at the Augusta, Maine DEP regional office, during normal working hours. A copy of the applications and supporting documentation may also be seen at the municipal office in Hampden, Maine.

Send all correspondence to: David Burns, P.E., Project Manager, Maine Department of Environmental Protection, Division of Technical Services, Bureau of Remediation and Waste Management, 17 State House Station, Augusta, Maine 04333-0017 (207) 287-2651 or 1-800-452-1942).

Legal Notices

PUBLIC NOTICE OF INTENT TO FILE

Please take notice that the Municipal Review Committee, Inc. (MRC) of 395 State Street, Ellsworth, Maine 04605, (207) 664-1700 and Fiberight, LLC (Fiberight), 1450 South Rolling Road, Baltimore, Maryland 21227, (410) 340-9387 are intending to file joint applications with the Maine Department of Environmental Protection (Department) on or about June 22, 2015 pursuant to the provisions of: 38 M.R.S.A., Section 1301 et seq. (Maine's Solid Waste Management Act and implementing regulations); 38 M.R.S.A Section 420-D (Stormwater Management and implementing regulations); 38 M.R.S.A Section 590 (Licensing and implementing regulations); and 38 M.R.S.A. Section 480-A et seq. (Natural Resources Protection Act and implementing regulations).

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The applications are for a proposed municipal solid waste (MSW) processing and recycling facility (Facility) to be located in Hampden, Maine. The proposed Facility will be located on a 90 acre parcel of land approximately one mile to the northeast of the Coldbrook Road and 1/4 mile to the southeast of I-95. The parcel will be owned by MRC and the Facility and infrastructure will be owned and operated by Fiberight. To access the Facility site, a 4,620-foot access roadway with utilities located opposite Bryer Lane intersecting Coldbrook Road will be owned and constructed by MRC as part of this project.

According to Department regulations, interested parties must be publicly notified, written comments invited, and if justified, an opportunity for public hearing given. A request for a public hearing, or that the Board of Environmental Protection assume jurisdiction of an application(s), must be received by the Department, in writing, no later than 20 days after the application(s) are accepted by the Department as complete for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comments on the applications will be accepted throughout the processing of the applications.

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Send all correspondence to: David Burns, PE., Project Manager, Maine Department of Environmental Protection, Division of Technical Services, Bureau of Remediation and Waste Management, 17 State House Station, Augusta, Maine 04333-0017 ((207) 287-2651 or 1-800-452-1942).

June 13, 2015

CERTIFIED MAIL LIST & RECEIPTS
(Mailed 06/22/2015)

HO Bouchard, Inc.
PO Box 249
Hampden, ME 04444-0249

Hickory Development, LLC
PO Box 249
Hampden, ME 04444

Bouchard Sports Center, LLC
PO Box 249
Hampden, ME 04444

Emera Maine
PO Box 932
Bangor, ME 04402-0932

Town of Hampden
106 Western Avenue
Hampden, ME 04444-1428

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only, No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

OFFICIAL USE

Postage	\$.485
Certified Fee	3.45
Return Receipt Fee (Postmaster Required)	1.40
Restricted Delivery Fee (Postmaster Required)	
Total Postage & Fees	\$ 5.335

Send To: HO Bouchard, Inc.
Street, Apt. No. or PO Box No. PO Box 249
City, State, ZIP+4® Hampden ME 04444

PS Form 3800, August 2008 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only, No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

OFFICIAL USE

Postage	\$.485
Certified Fee	3.45
Return Receipt Fee (Postmaster Required)	1.40
Restricted Delivery Fee (Postmaster Required)	
Total Postage & Fees	\$ 5.335

Send To: Hickory Development LLC
Street, Apt. No. or PO Box No. PO Box 249
City, State, ZIP+4® Hampden, ME 04444

PS Form 3800, August 2008 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only, No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

OFFICIAL USE

Postage	\$.485
Certified Fee	3.45
Return Receipt Fee (Postmaster Required)	1.40
Restricted Delivery Fee (Postmaster Required)	
Total Postage & Fees	\$ 5.335

Send To: Bouchard Sports Center, LLC
Street, Apt. No. or PO Box No. PO Box 249
City, State, ZIP+4® Hampden ME 04444

PS Form 3800, August 2008 See Reverse for Instructions

U.S. Postal Service
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Restricted Delivery Fee (Postmaster Required)	
Total Postage & Fees	\$ 5.335

Send To: Emera Maine
Street, Apt. No. or PO Box No. PO Box 932
City, State, ZIP+4® Bangor, ME 04402

PS Form 3800, August 2008 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
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Postage	\$.485
Certified Fee	3.45
Return Receipt Fee (Postmaster Required)	1.40
Restricted Delivery Fee (Postmaster Required)	
Total Postage & Fees	\$ 5.335

Send To: Town of Hampden
Street, Apt. No. or PO Box No. 106 Western Ave
City, State, ZIP+4® Hampden ME 04444

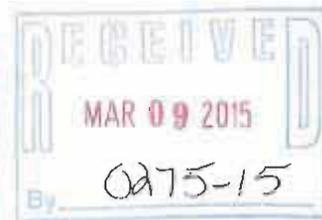
PS Form 3800, August 2008 See Reverse for Instructions



ATTACHMENT 11
MHPC/ TRIBAL LETTERS

March 5, 2015

Mr. Earle G. Shettleworth, Jr., Director
Maine Historic Preservation Commission
55 Capitol Street
65 State House Station
Augusta, ME 04333-0065

**Re: Proposed Waste Processing Facility and Access Road | Hampden, Maine**

Dear Mr. Shettleworth:

CES, Inc. is assisting with the design and permitting of a proposed waste processing facility and associated access road in Hampden, Maine. We respectfully request your review of the site and its immediate surroundings for the potential presence of structures or areas of historical significance to the Maine Historical Preservation Commission.

The site is located on Cold Brook Road in Hampden, Maine. The site is undeveloped and accessed via a gravel road. There are no buildings or structures on or adjacent the project site greater than 50 years of age. Proposed site improvements consist of the construction of a waste processing facility and improvements to the access road. For your reference, the site location is indicated on the attached portion of the U.S.G.S. 7.5' Bangor, Maine quadrangle map.

Your response can be emailed to rstamand@ces-maine.com), faxed to 207-989-4881, or mailed to CES, Inc., 465 South Main Street, P.O. Box 639 Brewer, Maine 04412. If you have any questions, please do not hesitate to contact us.

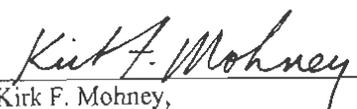
Sincerely,
CES, Inc.



Roger St.Amand, CSS, LSE
Project Manager

RSA/gdr
Enc.

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.


Kirk F. Mohney,
Deputy State Historic Preservation Officer
Maine Historic Preservation Commission

3/18/15
Date

Mr. Earle Shettleworth | 03.05.2015 | 10973.003 / 11293.001



Engineers ♦ Environmental Scientists ♦ Surveyors

June 25, 2015

Passamaquoddy Tribe of Indians
Pleasant Point Reservation
Attn: Mr. Donald Soctomah, THPO
P.O. Box 343
Perry, Maine 04667

Re: NRPA Individual Permit and Army Corps of Engineers General Permit Application for MRC-Fiberight Proposed Waste Processing Facility and Access Road | Hampden, Maine

Dear Mr. Soctomah:

CES, Inc. is assisting the Municipal Review Committee (MRC) and Fiberight, LLC with the design and permitting of a proposed solid waste processing and recycling facility and associated access road in Hampden, Maine. The site is located on Coldbrook Road in Hampden, Maine. The site is undeveloped and accessed via a gravel road. Proposed site improvements consist of the construction of a waste processing facility and improvements to the access road.

For your reference, the site location is indicated on the attached portion of the U.S.G.S. 7.5' Bangor, Maine quadrangle map. The permit application for the proposed project can be found online:

<http://www.ces-clientaccess.com/hampdenprocfacility>

User: ces-maine

PW: !2014Proc

A hardcopy is also available by request to us at (207) 989-4824 or by email to rstamand@ces-maine.com. These materials are sent for your review as required for US Army Corps of Engineers permitting requirements. Please contact us if you have any questions or concerns.

Sincerely,
CES, Inc.

A handwritten signature in black ink, appearing to read 'R. St. Amand', is written over a light blue horizontal line.

