November 29, 2017

ADEQ
Water Div.

To whom it may concern;

The treatment plant proposed for Dana Vint will use the Norweco model 960 as submitted by Strider Consulting Feb 25, 2010.

Sincerely,
Clear Flow

Mike O’Connor
DR # 60-37
I. PERMITTEE/OPERATOR INFORMATION

Permittee (Legal Name): Danna Vint
Permittee Mailing Address: 120 Ouachita 404
Permittee City: Camden
Permittee State: AR Zip: 71701
Permittee Telephone Number: 870-818-8954
Permittee Fax Number: N/A
Permittee E-mail Address: N/A

Operator Type:
☐ State
☐ Partnership
☐ Federal
☐ Corporation*
☐ Sole Proprietorship/Private

*State of Incorporation:
The legal name of the Permittee must be identical to the name listed with the Arkansas Secretary of State.

II. INVOICE MAILING INFORMATION (Home owners are exempt.)

Invoice Contact Person: N/A City: N/A
Invoice Mailing Company: N/A State: N/A Zip: N/A
Invoice Mailing Address: N/A Telephone: N/A

III. FACILITY INFORMATION

Facility Name: Danna Vint
Facility Address: 120 Ouachita 404
Facility County: Ouachita
Facility Latitude: 33 Deg 39 Min 11Sec
Facility Contact Person: Danna Vint
Telephone Number: 870-818-8954
Facility City, State & Zip: Camden AR 71701
Facility Longitude: -92 Deg 46 Min 41Sec
Datum: U/N Method: U/N Scale: U/N Description: U/N

IV. DISCHARGE INFORMATION

Outfall Number: 1 Flow: 370 gpd (Gallons per Day)
Stream Segment: 
Outfall Latitude: 33 Deg 39 Min 12Sec Datum
Outfall Longitude: -92 Deg 46 Min 40Sec
Accuracy: U/N Method: U/N Scale: U/N Description: U/N

Type of Treatment: Norweco Model 960 With Chlorine
Receiving Stream: Unnamed tributary thence Mizzle Creek thence Ouachita River

V. FACILITY PERMIT INFORMATION

NPDES Individual Permit Number (If Applicable): AR00
NPDES General Permit Number (If Applicable): ARG
State Construction Permit Number:
NPDES General Construction Stormwater Permit Number (If Applicable): ARR15

WATER DIVISION
5301 NORTHSHORE DRIVE / NORTH LITTLE ROCK, ARKANSAS 72118
PHONE 501-682-0623 / FAX 501-682-0880
www.adeq.state.ar.us
- 5 -
VI. OTHER INFORMATION:

Operator Name: Mike O'Connor
Operator License Number: 010202

Consultant Contact Name: Mike O'Connor
Consultant Email Address: Mike@ArkansasSeptic.com
Consultant Address: PO 992 City: Cabot State: AR Zip: 72023
Consultant Phone Number: 501-843-8202 Consultant Fax Number: 501-843-2546

Has this treatment system been approved by AHD? Yes X No

Disclosure Statements:

Arkansas Code Annotated Section 8-1-106 requires that all applicants for the issuance or transfer of any permit, license, certification or operational authority issued by the Arkansas Department of Environmental Quality (ADEQ) file a disclosure statement with their applications. The filing of a disclosure statement is mandatory. No application can be considered complete without one. You must submit a new disclosure statement even if you have one on file with the Department. The form may be obtained from ADEQ website at: http://www.adex.state.ar.us/discoeal胱ntal_stmt.pdf.

VII. CERTIFICATION OF OPERATOR

(Initial) "I certify that, if this facility is a corporation, it is registered with the Secretary of the State of Arkansas."

(Initial) "I certify that the cognizant official designated in this Application is qualified to act as a duly authorized representative under the provisions of 40 CFR 122.22(b). If no cognizant official has been designated, I understand that the Department will accept reports signed only by the Applicant."

(Initial) "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Responsible Official Printed Name: Damny Viny
Responsible Official Signature: [Signature]
Responsible Official Email: 

Cognizant Official Printed Name: 
Cognizant Official Signature: 
Cognizant Official Email: 

X. PERMIT REQUIREMENT VERIFICATION

Please check the following to verify completion of permit requirements.

Yes ☐ No ☐ * If No is answered for any of the questions, then a permit cannot be issued!

