DEPARTMENTAL INPUT

CONTRACT/PROJECT MEASURE ANALYSIS AND RECOMMENDATION

☐ New  ☐ OTR  ☑ Sole Source  ☐ Bid Waiver  ☐ Emergency  Previous Contract/Project No. N/A
☐ Re-Bid  ☐ Other

Requisition No./Project No.: RQWS1500017  LIVING WAGE APPLIES: ☑ YES  ☐ NO

TERM OF CONTRACT YEAR(S) WITH YEAR(S) OTR

Requisition/Project Title: Purchase of Valve Maintenance Trailers

Description: Miami-Dade County's Water & Sewer Department requires two (2) valve maintenance trailers to be purchased to conduct routine service/maintenance at their Water Treatment Plants. There is only one vendor in the marketplace with equipment that meets the Department's need.

Issuing Department: WASD  Contact Person: Tracey Jones  Phone: 305-375-4803

Estimate Cost: $131,320.00

Funding Source:

GENERAL  FEDERAL  OTHER  Proprietary

ANALYSIS

Commodity Codes: 070-59

Contract/Project History of previous purchases three (3) years

Check here ☑ if this is a new contract/purchase with no previous history.

Contractor:

EXISTING  2ND YEAR  3RD YEAR

Small Business Enterprise:

Contract Value:

$  $  $

Comments:

Continued on another page(s): ☐ YES  ☐ NO

RECOMMENDATION

SBE  Set-aside  Sub-contractor goal  Bid preference  Selection factor

Basis of recommendation:

Signed: Tracey Jones  Date sent to SBD: 6/25/15

Also send to: oca@miami-dade.gov  Date returned to DPM:
Scope: Miami-Dade County Water and Sewer Department Valve Maintenance Trailers

Miami-Dade County Water and Sewer Department requires a quantity of two (2) valve maintenance trailers to enable routine exercising of the valves through the Miami-Dade Water and Sewer Department system in order to prevent a critical valve failure when the valve must be opened or closed during an emergency. The ability to exercise the Department’s network valves is vital to ensure that a given valve will be capable of opening or closing completely without failure during an emergency.

The operating arm must be able to extend at least 13 feet reach over 270 degrees and capable of at least 750 feet/pound of torque. This unit must be constructed of steel and powder coating for long life. The unit must come with ruggedized handheld water resistant controller to operate and collect data with built in GPS. In addition, it should have a software package which enables data logging and synchronized between the handheld controllers and desk to GIS. Engine must be diesel, liquid cooled and EPA emission compliant. The hydraulic system must be equipped with oil level, temperature gauges, pressure gauges and 1800PSI of continuous duty. Pressure washer should be at least 3000PSI with a 90 gallon water tank, and 50 feet of hose on a spring rewind hose reel. The equipment should have 20 feet long minimum hydraulic hose and a vacuum pump with positive displacement rotary lobe blower capable of at least 500CFM capable of running a 3 inch hydraulic pump trash pump tool.

Additional equipment required:

- 3 inch Hydraulic pump head with quick connects
- 4 inch Hydraulic pump head with quick connects
- 25 foot Hydraulic hose quick to connect
Justification/Input Document for Non-Competitive Acquisition

It is the policy of Miami-Dade County to consistently purchase goods and services using a full and open process/competition. The citizens of Miami-Dade County are best served when we make sound business decisions based on competitive bids or proposals. Early acquisition planning, including consultation with the Internal Service Department Procurement staff can help avoid delays and facilitate effective market research. However, there may be instances when an open competition is not conducive in addressing an immediate need and an alternate process may be justified. When a user department(s) determines that an alternate or other than full and open competition is necessary or in the best interest of the County, appropriate justification for that course of action must be submitted to ISD for approval and execution in order to waive the competitive bid/proposal process.

Please provide the information requested below to support the need and feasibility for waiving the competitive bid/proposal process:

| Department: | WASD |
| Contact Person: | Steve Kronhelm |
| Phone Number: | 786-268-5717 |
| Requisition No.: | Estimated Value p/unit $65,650.00 |
| | two (2) units: $131,300.00 |
| Proposed Vendor: | WACHS |
| Previous Contract Number: | Previous Contract Value: |

Purpose of the Purchase
Please describe your minimum requirements and the benefits of making the acquisition.

