

March 10, 2017

Via Federal Express/Electronic Mail

Todd Anthony Bianco, EFSB Coordinator
RI Energy Facilities Siting Board
89 Jefferson Blvd.
Warwick, RI 02888

Re: Invenergy Docket No. SB-2015-06

Dear Mr. Bianco:

Pursuant to R.I. Gen. Laws § 42-98-20, entitled "informational filings," on behalf of Invenergy Thermal Development LLC ("Invenergy"), enclosed please find an original and 10 copies of Invenergy's Onsite Wastewater Treatment System Permit Application that was filed with the Rhode Island Department of Environment on March 7, 2017.

Very truly yours,

Handwritten signature in blue ink that reads "Alan M. Shoer / nmv".

ALAN M. SHOER
ashoer@apslaw.com

Enclosures

cc: Service List



8 Blackstone Valley Place
Lincoln, RI 02865

Tel: 401-334-4100
Fax: 401-334-4108

LETTER OF TRANSMITTAL

HAND DELIVERY

TO: RI Dept. Of Environmental Management
235 Promenade Street
Providence, RI 02908-5767

DATE: 3/7/2017	JOB NO: 15166.04
ATTENTION: Office of Water Resources	
RE: RIDEM OWTS New Construction Clear River Energy Center Wallum Lake Road, Burrillville, RI	

WE ARE SENDING YOU Attached Under separate cover via _____ the following items

- Shop drawings Prints Plans Samples Specifications
 Copy of letter Change order See Below

COPIES	DATE	NO.	DESCRIPTION
1	3/7/2017		OWTS Application
1	3/7/2017		OWTS Application Submission Checklist
1	2/22/2017	4	Soil Evaluation Forms
4	Mar 2017	6	OWTS Drawings
1	3/7/2017	9065	Check for \$400.00 OWTS Permit Fee

THESE ARE TRANSMITTED as checked below:

- For approval Approved as submitted Resubmit _____ copies for approval
 For your use Approved as noted Submit _____ copies for distribution
 As requested Returned for corrections Return _____ corrected prints
 For review and comment _____
 FOR BIDS DUE _____ 20 _____ PRINTS RETURNED AFTER LOAN TO US

REMARKS:

Enclosed please find an application package for a New Construction OWTS at the proposed Clear River Energy Center. The application fee of \$400 has been included, which accounts for a Commercial OWTS (\$200:00) and the additional fee associated with an Advanced Treatment system.

COPY TO: J. Niland; B. Blanchard (Pare); L. Goyer (Pare); FILE SIGNED: _____

If enclosures are not as noted, kindly notify us at once.

Allison Viens
Allison Viens

Environmental Division Admin. Assistant

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
ONSITE WASTEWATER TREATMENT SYSTEM CONSTRUCTION PERMIT**

FOR RIDEM USE ONLY

APPLICATION NO. _____ DATE RECEIVED _____ / _____ / _____ AMOUNT RECEIVED \$ _____ CHECK # _____ NOTE _____

TYPE OF APPLICATION (CHECK ALL THAT APPLY)

- NEW BUILDING CONSTRUCTION
- ALTERATION
- REPAIR
- TRANSFER
- A/E TECHNOLOGY
- VARIANCE
- REDESIGN

SITE INFORMATION
 NO. STREET Route 100, Wallum Lake Road CITY/TOWN BURLINGTONE POLE # 95
 PLAT NUMBER 137 LOT NUMBER 000 SUBDIVISION LOT NUMBER N/A
 LOT SIZE 67 SQUARE FEET ACRES
 SUBDIVISION NAME N/A
 SUBDIVISION SITE SUITABILITY CERTIFICATION # N/A

OWNER INFORMATION
 LAST NAME Clean River Energy LLC FIRST NAME _____ M.I. _____
One South Wacker Dr. Suite 1800 CITY/TOWN Chicago, IL ZIP CODE 60606

RIDEM APPLICATION HISTORY
 PREVIOUS SITE TESTING YES NO APPLICATION # 17-03-0050
 DEPTH TO APPROVED WATER TABLE 18 in HOW DETERMINED Test Holes
 TEST HOLE # 002 DATE EXCAVATED 8/17/17 WETLANDS WITHIN 200' OF OWTS YES NO
 WETLAND DETERMINATION YES NO RIDEM FILE # 15-0289 DATE 01/28/2016
 LARGE SYSTEM YES NO

DESIGN INFORMATION
 BUILDING USE: Residential Commercial Other Proposed Power Plant
 WATER SUPPLY: public water private well private well
 # OF DESIGN UNITS 05 pipe
 UNIT DESIGN FLOW 0.5 gallons per person/unit TOTAL DAILY FLOW 60.5 gallons
 TANK SIZE 1,500 gallons DESIGN LOADING RATE 1.5 square feet
 MINIMUM REQUIRED LEACHFIELD AREA 417 square feet
 LEACHFIELD TYPE Bottomless Sand Filter
 TOTAL AREA OF LEACHFIELD PROVIDED 420 square feet

CERTIFICATION

I, BRANDON BLANCHARD PE, (print), the undersigned licensed OWTS designer, certify that I prepared this application and accompanying forms, submittals, plans and sketches in accordance with the RULES of the RIDEM pertaining to OWTS and that all the information provided on this application and accompanying forms, submittals, plans and sketches is true and accurate.