Submittal of Complete NOI? ☐ ☐
Submittal of Required Permit Fee? ☐ ☐ Check Number: 
Submittal of AHD Form EH-197? ☐ ☐
Submittal of Site Map? ☐ ☐
Submittal of Disclosure Statement? ☐ ☐
Arkansas Department of Health
Environmental Health Protection

Individual Onsite Wastewater System Permit Application

<table>
<thead>
<tr>
<th>Permit Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New Installation</td>
<td></td>
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<tr>
<td>Alteration / Repair</td>
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</tbody>
</table>

DR Environmental ID #
#0029000177

Part 1  Application  Treatment Type (check one)  Disposal Method (check one)

<table>
<thead>
<tr>
<th>STD = Standard Septic Tank</th>
<th>ATM = Aerobic Treatment Plant</th>
<th>STD = Standard Absorption Field</th>
<th>SUR = Surface Discharge</th>
<th>LPD = Low Pressure Distribution</th>
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</thead>
<tbody>
<tr>
<td>ISF = Intermittent Sand Filter</td>
<td>RSF = Re-circulating Sand Filter</td>
<td>SUR = Surface Discharge</td>
<td>HLD = Holding Tank</td>
<td>SRL = Septic Tank</td>
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<tr>
<td>PMF = Proprietary Media Filter</td>
<td>RGPF = Re-circulating Gravel Filter</td>
<td>HLD = Holding Tank</td>
<td>LDP = Low Pressure Distribution</td>
<td>DRP = drip irrigation</td>
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<tr>
<td>OTH = Other (Describe)</td>
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</table>

1. Owner/Applicant's Name: DANN VINT
2. Phone Number: 1- 870. 818. 8954
3. Mailing Address: 120 OUACHITA 404, CAMDEN, AR 71701
4. County: OUACHITA
5. Address of Proposed System (if a 911 address is not available, attach detailed directions or map): 120 OUACHITA 404, CAMDEN, AR 71701

6. Subdivision Name: OSCAR A. HAYES SUBDIVISION
7. Approval Date: MARCH 17, 1955
8. Date Recorded: MARCH 17, 1955
9. Lot Number: LOT 25 30
10. Lot Dimensions: 1.02 AC.
11. Total Area (Acres): 1.02
12. # Bathrooms / # People: THREE
15. Water Supply (Specify supplier, if Public Water): HARMONY GROVE WATER ASSOCIATION
16. GPS Coordinates: 33°39'11.90"N DISCHARGE 33°39'21.40"W POINT 92°40'41.89"W
17. Loading Rates (gpd/ft²): 
18. System Specifications:
   a. Size of Septic Tank: NORWEIG 500 gal
   b. Size of Tank: 300 gal
   c. Absorption Area: 240, 120 ft²
   d. Number of Field Lines: 7
   e. Length of Field Lines: 60, 120 ft
   f. Trench Depth: 20
   g. Trench Spacing: 10
   h. Trench Media (List Below): PERFORATED PIPE / GRAVEL

TO THE OWNER FOR THIS RESIDENCE:

The permit for construction may be denied by the local Environmental Health Specialist before the start of construction, if the site and/or soil conditions have changed after approval of this permit, or if the information within this permit is inaccurate or has been found to be misrepresented. Approval for operation does not constitute a guarantee that the system will function properly. The approval states that the system was designed and installed according to the Arkansas Department of Health, Rules and Regulations Pertaining to Onsite Wastewater Systems, unless there are exceptions or deviations noted in the comments. A Permit for Construction is valid for one (1) year from the date of approval. The authorized agent must recalibrate a permit more than one (1) year old prior to the start of any construction.

19. Utilization Verification:
   I hereby attest that item 12, the number of bedrooms (number of persons for commercial) and square footage of the structure that will utilize the designed individual onsite wastewater system in this permit application, is accurate. I have reviewed the permit application and understand the layout, installation, maintenance, operation and expense(s) that may be associated with this system.

Owner/Applicant Signature: DANN VINT  Date: 1-22-19

20. I certify that I have conducted the above tests and that the above listed information is in accordance with the latest requirements of the Arkansas Department of Health Rules and Regulations Pertaining to Onsite Wastewater Systems.

