

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS
AGENDA ITEM SUMMARY

Meeting Date: October 22, 2013 Consent [X] Regular []
Public Hearing []

Department: Water Utilities Department

I. EXECUTIVE BRIEF

Motion and Title: Staff recommends motion to approve: Work Authorization No. 3 with Cardinal Contractors, Inc. for installation of a new degassifier and replacement of the odor scrubber at Water Treatment Plant No. 3 (WTP 3) in the amount of \$1,640,915.97.

Summary: On January 24, 2012, Palm Beach County Board of County Commissioners approved the Contract for Water, Wastewater and Reclaimed Water Improvements Design/Build Services with Calvin Giordano (R2012-0160). On September 10, 2013 the Contract was assigned from Calvin Giordano to Cardinal Contractors to enable bonding capacity with the same design build team members. Work Authorization No. 3 will install new equipment necessary to ensure uninterrupted operation of the water treatment facility. The current two (2) degassifiers at WTP 3 provide no redundancy at this critical plant. The odor scrubber for the clearwell has corroded to the point that immediate replacement is required. The Small Business Enterprise (SBE) participation goal established by the SBE Ordinance (R2002-0064) is 15% overall. The contract with Cardinal Contractors, Inc. provides for SBE participation of 26% overall. This Authorization includes 21.92% overall participation. The cumulative SBE participation, including this Work Authorization is 24.48% overall. Cardinal Contractors, Inc. is a non-local company. (WUD Project No. 12-083) District 5 (JM)

Background and Justification: Work Authorization No. 3 will provide a redundant Degassifier No. 3 and a redundant larger odor scrubber for Clearwell No. 1 at WTP 3. As well as improving the reliability of this critical plant. Both of the plant's two (2) clearwells are scheduled for coating in 2015. The additional degassifier and larger odor scrubber will allow the plant to produce its average daily flow during this major scheduled maintenance.

Attachments:

1. Location Map
2. Two (2) Original Work Authorizations No. 3

Recommended By:  10/1/13
Department Director Date

Approved By:  10/16/13
Assistant County Administrator Date

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years	2014	2015	2016	2017	2018
Capital Expenditures	<u>\$1,640,916</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
External Revenues	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Program Income (County)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
In-Kind Match County	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
NET FISCAL IMPACT	<u>\$1,640,916</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
# ADDITIONAL FTE POSITIONS (Cumulative)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Budget Account No.: Fund 4011 Dept 721 Unit W003 Object 6541

Is Item Included in Current Budget? Yes X No

Reporting Category N/A

B. Recommended Sources of Funds/Summary of Fiscal Impact:

One (1) time capital expenditure from user fees with balances brought forward.

C. Department Fiscal Review: Debra M. West

III. REVIEW COMMENTS

A. OFMB Fiscal and/or Contract Development and Control Comments:

Susan Neary 10/2/13
OFMB ^{KU} ^{JB}
10/2 10/2

Mr. J. Jacobson 10/16/13
Contract Development and Control

B. Legal Sufficiency:

James C. Thompson 10/17/13
Assistant County Attorney

C. Other Department Review:

Department Director

This summary is not to be used as a basis for payment.

ATTACHMENT I

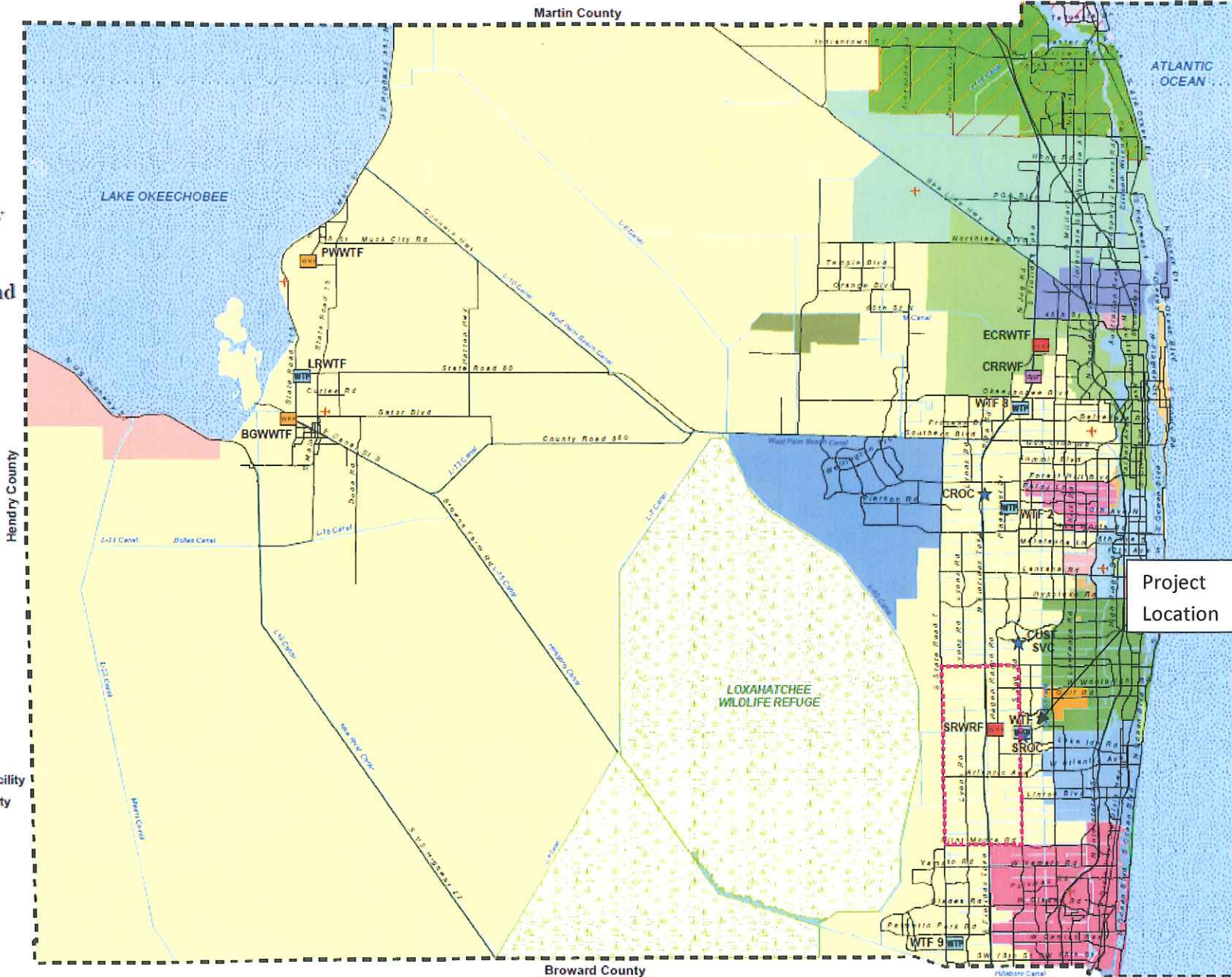


Palm Beach County
Water Utilities
Department
Service Area (SA) and
Major Facilities

Attachment 1

Legend

- Administration
- Water Treatment Facility
- Reclamation Facility
- Wastewater Reclamation Facility
- Wastewater Treatment Facility
- Mandatory Reclaimed SA
- Palm Beach County Limits
- P.B.C.W.U.D. Service Area



WTP 3 - Degasifier No. 3 & Odor Scrubber WUD 12-083

WORK AUTHORIZATION NO. 03
Palm Beach County Water Utilities Department
Water, Wastewater & Reclaimed Water Services

Project No. WUD 12-083

District: 5

Budget Line Item No. 4011-721-W003-6541

Project Title: Water Treatment Plant No. 3 Degasifier No. 3 and Odor Scrubber

THIS AUTHORIZATION No. 03 to the Contract for Water, Wastewater & Reclaimed Water Services Design-Build dated January 24, 2012 (R2012-0160), by and between Palm Beach County and the Design Build Entity as assigned to Cardinal Contractors, Inc., is for the Design-Build Services of this Work Authorization. The Contract provides for 26% SBE participation overall. This Work Authorization includes 21.92% overall participation. The cumulative proposed SBE participation, including this authorization is 24.48% overall. Additional authorization will be utilized to meet or exceed the stated overall participation goal.

1. DESIGN-BUILD ENTITY: Cardinal Contractors, Inc.
2. ADDRESS: 10405 Technology Terrace, Lakewood Ranch, FL 34211
3. Description of Services (Scope of Work) to be provided by the Design Build Entity:

See **ATTACHMENT A.**

4. Services completed by the Design Build Entity to date:

See **ATTACHMENT G.**

5. Design Build Entity shall begin work promptly or deliver ordered materials within the following calendar days from the approval date of the Work Authorization:

Substantial Design Completion 120 Calendar Days Calendar Day after receipt of executed Work Authorization and notice to proceed with design.

Substantial Construction Completion 300 Calendar Days after receipt of all permits and issuance of notice to proceed with construction.

Final Construction Completion 365 Calendar Days after receipt of all permits and notice to proceed with construction.

Liquidated damages will apply as follows:

\$1,000 per day past substantial completion date.

\$500 per day past final completion date.

(For Liquidated Damages Rates see ATTACHMENT B)

The parties hereby agree and acknowledge that County's actual damages in the event of delay would be difficult or impossible to ascertain and that the foregoing liquidated damages amount represents a liquidated sum of damages agreed upon by the parties as a measure of damages in the event of such delay and not as a penalty.

6. The Contract Price or Guaranteed Maximum Price, as applicable, to be paid to the Design Build Entity for providing the requested services in accordance with the Contract shall be \$1,640,915.97, subject to adjustment in accordance with the terms of the Contract.
7. EXCEPT AS HEREBY AMENDED, CHANGED OR MODIFIED, all other terms, conditions and obligations of the Contract dated 01/24/2012 remain in full force and effect.

WORK AUTHORIZATION NO. 03

Project No. WUD 12-083

Project Title: Water Treatment Plant No. 3 Degasifier No. 3 and Odor Scrubber

IN WITNESS WHEREOF, this Authorization is accepted, subject to the terms, conditions and obligations of the aforementioned Contract.

PALM BEACH COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF FLORIDA

Sharon R. Bock, Clerk & Comptroller,
Palm Beach County

Palm Beach County,
Board of County Commissioners

ATTEST:

Signed: _____

Signed: _____

Steven L. Abrams, Mayor



Typed Name: _____
Deputy Clerk

Date

Approved as to Form and Legal
Sufficiency


Signed: _____

Typed Name: _____
County Attorney

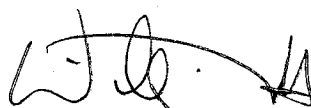
DESIGN BUILD ENTITY:

CARDINAL CONTRACTORS, INC

ATTEST:



Witness



(Signature)

Robin C. Wilson, Treasurer
(Name and Title)

William J. McDevitt, President
(Name and Title)

(CORPORATE SEAL)

August 28, 2013
Date

LIST OF ATTACHMENTS

WORK AUTHORIZATION NO. 03

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

ATTACHMENT – A	Scope of Work
ATTACHMENT – B	Rate for Liquidated Damages
ATTACHMENT – C	Public Construction Bond
ATTACHMENT – D	Form of Guarantee
ATTACHMENT – E	Work Authorization Cost Schedule
ATTACHMENT – F	SBE Schedule 1 and Schedule 2
ATTACHMENT – G	Authorization Status Report - Summary and Status of Authorizations
ATTACHMENT – H	Authorization Status Report - Summary of SBE/Minority Business Tracking
ATTACHMENT – I	Location Map
ATTACHMENT – J	Design-Build Criteria
ATTACHMENT – K	Vendor Quotes

ATTACHMENT A

WORK AUTHORIZATION NO. 03

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

SCOPE OF WORK FOR

WATER TREATMENT PLANT No. 3 DEGASIFIER No. 3 AND ODOR SCRUBBER

INTRODUCTION

Palm Beach County (County) entered into an agreement entitled Water, Wastewater & Reclaimed Water Improvements - Palm Beach County Water Utilities Department Project No. WUD 12-083 (CONTRACT) with Calvin, Giordano & Associates, as assigned to Cardinal Contractors, Inc. (DESIGN BUILD ENTITY) to provide design-build services for various general activities on the Water, Wastewater & Reclaimed Water Services Design-Build Contract dated January 24, 2012 (R2012-0160). This Work Authorization will be performed under that CONTRACT.