The Department is requesting two (2) Valve Maintenance Trailers for the Central District Wastewater Treatment Plant (CDWWTP) & North District Wastewater (NDWWTP). These units are being requested for the following purposes:

1) To enable maintenance personnel to safely open and close large system underground valves that control the wastewater system network. These valves have a geared operation which require a portable, powered valve operation device to achieve proper opening or closure of a given valve at its location; often at times, on an emergency basis.

   * The term “safely” indicates an attribute that this particular machine possesses that enables the operator to effectively turn valves using AWWA (American Water Works Association) recommended procedures. This protects the valve by allowing the machine software to control the maximum torque applied to the valve operator, thus preventing potentially serious and/or permanent damage to the network valve.

2) To enable routine exercising of the above valves through the MDWASD system in order to prevent a critical valve failure when the valve must be opened or closed during an emergency. The ability to exercise the Department’s network valves is vital to ensure that a given valve will be capable of opening or closing completely without failure during an emergency.
System Description:

The operating arm must be able to extend at least 13 ft., reach over 270 degrees and capable of at least 750ft/lb. of torque. This unit must be constructed of steel and powder coated for long life. The unit must come with ruggedized handheld water resistant controller to operate and collect data with built in GPS. In addition, it should have a software package which enables data logging and synchronization between the handheld controllers and desk top GIS. Engine must be diesel, liquid cooled and EPA emission compliant. The hydraulic system must be equipped with oil level, temperature gauges, pressure gauges and 1800PSI of continuous duty. Pressure washer should be at least 3000 PSI with a 90 gallon water tank, and 50 ft. of hose on a spring rewind hose reel. The equipment should have a 20 ft. long minimum hydraulic hose and a vacuum pump with positive displacement rotary lobe blower capable of at least 500CFM capable of running a 3 in. hydraulic pump trash pump tool.

Additional Equipment required:
3 in. Hydraulic pump head with quick connects.
4 in. Hydraulic pump head with quick connects.
25 ft. hydraulic hose quick to connect

Best Interest of the County / Uniqueness of Product
Please provide a detailed description as to why a waiver of formal bidding is in the County’s best interest (e.g., product standardization, compatibility, proprietary access or distributorship, how vendor is uniquely qualified to provide the needed product or service, etc.). Please note that a lack of advance planning is not an acceptable justification for a non-competitive acquisition.

Equipment is consistent with similar equipment currently in operation within 3 Wastewater treatment plants.
Unit Valve stems must be automated.
This make provides prompt customer and technical support service when needed.
Loaner valves are available when unit is down.

Market Research
Please describe your market research and the results thereof. This should include a description of other, similar sources or products available in the market if any and why they are not acceptable.

Pacific Tec model it is not automated and requires manual torque and adjustments, and data logger not standard.

Flow Master model it is not automated and doesn’t meet our minimum requirements.

Spin Doctor not automated, and can only be manually operated.

EH WACHS Equipped with GPS to identify location/label and graph history of torque levels, it is able to sense torque resistance and alternate rotation to clear obstructions. Unit is equipped with automatic mode to protect valve from human error, and able to operate without being manned once it is set up.
This equipment should function safely on its own without damaging the valve.
<table>
<thead>
<tr>
<th>Proposed Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please describe the actions the department will take to overcome the present barriers to competition prior to any future acquisitions of this product or service.</td>
</tr>
</tbody>
</table>

| The department owns a similar EH WACHS valve maintenance trailer, and division plant staff is well-trained on operation of EH WACHS valve Maintenance trailer. The manufacturer support has been outstanding, and equipment has been extremely reliable supporting the operation. Our recommended preference is to obtain the two (2) requested Valve Maintenance Trailer from WACHS Standard LX-Valve Maintenance Trailer Product number 77-000-38 requested. |

<table>
<thead>
<tr>
<th>Department Director’s Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Signature)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/9/15</td>
</tr>
</tbody>
</table>
WASD MOBILE EQUIPMENT REQUEST FORM

ROUTE COMPLETED FORM TO WASD/FLEET MANAGEMENT WITH DIVISION CHIEF SIGNATURE

Check the appropriate box for this vehicle section.

All request require Department Director, OSBM and Mayor's Office approval

☐ Replacement equipment request.  Division Requesting Equipment 850

Complete vehicle information below:

Asset DC #: ___________________  Year: ____________  Make: ___________________

Model: ___________________  Current miles/hour meter reading: ______________
If meter reading is not accurate specify N/A and explain below why replaced.

