



Work Authorization No.3

The services rendered pursuant to Work Authorization No.3 are in accordance with Commission approved Resolution 2016-232 and the terms and conditions of the Service Agreement between the City of Pompano Beach ("CITY") and Odyssey Manufacturing Co. ("CONTRACTOR") executed July 1st, 2016 and First Amendment executed July 3, 2017.

As a follow-up to your request, Odyssey is pleased to quote the City of Pompano Beach the following to replace the two existing lime slaking systems (a.k.a. "slakers") at its Water Plant.

Description of WTP Operations

The City of Pompano Beach WT plant is permitted for 50-million gallons per day (MGD) (PWS #4061129). The plant average production is about 14.5 MGD and the peak production is about 18.0 MGD depending upon the time of year. The plant is only permitted, however, to treat 30 MGD in order to achieve 4-log removal. The plant has two treatment processes: (1) Nano-filtration (NF); and (2) Lime softening. The plant has five NF skids of 2 MGD each and two 20 MGD each lime softeners. Typically, two or three NF trains are run at a time and one softener is run at a time at a rate of 5 to 12 MGD. The finished water from both processes goes to the blending clear well which is approximately 2 million gallons. The finished water is then pumped from the clear well to two on-site Ground Storage Tanks rated for 5 million each. The plant uses about 1,000 gpd of sodium hypochlorite and 100 ppd of anhydrous ammonia. The plant adds carbon dioxide after the clarifiers to lower pH. The plant feeds between 1,000 and 2,000 ppd of carbon dioxide. Typical deliveries are 40,000 lbs. at a time and the plant gets deliveries every month sometimes twice per month. The plant's finished water pH is 8.5. Sodium hypochlorite is normally fed at the blending clear well and at the pre-filters of the lime softening process. During burnouts, sodium hypochlorite is normally added to the Post injection as well. Anhydrous ammonia is currently added at the beginning of the blending clear well.

From the desk of...

Patrick H. Allman
General Manager

1484 Massaro Boulevard
Tampa, Florida 33619

Cellular/Voicemail: (813) 335-3444
Business: (800) ODYSSEY
Facsimile: (813) 630-2589

Current Situation

The existing lime slakers are nearly twenty (20) years old. There are two lime slakers, one is dedicated to each softener. The slakers no longer have replacement parts available and are at end of life. Each lime slaking system provide equipment to safely convert the dry pebble quicklime fed by the lime feeder into lime slurry, which is then piped by gravity directly to the process or discharged into a slurry tank before being pumped to the process (i.e., the softeners) as required by the site operating conditions. A conveyor type grit remover is used to separate the grit from the slaked lime which is dumped into a small dumpster and disposed of.

The lime slaker uses a controlled paste-slaking technique with a 2:1 water to lime ratio by weight. A mechanical torque-operated water valve automatically maintain paste consistency of the lime being slaked. It maintains the desired water to lime ratio over the range of the feeder up to 20:1. A pre-wired remote control panel ensures proper control and operation of the system. The system is operated manually or automatically with 4-20 mA flow-proportional control of the feeder or remote start-stop signal and automatic start-stop operation of the slaker system.

Recommendation

Odyssey proposes the following scope of work:

- FDEP Permitting (as required)
- Utilize existing concrete pedestals for new slakers
- Remove existing lime slakers one at a time and replace it with new slaker
- Replace electrical feeds to each Slaker
- Replace control wiring to each Slaker
- Replace Control Panel for each Slaker
- Replace piping to and from each Slaker as required
- Provide final As-Built Drawings and O&M manuals for Project
- Remove and Dispose of Existing Lime Slaking Systems

The following equipment would be supplied by Odyssey:

- 2 – Inlet Rotary Cut Off Valves (a.k.a. “Knife Valves”)
- 2 – Transition chutes from inlet rotary valves to inlet flexible connection
- 2 – Volumetric Screw Type Lime Feeder with VFD Controls
- 2 – Paste Type Lime Slaker
- 2 – Mechanical Torque-Operated Water Valve
- 2 – Conveyor Type Grit Remover
- 2 – System Control Panel and Junction Box
- Lot – Miscellaneous Piping
- Lot – Miscellaneous Electrical and Controls Wiring

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The City of Pompano Beach would be responsible for any required SCADA reprogramming and terminations of any additional I/O above and beyond what is currently available on the lime slaking system.