   Eddie Sullivan  D.R. #173  Soil Certified: Yes / No
   Designated Representative Signature
   EDDIE SULLIVAN  July 17, 2019
   Title: 1-870. 834. 4566
   Print Name: EDDIE SULLIVAN
   Date: Phone Number 1-870. 833. 2001

21. Approval of Health Authority:
   The information and specifications in the application has been reviewed and found to meet the requirements of the Arkansas Department of Health Rules and Regulations Pertaining to Onsite Wastewater Systems. A PERMIT FOR CONSTRUCTION is hereby issued.
   Environment Specialist Signature
   Date: 2/19/19

EHP-19 (R 8/13) Page 1
Arkansas Department of Health
Environmental Health Protection

Individual Onsite Wastewater System Permit Application

<table>
<thead>
<tr>
<th>Permit Type</th>
<th>Fee Schedule for Structures</th>
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<tr>
<td>□ New Installation</td>
<td>Structures 1500 sq ft or less</td>
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<td>□ Alteration / Repair</td>
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DR Environmental ID #
#0029000177

☐ Homeowner
☐ Builder/Developer

TO THE PROPERTY OWNER

Onsite Wastewater System Utilization Verification

Property location: 120 OACHITA 44, CAMDEN, AR 71701

(Address of Proposed System, City, State, Zip)

I hereby attest there are ___ bedrooms (___ number of persons for commercial) and the square footage of the structure that will utilize the designed onsite wastewater system in this permit application is accurate. I have reviewed the permit application and understand the layout, installation, maintenance, operation and expense(s) that may be associated with this system.

As Developer/Builder, I hereby attest that the above information is correct and prior to the sale of the property, I will convey, to the buyer, all information associated with this system.

Owner/Applicant Signature

Date 7/22/19

This document must be submitted with the permit application, if the Owner/Applicant Signature Section (number 19 on the EHP-19) is not signed.

EHP-19, OPT-A (R 8/13)
Each township and range has been numbered and subdivided into 4 T quadrants A,B,C,D. The first grid index will be the beginning point for house numbers in the unincorporated area. Where the beginning point is at a city limits the house number/block number will follow the last city house number/block number. Where the beginning point 30' another road, the house number/block will begin with 100.

VICINITY MAP
MEMORANDUM OF AGREEMENT

SUBJECT: ONSITE WASTEWATER SYSTEM APPLICATION

This is an agreement that the onsite wastewater system installed on this property has been permitted under authority of Act 402 of 1977 and by the Arkansas Department of Health with the understanding that the following provisions are met:

1. Onsite Wastewater Systems requiring a Monitoring Contract with a Certified Monitoring Personnel are Holding Tanks, Experimental Systems (i.e. Reduced Absorption Areas, "ABGs"), and Drip Dispersal Systems. "Aerobic Biological Generators – Commercial applications only, residential applications must follow manufacturers’ service contract requirements.

2. The property owner assumes all responsibility for the proper operation of the onsite wastewater system.

3. The property owner must maintain a monitoring contract with a licensed Certified Monitoring Personnel for the life of the system and retain Onsite Wastewater System Assessments (EHP-71), on file, for at least five (5) years.

4. The Arkansas Department of Health has no responsibility in the operation and maintenance of such systems.

5. That the Arkansas Department of Health may monitor the system as to its operation capabilities.

6. That the Arkansas Department of Health is granted permission to make such inspections as deemed necessary.

7. Subsurface systems with flows ≥3000 gpd and all surface discharging systems require the owner to file an additional permit application with the Arkansas Department of Environmental Quality (ADEQ).

8. That, on the sale of the property, the owner of the property must disclose to the perspective buyer notice of this agreement and any permit requirements. The buyer is to sign memoranda, contracts or permit name change forms and submit these documents to the appropriate regulatory agency.

SIGNED: [Signature] (Property Owner)
SIGNED: [Signature] (Health Department)

DATE: 7/22/19 DATE: 8/9/19

EHP-35 (R)
Onsite Maintenance Contract

Date: JULY 17, 2019

Homeowner: DANNA VINT

Property address: 130 OVACHITA RD
CAMDEN, AR 71701

Contact number: 1-870-818-8954

Items to be reviewed, at minimum, each 6 months for 2 years. After 2 years, this contract is renewable for a yearly fee.

- Chlorine residual
- PH
- Evaluation of system components, motor, wiring, alarm, etc
- Document findings, and file necessary paper work with Health Department

This contract does not include the cost of chlorine tablets, replacement ozone bulbs, or any damaged components.

OMP: Mike O'Connor
Clear Flow
P.O. Box 992
Cabot, Arkansas 72023

Office phone: 501-843-8202
Mobile phone: 501-517-7198

Signature: [Signature]
Arkansas Department of Health
4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000
Governor Mike Beebe
Paul K. Halverson, DrPH, FACHE, Director and State Health Officer

IMPORTANT NOTICE TO PROPERTY OWNER

The Arkansas Department of Health’s approval of a surface discharging sewage system **does not** relieve the property owner of any other local, state, or federal requirement regarding sewage discharging systems. The final approval to operate your system will not be signed off until verification of the receipt of the National Pollutant Discharge Elimination System (NPDES) permit is received by the Department.

