

# CITY OF DAYTON, OHIO

AD # 10/29 & 11/3

INVITATION FOR BID  
**IFB No. S20030**

Procurement Division  
Room 514, CITY HALL  
P.O. Box 22  
DAYTON, OHIO 45402

## **Testing of Motors using the PDMA Testing System**

**For Further Information Contact:**

Jason Schortgen, CPPB  
Room 514, CITY HALL  
101 W. Third St.  
Dayton OH 45402  
Phone No. 937-333-4041  
Fax No. 937-234-1600

Date October 29, 2020

**Melissa A. Wilson, CPPB**  
Procurement Agent

**ELECTRONIC BIDS** MUST BE RECEIVED IN PROCUREMENT DIVISION OFFICE, ROOM 514 BEFORE: **10:30 A.M. local (Dayton OH) time on November 11, 2020.**

User Agency: Water

**Your bid is requested for the following:** To establish a firm fixed price for the Testing of Motors using the PDMA Testing System with firm pricing through December 31, 2021 and three (3) additional options to renew starting 1/1/2022 through 12/31/2024.

All Vendors must submit a current copy of their W-9 with their Bid. If you have not registered with the City of Dayton, please complete and submit your complete Vendor Application form. Forms must be on file with the City of Dayton before any Purchase Order or contract can be awarded with your company.

A copy of this bid may be found on the City's Website at: <http://www.daytonohio.gov/bids.aspx>

For additional information on this IFB, please contact the Division of Procurement, Jason Schortgen at (937) 333-4034.

**Submit one (1) signed original pdf bid to [bids@daytonohio.gov](mailto:bids@daytonohio.gov). All supplemental documentation shall be submitted with bid.**

**BIDDER IS REQUESTED TO USE THE CITY'S BID FORM ENCLOSED AS NONE OTHER WILL BE ACCEPTED.**

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LEGIBLE INFORMATION MUST BE GIVEN IN THE SPACES PROVIDED.

A copy of the Bid Tabulation may be obtained by contacting the Procurement office and will be available online once the award has been made.

All federal, state, and local laws regarding competitive bidding, ant-competitive practices, and conflict of interest shall be applicable to this I.F.B.

Bids are to include all shipping costs to the point of delivery as indicated above.

The City of Dayton is exempt from payment of federal excise taxes and state retail sales taxes (Ohio Vendor's License No. 57-15847).

Multi-year orders are valid only if funds are available in succeeding years.

State Manufacturer and Model No. of items you are bidding and send DESCRIPTIVE LITERATURE on same with your bid. Any brand names on our bid form are to establish quality levels and do not indicate preference.

The City of Dayton reserves the right to reject any or all bids, to waive any irregularities in a bid, or to accept the bid or bids which in the judgment of proper officials, is to the best interest of the City.

The City of Dayton reserves the right to accept a part or parts of a bid unless otherwise restricted in the bid. If you are not in a position to quote, advise to this effect so we may keep your name on our active bid list. We are not permitted to accept telephone bids or Fax bids.

BIDDER'S PLEASE NOTE: Your signed equal opportunity "Affirmative Action Assurance" form (available at Human Relations Council, 371 W. Second St., Suite 100, Dayton, Ohio 45402--Phone No. 937-333-1403) must be on file with the City of Dayton before an order or contract can be issued.

Please complete and return promptly to the Human Relations Council.

# BID TO THE CITY OF DAYTON, OHIO

## PROCUREMENT DIVISION

FAX NO. (937) 234-1600

Date: \_\_\_\_\_

Buyer: Jason Schortgen Voice (937) 333-4034

I.F.B. No. S20030

**PLEASE REPLY NO LATER THAN: 10:30 A.M. local (Dayton OH) time; 11-11-2020**

Req. # WT0WT399

**Note: FOB Destination; all prices bid to the City shall include all fees of transportation including inside delivery.**

ITEM NO.	QTY.	DESCRIPTION	UNIT PRICE
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### Testing of Motors Using the PDMA Testing System

It is the City's intent to have all the motors tested at the same time, once a year moving forward. However, things can always change. For this reason, the City is getting a price if all motors are done at the same time and a different price per motor if they are done at different times throughout the year.

- |    |     |  |              |
|----|-----|--|--------------|
| 1. | LOT | Price to test all motors at the same time<br>(see attached specs and appendix) | \$ _____ Lot |
| 2. | EA  | Price to test one motor<br>(see attached specs and appendix)                   | \$ _____ EA  |

**Bidder shall provide all product Summary and Specifications related to product(s) and Manufacturer's Warranty with your company's bid response.**

**BIDDER IS REQUESTED TO USE THE CITY'S BID FORM ENCLOSED AS NONE OTHER WILL BE ACCEPTED.**

"I certify the bidding entity complies with City of Dayton Ordinance #30829-09 and the City's Revised Code of General Ordinances Section 35.70 through 35.74 regarding Living Wages." [ ] YES [ ] NO

All delivery costs are included in this quotation regardless of F.O.B. designation.

Cash Discount Allowed: \_\_\_\_\_% 10th Proximo.  
Leave blank if your terms are Net 30 Days.

Delivery will be made within \_\_\_\_\_ calendar days after receipt of order.

Prices quoted will remain firm for acceptance within **90** calendar days after bid opening unless otherwise stated.