Signature of Designer Brandon Blanchard
 Designer License Number D-3101 Phone # 401.334.4100
 Business/Company Name PAPE CORPORATION
 I certify that a) I am the owner of the property indicated under the site information on this application, b) I will hire a licensed OWTS installer to install the system proposed herein, c) the system will be installed in strict accordance with this application, d) I will hire and retain the licensed OWTS designer of record to witness and inspect the installation of the system, e) I assume all responsibility for the truth and accuracy of this application and all liability and responsibility for any improper installations of the system on this site and agree to hold the RIDEM harmless for any and all claims relating whatsoever to the system. In the case of a transfer application, I acknowledge that the permit application and plans previously approved and accompanying this application are the operative documents subject to certification.
 Owner(s) Signature [Signature] Phone Number 312.224.1400

PERMIT APPROVAL SECTION: DO NOT WRITE BELOW THIS LINE

Based upon the representations of the owner and the owner's agents, including the representations of the owner's OWTS designer, and the truth and accuracy of all information submitted, this application for an OWTS is hereby approved. The RIDEM assumes no responsibility or liability for the future safe operation or maintenance of the approved system, of the fitness or suitability of this system to this site, nor does it assume any responsibility for the accuracy and truth of the owner's or the owner's agent's representations. This approval is subject to future suspension or revocation in the event that subsequent examination reveals any data indicated on any application, form, submittal, plan or sketch to be incorrect, or not in compliance with the RULES or any conditions at the site are such that the approved design is not in accordance with the RULES, or in the event that the system discharges inadequately treated wastewater to waters of the State or fails to operate satisfactorily in any other manner.

IMPORTANT: Additional terms of approval as circled.

- A. Bottom of leaching area excavation must be inspected by the RIDEM prior to placement of any gravel or stone.
- B. System installation must be inspected by RIDEM prior to connecting any component of the system with backfill.
- C. Applicant shall comply with all requirements, conditions and stipulations of variance(s) approved on _____.
- D. A/E Technology: additional specific residential, operation, or maintenance requirements may apply (see RIDEM A/E Technology certification for this system type).
- E. Copy of this form and Operation/Maintenance contract must be filed in land evidence records prior to commencement.
- F. Proposed construction falls within "Coastal Zone", Coastal Ridge Island Capital Resources Management Council.
- G. Proper erosion and sedimentation controls must be installed prior to start of construction.
- H. Transfer: See original permit for all applicable conditions.
- I. Other _____

Signature of RIDEM Official _____

Date of Approval _____

Date of Expiration _____

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Office of Water Resources
Onsite Wastewater Treatment Systems (OWTS) Program

Application Submission Checklist

For Office Use

Owner Name: CLEAR RIVER ENERGY LLC

Application No. _____

Designer Name: BLANCHARD D-3101

Date _____

The following Submission Checklist is to be completed by the designer and submitted with all construction permit applications.

I. OWTS Submission Requirements (Check Appropriate Submission)

NEW CONSTRUCTION

- Application Form
- 4 Sets of Plans
- Proper Fee

REDESIGN

- Application Form
- 4 Sets of Plans
- Proper Fee

ALTERATION

- Application Form
- 4 Sets of Plans
- Proper Fee
- Copy of Tax Card

REPAIR

- Application Form
- 4 Sets of Plans
- Proper Fee
- Copy of Tax Card

TRANSFER

- Application Form
- Copy of Approved Plan
- Proper Fee
- Copy of Deed

VARIANCE

- Application Form
- Variance Application Form & associated submittals
- 4 Sets of Plans
- Proper Fee
- List of Abutters w/in 200' of System
- Radius Map

II. Well Drilling Variance Submission Requirements

- Variance Application Form
- Affidavit
- 1 Set of Plans



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
 Department of Environmental Management
 Office of Water Resources
 Onsite Wastewater Treatment System Program



Site Evaluation Form

Part A - Soil Profile Description

Application Number 1703-0050

Property Owner: Invenergy Thermal Development, LLC

Property Location: Route 100, Wallum Lake Road, Burrillville, RI AP 137 Parcel 002

Date of Test Hole: 02-07-2017

Soil Evaluator: DiOrio, Alfred W.

License Number: D4004

Weather: Rain

Shaded: Yes No Time: 08:30

TH 1 Horizon	Depth	Horizon Boundaries		Soil Colors		Re-Dox		Texture	Structure	Consistence	Soil Category
		Dist	Topo	Matrix	Re-Dox Features	Ab.	S. Contr.				
A	0-3"	a	s	2.5Y2.5/1	None	None	None	ls	gr	fr	3
E	3-7"	g	s	10YR4/1	None	None	None	ls	gr	fr	3
Bw1	7-12"	g	s	7.5YR2.5/2	None	None	None	sl	1 sbk	fr	3
Bw2	12-17"	a	s	10YR3/4	None	None	None	sl	1 sbk	fr	3
C	17"-96"	--	--	2.5Y7/2	None	None	None	f ls	0m	fr	6
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT FEB 13 2017											
TH 2 Horizon	Depth	Horizon Boundaries		Soil Colors		Re-Dox		Texture	Structure	Consistence	Soil Category
		Dist	Topo	Matrix	Re-Dox Features	Ab.	S. Contr.				
A	0-4"	a	s	7.5YR2.5/2	None	None	None	ls	gr	fr	3
Bw1	4-14"	g	s	10YR4/4	5YR4/4	C 2 P		f sl	1 sbk	fr	3
Bw2	14-23"	g	w	7.5YR4/4	5YR4/4	C 2 P		sl	1 sbk	fr	3
C	23"-96"	--	--	2.5Y7/2	Submerged	Submerged		f ls	0m	fr	6

TH 1 Soil Class B Total Depth 96" Impervious/Limiting Layer Depth None (og) GW Seepage Depth 18" SHWT 18" (og)

TH 2 Soil Class B Total Depth 96" Impervious/Limiting Layer Depth None (og) GW Seepage Depth 18" SHWT 18" (og)

Comments: Recommend the removal of all organic horizons [A and B] for OWTS design.