Please be advised that **all** wastewater systems that discharge sewage to the surface are required to notify:

Arkansas Department of Environmental Quality
ATTN: Permits Branch
5301 North Shore Drive
North Little Rock, AR 72118

Phone Number: 501-682-0623
Web Site: www.adeq.state.ar.us
Norweco
(CINGLVAR) TNT-500

Tank
72" + Risors (deep)
5'6" (wide)
10' (long)

Hole
7' Deep 81"
6' Wide
12' Long
To calculate Gallons per minute:

1. Gallons per day ÷ loading rate = 494 sq ft. (Example: 370 gpd ÷ .75 = 493.33 or 494 sq ft)

2. Square footage required for system x dose rate. Specify Dose Rate = .15 gal/ sq. ft (Max dose rate is .25 gal/ sq.ft.)
   (Example: 494 sq. ft x .15 gal/sq.ft = 74.1 gal dose) = 74.1 gal per dose.

3. Take dose rate and ÷ by number of minutes for pump run time = 19 gpm calculated. Recommended minimum pump run time is 2 minutes. Calculated pump run time = 4 minutes per dose. Check manufacturer for best optimal run duration.
   (Example: 74.1 gal/dose ÷ 4 minutes = 18.53 or 19 gpm)

To calculate Total Head:

1. Ground elevation of distribution device = 99.77' - (minus) Ground elevation pump/ dose tank = 96.77' = 3.00'
   + "Pump off" elevation in dose chamber / tank to ground (typically 4.25 ft) = 7.25' = (Elevation / Static Head)

2. Distance to be pumped = 10' Pipe Size: 2' . Calculate Friction Loss (Use Table on back of page)
   0.19 Friction loss.

3. Add additional headloss for distribution device if not using d-box: \( \sqrt{4} \). Attach calculation sheet for the device.

4. Total Head (TDH) = (Elevation / Static Head) + Friction Loss + Distribution device (if needed) = Total Head

Pump Selected (brand, model) Liberty LE 41 Attach pump curve and spec sheet.

Alarm Selected (brand, model) Zoeller 10-0623 Attach spec sheet.

Calculate Drawdown: Maintain enough effluent to cover the pump.

Length” x Width” x 1” ÷ 231 = Gallons per inch (Example 72” x 16” x 1” = 1152³ inches ÷ 231 = 4.98 or 5 gals/ inch)

ROUND TANK 3.14 x 20.5” x 20.5” x 1” = 291 =

Drawdown: 5.71 gal/in gallons per inch in tank. Drawdown in inches per dose 10” = 57.1 GAL/Dose

Set pump float and alarm float. (Maintain a minimum of 1 inch difference between the pump “on/off” float and the alarm float.

NOTE: Gallons per inch may vary between tanks/pump chambers by different manufacturers.
# Friction Loss Per 100 Feet of SCH 40 Plastic Pipe

Nominal Pipe Diameter

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<th>3/4&quot;</th>
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</table>

***** Don’t forget to add 20% for fittings*****

**FORMULA:** Force main + 20% + 100 x friction loss

**Force main** \( \frac{10}{_2} \) ft x .20 = \( \frac{2}{_2} \) + force main \( \frac{10}{_2} \) = equivalent pipe length \( \frac{12}{_2} \)

**Equivalent pipe length** \( \frac{12}{_2} \) + 100 = \( \frac{0.12}{_2} \) x Friction loss \( \frac{1.62}{_2} \) = Friction Headloss \( \frac{0.19}{_2} \)

Example: 125 ft of 2 in SCH 40 at 25 gpm

\( 125 \times .20 \) (fitting loss) = \( 25 + 125 = 150 \) ft (equivalent pipe length) + 100 = 1.5 x 1.15 = 1.73 ft of Friction Headloss

Take answer and apply to front of worksheet.

**Helpful conversion factors:**

1 acre = 43,560 Sq. Ft. (ft²)

Inches + 12 = Tenth of Foot (Ex. 6 in. ÷ 12 = 0.5 Ft.)