Bidding Company \_\_\_\_\_

Address : \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

**Email address to send Purchase Order to:**

By: \_\_\_\_\_  
(Please Print or Type) Name and Title

Signature: \_\_\_\_\_

Phone No. \_\_\_\_\_ /FED. ID# \_\_\_\_\_

Fax No. \_\_\_\_\_

# BID TO THE CITY OF DAYTON, OHIO

## PROCUREMENT DIVISION

FAX NO. (937) 234-1600

Date: \_\_\_\_\_

Buyer: Jason Schortgen Voice (937) 333-4034

I.F.B. No. S20029

**PLEASE REPLY NO LATER THAN: 10:00 A.M. local (Dayton OH) time; 10-28-2020**

Req. # WT0WT399

**Note: FOB Destination; all prices bid to the City shall include all fees of transportation including inside delivery.**

ITEM NO.	DESCRIPTION	UNIT PRICE
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### Testing of Motors using the PDMA Testing System

(Continued)

- Price to remain firm for the period through December 31, 2021.
- Option to renew any resulting price agreement at the same rates, terms, and conditions for additional 12-month period (from January 1, 2022 through December 31, 2022) at the City's sole discretion?  
Yes [  ]  
No [  ] If appropriate, state maximum percent of increase (**based on pricing as of first year of bid**) to retain this option is \_\_\_\_\_%. Any provided request shall be accompanied by supporting documentation that clearly indicates the detailed justification of the requested increase
- Option to renew any resulting price agreement at the same rates, terms, and conditions for additional 12-month period (from January 1, 2023 through December 31, 2023) at the City's sole discretion?  
Yes [  ]  
No [  ] If appropriate, state maximum percent of increase (**based on pricing as of first year of bid**) to retain this option is \_\_\_\_\_%. Any provided request shall be accompanied by supporting documentation that clearly indicates the detailed justification of the requested increase
- Option to renew any resulting price agreement at the same rates, terms, and conditions for additional 12-month period (from January 1, 2024 through December 31, 2024) at the City's sole discretion?  
Yes [  ]  
No [  ] If appropriate, state maximum percent of increase (**based on pricing as of first year of bid**) to retain this option is \_\_\_\_\_%. Any provided request shall be accompanied by supporting documentation that clearly indicates the detailed justification of the requested increase

Bidding Company: \_\_\_\_\_



**CITY OF DAYTON**  
**City of Dayton**  
**Department of Water**  
**Division of Water Supply and Treatment**  
**Testing of Motors Using the PDMA Testing System**  
**October 2020**

**Specification for Testing of City of Dayton WS&T Motors using the PDMA testing system**

**Purpose-** Our purpose is to get proposals from testing companies for periodic testing (1-2 times a year) of our Distribution motors using the PDMA testing system. There has been no concentrated effort to periodically test these assets on a regular basis through the years. Experience has shown motor testing would provide data for machine supervision and analytics. This goal is to achieve four desired outcomes: greater reliability, longer-lasting optimal performance, enhancing the motor or machine's useful life, and improving plant reliability.

1. **Scope-**Our periodic testing will cover the twenty motors outlined in Appendix A located at the Miami North, the Miami South, the Ottawa Pump Stations, DM-1, DM-2 , and DM-3. There is a mix of 4160 VAC synchronous motors and 4160 VAC induction motors varying in horsepower from 500 to 1250 in the Pump Stations and 460 VAC induction motors at DM-1, DM-2 , and DM-3. We want to have all these of motors tested every six months and to have permanent records of each test using the PDMA test system.
2. **Wants and Why-** We want a mix of machine supervision based upon testing equipment, the storage of test result baselines, and human analysis to be done concurrently.

"Big Data" and its use in predictive analytics and the Internet of Things will not be enough to replace human supervision. So in our scope we do not want to rely totally on machine only provided data analytics. We prefer a combination so that the failure of our machines is not missed. We would be looking for third party assistance at this time or possibly in the future trained employees in the particular machine's provided data analytics.

There is too much at stake to rely totally on machine produced data and predictions alone. The system should have the machine do the data gathering and crunch the data while having this third party analyst use their expertise to make the significant observations. We want to get competitive bids from experienced users of the PDMA testing system for testing of our key motors

3. **The Way Forward with the PDMA test system-** We want to start investing in a more fail-safe system for maintenance of our electric distribution motors. Testing alone will not prevent anything because experts point out that analyzing the data must be considered. If not considered there will be a gap in our motor management program. We need a plan for complete motor management and maintenance. In this case qualification and asset tracking and analysis of the system the motor operates in. We require software to track the history of repair, mean times between failure, and the identifying the faults that can be remedied.
4. **Areas of Testing Interest with the PDMA test system** – Finding each fault and its relationship to other faults has caused experts to point to six areas of testing interest and their associated faults.
  - 4 a. **Quality Control**
    1. All new motors and newly repaired or refurbished motors need to be tested immediately after installation.
    2. Alarm set points for motors are based upon existing knowledge and industry standards but the modification of these set points is essential to avoid failure as industry standards change.

3. Whatever the testing you use in your facility ensure that your repair shop can duplicate your testing capability. This allows the Quality Control to be consistent. Data can be trusted if your repair facility has the ability to perform the same testing. As a long term goal our motor testing data should be shareable electronically in digital form with our repair shop.
4. Acceptance criteria for a good motor have to be shared by you, your repair shop, and any supplier.
5. Storage of any spare motors has to be managed. Stored motors can be at risk of failure. Bearings have to be rotated to avoid damage.

4b. **Data Trending-** This is the stored data which are collected on your motors on a regular basis. This is intended to point to potential problems and to provide a detailed history of any issues. There again we have large amounts of data but it is not analyzed. As data is collected by a testing instrument there is a reliance on pass/fail testing. This is especially true if no alarm is triggered during testing. This may be viewed as a normal test but may be an indication if viewed in a historical trend as warning of a fault. A data value when increasing or decreasing over time when viewed as trending will indicate this fault warning. The testing system should have the capability to open a historical database and perform trending to discover these movement of collected data into fault zones.

4c. **Why the PDMA testing system collection is effective in data trending.**

1. **Power Quality Problems:** The test system should characterize the quality of voltage (which comes from the power system). It should also characterize the quality of the current (which is determined from the load). High and low voltages, total harmonic distortion, and crest factors for the current and voltage.

The influences of power quality can cause excessive harmonics on the distribution system. This can result in over-heating of the insulation system. This overheating of the insulation system can lead to overheating and malfunction. This leads to a shortened life for a motor.

2. **Power Circuit Problems:** The power circuit includes not only the motor but every component from the test point down to the motor. So it should be able to test in line fuses, circuit breakers, lug connections, and disconnects as part of its capabilities.

3.

Faulty conditions in the power circuit can result in reduced horsepower from the motor. This can cause excessive heating and insulation damage. These conditions in the power circuit result in unbalanced terminal voltages at the motor. The problems with unbalanced voltage include decreased torque and overheating of other components. Other phases will draw excess current to compensate for the voltage imbalance which results in overheating of the insulation. This decreases motor efficiency and decreases motor life. Decreased motor efficiency will result in higher KW-Hr charges and possible demand charges. Ultimate problems may be phase loss or burnout.