Part B

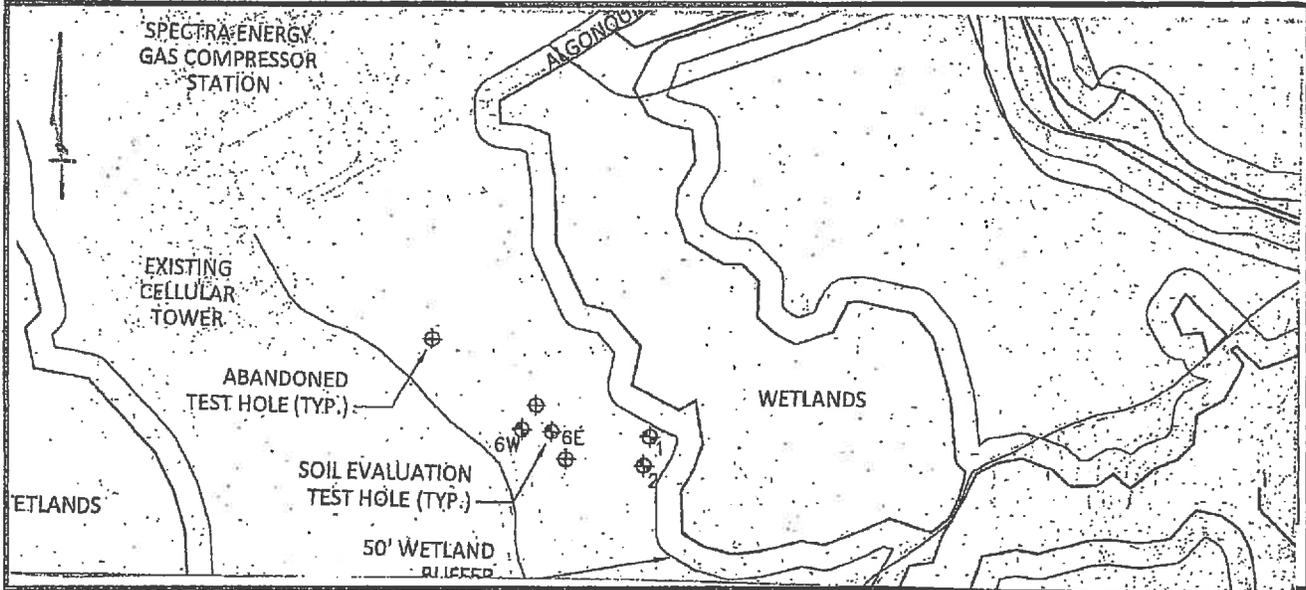
Site Evaluation – to be completed by Soil Evaluator or Class II or III Designer

Please use the area below to locate:

1. Test holes and bedrock test holes,
2. Approximate direction of due north,
3. Offsets from all test holes to fixed points such as street, utility pole, or other permanent, marked object.*
*OFFSETS MUST BE SHOWN

Key:

- Approximate location of test holes
- Approximate location of bedrock test holes
- Estimated gradient and direction of slope
- Approximate direction of due north



1. Relief and Slope: Elevation = 560+/- NAVD88 (Google) Slope 0-8%

2. Presence of any watercourse, wetlands or surface water bodies, within 200 feet of test holes? If yes, locate on above sketch. NO YES
3. Restrictive Layer or Bedrock within 4' below original ground within 25 feet of test hole? Provide all test hole locations & depths above. NO YES
4. Presence of existing or proposed private drinking water wells within 200 feet of test holes? If yes, locate on above sketch. NO YES
5. Public drinking water wells within 500 feet of test holes? If yes, locate on above sketch. NO YES
6. Is site within the watershed of a public drinking water reservoir or other critical area defined in Rule 38? NO YES
7. Has soil been excavated from or fill deposited on site? If yes, locate on above sketch. NO YES
8. Site's potential for flooding or ponding: NONE SLIGHT MODERATE SEVERE
9. Landscape position: Back slope
10. Vegetation: Specimen vegetation with moderate understory
11. Indicate approximate location of property lines and roadways.
12. Additional comments, site constraints or additional information regarding site: For use with OWTS design only.

Certification

The undersigned hereby certifies that all information on this application and accompanying forms, submittals and sketches are true and accurate and that I have been authorized by the owner(s) to conduct these necessary field investigations and submit this request.

Part A prepared by: Alfred W. DiOrto D4004 Part B prepared by: Alfred W. DiOrto D4004
Signature License # Signature License #

DO NOT WRITE IN THIS SPACE

Witnessed Soil Evaluation Decision: Concur Inconclusive Disclaim

Unwitnessed Soil Evaluations Decision: Accept Inconclusive Disclaim

Wet Season Determination required Additional Field Review Required

Explanation: less than 24"

Signature Authorized Agent: [Signature] Date: 2/16/17



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management
Office of Water Resources
Onsite Wastewater Treatment System Program



Site Evaluation Form

Part A - Soil Profile Description

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Shaded: Yes No Time: 08:30

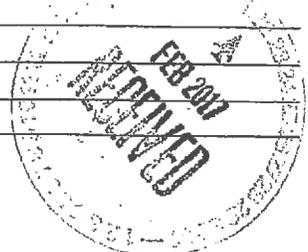
TH <u>6E</u> Horizon	Depth	Horizon Boundaries		Soil Colors		Re-Dox		Texture	Structure	Consistence	Soil Category
		Dist	Topo	Matrix	Re-Dox Features	Ab.	S. Contr.				
Ap	0-5"	a	s	10YR3/4	None	None	ls	1 sbk	fr	3	
Bw1	5-24"	a	s	10YR4/6	None	None	ls	1 sbk	fr	3	
Bw2	24-31"	g	w	2.5Y5/6	7.5YR4/6	C 2 P	sl	1 sbk	fr	3	
C	31-96"	--	--	2.5Y6/2	7.5YR4/6	C 2 P	g sl	0m	fr	6m	
TH _____ Horizon	Depth	Horizon Boundaries		Soil Colors		Re-Dox		Texture	Structure	Consistence	Soil Category
		Dist	Topo	Matrix	Re-Dox Features	Ab.	S. Contr.				