231 cubic inches = 1 gallon of water

1 Cu. Ft. of Water weighs = 62.4 lbs.

1 Cubic Yard = 27 Cu. Ft. (3 x 3 x 3)

1 Gallon of Water weights = 8.34 lbs.

1 Cu. Ft. = 7.48 gallons

Volume, gallons = \( \text{ft}^3 \times 7.48 \)

Volume for a Rectangle

Volume, cu. ft. = \( L \times W \times d \)

(L = length; \( W = \text{width}; \ d = \text{depth of water in tank} \))

Volume for a Circle

Volume, cu. ft. = \( 3.14 \times r^2 \times d \) (\( d = \text{depth of water in tank} \))

Volume, cu. ft. = \( 0.785 \times D^2 \times d \)

Volume for a Pond

Volume, \( \text{ft}^3 = 43,560 \times \text{acres} \times \text{depth} \)

VER 1.0 (10/07)
"WELCH" 300 GAL. PUMP CHAMBER

OFF: \( \pi r^2 \times d = 3.14 \times 1.71 \times 1.71 \times 7.48 = 79.67 \text{ gal} \)

ON: \( \pi r^2 \times d = 3.14 \times 1.71 \times 1.71 \times 83 \times 7.48 = 57 \text{ gal} \)
## Models

<table>
<thead>
<tr>
<th>Series</th>
<th>HP</th>
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<tbody>
<tr>
<td>LE40</td>
<td>4/10</td>
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<td>LEH100</td>
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</table>

- **LE40** Series: 4/10 HP
- **LE50** Series: 1/2 HP
- **LE70** Series: 3/4 HP
- **LE100** Series: 1 HP
- **LEH100** Series: 1 HP
For installation, read the following instructions carefully. Each Liberty pump is individually factory tested to ensure proper operation. Closely following these instructions will eliminate potential operating problems, assuring years of trouble-free service.

**RISK OF ELECTRIC SHOCK**
To reduce risk of electric shock, always disconnect pump from power source before handling.

These pumps are not to be installed in locations classified as hazardous in accordance with the National Electric Code, ANSI/NEPA 70.

Installation must be in accordance with the National Electric Code and all applicable local codes.

Installation and servicing is to be conducted by qualified personnel.

Do not use these pumps in water over 140° F.

The Uniform Plumbing Code (UPC) states that sewage systems shall have an audio and visual alarm that signals a malfunction of the system, to reduce the potential for property damage.

**CODE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Model</th>
<th>HP</th>
<th>Volts</th>
<th>Phase</th>
<th>Full Load Amps</th>
<th>Solid Handling</th>
<th>LEAD Discharge</th>
<th>Automatic or Manual</th>
<th>Shut-off Head</th>
</tr>
</thead>
<tbody>
<tr>
<td>LE40A</td>
<td>4/10</td>
<td>115</td>
<td>1</td>
<td>12</td>
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<td>2&quot;</td>
<td>Automatic</td>
<td>18&quot;</td>
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<td>115</td>
<td>1</td>
<td>12</td>
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<td>2&quot;</td>
<td>Manual*</td>
<td>18&quot;</td>
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<tr>
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<td>1/2</td>
<td>115</td>
<td>1</td>
<td>12</td>
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<td>2&quot;</td>
<td>Automatic</td>
<td>20&quot;</td>
</tr>
<tr>
<td>LE71M</td>
<td>1/2</td>
<td>115</td>
<td>1</td>
<td>12</td>
<td>2&quot;</td>
<td>2&quot;</td>
<td>Manual*</td>
<td>20&quot;</td>
</tr>
<tr>
<td>LE82A</td>
<td>1/2</td>
<td>208-230</td>
<td>1</td>
<td>6.8</td>
<td>2&quot;</td>
<td>2&quot;</td>
<td>Automatic</td>
<td>22&quot;</td>
</tr>
<tr>
<td>LE82M</td>
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<td>208-230</td>
<td>1</td>
<td>6.8</td>
<td>2&quot;</td>
<td>2&quot;</td>
<td>Manual*</td>
<td>22&quot;</td>
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<tr>
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<td>3/4</td>
<td>115</td>
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<td>12</td>
<td>2&quot;</td>
<td>2&quot; or 3&quot;</td>
<td>Automatic</td>
<td>28&quot;</td>
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<tr>
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<td>115</td>
<td>1</td>
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<td>2&quot; or 3&quot;</td>
<td>Manual*</td>
<td>28&quot;</td>
</tr>
<tr>
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<td>6</td>
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<td>2&quot; or 3&quot;</td>
<td>Automatic</td>
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<tr>
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<td>28&quot;</td>
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<td>208-230</td>
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<tr>
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<td>36&quot;</td>
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<td>208-230</td>
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<td>5.8</td>
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<td>36&quot;</td>
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<td>2&quot; or 3&quot;</td>
<td>Manual*</td>
<td>36&quot;</td>
</tr>
</tbody>
</table>