A 1% voltage imbalance can result in a 6-7% current imbalance. A 3.5% voltage imbalance can raise the winding temperatures by 25% . A 10 degree C increase in winding temperature above it design can result in 50% reduction in a motor's life.

The voltage imbalances cause excessive heating which is caused by negative sequence currents trying to turn the motor in an opposing direction. Increased heat causes decreases motor life.

4. **Insulation System:** The insulation system can be affected by vibration, age, moisture, temperature and other conditions. The test system should be able to measure, using a combination of hardware and software, resistance to ground, polarization index, capacitance to ground, and step voltage.

4c. **Insulation systems can be damaged by dirt, high temperatures, moisture, and age.**

A key element of insulation condition is the insulation resistance is made up of the applied direct voltage across the insulation divided by the total resultant current. The total current is a sum of four different currents: geometric capacitance, conductance, surface leakage, and absorption. The geometric capacitance is due to the geometric capacitance. This is an AC component and is only present for as short time during direct voltage measurement. The conduction current is generally low in modern insulation systems with epoxy or polyester unless it becomes saturated with moisture. Older mica insulated systems may exhibit higher conduction currents. Surface leakage is caused by moisture and conductive contamination in the motor. The absorption current is caused by polarization of the insulation material and the second is due to the drift of electrons and ions through the insulating material. The absorption current is a property of the insulation material and winding temperature. The absorption current may or may not be a good indication of good condition of an insulating system. It has generally decreased due to the use of

polyesters and epoxy bonding in insulation systems but do not tell the whole story.

5. **Stator Problems:** The test system should measure inductive and impedance imbalances which points to problems with the insulation between turns of the magnet wire in the stator coils.  
A stator has copper windings and is connected between coils with solder joints. The goal of the measuring system is to find conditions that would lead to stator faults. Stator faults can be a dire situation and can cause unplanned downtime. The most common faults are turn to turn, phase to phase, or turn to ground shorts. A turn to turn short is a short of one or more coils in a winding. This causes excessive current through the shorted coil creating a hot spot and insulation damage. A phase to phase short is one or more phases shorted to another phase. The fault can result in a large voltage potential existing between phases at the short location.
6. **Rotor Problems:** A current signature analysis (CSA), inrush current, inductive imbalances, and rotor influence check (RIC) test should be part of its capability.  
The rotor consists of rotor bars, laminations, and end rings. It is not as common as other faults but if present can cause extensive motor damage. A cracked rotor bar may cause excessive heating and melting of lamination insulation or damage to the nearby stator.
7. **Air Gap Problems:** The CSA test and RIC test should show levels of static and dynamic shaft eccentricity.

The air gap is the gap between the rotor and stator. The gap should be evenly distributed evenly around the 360 degrees of the motor. When the distribution is uneven or non-symmetric you get an unbalanced magnetic field and high vibration levels. The increased vibration can cause stator winding failure by causing stator faults, can cause bearing failure, and can cause mechanical looseness. These can cause failure of the motor which could be severe. Rewinding or lamination restacking may be necessary to repair this. If severe damage does not result it could in a decrease of motor efficiency.

8. **Testing Intervals-**These tests should be performed on a consistent interval to have the most value.

4d. **Troubleshooting using the PDMA testing system-**This occurs after the motor is performing poorly, has malfunctioned, or has failed. All things eventually have end of life but the failure and its severity will depend on the Quality Control Program and Trending that is done. Troubleshooting is best done with a detailed checklist to identify fixable repairs from end of life conditions. Identification of the root cause is important. Problems with the power source can be field fixable while a problem with the stator winding will require a trip to the repair facility. The test system should point out the differences and severity of internal faults, point out external faults caused by power issues, and identify wiring problems. The test system should help with the development and detection of conditions on the troubleshooting checklist.

## 5. What does the PDMA testing system software do?

There should be a hierarchy of software levels starting with a basic level and going up to the highest managing and maintenance level.

### 5a. Technology Level Software

A level designed around industry standards for motors. These standards have alarms and alerts for accepted reliability of motors. These are gotten from recommendations from NEMA (National Electric Manufacturers Association) and IEEE (Institute of Electrical and Electronic Engineers). This is the base level covered by software.

### 5b. Information Management Software

Software designed to arrange and organize information about a particular asset such that supervisors, managers, and service technicians can see trends and indications of problems.

Much of this info is historical in nature and can keep track of past problems.

### 5c. Centralized Maintenance Management Software

Here is kept centralized info on an organizations motors from different technologies. These technologies are electrical, mechanical, vibration, and other sources. This is where the work orders are initiated and authorized. There will be a history of all work orders presently in progress and all past work orders on the asset.

#### 5d. **Enterprise** Asset Management Software

Here is where all maintenance is tracked and used in top level decisions. Reliability of the asset and its return on investment can be monitored for cost effectiveness and competitive manufacturing.

6. **End Result:**-The result of this implementation of these ideas along with a testing data collection machine is a hope to increase reliability and to increase faster returns to service in the case of troubleshooting and repairs. The test system should help the analyst in this goal. Raw data, analysis, trending, decision making on the motor condition, and the correct necessary alarm set points are points to consider with this test system.
7. **Why PDMA:** The PDMA testing system software meets these all these criteria and is the only system we will consider for this testing. It meets the above criteria for testing motors. The City of Dayton, Water Reclamation has standardized on its use in all its facilities.
8. **Bidders:** All bidders should have a minimum of five years of experience using the PDMA testing system in an industrial environment testing medium and low voltage motors. Before final bids an onsite visit will be arranged for all bidders to view the motors at the listed facilities. All questions will be answered and shared with all bidders after this onsite visit.

