

**Ohio Drinking Water Assistance Fund  
Drinking Water State Revolving Fund (DWSRF)  
Green Project Reserve Information**

**2011 Business Cases Approved for Green Infrastructure Funding**

*\* To view Green Project Reserve Form, click on a business case name listed below.*

Brilliant Water and Sewer District, Water Line Replacements

Coal Grove Village, Phase II Water System Improvements

Flushing Village, Water Main Replacements

Greater Cincinnati Water Works, Dana Ave. Water Main Replacement

Old Straitsville Water Association, Old Town Waterline & Meter Replacement

Southern Perry County Water District, Congo Water System Improvements

Tuppers-Plains Chester Water District, Phase 9 Water System Improvements

**GREEN PROJECT RESERVE FORM**

U.S. EPA requires Ohio EPA to use at least 20 percent of its capitalization grant funds for projects to address green infrastructure, water or energy efficiency improvements and other environmentally innovative activities. These four categories of projects comprise the Green Project Reserve (GPR).

Projects that meet GPR criteria follow the established DWSRF project process. Projects clearly eligible for GPR are known as categorically eligible projects. A list of categorically eligible projects within each project category is attached to this form. Projects not found to be categorically eligible will need to have business case documentation. For a project to be considered a GPR project, a business case requires a well-documented justification. Ohio EPA reviews all business cases to determine GPR eligibility and posts them on its website by the end of the calendar quarter in which the loan is made.

Listed below are the four categories of projects that comprise the GPR. For each category, there are corresponding pages that must be completed and submitted with this cover page. Attach additional pages as necessary. Please check the **category or categories** that are applicable to your project.

- Green Infrastructure (G)** (pages 3-4)
- Energy Efficiency (E)** (pages 5-7)
- Water Efficiency (W)** (pages 8-10)
- Other Environmentally Innovative Activity (O)** (pages 11-13)

PWS Name: Brilliant Water & Sewer District

PWSID: 4100412

Project Name: Water Line Replacement

PPL #: 47  
(Assigned by Ohio EPA)

Total Est. Project Cost: \$868,298.52

Total Est. GPR Amount: \$341,500

Completed by:

Name: Jeffrey Vaughn Title: Engineer  
(Please print)

Signature: *Jeffrey A Vaughn* Date: 7-26-11

For Ohio EPA use only:

Loan Number (if applicable): FS 391423-0002 Eligible GPR Amount \$: 119,700.00

Eligible GPR Categories: W Evaluated by/Date: SMH/BM 7/26/11

Loan Award Date (if applicable): 6/30/11

Date Business Case Posted on webpage (if applicable): \_\_\_\_\_



**Water Efficiency (W)**

PWS Name: Brilliant Water & Sewer District

PWSID: 4100412

Project Name: Water Line Replacement

PPL #: \_\_\_\_\_  
 (Assigned by Ohio EPA)

Total Est. Project Cost: \$868,298.52

Total Est. GPR Amount: \$341,500

Project Summary: Replace approx.. 6,550 lf of 10", 8", 6", 4" & 2" water main, fire hydrants, valves and reconnection to complete water main replacements.

**Water Main Replacement**

Water main material/length to be replaced  
6550 linear feet

Est. total system water lost due to breaks and leaks 20%

Est. water loss from pipe being replaced 5%

Total annual production 175.51 mg

Number of breaks recorded in past 24 months for the area to be replaced 12

Est. annual water savings 875,000 gal.

Est. annual costs savings \$3,990.00

Other efficiencies to be gained by the replacement? (reduced head and therefore less energy loss in an upstream pump station, etc.)

**Meter Installation/Replacement**

Original Installation  Replacement

Reason for replacement

Est. annual water savings

Est. annual costs savings

Business Case Narrative (Calculate water saving improvements and costs savings): IV. Proper water infrastructure – replacing aging infrastructure. Water lost due to breaks and leaks on the lines being replaced = 5% or 875,000 gallons per year. The Village produces their own water. A portion of the total lines (6,550 ft.) are being replaced in the village. The total water savings in lost water would equal \$3,990 per year. The village averages 6 breaks per year and they fix these breaks themselves. The overtime cost for the two employees that work on these breaks, fuel for the backhoe, and repair materials is estimated at \$800 per break or \$5,600 per year. The total annual savings is estimated as the sum of these costs or \$9,590 per year.

$\$3,990 \times 30 \text{ yr loan} = \$119,700$  *Sam*

Attach Supporting Documentation

Engineering Project Planning Documents

Water/Energy Efficiency Determination (Ohio EPA)

Public Water System Records

Other: \_\_\_\_\_



Ohio Drinking Water Assistance Fund  
Drinking Water State Revolving Fund (DWSRF)  
Green Project Reserve Information Form



Environmental Protection Agency  
Division of Drinking and Ground Waters

GREEN PROJECT RESERVE FORM

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- Water Efficiency (W) (pages 8-10)
- Other Environmentally Innovative Activity (O) (pages 11-13)

PWS Name: Village of Coal Grove, OH PWSID: OH4400012

Project Name: Phase 2 water system improvements PPL #: 44  
(Assigned by Ohio EPA)

Total Est. Project Cost: \$450,271.00 Total Est. GPR Amount: 439,447

Completed by: Paul Amburger  
Name: E.L. Robinson Engineering Title: Project Manager  
(Please print)

Signature: Paul Amburger Date: 7/15/2011

For Ohio EPA use only:

Loan Number (if applicable): FS 390269-0003 Eligible GPR Amount \$: 430,447

Eligible GPR Categories: W Evaluated by/Date: S.M. Donald 7/18/11

Loan Award Date (if applicable): 3/31/11

Date Business Case Posted on webpage (if applicable): \_\_\_\_\_



Ohio Drinking Water Assistance Fund  
 Drinking Water State Revolving Fund (DWSRF)  
 Green Project Reserve Information Form



Water Efficiency (W)  
 PWS Name: Village of Coal Grove PWSID: OH 44 00012  
 Project Name: Phase 2 Water System Improvements PPL #: \_\_\_\_\_  
 (Assigned by Ohio EPA)  
 Total Est. Project Cost: 460,271 Total Est. GPR Amount: 432,447

Project Summary: The project includes replacement of 6,195 L.F. of exist. 8" WL. Also replacement of filter media @ WTP

**Water Main Replacement**  
 Water main material/length to be replaced 6,195' of 8" PVC  
 Est. total system water lost due to breaks and leaks 15,000 gal/day ~ 5.25 MG/Year  
 Est. water loss from pipe being replaced \_\_\_\_\_  
 Total annual production 145 MG/Year  
 Number of breaks recorded in past 24 months for the area to be replaced 5  
 Est. annual water savings 15,000 gal/day  
 Est. annual costs savings \$25,000  
 Other efficiencies to be gained by the replacement? (reduced head and therefore less energy loss in an upstream pump station, etc.) Replacement of exist. WTP filter media will result in less water wasted for backwashing filters

**Meter Installation/Replacement**  Original Installation  Replacement Filters  
 Reason for replacement \_\_\_\_\_  
 Est. annual water savings N/A  
 Est. annual costs savings \_\_\_\_\_

Business Case Narrative (Calculate water saving improvements and costs savings):  
The project will replace the entire length of village's existing high pressure transmission line from WTP to Tank. Numerous breaks repaired over the years. Replacement of WTP filter media will reduce backwash water wasted, improve pipe efficiency  
 Attach Supporting Documentation  
 Engineering Project Planning Documents  Water/Energy Efficiency Determination (Ohio EPA)  
 Public Water System Records  Other: Contractor's bid

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# General Plan for Phase 2 Water System Improvements

*Village of Coal Grove, Ohio*

March 9, 2010

Prepared by:  
E.L. Robinson Engineering  
Paul Amburgey, PE

## **General Plan (Minimum Requirements)**

1. Discussion of all existing water quality problems.
2. Contain an assessment of the current and reasonably foreseeable requirements of Chapter 6109 of the Ohio Revised Code and rules adopted thereunder, based on monitoring data from the proposed source of supply.
3. Discussion of why the project is needed and other projects anticipated over the next twenty years.
4. Describe the existing and projected service area and population to be served.
5. Estimate the existing and projected water demand.
6. Describe project alternatives considered and the rationale for the selected alternative; this description should include the technical, managerial, financial, operational and local decision making rationale for the selected approach.
7. Include an engineering description of the existing facilities and facilities to be constructed.
8. Information regarding public participation for the project, to date, such as minutes from council meetings, public meetings or newspaper articles.

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## **Section 1 - Existing Water Quality Problems**

The system experiences temporary water quality problems associated with numerous breaks and repairs to the existing waterline. Long term water quality issues exist at the WTP due to the poor condition of the existing pressure filters.

## **Section 2- Assessment of Current and Foreseeable Requirements of Chapter 6109**

The existing system currently meets all water quality requirements pursuant to Chapter 6109. While, the WTP meets the all EPA secondary drinking water standards, there are periods where excessive iron and manganese levels exist due to the condition of the filters. This project is to

8"

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Address OEPA's recommendation to replace the existing ~~3~~<sup>8</sup>-inch water transmission line, and rehab of the WTP pressure filters, replacement of the 40 year old backwash pump.

### Section 3 – Project Needs and Future Projects

The Village is seeking Economic Stimulus funds (Phase 2- 2010 Jobs Bill) from the State of Ohio to complete replacement of an existing ~~3~~<sup>8</sup>-inch PVC main water transmission waterline. Adding new mainline valves will allow better isolation of the system during periods when waterline ruptures occur. Also, the WTP pressure filters rehab, replacement of the backwash pump is needed to maintain treatment efficiency. Future project needs would include replacement of existing cast iron waterlines (70 years old), addition of another gravel pack well in the Village wellfield.

### Section 4 – Existing and Projected Service area and Population

The existing service area customers (1,200), population (3,900), and water demand in Coal Grove is expected to achieve only slight growth over time. This proposed project includes only improvements to the existing water system however, no new extensions are possible as all existing customers are already served.

### Section 5 - Existing and Projected Water Demand

The existing water demand is expected to remain constant throughout the planning period. The economic state of the region and the historic population trends do not forecast a significant increase or decrease in the residential population of the area.

### Section 6 – Project Alternatives

No other alternatives are available as the Village has a critical need to replace the existing PVC main waterline and complete the filter, pump rehab/replacement work at the WTP

### Section 7 – Existing Facilities and Facilities to Be Constructed

8"

8" ~~3~~ The proposed project will replace 5,500 LF of existing ~~3~~<sup>8</sup>-inch PVC Class 160 psi water transmission line along Riverside Drive, Lane Street to the existing 500,000 gallon tank with new ~~3~~<sup>8</sup>-inch C-900 Class 200 psi PVC line. The old line was constructed using "thinwall" Class 160 pipe and has been repaired many times. In conjunction with the waterline replacement, also replaced will be 12 valves, 8 mainline system re-connections, and finally associated pavement replacement. At the WTP, the existing filter backwash pump and motor (40 years old) will be replaced and the pressure filters will be rehabbed.

### Section 8 – Public Involvement

The project has been discussed at several Village Council meetings.

Loan Recipient: Village of Coal Grove  
 Address: 513 Carlton Davidson Lane  
 City/State/Zip: Coal Grove, Ohio 45638

Loan # FS390269-0003  
 Pay Request # 2  
 Percent of Total: 22%  
 Date:

Activity	Total Eligible Project Cost	Previous Paid Eligible Cost	This Request	Eligible Costs To Date
<b>TECHNICAL SERVICES</b>				
Administration	\$1,718.00	\$623.64		\$623.64
Const. Management	\$14,795.00		\$1,479.50	\$1,479.50
Inspection	\$22,192.00			
Force Account				
<b>CONSTRUCTION</b>				
Distel Construction, Inc.	\$331,873.00		\$53,421.34	\$53,421.34
<p><i>Construction See separate sheets for elig. costs</i></p> <p><i>2011 Non-Construction Eligible GPR Reserve \$123,398</i></p>				
<b>OTHER COSTS</b>				
Contingency	\$33,155.16			
Land				
Planning	\$6,000.00	\$6,000.00		\$6,000.00
Design	\$36,988.00	\$34,711.60	\$2,276.40	\$36,988.00
<b>SUBTOTAL</b>	<b>\$446,721.16</b>	<b>\$41,335.24</b>	<b>\$57,177.24</b>	<b>\$98,512.40</b>
Capitalized Interest	\$9,306.00			
Application Fee (.35%)	\$4,243.84	\$4,243.84		\$4,243.84
<b>Total Estimated Costs</b>	<b>\$460,271.00</b>	<b>\$45,579.08</b>	<b>\$57,177.24</b>	<b>\$102,756.30</b>

I hereby certify that this request for disbursement is a true and accurate request for disbursement, that it is made in accordance with the terms and conditions of the above referenced loan agreement, that this request for disbursement represents eligible project costs previously unrequested, and that an inspection has been performed with all work being done in accordance with the terms of the contract award(s).

*Paul Ambrey 6/8/11*  
 E. L. Robinson Eng. Co.

Signature of Preparer

X

Signature of Borrower's Authorized Representative

FOR OWDA USE
I hereby certify that the amount of
\$ _____
named in this request is due and payable on this date in accordance with the terms and conditions of the above referenced Loan Agreement.

Ohio Water Development Authority

Contractors  
Bid

The Bidder hereby acknowledges receipt of the following addenda:

Addendum No. 1  
Date: 1-14-2011

The undersigned, having full knowledge of the plans and specifications for the improvements and the conditions of the Proposal hereby agree to furnish all the services, labor, materials, and equipment necessary to complete the work according to the plans and specifications and to accept as full compensation the lump sum or the unit prices specified serving as deduct or extra compensation rates.

And We (or I) do hereby agree that in the event of failure on OUR part to contract as aforesaid (provided this Proposal is accepted) the Bid Bond, Check or Letter of Credit accompanying this Proposal shall be forfeited to the Owner as liquidated damages for the difference between this bid and the awarded Contract price, not to exceed the amount of bond. We further agree that the Owner may reject any or all bids.

By signature below, I hereby certify that I have examined the insurance requirements in the specifications and that the types and amounts of same are currently in effect or will be obtained and kept in effect for the project duration. Verification will be provided to the Owner subsequent to the issuance of a Notice of Award.