Roger St.Amand, CSS, LSE, LF, CPESC
Senior Project Scientist

RSA/jok
Enc.

Mr. Donald Soctomah | 06.25.2015 | 10973.002/11293.001



Engineers ♦ Environmental Scientists ♦ Surveyors

June 25, 2015

Penobscot Indian Nation
Indian Island Reservation
Attn: Ms. Bonnie Newsom, THPO
12 Wabanaki Way
Indian Island, Maine 04468

Re: NRPA Individual Permit and Army Corps of Engineers General Permit Application for MRC-Fiberight Proposed Waste Processing Facility and Access Road | Hampden, Maine

Dear Ms. Newsom:

CES, Inc. is assisting the Municipal Review Committee (MRC) and Fiberight, LLC with the design and permitting of a proposed solid waste processing and recycling facility and associated access road in Hampden, Maine. The site is located on Coldbrook Road in Hampden, Maine. The site is undeveloped and accessed via a gravel road. Proposed site improvements consist of the construction of a waste processing facility and improvements to the access road.

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<http://www.ces-clientaccess.com/hampdenprocfacility>

User: ces-maine
PW: !2014Proc

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Sincerely,
CES, Inc.

A handwritten signature in blue ink, appearing to read 'R. St. Amand', is written over a light blue circular stamp.

Roger St. Amand, CSS, LSE, LF, CPESC
Senior Project Scientist

RSA/jok
Enc.

Ms. Bonnie Newsom | 06.25.2015 | 10973.002/11293.001



Engineers ♦ Environmental Scientists ♦ Surveyors

June 25, 2015

Aroostook Band of Micmacs
Attn: Victoria Higgins, Chief
7 Northern Road
Presque Isle, Maine 04769

Re: NRPA Individual Permit and Army Corps of Engineers General Permit Application for MRC-Fiberight Proposed Waste Processing Facility and Access Road | Hampden, Maine

Dear Ms. Higgins:

CES, Inc. is assisting the Municipal Review Committee (MRC) and Fiberight, LLC with the design and permitting of a proposed solid waste processing and recycling facility and associated access road in Hampden, Maine. The site is located on Coldbrook Road in Hampden, Maine. The site is undeveloped and accessed via a gravel road. Proposed site improvements consist of the construction of a waste processing facility and improvements to the access road.

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<http://www.ces-clientaccess.com/hampdenprocfacility>

User: ces-maine
PW: !2014Proc

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Sincerely,
CES, Inc.

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Roger St.Amand, CSS, LSE, LF, CPESC
Senior Project Scientist

RSA/jok
Enc.

Ms. Victoria Higgins | 06.25.2015 | 10973.002/11293.001



Engineers ♦ Environmental Scientists ♦ Surveyors

June 25, 2015

Houlton Band of Maliseet Indians
Attn: Sharri Venno, Environmental Planner
88 Bell Road
Littleton, Maine 04730

Re: NRPA Individual Permit and Army Corps of Engineers General Permit Application for MRC-Fiberight Proposed Waste Processing Facility and Access Road | Hampden, Maine

Dear Ms. Venno:

CES, Inc. is assisting the Municipal Review Committee (MRC) and Fiberight, LLC with the design and permitting of a proposed solid waste processing and recycling facility and associated access road in Hampden, Maine. The site is located on Coldbrook Road in Hampden, Maine. The site is undeveloped and accessed via a gravel road. Proposed site improvements consist of the construction of a waste processing facility and improvements to the access road.

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<http://www.ces-clientaccess.com/hampdenprocfacility>

User: ces-maine
PW: !2014Proc

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Sincerely,
CES, Inc.

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Roger St.Amand, CSS, LSE, LF, CPESC
Senior Project Scientist

RSA/jok
Enc.

Ms. Sharri Venno | 06.25.2015 | 10973.002/11293.001



Six Locations in Maine | www.ces-maine.com

465 South Main Street
PO Box 639
Brewer, Maine 04412
T 207.989.4824
F 207.989.4881



Engineers ♦ Environmental Scientists ♦ Surveyors

June 25, 2015

Passamaquoddy Tribe of Indians
Indian Township Reservation
Attn: Donald Soctomah, THPO
P.O. Box 301
Princeton, Maine 04668

Re: NRPA Individual Permit and Army Corps of Engineers General Permit Application for MRC-Fiberight Proposed Waste Processing Facility and Access Road | Hampden, Maine

Dear Mr. Soctomah:

CES, Inc. is assisting the Municipal Review Committee (MRC) and Fiberight, LLC with the design and permitting of a proposed solid waste processing and recycling facility and associated access road in Hampden, Maine. The site is located on Coldbrook Road in Hampden, Maine. The site is undeveloped and accessed via a gravel road. Proposed site improvements consist of the construction of a waste processing facility and improvements to the access road.

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User: ces-maine
PW: !2014Proc

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CES, Inc.

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Roger St.Amand, CSS, LSE, LF, CPESC
Senior Project Scientist

RSA/jok
Enc.

Mr. Donald Soctomah | 06.25.2015 | 10973.002/11293.001



Engineers ♦ Environmental Scientists ♦ Surveyors

June 25, 2015

Mr. Dean Bennett, Director
Community & Economic Development
Town of Hampden
106 Western Avenue
Hampden, ME 04444

Re: NRPA Individual Permit and Army Corps of Engineers General Permit Application for MRC-Fiberight Proposed Waste Processing Facility and Access Road | Hampden, Maine

Dear Mr. Bennett:

CES, Inc. is assisting the Municipal Review Committee (MRC) and Fiberight, LLC with the design and permitting of a proposed solid waste processing and recycling facility and associated access road in Hampden, Maine. The site is located on Coldbrook Road in Hampden, Maine. The site is undeveloped and accessed via a gravel road. Proposed site improvements consist of the construction of a waste processing facility and improvements to the access road.

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<http://www.ces-clientaccess.com/hampdenprocfacility>

User: ces-maine

PW: !2014Proc

A hardcopy is also available by request to us at (207) 989-4824 or by email to rstamand@ces-maine.com. These materials are sent for your review as required for US Army Corps of Engineers permitting requirements. Please contact us if you have any questions or concerns.

Sincerely,
CES, Inc.

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Roger St.Amand, CSS, LSE, LF, CPESC
Senior Project Scientist

RSA/jok
Enc.

Mr. Earle Shettleworth, Jr. | 06.25.2015 | 10973.002/11293.001



Six Locations in Maine | www.ces-maine.com

465 South Main Street
PO Box 639
Brewer, Maine 04412
T 207.989.4824
F 207.989.4881



ATTACHMENT 12
FUNCTIONAL ASSESSMENT

ATTACHMENT 12

WETLAND FUNCTIONAL ASSESSMENT

INTRODUCTION

This Functional Assessment (FA) was prepared for the proposed MRC-Fiberight solid waste processing and recycling facility in Hampden, Maine.

SITE AND PROJECT OVERVIEW

The project area is located in the lower Penobscot watershed (HUC#01020005) and is characterized by undeveloped forestland and old agricultural fields. The development road and improvements will occupy approximately 10 acres of the site. The area is dominated by a large wetland stream complex that extends north and south from the project area. Forested wetlands with red maple and balsam fir dominate, with smaller areas of scrub shrub alder wetlands along the stream corridors. This assessment considers the wetland area as a contiguous unit on the landscape.

EXECUTIVE SUMMARY

The FA indicates the principal functions of the wetlands within the Site are Flood Flow Alteration, Production Export, and Wildlife Habitat. Minor secondary functions include Groundwater Recharge/Discharge, Recreation, Fish and Shellfish Habitat, and potential Endangered Species Habitat. A minimal loss of flood flow alteration and wildlife habitat functions area is anticipated due to the clearing and development of the facility.

METHODOLOGY

This analysis was performed using “*The Highway Methodology Workbook Supplement, Wetland Functions and Values*” by the US Army Corps of Engineers. The methods outlined in this workbook provide a descriptive approach to wetland functions and values and incorporate both wetland science and human judgment in assessing a site. Portions of the methodology directly address stream functions and values. In cases where wetland properties were the only criteria for assessing a function or value, a broader interpretation of the property was used to include stream characteristics. For example, some of the functions identify the diversity in plant community structure as a consideration; in these cases, the diversity of habitats within the stream, such as riffles and pools, were considered a similar metric.