#### **References**

1. Motor Efficiency and Fault Zone Analysis by Noah Bethel, PDMA Corp
2. Hybrid Analytics: The Value of Machine and Human Supervision by Noah Bethel, PDMA Corp
3. The Trifecta of Motor Maintenance by Noah Bethel, PDMA Corp
4. Motor Repair or Replacement? The Green Solutions by Noah Bethel, PDMA Corp
5. Gaps in Your Electric Motor Reliability Program by Noah Bethel, PDMA Corp
6. World Class Companies Need World Class Motor Management and Maintenance By Noah Bethel, PDMA Corp
7. Electric Motor Diagnostics by Howard Penrose

## Appendix 1

### Synchronous Motors Miami North Pump Building

Location: 3210 Chuck Wagner Lane, Dayton, OH 45414

HS#1 Ideal  
Electric

Serial Number	329606
Type	SMVB
Frame	2800-17
HP	800
Volts	4000 V
Amps	89.9 Amps
RPM	1200
Bearing Upper 1	SKF 6230 Oil Bath
Bearing Upper 2	SKF 29330 Oil Bath
Bearing Lower	SKF 6230 Oil Bath
Field Volts	100 V
Field Amps	3 Amps

HS#2 Ideal  
Electric

Serial Number	329604
Type	SMVB
Frame	2840-22
HP	1250
Volts	4000 V
Amps	139 Amps
RPM	1200
Bearing Upper 1	SKF 6230 Oil Bath
Bearing Upper 2	SKF 29330F Oil Bath
Bearing Lower	SKF 6234 Oil Bath
Field Volts	100 V
Field Amps	3.4 Amps

HS#3 Ideal  
Electric

Serial Number	246161
Type	SMVB
Frame	2804
HP	800
Volts	4160 V
Amps	86.5 Amps
RPM	1200
Bearing Upper 1	SKF 6230 Oil Bath
Bearing Upper 2	SKF 29330F Oil Bath
Bearing Lower	SKF 6234 Oil Bath
Field Volts	125 V
Field Amps	

HS#4 Ideal  
Electric

Serial Number	246165
Type	SMVB
Frame	2802-D40
HP	500
Volts	4160 V
Amps	.5 Amps
RPM	1200
Bearing Upper 1	SKF 6230 Oil Bath
Bearing Upper 2	SKF 29330F Oil Bath
Bearing Lower	SKF 6234 Oil Bath
Field Volts	125 V
Field Amps	

**Induction Motors & LS3 Synchronous Motor  
Miami South Pump Building**

**Location: 3210 Chuck Wagner Lane, Dayton, OH 45414**

LS#2 Emerson U.S. Electric

Serial Number	E0900034365-100R-01 WRR
Type/ Encl.	HVE4 / WPI
Frame	6010P
HP	1000
Volts	4160 V
Amps	128 Amps
RPM	890
Bearing Upper	29438-EJ
Bearing Lower	6226-J
SF	1.15
Insul Class	F

LS#1 Emerson U.S. Electric

Serial Number	E0900034279-100R
Type / Encl.	HVE4 / WPI
Frame	5809P
HP	500
Volts	4160 V
Amps	64 Amps
RPM	1190
Bearing Upper	29428-EJ
Bearing Lower	6222-J
SF	1.15
Insul Class	F

HS#7 Emerson U.S. Electric

Serial Number	E0900034274-100R-01 WRR
Type / Encl.	HVE4 / WPI
Frame	5809B
HP	600
Volts	4160 V
Amps	72 Amps
RPM	1785
Bearing Upper	29428-EJ
Bearing Lower	6222-J
SF	1.15
Insul Class	F

HS#5 Emerson U.S. Electric

Serial Number	E0900034229-100R-01 WRR
Type / Encl.	HVE4 / WPI
Frame	6810P
HP	1250
Volts	4160 V
Amps	153 Amps
RPM	1190
Bearing Upper	29438-EJ
Bearing Lower	6226-J
SF	1.15
Insul Class	F

LS#3 Ideal  
Electric

Serial Number	246165
Type / Encl.	SMVB
Frame	5809P
HP	500
Volts	4160 V
Amps	54.5 Amps
RPM	1200
Field	125 VDC
DC Amps	22.4 Amps

**Induction Motors Ottawa Pump Building**

**Location: Ottawa Yards 935 Ottawa Street Dayton, OH 45402**

LS#1 Reliance Electric LXE Duty motor

Serial Number	1VAQ07560-A1-RS
Frame	36EC 5812S
HP	900
Volts	4160 V
Amps	116 Amps
RPM	891
Code	F
Insul Class	F

LS#3 Reliance Electric LXE Duty motor

Serial Number	2VAQ07560-A1-QS
Frame	26EC 5810S
HP	900
Volts	4160 V
Amps	110 Amps
RPM	1189
Code	F
Insul Class	F

HS#1 Reliance Electric LXE Duty motor

Serial Number	3VAQ07560-A2-QS
Frame	19EE 5010Z
HP	500
Volts	4160 V
Amps	62.1 Amps
RPM	1788
Code	F
Insul Class	F

HS#5 Reliance Electric LXE Duty motor

Serial Number	4VAQ07560-A1-RS
Frame	26EC 5810S
HP	800
Volts	4160 V
Amps	97 Amps
RPM	1189
Code	F
Insul Class	F

HS#6 Reliance Electric LXE Duty motor

Serial Number	4VAQ07560-A2-YS
Frame	26EC 5810S
HP	800
Volts	4160 V
Amps	97 Amps
RPM	1189
Code	F
Insul Class	F

HS#4 Reliance Electric LXE Duty motor

Serial Number	3VAQ07560-A4-YS
Frame	19EB- 5010Z
HP	500
Volts	4160 V
Amps	62.1 Amps
RPM	1788
Code	F
Insul Class	F

LS#4 Reliance Electric LXE Duty motor

Serial Number	1VAQ07560-A3-US
Frame	36EC- 5812S
HP	900
Volts	4160 V
Amps	116 Amps
RPM	891
Code	F
Insul Class	F

LS#2 Reliance Electric LXE Duty motor

Serial Number	1VAQ07560-A2-SS
Frame	36EC- 5812S
HP	900
Volts	4160 V
Amps	116 Amps
RPM	891
Code	F
Insul Class	F

HS#3 Reliance Electric LXE Duty motor

Serial Number	3VAQ07560-A1-QS
Frame	19EB- 5010Z
HP	500
Volts	4160 V
Amps	62.1 Amps
RPM	1788
Code	F
Insul Class	F