Submitted by,

<u>Distel Construction, Inc.</u> Firm, Corporation, or Individual	<u>David Distel, President</u> Officer's Name and Title (typed)	<u>740-353-2815</u> Telephone Number
<u>2227 6th St., Portsmouth, OH 45662</u> Street Address	<u>David Distel</u> Officer's Signature	<u>740-354-0632</u> Fax Number
<u>Portsmouth, OH 45662</u> City, State, Zip Code	<u>01-14-2011</u> Date	<u>distelco@roadrunner.com</u> E-Mail Address

Note: Evidence of authority to sign and the corporate seal must be affixed and attested by the Secretary.

SUBSTANTIAL COMPLETION DATE: 150 Days

RESTORATION COMPLETION DATE: 180 Days

LIQUIDATED DAMAGES: \$200.00 PER DAY

Phase 2 Water Distribution Treatment System Improvements  
 Contract 3- 8-Inch Water Transmission Line Replacement, WTP Pumps, Valves, Filter Media Replacement  
 Construction Bid Proposal (Page 1)

Item #	Item Description	Quantity	Unit	Unit Price	Cost
1	2-inch SDR 21 PVC CL 200 Waterline, complete including furnishing, bedding, trenching, install, test/steril., clean	28	LF	20.00	560.00
2	4-inch C900 DR 14 PVC Waterline, complete including furnishing, bedding, trenching, install, test/steril., clean	100	LF	15.00	1500.00
3	8-inch C900 DR 14 PVC Waterline, complete including furnishing, bedding, trenching, install, test/steril., clean	5,900	LF	21.00	123900.00
4	8-inch C350 DIP Waterline, complete including furnishing, bedding, trenching, install, test/steril., clean	295	LF	40.00	11800.00
5	3/4-inch CL 200 Poly. Serviceline, complete including furnishing, bedding, trenching, install, test/steril., clean	100	LF	10.00	1000.00
6	Reconnect exist. Water Meter Settings to new Main, complete incl. 8-inch saddle, corp. stop. 3/4" brass coupling	3	Each	250.00	750.00
7	Tie-in No 1 - Connect new 8-inch W/L to Ex. 8-inch W/L complete w/fittings, 8-inch valve/box, coupling	1	Each	4400.00	4400.00
8	Tie-in Nos. 2, 7 - Connect new 8-inch W/L to Ex. 4-inch W/L complete w/fittings, 4-inch valve/box, coupling	2	Each	2300.00	4600.00
9	Tie-in No 3 - Connect new 8-inch W/L to Ex. 8-inch W/L complete w/fittings, 8-inch valve/box, coupling	1	Each	3007.00	3007.00
10	Tie-in No 4 - Connect new 8-inch W/L to Ex. 8-inch W/L complete w/fittings, 8-inch valve/box, coupling	1	Each	2856.00	2856.00
11	Tie-in No 5 - Connect new 4-inch W/L to Ex. 4-inch W/L complete w/fittings, coupling	1	Each	800.00	800.00
12	Tie-in No 6 - Connect new 8-inch W/L to Ex. 6-inch W/L complete w/fittings, 6-inch valve/box, coupling	1	Each	2369.00	2369.00
13	Tie-in No 6A - Connect new 2-inch W/L to Ex. 2-inch W/L complete w/fittings, 2-inch valve/box, coupling	1	Each	800.00	800.00
14	Tie-in No 8 - Connect new 8-inch W/L to Ex. 8-inch W/L complete w/fittings, 8-inch valve/box, coupling	1	Each	3007.00	3007.00
15	New 4-inch gate valve/box, 8 x 4 reducer (Riverside Drive/Pike Street)	1	Each	700.00	700.00
16	New 8-inch gate valve/box(Pike Street near us 52 Overpass)	1	Each	900.00	900.00
17	Gravel Surface Replacement	65	S.Y.	10.00	650.00
18	Concrete Sidewalk Replacement w/o Curb	130	S.Y.	95.00	12350.00
19	Concrete Sidewalk Replacement w/ Curb	135	S.Y.	120.00	16200.00
20	Asphalt Pavement Replacement including granular trench backfill, asphalt pavement	800	S.Y.	32.00	25600.00
21	Concrete Pavement Replacement including granular backfill	220	S.Y.	70.00	15400.00
22	Installation of Waterline Markers	20	Each	35.00	700.00
23	Temporary Erosion Control Measures (Waterline construction)	1	LS	1300.00	1300.00

DD  
DD  
DD  
DD  
DD  
DD  
DD

7/20/11 All costs this page GPR water efficiency eligible

BF.7

Contractors  
 Bid 2 of 3

**Construction Bid Proposal (Page 2)- Revised Addendum No. 1: 1-17-2011**

Item #	Item Description	Quantity	Unit	Unit Price	Cost
24	Removal of existing media, remove clean underdrain nozzles, furnish install new filter, support gravel media for the (4) Water Plant Pressure Filters	1	LS	52000.00	52000.00
		1	LS	1400.00	<del>1400.00</del>
<del>25</del>	<del>Remove, replace existing 6-inch flanged HS Pumps discharge gate valves (2 total) at Water Plant</del>	1	LS	<del>10799.00</del>	<del>10799.00</del>
<del>26</del>	<del>Remove, replace existing Water Plant HS Pump No. 2 Motor only</del>	1	LS	<del>13005.00</del>	<del>13005.00</del>
<del>27</del>	<del>Remove, replace existing Water Plant Backwash Pump and Motor</del>	1	LS	<del>4620.00</del>	<del>4620.00</del>
<del>28</del>	<del>Install new Exhaust fan w/dampers/ louvers/grille, replace existing Electric Panelboard</del>	1	LS	14900.00	14900.00
29	Surface prep. Sandblast clean, prime, finish paint the (4) Water Plant Pressure Filters exterior only				
				Total Base Bid Numbers:	\$ 331,873.00
Deductive Alternates: Provide (-) deduct in the event the Owner remove or modify from Bid the following scope of work					
1a.	Provide deduct cost if Owner elects to eliminate installation of Exhaust Fan, louvers, Electrical Panel replacement (Item 28 above)	1	LS	4600.00	\$ (-) 4600.00
2a.	Provide material deduct cost if Owner elects to use C900 8-inch DR 18 PVC pipe vs. 8-inch DR 14 as specified	5,900	L.F.	9030.00	\$ (-) 9030.00
3a.	Provide deduct cost to remove, replace existing 6-inch flanged HS Pumps discharge gate valves (2 total) at WTP (Item 25 above)	1	LS	1400.00	\$ (-) 1400.00
4a.	Provide deduct cost for surf. prep. sandblast clean, prime, finish paint the (4) Water Plant Pressure Filters extn. (Item 29)	1	LS	14900.00	\$ (-) 14900.00
				Total Deducts Alternate Bid:	\$ (-) 29930.00

Note: Contractor to include costs for mobilization, insurance, bonding, overhead/profit in unit prices above.  
 No separate payment will be made for these items.

**Basis of Award:**

The determination of the lowest and most responsive bid for this project shall be based in part on the lowest base bid for this project.

Signature: David Distel

David Distel, President

Date 1-17-2011

*Contractors Bid*  
*30 of 3*

*2/2011*  
*Green Project Reserve*  
*(Water Energy Efficiency)*

*Total Project Cost AS Bid: \$ 331,873*  
*Less non-Elig. Items - 29,824*

*NET Green Project*  
*Eligible: \$ 302,049*  
*Plus Non Const \$ 128,398*  
*Eligible Costs \$ 430,447*

BF.7A

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- Water Efficiency (W)** (pages 8-10)
- Other Environmentally Innovative Activity (O)** (pages 11-13)

PWS Name: Village of Flushing

PWSID: 700912

Project Name: Water Main Replacements

PPL #: 95  
(Assigned by Ohio EPA)

Total Est. Project Cost: \$2,059,117.71

Total Est. GPR Amount: \$600,783.00

Completed by:

Name: Jeffrey Vaughn Title: Engineer  
(Please print)

Signature:  Date: 7-26-11

For Ohio EPA use only:

Loan Number (if applicable): F5390357-0003 Eligible GPR Amount \$: 34,350

Eligible GPR Categories: W Evaluated by/Date:  7/26/11

Loan Award Date (if applicable): 5/26/11

Date Business Case Posted on webpage (if applicable): \_\_\_\_\_



Water Efficiency (W)

PWS Name: Village of Flushing

PWSID: 700912

Project Name: Water Main Replacements

PPL #: \_\_\_\_\_  
 (Assigned by Ohio EPA)

Total Est. Project Cost: \$2,059,117.71

Total Est. GPR Amount: \$600,783.00

Project Summary: Construct approximately 23,600 linear feet of 8", 6" and 4" water main, 39 fire hydrants, 26 water line valves, 388 residential customer reconnections borings, tie-ins and other appurtenances to complete the water main replacements.

**Water Main Replacement**

Water main material/length to be replaced  
 approx.. 23,600 linear feet.

Est. total system water lost due to breaks and leaks 10%

Est. water loss from pipe being replaced 5%

Total annual production 28.6 MG

Number of breaks recorded in past 24 months  
 for the area to be replaced 14

Est. annual water savings 285,000 gallon

Est. annual costs savings \$1,145.00

Other efficiencies to be gained by the replacement? (reduced head and therefore less energy loss in an upstream pump station, etc.)

**Meter Installation/Replacement**       Original Installation       Replacement

Reason for replacement

Est. annual water savings

Est. annual costs savings

Business Case Narrative (Calculate water saving improvements and costs savings): IV. Proper water infrastructure - replacing aging infrastructure. Water lost due to breaks and leaks on the lines being replaced = 10% or 285,000 gallons per year. The village purchases their water from Belmont County. All the lines are being replaced in the village. Total water savings in lost water would equal \$1,145 per year. The village averages 7 breaks per year and they fix these themselves. The overtime cost for the two employees that work on these breaks, fuel for the backhoe, and repair materials is estimated at \$800 per break or \$5,600 per year. Total annual savings is estimated as the sum of these costs or \$6,745 per year.

Attach Supporting Documentation

$\$1,145 \times 30 \text{ yr loan} = \$34,350$  *SM*

Engineering Project Planning Documents

Water/Energy Efficiency Determination (Ohio EPA)

Public Water System Records

Other: \_\_\_\_\_





GREEN PROJECT RESERVE FORM

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- Other Environmentally Innovative Activity (O) (pages 11-13)

PWS Name: Greater Cincinnati Water Works PWSID: 3102612

Project Name: Dana Ave. Water Main Replacement PPL #: FS390255-0010  
(Assigned by Ohio EPA)

Total Est. Project Cost: \$3,042,375.56 Total Est. GPR Amount: \$256,641

Completed by:

Name: Carel Vandermeyden Title: Chief Engineer  
(Please print)

Signature: *Carel Vandermeyden* Date: 8/18/11

For Ohio EPA use only:

Loan Number (if applicable): FS390255-0010 Eligible GPR Amount \$: 256,641.00

Eligible GPR Categories: W Evaluated by/Date: Sam Adams 8/18/11

Loan Award Date (if applicable): 6/30/11

Date Business Case Posted on webpage (if applicable): 9/14/11





**Water Efficiency (W)**

PWS Name: Greater Cincinnati Water Works PWSID: 3102612

Project Name: Dana Ave. Water Main Replacement PPL #: FS390255-0010  
 (Assigned by Ohio EPA)

Total Est. Project Cost: \$3,042,375.56 Total Est. GPR Amount: \$256,641

**Project Summary:** This project replaces a number of older, cast iron water mains in the GCWW distribution system along Dana Avenue. Some of these mains date back to the early 1900's. The existing 20-inch and 24-inch diameter water transmission mains are being replaced with new 24-inch and 30-inch diameter transmission mains. Similarly, the existing 6-inch and 8-inch diameter distribution mains that were installed in the early 1900's are being replaced with new water mains.

**Water Main Replacement**

Water main material/length to be replaced	9,257 feet of cast iron water mains
Est. total system water lost due to breaks and leaks	5,346 MG (2009 real losses estimate)
Est. water loss from pipe being replaced	Unknown
Total annual production	45,809 MG (2009)
Number of breaks recorded in past 24 months for the area to be replaced	One break was recorded on the 6-inch water main in 2010. Additional breaks were recorded in 2008, 2007 and 2005
Est. annual water savings	3.78 MG/year
Est. annual costs savings	\$9,551/year
Other efficiencies to be gained by the replacement? (reduced head and therefore less energy loss in an upstream pump station, etc.)	N/A

**Meter Installation/Replacement**

Original Installation  Replacement

Reason for replacement	
Est. annual water savings	
Est. annual costs savings	

**Business Case Narrative (Calculate water saving improvements and costs savings):**

The water mains to be replaced are close to 100 years old, but do not show an excessive amount of breaks. Because the City of Cincinnati is doing a major roadway improvement project on Dana Avenue, GCWW decided to replace this aging infrastructure as a pro-active step before excessive water main breaks start occurring. Historical breaks are not significant, but it is GCWW's experience that after a major road project, these old mains are compromised and will experience higher rates of leaks and breaks. Of the real system losses, the majority of the main breaks tend to occur on cast iron water mains. Assuming that 75% of the water main breaks are on cast iron mains, then 4,009 MG/yr of real losses ( $5,346 \times 0.75 = 4,009$  MG/yr) would be attributable to cast iron water mains. GCWW has approximately 1,857 miles of cast iron water mains, so the average annual water losses per mile of cast iron water main are 2.16 MG/mile/yr ( $4,009$  MG/ $1,857$  miles). Since this project has 1.75 miles of water main ( $9,257/5280 = 1.75$  miles), the estimated future water losses are 3.78 MG/year. This could be avoided by replacing the cast iron water mains now. At a commodity cost of \$1.89/CCF, the estimated savings in year 1 could be \$9,551 per year. Over the 20 year loan period, assuming an average 3% annual rate increase, the total estimated savings would be \$256,641.



OHIO EPA - DDAGW

GREEN PROJECT RESERVE FORM

U.S. EPA requires Ohio EPA to use at least 20 percent of its capitalization grant funds for projects to address green infrastructure, water or energy efficiency improvements and other environmentally innovative activities. These four categories of projects comprise the Green Project Reserve (GPR).

Projects that meet GPR criteria follow the established DWSRF project process. Projects clearly eligible for GPR are known as categorically eligible projects. A list of categorically eligible projects within each project category is attached to this form. Projects not found to be categorically eligible will need to have business case documentation. For a project to be considered a GPR project, a business case requires a well-documented justification. Ohio EPA reviews all business cases to determine GPR eligibility and posts them on its website by the end of the calendar quarter in which the loan is made.