The USACE Highway Methodology Workbook Supplement defines functions and values as follows:

Functions: Functions are self-sustaining properties of a wetland ecosystem that exist in the absence of society. Functions result from both living and non-living components of a specific wetland. These include all processes necessary for the self-maintenance of the wetland ecosystem such as primary production and nutrient cycling, among others. Therefore, functions relate to the ecological significance of wetland properties without regard to subjective human values.

Values: Values are benefits to society that derive from one or more functions and the physical characteristics associated with a wetland. The value of a particular wetland function, or combination thereof, is based on human judgment of the worth, merit, quality, or importance attributed to those functions.

The evaluation first determines the particular functions and values that occur and why, followed by a determination of what functions and values are principal. Functions and values can be principal if they are an important physical component of a wetland ecosystem, and/or are considered of special value to society, from a local, regional, and/or national perspective. These include eight functions and five values. An assessment for each item follows.

This analysis considers the effects of direct and indirect impacts of the proposed construction and development of the site and the potential impacts to the wetland functions and values that might occur.

GROUNDWATER RECHARGE/DISCHARGE

This function evaluates the effectiveness of the wetland in providing a groundwater recharge and discharge area for aquifers. This wetland provides some function for both recharge and discharge.

Groundwater Recharge: The wetland is large in relation to the watershed and has the potential to function as a groundwater recharge area in the mid and upper areas.

Groundwater Discharge: The lower portion of the wetland would function as a discharge point in association with the intermittent stream in the lower part of the basin. The adjacent land is largely undeveloped so there is currently limited potential for downstream use by private wells.

FLOOD FLOW ALTERATION

This function evaluates the wetland's ability to hold flood waters and reduce flood damage to adjacent areas. This wetland is located on a broad gently sloping area with fine grained mineral soils. The wetland is large in relation to the watershed and provides detention of runoff and overland flow within it. The complex microtopography associated with the pit/mound areas provides a landscape complexity that improves the flood flow storage capacity of the wetland. This is a primary function of the wetland.

FISH AND SHELLFISH HABITAT

This function evaluates the ability of the wetland and associated watercourses to provide habitat for fish and shellfish. The intermittent streams within the large wetland do have the ability to provide some fish habitat. The small size of the stream and limited available watershed results in portions of the stream drying out seasonally. The shallow nature and silt mud bottom is not conducive to cold water fisheries, or species that require deeper water habitats. This function is present but limited.

SEDIMENT/TOXICANT/PATHOGEN RETENTION

This function in a wetland ameliorates water quality degradation through the ability of the wetland to trap sediments and pollutants from runoff from surrounding areas before entering surface water. This wetland has the potential to provide this function based on the presence of fine grained soils, extended water retention times, and the presence of intermittent streams. The surrounding areas are largely undeveloped and so there are limited sources of sediments and toxicants. The primary source would be through occasional forest harvesting operations. These have the potential to introduce sediment through erosion if best management practices are not observed.

NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

This function evaluates the ability of the wetlands to retain and break down nutrients in the runoff water from adjacent uplands. This wetland has limited potential to provide this function based on the presence of fine grained soils and extended water retention times and the presence of intermittent streams. The surrounding areas are largely undeveloped and so there are limited sources for nutrients to be introduced

PRODUCTION EXPORT

This function evaluates the effectiveness of the wetland to produce food or useable products for society, and/or other living organisms. This wetland provides forest products for logs, fiber and fuel, as well as habitat for large and small game species including white tail deer, and turkeys, both of which are utilized from the area.

SEDIMENT/ShORELINE STABILIZATION

This function considers the effectiveness of the wetland to stabilize stream banks and shorelines against erosion. Wetlands that provide the sediment/shoreline stabilization function are present and have limited capacity due to the intermittent stream and gentle topography. These result in a lack of erosion potential within the landscape.

WILDLIFE HABITAT

This function considers the effectiveness of the wetland to provide habitat for various types and populations of wildlife associated with wetland habitats. A primary function of this wetland is wildlife habitat. The large undeveloped forested block provides habitat for several species of wildlife. It is part of a mapped Deer Wintering area by the Maine Department of Inland fisheries and Wildlife. Several other mammals and amphibians also utilize the area. A number of vernal pools were present in the wetland. These provide primary breeding habitat for several species, including wood frogs and spotted salamanders. These areas in turn provide food for other species that prey on amphibians, including green and bullfrogs, raccoons and herons.

RECREATION

This value considers the suitability of the wetland to provide non-consumptive and consumptive opportunities such as hiking, canoeing, boating, fishing, hunting, or other active or passive recreational activities. The Site is private land with limited public access and is located in close to a population center/urbanized area. An ITS trail runs through the property along the gas pipeline. Hunting and snowmobiling are the primary recreational use, though access is controlled by the landowner. The wetland currently provides some recreational value but has the potential to provide more capacity for recreation.

EDUCATIONAL/SCIENTIFIC VALUE

This value considers the suitability of the resources as a site for an "outdoor classroom" or as location for scientific study or research. The resources on Site do not have significant educational or scientific value and are located within a privately owned area with limited public access. Marginal access to the area, and low visual/aesthetic quality indicate this is not a value of the resources on the Site.

UNIQUENESS/HERITAGE

This value considers the effectiveness of the resources on Site to provide certain special values, which are valuable relative to aspects of public health, recreation, and habitat diversity. The wetland and natural communities on-site are common regionally and no unique sites were observed. Uniqueness/heritage is not a value associated with the resources on the Site.

VISUAL QUALITY/AESTHETICS

This value considers the visual and aesthetic quality or usefulness of the resources in the wetland. The diversity of plant community structure and interspersed vegetation classes is relatively low and there are limited opportunities for viewing wetland areas. This is not a value for this wetland.

ENDANGERED SPECIES HABITAT

This value considers the suitability of the stream to support threatened or endangered species. The mature forestland associated with the wetland may have the potential to provide summer roosting habitat for the federally listed Northern Long Eared Bats, *Myotis septentrionalis*, (NLEB). The presence of bats has not been confirmed, but the area contains older saw log sized trees greater than 14" in DBH, dead or dying snags, that could provide roosting habitat.

CONCLUSION

The results of the FA indicate the principal functions of the wetlands within the Site are: Flood Flow Alteration, Production Export and Wildlife Habitat. Minor secondary functions include Groundwater Recharge/Discharge, Recreation, Fish and Shellfish Habitat and potential Endangered Species Habitat.

The proposed project is expected to have limited impacts to the wetland functions and values as impact will be confined to areas along an existing access road, and within a small corner of the larger wetland. Alterations from filling and clearing will occur on less than 1% of the wetland area. The alterations are located at the edge of the wetlands and maintain the core area which provides most of functions and values associated with the site. A minimal loss of flood flow alteration and wildlife habitat area is anticipated due to the clearing and development of the facility.



ATTACHMENT 13
COMPENSATORY MITIGATION PLAN

ATTACHMENT 13

COMPENSATORY MITIGATION PLAN

A. GENERAL INFORMATION

1. The plan and documentation are submitted here as a part of a joint MDEP NRPA and Army Corps of Engineers Section 404 CWA Permit Application and constitute a complete package.
2. Site Location:
 - a. Locus Map for the project and mitigation site is attached (see Attachment 3);
 - b. Aerial Maps for the project and mitigation sites are attached (see Attachment 6);
 - c. Mitigation Site Geographic Location: N-44° -46' -90"° W-68° -50' -23"; and
 - d. Watershed HUC Code: Lower Penobscot Watershed, HUC#01020005.

The Applicants propose to jointly construct a solid waste processing and recycling facility and associated access roads and improvements in Hampden, Maine. The facility will serve as a solid waste processing site for over 187 member communities within the region. The site is located east of the Coldbrook Road. The proposed construction will result in alterations to freshwater wetlands, an intermittent stream crossing, and limited clearing of forested areas within critical terrestrial habitats for vernal pools which have been addressed separately. For this project, mitigation is required for impacts to natural resources.

B. IMPACT AREAS

The proposed access road and processing facility will impact approximately 75,000 square feet of freshwater forested wetland, a limited portion of vernal pool critical habitat, and one stream crossing. Mitigation will be required to compensate for the direct and indirect wetland alteration associated with the project. (See Section 1 of the NRPA for a summary of the impacts.)