This Work Authorization encompasses providing services related to design, permitting, and construction for the addition of Degasifier No. 3; the replacement of the existing odor control system at the Water Treatment Plant No. 3 Clearwell No. 1; the installation of a cleaning system for Degasifiers No. 1, No. 2 and No. 3 and the Clearwell No. 1 Odor Scrubber; and structural modifications to Clearwell No. 1 as detailed in Attachment J Design Criteria.

The services will include mechanical, structural, electrical, instrumentation and controls, design plans and specifications to obtain all applicable engineering and building permits. This includes the addition of Degasifier No. 3, with connection to the existing permeate piping, Air Blower No. 3, inlet air duct, outlet duct work, verification of air duct supports and replacement of the odor control scrubber and all associated work detailed in Attachment J Design Criteria.

The proposed location for Degasifier No. 3 was determined in the Water Treatment Plant No. 3 original design, and will connect to an existing permeate pipe header. A new permeate riser pipe will be provided with a magmeter-type flow meter and isolation valve. The magmeter shall be provided with dismantling joint the same as on the existing Degasifiers No. 1 & No. 2.

A new cleaning system, including header, piping, spray nozzles and circulation pumps, will be installed to clean Degasifiers No. 1, No. 2, and No. 3 and the new Odor Scrubber. Degasifier No. 3 will be provided with the ability to be isolated from the Clearwell No. 1 during cleaning.

The existing Degasifiers No. 1 and No. 2 will continue to use the manual plugs for isolation and will not be modified.

Clearwell No. 1 top slab will be modified to receive the Degasifier No. 1 permeate discharge pipe. The pipe will be supported in the clearwell sump area. A portion of the east wall of the Clearwell No. 1 sump will be removed to match the sumps for Degasifiers No. 1 and No. 2. The opening will be provided with a coating to protect against deterioration of the concrete surface.

The proposed Air Blower No. 3 will be located where the existing common air intake for Air Blowers No. 1 and No. 2 is. The proposed design will eliminate the common air intake filter housing, and provide new air blower enclosures for Air Blowers No. 1, No. 2 and No. 3.

The air duct piping for Degasifier No. 3 shall be provided from the Air Blower No. 3 enclosure to the degasifier, and from the degasifier to the Odor Scrubber inlet air piping header. New pipe supports shall be designed for the new and existing air duct pipe and shall comply with the wind load criteria.

The existing Odor Scrubber will be replaced with a new 12' diameter scrubber tower.

Existing FRP ladders and platforms on Degasifiers 1 & 2 shall be replaced with new aluminum ladders and platforms.

The design shall meet all wind load criteria.

The County will be responsible for permit modifications for the groundwater rule CT.

The proposed electrical design will provide power and instrumentation to the Air Blower No. 3, permeate magmeter, and instruments located on Degasifier No. 3 and Odor Scrubber.

The new equipment shall be provided with connection to the existing plant SCADA system.

Design will be in accordance with the PBCWUD's Minimum Engineering Standards and Design Manual.

SCOPE OF SERVICES

Design Build Entity shall perform the Scope of Services as described herein:

Task 1 – Data Collection and Survey

1. Receive NTP for Design
2. Review as-built drawings and specifications.
3. Review shop drawings for the existing degasifiers and Odor Scrubber system.
4. Determine electrical and instrumentation requirements.
5. Coordinate with existing plant SCADA, confirming available I/O.
6. Conduct field surveys for use in the design.

Task 2 – 60% Design

1. Evaluation of the existing Degasifier No. 1 and No. 2 with future addition of Degasifier No. 3.
2. Evaluation of the existing Odor Scrubber system with future addition of Degasifier No. 3.
3. Design of the Degasifier No. 3
4. Design Air Blower No. 3 and air duct piping.
5. Engineering Report for Palm Beach County Health Department.
6. Design of Odor Scrubber.
7. Design demolition of the existing common air intake filter housing.
8. Design structural supports for the air piping.
9. Add hole in Clearwell Chamber wall
10. Design modifications to Clearwell No. 1 for the installation of Degasifier No. 3.
11. Design electrical and instrumentation associated with the SCADA system relocation.
12. Prepare 60% design drawings and specifications.
13. Provide (3) full size and (3) half size drawing sets of plans and specifications to be submitted for PBCWUD review at the 60% design.

Task 3 - 90% Design

1. Provide written response to 60% design comments.
2. Palm Beach County Health Department Permit Application.
3. Provide (3) full size and (3) half size drawing sets plans and specifications to be submitted for PBC WUD review at the 90% design.

Task 4 - 100% Design

1. Provide written response to 90% design comments
2. Provide (3) half size and (3) full size sets of signed and sealed plans for the PBC Building permit.
3. Provide CAD files and PDF files.
4. Provide (3) half size and (3) full size sets of plans and specifications.

Task 5 – Pre-Construction Services

1. Pre-Construction Meeting.
2. Shop drawing review and approval.

Task 6 – Construction Services

1. Receive NTP for Construction
2. Demolition of the existing blower enclosures, air filter housing, air ducts, equipment pads sidewalks.
3. Modifications to the Clearwell No. 1 top slab and partition wall below Degasifier No. 3.
4. Demolition of the existing Odor Scrubber, recirculation pumps and concrete pads.
5. Construct equipment pads for the new Odor Scrubber, Degasifier No. 3, recirculation pumps and Blower No. 3.
6. Install new Odor Scrubber, Degasifier No. 3, blower enclosures, air ducts, ladders, and platforms.
7. Install new permeate inlet riser pipe, and Clearwell No. 1 discharge pipe for Degasifier No. 3.
8. Install cleaning system for Degasifiers No. 1, No. 2, No. 3 and Odor Scrubber.
9. Install instrumentation and controls.
10. Start up and testing.

11. Sidewalk restoration and grass areas.

Task 7 – Project Close Out

1. Restore all areas and improvements disturbed by the work to a condition that matches or exceeds its pre-construction condition.
2. Coordinate preparation of final As-Built Plan.
3. Coordinate and provide all required final certifications.
4. Obtain all final inspections and close out all permits. When possible, provide computer print-out from permitting agency evidencing permits have been properly closed.
5. Prepare project close-out documentation package, including signed-off permits, As-Built drawings, and photographs.

ASSUMPTIONS

1. PBCWUD will make available all existing record drawings in PDF and CAD format including:
 - A. Clearwell No. 1 Degasifiers No. 1 & No. 2 (Phase 1 by Montgomery Watson WUD 92-95).
 - B. Modifications to Clearwell No. 1 (Phase 2 by CDM WUD 99-196).
 - C. Groundwater Rule improvements to Clearwell No. 1 by GlobalTech.
 - D. Permeate pipeline replacement drawings for piping and risers on Clearwell No. 1.
2. PBCWUD will make available all existing geotechnical information.
3. PBCWUD will provide the membrane permeate and finished water quality concentrations including—but not limited to—pH, hardness, and hydrogen sulfide.
4. Typical hydrogen sulfide concentrations in the membrane permeate are approximately 1.0 ppm. PBCWUD will be responsible for all testing of hydrogen sulfide to determine removal efficiency of existing Odor Scrubber.
5. PBCWUD will make available the design plans for the Clearwell No. 1 Permeate Pipe which is in the process of being replaced.
6. PBCWUD will make available magmeter shop drawing for permeate pipeline replacement in order to match the ones being installed on Degasifiers No. 1 & No. 2.
7. PBCWUD will make available SS Piping Shop drawings for permeate pipeline replacement risers in order to match the ones being installed on Degasifiers No. 1 & No. 2.
8. PBCWUD will make available Shop drawings (Phase 1 WUD 92-95) for: Degasifiers No. 1 & No. 2 and the Odor Scrubber for Clearwell No. 1 including any calculations and performance curves including O&M manuals.
9. PBCWUD will make available Shop drawings for the influent air box for Degasifiers No. 1 & No. 2.
10. PBCWUD will make available design information on Air Blowers No. 1 & No. 2.
11. Pricing for permeate riser to Degasifier is based on the approved shop drawing by Aerex on Permeate Pipeline Project.

COMPENSATION

Compensation for this Work Authorization shall not exceed the Guaranteed Maximum Price.

SBE PARTICIPATION

As described in General Provisions Section A.3 of the Contract, SBE participation is included in ATTACHMENT F under this Authorization. The attached Schedule 1 defines the SBE applied to this Authorization/Contract and Schedule 2 establishes the SBE contribution from each subcontractor (Letter of Intent to perform as an SBE).

ATTACHMENT B

WORK AUTHORIZATION NO. 03

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

Rates for Liquidated Damages

Substantial Design Completion 120 Calendar Days after receipt of executed Work Authorization and notice to proceed with design.

Substantial Construction Completion 300 Calendar Days after receipt of all permits and issuance of notice to proceed with construction.

Final Construction Completion 365 Calendar Days after receipt of all permits and notice to proceed with construction.

Liquidated damages will apply as follows:

\$1,000 per day past substantial completion date.

\$500 per day past final completion date.

The parties hereby agree and acknowledge that County's actual damages in the event of delay would be difficult or impossible to ascertain and that the foregoing liquidated damages amount represents a liquidated sum of damages agreed upon by the parties as a measure of damages in the event of such delay and not as a penalty.

Original bonds issued: 4

Bond Nos: Federal: 82326651
Western: 929571386

PUBLIC CONSTRUCTION BOND

This Bond is issued in favor of the County conditioned on the full and faithful performance of the Contract.

KNOW ALL MEN BY THESE PRESENTS: that Contractor and Surety, are held and firmly bound unto

Palm Beach County Board of County Commissioners
301 N. Olive Avenue
West Palm Beach, Florida 33401

as Oblige, herein called County, for the use and benefit of claimant as herein below defined, in the amount of

Dollars (\$ 1,640,915.97)

for the payment whereof Principal and Surety bind themselves, their heirs, personal representatives, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,

Principal has by written agreement dated _____, 2013, entered into a contract with the County for

Project Name: Water Treatment Plant No. 3 Degasifier No. 3 and Odor Scrubber
Project No.: WUD 12-083
Project Description: Design, permit and construction of Degasifier No. 3 and Odor Scrubber at Water Treatment Plant No. 3.
Project Location: Water Treatment Plant No. 3, PCN 00-42-46-10-00-000-1020

in accordance with Design Criteria Drawings and Specifications prepared by


Name of Design Firm: Palm Beach County Water Utilities Department
Location of Firm: 8100 Forest Hill Blvd., West Palm Beach, FL 33416
Phone: (561) 493-8110
Fax: (561) 493-6008

which contract is by reference made a part hereof in its entirety, and is hereinafter referred to as the Contract.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the contract dated _____, 2013, between Principal and County for the design and construction of Water Treatment Plant No. 3 Degasifier No. 3 and Odor Scrubber, the contract being made a part of this bond by reference, at the times and in the manner prescribed in the contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05, Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract; and

3. Pays County all losses, damages (including liquidated damages), expenses, costs, and attorneys' fees, including appellate proceedings, that County sustains because of a default by Principal under the contract; and
4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.
5. Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes does not affect Surety's obligation under this bond and Surety waives notice of such changes.
6. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of construction liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against the bond.
7. Principal and Surety expressly acknowledge that any and all provisions relating to consequential, delay and liquidated damages contained in the contract are expressly covered by and made a part of this Performance, Labor and Material Payment Bond. Principal and Surety acknowledge that any such provisions lie within their obligations and within the policy coverage's and limitations of this instrument.
8. Section 255.05, Florida Statutes, as amended, together with all notice and time provisions contained therein, is incorporated herein, by reference, in its entirety. Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes. This instrument regardless of its form, shall be construed and deemed a statutory bond issued in accordance with Section 255.05, Florida Statutes.
9. Any action brought under this instrument shall be brought in the state court of competent jurisdiction in Palm Beach County, Florida and not elsewhere.