Description of equipment: ____________________________________________

Amount Budgeted for Equipment: $130,000.00  Estimated New Equipment Cost: $65,000.00 each

Budget Line Item: # 2571  Fiscal Year: 2013 / 2014

Cumulative Repair Costs: $____

Expenditure Requisition (ER): # S048990  Number of Similar Existing Equipment in Division: # 1

Index code to be billed for fuel, fluids, and repairs: (required) 321133

Local Bid #: ___________________  Recommended Existing Contract #: ____________

☐ New Additional Equipment Request.

Quantity to be purchased: TWO

Estimated purchase price: $65,000.00 each

Estimated total: $130,000.00

Description of the equipment being purchased including all accessories:
Standard LX - Valve Maintenance Trailer

Revision Date: 10/15/2013  Page 1 of 4
WASD MOBILE EQUIPMENT REQUEST FORM

Select type of equipment being requested with specifications

<table>
<thead>
<tr>
<th>Vans</th>
<th>Pickup Trucks</th>
<th>Hybrid Sedans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Compact</td>
<td>Compact</td>
</tr>
<tr>
<td></td>
<td>½ Ton</td>
<td>Mid-Size</td>
</tr>
<tr>
<td></td>
<td>¾ Ton</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Ton</td>
<td>Hybrid Pickup</td>
</tr>
<tr>
<td>Van Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cargo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Passengers</td>
<td>4X2</td>
<td>½ Ton 4x4</td>
</tr>
<tr>
<td></td>
<td>4X4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk In Step</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Note Size)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Miscellaneous

- Utility Carts
- ATV's
- Lawn Mowers
- Air Compressors
- Pumps
- Generators

Division Justification for Replacement/Addition:

Equipment is required for valve exercise and improved operations, if valve are not exercised they can freeze and become inoperable and must be replaced. The portable valve operator is essential for the implementation of a valve management program at the CDWVT to reduce the number of non-working valves in the system. This has a direct effect on the reliability of the wastewater treatment system. Reliability is knowing the system is working correctly and the ability to consistently process an acceptable quantity and quality of wastewater at a suitable pressure with minimum interruptions, wastewater quality impacts, inoperable valves and process system breaks.

Description- Scope of Work

- Equipment is required for valve exercise and improved operations, if valve are not exercised they can freeze and become inoperable and must be replaced. This equipment is primarily needed to maintain underground 30 years old valves at the CDWVT and identify frozen and broken ones for repair in preparation of the massive court-mandated consent decree projects to come. These major time-sensitive projects will be delayed if isolation valves cannot be relied on to secure and isolate portions of the plant for construction. Portable valve operators are standard equipment in the Water and Wastewater Treatment Plants and can service a varied assortment of different size valves found at the CDWVT. The unit is versatile and adaptable to almost any valve or gearbox combination through dedicated couplings and suitable for any operating position.
WASD MOBILE EQUIPMENT REQUEST FORM

Signature(s): (Originals Only)

Robert E. Ferguson

[Signature]

Requested and Completed
Division Chief       Print and Sign

[Signature]

Date

Fleet Recommendation(s):

Equipment requested by the division for operation.

[Signature]

Department Fleet Manager

5/3/14

Date

[Signature]

Department Director

5/16/14

Date

[Signature]

DBBM Approval

6/6/14

Date

[Signature]

Mayor/Deputy Approval

7/14/14

Date
E.H. Wachs is pleased to offer the following quotation.