Listed below are the four categories of projects that comprise the GPR. For each category, there are corresponding pages that must be completed and submitted with this cover page. Attach additional pages as necessary. Please check the **category or categories** that are applicable to your project.

- Green Infrastructure (G) (pages 3-4)
- Energy Efficiency (E) (pages 5-7)
- Water Efficiency (W) (pages 8-10)
- Other Environmentally Innovative Activity (O) (pages 11-13)

PWS Name: Old Straitsville Water Association

PWSID: 6401403

Project Name: Old Town Waterline & Meter Replacement

PPL #: 55 & 162  
(Assigned by Ohio EPA)

Total Est. Project Cost: \$319,450.00

Total Est. GPR Amount: \$242,506.56

Completed by:

Name: Alan Brown, M•E Companies, Inc. Title: Project Engineer  
(Please print)

Signature:  Date: 6/29/2011

For Ohio EPA use only:

Loan Number (if applicable) FS 391275-0004 Eligible GPR Amount \$242,506.56

Eligible GPR Categories: W Evaluated by/Date Samir M. Danil / 7/5/11

Loan Award Date (if applicable): 5/26/11

Date Business Case Posted on webpage (if applicable): 9/14/11



**Ohio Drinking Water Assistance Fund  
Drinking Water State Revolving Fund (DWSRF)  
Green Project Reserve Information Form**



**Environmental  
Protection Agency**

Division of Drinking and Ground Waters

**Water Efficiency (W)**

PWS Name: Old Straitsville Water Association

PWSID: 6401403

Project Name: Old Town Waterline & Meter Replacement

PPL #: 55 & 162  
(Assigned by Ohio EPA)

Total Est. Project Cost: \$319,450.00

Total Est. GPR Amount: \$242,506.56

**Project Summary:**

The project includes replacement of approximately 2,500 feet of 3" waterline, replacement of 367 water meters with AMR meters and 4 sub-meters (leak detection).

**Water Main Replacement**

Water main material/length to be replaced	2,500 feet of 2" PVC with 3" HDPE
Est. total system water lost due to breaks and leaks	4,797,102 gallons per year
Est. water loss from pipe being replaced	16,767 gallons per year
Total annual production	60,869,400 gallons purchased
Number of breaks recorded in past 24 months for the area to be replaced	16
Est. annual water savings	16,767 gallons
Est. annual costs savings	\$70.42
Other efficiencies to be gained by the replacement? (reduced head and therefore less energy loss in an upstream pump station, etc.)	Use of HDPE should eliminate any future leaks with fused joint connections.

**Meter Installation/Replacement**

Original Installation  Replacement

Reason for replacement	Exceeded useful life (lost water) / not AMR
Est. annual water savings	\$3,699.36
Est. annual costs savings	\$8,506.08

**Business Case Narrative (Calculate water saving improvements and costs savings):**

The water loss on the 2,500 feet of pipe should go from 16,767 gallons annually to 0 gallons. At a price of \$4.20 per 1,000 gallons that is an annual savings of \$70.42. The Water Assn. will reduce the total man hours to read system wide meters by replacing the last 367 meters with AMR meters. This results in a monthly savings of \$708.84 or an annual savings of \$8,506.08. The new meters will also be more accurate and should at least result in a 5% reduction of lost water on those meters. Assuming 200 gallons per month (4,000 x 5%) for the 367 meters would be an annual water savings of 880,800 gallons or \$3,699.36. In addition, the project includes installing 4 sub-meters at locations known to be leak prone. The sub-meters will allow the Water Assn. to find leaks quicker and hopes of reducing their water loss to less than 10% (currently 14.79%). The 4.79% difference on 60,869,400 gallons annually is 2,915,644 gallons. Again, at a price of \$4.20 per 1,000 gallons that is as much as \$12,245.71 in annual savings.

**Attach Supporting Documentation**

- Engineering Project Planning Documents  Water/Energy Efficiency Determination (Ohio EPA)  
 Public Water System Records  Other: Bid Tabulation

RECEIVED

JUL 01 2011



BID RESULTS - OLD STRAITSVILLE WATER ASSOCIATION  
 OLD TOWN WATERLINE REPLACEMENT  
 ENGINEER'S ESTIMATE = \$85,000  
 CONTRACT A - MATERIAL SUPPLY

APRIL 1, 2011

BUCKEYE STATE PIPE & SUPPLY CO., INC.							
BID ITEM NO.	DESCRIPTION	QUANTITY	UNIT	LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE
1	5/8" x 3/4" COLD WATER METER, GALLON REGISTER w/ RADIO READ MODULE FOR UNDER THE LID MOUNT	356	EA		193.97	\$193.97	\$69,053.32
2	1" COLD WATER METER, GALLON REGISTER w/ RADIO READ MODULE FOR UNDER THE LID MOUNT	11	EA		297.36	\$297.36	\$3,270.96
3	3" TURBINE COLD WATER METER GALLON REGISTER w/ RADIO READ MODULE FOR BELOW GRADE VAULT	4	EA		1,276.57	\$1,276.57	\$5,106.28
4	RADIO READ MOBILE RECIEVER KIT, COMPLETE	1	LS		5,781.00	\$5,781.00	\$5,781.00
TOTAL (ITEMS 1-4)							\$83,211.56



CERTIFIED BY:

*Randy A. Stoll*

DATE:

4.3.2011

BID ITEM NO.	DESCRIPTION	QUANTITY	UNIT	TAM CONSTRUCTION, INC.				KENDRICK EXCAVATING, INC.			
				LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE	LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE
1	MOBILIZATION / DEMOBILIZATION	1	LS	16,000.00	3,442.50	\$19,442.50	\$19,442.50	2,640.00	-	\$2,640.00	\$2,640.00
2	3" PVC (SDR 17) WATERLINE	2,500	LF	3.50	1.50	\$5.00	\$12,500.00	3.50	3.50	\$7.00	\$17,500.00
3	3/4" PE SERVICE LINE	840	LF	5.00	1.00	\$6.00	\$5,040.00	3.00	3.25	\$6.25	\$5,250.00
4	3" ROAD BORE CROSSING w/ 6" STEEL CASING, INCL. CARRIER PIPE, COMPLETE	85	LF	21.00	79.00	\$100.00	\$8,500.00	25.00	20.00	\$45.00	\$3,825.00
5	3" OPEN CUT ROAD CROSSING w/ GRAVEL ROAD REPAIR, INCL. CARRIER PIPE, COMPLETE	35	LF	21.00	79.00	\$100.00	\$3,500.00	30.00	45.00	\$75.00	\$2,625.00
6	3/4" SERVICE LINE BORE INCL. PE SERVICE LINE & 1 1/4" PE CASING	1,000	LF	7.00	1.00	\$8.00	\$8,000.00	5.19	4.00	\$9.19	\$9,190.00
7	3" GATE VALVE & BOX, COMPLETE	3	EA	50.00	475.00	\$525.00	\$1,575.00	325.00	325.00	\$650.00	\$1,950.00
8	2" GATE VALVE & BOX, COMPLETE	2	EA	50.00	350.00	\$400.00	\$800.00	200.00	225.00	\$425.00	\$850.00
9	2" FLUSH HYDRANT, COMPLETE	2	EA	125.00	850.00	\$975.00	\$1,950.00	800.00	800.00	\$1,600.00	\$2,600.00
10	4" TYPE "A" CONNECTION, INCL. TAPPING VALVE AND BOX, COMPLETE	6	EA	600.00	1,050.00	\$1,650.00	\$9,900.00	900.00	1,000.00	\$1,900.00	\$11,400.00
11	3" TYPE "B" CONNECTION, COMPLETE	1	EA	150.00	250.00	\$400.00	\$400.00	600.00	630.00	\$1,230.00	\$1,230.00
12	3/4" TAP TO 8" MAIN, COMPLETE	18	EA	40.00	100.00	\$140.00	\$2,520.00	200.00	238.00	\$438.00	\$7,884.00
13	3/4" TAP TO 3" MAIN, COMPLETE	29	EA	30.00	70.00	\$100.00	\$2,900.00	100.00	135.00	\$235.00	\$6,815.00
14	3/4" SERVICE RECONNECTION, COMPLETE	47	EA	50.00	20.00	\$70.00	\$3,290.00	100.00	165.00	\$265.00	\$12,455.00
15	3/4"x5/8" METER ENCLOSURE, INCL. BOX, COVER & TANDEM SETTER FOR SERVICE w/ MPRV	47	EA	100.00	325.00	\$425.00	\$19,975.00	140.00	150.00	\$290.00	\$13,630.00
16	REMOVAL OF EXISTING METER ENCLOSURE, INCL. BOX, COVER, METER & SETTER	47	EA	100.00	-	\$100.00	\$4,700.00	100.00	65.00	\$165.00	\$7,755.00
17	UTILITY MARKERS	9	EA	5.00	30.00	\$35.00	\$315.00	15.00	15.00	\$30.00	\$270.00
18	UNDETECTABLE MARKING TAPE	2,500	EA	0.05	0.05	\$0.10	\$250.00	-	0.22	\$0.22	\$550.00
19	TRACER WIRE	4,775	EA	0.10	0.40	\$0.50	\$2,387.50	-	0.20	\$0.20	\$955.00
20	DEMOLITION OF EXISTING MPRV STATION, COMPLETE	1	LS	500.00	50.00	\$550.00	\$550.00	1,000.00	-	\$1,000.00	\$1,000.00
21	CLEARING & GRUBBING	1	LS	90.00	10.00	\$100.00	\$100.00	1,500.00	-	\$1,500.00	\$1,500.00
22	SEEDING & MULCHING	1	LS	2,000.00	500.00	\$2,500.00	\$2,500.00	1,200.00	1,000.00	\$2,200.00	\$2,200.00
23	DISINFECTION AND TESTING	1	LS	900.00	100.00	\$1,000.00	\$1,000.00	5,000.00	-	\$5,000.00	\$5,000.00
24	EROSION CONTROL MEASURES	1	LS	400.00	100.00	\$500.00	\$500.00	2,000.00	2,000.00	\$4,000.00	\$4,000.00
25	REMOVAL & REPLACEMENT OF METER BOX & LFD	20	EA	100.00	120.00	\$220.00	\$4,400.00	100.00	175.00	\$275.00	\$5,500.00
26	SUB-METER VAULT & PIPING, AS DETAILED	4	EA	4,000.00	6,500.00	\$10,500.00	\$42,000.00	4,100.00	5,000.00	\$9,100.00	\$36,400.00
<b>TOTAL (ITEMS 1-26)</b>							<b>\$158,995.00</b>				<b>\$164,994.00</b>

ALTERNATE BID

BID ITEM NO.	DESCRIPTION	QUANTITY	UNIT	TAM CONSTRUCTION, INC.				KENDRICK EXCAVATING, INC.			
				LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE	LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE
A1	MOBILIZATION / DEMOBILIZATION	1	LS	16,250.00	3,442.50	\$19,692.50	\$19,692.50	2,640.00	-	\$2,640.00	\$2,640.00
A2	3" HDPE (DR 11) WATERLINE	2,500	LF	3.50	1.50	\$5.00	\$12,500.00	5.00	5.00	\$10.00	\$25,000.00
A3	3/4" PE SERVICE LINE	840	LF	5.00	1.00	\$6.00	\$5,040.00	3.00	3.25	\$6.25	\$5,250.00
A4	3" ROAD BORE CROSSING VIA DIRECTIONAL BORE, COMPLETE	85	LF	21.00	79.00	\$100.00	\$8,500.00	25.00	20.00	\$45.00	\$3,825.00
A5	3" OPEN CUT ROAD CROSSING w/ GRAVEL ROAD REPAIR, INCL. CARRIER PIPE, COMPLETE	35	LF	21.00	79.00	\$100.00	\$3,500.00	30.00	45.00	\$75.00	\$2,625.00
A6	3/4" SERVICE LINE BORE INCL. PE SERVICE LINE & 1 1/4" PE CASING	1,000	LF	7.00	1.00	\$8.00	\$8,000.00	5.19	4.00	\$9.19	\$9,190.00
A7	3" GATE VALVE & BOX, COMPLETE	3	EA	50.00	475.00	\$525.00	\$1,575.00	325.00	325.00	\$650.00	\$1,950.00
A8	2" GATE VALVE & BOX, COMPLETE	2	EA	50.00	350.00	\$400.00	\$800.00	200.00	225.00	\$425.00	\$850.00
A9	2" FLUSH HYDRANT, COMPLETE	2	EA	125.00	850.00	\$975.00	\$1,950.00	500.00	800.00	\$1,300.00	\$2,600.00
A10	4" TYPE "A" CONNECTION, INCL. TAPPING VALVE AND BOX, COMPLETE	6	EA	600.00	1,050.00	\$1,650.00	\$9,900.00	900.00	1,000.00	\$1,900.00	\$11,400.00
A11	3" TYPE "B" CONNECTION, COMPLETE	1	EA	150.00	250.00	\$400.00	\$400.00	600.00	650.00	\$1,250.00	\$1,250.00
A12	3/4" TAP TO 8" MAIN, COMPLETE	18	EA	40.00	100.00	\$140.00	\$2,520.00	200.00	238.00	\$438.00	\$7,884.00
A13	3/4" TAP TO 3" MAIN, COMPLETE	29	EA	30.00	70.00	\$100.00	\$2,900.00	100.00	135.00	\$235.00	\$6,815.00
A14	3/4" SERVICE RECONNECTION, COMPLETE	47	EA	50.00	20.00	\$70.00	\$3,290.00	100.00	165.00	\$265.00	\$12,455.00
A15	3/4"x5/8" METER ENCLOSURE, INCL. BOX, COVER & TANDEM SETTER FOR SERVICE w/ MPRV	47	EA	100.00	325.00	\$425.00	\$19,975.00	140.00	150.00	\$290.00	\$13,630.00
A16	REMOVAL OF EXISTING METER ENCLOSURE, INCL. BOX, COVER, METER & SETTER	47	EA	100.00	-	\$100.00	\$4,700.00	100.00	65.00	\$165.00	\$7,755.00
A17	UTILITY MARKERS	9	EA	5.00	30.00	\$35.00	\$315.00	15.00	15.00	\$30.00	\$270.00
A18	UNDETECTABLE MARKING TAPE	2,500	EA	-	-	\$0.00	\$0.00	-	0.22	\$0.22	\$550.00
A19	TRACER WIRE	4,775	EA	0.10	0.40	\$0.50	\$2,387.50	-	0.20	\$0.20	\$955.00
A20	DEMOLITION OF EXISTING MPRV STATION, COMPLETE	1	LS	500.00	50.00	\$550.00	\$550.00	1,000.00	-	\$1,000.00	\$1,000.00
A21	CLEARING & GRUBBING	1	LS	90.00	10.00	\$100.00	\$100.00	1,500.00	-	\$1,500.00	\$1,500.00
A22	SEEDING & MULCHING	1	LS	2,000.00	500.00	\$2,500.00	\$2,500.00	1,100.00	1,100.00	\$2,200.00	\$2,200.00
A23	DISINFECTION AND TESTING	1	LS	900.00	100.00	\$1,000.00	\$1,000.00	5,000.00	-	\$5,000.00	\$5,000.00
A24	EROSION CONTROL MEASURES	1	LS	400.00	100.00	\$500.00	\$500.00	2,000.00	2,000.00	\$4,000.00	\$4,000.00
A25	REMOVAL & REPLACEMENT OF METER BOX & LID	20	EA	100.00	120.00	\$220.00	\$4,400.00	100.00	175.00	\$275.00	\$5,500.00
A26	SUB-METER VAULT & PIPING, AS DETAILED	4	EA	4,000.00	6,500.00	\$10,500.00	\$42,000.00	4,100.00	5,000.00	\$9,100.00	\$36,400.00
<b>TOTAL (ITEMS A1-A26)</b>							<b>\$158,995.00</b>				<b>\$172,494.00</b>