The development has two main phases or components. The first phase is construction of a 4,460 linear foot access road to access the processing facility location. The second component is construction of the facility itself and its associated infrastructure. The proposed access road has been sited to avoid and minimize impacts by using an existing road that extends through the largest wetland areas. Only minimal impacts associated with upgrading this road to meet the design requirements will be needed.

Within the facility site, development has been located to maximize use of uplands and avoid wetlands and vernal pool areas. The clearing for the development will result in less than 25% non-forested area within the critical terrestrial habitat within the 250 foot and 750 foot buffers, respectively. The access road will make full use of the existing disturbed areas to minimize impacts to wetlands, and will involve minor additional clearing within 100 feet of a non-significant vernal pool. For the processing site, all new disturbances will be located greater than 100 feet from any vernal pool depression, and any past disturbances within the 100 foot vernal pool envelope will be restored, or allowed to revegetate. Based on these criteria, the project will meet the MDEP Permit by Rule Standards for State regulated vernal pools, and ACOE Category 1 standards as outlined under the current Maine General Permit for the Corps.

Meeting these standards, mitigation is not required for these vernal pool impacts. The clearing and wetland impacts have been minimized to the greatest extent practical by clustering development and reducing the footprint of structures as well as designing the roadway and site to allow for wildlife movement and habitat connectivity. See *Natural Resource Impact Table* located in Attachment 1.

Wetland and Stream Functions and Values: The wetlands associated with project include mostly forested wetlands that are part of a large forested wetland and stream complex that extends off site in all cardinal directions. The forested wetlands within the site were previously disturbed by a timber harvest in the mid-1990s.

The principal functions and values of the impacted wetlands identified in Section 12 of the NRPA include Flood Flow Alteration, Production Export, Wildlife Habitat, and Recreation, Secondary Functions include and Sediment/Toxicant retention and Nutrient Removal from future up-gradient developed areas. The project will result in minor losses to the primary functions and values resulting from fill and clearing with the wetland and additional developed area.

Type and Purpose of Work: Wetland and natural resource alterations will occur as part of the road and processing facility construction and will consist of fill and clearing for proposed access roads, parking lots, and building areas. The proposed activities have been designed to maximize use of previously disturbed areas and limit new disturbance. The impacts to critical terrestrial habitat occur due to clearing and grading activities associated with the site development and stormwater structures. Impacts include removal of forest cover and conversion of forest floors to other stabilized bases including gravel, pavement, and developed area.

Wetland fill and the stream crossing are associated with the access road construction and are required to access the proposed development area. The stream crossing at the unnamed tributary to Souadabscook Stream will be located at an existing culvert crossing. This culvert will be updated and improved to provide improved aquatic passage by using a pipe arch or clear span box to maintain stream flow and habitat connectivity. Minimal additional clearing is needed along the existing access road.

Relationship of Impact Area to Watershed and Regional Plans: The project site is located west of the greater Bangor urban area. For the resources impact, the wetland impacts are associated with previously disturbed areas and old agricultural fields. The relatively large size of the wetland area reduces the effects of the impact and allows for the primary functions and values to be retained.

Mitigation Area: Background Information: The project impacts will require mitigation for natural resource impacts. No other impacts to Significant Wildlife Habitats and vernal pool resources beyond what is allowed under the Permit by Rules and General Permit Category I criteria are expected.

Mitigation Alternatives: The alternatives analysis for the proposed project mitigation included a detailed review of the potential impacts and losses that might occur from the project. Potential alternatives for mitigation include:

1. On-Site, In-Kind;
2. On-Site, Out-of-Kind;
3. Off Site, In-Kind; and
4. In-lieu Fee (ILF) Program.

The project impacts and potential mitigation strategies were reviewed and compared to develop suitable compensation goals. On-site wetland creation/ restoration was not a suitable option due to the lack of previously impacted areas, and a relatively natural state. Using the In-Lieu Fee (ILF) program for compensation was considered, but was ultimately found to be unsuitable. The most suitable strategy for compensation was deemed to be On-Site, In-Kind mitigation through Preservation using the adjacent area. The remainder of the parcel is a critical habitat block that will enhance and provide an anchor for local conservation efforts.

COMPENSATORY MITIGATION WORKSHEET					
Impact Type	Area (SF)	Area (Acres)	Restoration Ratio	ACOE Preservation Ratio	Minimum Preservation Area Required (Acres)
Forested Wetland	75,177	1.73	(3:1)	(15:1)	26
SWH/Vernal Pool		N/A			N/A

Mitigation Parcel Summary: The proposed mitigation site is approximately 80 acres, see attached Exhibit B. Using the ACOE recommended ratios for preservation of 15:1 would require a preservation site of approximately 26 acres. The proposed Preservation Area of 80 acres results in an approximately 40:1 ratio.

- ◆ Approximately 80 % of the site is freshwater wetland with the remainder uplands.
- ◆ The mitigation site includes approximately 3,000 linear feet of streams and drainages.
- ◆ The mitigation parcel also contains over 40 mapped vernal pools and associated critical habitat.
- ◆ Additional wildlife habitat includes 70 acres designated as indeterminate value Deer wintering area by the Maine Department of Inland Fisheries and Wildlife (MDIFW). Other species identified on the parcel include beaver, fox, coyote, deer, and small mammals, and several migratory birds common to the region.

The soils within the parcel are composed of somewhat poorly and poorly drained hydric glacio-lacustrine sediments. Soil texture range from silt loams to silty clay loam

The existing vegetation within the site is dominated by forest communities. On the upland areas, Spruce-Fir-Broom-Moss coniferous forests are the dominant natural community. Within wetland areas, mixed forested wetland communities include Spruce-Fir-Cinnamon Fern Forest and Red Maple-Sensitive Fern Swamp. Smaller areas of Alder shrub Thickets around beaver flowages and scrub-shrub wetlands are found along the riparian areas of the larger brooks and stream systems.

The surrounding land use is dominated by large undeveloped forest tracts to the north and west owned by the previous landowner.

USFWS/NOAA SHPO Review: The proposed mitigation site is currently undeveloped and will be retained for preservation only with no mitigation construction or development impacts. Based on consultation with the Corps there is no potential for impacts to listed species or to historic resources that may be present at the site and review by these agencies is not required.

Mitigation Proposed: The proposed mitigation for the project is to preserve ~80 acre parcel through deed Covenants and Restrictions to be held by MRC. The Covenants and Restrictions will protect the wetlands and riparian corridors, vernal pool resources, and wildlife habitat identified on the site.

Site Specific and Landscape Level Functions and Values: The mitigation parcel functions and values are similar to the impacted wetlands, and in some cases, include these wetlands outside the development area. The principle functions and values include wildlife habitat and flood flow alteration and provide for in-kind compensation for the habitat impacts from the proposed development. Additional wetland functions and values that would be retained and enhanced include Recreation and Visual Quality/Aesthetics.

Target Fish/Wildlife Species: There is no specific target wildlife for the mitigation site, but it will provide habitat for several species known to occur in the area and amphibians that require vernal pool habitat for breeding and life cycle completion. These include wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), and blue-spotted salamanders (*Ambystoma laterale*). The preservation of this parcel will protect the vernal pools and the adjacent forested habitat within the parcel from future development or habitat alteration that could adversely impact the natural resources on-site. Other wildlife will also benefit by the creation of a large habitat block that can serve to connect to future conservation parcels planned in the area.

Reference Site: Since no wetland or habitat creation is proposed, there is no requirement of reference sites. The adjacent conservation parcels could be utilized for reference to ensure the site is providing suitable habitat if necessary.

Design Constraints: The constraints on the mitigation parcel are primarily based on the surrounding land use. The mitigation design is focused on preservation of the site. The adjacent land use to the south side is conservation oriented and would protect the habitat areas.

Construction Oversight: The proposed mitigation project will not involve any wetland creation or other construction outside the main development that will require professional oversight.

Construction Timing: There is no proposed construction within the mitigation parcel so this item is not relevant.

Responsible Parties: The mitigation parcel Covenants and Restrictions will be held by MRC, a non-profit organization. It will hold the Covenants and Restrictions on the parcel and be responsible for maintenance and managing the parcel in accordance with the conditions of the Covenants and Restrictions.

Potential to Attract Waterfowl and Other Bird Species that may be a Threat to Aircraft: The mitigation parcel is located greater than 10,000 feet from an airport and should not pose a threat to aircraft.