Note: Manual models ("M" suffix) and 3-phase models, as designated above, require a separate approved pump control device for automatic operation. Operation of these models will be according to the control selected. Make sure the electrical specifications of the control selected properly match the electrical specifications of the pump. 3-phase models require wattage elements selected or adjusted in accordance with the control or panel instructions.
A-PAK ALARM SYSTEM FEATURES

- Indoor & Outdoor use per UL 664.
- UL Listed and CSA Certified.
- Alarm system (horn & light) operates to warn of a high water condition.
- Horn is rated 85 decibels at 10'.
- Alarm test and Horn Silence Switch with auto reset.
- Terminal connections for pump & float switch.

Standard Model (PIN 10-0623) Includes:
- 15' float switch.

Deluxe Model (PIN 10-0692) Includes:
- 20' float switch.
- 5 ft. power cord plugs into 115V outlet.
- Watertight cord connectors.

"A-PAK" ALARM SYSTEM FEATURES

10-1484 (115V/120V/12V DC)
- Auto reset solid state alarm.
- 9 Volt battery back-up (battery not included).
- NEMA 4 non-corrosive enclosure for indoor use.
- Float operates on 12 VAC.
- Float switch with 15' cable included.
- 8 ft. power cord plugs into 115V outlet.
- Horn is rated at 85 decibels at 10'.

10-0333 (115V/1Ph)
- NEMA 1 metal enclosure for indoor use.
- Solid state warning light and horn.
- Float operates on 12 VAC.
- Float switch with 15' cable included.
- 8 ft. power cord plugs into 115V outlet.
- Horn is rated at 85 decibels at 10'.

"A-PAK II" ALARM SYSTEM FEATURES

10-0126 (115V/1Ph)
- NEMA 4X thermoplastic alarm panel.
- Horn & light warn of high liquid levels.
- Test and Silence switch.
- Auxiliary dry high level alarm contacts - 5 amps.
- Operates on separate circuit from pump 115 VAC.
- UL Listed for US & Canada.
- Float switch with 15' cable included.
- Can be used with liquids to 140°F (60°C).
- Horn is rated at 85 decibels at 10'.

Side View Model 10-0126
SCHEMATIC OF A TYPICAL CONSTRUCTION MANIFOLD

The manifold should be level and high enough to
flood the highest line to the top of the ground.
The "tees" that make up the manifold should be
close together. The manifold should extend one
foot past the last "tee", and have a clean-out at the
direction.

Taps must be made out of the same side of the manifold.
When more than four lines are used the manifold diam-
eter must be increased to three inches. When more than
nine lines are used the it must be four inches.
nipple is pushed into the bushings. The nipple forms the
constriction.

Discharge rates for 1/2 inch holes vary with pressure.
However, this type of system should have at least three
foot of residual head or spurt. Therefore, at:

foot of head  | discharge rate
3            | 5.1 gpm
4            | 5.89 gpm
5            | 6.59 gpm
**Constructed Discharge Route**

When a discharging sewer system is installed on locations with limited fall along the discharge route, especially where surface contours are irregular and may allow effluent to pond. Or, where the natural drainage doesn’t provide the required minimum 200 ft. of distance from property lines, suitable drainage will need to be constructed at the time of the installation by the installer. Such is the case with the installation of this system.

This constructed discharge route must provide constant and uniform elevation drop over the length of the discharge route. Depending on the location, there may not be enough fall over the length of the discharge route to allow cutting into natural ground to form the terrace. In such cases fill must be supplied to form the sides of the trough. A discharge route will start at the system’s discharge point and often end near the edge of the property. A constructed discharge route is a shallow V shaped ditch, that where specified on the permit drawing forms the discharge route. It must be constructed in accordance with the drawing shown below.

This configuration is for relatively flat surfaces, or where the discharge route is running more or less with the direction of the ground slope. Where the direction of the discharge route is more or less at right angles to the direction of significant ground slope, the discharge terrace should be shaped somewhat differently. And another drawing with different specifications will be furnished.

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**Discharge Terrace - shown below**

- Natural ground surface
- About 6ft wide
- About 1ft. deep
- Line above arrow represents natural ground elevation before construction