Work Details

- 1) Demolish existing lime slaking systems. This includes disconnecting the water supply lines, blower lines and slurry lines. It also involves disconnecting the electrical power and control wiring.
- 2) Furnish and install two lime slakers (Model #A-758). The lime slaker shall include the following features:
 - a) Paste type.
 - b) Capacity of 2,000 pounds per hour of AWWA 202 grade pebble lime.
 - c) Trough constructed of unpainted 304 stainless steel.
 - d) Ability to achieve a self-sustaining slaking temperature of 170° F or above without requiring the use of a heat exchanger, heated water or any external heat source.
 - e) Automatically control the slaking water flow rate to provide a 2:1 water-to lime ratio by weight and compensate for vapor loss, changes in lime reactivity, and feed rate.
 - f) Complete with two counter-rotating, pug mill type paddle mixers. Mixers shall have a maximum rotational speed not to exceed 40 rpm. The use of high-speed mixers and replaceable wear plates is unacceptable.
 - g) The slaking chamber shall be designed to complete the slaking reaction in 5 minutes or less.
 - h) A 20:1 operating range
 - i) Mechanical torque operated water control valve to maintain a 2:1 water-to lime ratio and a five-minute retention time in the slaking compartment. Other water control valve types for use with this purpose are not acceptable.
 - j) Integral dust and vapor arrestor
 - k) Water pressure reducing valve
 - l) Supply water strainer and pressure gauge
 - m) Supply water low pressure switch
 - n) 1 HP, 230/460V, 3 ph, 60Hz mixer motor
 - o) Paste cut-off jet spray nozzles and slurry mixing
 - p) Normally opened bypass solenoid valve to flush slaking compartment on system shutdown
 - q) Slaker outlet and overflow connections
 - r) Knife Switch over Slaker separating cone silo from slaker.
- 3) Furnish and install one Grit Remover. The grit remover is a conveyor type grit remover with the ability to remove virtually all grit down to 10 mesh in size and a portion of finer grit down to 40 mesh. Grit particles are separated from the lime slurry based on their specific gravity. Lime slurry concentrations up to 18% are achievable. The conveyor type grit remover will be complete with:
 - a) Unpainted 304 stainless steel housing construction
 - b) Clean-out hatch
 - c) 1/4 horsepower, 230/460 volt, 3 phase, 60Hz, TENV gear motor

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- d) Individually replaceable flight scrapers
 - e) Water control valve and flowmeter to regulate the grit-wash water flow
- 4) Furnish and install one screw type volumetric feeder (Model #32-300SP). The feeder shall have the following characteristics:
- a) The slaking system will include a screw type volumetric feeder to control the feed rate of pebble lime into the slaker.
 - b) In order to facilitate on-site assembly of the slaking system and assure proper fit and function of all system components the feeder shall be supplied by the same manufacturer as the slaker.
 - c) Each unit shall be Model 32-300SP screw-type volumetric feeder having a capacity of 2,000 pounds per hour of pebble lime, and complete with a 2" lime feed screw; VFD speed control with 1 horsepower, 230/460 volt, 3 phase, 60Hz AC motor; and right-angle drive gearbox. The feeder housing shall be constructed of unpainted 304SS.
 - d) The VFD drive shall be provided mounted in the control panel and wired to current NEC requirements.
 - e) The feeder shall be provided with an inlet flexible connection to isolate the feeder from vibration in equipment leading up to and away from feeder. The inlet flexible connector shall be canvas.
- 5) Furnish and install one water supply panel. The water supply piping shall be mounted on a stainless steel panel providing a single water source point and shall consist of the following components:
- a) Supply water strainer
 - b) Wash-down valve with garden hose connection
 - c) Control valves
 - d) Supply water pressure gauge
 - e) Pressure reducing valve
 - f) Slaking water pressure gauge/switch with local display
 - g) Slaking water bypass solenoid valve
 - h) Slaking water bypass manual valve
 - i) Grit-wash water electronic flowmeter with local display
 - j) Automatic batching solenoid valve
 - k) The water panel piping shall be Copper.
- 6) Furnish and install the new Slaker Control Panel. The lime slaker electrical control panel shall provide electrical control for the entire system. The control panel enclosure shall be rated NEMA 4X and shall be made of 304SS. The panel shall be remote-mounted next to the slaker system. A junction box shall be provided mounted on the slaker system and be factory pre-wired to system components. The panel shall be based on PLC logic and shall include a 10" Operator Interface Terminal (OIT) graphical display to provide system automation and operator monitoring of the lime slaker system. The operator interface shall provide access to the following:
- a) Pebble lime feed-rate control
 - b) Pebble lime feed rate display
 - c) Manual and automatic operation of the lime feeder
 - d) On/Off/Auto/Manual/Fault indication of the lime feeder status