Aquatic Resource Checklist Information Appended: A checklist has not been compiled for this project.

C. GRADING PLAN

No grading is planned for the mitigation parcel.

D. EROSION CONTROLS

No erosion controls will be needed as there is no construction.

E. INVASIVE SPECIES

Risks: Within the undeveloped areas, limited ground disturbance is planned resulting in a low risk of invasive species becoming further established. Along the stream corridor in the eastern section invasive honeysuckle, *Lonicera morrowii* is rampant. MRC will monitor the site for invasive species and manage invasive plants in accordance with the recommended management guidelines for its adjacent holdings. Control of any invasive will be completed in accordance with the State and /or Federal guidelines.

F. OFF-ROAD VEHICLE USE

Recreational off road motorized vehicle use will be managed and limited on the property as outlined in the Declaration of Covenants and Restrictions attached in **Appendix A**.

G. PRESERVATION

The property will be preserved in perpetuity through Deed Covenants and Restrictions, the form of which is attached as **Appendix A**.

Adequate Buffers: The proposed Covenants and Restrictions will cover almost the entire property providing an adequate buffer.

Wetlands within Development are Protected along with Appropriate Buffers: See item above.

Preservation Language Included: The proposed Covenants and Restrictions is attached in Appendix A; *Within 30 days of the date of permit issuance and prior to initiation of permitted work in aquatic resources, the permittee shall execute and record the preservation document with the Registry of Deeds for Penobscot County and the State of Maine. A copy of the executed and recorded document must then be sent to the Corps of Engineers within 180 days of the date the Corps approves it.*

Preservation Site Plan: The proposed mitigation site plan is included as **Appendix B**.

Documentation of Acceptance: MRC as Co-Applicant for the Project will accept the deed Covenants and Restrictions.

H. MONITORING PLAN

The parcel will be monitored annually to ensure the site is being maintained according to the requirements of the mitigation plan and the Deed Covenants and Restrictions

I. ASSESSMENT PLAN

No assessment plan is required or expected other than the periodic monitoring.

J. CONTINGENCY

Since there is no construction or creation of mitigation, the preservation of the parcel in perpetuity will ensure the mitigation values are protected and a contingency is not required.

K. LONG-TERM STEWARDSHIP

The long term steward ship of the parcel will be managed by the MRC in perpetuity as defined under the Covenants and Restrictions.

L. FINANCIAL ASSURANCES

Stewardship fees for the long term monitoring and maintenance of the parcel is not proposed due to the acceptance of the parcel by a non-profit organization that will benefit their mission.

M. OTHER COMMENTS

Not Applicable.

APPENDIX A

DECLARATION OF COVENANTS AND RESTRICTIONS

THIS DECLARATION OF COVENANTS AND RESTRICTIONS is made this _____ day of _____, 20____, by Municipal Review Committee, Inc. , a Maine non-profit organization having a mailing address of 395 State Street, Ellsworth, Maine 04605 (herein referred to as the "Declarant"), pursuant to State of Maine Department of Environmental Protection Natural Resources Protection Act (Tier 1 or Tier 2 or Order), Project Number _____, dated _____, 2013 (hereinafter referred to as "Order"), relating to preservation of an approximately 80-acre parcel of land near Coldbrook Road, Hampden, Maine

RECITALS

WHEREAS, the Declarant holds title to certain real property situated in Hampden, Maine described in a deed from XXXX to MRC dated XX, xx, 2015, and recorded in Book xx Page xx at the Penobscot County Registry of Deeds, and the Declarant is the successor in title to _____ by deeds recorded in Book _____, Page _____, (and Book _____, Page _____,) all in said Registry; and

WHEREAS, Declarant desires to place certain deed covenants, under the terms and conditions herein, over a portion of said real property (hereinafter referred to as the "Covenant Area") described as follows:

SEE Exhibit A

WHEREAS, pursuant to the Natural Resources Protection Act, Title 38 M.R.S.A. Section 480-A et seq. and Chapter 310 of regulations promulgated by the Maine Department of Environmental Protection (the "Wetland Protection Rules"), Declarant has agreed, in satisfaction of paragraph _____ of the Order, to impose certain covenants and restrictions on the Covenant Area as more particularly set forth herein and has agreed that such covenants and agreements may be enforced by the Maine Department of Environmental Protection (hereinafter the "MDEP") or any successor in interest.

NOW, THEREFORE, the Declarant hereby declares that the Covenant Area is and shall forever be held, transferred, sold, conveyed, occupied and maintained subject to the covenants, conditions and restrictions set forth herein (sometimes referred to as the "Covenants and Restrictions"). The Covenants and Restrictions shall run with the Covenant Area and shall be binding on all parties having any right, title and interest in and to the Covenant Area, or any portion thereof, and their heirs, personal representatives, successors, and assigns. Any present or future owner or occupant of the Covenant Area or any portion thereof, by the acceptance of a deed of conveyance of all or part of the Covenant Area or an instrument conveying any interest therein, whether or not the deed or instrument shall so express, shall be deemed to have accepted the Covenant Area subject to the Covenants and Restrictions and shall agree to be bound by, to comply with and to be subject to each and every one of the Covenants and Restrictions hereinafter set forth.

1. Restrictions on Covenant Area. No man-made structures, temporary or permanent, no alterations to the surface or terrain, no cutting or alteration of vegetation, and no disposal of waste, are permitted on the Protected Property, except that Grantor has reserved the following rights, for itself, and its successors and assigns:

- a. **MINOR STRUCTURES:** Grantor reserves the right to locate and maintain anywhere on the Protected Property, only those minor structures necessary or appropriate to enhance the

opportunity for low-impact outdoor recreation, education, nature observation and study; provided that all such structures must be designed and located to blend with the natural surroundings and preserve the substantially undisturbed natural resources on the Protected Property. Examples of permitted minor structures for such purposes are boundary markers, unlighted informational and interpretive signs, rustic walkways, culverts, footpath bridges, hand rails, bog bridges, benches, and barriers necessary to protect fragile natural resources or prevent unauthorized use. Grantor also reserves the right to maintain existing power, communication, and other utilities along roadways, grant utility service easements in connection with permitted structures, and to bury the same underground after notice in writing to Grantee.

- b. **VEGETATION MANAGEMENT:** Grantor reserves the right to alter vegetation anywhere on the Protected Property as necessary to cut or remove deadwood, leaners and blowdowns, to remove hazards to human safety, to manage the forest to maintain and improve the aesthetics and health of the forest, to combat active fire, and with the prior written consent of Grantee, to prevent fire or combat disease or exotic intrusion; all subject to the requirement of maintenance of a substantially natural and forested landscape. Commercial forest management is prohibited, but this should not be construed to prohibit the sale or removal of trees or vegetation cut on the Protected Property in the proper exercise of the above rights.

- c. **Waste Disposal and Water Protection:** In order to assure the preservation of the high quality scenic, natural and ecological character of the Protected Property, the following specific restrictions, subject to any more restrictive local, state, and/or federal laws and regulations, are imposed on the Protected Property:
 - i. The direct discharge of treated or untreated sewage or gray water waste into waters on or about the Protected Property is strictly prohibited, and shall be disposed of otherwise in accordance with applicable laws and regulations.

 - ii. It is forbidden to dispose of or store rubbish, garbage, debris, unserviceable or abandoned vehicles or equipment, parts thereof, or any other unsightly or offensive waste material on the Protected Property, except that compost and vegetative slash and debris may be allowed to remain on the Protected Property in accordance with applicable laws and regulations, and waste generated by permitted uses on the Protected Property may be stored temporarily in appropriate receptacles for removal at reasonable intervals.

Any activity on or use of the Covenant Area inconsistent with the purpose of these Covenants and Restrictions is prohibited. Prior to undertaking any changes in the use of the Covenant Area, the Declarant, its successors and assigns, shall consult with the MDEP regarding the proposed changes to determine the effect of such changes on the conservation values of the Covenant Area. The MDEP shall have the right to approve such changes in use if such uses do not impair or impede the conservation values of the Covenant Area or the purpose of the Covenants and Restrictions.

2. Enforcement. The MDEP may enforce any of the Covenants and Restrictions set forth in Section 1 above. Any future alterations of the Covenant Area must receive the prior approval in writing from the MDEP.