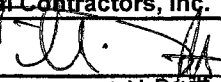
Witness
Robin C. Wilson

Print name

See attached Notary Acknowledgment
Witness

Donna J. Frowd

Print name

Cardinal Contractors, Inc.
Principal  (Seal)

Print name William J. McDevitt

President

Title

Federal Insurance Company
& Western Surety Company

Surety (Seal)



Print name - Debbie L. Welsh

Attorney-in-Fact

Title

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of MARIN

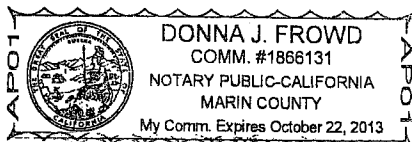
On August 28, 2013 before me, Donna J. Frowd, Notary Public, personally appeared Debbie L. Welsh who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/~~she~~/~~they~~ executed the same in ~~his~~/~~her~~/~~their~~ authorized capacity(ies), and that by ~~his~~/~~her~~/~~their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

(seal)

Signature Donna J. Frowd





**Chubb
Surety**

**POWER
OF
ATTORNEY**

**Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company**

**Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059**

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint Donna J. Frowd, Michael Brophy McGowan, Susan J. McGowan, Debbie L. Welsh and Donna L. Welsh of Novato, California

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this **23rd** day of **November, 2011**.

Kenneth C. Wendel, Assistant Secretary

David B. Norris, Jr., Vice President

STATE OF NEW JERSEY
County of Somerset ss.

On this **23rd** day of **November, 2011** before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Kenneth C. Wendel, being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By-Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that he is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By-Laws and in deponent's presence.

Notarial Seal



**KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2316685
Commission Expires July 16, 2014**

Notary Public

CERTIFICATION

Extract from the By-Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Kenneth C. Wendel, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

- (i) the foregoing extract of the By-Laws of the Companies is true and correct,
- (ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
- (iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this **28th** day of **August, 2013**



Kenneth C. Wendel, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903- 3493 Fax (908) 903- 3656 e-mail: surety@chubb.com

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Michael Brophy Mc Gowan, Donna L Welsh, Donna J Frowd, Debbie L Welsh, Individually

of Novato, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 20th day of March, 2013.



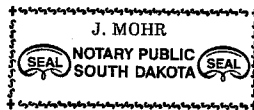
WESTERN SURETY COMPANY

Paul T. Bruflat, Vice President

State of South Dakota }
County of Minnehaha } ss

On this 20th day of March, 2013, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
June 23, 2015



J. Mohr, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 28th day of August, 2013.



WESTERN SURETY COMPANY

L. Nelson, Assistant Secretary

Authorizing By-Law

ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.

ATTACHMENT D

WORK AUTHORIZATION NO. 03

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

FORM OF GUARANTEE

GUARANTEE FOR (Contractor and Surety Name) Cardinal Contractors, Inc. and Federal Insurance Company and Western Surety Company

We the undersigned hereby guarantee that the Water, Wastewater & Reclaimed Water Improvements Design/Build Contract R2012-0160, Project Number WUD 12-083, Palm Beach County, Florida, will be constructed and bonded, in accordance with the plans and specifications; that the work constructed will fulfill the requirements of the guaranties included in the Contract Documents. We agree to repair or replace any or all of our work, together with any work of others which may be damaged in so doing, that may prove to be defective in the workmanship or materials within a period of one year from the date of Substantial Completion of all of the above named work by the County of Palm Beach, State of Florida, without any expense whatsoever to said County of Palm Beach, ordinary wear and tear and unusual abuse or neglect excepted by the County. When correction work is started, it shall be carried through to completion.

In the event of our failure to acknowledge notice, and commence corrections of defective work within five (5) calendar days after being notified in writing by the Board of County Commissioners, Palm Beach County, Florida, we, collectively or separately, do hereby authorize Palm Beach County to proceed to have said defects repaired and made good at our expense and we will honor and pay the costs and charges therefore upon demand.


DATED August 28, 2013

SEAL AND NOTARIAL ACKNOWLEDGMENT OF SURETY

Cardinal Contractors, Inc. (Seal)
(Contractor)

By: _____
(Signature) (Printed Name)

Federal Insurance Company & Western Surety Company (Seal)
(Surety)

By:  Debbie L. Welsh, Attorney-in-Fact
(Signature) (Printed Name)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of MARIN

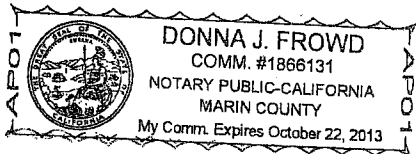
On August 28, 2013 before me, Donna J. Frowd, Notary Public, personally appeared Debbie L. Welsh who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/~~she~~/~~they~~ executed the same in ~~his~~/~~her~~/~~their~~ authorized capacity(ies), and that by ~~his~~/~~her~~/~~their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

(seal)

Signature Donna J. Frowd





**Chubb
Surety**

**POWER
OF
ATTORNEY**

**Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company**

**Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059**

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint Donna J. Frowd, Michael Brophy McGowan, Susan J. McGowan, Debbie L. Welsh and Donna L. Welsh of Novato, California

each as their true and lawful Attorney- in- Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this **23rd** day of **November, 2011.**

Kenneth C. Wendel, Assistant Secretary

David B. Norris, Jr., Vice President

STATE OF NEW JERSEY
County of Somerset ss.

On this **23rd** day of **November, 2011** before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Kenneth C. Wendel, being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By- Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that he is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By-Laws and in deponent's presence.

Notarial Seal



**KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2316685
Commission Expires July 16, 2014**

Notary Public

CERTIFICATION

Extract from the By- Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys- in- Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Kenneth C. Wendel, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

- (i) the foregoing extract of the By- Laws of the Companies is true and correct,
- (ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
- (iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this **28th** day of **August, 2013**



Kenneth C. Wendel, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903- 3493 Fax (908) 903- 3656 e-mail: surety@chubb.com

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Michael Brophy Mc Gowan, Donna L Welsh, Donna J Frowd, Debbie L Welsh, Individually

of Novato, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 20th day of March, 2013.



WESTERN SURETY COMPANY

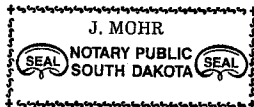
Paul T. Bruflat

Paul T. Bruflat, Vice President

State of South Dakota }
County of Minnehaha } ss

On this 20th day of March, 2013, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
June 23, 2015



J. Mohr

J. Mohr, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 28th day of August, 2013.



WESTERN SURETY COMPANY

L. Nelson

L. Nelson, Assistant Secretary

Authorizing By-Law

ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.

ATTACHMENT E

WORK AUTHORIZATION NO. 03

Palm Beach County Water Utilities Department

Water, Wastewater & Reclaimed Water Services Design-Build Contract

Work Authorization Cost Schedule

(Provide breakdown of materials, labor and subcontractors)



Calvin, Giordano & Associates, Inc.
 EXCEPTIONAL SOLUTIONS
 350 Village Blvd., Suite 140 West Palm Beach, Florida 33409
 Phone: 561 681.6161 • Fax: 561 681.4360

**ATTACHMENT E - WORK AUTHORIZATION
 SCHEDULE OF BID ITEMS**

DATE
 August 9, 2013

Certificate of Authorization No. 514

Project Title	CGA PROJECT NO.
WTP #3 Degasifier #3 and Odor Scrubber	11-4416.13
WA Number	PBC WJD Project No.
WA-2	12-022

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #1	Data Collection and Survey			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	3	\$ 190.00	\$ 570.00
	Director, Engineering (V)	3	\$ 165.00	\$ 495.00
	Project Manager (IV)	20	\$ 145.00	\$ 2,900.00
	Project Engineer (III)	6	\$ 125.00	\$ 750.00
	Engineer (II)	4	\$ 105.00	\$ 420.00
	CADD Technician (Engineering)	4	\$ 95.00	\$ 380.00
	CADD Technician (Surveying)	20	\$ 95.00	\$ 1,900.00
	Senior Registered Surveyor	1	\$ 145.00	\$ 145.00
	Registered Surveyor	2	\$ 130.00	\$ 260.00
	Survey Crew	20	\$ 135.00	\$ 2,700.00
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	83.00		\$ 10,520.00
	Subconsultants (10% Markup)			
	EDA (Electrical) SBE	Fee \$ 2,756.00	Markup (10%) \$ 275.60	\$ 3,031.60
	RADISE (Geotech) SBE	\$ -	\$ -	\$ -
	AGA (Structural) SBE	\$ 1,500.00	\$ 150.00	\$ 1,650.00
	Colome' (Architectural) SBE	\$ -	\$ -	\$ -
	Cardinal (Contractor) SBE	\$ 30,000.00	\$ -	\$ 30,000.00
	Engineering Task Subconsultant Subtotal	\$ 34,256.00	\$ 425.60	\$ 34,681.60
	Task #1 Total			\$ 45,201.60

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #2	60% Design Submittal			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	4	\$ 190.00	\$ 760.00
	Director, Engineering (V)	4	\$ 165.00	\$ 660.00
	Project Manager (IV)	77	\$ 145.00	\$ 11,165.00
	Project Engineer (III)	30	\$ 125.00	\$ 3,750.00
	Engineer (II)	14	\$ 105.00	\$ 1,470.00
	CADD Technician (Engineering)	40	\$ 95.00	\$ 3,800.00
	CADD Technician (Surveying)	0	\$ 95.00	\$ -
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	0	\$ 135.00	\$ -
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	169.00		\$ 21,605.00
	Subconsultants (10% Markup)			
	EDA (Electrical) SBE	Fee \$ 6,184.00	Markup (10%) \$ 618.40	\$ 6,802.40
	RADISE (Geotech) SBE	\$ -	\$ -	\$ -
	AGA (Structural) SBE	\$ 5,700.00	\$ 570.00	\$ 6,270.00
	Colome' (Architectural) SBE	\$ -	\$ -	\$ -
	Cardinal (Contractor) SBE	\$ 3,000.00	\$ -	\$ 3,000.00
	Engineering Task Subconsultant Subtotal	\$ 14,884.00	\$ 1,188.40	\$ 16,072.40
	Task #2 Total			\$ 37,677.40