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>Qty</th>
<th>Unit Price (USD)</th>
<th>Line Total (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 77-000-38</td>
<td>Standard LX (Diesel) - VMT: Single turner valve maintenance trailer; includes Wachs 750 Ft/lb (1020 Nm) Extended Reach Valve operator, telescoping valve key and ruggedized Recon controller. A Catipillary/Parkins 29 HP (21.3 kW), liquid cooled, DPI diesel engine provides ample power for all contained functions, including an auxiliary HTMA Class II circuit; 10 gallon (38 L) reservoir, fan cooled heat exchanger, continuous duty rated at 8 GPM (30.3 LPM) @ 1,800 PSI (125 bar). A positive displacement blower provides 500 CFM (14.2 cfm)-1&quot; (25mm) 4&quot; (1000 mm) Hg vacuum, with spills containment provided by a 350 (990 L) gallon tank with power hydraulic dam (rear discharge) and latching rear door. Also driven from the common power train is a 2.5 rpm (9.5 RPM) @ 3000 PSI (210 bar) pressure washer system with 3 gallon (11.4 L) anti-freeze tank and 95 gallon (360 L) water tank. Includes 2-1/2&quot; (63.5mm), 1-1/4&quot; (31.75mm) &amp; 7/8&quot; (22mm) suction wands and one each short and long wash-down guns. The LX package bundles the light bar with arrow board, 49&quot; (1.4m) auxiliary hydraulic hose reel for operation of hydraulic power tools and 24&quot; (61cm) X 18&quot; (46cm) x 16&quot; (46cm) aluminum job box. Domestic destination and freight charges included. Available as a GPS upgrade for Recon is kit 79-411-00 or subroutine kit 79-413-00.</td>
<td>1 EA</td>
<td>59,250.00</td>
<td>59,250.00</td>
</tr>
<tr>
<td>2 08-000-03</td>
<td>WDP3500 Dewatering Pump is lightweight, compact unit capable of discharging water quickly and quietly. Centrifugal-type pump features a direct drive hydraulic motor for continuous use. The contaminant-tolerant gear motor is designed for continuous high-speed operation. Direct drive impeller with no spindle bearings that require periodic lubrication or replacement. Cast stainless steel, semi-clined impeller resists corrosion and sealed drive shaft. Includes operation manual. Domestic destination and freight charges included.</td>
<td>1 EA</td>
<td>2,495.00</td>
<td>2,495.00</td>
</tr>
<tr>
<td>3 08-400-03</td>
<td>Hose Discharge 3&quot; for WDP3500 25x 3&quot; Diameter Vinyl Coated Discharge Hose with Aluminum Female Camlock Coupler</td>
<td>1 EA</td>
<td>180.00</td>
<td>180.00</td>
</tr>
<tr>
<td>4 08-000-04</td>
<td>The WTP4800 Trash Pump is a lightweight, heavy duty machine capable of pumping high volumes of water, sand, surrules, gravel, sludge, and solids up to 3 in. /75 mm in diameter. Features a &quot;free flow&quot; impeller with a direct drive hydraulic motor for continuous use. Submersible and self-priming, can run dry without damage to the motor, bearings or impeller. Abrasion-resistant impeller and volute with replaceable wear plates. Includes operating manual. Domestic destination and freight charges included.</td>
<td>1 EA</td>
<td>3,465.00</td>
<td>3,465.00</td>
</tr>
<tr>
<td>5 08-400-04</td>
<td>Hose Discharge 4&quot; for WTP4800</td>
<td>1 EA</td>
<td>270.00</td>
<td>270.00</td>
</tr>
</tbody>
</table>

Quote Total (USD): $65,660.00

Please refer to our website for terms and conditions.
Thank you for the opportunity to quote your application needs. If you have any questions or if I may be of any further assistance to you please do not hesitate to notify me.

(SALES TAX!!!) We collect sales tax in all but the following states: AK, DE, MT, OR and NH. If you are tax exempt please supply your identification number and certificate with your order. If your exempt number is not on file, tax will be added to your order.

Ken Redding
Utility Technical Sales Rep
815-943-4785 x2773
kredding@ehwachs.com

Please refer to our website for terms and conditions.
Valve Operators

- Reversible and resettable LED revolution counter built in.
- Can be used alone with its lightweight hydraulic power unit (Model PU-20G), or as a helper to the truck mounted valve operator on valves located off the street.

PT-13

PT-13 Standard Features:

- Turns valves with adjustable torque from 0 to 850 ft. lbs.
- Digital reversible revolution counter.
- Operate valves up to 13 ft. away from the vehicle.
- Hydraulic unit or PTO drive.
- Modify ANY truck into a valve exerciser vehicle!
- Valve operator/exerciser head has torque readout, torque control valve, speed control valve, directional control valve, and arm lock/unlock controls.
- Can operate valves in the street, median, or off the road.
- Counter counts in 1/16th of a turn for data accuracy.
- Can be linked to computerized data collection program to automatically capture and store data.