BID ITEM NO.	DESCRIPTION	QUANTITY	UNIT	PERRY RECLAIMING, INC.				BEAUTY RIDGE CONTRACTORS, LLC.			
				LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE	LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE
1	MOBILIZATION / DEMOBILIZATION	1	LS	500.00	-	\$500.00	\$500.00	500.00	500.00	\$1,000.00	\$1,000.00
2	3" PVC (SDR 17) WATERLINE	2,500	LF	7.00	2.50	\$9.50	\$23,750.00	4.90	1.40	\$6.30	\$15,750.00
3	3/4" PE SERVICE LINE	840	LF	5.00	0.25	\$5.25	\$4,410.00	4.70	0.30	\$5.00	\$4,200.00
4	3" ROAD BORE CROSSING w/ 6" STEEL CASING, INCL. CARRIER PIPE, COMPLETE	85	LF	40.00	16.00	\$56.00	\$4,760.00	60.00	30.00	\$90.00	\$7,650.00
5	3" OPEN CUT ROAD CROSSING w/ GRAVEL ROAD REPAIR, INCL. CARRIER PIPE, COMPLETE	35	LF	8.00	8.00	\$16.00	\$560.00	60.00	30.00	\$90.00	\$3,150.00
6	3/4" SERVICE LINE BORE INCL. PE SERVICE LINE & 1 1/4" PE CASING	1,000	LF	5.00	1.50	\$6.50	\$6,500.00	15.00	4.00	\$19.00	\$19,000.00
7	3" GATE VALVE & BOX, COMPLETE	3	EA	20.00	530.00	\$550.00	\$1,650.00	200.00	515.00	\$715.00	\$2,145.00
8	2" GATE VALVE & BOX, COMPLETE	2	EA	20.00	375.00	\$395.00	\$790.00	170.00	363.00	\$533.00	\$1,066.00
9	2" FLUSH HYDRANT, COMPLETE	2	EA	100.00	900.00	\$1,000.00	\$2,000.00	400.00	1,249.00	\$1,649.00	\$3,298.00
10	4" TYPE "A" CONNECTION, INCL. TAPPING VALVE AND BOX, COMPLETE	6	EA	1,750.00	1,150.00	\$2,900.00	\$17,400.00	1,387.00	1,150.00	\$2,537.00	\$15,222.00
11	3" TYPE "B" CONNECTION, COMPLETE	1	EA	60.00	250.00	\$310.00	\$310.00	1,000.00	250.00	\$1,250.00	\$1,250.00
12	3/4" TAP TO 8" MAIN, COMPLETE	18	EA	20.00	100.00	\$120.00	\$2,160.00	95.00	95.00	\$190.00	\$3,420.00
13	3/4" TAP TO 3" MAIN, COMPLETE	29	EA	20.00	70.00	\$90.00	\$2,610.00	95.00	65.00	\$160.00	\$4,640.00
14	3/4" SERVICE RECONNECTION, COMPLETE	47	EA	250.00	20.00	\$270.00	\$12,690.00	50.00	20.00	\$70.00	\$3,290.00
15	3/4"x5/8" METER ENCLOSURE, INCL. BOX, COVER & TANDEM SETTER FOR SERVICE w/ MPRV	47	EA	30.00	350.00	\$380.00	\$17,860.00	270.00	350.00	\$620.00	\$29,140.00
16	REMOVAL OF EXISTING METER ENCLOSURE, INCL. BOX, COVER, METER & SETTER	47	EA	100.00	-	\$100.00	\$4,700.00	20.00	20.00	\$40.00	\$1,880.00
17	UTILITY MARKERS	9	EA	-	30.00	\$30.00	\$270.00	20.00	30.00	\$50.00	\$450.00
18	UNDETECTABLE MARKING TAPE	2,500	EA	-	0.10	\$0.10	\$250.00	0.10	0.05	\$0.15	\$375.00
19	TRACER WIRE	4,775	EA	-	1.00	\$1.00	\$4,775.00	0.05	0.35	\$0.40	\$1,910.00
20	DEMOLITION OF EXISTING MPRV STATION, COMPLETE	1	LS	770.00	-	\$770.00	\$770.00	200.00	50.00	\$250.00	\$250.00
21	CLEARING & GRUBBING	1	LS	-	-	\$0.00	\$0.00	100.00	100.00	\$200.00	\$200.00
22	SEEDING & MULCHING	1	LS	3,000.00	500.00	\$3,500.00	\$3,500.00	500.00	500.00	\$1,000.00	\$1,000.00
23	DISINFECTION AND TESTING	1	LS	2,500.00	380.00	\$2,880.00	\$2,880.00	200.00	400.00	\$600.00	\$600.00
24	EROSION CONTROL MEASURES	1	LS	50.00	50.00	\$100.00	\$100.00	200.00	100.00	\$300.00	\$300.00
25	REMOVAL & REPLACEMENT OF METER BOX & LID	20	EA	125.00	175.00	\$300.00	\$6,000.00	100.00	130.00	\$230.00	\$4,600.00
26	SUB-METER VAULT & PIPING, AS DETAILED	4	EA	5,100.00	7,000.00	\$12,100.00	\$48,400.00	2,000.00	9,500.00	\$11,500.00	\$46,000.00
<b>TOTAL (ITEMS 1-26)</b>							<b>\$169,595.00</b>				<b>\$171,786.00</b>

ALTERNATE BID

BID ITEM NO.	DESCRIPTION	QUANTITY	UNIT	PERRY RECLAIMING, INC.				BEAUTY RIDGE CONTRACTORS, LLC.			
				LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE	LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE
A1	MOBILIZATION / DEMOBILIZATION	1	LS	NO BID	NO BID	NO BID	NO BID	500.00	500.00	\$1,000.00	\$1,000.00
A2	3" HDPE (DR 11) WATERLINE	2,500	LF	NO BID	NO BID	NO BID	NO BID	6.00	3.00	\$9.00	\$22,500.00
A3	3/4" PE SERVICE LINE	840	LF	NO BID	NO BID	NO BID	NO BID	4.70	0.30	\$5.00	\$4,200.00
A4	3" ROAD BORE CROSSING VIA DIRECTIONAL BORE, COMPLETE	85	LF	NO BID	NO BID	NO BID	NO BID	60.00	30.00	\$90.00	\$7,650.00
A5	3" OPEN CUT ROAD CROSSING w/ GRAVEL ROAD REPAIR, INCL. CARRIER PIPE, COMPLETE	35	LF	NO BID	NO BID	NO BID	NO BID	60.00	30.00	\$90.00	\$3,150.00
A6	3/4" SERVICE LINE BORE INCL. PE SERVICE LINE & 1 1/2" PE CASING	1,000	LF	NO BID	NO BID	NO BID	NO BID	15.00	4.00	\$19.00	\$19,000.00
A7	3" GATE VALVE & BOX, COMPLETE	3	EA	NO BID	NO BID	NO BID	NO BID	200.00	515.00	\$715.00	\$2,145.00
A8	2" GATE VALVE & BOX, COMPLETE	2	EA	NO BID	NO BID	NO BID	NO BID	170.00	363.00	\$533.00	\$1,066.00
A9	2" FLUSH HYDRANT, COMPLETE	2	EA	NO BID	NO BID	NO BID	NO BID	400.00	1,249.00	\$1,649.00	\$3,298.00
A10	4" TYPE "A" CONNECTION, INCL. TAPPING VALVE AND BOX, COMPLETE	6	EA	NO BID	NO BID	NO BID	NO BID	1,387.00	1,150.00	\$2,537.00	\$15,222.00
A11	3" TYPE "B" CONNECTION, COMPLETE	1	EA	NO BID	NO BID	NO BID	NO BID	1,000.00	250.00	\$1,250.00	\$1,250.00
A12	3/4" TAP TO 8" MAIN, COMPLETE	18	EA	NO BID	NO BID	NO BID	NO BID	95.00	95.00	\$190.00	\$3,420.00
A13	3/4" TAP TO 3" MAIN, COMPLETE	29	EA	NO BID	NO BID	NO BID	NO BID	95.00	65.00	\$160.00	\$4,640.00
A14	3/4" SERVICE RECONNECTION, COMPLETE	47	EA	NO BID	NO BID	NO BID	NO BID	50.00	20.00	\$70.00	\$3,290.00
A15	3/4" x 5/8" METER ENCLOSURE, INCL. BOX, COVER & TANDEM SETTER FOR SERVICE w/ IPRV	47	EA	NO BID	NO BID	NO BID	NO BID	270.00	350.00	\$620.00	\$29,140.00
A16	REMOVAL OF EXISTING METER ENCLOSURE, INCL. BOX, COVER, METER & SETTER	47	EA	NO BID	NO BID	NO BID	NO BID	20.00	20.00	\$40.00	\$1,880.00
A17	UTILITY MARKERS	9	EA	NO BID	NO BID	NO BID	NO BID	20.00	30.00	\$50.00	\$450.00
A18	UNDETECTABLE MARKING TAPE	2,500	EA	NO BID	NO BID	NO BID	NO BID	0.10	0.05	\$0.15	\$375.00
A19	TRACER WIRE	4,775	EA	NO BID	NO BID	NO BID	NO BID	0.05	0.35	\$0.40	\$1,910.00
A20	DEMOLITION OF EXISTING MPRV STATION, COMPLETE	1	LS	NO BID	NO BID	NO BID	NO BID	200.00	50.00	\$250.00	\$250.00
A21	CLEARING & GRUBBING	1	LS	NO BID	NO BID	NO BID	NO BID	100.00	100.00	\$200.00	\$200.00
A22	SEEDING & MULCHING	1	LS	NO BID	NO BID	NO BID	NO BID	500.00	500.00	\$1,000.00	\$1,000.00
A23	DISINFECTION AND TESTING	1	LS	NO BID	NO BID	NO BID	NO BID	200.00	400.00	\$600.00	\$600.00
A24	EROSION CONTROL MEASURES	1	LS	NO BID	NO BID	NO BID	NO BID	200.00	100.00	\$300.00	\$300.00
A25	REMOVAL & REPLACEMENT OF METER BOX & LID	20	EA	NO BID	NO BID	NO BID	NO BID	100.00	130.00	\$230.00	\$4,600.00
A26	SUB-METER VAULT & PIPING, AS DETAILED	4	EA	NO BID	NO BID	NO BID	NO BID	2,000.00	9,500.00	\$11,500.00	\$46,000.00
<b>TOTAL (ITEMS A1-A26)</b>							<b>NO BID</b>				<b>\$178,536.00</b>