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #3	90% Design Submittal			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	4	\$ 190.00	\$ 760.00
	Director, Engineering (V)	4	\$ 165.00	\$ 660.00
	Project Manager (IV)	51	\$ 145.00	\$ 7,395.00
	Project Engineer (III)	25	\$ 125.00	\$ 3,125.00
	Engineer (II)	11	\$ 105.00	\$ 1,155.00
	CADD Technician (Engineering)	8	\$ 95.00	\$ 760.00
	CADD Technician (Surveying)	0	\$ 95.00	\$ -
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	0	\$ 135.00	\$ -
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	103.00		\$ 13,855.00
	Subconsultants (10% Markup)			
	EDA (Electrical) SBE	Fee \$ 7,114.00	Markup (10%) \$ 711.40	\$ 7,825.40
	RADISE (Geotech) SBE	\$ -	\$ -	\$ -
	AGA (Structural) SBE	\$ 2,900.00	\$ 290.00	\$ 3,190.00
	Colome' (Architectural) SBE	\$ -	\$ -	\$ -
	Cardinal (Contractor)	\$ -	\$ -	\$ -
	Engineering Task Subconsultant Subtotal	\$ 10,014.00	\$ 1,001.40	\$ 11,015.40
	Task #3 Total			\$ 24,870.40

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #4	100% Design Submittal			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	2	\$ 190.00	\$ 380.00
	Director, Engineering (V)	2	\$ 165.00	\$ 330.00
	Project Manager (IV)	25	\$ 145.00	\$ 3,625.00
	Project Engineer (III)	4	\$ 125.00	\$ 500.00
	Engineer (II)	2	\$ 105.00	\$ 210.00
	CADD Technician (Engineering)	8	\$ 95.00	\$ 760.00
	CADD Technician (Surveying)	0	\$ 95.00	\$ -
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	0	\$ 135.00	\$ -
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	43.00		\$ 5,805.00
	Subconsultants (10% Markup)			
	EDA (Electrical) SBE	Fee \$ 4,238.00	Markup (10%) \$ 423.80	\$ 4,661.80
	RADISE (Geotech) SBE	\$ -	\$ -	\$ -
	AGA (Structural) SBE	\$ 1,400.00	\$ 140.00	\$ 1,540.00
	Colome' (Architectural) SBE	\$ -	\$ -	\$ -
	Cardinal (Contractor)	\$ 3,000.00	\$ -	\$ 3,000.00
	Engineering Task Subconsultant Subtotal	\$ 8,638.00	\$ 563.80	\$ 9,201.80
	Task #4 Total			\$ 15,006.80

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #5	Pre-Construction Meeting and Shop Drawing Review			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	0	\$ 190.00	\$ -
	Director, Engineering (V)	0	\$ 165.00	\$ -
	Project Manager (IV)	34	\$ 145.00	\$ 4,930.00
	Project Engineer (III)	15	\$ 125.00	\$ 1,875.00
	Engineer (II)	0	\$ 105.00	\$ -
	CADD Technician (Engineering)	0	\$ 95.00	\$ -
	CADD Technician (Surveying)	0	\$ 95.00	\$ -
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	0	\$ 135.00	\$ -
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	49.00		\$ 6,805.00
	Subconsultants (10% Markup)	Fee	Markup (10%)	
	EDA (Electrical) SBE	\$ 3,084.00	\$ 308.40	\$ 3,392.40
	RADISE (Geotech) SBE	\$ -	\$ -	\$ -
	AGA (Structural) SBE	\$ 900.00	\$ 90.00	\$ 990.00
	Colome' (Architectural) SBE	\$ -	\$ -	\$ -
	Engineering Task Subconsultant Subtotal	\$ 3,984.00	\$ 398.40	\$ 4,382.40
	Engineering Task Total			\$ 11,187.40
	Construction Services			
	Cardinal Construction	Fee	Markup (0%)	Total
	Guaranteed Maximum Price (Excluding subcontractors below)	\$ -	0% \$ -	\$ -
	Subcontractors (10% Markup)	Fee	Markup (10%)	Total
	Electrical SBE	\$ -	\$ -	\$ -
	Instrumentation & Controls SBE	\$ -	\$ -	\$ -
	Sod SBE	\$ -	\$ -	\$ -
	Miscellaneous SBE	\$ -	\$ -	\$ -
	Subcontractor Subtotal	\$ -	\$ -	\$ -
	Construction Task Total	\$ -	\$ -	\$ -
	Task #5 Total			\$ 11,187.40

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #6	Construction Services			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	0	\$ 190.00	\$ -
	Director, Engineering (V)	0	\$ 165.00	\$ -
	Project Manager (IV)	90	\$ 145.00	\$ 13,050.00
	Project Engineer (III)	6	\$ 125.00	\$ 750.00
	Engineer (II)	30	\$ 105.00	\$ 3,150.00
	CADD Technician (Engineering)	0	\$ 95.00	\$ -
	CADD Technician (Surveying)	0	\$ 95.00	\$ -
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	0	\$ 135.00	\$ -
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	126.00		\$ 16,950.00
	Subconsultants (10% Markup)	Fee	Markup (10%)	Total
	EDA (Electrical) SBE	\$ 1,716.00	\$ 171.60	\$ 1,887.60
	RADISE (Geotech) SBE	\$ -	\$ -	\$ -
	AGA (Structural) SBE	\$ 3,700.00	\$ 370.00	\$ 4,070.00
	Colome' (Architectural) SBE	\$ -	\$ -	\$ -
	Engineering Task Subconsultant Subtotal	\$ 5,416.00	\$ 541.60	\$ 5,957.60
	Engineering Task Total			\$ 22,907.60
	Construction Services			
	Cardinal Construction	Fee	Markup	Total
	Guaranteed Maximum Price (Excluding subcontractors below)	\$1,079,179.57	0%	\$1,079,179.57
	Subcontractors (10% Markup)	Fee	Markup (10%)	Total
	Electrical SBE	\$ 314,300.00	\$ 31,430.00	\$345,730.00
	Instrumentation & Controls SBE	\$ -	\$ -	\$0.00
	Sod SBE	\$ -	\$ -	\$0.00
	Miscellaneous SBE	\$ -	\$ -	\$0.00
	Subcontractor Subtotal	\$ 314,300.00	\$ 31,430.00	\$345,730.00
	Construction Task Total	\$ 1,393,479.57	\$ 31,430.00	\$ 1,424,909.57
	Task #7 Total			\$ 1,447,817.17

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Task #7	Project Close-Out			
	Engineering Services			
	Calvin, Giordano & Associates			
	Associate, Engineering (VI)	4	\$ 190.00	\$ 760.00
	Director, Engineering (V)	4	\$ 165.00	\$ 660.00
	Project Manager (IV)	74	\$ 145.00	\$ 10,730.00
	Project Engineer (III)	54	\$ 125.00	\$ 6,750.00
	Engineer (II)	10	\$ 105.00	\$ 1,050.00
	CADD Technician (Engineering)	8	\$ 95.00	\$ 760.00
	CADD Technician (Surveying)	16	\$ 95.00	\$ 1,520.00
	Senior Registered Surveyor	0	\$ 145.00	\$ -
	Registered Surveyor	0	\$ 130.00	\$ -
	Survey Crew	15	\$ 135.00	\$ 2,160.00
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
	Engineering Task Labor Subtotal	186.00		\$ 24,390.00

Subconsultants (10% Markup)		Fee	Markup (10%)	Total
EDA (Electrical)	SBE	\$ 3,432.00	\$ 343.20	\$ 3,775.20
RADISE (Geotech)	SBE	\$ -	\$ -	\$ -
AGA (Structural)	SBE	\$ 900.00	\$ 90.00	\$ 990.00
Colome' (Architectural)	SBE	\$ -	\$ -	\$ -
Engineering Task Subconsultant Subtotal		\$ 4,332.00	\$ 433.20	\$ 4,765.20

Engineering Task Total \$ 29,155.20

Construction Services			
Cardinal Construction	Fee	Markup	Total
Guaranteed Maximum Price (Excluding subcontractors below)	\$5,000.00	0%	\$5,000.00

Subcontractors (10% Markup)		Fee	Markup (10%)	Total
Electrical	SBE	\$ -	\$ -	\$0.00
Instrumentation & Controls	SBE	\$ -	\$ -	\$0.00
Sod	SBE	\$ -	\$ -	\$0.00
Miscellaneous	SBE	\$ -	\$ -	\$0.00
Subcontractor Subtotal		\$ -	\$ -	\$0.00

Construction Task Total \$ 5,000.00

Task #8 Total \$ 34,155.20

Work Activity	Employee Classification	Hours	Hourly Rate	Total
Totals				
Engineering Services				
Calvin, Giordano & Associates				
	Associate, Engineering (VI)	17	\$ 190.00	\$ 3,230.00
	Director, Engineering (V)	17	\$ 165.00	\$ 2,805.00
	Project Manager (IV)	371	\$ 145.00	\$ 53,795.00
	Project Engineer (III)	140	\$ 125.00	\$ 17,500.00
	Engineer (II)	71	\$ 105.00	\$ 7,455.00
	CADD Technician (Engineering)	68	\$ 95.00	\$ 6,460.00
	CADD Technician (Surveying)	30	\$ 95.00	\$ 2,850.00
	Senior Registered Surveyor	1	\$ 145.00	\$ 145.00
	Registered Surveyor	2	\$ 130.00	\$ 260.00
	Survey Crew	28	\$ 135.00	\$ 3,780.00
	Soft Dig (per hole)	0	\$ 480.00	\$ -
	Utility Locates (per hour)	0	\$ 205.00	\$ -
Engineering Project Labor Subtotal		745.00	\$	98,280.00

Subconsultants (10% Markup)		Fee	Markup (10%)	Total
EDÁ (Electrical)	SBE	\$ 28,524.00	\$ 2,852.40	\$ 31,376.40
RADISE (Geotech)	SBE	\$ -	\$ -	\$ -
AGA (Structural)	SBE	\$ 17,000.00	\$ 1,700.00	\$ 18,700.00
Colome' (Architectural)	SBE	\$ -	\$ -	\$ -
Engineering Project Subconsultant Subtotal		\$ 45,524.00	\$ 4,552.40	\$ 50,076.40

Engineering Task Total **\$ 148,356.40**

Construction Services

Cardinal Construction	Fee	Markup	Total
Guaranteed Maximum Price (Excluding subcontractors below)	\$ 1,120,179.57	0%	\$ 1,120,179.57

Subcontractors (10% Markup)		Fee	Markup (10%)	Total
Electrical	SBE	\$ 314,300.00	\$ 31,430.00	\$ 345,730.00
Instrumentation & Controls	SBE	\$ -	\$ -	\$ -
Sod	SBE	\$ -	\$ -	\$ -
Miscellaneous	SBE	\$ -	\$ -	\$ -
Subcontractor Subtotal		\$ 314,300.00	\$ 31,430.00	\$ 345,730.00

Construction Project Total **\$ 1,484,479.57** **\$ 31,430.00** **\$ 1,465,909.57**

Construction Total **\$ 1,465,909.57**
Engineering Total **\$ 150,006.40**
Project Sub-Total **\$ 1,615,915.97**
Allowance **\$ 25,000.00**

WA GRAND TOTAL **\$ 1,640,915.97**

ATTACHMENT F
SBE Schedules 1 and 2

**SCHEDULE 1
LIST OF PROPOSED SBE-M/WBE PARTICIPATION**

PROJECT NAME OR BID NAME: WTP No. 3 Degasifier No. 3 and Odor Scrubber

PROJECT NO. OR BID NO.: WUD 12-083

NAME OF PRIME BIDDER: Calvin, Giordano & Associates,
as assigned to Cardinal Contractors, Inc.

ADDRESS: 560 Village Boulevard, Suite 340, West Palm Beach, Florida 33409

CONTACT PERSON: Karl Kennedy, P.E.