3. Binding Effect. The restrictions set forth herein shall be binding on any present or future owner of the Covenant Area. If the Covenant Area is at any time owned by more than one owner, each owner shall be bound by the foregoing restrictions but only to the extent that any of the Covenant Area is included within such owner's property.

4. Amendment. Any provision contained in this Declaration may be amended or revoked only by the recording of a written instrument or instruments specifying the amendment or the revocation signed by the owner or owners of the Covenant Area and by the MDEP (or any successor thereto).

5. Effective Provisions of Declaration. Each provision of this Declaration, and any agreement, promise, covenant and undertaking to comply with each provision of this Declaration, shall be deemed a covenant running with the land as a burden and upon the title to the Covenant Area.

6. Severability. Invalidity or unenforceability of any provision of this Declaration in whole or in part shall not affect the validity of enforceability of any other provision or any valid and enforceable part of a provision of this Declaration.

7. Governing Law. This Declaration shall be governed by and interpreted in accordance with the laws of the State of Maine.

Municipal Review Committee, Inc.

BY:
ITS:

STATE OF MAINE
(County), ss. _____, 20__.

Personally appeared before me the above named (name), (enter title/authority), Municipal Review Committee, Inc. (company), (I), and acknowledged the foregoing instrument to be (his/her) free act and deed in (his/her) said capacity and the free act and deed of said (company or corporate name).

Notary Public

EXHIBIT A

Legal Description of the Protected Property



ATTACHMENT 14

**MDEP APPENDIX A
VISUAL EVALUATION FIELD SURVEY**

**APPENDIX A: MDEP VISUAL EVALUATION
FIELD SURVEY CHECKLIST**
(Natural Resources Protection Act, 38 M.R.S.A. §§ 480 A - Z)

Name of applicant: MRC, Fiberright, LLC Phone: 207-664-1700

Application Type: NRPA- Wetland Fill/Alteration

Activity Type: (brief activity description) Construct 144,000 square foot Solid Waste Processing and Recycling facility, 4,400 linear foot access road, and associated infrastructure near Coldbrook Road in Hampden, Maine

Activity Location: Town: Hampden Court: Penobscot
GIS Coordinates, if known: UTM Northing: 5023286 | UTM Easting: 536410

Date of Survey: June, 2015 Observer: CES, Inc. (RST) Phone: 989-4824

**Distance Between the Proposed Visibility
Activity and Resource (in Miles)**

- | | 0-1/4 | 1/4-1 | 1+ |
|--|--------------------------|-------------------------------------|---|
| 1. Would the activity be visible from: | | | |
| A. A National Natural Landmark or other outstanding natural feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> No |
| B. A State or National Wildlife Refuge, Sanctuary, or Preserve or a State Game Refuge? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> No |
| C. A state or federal trail? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> No |
| D. A public site or structure listed on the National Register of Historic Places? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> No |
| E. A National or State Park? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> No |
| F. 1) A municipal park or public open space? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2) A publicly owned land visited, in part, for the use, observation, enjoyment and appreciation of natural or man-made visual qualities? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> No |
| 3) A public resource, such as the Atlantic Ocean, a great pond or a navigable river? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. What is the closest estimated distance to a similar activity? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> N/A |
| 3. What is the closest distance to a public facility intended for a similar use? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> N/A |
| 4. Is the visibility of the activity seasonal? (i.e., screened by summer foliage, but visible during other seasons) | | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 5. Are any of the resources checked in question 1 used by the public during the time of year during which the activity will be visible? | | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

A listing of National Natural Landmarks and other outstanding natural features in the State of Maine can be found at: www.nature.nps.gov/nml/Registry/USA_map/states/Maine/maine.htm . In addition, unique natural areas are listed in the Maine Atlas and Gazetteer published by DeLorme.

Most Maine State and National Wildlife Refuges, Sanctuaries, and Preserves and State Game Refuges are listed in the Maine Atlas and Gazetteer published by DeLorme.

Most State and federal trails are listed in the Maine Atlas and Gazetteer published by DeLorme. In addition, the Maine Department of Conservation maintains a list of state parks with trails that can be searched by county at: www.state.me.us/doc/parks/programs/db_search/index.html

Maine sites and structures listed on the National Register of Historic Places pursuant to the National Historic Preservation Act of 1966, as amended, can be searched by town at: www.cr.nps.gov/nr/research/nris.htm

In addition, State historic sites can be found at: www.state.me.us/doc/parks/programs/db_search/index.html A partial listing of historic sites in Maine can be found in the Maine Atlas and Gazetteer published by DeLorme.

A listing of Maine State Parks can be found at: www.state.me.us/doc/parks/programs/db_search/index.html or in the Maine Atlas and Gazetteer published by DeLorme. Acadia National Park on Mount Desert Island is Maine's only National Park.

For guidance on completing this field survey checklist, please contact Licensing staff in the Division of Land Resource Regulation at the following offices:

(Headquarters)
Central Maine Regional Office
17 State House Station
Ray Building, Hospital Street
Augusta, Maine 04333
(207) 287-3901 or
toll free at **1-800-452-1942**

Eastern Maine Regional Office
106 Hogan Road
Bangor, Maine 04401
(207) 941-4570 or
toll free at **1-888-769-1137**

Northern Maine Regional Office
1235 Central Drive
Presque Isle, Maine 04769
(207) 764-0477 or
toll free at **1-888-769-1053**

Southern Maine Regional Office
312 Canco Road
Portland, Maine 04103
(207) 822-6300 or
toll free at **1-888-769-1036**

ATTACHMENT 15
RIGHT, TITLE, INTEREST

ATTACHMENT 15

TITLE, RIGHT, INTEREST

Included in this Attachment, the MRC has acquired an *Option to Purchase* the property necessary for the development of the proposed Facility from HO Bouchard, Inc. and Hickory Development, LLC. The MRC and Fiberight estimate that approximately 95 +/- acres will be acquired which includes a 90 acre parcel where the Facility will be developed and a five acre parcel for a new 4,460 foot road to access the processing plant. Fiberight will retain ownership of the Facility and will lease the property owned by the MRC as outlined in the *Development Agreement between MRC and Fiberight* included in this Attachment.

OPTION TO PURCHASE

H. O. Bouchard, Inc., a Maine corporation with a place of business in Hampden, Maine and **Hickory Development, LLC**, a Maine limited liability company with a place of business in said Hampden (hereinafter collectively referred to as *Seller*), grants to **Municipal Review Committee, Inc.**, a Maine nonprofit corporation with a place of business in Ellsworth, Maine (hereinafter referred to as *Buyer*), an option to purchase, upon the terms and conditions set forth below, the real estate, together with any improvements thereon and all easement and access rights thereto, including those described in conveyances to Seller and those exercised by Seller, located easterly of Coldbrook Road in **Hampden, Penobscot County, Maine**, generally depicted on Exhibit A attached hereto, together with an easement for a right of way for all purposes, including utility services, along the private road depicted on Exhibit A (hereinafter collectively referred to as *the Property*).

TERMS AND CONDITIONS:

1. Option Term. This Option shall be for a term commencing on the date of this agreement through March 31, 2017. This Option shall expire if not exercised on or before March 31, 2017.

2. Exercise of Option. Buyer shall exercise this Option, if at all, at any time during the term of this Option, and any renewals thereof, by giving written notice delivered by hand or by certified mail, return receipt requested, at the address provided below. Upon exercise of this option, the terms and provisions herein shall govern the purchase and sale of the Property.

3. Option Consideration. Buyer shall pay to Seller an initial option consideration of twelve thousand dollars (\$12,000.00), payable within five (5) business days after Seller's execution of this agreement. Upon exercise of this Option, the initial option consideration and any additional option consideration shall be deemed an earnest money deposit and applied toward the purchase price. Except as provided herein, if the Option is not exercised, the Option Consideration shall be retained by Seller.

4. Restrictions during Option Term. During the term of this Option, and any renewals thereof, and prior to closing, Seller agrees not to sell the Property, offer to sell, mortgage, encumber, or otherwise transfer or dispose of or alter the Property without prior written consent of Buyer.