BID ITEM NO.	DESCRIPTION	QUANTITY	UNIT	LEXCO SITE SERVICES, INC.				ZEMBA BROS., INC.			
				LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE	LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE
1	MOBILIZATION / DEMOBILIZATION	1	LS	18,443.45	-	\$18,443.45	\$18,443.45	2,000.00	2,793.60	\$4,793.60	\$4,793.60
2	3" PVC (SDR 17) WATERLINE	2,500	LF	6.56	1.99	\$8.55	\$21,375.00	9.25	3.35	\$12.60	\$31,500.00
3	3/4" PE SERVICE LINE	840	LF	5.50	0.20	\$5.70	\$4,788.00	3.13	0.23	\$3.36	\$2,822.40
4	3" ROAD BORE CROSSING w/ 6" STEEL CASING, INCL. CARRIER PIPE, COMPLETE	85	LF	68.23	18.37	\$86.60	\$7,361.00	63.53	34.68	\$98.21	\$8,347.85
5	3" OPEN CUT ROAD CROSSING w/ GRAVEL ROAD REPAIR, INCL. CARRIER PIPE, COMPLETE	35	LF	16.57	25.41	\$41.98	\$1,469.30	31.72	46.83	\$78.55	\$2,749.25
6	3/4" SERVICE LINE BORE INCL. PE SERVICE LINE & 1/4" PE CASING	1,000	LF	12.75	0.84	\$13.59	\$13,590.00	15.60	1.36	\$16.96	\$16,960.00
7	3" GATE VALVE & BOX, COMPLETE	3	EA	32.00	375.00	\$407.00	\$1,221.00	185.00	469.02	\$654.02	\$1,962.06
8	2" GATE VALVE & BOX, COMPLETE	2	EA	15.00	300.00	\$315.00	\$630.00	185.00	330.63	\$515.63	\$1,031.26
9	2" FLUSH HYDRANT, COMPLETE	2	EA	150.00	704.00	\$854.00	\$1,708.00	185.00	848.30	\$1,033.30	\$2,066.60
10	4" TYPE "A" CONNECTION, INCL. TAPPING VALVE AND BOX, COMPLETE	6	EA	1,380.00	1,125.00	\$2,505.00	\$15,030.00	600.00	1,522.34	\$2,122.34	\$12,734.04
11	3" TYPE "B" CONNECTION, COMPLETE	1	EA	580.00	445.00	\$1,025.00	\$1,025.00	370.00	283.70	\$653.70	\$653.70
12	3/4" TAP TO 8" MAIN, COMPLETE	18	EA	100.00	81.00	\$181.00	\$3,258.00	125.00	85.24	\$210.24	\$3,784.32
13	3/4" TAP TO 3" MAIN, COMPLETE	29	EA	25.00	52.00	\$77.00	\$2,233.00	125.00	54.44	\$179.44	\$5,203.76
14	3/4" SERVICE RECONNECTION, COMPLETE	47	EA	100.00	2.00	\$102.00	\$4,794.00	62.50	14.23	\$76.73	\$3,606.31
15	3/4"x5/8" METER ENCLOSURE, INCL. BOX, COVER & TANDEM SETTER FOR SERVICE w/ IPRV	47	EA	100.00	357.00	\$457.00	\$21,479.00	250.00	328.42	\$578.42	\$27,185.74
16	REMOVAL OF EXISTING METER ENCLOSURE, INCL. BOX, COVER, METER & SETTER	47	EA	50.00	-	\$50.00	\$2,350.00	125.00	21.35	\$146.35	\$6,878.45
17	UTILITY MARKERS	9	EA	5.00	20.00	\$25.00	\$225.00	20.00	27.15	\$47.15	\$424.35
18	UNDETECTABLE MARKING TAPE	2,500	EA	-	0.02	\$0.02	\$50.00	0.01	0.03	\$0.04	\$100.00
19	TRACER WIRE	4,775	EA	0.15	0.20	\$0.35	\$1,671.25	0.01	0.36	\$0.37	\$1,766.75
20	DEMOLITION OF EXISTING MPRV STATION, COMPLETE	1	LS	1,800.00	349.00	\$2,149.00	\$2,149.00	940.00	213.50	\$1,153.50	\$1,153.50
21	CLEARING & GRUBBING	1	LS	1,200.00	-	\$1,200.00	\$1,200.00	25.00	25.00	\$50.00	\$50.00
22	SEEDING & MULCHING	1	LS	1,400.00	1,200.00	\$2,600.00	\$2,600.00	1,900.00	1,900.19	\$3,800.19	\$3,800.19
23	DISINFECTION AND TESTING	1	LS	1,640.00	300.00	\$1,940.00	\$1,940.00	3,120.00	372.42	\$3,492.42	\$3,492.42
24	EROSION CONTROL MEASURES	1	LS	250.00	300.00	\$550.00	\$550.00	250.00	250.00	\$500.00	\$500.00
25	REMOVAL & REPLACEMENT OF METER BOX & LID	20	EA	120.00	105.00	\$225.00	\$4,500.00	250.00	157.99	\$407.99	\$8,159.80
26	SUB-METER VAULT & PIPING, AS DETAILED	4	EA	4,960.00	7,855.00	\$12,815.00	\$51,260.00	3,809.00	6,645.42	\$10,454.42	\$41,817.68
<b>TOTAL (ITEMS 1-26)</b>							<b>\$186,900.00</b>				<b>\$193,544.03</b>

ALTERNATE BID

BID ITEM NO.	DESCRIPTION	QUANTITY	UNIT	LEXCO SITE SERVICES, INC.				ZEMBA BROS., INC.			
				LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE	LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE
A1	MOBILIZATION / DEMOBILIZATION	1	LS	NO BID	NO BID	NO BID	NO BID	2,000.00	2,793.60	\$4,793.60	\$4,793.60
A2	3" HDPE (DR 11) WATERLINE	2,500	LF	NO BID	NO BID	NO BID	NO BID	9.25	5.85	\$15.10	\$37,750.00
A3	3/4" PE SERVICE LINE	840	LF	NO BID	NO BID	NO BID	NO BID	3.13	0.23	\$3.36	\$2,822.40
A4	3" ROAD BORE CROSSING VIA DIRECTIONAL BORE, COMPLETE	85	LF	NO BID	NO BID	NO BID	NO BID	63.53	34.68	\$98.21	\$8,347.85
A5	3" OPEN CUT ROAD CROSSING w/ GRAVEL ROAD REPAIR, INCL. CARRIER PIPE, COMPLETE	35	LF	NO BID	NO BID	NO BID	NO BID	31.72	46.83	\$78.55	\$2,749.25
A6	3/4" SERVICE LINE BORE INCL. PE SERVICE LINE & 1 1/2" PE CASING	1,000	LF	NO BID	NO BID	NO BID	NO BID	15.60	1.36	\$16.96	\$16,960.00
A7	3" GATE VALVE & BOX, COMPLETE	3	EA	NO BID	NO BID	NO BID	NO BID	185.00	469.02	\$654.02	\$1,962.06
A8	2" GATE VALVE & BOX, COMPLETE	2	EA	NO BID	NO BID	NO BID	NO BID	185.00	330.63	\$515.63	\$1,031.26
A9	2" FLUSH HYDRANT, COMPLETE	2	EA	NO BID	NO BID	NO BID	NO BID	185.00	848.30	\$1,033.30	\$2,066.60
A10	4" TYPE "A" CONNECTION, INCL. TAPPING VALVE AND BOX, COMPLETE	6	EA	NO BID	NO BID	NO BID	NO BID	600.00	1,522.34	\$2,122.34	\$12,734.04
A11	3" TYPE "B" CONNECTION, COMPLETE	1	EA	NO BID	NO BID	NO BID	NO BID	370.00	283.70	\$653.70	\$653.70
A12	3/4" TAP TO 8" MAIN, COMPLETE	18	EA	NO BID	NO BID	NO BID	NO BID	125.00	85.24	\$210.24	\$3,784.32
A13	3/4" TAP TO 3" MAIN, COMPLETE	29	EA	NO BID	NO BID	NO BID	NO BID	125.00	54.44	\$179.44	\$5,203.76
A14	3/4" SERVICE RECONNECTION, COMPLETE	47	EA	NO BID	NO BID	NO BID	NO BID	62.50	14.23	\$76.73	\$3,606.31
A15	3/4"x5/8" METER ENCLOSURE, INCL. BOX, COVER & TANDEM SETTER FOR SERVICE w/ IFRV	47	EA	NO BID	NO BID	NO BID	NO BID	250.00	328.42	\$578.42	\$27,185.74
A16	REMOVAL OF EXISTING METER ENCLOSURE, INCL. BOX, COVER, METER & SETTER	47	EA	NO BID	NO BID	NO BID	NO BID	125.00	21.35	\$146.35	\$6,878.45
A17	UTILITY MARKERS	9	EA	NO BID	NO BID	NO BID	NO BID	20.00	27.15	\$47.15	\$424.35
A18	UNDETECTABLE MARKING TAPE	2,500	EA	NO BID	NO BID	NO BID	NO BID	0.01	0.03	\$0.04	\$100.00
A19	TRACER WIRE	4,775	EA	NO BID	NO BID	NO BID	NO BID	0.01	0.36	\$0.37	\$1,766.75
A20	DEMOLITION OF EXISTING MPRV STATION, COMPLETE	1	LS	NO BID	NO BID	NO BID	NO BID	940.00	213.50	\$1,153.50	\$1,153.50
A21	CLEARING & GRUBBING	1	LS	NO BID	NO BID	NO BID	NO BID	25.00	25.00	\$50.00	\$50.00
A22	SEEDING & MULCHING	1	LS	NO BID	NO BID	NO BID	NO BID	1,800.00	1,900.19	\$3,800.19	\$3,800.19
A23	DISINFECTION AND TESTING	1	LS	NO BID	NO BID	NO BID	NO BID	3,120.00	372.42	\$3,492.42	\$3,492.42
A24	EROSION CONTROL MEASURES	1	LS	NO BID	NO BID	NO BID	NO BID	250.00	250.00	\$500.00	\$500.00
A25	REMOVAL & REPLACEMENT OF METER BOX & LID	20	EA	NO BID	NO BID	NO BID	NO BID	250.00	157.99	\$407.99	\$8,159.80
A26	SUB-METER VAULT & PIPING, AS DETAILED	4	EA	NO BID	NO BID	NO BID	NO BID	3,809.00	6,645.42	\$10,454.42	\$41,817.68
<b>TOTAL (ITEMS A1-A26)</b>							<b>NO BID</b>				<b>\$199,794.03</b>

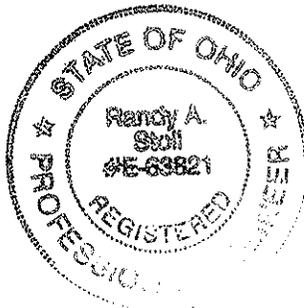
## LITTLE CREEK CONSTRUCTION, INC.

BID ITEM NO.	DESCRIPTION	QUANTITY	UNIT	LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE
1	MOBILIZATION / DEMOBILIZATION	1	LS	10,000.00	10,000.00	\$20,000.00	\$20,000.00
2	3" PVC (SDR 17) WATERLINE	2,500	LF	8.00	3.00	\$11.00	\$27,500.00
3	3/4" PE SERVICE LINE	840	LF	6.00	2.00	\$8.00	\$6,720.00
4	3" ROAD BORE CROSSING w/ 6" STEEL CASING, INCL. CARRIER PIPE, COMPLETE	85	LF	50.00	40.00	\$90.00	\$7,650.00
5	3" OPEN CUT ROAD CROSSING w/ GRAVEL ROAD REPAIR, INCL. CARRIER PIPE, COMPLETE	35	LF	30.00	30.00	\$60.00	\$2,100.00
6	3/4" SERVICE LINE BORE INCL. PE SERVICE LINE & 1 1/2" PE CASING	1,000	LF	7.00	3.00	\$10.00	\$10,000.00
7	3" GATE VALVE & BOX, COMPLETE	3	EA	100.00	550.00	\$650.00	\$1,950.00
8	2" GATE VALVE & BOX, COMPLETE	2	EA	100.00	400.00	\$500.00	\$1,000.00
9	2" FLUSH HYDRANT, COMPLETE	2	EA	300.00	900.00	\$1,200.00	\$2,400.00
10	4" TYPE "A" CONNECTION, INCL. TAPPING VALVE AND BOX, COMPLETE	6	EA	800.00	1,200.00	\$2,000.00	\$12,000.00
11	3" TYPE "B" CONNECTION, COMPLETE	1	EA	700.00	200.00	\$900.00	\$900.00
12	3/4" TAP TO 8" MAIN, COMPLETE	18	EA	25.00	100.00	\$125.00	\$2,250.00
13	3/4" TAP TO 3" MAIN, COMPLETE	29	EA	25.00	60.00	\$85.00	\$2,465.00
14	3/4" SERVICE RECONNECTION, COMPLETE	47	EA	200.00	30.00	\$230.00	\$10,810.00
15	3/4"x5/8" METER ENCLOSURE, INCL. BOX, COVER & TANDEM SETTER FOR SERVICE w/ MPRV	47	EA	200.00	400.00	\$600.00	\$28,200.00
16	REMOVAL OF EXISTING METER ENCLOSURE, INCL. BOX, COVER, METER & SETTER	47	EA	150.00	-	\$150.00	\$7,050.00
17	UTILITY MARKERS	9	EA	5.00	30.00	\$35.00	\$315.00
18	UNDETECTABLE MARKING TAPE	2,500	EA	0.05	0.05	\$0.10	\$250.00
19	TRACER WIRE	4,775	EA	0.10	0.35	\$0.45	\$2,148.75
20	DEMOLITION OF EXISTING MPRV STATION, COMPLETE	1	LS	500.00	500.00	\$1,000.00	\$1,000.00
21	CLEARING & GRUBBING	1	LS	250.00	250.00	\$500.00	\$500.00
22	SEEDING & MULCHING	1	LS	1,000.00	1,000.00	\$2,000.00	\$2,000.00
23	DISINFECTION AND TESTING	1	LS	1,000.00	500.00	\$1,500.00	\$1,500.00
24	EROSION CONTROL MEASURES	1	LS	500.00	500.00	\$1,000.00	\$1,000.00
25	REMOVAL & REPLACEMENT OF METER BOX & LID	20	EA	100.00	100.00	\$200.00	\$4,000.00
26	SUB-METER VAULT & PIPING, AS DETAILED	4	EA	3,500.00	6,500.00	\$10,000.00	\$40,000.00
<b>TOTAL (ITEMS 1-26)</b>							<b>\$195,708.75</b>

ALTERNATE BID

LITTLE CREEK CONSTRUCTION, INC.							
BID ITEM NO.	DESCRIPTION	QUANTITY	UNIT	LABOR	MATERIAL	TOTAL labor + material	TOTAL EXTENDED PRICE
A1	MOBILIZATION / DEMOBILIZATION	1	LS	10,000.00	10,000.00	\$20,000.00	\$20,000.00
A2	3" HDPE (DR 11) WATERLINE	2,500	LF	11.00	7.00	\$18.00	\$45,000.00
A3	3/4" PE SERVICE LINE	840	LF	6.00	2.00	\$8.00	\$6,720.00
A4	3" ROAD BORE CROSSING VIA DIRECTIONAL BORE, COMPLETE	85	LF	50.00	10.00	\$60.00	\$5,100.00
A5	3" OPEN CUT ROAD CROSSING w/ GRAVEL ROAD REPAIR, INCL. CARRIER PIPE, COMPLETE	35	LF	30.00	30.00	\$60.00	\$2,100.00
A6	3/4" SERVICE LINE BORE INCL. PE SERVICE LINE & 1/4" PE CASING	1,000	LF	7.00	3.00	\$10.00	\$10,000.00
A7	3" GATE VALVE & BOX, COMPLETE	3	EA	200.00	750.00	\$950.00	\$2,850.00
A8	2" GATE VALVE & BOX, COMPLETE	2	EA	100.00	400.00	\$500.00	\$1,000.00
A9	2" FLUSH HYDRANT, COMPLETE	2	EA	300.00	900.00	\$1,200.00	\$2,400.00
A10	4" TYPE "A" CONNECTION, INCL. TAPPING VALVE AND BOX, COMPLETE	6	EA	900.00	1,300.00	\$2,200.00	\$13,200.00
A11	3" TYPE "B" CONNECTION, COMPLETE	1	EA	800.00	300.00	\$1,100.00	\$1,100.00
A12	3/4" TAP TO 8" MAIN, COMPLETE	18	EA	25.00	100.00	\$125.00	\$2,250.00
A13	3/4" TAP TO 3" MAIN, COMPLETE	29	EA	50.00	100.00	\$150.00	\$4,350.00
A14	3/4" SERVICE RECONNECTION, COMPLETE	47	EA	200.00	30.00	\$230.00	\$10,810.00
A15	3/4"x5/8" METER ENCLOSURE, INCL. BOX, COVER & TANDEM SETTER FOR SERVICE w/ IPRV	47	EA	200.00	400.00	\$600.00	\$28,200.00
A16	REMOVAL OF EXISTING METER ENCLOSURE, INCL. BOX, COVER, METER & SETTER	47	EA	150.00	-	\$150.00	\$7,050.00
A17	UTILITY MARKERS	9	EA	5.00	30.00	\$35.00	\$315.00
A18	UNDETECTABLE MARKING TAPE	2,500	EA	0.05	0.05	\$0.10	\$250.00
A19	TRACER WIRE	4,775	EA	0.10	0.35	\$0.45	\$2,148.75
A20	DEMOLITION OF EXISTING MPRV STATION, COMPLETE	1	LS	500.00	500.00	\$1,000.00	\$1,000.00
A21	CLEARING & GRUBBING	1	LS	250.00	250.00	\$500.00	\$500.00
A22	SEEDING & MULCHING	1	LS	1,000.00	1,000.00	\$2,000.00	\$2,000.00
A23	DISINFECTION AND TESTING	1	LS	1,000.00	500.00	\$1,500.00	\$1,500.00
A24	EROSION CONTROL MEASURES	1	LS	500.00	500.00	\$1,000.00	\$1,000.00
A25	REMOVAL & REPLACEMENT OF METER BOX & LID	20	EA	100.00	100.00	\$200.00	\$4,000.00
A26	SUB-METER VAULT & PIPING, AS DETAILED	4	EA	3,500.00	6,500.00	\$10,000.00	\$40,000.00
<b>TOTAL (ITEMS A1-A26)</b>							<b>\$214,843.75</b>

ORIGINAL BID \$214,605.00



CERTIFIED BY: Randy A. Stoll

DATE: 4.3.2011



GREEN PROJECT RESERVE FORM

U.S. EPA requires Ohio EPA to use at least 20 percent of its capitalization grant funds for projects to address green infrastructure, water or energy efficiency improvements and other environmentally innovative activities. These four categories of projects comprise the Green Project Reserve (GPR).