**Induction Motors DM1 Pump Building**  
**Location: 2000 Carillion Blvd Dayton, OH**  
**45409**

Pump#1 Nidec Motor Corporation

Serial Number	Custom P/N SHOP S006555
Type	JCB
Frame	449T TEFC
HP	300
Volts	460 V
Amps	351 Amps
RPM	1190
Code	G
Design	B
SF	1
PF	83.6

Pump#2 Nidec Motor Corporation

Serial Number	Custom P/N SHOP S006556
Type	JCB
Frame	449T TEFC
HP	300
Volts	460 V
Amps	351 Amps
RPM	1190
Code	G
Design	B
SF	1.15
PF	83.6

Pump#3 Nidec Motor Corporation

Serial Number	Custom P/N SHOP S006557
Type	JCB
Frame	TEFC
HP	125
Volts	460 V
Amps	152 Amps
RPM	885
Code	G
Design	B
SF	1.15
PF	83.6

Pump#4 Nidec Motor Corporation

Serial Number	Custom P/N SHOP S000557
Type	JCB
Frame	TEFC
HP	125
Volts	460 V
Amps	152 Amps
RPM	885
Code	G
Design	B
SF	1.15
PF	83.6

Pump#5 Nidec Motor Corporation

Serial Number	Custom P/N SHOP S006558
Type	JCB
Frame	449T TEFC
HP	300
Volts	460 V
Amps	351 Amps
RPM	1190
Code	G
Design	B
SF	1.15
PF	83.6

**Induction Motors DM2 Pump Building****Location: 2510 Wilmington Pike Dayton, OH 45419**

Pump#2 WEG Motor Corporation

Serial Number	NCS 141783-S-B
Type	
Frame	
HP	200
Volts	460 V
Amps	230 Amps
RPM	1780
Code	G
Design	B
SF	1.15
PF	83.6

Pump#3 WEG Motor Corporation

Serial Number	NCS 141763-5-A
Type	
Frame	
HP	200
Volts	460 V
Amps	230 Amps
RPM	1780
Code	G
Design	B
SF	1.15
PF	83.6

Pump#4 WEG Motor Corporation

Serial Number	
Type	
Frame	
HP	200
Volts	460 V
Amps	230 Amps
RPM	17800
Code	G
Design	B
SF	1.15
PF	83.6

**Induction Motors DM3 Pump Building**  
**Location: 1913 Woodman Dr. Dayton, OH**  
**45420**

Pump#1 WEG ZM04018ST3QIE042815

Serial Number	NCS141761-4-B
Type	TEFC
Frame	324T
HP	40
Volts	460 V
Amps	47.1 Amps
RPM	1778
Code	G
Design	B
SF	1.25
PF	85

Pump#2 WEG ZM04018ST3QIE042815

Serial Number	NCS141761-4-D
Type	TEFC
Frame	324T
HP	40
Volts	460 V
Amps	47.1 Amps
RPM	1778
Code	G
Design	B
SF	1.25
PF	85

Pump#3 WEG ZM04018ST3QIE042815

Serial Number	NCS141761-4-A
Type	TEFC
Frame	324T
HP	40
Volts	460 V
Amps	47.1 Amps
RPM	1778
Code	G
Design	B
SF	1.25
PF	85

Pump#4 WEG ZM04018ST3QIE042815

Serial Number	NCS141761-4-C
Type	TEFC
Frame	324T
HP	40
Volts	460 V
Amps	47.1 Amps
RPM	1778
Code	G
Design	B
SF	1.25
PF	85

## **Bid Opening**

All bids shall be submitted as a PDF via electronic submission to [bids@daytonohio.gov](mailto:bids@daytonohio.gov). The City has a 20meg limit for incoming e-mail message sizes (20meg includes e-mail itself and any attachments total). Should your company's bid document exceed this limit, your company will have to submit its bid document in multiple parts (emails). Should bid document require multiple emails, please designate in the "Subject" line of each email sent: IFB No. S20030 X of X.

The bid opening will be facilitated using ZOOM with the following login information:

Topic: Bid Opening for IFB S20030

Time: Nov 11, 2020 10:30 AM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/86964282245?pwd=eiszN3VxMkpFZ0lzWk5WbW01Vlpwdz09>

Meeting ID: 869 6428 2245

Passcode: 175392

One tap mobile

+13126266799,,86964282245#,,,,,0#,,175392# US (Chicago)

+19294362866,,86964282245#,,,,,0#,,175392# US (New York)

Dial by your location

+1 312 626 6799 US (Chicago)

+1 929 436 2866 US (New York)

+1 301 715 8592 US (Germantown)

+1 346 248 7799 US (Houston)

+1 669 900 6833 US (San Jose)

+1 253 215 8782 US (Tacoma)

Meeting ID: 869 6428 2245

Passcode: 175392

Find your local number: <https://us02web.zoom.us/j/kes1qQbCyk>



City of Dayton, Ohio  
Division of Water Supply & Treatment  
Testing of Motors Using the PDMA Testing System  
IFB No. S20030  
October 2020

**REFERENCES FOR BIDDING COMPANY**

Name of Bidding Company: \_\_\_\_\_

**List Company names, addresses, and telephone numbers for at least three references presently or previously served by your Company for IFB No. S20029. Do not use the City of Dayton as a reference.**