5. Inspection. Within thirty (30) days of the date of this agreement, Seller shall provide Buyer with copies of all existing engineering and environmental site assessments and reports. Seller grants to Buyer, Buyer's duly authorized agents and employees, the right, during the term of this Option and prior to Closing to enter upon the Property to conduct whatever tests and inspections of the Property that Buyer deems necessary. In the event the results of such tests and inspections are unsatisfactory to Buyer, Buyer may terminate this agreement upon written notice to Seller, which

written notice must be delivered to Seller not later than twenty (20) days prior to closing. Buyer shall defend, indemnify and hold Seller harmless from and against any and all claims, demands, suits and actions of any person or entity arising out of Buyer's tests and inspections.

6. Property. Prior to exercise of the Option by Buyer, if any, Buyer shall cause the Property to be surveyed by a licensed Maine surveyor. The survey shall depict:

a. a parcel of land containing not less than ninety (90) acres and not more than one hundred twenty (120) acres in substantially the same location and configuration as depicted on Exhibit A, and bounded northeasterly by land and/or easements now or formerly of Bangor Hydro Electric Company, bounded southerly and southwesterly by land now or formerly of Seller, and bounded northerly by the centerline of said private road referred to above; and

b. a private road leading from Coldbrook Road to the northeasterly corner of the Property. The width of said private road shall be not less than the width required by any laws, rules and regulations applicable to Buyer's intended use of the Property.

The final configuration and location of the parcel of land and the private road will be determined by a joint evaluation of the parties, including a determination as to the most favorable location for said private road and utility connections, and is subject to Seller's approval which shall not unreasonably be withheld, conditioned or delayed.

UPON EXERCISE OF THIS OPTION, THIS AGREEMENT SHALL BE CONSIDERED A PURCHASE AND SALE AGREEMENT AND THE FOLLOWING PARAGRAPHS 1 - 6 SHALL APPLY TO CONVEYANCE OF THE PROPERTY.

1. Purchase Price. The total purchase price for the Property shall be based on the valuation of \$3,300.00 per acre. For purposes of determining the Purchase Price, the ~~number~~ of acres comprising the Property as finally configured will be rounded up or down to the nearest whole acre. After application of the option consideration/deposit, the remaining purchase price shall be paid to Seller with cash or by bank check or certified check at closing.

2. Deed. At the closing of the sale, Seller shall deliver to Buyer or Buyer's agent a duly executed and acknowledged quitclaim deed with covenant conveying to Buyer good and marketable title to the Property, free of all encumbrances other than easements, restrictions or agreements of record which do not have a material adverse effect on the value of Property or the Buyer's intended use of the Property, and existing laws, ordinances, or regulation governing the use of the Property.

3. Title Documents. Examination of the title shall be the responsibility of Buyer at Buyer's sole expense. Within thirty (30) days of the date of this agreement, Seller shall provide Buyer with copies of all existing title abstracts, title insurance policies or other title or survey information which Seller may have in Seller's possession. If Buyer finds title to the Property not to be good and marketable or subject to any easements, restrictions or agreements of record which have a material adverse effect on the value of Property or the Buyer's intended use of the Property ("defect or defects"), then the closing shall be delayed for not more than thirty (30) days in order for Seller to cure

the defect or defects. If such defect or defects cannot be removed by Seller (Seller having used reasonable efforts), Buyer may, at Buyer's sole option, either (a) terminate this agreement, in which case all parties shall be released from their obligations hereunder and the option consideration/deposit shall be returned to Buyer, or (b) accept such title as Seller can convey and consummate purchase of the Property in accordance with this agreement.

4. Possession. Exclusive possession of the Property shall be delivered to Buyer at the time of the delivery of said deed.

5. Closing. The closing of the sale contemplated hereby shall take place at the offices of Eaton Peabody, 80 Exchange Street, Bangor, Maine,, within sixty (60) days of Seller's receipt of notice of Buyer's exercise of the option as stated herein or such earlier date as specified by Buyer in its notice of exercise, unless delayed in accordance with the terms hereof.

6. Conditions of Closing. It is a condition of Closing that the private road accessing the Property shall be accepted as a public way by the Town of Hampden and that utilities, including but not limited to water and sewer, to service the Property are installed and connected to their respective service systems providers. Buyer shall be responsible for construction of the private road to standards required by the Town of Hampden for acceptance as a public way and Buyer shall have the right, at any time after the date of this agreement, to enter onto lands of Seller for purposes incidental to the same. Seller shall cooperate with Buyer in connection with any applications required for such construction and acceptance.

7. Closing Adjustments. Real property taxes and any other assessments, utility charges or other charges levied against the Property shall be prorated as of the date of the closing. Real property taxes shall be prorated based on the fiscal year of the Town of Hampden. State of Maine transfer tax shall be shared equally by Buyer and Seller. Seller shall pay all charges for recording any documents necessary to remove encumbrances from record title to the Property.

8. Confidentiality. Except to the extent required by law or as otherwise agreed by both parties in writing, neither party will disclose or use, and will direct its representatives not to disclose or use, to the detriment of the other party, the existence of this agreement, the letter of intent dated November 7, 2014, or any information concerning its subject matter unless such disclosure or use is required by law or unless such information already is publicly available through no fault of the disclosing party. If disclosure is required by law, the disclosing party shall provide to the other party notice of its intended disclosure in a manner calculated, to the greatest extent practicable under the circumstances, to afford the other party opportunity to challenge such disclosure. Upon written request of a party, the other party will promptly return or destroy any such information furnished to it.

9. Publicity. Neither party will publicly disclose the existence of this agreement or said letter of intent or the terms described herein or therein without the prior written consent of the other party.

10. Costs. Unless otherwise specifically agreed in writing, each party shall be

responsible for its own costs and expenses incurred with respect to any of the matters set forth in this agreement, including, but not limited to, legal fees, accounting fees and consulting fees. Each party agrees to indemnify the other against any claim for finder's fees or broker's commissions arising out of any commitment made by the indemnifying party.

11. Default. In the event Buyer fails to fulfill any of Buyer's obligations hereunder, this agreement shall, at the option of Seller, be terminated, and Buyer's said option considerations/deposit shall be retained by Seller as Seller's sole remedy. In the event Seller fails to fulfill any of Seller's obligations hereunder, then the option considerations/deposit shall be returned to Buyer and Buyer, at Buyer's option, may pursue its remedies at law or in equity, including but not limited to specific performance.

12. Notices. Any notice by either party to the other, as provided herein, shall be in writing and shall be effective if delivered by certified mail, return receipt requested, or by reputable overnight courier to the following address:

- a. If to Seller, 349 Coldbrook Road
Hampden, ME 04444
Attn: Brian Bouchard

- b. If to Buyer, c/o Karen A. Huber, Esq.
Eaton Peabody P.A.
P.O. Box 1210
80 Exchange Street
Bangor, ME 04402-1210
khuber@eatonpeabody.com

13. General Provisions.

a. This agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns. Buyer may assign this agreement, provided that Buyer shall give written notice to Seller after such assignment of the name and address for any assignee.

b. This agreement constitutes the entire agreement between the parties, supersedes all prior negotiations and understandings between them, and shall not be altered or amended except by a written amendment signed by Seller and Buyer.

c. This agreement may be simultaneously executed in any number of counterparts, each of which when duly executed and delivered shall be an original; but such counterparts shall constitute but one and the same agreement. For purposes of this agreement, a facsimile signature shall be deemed an original.

d. Seller agrees that it shall keep the terms of this agreement and the transaction contemplated herein confidential, except as may be set forth in the Memorandum of Option contemplated below. Seller acknowledges and agrees that breach of this agreement could result in irreparable harm to Buyer and that money damages would not be a sufficient remedy for any breach of this agreement by Seller. In the event of any breach, Buyer shall be entitled to specific performance and injunctive relief as remedies for any such breach. Such remedies will not be deemed to be the exclusive remedies for a breach of this agreement by Seller but will be in addition to all other remedies available at law or in equity to Buyer. Seller's obligations under this provision shall survive closing.

e. The parties agree that this Option shall not be recorded. A Memorandum of this Option to Purchase may be prepared for recording for the purpose of giving notice to third persons of the existence of this agreement.

f. If any provision of this agreement is found to be invalid or unenforceable, such finding shall not affect the validity or enforceability of any other provision hereof.

g. This agreement shall be construed and enforced in accordance with and governed by the laws of the State of Maine.