Environmental Management
FEB 13 2017
Office of Water Resources

TH 6E Soil Class B Total Depth 96" Impervious/Limiting Layer Depth None (og) GW Seepage Depth 23" SHWT 23" (og)

TH _____ Soil Class _____ Total Depth _____ Impervious/Limiting Layer Depth _____ (og) GW Seepage Depth _____ SHWT _____ (og)

Comments: Recommend the removal of all organic horizons [A and B] for OWTS design.



Part B

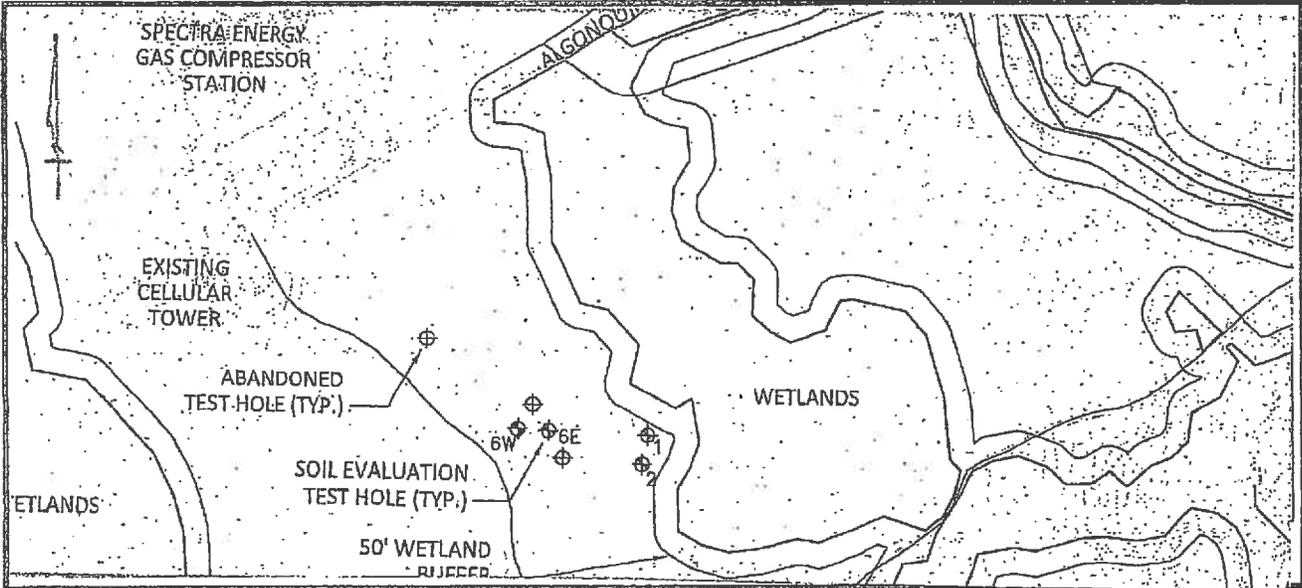
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Part A prepared by: Alfred W. DiOno License # D4004 Part B prepared by: Alfred W. DiOno License # D4004

DO NOT WRITE IN THIS SPACE

Witnessed Soil Evaluation Decision: Concur Inconclusive Disclaim

Unwitnessed Soil Evaluations Decision: Accept Inconclusive Disclaim

Wet Season Determination required Additional Field Review Required

Explanation: less than 24"

Signature Authorized Agent: [Signature] Date: 2/16/17

SB-2015-06 Invenergy CREC Service List as of 03/08/2017

Name/Address	E-mail	Phone/FAX
<p>File an original and 10 copies with EFSB: Todd Bianco, Coordinator Energy Facility Siting Board 89 Jefferson Boulevard Warwick, RI 02888</p> <p>Margaret Curran, Chairperson Janet Coit, Board Member Assoc. Dir., Div. of Planning Parag Agrawal Patti Lucarelli Esq., Board Counsel Susan Forcier Esq., Counsel Rayna Maguire, Asst. to the Director DEM Catherine Pitassi, Asst. to. Assoc. Dir. Plann. Margaret Hogan, Sr. Legal Counsel</p>	Todd.Bianco@puc.ri.gov ;	401-780-2106
	Kathleen.Mignanelli@puc.ri.gov ;	
	Patricia.lucarelli@puc.ri.gov ;	
	Margaret.Curran@puc.ri.gov ;	
	janet.coit@dem.ri.gov ;	
	Catherine.Pitassi@doa.ri.gov ;	
	Margaret.hogan@puc.ri.gov ;	
	susan.forcier@dem.ri.gov ;	
	rayna.maguire@dem.ri.gov ;	
	Parag.Agrawal@doa.ri.gov ;	
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	enoonan@apslaw.com ;	
	nverdi@apslaw.com ;	
	jniland@inveneryllc.com ;	
<p>John Niland, Dir. Of Business Development Tyrone Thomas, Esq., Asst. General Counsel Invenergy Thermal Development LLC One South Wacker Drive, Suite 1900 Chicago, IL 60600</p>	jniland@inveneryllc.com ;	312-224-1400
	Tthomas@inveneryllc.com ;	
<p>Town of Burrillville Michael McElroy, Esq., Special Counsel Leah Donaldson, Esq., Special Counsel Schacht & McElroy PO Box 6721 Providence, RI 02940-6721</p>	Michael@mcelroylawoffice.com ;	401-351-4100
	leah@mcelroylawoffice.com ;	
	dimitrilaw@icloud.com ;	
<p>William Dimitri, Esq., Acting Town Solicitor</p>	dimitrilaw@icloud.com ;	401-474-4370
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	Mgreene@clf.org ;	
<p>Ms. Bess B. Gorman, Esq. Assistant General Counsel and Director Legal Department, National Grid</p>	Bess.Gorman@nationalgrid.com ;	781-907-1834