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

## TERMS AND CONDITIONS

1. **BILLING:** All goods or services must be billed to THE CITY OF DAYTON, OHIO and at prices not exceeding those stated on the Purchase Order. If prices or terms do not agree with quotation, notify the City of Dayton, Division of Procurement, immediately.
2. **INVOICE:** All invoices must be in duplicate and must be forwarded to the City of Dayton at the address shown on the Purchase Order. Each Purchase Order must be invoiced separately. Invoices for partial shipments will be accepted; final invoice must indicate completion of order.
3. **CASH DISCOUNTS:** All cash discount terms will be effective from date of actual receipt and acceptance of the items purchased, or from receipt of correct and acceptable invoice, whichever is later.
4. **PAYMENTS:** With the award this contract, the successful vendor(s) will be required to receive their payment(s) electronically via a virtual credit card by the City's contracted provider effective 01/01/2019. All fees associated with acceptance of the payment will be the responsibility of the vendor.
5. **F.O.B.:** Destination (City of Dayton, Ohio) with delivery to the specified Department at the specified street address. **NO COLLECT FREIGHT SHIPMENTS WILL BE ACCEPTED.** All quotations are solicited won a delivered price basis. When, in rare instances, the City accepts a quotation not including all shipping charges, your claim for reimbursement must be itemized on the invoice and supported with a copy of the original freight bill.
6. **TAXES:** The City of Dayton is exempt from payment of Federal excise taxes and State retail sales taxes. The City of Dayton's Federal Exemption Certificate is No. 31-73-0546K and Ohio Vendor's License No. is 57-15847. The Vendor is responsible for all Social Security taxes and Workers' Compensation contributions for the Vendor or any of the Vendor's employees.
7. **DELIVERIES:** All deliveries on this order must be in full accordance with specifications, properly identified with the Purchase Order number, and must not exceed the quantities specified.
8. **CANCELLATION:** The City of Dayton reserves the right to cancel this order by written notice if the Vendor does not fulfill its contractual obligations with respect to timeliness and/or quality.
9. **DEFAULT PROVISIONS:** In case of default by the Vendor, the City of Dayton may procure the items from other sources, and the Vendor shall be responsible for any excess costs occasioned thereby.
10. **NO VERBAL AGREEMENTS:** The City of Dayton will be bound only by the terms and conditions of this order and will not be responsible for verbal agreements made by any other officer or employee of the City of Dayton. The receipt of this purchase order does not indicate an authorization of fulfillment. Confirmation by City personnel must be received as indicated in the purchase order before any orders are placed.
11. **PATENT AND COPYRIGHT INFRINGEMENTS:** It is hereby understood that by acceptance of this order, the Vendor agrees to defend, indemnify, and save harmless the City of Dayton, Ohio, its officers, agents and employees from any and all loss, costs or expense on account of any claim, suit or judgment as a result of, caused by, or incidental to any patent, copyright or trademark infringement and/or royalty, actual or claimed, because of the use or disposition by said City of any article enumerated on this order and sold to said City pursuant to this order.
12. **APPLICABLE LAWS:** The Vendor warrants that the items and their production or completion shall not violate any federal, state or local laws, regulations or orders.
13. **INSPECTION:** The City of Dayton may inspect the items ordered hereunder during their manufacture, construction and/or preparation at reasonable times and shall have the right to inspect such items at the time of their delivery and/or completion.
14. **WARRANTY:** The Vendor warrants all items delivered hereunder to be free from defects of material or workmanship, to be of good quality, and to conform strictly to any specifications, drawings or samples which may have been specified or furnished by the City of Dayton, and the Vendor further warrants that the Vendor will have good title to the items free and clear of all liens and encumbrances and will transfer such title to the City of Dayton. Said warranties shall not negate or limit any implied warranties of merchantability or fitness. This warranty shall survive any inspection, delivery, acceptance or payment by the City of Dayton.
15. **RISK OF LOSS:** Title and risk of loss to and with respect to the items shall remain in the Vendor until the items in a completed state have been delivered to and accepted by the City of Dayton or to an agent or consignee duly designated by the City of Dayton at the location specified on the face hereof, items which are to be shipped shall be shipped F.O.B. destination unless otherwise specified by the City of Dayton. A packing slip must accompany each such shipment and if a shipment is to a consignee or an agent of the City of Dayton, a copy of the packing slip shall be forwarded concurrently to the City of Dayton. If no such packing slip is sent, the count or weight by the City of Dayton or its agent or consignee is agreed to be final and binding on the Vendor with respect to such shipment.
16. **SAVE HARMLESS:** To the fullest extent permitted by law, the Vendor shall protect, defend, indemnify and hold free and harmless the City of Dayton, its agents, consignees, employees, and representatives from any and all claims, damages, losses claims of loss, causes of action, penalties, settlements, costs, liabilities and expenses of any kind, including but not limited to attorney's fees, arising out of any acts or omissions of the Vendor; its officers and employees, including but not limited to temporary employees that the Vendor provides to the City of Dayton who may be trained or controlled by the City of Dayton to any degree; consultants; agents; and, subcontractors of any tier used in any way to provide the goods or services for this purchase order.
17. **FORCE MAJEURE:** Neither the City nor Vendor shall be considered in default of these Purchase Order Terms and Conditions for delays in performance caused by circumstances beyond the reasonable control of the non-performing party. For purposes of these Terms and Conditions, such circumstances include, but are not limited to: abnormal weather conditions; floods; earthquakes; fire; epidemics; wars, riots, and other civil disturbances; strikes, lockouts, work slowdowns, and other labor disturbances; sabotage; judicial restraint; and inability to procure permits, licenses, or authorization from any local, state, or federal agency for any of the supplies, materials, accesses, or services required to be provided by either the City of Consultant under this Agreement. Should such circumstances occur, the non-performing party shall, within a reasonable time of being prevented from performing, give written notice to the other party describing the circumstances preventing continued performance and the efforts being made to resume performance under this Purchase Order.
18. **INSURANCE:** If requested by the City of Dayton, the Vendor shall maintain policies of liability insurance of such types and such amounts and with such companies as may be designated by the City of Dayton, which policies shall be written so as to protect the City of Dayton and the Vendor from the risks enumerated in Section 15. Such policies of insurance shall not be cancellable except upon thirty (30) days written notice to the City of Dayton and proof of such insurance shall be furnished by the Vendor to the City of Dayton. In addition, such policies shall protect all subcontractors of the Vendor. The Vendor agrees to make prompt written report to the insurance company involved of all accidents, occurrences, injuries or losses which may occur and of any and all claims made against the persons insured under said policies.
19. **SPECIFICATIONS CONFIDENTIAL:** Any specifications, drawing, notes, instructions, engineering notices or technical data referred to in this Purchase Order shall be deemed to be incorporated herein by reference the same as if fully set forth. The City of Dayton shall at all times retain title to all such documents and the Vendor shall not disclose such to any party other than the City of Dayton or a party duly authorized by the City of Dayton. Upon the City of Dayton's request or upon completion and delivery of the items the Vendor shall promptly return all such documents to the City of Dayton.
20. **EXAMINATION OF PREMISES:** If work is to be performed hereunder on the premises of the City of Dayton, the Vendor represents that it has examined the premises and any specifications or other documents furnished in connection with the items and that it has satisfied itself as to the condition of the premises and site and agrees that no allowance shall be made in respect of any error as to such on the part of the Vendor.
21. **CLEANING OF PREMISES:** If work is to be performed hereunder on the premises of the City of Dayton, the Vendor shall at all times keep the premises free from accumulation of waste material or rubbish. At the completion of the items the Vendor shall leave the premises and the items broom-clean.
22. **EQUAL EMPLOYMENT OPPORTUNITY, R.C.G.O. Sec. 35.14:** (a) The Vendor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, ancestry, national origin, place of birth, age, marital status, or handicap with respect to employment, upgrading, promotion or transfer, recruitment or recruitment advertising, lay-off, termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. (b) It is expressly agreed and understood by Vendor that R.C.G.O. Sec. 35.14 constitutes a material condition of this contract as fully as if specifically rewritten herein and that failure to comply therewith shall constitute a breach thereof entitling the City to terminate the contract at its option.
23. **AGREEMENT TO BE EXCLUSIVE:** This Purchase Order contains the entire agreement between the parties and supersedes all other agreements between them. The parties acknowledge and agree that neither of them has made any representation with respect to the subject matter of this Purchase Order or any representation inducing the execution and delivery of this Purchase Order except such representations as are specifically set forth herein, and each party acknowledges that it has relied on these representations in connection with its dealings with the other.
24. **GOVERNING LAW:** This Purchase Order, the performance under it, and all suits and special proceedings under it shall be construed in accordance with the laws of the State of Ohio. In any action, special proceeding or other proceeding that may be brought arising out of, in connection with, or by reason of this Purchase Order, the laws of the State of Ohio shall be applicable and shall govern to the exclusion of the laws of any other forum, without regard to the jurisdiction in which the action or special proceeding may be heard.
25. **ADDITIONAL RIGHTS:** Any rights or remedies granted to the City of Dayton in any part of this Purchase Order shall not be exclusive of, but shall be in addition to, any other rights or remedies granted in another part of this Purchase Order and any other rights or remedies that the City of Dayton may have at law or in equity in any such instance.
26. **PRODUCT MANUFACTURE LABOR STANDARDS:** Products and services provided for in this Purchase Order cannot be produced under "Sweatshop" Conditions as defined in Informal Resolution No. 301-97 as adopted by the Commission of the City of Dayton. The City of Dayton encourages vendors, contractors, Enterprise Zone employers and other organization doing business with the City of Dayton to use their best efforts to pay a living wage to their employees in accordance with Informal Resolution No. 321-98 as adopted by the Commission of the City of Dayton.
27. **CONTRACTOR:** Contractor acknowledges its employees are not public employees for purpose for Ohio Public Employees Retirement System ("OPERS") membership.