PHONE NO.:561-684-6161 FAX NO.:561-684-6363

BID OPENING DATE: n/a

USER DEPARTMENT: Water Utilities Department

THIS DOCUMENT IS TO BE COMPLETED BY THE PRIME CONTRACTOR AND SUBMITTED WITH BID PACKET. PLEASE LIST THE NAME, CONTACT INFORMATION AND DOLLAR AMOUNT AND/OR PERCENTAGE OF WORK TO BE COMPLETED BY ALL SBE -M/WBE's ON THIS PROJECT. IF THE PRIME IS AN SBE-M/WBE, PLEASE ALSO LIST THE NAME, CONTACT INFORMATION AND DOLLAR AMOUNT AND/OR PERCENTAGE OF WORK TO BE COMPLETED BY THE PRIME ON THIS PROJECT. THE PRIME AFFIRMS THAT IT WILL MONITOR THE SBES LISTED TO ENSURE THE SBES PERFORM THE WORK WITH ITS OWN WORKFORCE.

Name, Address and Phone Number	(Check one or both Categories)		DOLLAR AMOUNT AND/OR PERCENTAGE OF WORK				
	<u>M/WBE</u> Minority Business	<u>SBE</u> Small Business	Black	Hispanic	Women	Caucasian	Other (Please Specify)
1. Electrical Design Associates, Inc. 5300 W. Atlantic Avenue, Suite 408 Delray Beach, FL 33484	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	_____	_____	\$28,524.00	_____	_____
2. Alan Gerwig & Associates, Inc. 12798 W. Forest Hill Blvd., Suite 204 Wellington, FL 33415	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	_____	_____	\$17,000.00	_____
3. Powerline of South Florida, Inc. 711 Commerce Way, Suite 6 Jupiter, FL 33458	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	_____	_____	\$314,300.00	_____
(Please use additional sheets if necessary)		Total	_____	_____	\$28,524.00	\$331,300.00	_____

Total Bid Price \$1,640,915.97

Total SBE-M/WBE Participation Dollar Amount and/or Percentage of Work \$359,824.00

I hereby certify that the above information accurate to the best of my knowledge: _____
Signature Title

- NOTE: 1. The amount listed on this form for a SBE-M/WBE Prime or Subcontractor must be supported by price or percentage listed on the signed Schedule 2 or signed proposal in order to be counted toward goal attainment.
2. Firms may be certified by Palm Beach County as an SBE and/or M/WBE. If firms are certified as both an SBE and M/WBE, please indicate the dollar amount and/or percentage under the appropriate category.
3. M/WBE information is being collected for tracking purposes only.

**OSBA SCHEDULE 2
LETTER OF INTENT TO PERFORM AS AN SBE-M/WBE**

This document must be completed by ALL SBE-M/WBE's and submitted with this bid packet. Specify in detail, the particular work items to be performed and the dollar amount and/or percentage for each work item. SBE credit will only be given for items which the SBE-M/WBE's is certified to perform. Failure to properly complete Schedule 2 will result in your SBE participation not being counted.

PROJECT NUMBER: WUD 12-083 PROJECT NAME: Water Treatment Plant #3 Degasifier #3 & Odor Scrubber

TO: Calvin, Giordano & Associates, Inc., as assigned to Cardinal Contractors, Inc.
(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a - (check one or more, as applicable):

Small Business Enterprise Minority Business Enterprise
Black Hispanic Women Caucasian Other (Please Specify) _____

Date of Palm Beach County Certification: May 26, 2012 to May 25, 2015

The undersigned is prepared to perform the following described work in connection with the above project. Additional Sheets May Be Used As Necessary

Line Item/ Lot No.	Item Description	Qty/Units	Unit Price	Total Price/ Percentage
1	Data Collection	1 lump sum	\$2,756.00	\$2,756.00
2	Final Design	1 lump sum	\$16,448.00	\$16,448.00
3	General Services during Construction	1 lump sum	\$9,320.00	\$9,320.00

at the following price or percentage \$28,524.00
(SBE Prime or Subcontractor's Quote)

and will enter into a formal agreement for work with you contingent upon your execution of a contract with Palm Beach County.

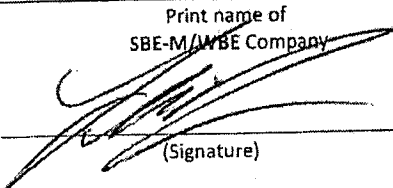
If undersigned intends to sub-subcontract any portion of this job to a certified SBE-M/WBE or a non-SBE subcontractor, please list the name of that subcontractor and the amount below.

Price or Percentage n/a Electrical Design Associates, Inc.
(Name of Subcontractor)

The Prime affirms that it will monitor the SBE-M/WBE listed to ensure the SBE-M/WBE perform the work with their own work force. The undersigned SBE-M/WBE Prime or SBE-M/WBE subcontractor affirms that it has the resources necessary to perform the work listed without subcontracting to a non-certified SBE or any other certified SBE subcontractors except as noted above.

The undersigned subcontractor understands that the provision of this form to Prime Bidder does not prevent Subcontractor from providing quotations to other bidders.

Electrical Design Associates, Inc.
Print name of
SBE-M/WBE Company

By: 
(Signature)

Lillian M. Reyes, P.E./President
Print name/title of person executing on behalf
of SBE-M/WBE

Date: 8-12-13

**OSBA SCHEDULE 2
LETTER OF INTENT TO PERFORM AS AN SBE-M/WBE**

This document must be completed by ALL SBE-M/WBE's and submitted with this bid packet. Specify in detail, the particular work items to be performed and the dollar amount and/or percentage for each work item. SBE credit will only be given for items which the SBE-M/WBE's is certified to perform. Failure to properly complete Schedule 2 will result in your SBE participation not being counted.

PROJECT NUMBER: WUD 12-083 PROJECT NAME: Water Treatment Plant #3 Degasifier #3 & Odor Scrubber

TO: Calvin, Giordano & Associates, Inc. as assigned to Cardinal Contractors, Inc.

(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a - (check one or more, as applicable):

Small Business Enterprise Minority Business Enterprise _____
 Black _____ Hispanic _____ Women _____ Caucasian Other (Please Specify) _____

Date of Palm Beach County Certification: _____

The undersigned is prepared to perform the following described work in connection with the above project. Additional Sheets May Be Used As Necessary

Line Item/ Lot No.	Item Description	Qty/Units	Unit Price	Total Price/ Percentage
<u>1</u>	<u>Structural Engineering Design Services</u>	<u>1 lump sum</u>	<u>\$17,000.00</u>	<u>\$17,000.00</u>

at the following price or percentage \$17,000.00
 (SBE Prime or Subcontractor's Quote)

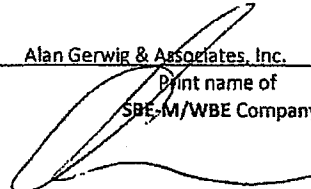
and will enter into a formal agreement for work with you contingent upon your execution of a contract with Palm Beach County.

If undersigned intends to sub-subcontract any portion of this job to a certified SBE-M/WBE or a non-SBE subcontractor, please list the name of that subcontractor and the amount below.

Price or Percentage n/a Alan Gerwig & Associates, Inc.
 (Name of Subcontractor)

The Prime affirms that it will monitor the SBE-M/WBE listed to ensure the SBE-M/WBE perform the work with their own work force. The undersigned SBE-M/WBE Prime or SBE-M/WBE subcontractor affirms that it has the resources necessary to perform the work listed without subcontracting to a non-certified SBE or any other certified SBE subcontractors except as noted above.

The undersigned subcontractor understands that the provision of this form to Prime Bidder does not prevent Subcontractor from providing quotations to other bidders.

Alan Gerwig & Associates, Inc.
 Print name of
 SBE-M/WBE Company
 By: 
 (Signature)

Alan Gerwig, P.E., President
 Print name/title of person executing on behalf
 of SBE-M/WBE

Date: 8/14/13

**OSBA SCHEDULE 2
LETTER OF INTENT TO PERFORM AS AN SBE-M/WBE**

This document must be completed by ALL SBE-M/WBE's and submitted with this bid packet. Specify in detail, the particular work items to be performed and the dollar amount and/or percentage for each work item. SBE credit will only be given for items which the SBE-M/WBE is certified to perform. Failure to properly complete Schedule 2 will result in your SBE participation not being counted.

PROJECT NUMBER: WUD 12-083 PROJECT NAME: Water Treatment Plant #3 Degasifier #3 & Odor Scrubber

TO: Calvin, Giordano & Associates, Inc., as assigned to Cardinal Contractors, Inc.
(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a - (check one or more, as applicable):

Small Business Enterprise Minority Business Enterprise _____
Black _____ Hispanic _____ Women _____ Caucasian _____ Other (Please Specify) _____

Date of Palm Beach County Certification: 8/6/2011 to 8/5/2014

The undersigned is prepared to perform the following described work in connection with the above project. Additional Sheets May Be Used As Necessary

Line Item/ Lot No.	Item Description	Qty/Units	Unit Price	Total Price/ Percentage
<u>1</u>	<u>Electrical & Process equipment</u>	<u>1 lump sum</u>	<u>\$234,300.00</u>	<u>\$234,300.00</u>
<u>2</u>	<u>Electrical installation</u>	<u>1 lump sum</u>	<u>\$80,000.00</u>	<u>\$80,000.00</u>

at the following price or percentage \$314,300.00
(SBE Prime or Subcontractor's Quote)

and will enter into a formal agreement for work with you contingent upon your execution of a contract with Palm Beach County.

If undersigned intends to sub-subcontract any portion of this job to a certified SBE-M/WBE or a non-SBE subcontractor, please list the name of that subcontractor and the amount below.

Price or Percentage n/a Powerline of South Florida, Inc.
(Name of Subcontractor)

The Prime affirms that it will monitor the SBE-M/WBE listed to ensure the SBE-M/WBE perform the work with their own work force. The undersigned SBE-M/WBE Prime or SBE-M/WBE subcontractor affirms that it has the resources necessary to perform the work listed without subcontracting to a non-certified SBE or any other certified SBE subcontractors except as noted above.

The undersigned subcontractor understands that the provision of this form to Prime Bidder does not prevent Subcontractor from providing quotations to other bidders.