40 Sylvan Road Waltham, MA 02451 Mark Rielly, Esq. Senior Counsel	Mark.rielly@nationalgrid.com ;	
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	Nicholas.Ucci@energy.ri.gov ;	401-574-9100
	Christopher.Kearns@energy.ri.gov ; egc@levitan.com ;	
	Brenna.McCabe@doa.ri.gov ;	
Rhode Island Building and Construction Trades Council Gregory Mancini, Esq. Sinapi Law Associates, Ltd. 2374 Post Road, Suite 201 Warwick, RI 02886	gmancinilaw@gmail.com ;	401-739-9690
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	kags8943@gmail.com ;	
Residents of Wallum Lake Road, Pascoag, RI Paul Bolduc and Mary Bolduc Joseph Keough Jr., Esq. 41 Mendon Avenue Pawtucket, RI 02861 Paul and Mary Bolduc 915 Wallum Lake Road Pascoag, RI 02859	jkeoughjr@keoughsweeney.com ;	401-724-3600
	oatyssl@verizon.net ;	401-529-0367
Abutter David B. Harris Michael Sendley, Esq. 600 Putnam Pike, St. 13 Greenville, RI 02828	mSENDLEY@cox.net ;	401-349-4405
Interested Persons (Electronic Service Only)		
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	jdx@sinapilaw.com ;	
Residents of 945 Wallum Lake Road, Pascoag, RI (Walkers) Nicholas Gorham, Esq. P.O. Box 46 North Scituate, RI 02857	nickgorham@gorhamlaw.com ;	401-647-1400
	edaigle4@gmail.com ;	

Peter Nightingale, member Fossil Free Rhode Island 52 Nichols Road Kingston, RI 02881	divest@fossilfreeri.org ;	401-789-7649
Sister Mary Pendergast, RSM 99 Fillmore Street Pawtucket, RI 02860	mpendergast@mercycne.org ;	401-724-2237
Patricia J. Fontes, member Occupy Providence 57 Lawton Foster Road South Hopkinton, RI 02833	Patfontes167@gmail.com ;	401-516-7678
Burrillville Land Trust Marc Gertsacov, Esq. Law Offices of Ronald C. Markoff 144 Medway Street Providence, RI 02906	marc@ronmarkoff.com ;	401-272-9330
Paul Roselli, President Burrillville Land Trust PO Box 506 Harrisville, RI 02830	proseli@cox.net ;	401-447-1560
Rhode Island Progressive Democrats of America Andrew Aleman, Esq. 168 Elmgrove Avenue Providence, RI 02906	andrew@andrewaleman.com ;	401-429-6779
Fighting Against Natural Gas and Burrillville Against Spectra Expansion Jillian Dubois, Esq. The Law Office of Jillian Dubois 91 Friendship Street, 4 th Floor Providence, RI 02903	jillian.dubois.esq@gmail.com ;	401-274-4591
Burrillville Town Council c/o Louise Phaneuf, Town Clerk 105 Harrisville Main Street Harrisville, RI 02830	lphaneuf@burrillville.org ;	401-568-4300
Christine Langlois, Deputy Planner Town of Burrillville 144 Harrisville Main Street Harrisville, RI 02830	clanglois@burrillville.org ;	401-568-4300
Joseph Raymond, Building Official	jraymond@burrillville.org ;	
Michael C. Wood, Town Manager Town of Burrillville 105 Harrisville Main Street Harrisville, RI 02830	mcwood@burrillville.org ;	401-568-4300 ext. 115

Mr. Leo Wold, Esq. Department of Attorney General 150 South Main Street Providence, RI 02903	LWold@riag.ri.gov ;	401-274-4400
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	Alan.nault@puc.ri.gov ;	
Division of Public Utilities and Carriers John J. Spirito, Esq., Chief of Legal Steve Scialabba, Chief Accountant Tom Kogut, Chief of Information	john.spirito@dpuc.ri.gov ;	401-941-4500
	steve.scialabba@dpuc.ri.gov ;	
	thomas.kogut@dpuc.ri.gov ;	
Matthew Jerzyk, Deputy Legal Counsel Office of the Speaker of the House State House, Room 302 Providence RI, 02903	mjerzyk@rilin.state.ri.us ;	401-222-2466
Hon. Cale Keable, Esq., Representative of Burrillville and Glocester	Cale.keable@gmail.com ;	401-222-2258
Nick Katkevich	nkatkevich@gmail.com ;	
Ambar Espinoza	aespinoza@ripr.org ;	
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Jared Rhodes, Chief Statewide Planning Program	jared.rhodes@doa.ri.gov ;	
Jennifer Sternick Chief of Legal Services RI Department of Administration	Jennifer.sternick@doa.ri.gov ;	
Doug Gablinske, Executive Director TEC-RI	doug@tecri.org ;	
Tim Faulkner ecoRI News 111 Hope Street Providence, RI 02906	tim@ecori.org ;	401-330-6276
Robert Tormey Conanicut Energy, LLC	rjtormey@conanicutenergy.com ;	617-306-1601
Sally Mendzela	salgalpal@hotmail.com ;	
Keep Burrillville Beautiful Paul LeFebvre	paul@acumenriskgroup.com ;	401-714-4493
Mark Baumer	everydayyeah@gmail.com ;	
Nisha Swinton Food & Water Watch New England	nswinton@fwwatch.org ;	
Kaitlin Kelliher	Kaitlin.kelliher@yahoo.com ;	