http://pacific-teek.com/valve-operators

2/3/2015
**Standard Equipment**

- 34 HP V-Twin Kohler Gas Engine
- 600 CFM Lobe Type Blower @ 14" Hg. Continuous With Simultaneous 4.7 GPM @ 3000 PSI Water Flow - Giant High Pressure Water Pump with Electric Clutch
- Y-Strainer Water Filter Element
- 95 Gallon Plastic Fresh Water Tank with 1-½" Drain Valve
- 6 Gallon Anti-Freeze Tank With 1" PVC 3-Way Valve
- Low Water Automatic Pressure Washer Pump Shutdown
- Cat Pump Pressure Sensitive Regulating Unloader Valve
- Large Blower Silencer Muffler For Noise Abatement - 80 db.
- 220 Gallon Spills Tank With 6" Full Spills Tank Check Valve And 3" Inlet Gate Valve
- Hydraulic Full Opening Rear Door Cammed For Using A Single Handle, Moving 4 Deadbolts Into Lock Position And A 3" Drain Gate Valve
- 1 Micron Washable Bag Filtration, Wet Or Dry Vacuum Capability With 3" PVC Drain Valve
- 10 Gallon Fuel Cell
- 6000# Torflex Rubber Torsion Axle With Electric Brakes
- (2) ST235/80 R16 Load Range E Tires
- Rear Curbside Aux. Hydraulics – 9 GPM @ 3000 PSI With 10 Gallon Oil Reservoir
- Oil Reservoir
- Lockable Hose Reel With 50' HP Hose & Flexible Spray Wand
- 2" Vacuum Relief Valve
- 2-½" Stainless Steel Vacuum Gauge
- 7000# Trailer Jack
- 12-Volt Battery
- Curbside Controls
- 2-5/16" Ball Hitch, Pintle Hitch Available Upon Request
- 3" X 25' Vac Hose With Ball And Socket Fittings
- 18" Lawn Sweep On 3" Steel Vac Tube
- Standard Valve Box Cleanout Tool
- Strobe & Dual Halogen Work Light Kit

**Dimensions**

- Skid Mount: Fits In 3' (96") Truck Bed
- Trailer Mount:
  - Width = 37" (95")
  - Length = 15' (180")
  - Height = Approx. 72" (88") - Top of Strobe

082411-250G
Mounting Base & Arms: Mounting base is 1 ft. square plate with an inner and outer articulated arm onto which the valve operator head is mounted. A deck mounted storage bracket is furnished to secure arms for travel.

Reach: With articulated arm fully extended valves up to 11 ft. from mounting base can be operated.

Power Head: The valve operator power head is driven by a single hydraulic motor. Output torque can be controlled from 0 to 850 ft. lbs. Rotating speed is controlled from 0 to 40 RPM.

Controls: Power head controls include position lock on/off buttons; 3-position directional control valve with detents in each position; torque control valve; speed control. Both revolution count and torque are displayed on digital electronic readouts on powerhead. Unit is computer ready to interface with data collection software system.

Position Locks: Both inner & outer arm are held in position by a push button actuated independent hydraulic "position lock" system while machine is in use. Push button actuated "lock" and "unlock" to be located on powerhead.

Valve Key & Socket: Unit to be furnished with a double jointed 1 3/8" square drive valve key with universal joint and 2" socket.

4. "Drive One" System

A single 25 HP V-twin gas engine will power the 525 CFM vacuum blower, the 8 GPM hydraulic pump, and the water jet system pump described above. Water & hydraulic pump will be activated via a selector switch.

A 19 gal. hydraulic reservoir with cooler and filters, a 6 gallon fuel tank, and a starting battery will also be included.

5. Hydraulic Tool Circuit (Optional)

An auxiliary 8 GPM hydraulic tool circuit with a hose reel and a 50 ft. set of ½" hydraulic hoses will be mounted on trailer deck.

6. Trailer

All above described equipment will be mounted on a custom 7 ft. wide x 10 ft. long raised deck tandem axle trailer. Trailer will have a steel diamond plate deck, 2 axles with a 5,200 lb. capacity each, an overall GVWR rating of 9,900 Lbs. Tongue jack to be a 3,500 lb. retractable leg unit. An adjustable height pintle hitch to be included along with electric brakes, and all standard L.E.D. highway lighting and markings. Valve key storage tubes (3) to be installed under rear of trailer deck.
Accessories

1) 4 ft. non-conductive suction wand with t-handle
2) 6 ft. non-conductive suction wand with t-handle
3) 4 ft. gas control low pressure variable nozzle spray wand
4) 5 ft. gas control high pressure roto nozzle water knife

Longevity

1) 2 coats of Epoxy Primer
2) 2 coats of Polyurethane Top Coat
3) Color "Safety" yellow for easy visibility
4) Wiring Connections Sealed

Trailer

1) 7,000 GVWR
2) Four tires on 2 single axles
3) Electric Brakes for both axles with safety breakaway
4) 10,000 lb. pintle hitch
5) 5,000 lb. jack stand
6) Storage racks for all accessories
7) Under coated to prevent corrosion