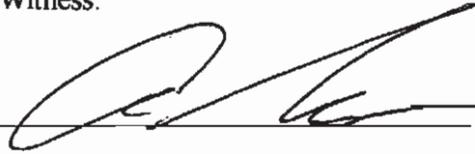
h. For purposes of this agreement, the date of this agreement shall ~~be the~~ date Seller executes this agreement.

**[THIS SPACE LEFT INTENTIONALLY BLANK.
SIGNATURES CONTINUED ON THE NEXT PAGE.]**

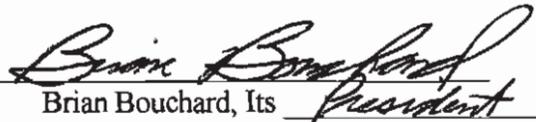
In witness whereof, the parties hereto have hereunto set their hands and seals as of the date set forth below.

Witness:

H.O. Bouchard, Inc.



By:



Brian Bouchard, Its

President

Duly Authorized

Date: Dec 1, 2014

Witness:

Hickory Development, LLC



By:



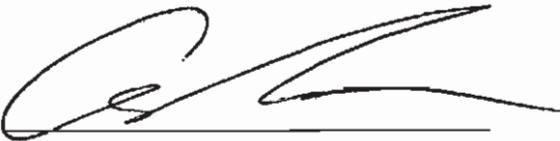
Brian Bouchard, Its

President

Duly Authorized

Date: Dec 1, 2014

Municipal Review Committee, Inc.



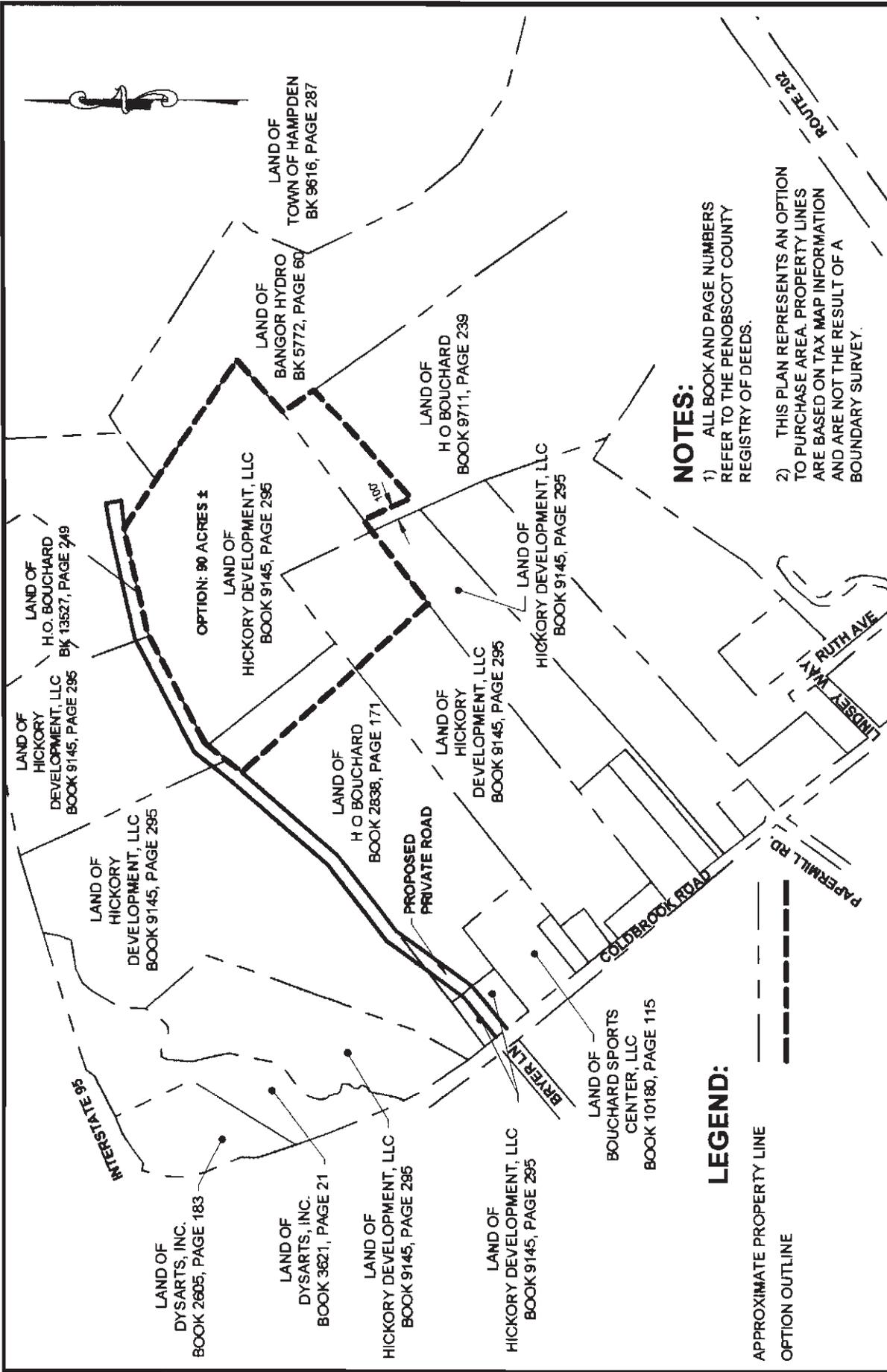
By:



Gregory Louder, Its Executive Director,

Duly Authorized

Date: Dec 1, 2014



NOTES:

- 1) ALL BOOK AND PAGE NUMBERS REFER TO THE PENOBSCOT COUNTY REGISTRY OF DEEDS.
- 2) THIS PLAN REPRESENTS AN OPTION TO PURCHASE AREA. PROPERTY LINES ARE BASED ON TAX MAP INFORMATION AND ARE NOT THE RESULT OF A BOUNDARY SURVEY.

LEGEND:

- APPROXIMATE PROPERTY LINE
- OPTION OUTLINE

 CES Engineers • Environmental Scientists • Surveyors		BY: JAT DATE: 12-01-2014 REV: REV DATE:
EXHIBIT A HAMPDEN, PENOBSCOT COUNTY, ME MUNICIPAL REVIEW COMMITTEE TOWN/OWNER PREFERRED LOCATION		DWG: JN: 10973-2 SCALE: 1"=2000'
PROJECT TITLE:		
SHEET TITLE:		

**MEMORANDUM OF
OPTION TO PURCHASE REAL ESTATE**

Optionor: H. O. Bouchard, Inc.
Hickory Development, LLC

Optionee: Municipal Review Committee, Inc.

Property: A certain lot or parcel of land containing not less than 90 acres and not more than 120 acres located on the easterly side of the Coldbrook Road in Hampden, Maine, in substantially the same location and configuration as generally depicted on Exhibit A, and bounded northeasterly by land and/or easements now or formerly of Bangor Hydro Electric Company, bounded southerly and southwesterly by land now or formerly of Optionor, and bounded northerly by the centerline of a private road leading from Coldbrook Road to the northeasterly corner of the Property in substantially the same location as depicted on Exhibit A.

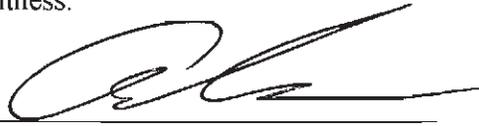
Date of Option: Dec 1, 2014

Term of Option: Commences on Dec. 1, 2014 until ~~December 31, 2016.~~ ^{MARCH 31, 2017} *BAB*

Renewal Term: None.

IN WITNESS WHEREOF, H. O. Bouchard, Inc. and Hickory Development, LLC have caused the foregoing instrument to be signed by the undersigned, duly authorized, as of this 1st day of December, 2014.

Witness:



H.O. Bouchard, Inc.

By: Brian Bouchard
Brian Bouchard, Its President
Duly Authorized

Witness:



Hickory Development, LLC

By: Brian Bouchard
Brian Bouchard, Its President
Duly Authorized
Date: Dec 1, 2014

STATE OF MAINE

Penobscot County

Dec 1, 2014

Personally appeared before me, the above named Brian Bouchard, as President of H. O. Bouchard, Inc., and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said corporation.

Elizabeth A. Lavin
Notary Public/Attorney at Law

Elizabeth A. Lavin
Print or type name as signed

ELIZABETH A. LAVIN
Notary Public • State of Maine
My Commission Expires April 8, 2020