Projects that meet GPR criteria follow the established DWSRF project process. Projects clearly eligible for GPR are known as categorically eligible projects. A list of categorically eligible projects within each project category is attached to this form. Projects not found to be categorically eligible will need to have business case documentation. For a project to be considered a GPR project, a business case requires a well-documented justification. Ohio EPA reviews all business cases to determine GPR eligibility and posts them on its website by the end of the calendar quarter in which the loan is made.

Listed below are the four categories of projects that comprise the GPR. For each category, there are corresponding pages that must be completed and submitted with this cover page. Attach additional pages as necessary. Please check the **category or categories** that are applicable to your project.

- Green Infrastructure (G) (pages 3-4)
- Energy Efficiency (E) (pages 5-7)
- Water Efficiency (W) (pages 8-10)
- Other Environmentally Innovative Activity (O) (pages 11-13)

PWS Name: Southern Perry County Water District

PWSID: OH6401603

Project Name: Congo Water System Improvements

PPL #: 11  
(Assigned by Ohio EPA)

Total Est. Project Cost: \$350,000

Total Est. GPR Amount: \$131,000

Completed by:

Name: Randy Stoll, P.E. Title: Project Manager  
(Please print)

Signature:  Date: 8.2.2011

For Ohio EPA use only:

Loan Number (if applicable): FS391640-000 Eligible GPR Amount \$: 131,000

Eligible GPR Categories: E Evaluated by/Date: SM [Signature] 8/3/11

Loan Award Date (if applicable): 5/26/11

Date Business Case Posted on webpage (if applicable): 9/14/11



**Ohio Drinking Water Assistance Fund  
 Drinking Water State Revolving Fund (DWSRF)  
 Green Project Reserve Information Form**



**Environmental  
 Protection Agency**  
Division of Drinking and Ground Waters

**Energy Efficiency (E)**

PWS Name: Southern Perry County Water District PWSID: OH6401603

Project Name: Congo Water System Improvements PPL #: 11  
 (Assigned by Ohio EPA)

Total Est. Project Cost: \$350,000 Total Est. GPR Amount: \$131,000

**Project Summary:**

This project includes the installation of approximately 17,000 feet of 4", and 3" PVC waterline, replacement of a water booster station with site work and piping, service meter installations, valves, hydrants, and all appurtenances.

**Pump Facilities**

Age of existing pumps or pumping facilities	34 years (1977)
Existing pump/motor efficiency rating, if known	65% (pump) 75% (motor)
New pump/motor efficiency rating	76% (pump) 93.5% (motor)
Estimated annual electrical savings	18,000 kW
Estimated annual cost savings	\$900

**Business Case Narrative: (Calculate energy efficiency improvements and costs savings.)**

Southern Perry County currently runs two service pumps at 145 gpm @ 245 TDH 12 hours per day to meet the demand. The existing pumps/motors have a wire-to-water efficiency of approximately 49%. The two new pumps will operate at 145 gpm @ 250 TDH 12 hours per day. The two new pumps will have a better wire-to-water efficiency of approximately 71%. This will reduce the amount of electricity spent on operating costs which make this addition "green." The two new pumps will operate sequentially extending the useful life of the pumps.

Based on the calculations attached, Southern Perry County will save approximately \$900 per year due to the installation of these two pumps. The useful life of these pumps is 25 years which will contribute to \$22,500 in savings. The payback period for these pumps is 11 years which is reasonable for a pumping station.

**Attach Supporting Documentation**

- Engineering Project Planning Documents       Water/Energy Efficiency Determination (Ohio EPA)  
 Public Water System Records                       Other: Calculation Worksheet





Project Name CONGO WATER SYS. IMP. Job No. \_\_\_\_\_

Calculated By \_\_\_\_\_ Date 8/2/2011

Checked By \_\_\_\_\_ Date \_\_\_\_\_

Subject CALCULATION WORKSHEET

**Achieving Exceptional Results through Management and Engineering**

POWER CONSUMPTION

EX. (WIRE-TO-WATER) efficiency = 65% x 75% = 49%

PROP. (WIRE-TO-WATER) efficiency = 76% x 93.5% = 71.1%

• POWER = Q x TDH x 0.746 / (3960 x WIRE-TO-WATER EFF.)

• Q<sub>EX</sub> = Q<sub>PROP</sub> = 145 GPM

• TDH = 250 ft

POWER<sub>PROP</sub> = (145 GPM)(250 FT)(0.746) / (3960 x 71.1%) = 9.6 KW

POWER<sub>EX</sub> = (145 GPM)(245 FT)(0.746) / (3960 x 49%) = 13.7 KW

RUNTIME = 12 HRS / DAY x 365 DAYS / YR = 4380 HRS

• ASSUME \$0.05 / KWH

ANNUAL CONSUMPTION (KWH) = (4380 hrs)(9.6 KW) = 42,048 KWH

= (4380 hrs)(13.7 KW) = 60,000 KWH

ANNUAL COST

PROP = (\$0.05 / KWH)(42,048 KWH) = \$2,102

EX = (\$0.05 / KWH)(60,000 KWH) = \$3,000

ANNUAL SAVINGS = \$900

• USEFUL LIFE = 25 YRS

TOTAL SAVINGS = \$22,500

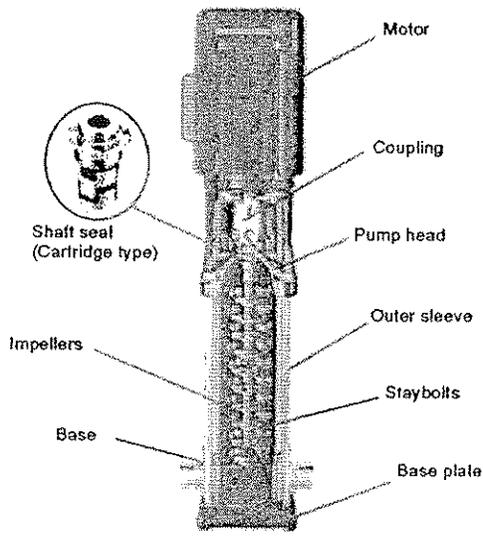
PAYBACK PERIOD = \$10,000 / \$2891 = 11 YRS

## Pump

The CR and CRE pump is a non-self-priming, vertical multistage centrifugal pump. The pumps are available with a Grundfos standard motor (CR pumps) or a frequency-controlled motor (CRE pumps).

The pump consists of a base and a pump head. The chamber stack and the outer sleeve are secured between the pump head and the base by means of staybolts. The base has suction and discharge ports on the same level (in-line).

All pumps are equipped with a maintenance-free mechanical shaft seal of the cartridge type.



GR3357 - GR3396

Fig. 3 CR pump

CR pump with ANSI/NSF 61 listing is available. See UL file MH26400 or contact Grundfos.

## Motor

**Grundfos standard motors - ML and Baldor® motors**  
CR, CRI and CRN pumps are fitted with a Grundfos specified motor. The motors are all heavy-duty 2-pole, NEMA C-face motors.

### Frequency-controlled motors - MLE motors

CRE, CRIE and CRNE pumps are fitted with a totally enclosed, fan-cooled, 2-pole motor with integrated variable frequency drive.

From 0.5 Hp to 1.5 Hp Grundfos offers CRE pumps fitted with single-phase MLE motors (1 x 208-230 V). From 1.0 Hp to 10 Hp Grundfos offers CRE pumps fitted with three-phase MLE motors (3 x 460-480 V). From 1.5 Hp to 7.5 Hp Grundfos offers CRE pumps fitted with three-phase MLE motors (3 x 208-230 V).

## Electrical data

Mounting designation	NEMA
Insulation class	F & B
Efficiency class*	Standard efficiency Energy efficient / EPCAct - on request Premium efficiency - on request
Enclosure class	TEFC - Totally Enclosed Fan Cooled (Grundfos standard) ODP - Open Drip Proof - on request
60 Hz Standard voltages	1 x 115/208-230 V 3 x 208-230/460 V 3 x 575 V
The motors are rated for:	
Approvals	Baldor ML/MLE

\* 1, 1½ and 2 HP ML motors are premium efficiency as standard

## Optional motors

The Grundfos standard range of motors covers a wide variety of application demands. However, for special applications or operating conditions, custom-built motor solutions can be provided.

For special applications or operating conditions, Grundfos offers custom-built motors such as:

- explosion proof motors,
- motors with anti-condensation heating unit,
- low-noise motors,
- energy efficient and premium efficiency motors PROVIDE
- Motors with thermal protection.

## Motor protection

Single-phase Grundfos specified motors up to 7.5 hp have a built-in thermal overload switch.

Three-phase motors must be connected to a motor starter in accordance with local regulations.

PROVIDE MOTORS + PUMP BEARINGS SIZED FOR 20,000 HOURS; L-10 LIFE.

## Terminal box positions

As standard the terminal box is mounted on the suction side of the pump.

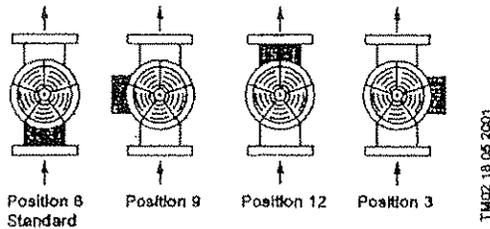


Fig. 4 Terminal box positions

## Ambient temperature

Ambient temperature: Maximum +104 °F.

If the ambient temperature exceeds +104 °F or if the motor is located 3280 feet above sea level or higher, the motor output (P2) must be reduced due to the low cooling effect of the air. In such cases, it may be necessary to use a motor with a higher output.

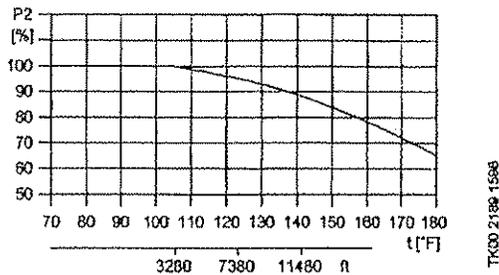


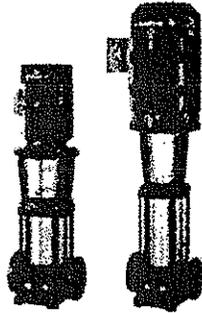
Fig. 5 Relationship between motor output (P2) and ambient temperature

## Viscosity

The pumping of liquids with densities or kinematic viscosities higher than those of water will cause a considerable pressure drop, a drop in the hydraulic performance and a rise in the power consumption.

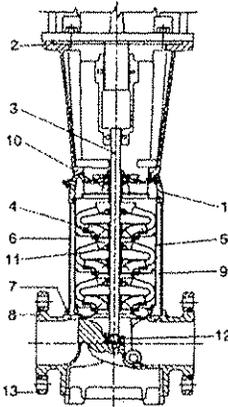
In such situations the pump should be equipped with a larger motor. If in doubt, contact Grundfos.