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- e) Manual and automatic operation of the paddle-shaft mixer motor
- f) On/Off/Auto/Manual/Fault indication of the paddle-shaft mixer motor status
- g) Manual and automatic operation of the grit remover
- h) On/Off/Auto/Manual/Fault indication of the grit remover status
- i) Manual and automatic operation of the auto-batch valve
- j) On/Off/Auto/Manual indication of the auto-batch valve
- k) Manual and automatic operation of the bypass valve
- l) On/Off/Auto/Manual indication of the bypass valve
- m) Alarm Indication for the following:
 - 1. Paddle shaft mixer fault
 - 2. Lime feeder fault
 - 3. Grit remover fault
 - 4. Control Power off
 - 5. Emergency stop active
 - 6. Inlet water low pressure

A single source of power shall be required (480v, 3 Ph, 60Hz, 25 amps) for the Control Panel. The Control Panel is provided with terminal strip for easy wiring connections for input and output. The panel provides for the following types of operation and control:

- 1. Manual speed control of the feeder via data entry on the on the OIT.
 - 2. Automatic control of feeder rate via a 4-20 mA input signal based on flow or process conditions.
 - 3. Automatic batching.
 - 4. Automatic system shutdown.
 - 5. Programmable flush cycle after each shutdown
- 7) Furnish and install all Schedule 80 PVC piping for water, vent from vapor and dust arrestor, overflow/drain and lime slurry discharge lines to/from lime slaker.
 - 8) Furnish and install all wiring to/from system control panel for power, control and alarm interfaces with feeder's VFD drive, water panel junction box, plant SCADA, etc.
 - 9) Furnish and install all anchor bolts, suitable concrete mounting pads and other incidentals as necessary to complete the installation.
 - 10) Odyssey has included two days of Integrity Municipal Systems (IMS) Factory Startup and Training for each of the new lime slaking systems.
 - 11) Odyssey agrees to disconnect and remove the two existing lime slaking systems. At this time we are assuming the scrap value of the two systems equals the cost to transport it off-site.

SCADA Interface

Odyssey proposes to run re-use the existing I/O from the existing control panels. Thus, there should be no need to reprogram the SCADA system.

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Warranty

One year parts and labor warranty from Odyssey upon system acceptance. One year limited parts only warranty from IMS from the date of acceptance.

Pricing

The work is expected to take two to three weeks. It will require an FDEP construction permit with the Broward County Health Department. The cost breakdown of the work is as follows:

Lot – Lime Slaking System Equipment	\$ 324,500
Lot - Schedule 80 PVC Materials	\$ 2,700
Lot - SS316 Pipe Supports	\$ 1,400
Lot – Electrical Components/Conduit	\$ 5,500
Dumpsters	\$ 1,600
Forklift Rental (to set new equipment)	\$ 5,500
240 hrs – Technician@\$80/hr	\$ 19,200
200 hrs – Helper@\$35/hr	\$ 7,000
20 hrs – Engineering@\$90/hr	\$ 1,800
Contingency (10%)	\$ 37,000

Total	\$ 406,200

Please issue us two purchase orders so you avoid paying sales taxes on the Lime Slaking systems itself (this will save the City of Pompano Beach almost \$20,000), one in the amount of \$324,500 and one in the amount of \$81,700.

Schedule

Notice to Proceed	0 Weeks
Submittals for Approval	4 Weeks ARO
Submittal Approval	5 Weeks ARO
Submit FDEP Permit	5 Weeks ARO
FDEP Permit Approval	5 Weeks ARO
Equipment On-site	16 Weeks ARO
#1 Slaker Installation Starts	17 Weeks ARO
#1 Slaker Startup	18 Weeks ARO
#2 Slaker Installation Starts	19 Weeks ARO
#2 Slaker Startup	20 Weeks ARO
Project Acceptance	22 Weeks ARO

Odyssey is a licensed plumbing and general contractor who specializes in chemical system design, permitting, equipment supply and installation and service work. This work would be done under the existing maintenance services agreement with the City of Pompano Beach. This proposal is good through December 31, 2017. Thanks for your consideration. Pat.