Powerline of South Florida, Inc.
Print name of
SBE-M/WBE Company

By: [Signature]
(Signature)

THOMAS LAESSIG PRES.
Print name/title of person executing on behalf
of SBE-M/WBE

Attachment G

AUTHORIZATION STATUS REPORT

SUMMARY AND STATUS OF
REQUESTS FOR AUTHORIZATIONS

Auth. No.	Description	Status	Project Total Amount	Date Approved	WUD No. Assigned	Globaltech Project No.
CONSULTANT SERVICE AUTHORIZATIONS						
CSA-1	Emergency Generator Storage at NROC	Approved	\$11,689.09	4/9/2012	11-012	11-4416.3
CSA-2	WTP 3 Chemical Containment Area and Corrosion Inhibitor Storage	Approved	\$49,987.17	4/30/2012	12-003	11-4416.2
CSA-3	Morikami Reclaimed Water Storage and Pumping Facilities Existing Equipment Evaluation	Approved	\$13,355.28	5/14/2012	11-027	11-4416.1
CSA-4	SCADA System Tower Improvements	Approved	\$92,999.24	10/24/2012	12-022	
	Total CSA's		\$168,030.78			
WORK AUTHORIZATIONS						
WA-1	NROC Emergency Generator Storage	Approved	\$68,860.40	10/11/2012	11-012	11-4416.8
WA-2	SCADA System Tower Improvements	Pending	\$241,597.94		12-022	
WA #3	WTP #3 Degasifier No. 3 and odor Scrubber	Pending	\$1,640,915.97		12-083	
	Total WA's		\$1,951,374.31			
Total			\$2,119,405.09			

Attachment H

AUTHORIZATION STATUS REPORT Disaster Recovery Services Design/Build Contract

SUMMARY OF
SBE / MINORITY BUSINESS TRACKING SYSTEM
Consultant Services Authorizations and Work Authorizations

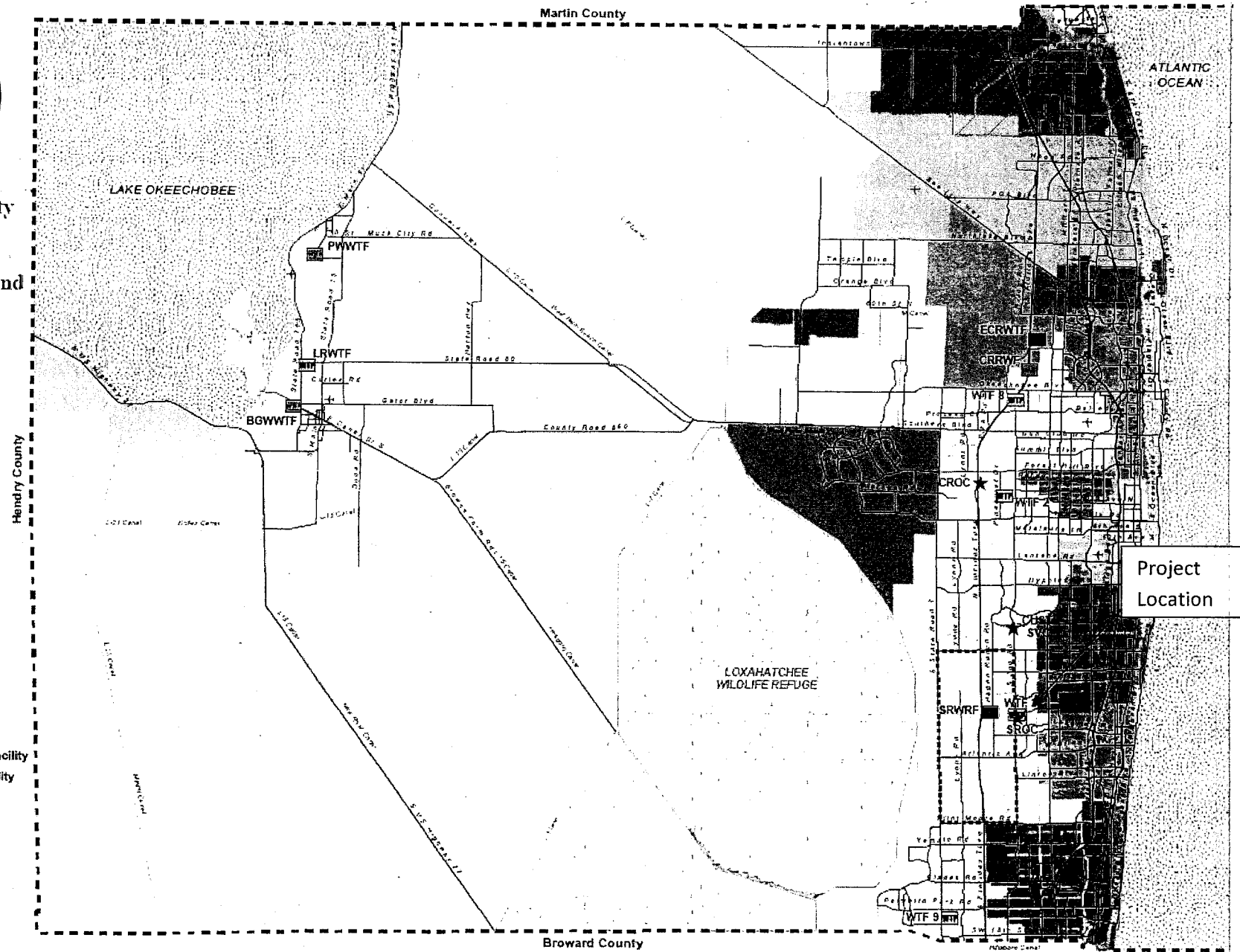
WORK AUTHORIZATION NO. 3

	TOTAL	SBE
Current Proposal		
Value of Consultant Service Authorization	\$0.00	
Value of Work Authorization	<u>\$1,640,915.97</u>	
Value of Consultant Service & Work Authorizations	\$1,640,915.97	
Value of SBE Letters of Intent	\$359,824.00	\$359,824.00
Actual Percentage	21.92%	21.92%
Signed / Approved Authorizations		
Value of Consultant Service Authorizations	\$168,030.78	
Value of Work Authorizations	<u>\$68,860.40</u>	
Value of Consultant Service & Work Authorizations	\$236,891.18	
Total Value of SBE Signed Subcontracts	\$100,011.24	\$100,011.24
Actual Percentage	42.21%	42.21%
Signed / Approved Authorizations plus Current Proposal		
Value of Consultant Service Authorizations	\$168,030.78	
Value of Work Authorizations	<u>\$1,709,776.37</u>	
Value of Consultant Service & Work Authorizations	\$1,877,807.15	
Total Value of Subcontracts & Letters of Intent	\$459,835.24	\$459,835.24
Actual Percentage	24.48%	24.48%
GOAL	26.00%	

ATTACHMENT I



Palm Beach County
Water Utilities
Department
Service Area (SA) and
Major Facilities



Legend

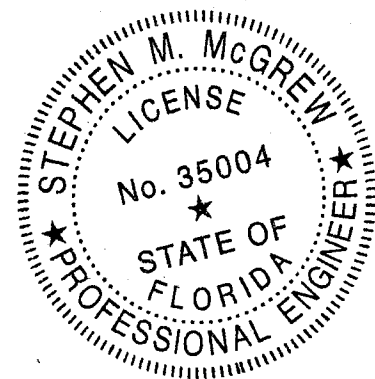
- ★ Administration
- Water Treatment Facility
- Reclamation Facility
- Wastewater Reclamation Facility
- Wastewater Treatment Facility
- Mandatory Reclaimed SA
- Palm Beach County Limits
- R.B.C.W.U.D. Service Area



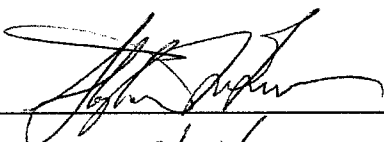
NOT TO SCALE

WTP 3 - Degasifier No. 3 & Odor Scrubber WUD 12-083

ATTACHMENT J
DESIGN CRITERIA
FOR
WTP 3 Degasifier No. 3 & Odor Scrubber
Project No. WUD 12-083



Stephen McGrew, P.E.
P.E. License #35004
Palm Beach County Water Utilities
8100 Forest Hill Boulevard
West Palm Beach, FL 33413


Date: 8/28/13

ATTACHMENT J
WORK AUTHORIZATION NO. 03
DESIGN CRITERIA
FOR
WTP 3 Degasifier No. 3 & Odor Scrubber
Project No.12-083

Part 1 General

1.1 Summary of Work

The proposed work to be performed as described below is located at the following facility:

*Water Treatment Plant No. 3
13026 South Jog Road
Delray Beach, FL 3344
PCN 00-42-46-10-00-000-1020*

The proposed work to be performed by the Design/Builder generally includes furnishing all labor, equipment, materials, tools, supervision, and services required to design, construct, test, and startup for Degasifier No. 3 and Odor Scrubber for Clearwell No. 1 as follows:

- 1) Furnish and install Air Inlet Filters in the blower housings for Degasifiers No. 1 and No. 2. Demolish existing Inlet Filter Box and piping for Degasifiers No. 1 and No. 2, which are necessary for installation of Degasifier No. 3. Minimize plant shut down (only one blower and Degasifier shall be off-line at any time while Clearwell No. 1 is in operation).
- 2) Furnish and install Degasifier No. 3, with blower, as a complete working system, with the following stipulations:
 - a) Concrete pad to be installed onto top of existing Clearwell No. 1.
 - b) Degasifier, piping, and ductwork designed for 160 mph wind load using ASCE 7-10.
 - c) Diameter and height to approximately match Degasifiers 1 and 2.
 - d) 316 SS riser pipe with mag meter and dismantling joint to match Degasifiers 1 and 2 (see shop drawings provided to Design/Builder).
 - e) Provide new blower for Degasifier No. 3 with electrical, instrumentation and control. Blower air flow and pressure to match performance of blowers for Degasifiers No. 1 and No. 2, and shall be designed for proper degassification of membrane permeate.
 - f) Provide 316 SS NEMA 4X powder coated white electrical control panel with sunshield.
 - g) Miscellaneous outlets and, connections shall be similar to Degasifiers 1 and 2 (size and type of materials).
 - h) New ladder and platform shall be aluminum at Owner's request, similar to Clearwell No. 2 system.

- i) Provide degasifier cleaning header, piping, and nozzles.
 - j) Modify existing degasifier 1 & 2 by adding a cleaning solution spray header.
 - k) Degasifier interior surface shall be NSF 61 approved for potable water.
 - l) Degasifier packing shall be Jaeger Tri-Packs.
 - m) Provide access manholes for cleaning, packing replacement, and maintenance.
 - n) Clearwell Modification (This work requires complete shutdown of Clearwell No. 1. Minimize shutdown and coordinate with plant.)
 - i) Cut out hole in top of clearwell for down pipe. Support downpipe into clearwell matching Degasifier sump 1 and 2 (Globaltech design).
 - ii) Provide opening between Degasifier sump 3 and 2. For purposes of establishing the GMP assume the design of the reinforcement of the openings between sumps 2 and 1 and completed for groundwater rule project is acceptable. Coat openings.
- 3) Remove existing Odor Scrubber.
- 4) Furnish and install new Odor Scrubber for Degasifiers No. 1, No. 2 and No. 3 with chemical pumps, motors, electrical and instrumentation. Location at or adjacent to existing Odor Scrubber. Downtime between removal of existing Odor Scrubber and installation of new scrubber to be minimized and if possible to be concurrent with clearwell shutdown.
- a) Provide concrete pad.
 - b) Odor scrubber, piping, and ductwork designed for 160 mph wind load using ASCE 7-10.
 - c) Diameter and height to approximately match Odor Scrubber No. 2 (Clearwell No. 2)
 - d) Ladders, platform, miscellaneous outlets, and connections similar to Odor Scrubber No. 2.
 - e) Packing shall be Jaeger Tri-Packs.
 - f) Access manholes for cleaning, packing replacement and maintenance.
 - g) Provide 316 SS NEMA 4x powder coated, white, electrical control panel with sunshield.
 - h) Provide instrumentation and controls.
 - i) Provide ductwork modifications to connect Odor Scrubber to Degasifiers No. 1, No. 2 and No. 3.
 - j) Connect to existing chemical piping using double contained pipe per wellfield protection requirements.
- 5) Provide PLC programming for instrumentation and coordinate with County staff. County will modify SCADA iFix screens.

Submittals

- 1) Provide 3 full sized and 3 half sized plans at 60%, 90%, and 100% design. Respond to all 60% and 90% review comments in writing.
- 2) Submit for Palm Beach County Health Department permit at 60% design with engineering report, signed and sealed drawings and permit application.
- 3) Provide 3 sets of signed and sealed full sized prints for building permit. County will be responsible for site plan modifications and abstracted survey.
- 4) Coordination meetings will be held at 60%, 90%, and 100% design.
- 5) Provide 8 sets of shop drawings beginning at 90% design.
- 6) Provide record drawings CAD and PDF formats and 3 full size sets.

- 7) Separate Notices to Proceed will be issued for design and construction. The construction notice to proceed will be issued after receipt of the Health Department permit.
- 8) Construction meetings will be held monthly.
- 9) Conform to the Water Utilities Minimum Design and Construction Standards, Engineering Design-Manual and security requirements.