Joe Piconi, Jr.	jiggzy@hotmail.com ;	
Hon. Aaron Regunberg Representative of Providence, District 4	Aaron.regunberg@gmail.com ;	
Paul Ernest	paulwernest@gmail.com ;	
Skip Carlson	scarlson@metrocast.net ;	
Kathryn Scaramella	kscaramella@outlook.com ;	
Diana Razzano	Dlrazzano13@verizon.net ;	
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Claudia Gorman	corkyhg@gmail.com ;	
Curt Nordgaard	Curt.nordgaard@gmail.com ;	
Colleen Joubert	Colleenj1@cox.net ;	
Matt Smith Food & Water Watch	msmith@fwwatch.org ;	
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Steven Ahlquist, RIFuture	atomicsteve@gmail.com ;	
Pascoag Utility District William Bernstein, Esq. Michael Kirkwood, General Manager Robert Ferrari, Northeast Water Solutions, Inc.	mkirkwood@pud-ri.org ;	
	Wlblaw7@gmail.com ;	
	rferrari@nwsri.net ;	
Ben Weilerstein Toxics Action Center	ben@toxicsaction.org ;	
Russ Olivo Woonsocket Call	rolivo232@gmail.com ;	
Celine Schmidt	celine_schmidt@brown.edu ;	
Suzanne Enser	svetromile@gmail.com ;	
Rhode Island Student Climate Coalition	risccl@brown.edu ;	

CLEAR RIVER ENERGY CENTER ON-SITE WASTE WATER TREATMENT SYSTEM (OWTS) BURRILLVILLE, RHODE ISLAND



SCALE: 1"=800'



OWNER/APPLICANT:

Invenergy
INVENERGY
ONE SOUTH WACKER DRIVE
SUITE 1800
CHICAGO, IL 60606

CIVIL ENGINEER:

PARE
PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-4100

March 2017

INDEX OF DRAWINGS

SHEET No.	DRAWING No.	DESCRIPTION
1	-	COVER SHEET
2	C1.0	GENERAL NOTES
3	C2.0	SITE PLAN
4 - 6	C3.1 - C3.3	DETAILS Nos. 1 - 3

**CLEAR RIVER ENERGY CENTER
 ON-SITE WASTE WATER TREATMENT SYSTEM (OWTS)**
 BURRILLVILLE, RHODE ISLAND

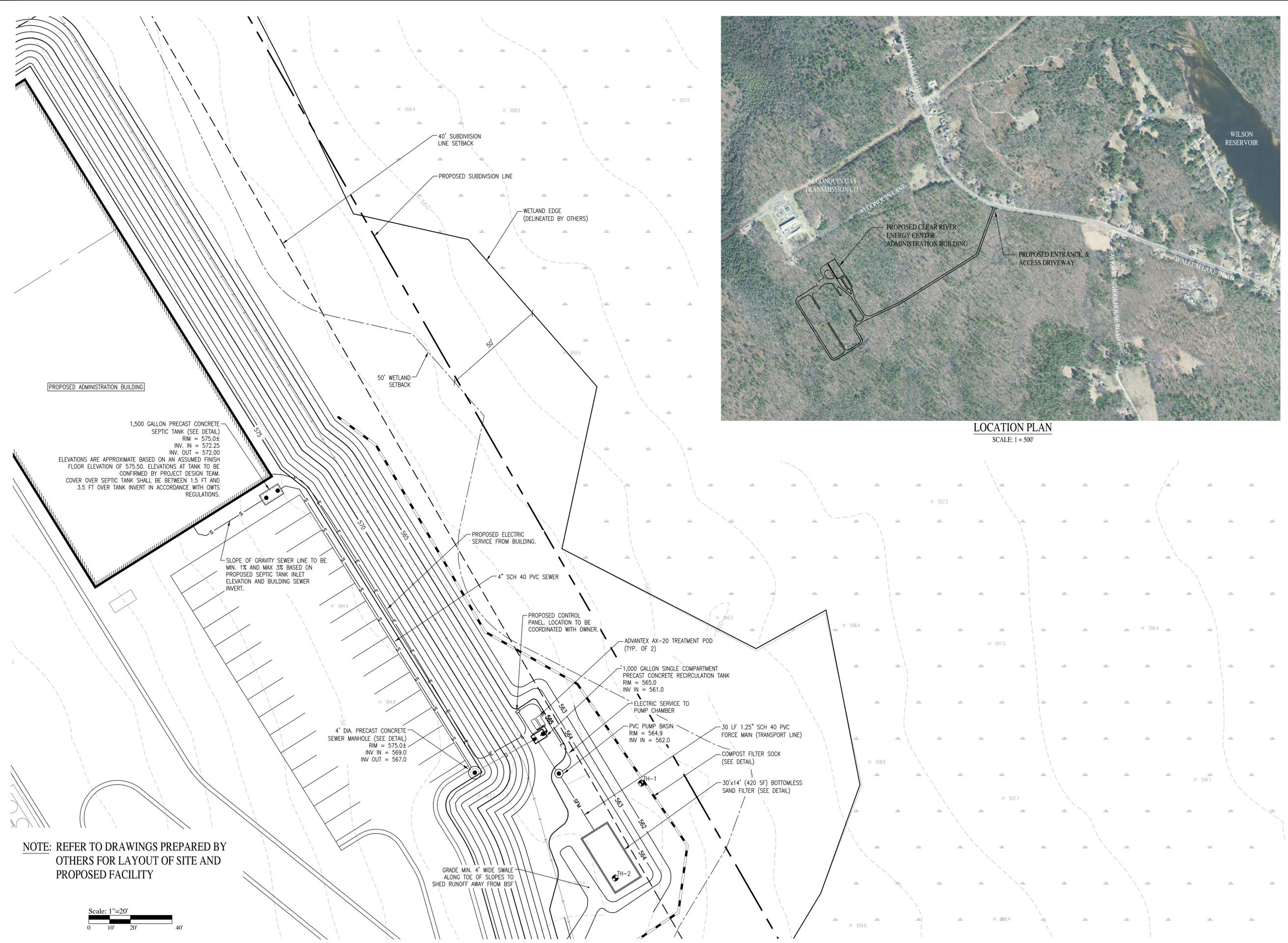


REVISIONS:

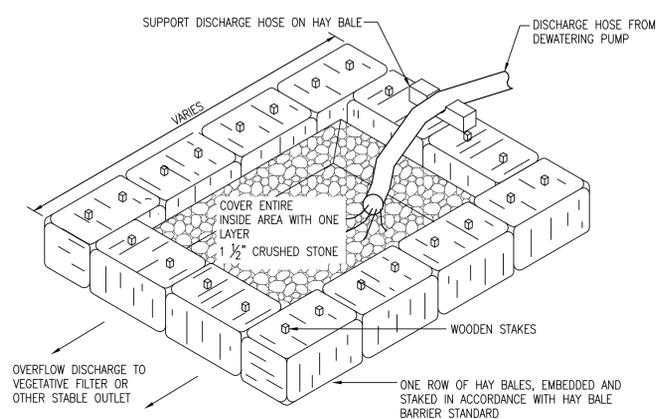
PROJECT NO.:	15166.04
DATE:	MARCH 2017
SCALE:	AS NOTED
DESIGNED BY:	TCJ/BMB
CHECKED BY:	BMB
DRAWN BY:	TCJ
APPROVED BY:	BMB
DRAWING TITLE:	SITE PLAN



LOCATION PLAN
 SCALE: 1" = 500'

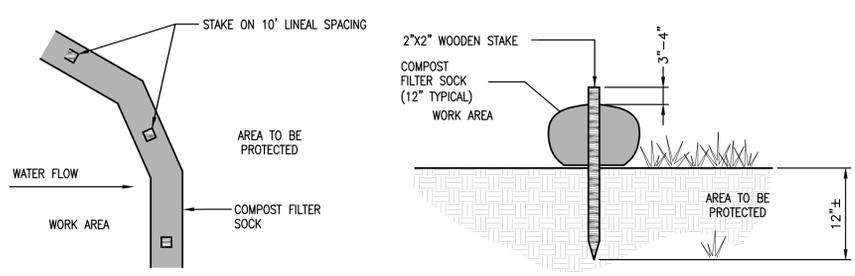


NOTE: REFER TO DRAWINGS PREPARED BY OTHERS FOR LAYOUT OF SITE AND PROPOSED FACILITY



- NOTES:
- REQUIRED SIZE OF FILTER BASIN TO BE DETERMINED BY CONTRACTOR TO ENSURE DISCHARGE IS CLEAR OF SEDIMENT.
 - FILTER FABRIC SHALL BE USED TO LINE THE INSIDE OF THE HAY BALE BASIN AND ANCHORED BY THE WOODEN STAKES.

TYPE 1 PUMPING SETTLING BASIN
 NOT TO SCALE



- NOTES:
- COMPOST/ SOIL/ ROCK/ SEED FILL TO MEET APPLICATION REQUIREMENTS.
 - COMPOST MATERIAL TO BE REMOVED OR DISPERSED ON SITE AS DETERMINED BY ENGINEER.

COMPOST FILTER SOCK DETAIL
 NOT TO SCALE

SHEET 1 OF 2
 STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
 Department of Environmental Management
 Office of Water Resources
 Onsite Wastewater Treatment System Program

Site Evaluation Form
 Part A - Soil Profile Description Application Number 1703-0050

Property Owner: Invenergy Thermal Development, LLC
 Property Location: Route 109, Wallum Lake Road, Burrillville, RI AP 137 Parcel 002
 Date of Test Hole: 02-07-2017
 Soil Evaluator: DiOrio, Alfred W. License Number: D4004
 Weather: Rain Shaded: Yes No Time: 08:30

TH 1 Horizon	Horizon Boundaries			Soil Colors		Re-Dox		Texture	Structure	Consistence	Soil Category
	Depth	Dist	Topo	Matrix	Re-Dox Features	Ab. S. Contr.	Re-Dox				
A	0-3"	a	s	2.5Y2.5/1	None	None	ls	gr	fr	3	
E	3-7"	g	s	10YR4/1	None	None	ls	gr	fr	3	
Bw1	7-12"	g	s	7.5YR2.5/2	None	None	sl	1 sbk	fr	3	
Bw2	12-17"	a	s	10YR3/4	None	None	sl	1 sbk	fr	3	
C	17"-96"	--	--	2.5Y7/2	None	None	f ls	0m	fr	6	

TH 2 Horizon	Horizon Boundaries			Soil Colors		Re-Dox		Texture	Structure	Consistence	Soil Category
	Depth	Dist	Topo	Matrix	Re-Dox Features	Ab. S. Contr.	Re-Dox				
A	0-4"	a	s	7.5YR2.5/2	None	None	ls	gr	fr	3	
Bw1	4-14"	g	s	10YR4/4	5YR4/4	C 2 P	f sl	1 sbk	fr	3	
Bw2	14-23"	g	w	7.5YR4/4	5YR4/4	C 2 P	sl	1 sbk	fr	3	
C	23"-96"	--	--	2.5Y7/2	Submerged	Submerged	f ls	0m	fr	6	

TH 1 Soil Class: B Total Depth: 96" Impervious/Limiting Layer Depth: None (cg) GW Seepage Depth: 18" SHWT: 18" (cg)
 TH 2 Soil Class: B Total Depth: 96" Impervious/Limiting Layer Depth: None (cg) GW Seepage Depth: 18" SHWT: 18" (cg)
 Comments: Recommend the removal of all organic horizons [A and B] for OWTS design.