## AFFIRMATIVE ACTION ASSURANCE

NOTE: Prior to any award on this bid the vendor(s) must have a current Affirmative Action Assurance Form on file and approved by the City of Dayton Human Relations Council.

If you have a current approval, please enclose a copy with your bid.

If you do not have a current approval, or are not sure if you do, please contact the Human Relations Council at 937/333-1403 or by following instructions at link:

<http://daytonhrc.org/business-technical-assistance/affirmative-action-assurance/affirmative-action-assurance-application/>

If you are notified by the City of Dayton that your company does not have a current "AAA" approval, you will have five (5) working days to obtain the approval. Failure to obtain this approval within five (5) working days may be cause for rejection of your bid(s).

**CITY OF DAYTON, OHIO  
PROCUREMENT ENHANCEMENT PROGRAM (PEP) PREFERENCE FORM**

Ordinance #31023-10 (hereinafter referred to as 'the Ordinance') passed by the Dayton City Commission provides for a Dayton Local Business and MBE, WBE or SBE Bidder Preferences for Goods and Services purchased by the City of Dayton as defined in section 35.42 of the Revised Code of General Ordinance (R.C.G.O.). Excerpts of the ordinance are provided for your information.

The rules and regulations adopted by the City for the administration of this ordinance require that bidders claiming Preference complete this form for each bid.

Failure to properly complete and return this form may result in not being qualified to receive preference under the Ordinance.

**If I am a:**   **1. Local and certified MBE, WBE or SBE 10%**  
                  **or 2. Local and not certified MBE, WBE or SBE 5%**  
                  **or 3. Certified and not local 5%**

If my bid is within the above percentage of the lowest bid submitted, I agree to reduce my bid to match the lowest bid

**Check one**     **Yes**     **No**     **Please contact me**

**PREFERENCE CLAIMED** - check one or both     Dayton Local Bus.     Certified MBE, WBE, or SBE

**NOTE** if claiming local preference, the business location must meet the definition of a Dayton Local Business.

**NOTE** if claiming Certified M/W/SBE preference, the business must submit a current copy of the City of Dayton HRC certification letter with the bid.

BUSINESS NAME: \_\_\_\_\_

BUSINESS ADDRESS: \_\_\_\_\_

COUNTY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_

FEDERAL I.D. NO.: \_\_\_\_\_

If incorporated. If a sole proprietorship, use Social Security number of owner.

**I. TESTIMONY AND AUTHORIZATION**

The undersigned, on behalf of the aforementioned business concern, hereby authorizes the City of Dayton Department of Finance, Division of Taxation to provide proof of situs pursuant to the Ordinance (#31023-10), to the city of Dayton Division of Procurement. In so doing, I authorize the Division of Taxation to disclose such records as may be necessary to establish qualifications for local preference as required by the Ordinance or any subsequent rules and regulations adopted in the administration of the Ordinance. I, on behalf of the aforementioned business concern, hereby release the City of Dayton and its officers, employees, or agents from any and all liability for the disclosure of any information establishing these qualifications. If applying as a Dayton Local Business, I attest to the fact that the business is physically located within the corporate limits and boundaries of the City of Dayton, Ohio. By affixing my signature to this form, I also attest that I am a duly authorized agent of the aforementioned business concern.