Salvaged Materials

- 1) Scrap metal to be placed in the County's salvage dumpster.
- 2) Odor scrubber with chemical pumps and motors, electrical panel may be retained by County for use at Lake Region, WTP 11.
- 3) Non-metal waste such as concrete, PVC, fiberglass etc to be hauled and legally disposed by Design/Builder.

1.2 Permits and Fees

It shall be the Design/Builder's responsibility to secure all permits required to complete the work under this contract, except permits obtained by the Owner. The Design/Builder shall be responsible for all inspections and requirements to close-out the completed permits. The Owner shall pay all permit fees.

1.3 Tests

The Design/Builder shall pay for all required soils and concrete tests.

1.4 Site elevations, Lines, and Grades

The Design/Builder shall employ a land surveyor registered in the State of Florida. The Design/Builder shall be responsible to establish elevations, lines, and levels, utilizing recognized engineering survey practices. The Design/Builder shall provide all labor, instruments and stakes, templates, and other materials necessary for marking and maintaining all lines and grades. The Design/Builder shall submit a copy of as-built drawings signed/sealed by the land surveyor that the elevations and locations of the work in Florida State plane coordinates are in conformance with the contract documents.

1.5 Work Area

The Design/Builder shall confine his activities to the site(s) designated by Owner for the work or staging areas for materials storage. All debris, materials, piping, and miscellaneous waste products from the proposed work shall be removed from the project as soon as possible. They shall be disposed of in accordance with applicable federal, state, and local regulations. The Design/Builder shall be responsible for determining these regulations and shall bear all costs or retain any profit associated with disposal of these items.

The Design/Builder shall protect his work throughout its length by the erection of suitable barricades and handrails, where required. The Design/Builder shall further indicate this work at night by the maintenance of suitable lights or flares, especially along or across thorough fares. Wherever it is necessary to cross a public walk, the Design/Builder shall provide suitable safe walkways with hand railings. The Design/Builder shall also comply with all laws or ordinances covering the protection of

such work and the safety measures to be employed therein. The Design/Builder shall carry out his work so as not to deny access to private property. All utility access manholes, valves, and fire hydrants shall be kept accessible at all times. No trenches or holes near walkways, in roadways or road shoulders are to be left open during night hours without the permission of the Owner.

1.6 Underground Utilities

All water pipes, storm drains, force mains, gas or other piping, telephone or power cables or conduits, and all other obstructions, whether or not shown, shall be temporarily removed from or supported across pipeline excavations. Before disconnecting any pipes or cables, the Design/Builder shall obtain permission from the Owner, or shall make suitable arrangements for their disconnection by the Owner. The Design/Builder shall be responsible for any damage to any such pipes, conduits or cables, and shall restore them to service promptly as soon as the work has progressed past the point involved. Approximate locations of known water, sanitary, drainage, power, and telephone installations along route of new pipelines or in vicinity of the work are shown on as-built drawings, but must be verified in the field by the Design/Builder. The Design/Builder shall uncover these pipes, ducts, cables, etc., carefully, by hand, to verify location and depth of cover. Any discrepancies or differences found shall be brought to the attention of the Owner in order that necessary changes may be made. Where fences, walls or other man made obstructions exist illegally in the public right-of-way, the Owner will have them removed upon adequate prior notice by the Design/Builder.

All excavation activity shall comply with Florida Statute 553.851 regarding notification of existing gas and oil pipeline company Owners and shall also notify "SUNSHINE STATE" at 1 (800)-432 4770 at least forty-eight (48) hours prior to excavating. Evidence of such notice shall be furnished to the Owner prior to excavating. Provide independent locate firm within plant and pump station boundaries.

Protect existing chemical trench and chemical piping.

1.7 Maintenance of Operations

The Design/Builder's activities or any partial SCADA shutdowns shall minimize disruption to the treatment facilities and conveyance. The Design/Builder shall schedule and perform the proposed work in a manner such that the Owner can keep the existing treatment and conveyance facilities in continuous dependable operation. Operation of all existing valves, gates, and equipment shall be performed by Owner.

1.8 Plant Shutdowns

Owner shall approve all SCADA and plant shutdowns.

1.9 Project Coordination

Design/Builder shall be solely responsible for coordination of all of the proposed work. He shall supervise, direct, and cooperate fully with all sub-contractors, manufacturers, fabricators, suppliers, distributors, installers, testing agencies and all others whose services, materials or equipment are required to ensure completion of the proposed work within the contract time.

Design/Builder shall cooperate with and coordinate his work with the work of any other contractor, utility service company, or Owner's employees performing additional work related to the project at the site. Design/Builder shall not be responsible for damage done by Design/Builders not under his jurisdiction. Design/Builder shall not be liable for any such loss or damage unless it is through the negligence of Design/Builder. Design/Builder shall also coordinate his work with the work of others to assure compliance with schedules.

Design/Builder shall attend and participate in all project coordination or progress meetings and report on the progress of all work and compliance with schedules. The Design/Builder shall provide and maintain a field office with telephone facilities where he or a responsible representative of his organization may be reached at any time while work is in progress.

Part 2 Acceptance Test Requirements

The Design/Builder shall be responsible for coordinating and completing the overall system startup and testing. The Design/Builder is responsible for providing all labor, equipment, and materials for conducting systems startup and testing.

2.1 Starting and Placing Equipment in Operation

Design/Builder shall initially start-up and place all equipment installed into successful operation according to manufacturer's written instructions and as instructed by manufacturer's field representative. Design/Builder shall provide all material, labor, tools, equipment, chemicals, lubricants, and expendables required to complete start-up. No system or subsystem shall be started up for continuous operation unless all components of that system or subsystem, including instrumentation, have been tested and proven to be operable as required for proposed work.

General system startup activities include: cleaning; removing temporary protective coatings; flushing and replacing greases and lubricants, where required by manufacturer; lubrication, checking shaft, and coupling alignments and resetting where required; checking and setting motor, pump and other equipment rotation, safety interlocks, and belt tensions; checking and correcting if necessary leveling plates, grout, bearing plates, anchor bolts, fasteners, and alignment of piping which may put stress on pumping equipment; performing any adjustments; providing chemicals and lubricants and all other required operating fluids; providing fuel, electricity, water, filters, and other expendables required for start-up of equipment.

Owner shall provide sufficient personnel to assist Design/Builder in the start-up, but the prime responsibility for proper mechanical operation shall belong to Design/Builder. Manufacturer's representatives shall be present during initial start-up and operation. Owner shall assume responsibility for operation of the equipment upon completion of start-up and placing equipment in operation.

2.2 Minimum Start-Up Requirements

- A. After system has been placed in operation the Design/Builder shall clean strainers, drives, pockets, orifices, valve seats and headers in fluid system to

assure freedom from foreign materials. He shall remove rust, scale, and foreign materials from equipment and renew defaced surfaces. All visible leakage shall be repaired.

- B. The Design/Builder shall check each electrical control circuit to assure that operation complies with regulations and requirements of proposed work and to provide desired performance. The Design/Builder shall vent gasses trapped in any part of systems and verify that liquids are drained from all parts of gas or air systems.
- C. The Design/Builder shall inspect for cleanliness, and clean and remove all foreign materials, verify alignment, replace defective bearings and those, which run rough or noisy, and grease as necessary and in accord with manufacturer's recommendations.
- D. The Design/Builder shall adjust tension in V-belt drives, and adjust varipitch sheaves and drives for proper equipment speed, adjust drives for alignment of sheaves and V-belts, and clean and remove foreign materials before starting operation.
- E. The Design/Builder shall check each motor for comparison to amperage nameplate value and correct conditions which produce excessive current flow and exist due to equipment malfunction.
- F. The Design/Builder shall check glands and seals for cleanliness and adjustment before running pump; inspect shaft sleeves for scoring; inspect mechanical faces, chambers, and seal rings, and replace if defective; and verify that piping system is free of dirt and scale before circulating liquid through the pump.

2.3 Equipment Startup and Performance Testing

The Design/Builder shall be responsible for performance testing during startup of all mechanical, electrical, instrumentation, and piping equipment and systems.

- A. Provide a testing plan setting forth the sequence in which all testing work required for the proposed upgrades will be implemented.
- B. A documentation the results of all equipment and system tests and submit to the Owner. Provide calibration tags for all equipment certifying the date of calibration.

2.4 Instruction of Operations and Maintenance Personnel

Training shall be provided prior to turning the operation of a system, unit process, or piece of equipment. Training shall be scheduled for each plant staff work shift accordingly. No system, unit process or any piece of equipment shall be started up for continuous operation without the approved operation and maintenance manuals being turned over to Owner.

Design/Builder shall provide services of supplier's operation and maintenance training specialists to instruct Owner's personnel in recommended operation and maintenance procedures for products and equipment. Supplier may be required to provide a

combination of classroom and field training. All training shall be conducted at the site, unless otherwise stated in the Specifications. Owner reserves the right to videotape training sessions.

Training of plant's personnel shall commence only after acceptable preliminary operation and maintenance data have been provided and starting and placing equipment in operation and equipment and system startup and performance testing, has been completed. Provide written documentation and checklists outlining important training items. Provide spreadsheets needed to document new processes for input by operators.

Part 3 Technical Requirements

3.1 Plant Site / Civil Requirements

The Design/Builder shall be responsible for becoming completely familiar with the site conditions in connection with developing the final site plan including all site investigations, analysis of subsurface conditions, geotechnical conditions, and soil borings.

3.2 Demolitions

Design/Builder shall be responsible for all labor, materials, equipment, and incidentals required for demolitions and pay for all disposal fees. Design/Builder shall not start removals without the permission of the Owner. At least 48 hours prior to commencement of any demolition activities, the Design/Builder shall advise the Owner, in writing, of the proposed schedule.

Design/Builder shall carry out operations so as to avoid interference with Owner's operations and work in the existing facilities. Design/Builder shall perform all demolition and removal work so as not to interfere with the use and safe passage to and from adjacent structures and shall prevent damage or injury to structures, occupants, and adjacent features, which might result from falling debris or other causes. Design/Builder shall erect and maintain barriers, lights, sidewalk sheds, and other necessary protective devices. The Design/Builder is responsible for repairing damage to the Owner's property or facilities.

Design/Builder shall not bring explosives on site nor use explosives without written consent of authorities having jurisdiction. Design/Builder shall use water sprinkling, temporary enclosures, and other suitable methods for dust control within the lowest practical level in compliance with governing regulations.

Surfaces of walls, floors, ceilings, or other areas, which are exposed by any of the removals, and which will remain as architecturally finished surfaces shall be repaired and re-finished by Design/Builder with the same or matching materials as the existing adjacent surface. Adjacent structures, facilities, and improvements of dust, dirt, and debris caused by demolition operations shall be cleaned and returned to pre-construction conditions.

Where piping that is to be removed passes through existing walls, the piping shall be cut off and properly capped on each side of the wall. When underground piping is to be altered or removed, the remaining piping shall be properly capped. Abandoned underground piping may be left in place and grouted under major structures/roadways, unless it interferes with the work. Any changes to potable water piping work shall be made in conformance with all applicable codes and under the same requirements as other underground piping.

All materials and equipment removed from existing work shall become the property of Design/Builder, except for those which Owner has identified and marked for their use. All materials and equipment marked by the Owner for its use shall be carefully removed by Design/Builder so as not to be damaged, and shall be cleaned and stored in a protected location specified by the Owner. Design/Builder shall dispose of all demolition materials, equipment, debris, and all other items not marked by the Owner, off the work site and in conformance with all existing applicable laws and regulations. Upon completion of the work, all materials, equipment, waste, and debris of every sort shall be removed and premises shall be left, clean, neat, and orderly.