Revised 1/31/14

Part B
 Site Evaluation - to be completed by Soil Evaluator or Class II or III Designer.
 Please use the area below to locate:
 1. Test holes and bedrock test holes.
 2. Offsets from all test holes to fixed points such as street, utility pole, or other permanent, marked object.
 *OFFSETS MUST BE SHOWN

Elevation = 560 +/- NAVD88 (Google) Slope 0-8%

- Relief and Slope: NO YES
- Presence of any watercourse, wetlands or surface water bodies, within 200 feet of test holes? If yes, locate on above sketch. NO YES
- Restrictive Layer or Bedrock within 4' below original ground within 25 feet of test hole? Provide all test hole locations & depths above. NO YES
- Presence of existing or proposed private drinking water wells within 200 feet of test holes? If yes, locate on above sketch. NO YES
- Public drinking water wells within 500 feet of test holes? If yes, locate on above sketch. NO YES
- Is site within the watershed of a public drinking water reservoir or other critical area defined in Rule 38? NO YES
- Has soil been excavated from or fill deposited on site? If yes, locate on above sketch. NO YES
- Site's potential for flooding or ponding: NONE SLIGHT MODERATE SEVERE
- Landscape position: Back slope
- Vegetation: Specimen vegetation with moderate understorey
- Indicate approximate location of property lines and roadways.
- Additional comments, site constraints or additional information regarding site: For use with OWTS design only.

Certification
 The undersigned hereby certifies that all information on this application and accompanying forms, submittals and sketches are true and accurate and that I have been authorized by the owner(s) to conduct the necessary field investigations and submit this request.

Part A prepared by: Alfred W. DiOrio License # D4004 Part B prepared by: Alfred W. DiOrio License # D4004

Witnessed Soil Evaluation Decision: Concur Inconclusive Disclaim
 Unwitnessed Soil Evaluations Decision: Accept Inconclusive Disclaim
 Wet Season Determination required Additional Field Review Required
 Explanation:
 Signature Authorized Agent: _____ Date: _____
 Revised 1/31/14

Pump Selection for a Pressurized System - Commercial Project
 Clear River Energy Center / New OWTS

Parameters

Discharge Assembly Size	2.00	inches
Transport Length	30	feet
Transport Pipe Class	40	
Transport Line Size	1.25	inches
Distributing Valve Model	None	
Max Elevation Lift	5	feet
Manifold Length	12	feet
Manifold Pipe Class	40	
Manifold Pipe Size	1.00	inches
Number of Laterals per Cell	7	
Lateral Length	28	feet
Lateral Pipe Class	40	
Lateral Pipe Size	1.00	inches
Office Size	1/8	inches
Office Spacing	2	feet
Residual Head	8	feet
Flow Meter	None	inches
Add-on Friction Losses	0	feet

Calculations

Minimum Flow Rate per Office	0.55	gpm
Number of Offices per Zone	105	
Total Flow Rate per Zone	57.8	gpm
Number of Laterals per Zone	7	
% Flow Differential (est.) Last Office	2.3	%
Transport Velocity	12.5	fps

Frictional Head Losses

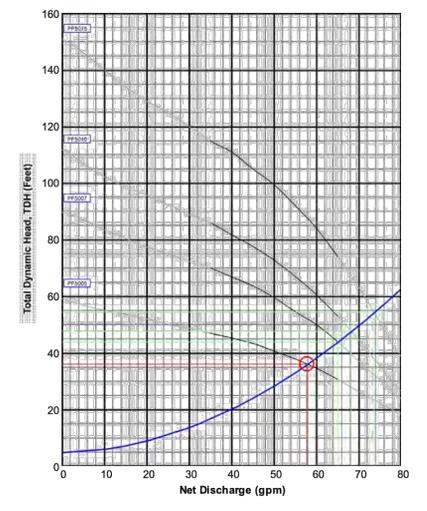
Loss through Discharge	6.7	feet
Loss in Transport	11.2	feet
Loss through Valve	0.0	feet
Loss in Manifold	4.7	feet
Loss in Laterals	0.4	feet
Loss through Flowmeter	0.0	feet
Add-on Friction Losses	0.0	feet

Pipe Volumes

Vol of Transport Line	2.3	gals
Vol of Manifold	0.5	gals
Vol of Laterals per Zone	9.8	gals
Total Volume	11.7	gals

Minimum Pump Requirements

Design Flow Rate	57.8	gpm
Total Dynamic Head	36.0	feet



Pump Data

PF5005 High Head Effluent Pump	50 GPM, 112HP, 115/230V 1Ø 60Hz, 200/230V 3Ø 60Hz
PF5007 High Head Effluent Pump	50 GPM, 3/4HP, 230V 1Ø 60Hz, 200/230V 3Ø 60Hz
PF5010 High Head Effluent Pump	50 GPM, 1HP, 230V 1Ø 60Hz, 200/460V 3Ø 60Hz
PF5015 High Head Effluent Pump	50 GPM, 1 1/2HP, 230V 1Ø 60Hz, 200V 3Ø 60Hz

Legend

- System Curve: —
- Pump Curve: —
- Pump Optimal Range: —
- Operating Point: ●
- Design Point: ○