Valve Exerciser

1) Capable of reaching valve 13' from machine (270 degrees total movement)
2) Capable of hydraulically open and close valves up to 405 ft lbs. Torque x 50 rpm
3) Hydraulically operate fire hydrants
4) 2" Valve wrench/extensions to operate valves up to 9' deep
5) Variable hydraulic pressure controller
6) Directional controls at head of exerciser
7) Hydraulic pressure gauge to determine torque required to operate valve
8) Built in Rotation Counter w/LED readout
9) Torque conversion chart up to 405 ft. lbs
10) Auxiliary Hydraulics (optional)

Options:

1) Hydraulic Door - LP Mini 333GT
2) 24HP Kohler Diesel w/hydraulic door (580 cfm) – LP Mini 333DT
# PRODUCT SPECIFICATIONS

**Standard LX – Valve Maintenance Trailer**

<table>
<thead>
<tr>
<th>Valve Exercising Equipment</th>
<th>Yes</th>
<th>No</th>
<th>Specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVM-760</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

- Exercising equipment with spring tension, or adjustable for cushion-like flexibility and tension. Each cylinder is equipped with a 3000 psi (210 bar) pressure gauge to monitor the pressure. The pressure is controlled by adjusting a valve mounted on the frame. The pressure is monitored using a digital pressure gauge.

<table>
<thead>
<tr>
<th>Valve Motorized Actuation</th>
<th></th>
<th></th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>WICH-100</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

- Panel-mounted controller to control the motorized valve actuator. The controller is equipped with a digital display and control buttons to adjust the speed and direction of the valve actuator.

<table>
<thead>
<tr>
<th>Data Management</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Fully compatible with other VMS or integrated with VMS software package script for easy importing and exporting of data into the controller or VMS.

## Power Pack

<table>
<thead>
<tr>
<th>Engine</th>
<th>Yes</th>
<th>No</th>
<th>Specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kubota L1551-5.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kohler 27 HP</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 5.4L diesel engine E5A: 445 RPM, 214 lb-ft torque. The engine is equipped with a digital tachometer and an hour meter.

<table>
<thead>
<tr>
<th>Controls</th>
<th>Yes</th>
<th>No</th>
<th>Specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital tachometer, engine hour meter, voltmeter, ammeters, switch, door switch, water/coolant selector switch, arrow head control and service ammunition</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Controls include a digital tachometer, an engine hour meter, a voltmeter, ammeters, switches, and a water/coolant selector switch. The controls are designed to allow easy access to service ammunition.

W. H. Wach's
451 Conchoe Circle, Harvard, Illinois 60033 - 815.945.4785

Customer Service: 1.800.442.6467

Standard LX specs 10212014 - 1 - January 26, 2013
<table>
<thead>
<tr>
<th>Specifications</th>
<th>Pacific-Tek #1</th>
<th>Spin_doctor #2</th>
<th>Flow-Master #3</th>
<th>eh-wachs #4</th>
<th>Specs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENGINE TYPE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trailer Spec</td>
<td>5,000 lb 2 axles</td>
<td>not specified</td>
<td>7,000 lb 2 axles</td>
<td>7,000 2 axle elect brakes</td>
<td>Minimum 6,500 trailer</td>
</tr>
<tr>
<td>Collection Tank</td>
<td>250 gal hydraulic door</td>
<td>120 gal tank hydraulic door</td>
<td>300 gal tank</td>
<td>250 gal hydraulic door</td>
<td></td>
</tr>
<tr>
<td><strong>Dumping</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Tank</td>
<td>100 gal tank</td>
<td>95 gal tank</td>
<td>2-50 gal tanks</td>
<td>90 gal tank</td>
<td>80 gal minimum</td>
</tr>
<tr>
<td>Pressure Washer Psp</td>
<td>3,000 psi 3.5 gpm</td>
<td>3,000 psi</td>
<td>3,000 psi 2.5 gpm</td>
<td>3,000 psi minimum</td>
<td>3,000 psi minimum</td>
</tr>
<tr>
<td>ARM Reach</td>
<td>11 ft</td>
<td>9 ft to 13 ft</td>
<td>13 ft</td>
<td>13 ft</td>
<td>10 ft minimum</td>
</tr>
<tr>
<td>Torque</td>
<td>850 lbs</td>
<td>800 lbs</td>
<td>450 lbs</td>
<td>750 lbs</td>
<td>700 lbs minimum</td>
</tr>
<tr>
<td>Hose Reel</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Vacuum Pump</td>
<td>525 cfm positive</td>
<td>600 cfm</td>
<td>550 cfm positive</td>
<td>500 cfm positive</td>
<td>500 cfm positive</td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See cut sheets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>