\_\_\_\_\_  
Type or Print Agent Name

\_\_\_\_\_  
Agent Signature and Date

## Excerpts from ORDINANCE #31023-10

Establishing a Dayton Local Business and MBE, WBE or SBE Bidder Preferences for Goods and Services

### Section 1. Definitions

- (a) **“Dayton Local Business”** hereafter called City Bidder, is a business as defined in Section 35.35 of the Revised Code of General Ordinances (R.C.G.O.) who is a business located within the corporate limits of the City that has filed or paid a payroll or earnings tax in the most recent calendar quarter and is a taxpayer in good standing with the City of Dayton.
- (b) **“Minority Business Enterprise (MBE)” or “Women Business Enterprise (WBE)” or “Small Business Enterprise (SBE)”** as certified through the City’s Human Relations Council and as defined by 35.35 of the R.C.G.O.
- (c) **“Goods”** All things, including specially manufactured goods, which are movable at the time of identification to the contract for sale, other than the money in which the price is to be paid, investment securities and things in action, and excluding land or a permanent interest in land
- (d) **“Services”** Those services within the scope of the practices included within professional services and general services.

### Section 2. Intent

The intent is to expand the City’s ability to provide a revenue neutral program, while allowing flexibility in the award process to include and prefer those companies qualified for the preference. In order to receive the preference, the business must be within the stated percentage and willing to reduce their bid.

Preferences will be given in the following order:

Step 1) 10% preference for a business that is local AND certified,

Step 2) If no business meets the above criteria, THEN a 5% preference for a non-certified local business may be granted,

Step 3) If no business meets either of the above criteria, THEN a 5% preference for a non-local certified business may be given.

### Section 3. Applying Local & Certified Preference Example

Bid Responses:

Bidder A: Not a certified and not a Dayton local business bids: \$100

Bidder B: Certified (MBE, WBE, or SBE) and Dayton Local Business bids: \$110

Bidder C: Not certified but is a Dayton Local HUB Zone Business bids: \$105

Bidder D: Not certified, but is a Dayton Local Business (non HUB) bids: \$105

Bidder E: Certified, but is not a Dayton Local Business bids: \$104

In step one, Procurement would first contact Bidder B a Dayton Local & Certified Business (since they are within 10% of the low bid), to determine if they would be willing to match the price of the low bid. If “Yes”, then Bidder B is awarded the contract at \$100, if “No”, Procurement would move onto the next criterion.

In step two, we have a tie between two Dayton local businesses (Bidder C and Bidder D), who are both within 5% of the low bid. The tie would be broken in favor of the Dayton Local business that is a qualified Dayton HUB Zone business. Procurement would contact Bidder C to determine if they would be willing to match the price of the low bid. If “Yes”, then Bidder C is awarded the contract at \$100, if “No”, Procurement would move onto the other Dayton Local business, Bidder D. Again Procurement would contact Bidder D to determine if they would be willing to match the price of the low bid. If “Yes”, then Bidder D is awarded the contract at \$100, if “No”, Procurement would move onto the next Criterion.

For step three, we have Bidder E who is certified through the City of Dayton as an MBE, WBE or SBE and within 5% of the low bidder, but is not a Dayton Local Business. Procurement would contact Bidder E to determine if they would be willing to match the price of the low bid. If “Yes”, then Bidder E is awarded the contract at \$100, if “No”, Procurement would have exhausted all possible preferences and would award to Bidder A the low bid of \$100.

### Section 4. Ties

When ranking qualifying businesses, In the event of a tie between two (2) or more Dayton Local Business bidders that are certified MBE, WBE or SBEs, ties will be broken through a lottery method until the winner remains. In the event the event of a tie between two Dayton Local Businesses, the tie shall be broken in favor of a Dayton Local Business that is also SBA HUBZone Certified. In the event of a tie between two (2) or more certified MBE, WBE or SBE bidders, ties will be broken through a lottery method until the winner remains.

### Section 5. City Manager Authorization

The City Manager or designee may promulgate rules and regulations to implement this ordinance provided they are not inconsistent with the expressed provisions of this ordinance.

### Section 6. Severability

This ordinance may be subject to the application of the laws of the State of Ohio or the United States of America, which may preempt all, or a portion of this ordinance.

### Section 7. Expiration

Pending City Commission approval this ordinance shall expire September 29, 2020.

PRODUCT MANUFACTURE LABOR STANDARDS  
VENDOR COMPLIANCE FORM

By informal resolution 301-97, the City of Dayton is prohibited from Procurement, leasing, renting or taking on consignment goods for use or for resale by the City which were produced under sweatshop conditions.

The City of Dayton requests the following information concerning the products you intend to provide to the City as a result of this bid. This information will allow us to determine your products' compliance with the standards outlined in informal resolutions 301-97.

We require that you make a good faith effort to ascertain the following about the factories which manufacture the products you intend to supply to the City and that you make information available to us for our verification of your claims.

- A. Child Labor. The factory or producer does not employ anybody younger than the legal age as established by the jurisdiction in which such factory or producer is located for children to work or participate in the production.
- B. Forced Labor. The factory or producer does not use forced labor of any kind-prison labor, indentured labor or bonded labor. However, goods produced by prisoners and/or patients as part of a formal rehabilitation or treatment program shall not be considered "forced labor" under the terms of this section.
- C. Wages and Benefits. The factory or producer pays and/or provides at least the minimum wages and/or benefits as required by law in the jurisdiction in which the factory or producer is located.
- D. Hours of Work. Employees are not required to work more hours than the maximum allowed by law for the jurisdiction in which the factory or producer is located.
- E. Worker Rights. The factory or producer makes available to its employees such rights and procedures as required by law for the jurisdiction in which the factory or producer is located.
- F. Health and Safety. The factory or producer provides at least the minimum safe and healthy working environment as required by law for the jurisdiction in which the factory or producer is located.
- G. Notice to Employees. The factory or producer provides any and all applicable notices to its workers as required by law for the jurisdiction in which the factory or producer is located.

This compliance form must be submitted with your bid. If at any time your products are found to be out of compliance with these standards, or if you refuse to provide information to the City for our verification of compliance, the City reserves the right to terminate contracts for those products.

City of Dayton Ref. No.: \_\_\_\_\_

Bidding Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
Signature/Title: \_\_\_\_\_

Federal I.D.#: \_\_\_\_\_

Phone No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_