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IN WITNESS OF THE FOREGOING, the parties have set their hands and seals the day and year first above written:

"CITY"

Witnesses:

CITY OF POMPANO BEACH

By: _____

Lamar Fisher, Mayor

Print Name

By: _____

Gregory P. Harrison, City Manager

Print Name

Attest:

Asceleta Hammond, City Clerk

(SEAL)

Approved as to Form:

Mark E. Berman, City Attorney

STATE OF FLORIDA
COUNTY OF BROWARD

The foregoing instrument was acknowledged before me _____ day of _____, 2017 by Lamar Fisher as Mayor, Gregory P. Harrison as City Manager, and Asceleta Hammond as City Clerk of the City of Pompano Beach, Florida, a municipal corporation, who is personally known to me.

NOTARY'S SEAL:

NOTARY PUBLIC, STATE OF FLORIDA

(Name of Acknowledger, Typed, Printed or Stamped)

Commission Number

From the desk of...

Patrick H. Allman
General Manager

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Tampa, Florida 33619

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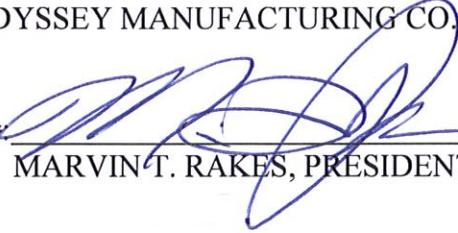
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"CONTRACTOR":

20

Witnesses:

ODYSSEY MANUFACTURING CO.

Tiffany Thaxton

By: 
MARVIN T. RAKES, PRESIDENT

Tiffany Thaxton
Print Name

Miya Marcus

Miya Marcus
Print Name

STATE OF FLORIDA
COUNTY OF HILLSBOROUGH

The foregoing instrument was acknowledged before me this 1st day of November, 2017 by MARVIN T. RAKES as President, of Odyssey Manufacturing Co., a Delaware corporation, on behalf of the corporation, who is personally known to me.

NOTARY'S SEAL:

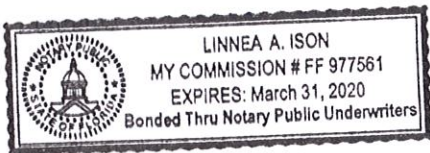


NOTARY PUBLIC, STATE OF FLORIDA

Linnea A. Ison

(Name of Acknowledger Typed, Printed or Stamped)

FF977561
Commission Number





CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
9/26/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Stahl & Associates Insurance Inc. 91 Lake Morton Drive P O Box 3608 Lakeland FL 33802	CONTACT NAME: Debbie MacGillivray PHONE (A/C, No, Ext): (863) 688-5495 FAX (A/C, No): (863) 688-4344 E-MAIL ADDRESS: debbie.macgillivray@stahlinsurance.com													
	<table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A: Westchester Surplus Lines Ins Co</td> <td>10172</td> </tr> <tr> <td>INSURER B: ACE American Insurance Co</td> <td>22667</td> </tr> <tr> <td>INSURER C: Zenith Insurance Company</td> <td>13269</td> </tr> <tr> <td>INSURER D:</td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </tbody> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Westchester Surplus Lines Ins Co	10172	INSURER B: ACE American Insurance Co	22667	INSURER C: Zenith Insurance Company	13269	INSURER D:		INSURER E:		INSURER F:
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INSURED Odyssey Manufacturing Co. 1484 Massaro Blvd Tampa FL 33619														

COVERAGES **CERTIFICATE NUMBER:** Oct 2017 Master **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Per Project Applies by Written Contract GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:	X	Y	G24092975 009 Includes Contractual Liability & XCU Coverages	10/1/2017	10/1/2018	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COM/OP AGG \$ 2,000,000 Employee Benefits \$ 1,000,000
B	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS	X	Y	H08450377 009 Hired Auto Physical Damage Com/Coll Ded \$1,000	10/1/2017	10/1/2018	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ PIP-Basic \$ 10,000
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$			G24092987 009	10/1/2017	10/1/2018	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	Z066828613	1/1/2017	1/1/2018	<input checked="" type="checkbox"/> PER STATUTE OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	Pollution/Prof Liability Poll Ded \$10K/Prof 25K			G24092975 009	10/1/2017	10/1/2018	Ea Poll Condition/AGG \$1,000,000 Prof Ea Claim Aggregate \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
When required in a written contract: City of Pompano Beach is an additional insured as respects general liability & auto liability; waiver of subrogation applies as respects general liability, auto liability & workers compensation if required by written contract; Excess Liability is over underlying policies.

APPROVED
John Mealer
 By John Mealer at 2:29 pm, Oct 10, 2017

CERTIFICATE HOLDER City of Pompano Beach Attn: Risk Manager PO Box 1300 Pompano Beach, FL 33061	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE Tony Martinez/MACG <i>Anthony H. Martinez</i>