## CR(E) 32, 45, 64 and 90



TM01 2150 1288

Sectional drawing

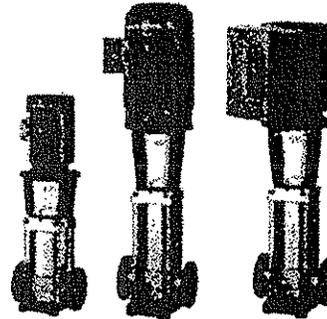


TM03 2157 3605

### Materials: CR(E)

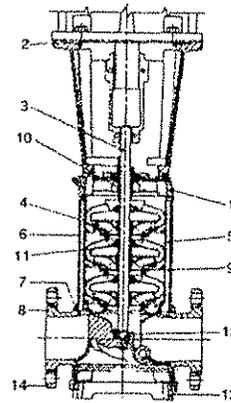
Pos.	Designation	Materials	AISI/ASTM
1	Pump head	Ductile iron	A 65-45-12
2	Motor stool	Cast iron	A 48-30 B
3	Shaft	Stainless steel	AISI 431
4	Impeller	Stainless steel	AISI 304
5	Chamber	Stainless steel	AISI 304
6	Outer sleeve	Stainless steel	AISI 304
7	O-ring for outer sleeve	EPDM or FKM	
8	Base	Ductile iron	A 65-45-12
9	Neck ring	Acoflon 215	
10	Shaft seal	Cartridge type	
11	Bearing ring	Bronze	
12	Bottom bearing ring	Tungsten carbide/ Tungsten carbide	
13	Flange ring	Ductile iron <sup>2)</sup>	A 65-45-12
	Rubber parts	EPDM or FKM	

## CRN(E) 32, 45, 64 and 90



TM02 7389 3403

Sectional drawing



TM03 2156 3605

### Materials: CRN(E)

Pos.	Designation	Materials	AISI/ASTM
1	Pump head	Stainless steel	CF 8M <sup>1)</sup>
2	Motor stool	Cast iron	A 48-30 B
3	Shaft	Stainless steel	SAF 2205
4	Impeller	Stainless steel	AISI 316
5	Chamber	Stainless steel	AISI 316
6	Outer sleeve	Stainless steel	AISI 316
7	O-ring for outer sleeve	EPDM or FKM	
8	Base	Stainless steel	CF 8M <sup>1)</sup>
9	Neck ring	Acoflon 215	
10	Shaft seal	Cartridge type	
11	Bearing ring	Carbon-graphite filled PTFE	
12	Bottom bearing ring	Tungsten carbide/ Tungsten carbide	
13	Base plate	Ductile iron <sup>2)</sup>	A 65-45-12
14	Flange ring	Ductile iron <sup>2)</sup>	A 65-45-12
	Rubber parts	EPDM or FKM	

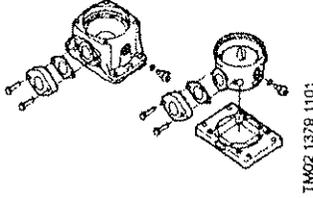
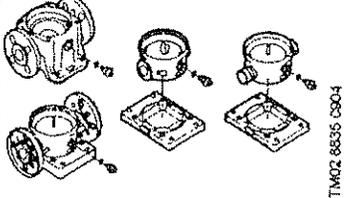
<sup>1)</sup> CF 8M is cast equivalent of AISI 316 stainless steel.

<sup>2)</sup> Stainless steel available on request.

# Operating and inlet pressure

CR, CRI, CRN, CRE, CRIE, CRNE

## Maximum operating pressure and temperature range

		Oval flange		ANSI, Clamp, PJE	
					
		Max. permissible operating pressure	Liquid temperature range	Max. permissible operating pressure	Liquid temperature range
CR, CRI, CRN 1s		232 [psi]	-4 °F to +248 °F	362 [psi]	-4 °F to +248 °F
CR(E), CRI(E), CRN(E) 1		232 [psi]	-4 °F to +248 °F	362 [psi]	-4 °F to +248 °F
CR(E), CRI(E), CRN(E) 3		232 [psi]	-4 °F to +248 °F	362 [psi]	-4 °F to +248 °F
CR(E), CRI(E), CRN(E) 5		232 [psi]	-4 °F to +248 °F	362 [psi]	-4 °F to +248 °F
CR(E) 10-1	> CR(E) 10-6	145 [psi]	-4 °F to +248 °F	-	-
CRI(E), CRN(E) 10-1	> CRI(E), CRN(E) 10-10	232 [psi]	-4 °F to +248 °F	-	-
CR(E), CRI(E) 10-1	> CR(E), CRI(E) 10-10	-	-	232 [psi]	-4 °F to +248 °F
CR(E), CRI(E) 10-12	> CR(E), CRI(E) 10-17	-	-	362 [psi]	-4 °F to +248 °F
CRN(E) 10		-	-	362 [psi]	-4 °F to +248 °F
CR(E) 15-1	> CR(E) 15-5	145 [psi]	-4 °F to +248 °F	-	-
CRI(E), CRN(E) 15-1	> CRI(E), CRN(E) 15-8	232 [psi]	-4 °F to +248 °F	-	-
CR(E), CRI(E) 15-1	> CR(E), CRI(E) 15-8	-	-	232 [psi]	-4 °F to +248 °F
CR(E), CRI(E) 15-9	> CR(E), CRI(E) 15-12	-	-	362 [psi]	-4 °F to +248 °F
CRN(E) 15		-	-	362 [psi]	-4 °F to +248 °F
CR(E) 20-1	> CR(E) 20-5	145 [psi]	-4 °F to +248 °F	-	-
CRI(E), CRN(E) 20-1	> CRI(E), CRN(E) 20-7	232 [psi]	-4 °F to +248 °F	-	-
CR(E), CRI(E) 20-1	> CR(E), CRI(E) 20-7	-	-	232 [psi]	-4 °F to +248 °F
CR(E), CRI(E) 20-8	> CR(E), CRI(E) 20-10	-	-	362 [psi]	-4 °F to +248 °F
CRN(E) 20		-	-	362 [psi]	-4 °F to +248 °F
CR(E), CRN(E) 32-1-1	> CR(E), CRN(E) 32-5	-	-	232 [psi]	-22 °F to +248 °F
CR, CRN 32-6-2	> CR, CRN 32-11-2	-	-	435 [psi]	-22 °F to +248 °F
CR(E), CRN(E) 45-1-1	> CR(E), CRN(E) 45-4-2	-	-	232 [psi]	-22 °F to +248 °F
CR(E), CRN(E) 45-4-1	> CR, CRN 45-8-1	-	-	435 [psi]	-22 °F to +248 °F
CR(E), CRN(E) 64-1-1	> CR(E), CRN(E) 64-3	-	-	232 [psi]	-22 °F to +248 °F
CR(E), CRN(E) 64-4-2	> CR(E), CRN(E) 64-5-2	-	-	435 [psi]	-22 °F to +248 °F
CR(E), CRN(E) 90-1-1	> CR(E), CRN(E) 90-3	-	-	232 [psi]	-22 °F to +248 °F
CR(E), CRN(E) 90-4-2	> CR(E), CRN(E) 90-4-1	-	-	435 [psi]	-22 °F to +248 °F
CR(E), CRN(E) 120-1-1	> CR(E), CRN(E) 120-5-1	-	-	435 [psi]	-22 °F to +248 °F
CR(E), CRN(E) 150-1-1	> CR(E), CRN(E) 150-4-1	-	-	435 [psi]	-22 °F to +248 °F

# Operating and inlet pressure

CR, CRI, CRN, CRE, CRIE, CRNE

## Operating range of the shaft seal

The operating range of the shaft seal depends on operating pressure, pump type, type of shaft seal and liquid temperature. The following curves apply to clean water and water with anti-freeze liquids. For selecting the right shaft seal, see *List of pumped liquids* on page 74.

### CR 1s - CR 20

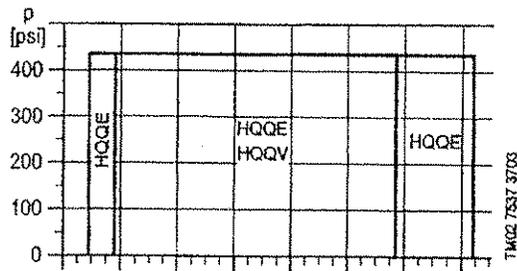


Fig. 14 Operating range of standard shaft seals for CR 1s - CR 20

### CR 32 - CR 150 (3.0-60 Hp)

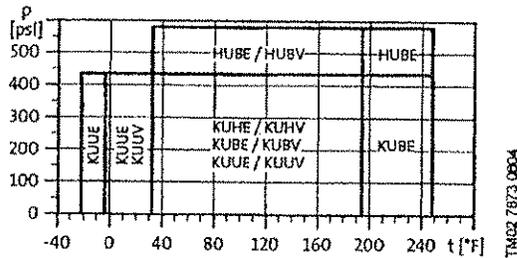


Fig. 15 Operating range of standard shaft seals for CR 32 - CR 150 (3.0-60 Hp)

### CR 120 - CR 150 (75-100 Hp)

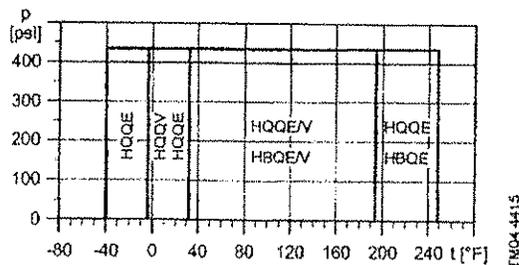


Fig. 16 Operating range of standard shaft seals for CR 120 - CR 150 (75-100 Hp)

Shaft seal	Description	Max. temp. range [°F]
HQQE	O-ring (cartridge) (balanced seal), SIC/SIC, EPDM	-22 °F to +248 °F
HBQE	O-ring (cartridge) (balanced seal), Carbon/SIC, EPDM	+32 °F to +248 °F
HQQV	O-ring (cartridge) (balanced seal), SIC/SIC, FKM	-4 °F to +194 °F
HUBE	O-ring (cartridge) (balanced seal), TC/carbon, EPDM	+32 °F to +248 °F
HUBV	O-ring (cartridge) (balanced seal), TC/carbon, FKM	+32 °F to +194 °F
KUBE	Bellows, metal (cartridge), TC/carbon, EPDM	+32 °F to +248 °F
KUBV	Bellows, metal (cartridge), TC/carbon, FKM	+32 °F to +194 °F
KUHE	Bellows, metal (cartridge), TC/Carbon with embedded TC, EPDM	+32 °F to +194 °F
KUHV	Bellows, metal (cartridge), TC/Carbon with embedded TC, FKM	+32 °F to +194 °F
KUUE	Bellows, metal (cartridge), TC/TC, EPDM	-22 °F to +194 °F
KUUV	Bellows, metal (cartridge), TC/TC, FKM	-4 °F to +194 °F

Note: TC= tungsten carbide

See section *Lists of variants - on request* on page 83, in case of extreme temperatures:

- low temperatures down to -40 °F or
- high temperatures up to +356 °F.

# Operating and inlet pressure

CR, CRI, CRN, CRE, CRIE, CRNE

## Maximum inlet pressure

The following table shows the maximum permissible inlet pressure. However, the current inlet pressure + the pressure against a closed valve **must** always be lower than the maximum permissible operating pressure.

If the maximum permissible operating pressure is exceeded, the conical bearing in the motor may be damaged and the life of the shaft seal reduced.

<b>CR, CRI, CRN 1s</b>		
1s-2	› 1s-27	145 [psi]
<b>CR(E), CRI(E), CRN(E) 1</b>		
1-2	› 1-25	145 [psi]
1-27		218 [psi]
<b>CR(E), CRI(E), CRN(E) 3</b>		
3-2	› 3-15	145 [psi]
3-17	› 3-25	218 [psi]
<b>CR(E), CRI(E), CRN(E) 5</b>		
5-2	› 5-9	145 [psi]
5-10	› 5-24	218 [psi]
<b>CR(E), CRI(E), CRN(E) 10</b>		
10-1	› 10-5	116 [psi]
10-6	› 10-17	145 [psi]
<b>CR(E), CRI(E), CRN(E) 15</b>		
15-1	› 15-2	116 [psi]
15-3	› 15-12	145 [psi]
<b>CR(E), CRI(E), CRN(E) 20</b>		
20-1		116 [psi]
20-2	› 20-10	145 [psi]
<b>CR(E), CRN(E) 32</b>		
32-1-1	› 32-2	58 [psi]
32-3-2	› 32-6	145 [psi]
32-7-2	› 32-11-2	218 [psi]
<b>CR(E), CRN(E) 45</b>		
45-1-1	› 45-1	58 [psi]
45-2-2	› 45-3	145 [psi]
45-4-2	› 45-8-1	218 [psi]
<b>CR(E), CRN(E) 64</b>		
64-1-1		58 [psi]
64-1	› 64-2-1	145 [psi]
64-2	› 64-5-2	218 [psi]
<b>CR(E), CRN(E) 90</b>		
90-1-1	› 90-2-2	145 [psi]
90-2-1	› 90-4-1	218 [psi]
<b>CR(E), CRN(E) 120</b>		
120-1		145 [psi]
120-2-2	› 120-3	218 [psi]
120-4-2	› 120-5-1	290 [psi]
<b>CR(E), CRN(E) 150</b>		
150-1-1		145 [psi]
150-1	› 150-2	218 [psi]
150-3-2	› 150-4-1	290 [psi]

## Example of operating and inlet pressures

The values for operating and inlet pressures shown in the tables must not be considered individually but must always be compared, see the following examples:

### Example 1:

The following pump type has been selected:  
CR 3-10 A-A-A

Max. operating pressure: **232 psi**

Max. inlet pressure: **145 psi**

Discharge pressure against a closed valve: **139.2 psi**, see page 34.

This pump is not allowed to start at an inlet pressure of 145 psi, but at an inlet pressure of  $232.0 - 139.2 =$  **92.8 psi**.

### Example 2:

The following pump has been selected:  
CR 10-2 A-GJ-A

Max. operating pressure: **232 psi**

Max. inlet pressure: **116 psi**

Discharge pressure against a closed valve: **42 psi (97 ft)**, see page 42.

This pump is allowed to start at an inlet pressure of 116 psi, as the discharge pressure is only 42 psi, which results in an operating pressure of  $116 + 42 =$  **158 psi**. On the contrary, the max. operating pressure of this pump is limited to 158 psi, as a higher operating pressure will require an inlet pressure of more than 116 psi.

In case the inlet or operating pressure exceeds the pressure permitted, see section *Lists of variants - on request* on page 83.

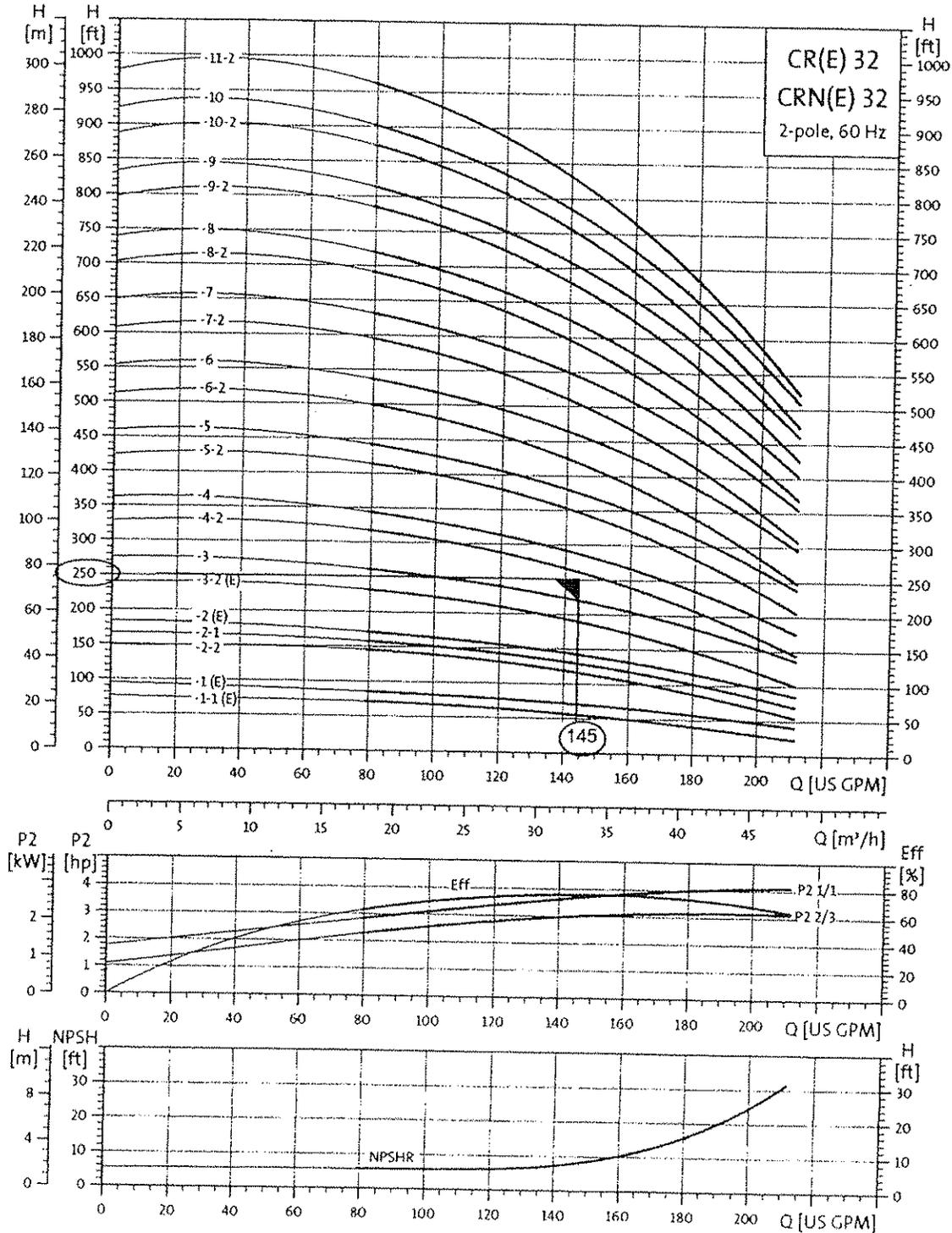
# Performance curves

CR(E) 32, CRN(E) 32

PERRY COUNTY, OHIO  
EFI JOB REFERENCE NO. 90774

CR(E), CRN(E) 32

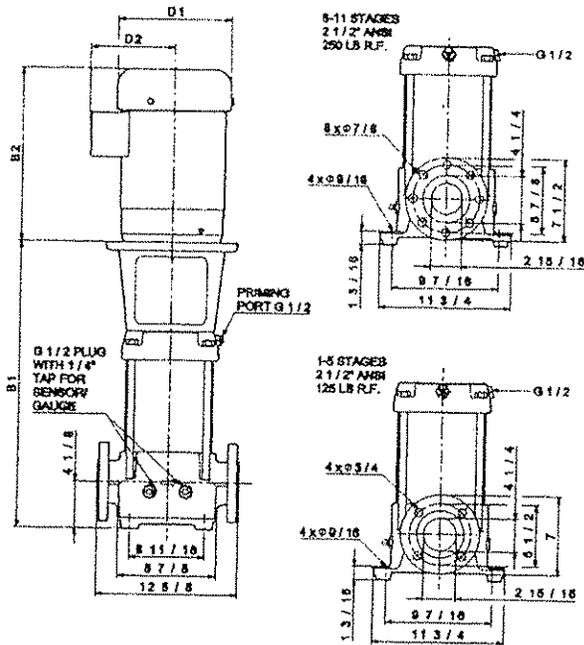
CONDITIONS:  
145 G.P.M. @ 250' T.D.H.  
15 HP, 3500 R.P.M.



T/M02 0038 1303

# Technical data

CR(E) 32



TMC02 7669 1009

Pump type	P2 [hp]	Ph.	ANSI dimensions [inch]									Ship Wt. [lbs.]	ANSI dimensions [inch]				Ship Wt. [lbs.]			
			B1	TEFC			ODP			MLE										
				D1	D2	B1+B2	D1	D2	B1+B2	D1	D2		B1+B2							
CR(E) 32-1-1	3	1	20	8 5/8	6 7/8	34 1/2	-	-	-	-	-	-	-	-	-	232	-	-	-	-
		3	20	7 1/8	4 3/8	31 5/8	-	-	-	-	-	-	-	-	-	160	8 3/4	7 1/2	32 5/8	213
CR(E) 32-1	5	1	20	10 5/8	7 1/2	35 3/8	-	-	-	-	-	-	-	-	-	258	-	-	-	-
		3	20	7 1/8	4 3/8	33 1/8	-	-	-	-	-	-	-	-	-	169	8 3/4	7 1/2	34 5/8	238
CR 32-2-2	7 1/2	1	22 3/4	10 1/4	7 1/2	38 1/8	-	-	-	-	-	-	-	-	-	277	-	-	-	-
		3	22 3/4	8 3/4	5 3/8	38 1/4	-	-	-	-	-	-	-	-	-	229	-	-	-	-
CR 32-2-1	7 1/2	1	22 3/4	10 1/4	7 1/2	38 1/8	-	-	-	-	-	-	-	-	-	277	-	-	-	-
		3	22 3/4	8 3/4	5 3/8	38 1/4	-	-	-	-	-	-	-	-	-	229	-	-	-	-
CR(E) 32-2	7 1/2	1	22 3/4	10 1/4	7 1/2	38 1/8	-	-	-	-	-	-	-	-	-	277	-	-	-	-
		3	22 3/4	8 3/4	5 3/8	38 1/4	-	-	-	-	-	-	-	-	-	229	-	-	-	-
CR(E) 32-3-2	10	1	25 1/2	10 1/4	10 3/8	41 1/4	-	-	-	-	-	-	-	-	-	334	8 3/4	7 1/2	38 1/8	285
		3	25 1/2	8 3/4	5 3/8	41	-	-	-	-	-	-	-	-	-	238	-	-	-	-
CR 32-3	15	3	29 3/4	10 1/4	8 3/4	46 3/8	10 5/8	7 3/8	45 3/4	318	-	-	-	-	-	318	-	-	-	-
CR 32-4-2	15	3	32 1/2	10 1/4	8 3/4	49 1/8	10 5/8	7 3/8	48 1/2	325	-	-	-	-	-	325	-	-	-	-
CR 32-4	15	3	32 1/2	10 1/4	8 3/4	49 1/8	10 5/8	7 3/8	48 1/2	325	-	-	-	-	-	325	-	-	-	-
CR 32-5-2	20	3	35 1/4	10 5/8	8 3/4	51 5/8	10 5/8	9	54 3/4	348	-	-	-	-	-	348	-	-	-	-
CR 32-5	20	3	35 1/4	10 5/8	8 3/4	51 5/8	11 5/8	9	54 3/4	346	-	-	-	-	-	346	-	-	-	-
CR 32-6-2	25	3	38	13	11 1/2	57 5/8	11 5/8	9	58 1/4	434	-	-	-	-	-	434	-	-	-	-
CR 32-6	25	3	38	13	11 1/2	57 5/8	11 1/2	9	58 1/4	434	-	-	-	-	-	434	-	-	-	-
CR 32-7-2	25	3	40 3/4	13	11 1/2	60 3/8	11 1/2	9	61	441	-	-	-	-	-	441	-	-	-	-
CR 32-7	30	3	40 3/4	15 5/8	13 1/8	63 3/4	11 1/2	12 1/4	62 1/4	602	-	-	-	-	-	602	-	-	-	-
CR 32-8-2	30	3	43 1/2	15 5/8	13 1/8	66 1/2	11 1/2	12 1/4	65	615	-	-	-	-	-	615	-	-	-	-
CR 32-8	30	3	43 1/2	15 5/8	13 1/8	66 1/2	11 1/2	12 1/4	65	615	-	-	-	-	-	615	-	-	-	-
CR 32-9-2	40	3	46 3/8	15 5/8	13 1/8	69 3/8	13 1/4	12 1/4	69 3/8	696	-	-	-	-	-	696	-	-	-	-
CR 32-9	40	3	46 3/8	15 5/8	13 1/8	69 3/8	13 1/4	12 1/4	69 3/8	696	-	-	-	-	-	696	-	-	-	-
CR 32-10-2	40	3	49 1/8	15 5/8	13 1/8	72 1/8	13 1/4	12 1/4	72 1/8	705	-	-	-	-	-	705	-	-	-	-
CR 32-10	40	3	49 1/8	15 5/8	13 1/8	72 1/8	13 1/4	12 1/4	72 1/8	705	-	-	-	-	-	705	-	-	-	-
CR 32-11-2	40	3	51 7/8	15 5/8	13 1/8	74 7/8	13 1/4	12 1/4	74 7/8	731	-	-	-	-	-	731	-	-	-	-

<sup>1)</sup> Weights are based on pump with TEFC motor (see price list for individual weights). All dimensions in inches unless otherwise noted.



**GREEN PROJECT RESERVE FORM**

U.S. EPA requires Ohio EPA to use at least 20 percent of its capitalization grant funds for projects to address green infrastructure, water or energy efficiency improvements and other environmentally innovative activities. These four categories of projects comprise the Green Project Reserve (GPR).

Projects that meet GPR criteria follow the established DWSRF project process. Projects clearly eligible for GPR are known as categorically eligible projects. A list of categorically eligible projects within each project category is attached to this form. Projects not found to be categorically eligible will need to have business case documentation. For a project to be considered a GPR project, a business case requires a well-documented justification. Ohio EPA reviews all business cases to determine GPR eligibility and posts them on its website by the end of the calendar quarter in which the loan is made.

Listed below are the four categories of projects that comprise the GPR. For each category, there are corresponding pages that must be completed and submitted with this cover page. Attach additional pages as necessary. Please check the **category or categories** that are applicable to your project.

- Green Infrastructure (G)** (pages 3-4)
- Energy Efficiency (E)** (pages 5-7)
- Water Efficiency (W)** (pages 8-10)
- Other Environmentally Innovative Activity (O)** (pages 11-13)

PWS Name: Tuppers Plains-Chester Water District PWSID: OH5300612

Project Name: Phase 9 Water System Improvements PPL #: 87, 88, 96, 126  
 (Assigned by Ohio EPA)

Total Est. Project Cost: \$1,400,000.00 Total Est. GPR Amount: \$1,190,000.00

Completed by:

Name: Grant Schooley Title: Project Engineer  
 (Please print)

Signature: *Grant F. Schooley* Date: 7/27/11

For Ohio EPA use only:

Loan Number (if applicable): BS 391356-0005 Eligible GPR Amount \$: \$221,425

Eligible GPR Categories: E and W Evaluated by/Date: *[Signature]* 7/29/11

Loan Award Date (if applicable): 6/30/11

Date Business Case Posted on webpage (if applicable): \_\_\_\_\_



Ohio Drinking Water Assistance Fund  
 Drinking Water State Revolving Fund (DWSRF)  
 Green Project Reserve Information Form



Environmental Protection Agency  
 Division of Drinking and Ground Waters

Energy Efficiency (E)

PWS Name: Tuppers Plains-Chester Water District PWSID: OH5300612

Project Name: Phase 9 Water System Improvements PPL #: 87, 88, 96, 126  
 (Assigned by Ohio EPA)

Total Est. Project Cost: \$1,400,000.00 Total Est. GPR Amount: \$1,190,000.00

Project Summary:  
 Replacement of undersized waterline and inefficient pumping stations. Addition of system controls and monitoring to reduce water loss. Solar panels for power supply.

**Pump Facilities**

Age of existing pumps or pumping facilities	50 Years
Existing pump/motor efficiency rating, if known	
New pump/motor efficiency rating	86%
Estimated annual electrical savings	\$1,000.00
Estimated annual cost savings	

Business Case Narrative: (Calculate energy efficiency improvements and costs savings.)

Reduction in power requirements due to decrease in friction losses and addition of variable frequency drives. Control system will reduce tank overflows and alert the district in case of large leaks. New pumps will be 3 hp, 86% efficiency. Solar panels will provide power at 2 tank sites.

$$\$1,000 \times 30 = \underline{\underline{\$30,000}}$$

Attach Supporting Documentation

- Engineering Project Planning Documents       Water/Energy Efficiency Determination (Ohio EPA)



**Ohio Drinking Water Assistance Fund  
 Drinking Water State Revolving Fund (DWSRF)  
 Green Project Reserve Information Form**



**Environmental  
 Protection Agency**  
 Division of Drinking and Ground Waters

**Water Efficiency (W)**

PWS Name: Tuppers Plains-Chester Water District PWSID: OH5300612

Project Name: Phase 9 Water System Improvements PPL #: 87, 88, 96, 126  
 (Assigned by Ohio EPA)

Total Est. Project Cost: \$1,400,000.00 Total Est. GPR Amount: \$1,190,000.00

Project Summary:  
 Replacement of undersized water main to increase efficiency and reduce system losses.

**Water Main Replacement**

Water main material/length to be replaced	PVC / 22,500
Est. total system water lost due to breaks and leaks	
Est. water loss from pipe being replaced	5,000 GPD
Total annual production	
Number of breaks recorded in past 24 months for the area to be replaced	25
Est. annual water savings	\$6,387.50
Est. annual costs savings	
Other efficiencies to be gained by the replacement? (reduced head and therefore less energy loss in an upstream pump station, etc.)	

<b>Meter Installation/Replacement</b>	<input type="radio"/> Original Installation	<input type="radio"/> Replacement
Reason for replacement		
Est. annual water savings		
Est. annual costs savings		

Business Case Narrative (Calculate water saving improvements and costs savings):

$5,000 \text{ GPD} \times \$3.50/1000\text{gal} = \$17.50/\text{day} = \$6,387.50 \times 30 = \$191,625$

Attach Supporting Documentation

- Engineering Project Planning Documents
- Water/Energy Efficiency Determination (Ohio EPA)
- Public Water System Records
- Other: \_\_\_\_\_