3.3 Excavation and Backfill

Design/Builder shall furnish all labor, materials, equipment, and incidentals required to perform all excavating, backfilling and disposing of earth materials required for the purpose of constructing structures, conduits, pipelines, grading, and other facilities required to complete the work in every respect.

Design/Builder shall be solely responsible for designing, installing, operating and maintaining whatever system is required to satisfactorily accomplish all necessary sheeting, bracing, protection, underpinning and dewatering.

Design/Builder shall be responsible for all field test data and shall submit to Owner copies of the following test reports from his testing laboratory.

Design/Builder shall perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction. Design/Builder shall obtain all necessary permits for work in roads, rights of way, etc. He shall also obtain permits as required by local, state, and federal agencies for discharging water from excavations. The use of explosives will not be permitted.

Data on subsurface conditions will be made available by Owner for the convenience of Design/Builder. The reports are not intended as a representation or warranty of continuity of such conditions between soil borings. Owner will not be responsible for interpretations or conclusions drawn by Design/Builder. Additional test borings and other exploratory operations may be made by Design/Builder at no cost to Owner.

Drawings from existing records showing certain surface and underground structures adjacent to the work will be made available by Owner. It is not guaranteed to be correct or complete and is shown for the convenience of the Design/Builder. Design/Builder shall explore ahead of the required excavation to determine the exact location of all

structures. They shall be supported and protected from injury by the Design/Builder. If they are broken or injured, they shall be restored immediately by the Design/Builder at its expense.

Design/Builder shall locate existing underground utilities in the areas of work. If utilities are to remain in place, Design/Builder shall provide adequate means of protection during earthwork operations. If uncharted or incorrectly charted piping or other utilities are encountered during excavation, Design/Builder shall consult the Owner immediately for directions as to procedure. Design/Builder shall cooperate with Owner and utility companies in keeping respective services and facilities in operation. Design/Builder shall repair damaged utilities to the satisfaction of Owner.

Design/Builder shall not interrupt existing utilities serving facilities occupied and used by Owner or others, except when permitted in writing by Owner and then only after acceptable temporary utility services have been provided.

3.4 Cast-In-Place Concrete

Design/Builder shall be responsible for providing concrete consisting of Portland cement, fine and coarse aggregate, water, and approved admixtures; then combined, mixed, transported, placed, finished and cured to accommodate the proposed work. All admixtures, curing compounds, etc. used in concrete or the curing and repair of concrete, which can contact potable water, shall be certified as conforming to the requirements of ANSI/NSF 61 for contact with potable water when in the finished concrete.

3.5 Miscellaneous Metals

All metals shall be non-ferrous except of steel reinforcing and as approved by the Owner. All bolt, nuts, and washers shall be 316 stainless steel the nuts shall be coated to prevent galling. Anchor bolts shall be 316 stainless steel. Stanchions, pipe supports, equipment bases, braces, and straps shall be 316 stainless steel or aluminum.

3.6 Painting

Design/Builder shall provide all labor, materials, tools, equipment, and incidentals as required to furnish and apply paint systems for surface preparation and painting of all new and existing interior and exterior items and surfaces throughout the project areas. Mechanical and process items to be painted include new and existing walls, floors, piping, mechanical equipment, supports, and any pertinent accessory items or area damaged by the construction activity. Owner's approval shall be required for all components of the surface preparation, selection of colors, and paint system application before start of proposed work.

Part 4 Electrical Requirements

4.1 Basic Requirements

Design/Builder shall design and provide all labor, materials, equipment, and incidentals to complete the electrical work. All systems shall be properly grounded. Exterior systems shall have lightning protection.

4.2 Codes

Material and equipment shall be installed in accordance with the current standards and recommendations of the National Electrical Code, the National Electrical Safety Code, and with local codes, which apply. Where discrepancies arise between codes, the most restrictive regulation shall apply.

4.3 Area Classifications

A. Wet Locations

The following areas shall be considered wet locations:

1. All outdoor areas.
2. All indoor areas below grade unless otherwise specified.
3. Materials, equipment and incidentals in areas identified as wet locations shall meet NEC and NEMA requirements for wet locations. Enclosures shall meet NEMA 4 requirements as a minimum. Conduits shall be terminated at enclosures with watertight, threaded hubs.

B. Corrosive Locations

All chemical storage and pumping areas or rooms. Materials, equipment, and incidentals in areas identified as corrosive shall meet NEC and NEMA requirements for corrosive locations. Conduit systems shall be PVC and enclosures shall meet NEMA 4X requirements. Conduits shall be terminated at enclosures with watertight hubs. Independent supports shall be PVC-coated galvanized steel, or fiberglass-reinforced epoxy struts.

4.4 Electrical Equipment

All new electrical equipment shall be capable of operating successfully at full-rated load, without failure, with an ambient outside air temperature of 0 degrees F to 122 degrees F and an elevation of 400 feet (MSL). All electrical devices and equipment shall have ratings based on 75 degrees C terminations. All electrical equipment enclosures at a minimum shall meet NEMA 12 requirements.

4.5 Schematic Diagrams

Schematic diagrams shall be prepared by the Design/Builder to act as guidance in fulfilling the operational intent of the conceptual documents. It shall be the Design/Builder's responsibility to meet all safety and electrical codes, and to provide all equipment, appurtenances, and specialty items required to provide for complete and operable systems. Review of control schemes submitted by Design/Builder shall not relieve Design/Builder of their contractual responsibility to provide complete and successfully operating systems.

4.6 Raceway Systems

Design/Builder shall furnish and install conduit and fittings to form complete, coordinated, and grounded raceway systems. Design/Builder shall provide for the proper installation of all conduits for each system.

- A. Rigid aluminum conduit for exposed indoor conduit runs in non-corrosive areas and rigid aluminum at all other sites.

- B. PVC Schedule 80 for individual conduit runs direct buried in earth and PVC coated rigid steel at all other sites (minimum 24-inch burial depth).
- C. Schedule 40 PVC for conduit runs embedded in or under structural concrete slabs or in concrete ductbanks (all sites).
- D. PVC schedule 80 conduit for exposed indoor and outdoor runs in corrosive areas and PVC coated rigid steel at all other sites.
- E. Flexible conduit for connections to motors and equipment.

4.7 Inspections, Testing and Adjustments

Accompany the normal installation tests with inspections to demonstrate to the satisfaction of the required judicial authorities the following:

- A. Connections: All circuits are properly connected in accordance with the drawings and applicable approved shop drawings.
- B. Operation: All circuits and devices are operable.
- C. Identification: All conductors are properly identified at each terminal.

Test each electrical circuit after permanent cables are in place to demonstrate that the circuit and connected equipment perform satisfactorily and that they are free from improper grounds and short circuits. Individually test 600-volt cables for insulation resistance between phases and from each phase to ground. Test after cables are installed and before they are put in service with a Megger whose rating is suitable for the tested circuit. Tests shall meet with the applicable specifications of ICEA S 66 524 and NEMA WC7 1971. The insulation resistance for any given conductor shall not be less than 1 megohm for 600 volt and less service. Any cable not meeting this value or which fails when tested under full load conditions shall be replaced with a new cable for the full length.

Test shielded instrumentation cable shields with an ohmmeter for continuity along the full length of the cable and for shield continuity to ground. Connect shielded instrumentation cables to a calibrated 4-20 milliamp DC signal transmitter and receiver. Test at 4, 12, and 20 milliamp transmitter settings.

Test the completed ground systems for continuity and for resistance to ground using an electrical ground resistance tester. Ground system resistance must be less than 5 ohms. Add up to two additional rods, spaced at 20 feet minimum from other electrodes, until resistance is less than 5 ohms.

Operate all starters, circuit breakers and associated equipment to demonstrate suitability and compliance with Specifications and reference standards, except for short circuit interrupting rating or other inherent design features covered by shop tests. Test all motors for direction of rotation and reverse connections if necessary. Check control circuits to determine that operation and sequence are correct and adjust limit switches, pressure switches, float switches, timers, and other devices to give proper operation.

Part 5 Instrumentation and Control Requirements

5.1 General

Design/Builder shall provide all labor, materials, equipment and incidentals as shown, specified and required to furnish, install, calibrate, test, start-up and place in satisfactory operation a complete and operating system for proposed work, including programming of the PLC, SCADA, and all required wire terminations. Tag number, equipment number, and description shall match the Owners numbering convention standards.

5.2 Calibration, Start-Up and Testing

Field verify the calibration and performance of each instrument prior to start-up of the associated equipment, and document on a separate sheet for each.

5.3 System Check-Out and Start-Up Responsibilities

Design/Builder shall retain the services of the system supplier to supervise and/or perform check out and start up of all system components. As part of these services, the system supplier shall coordinate and include check-out and start-up for those equipment items not manufactured or provided by him. The services of an authorized manufacturer's representative to check the equipment installation and place the equipment in operation may be required. The manufacturer's representative shall be thoroughly knowledgeable about the installation, operation and maintenance of the equipment.

Check and approve the installation of all instrumentation and control system components and all cable and wiring connections between the various system components prior to placing the various processes and equipment into operation. Conduct a complete system checkout and adjustment, including calibration of all instruments, tuning of control loops, checking operation functions, and testing of final control actions. When there are future operational functions included in this work, they should be included in the system checkout. All problems encountered shall be promptly corrected to prevent any delays in start up of the various unit processes.

System supplier shall provide all test equipment necessary to perform the testing during system checkout and start up. Design/Builder and system supplier shall be responsible for initial operation of monitoring and control system and shall make any required changes, adjustment, or replacements for operation, monitoring, and control of the various processes and equipment necessary to perform the functions intended.

Design/Builder shall furnish to the Owner certified calibration reports for field instruments and panel mounted devices specified in this Section as soon as calibration is completed. Design/Builder shall furnish Owner an installation inspection report certifying that all equipment has been installed correctly and is operating properly. The report shall be signed by authorized representatives of both Design/Builder and the system supplier.

5.4 Instrumentation and Control System Field Test

Following the plant monitoring and control system checkout and initial operation, system supplier, under the supervision of the Design/Builder, shall perform a complete system test to verify that all equipment and programmed software is operating properly as a fully integrated system, and that the intended monitoring and control functions are fully implemented and operational. Any defects or problems found during the test shall be corrected by system supplier, and then retested to demonstrate proper operation.

Following demonstration of all system functions, the plant monitoring and control system including field sensors/transducers and instruments, and telemetry system shall be running and fully operational for a continuous 72 hour period.

5.5 Control Panels and Enclosures

Control panels located inside control or electrical room areas shall be NEMA 12 rated unless differently noted on drawings. All others shall be stainless steel or non-metallic NEMA 4 except in corrosive areas, which shall be NEMA 4X. Provide panel ventilation or air conditioning if required by ambient conditions. Use pan type construction for doors. Door widths shall not exceed 36-inches. Exterior panel with displays shall face north. Exterior control panels shall be 316 stainless steel with powder coated white epoxy exterior finish with sunshield.

5.6 Surge Protection

Surge protection shall be provided to protect all electronic instrumentation from surges propagating along the signal, telephone, and power supply lines. Locate the suppression device as close as possible to the load device. The protection systems shall be such that the protection level shall not interfere with normal operation, but shall be lower than the instrument surge withstand level, and be maintenance free and self-restoring. Instruments shall be housed in suitable metallic cases, properly grounded. Ground wires for all surge protectors shall be connected to a good earth ground and where practical each ground wire run individually and insulated from each other.

5.7 Lightning Protection

Furnish and install UL certified lightning protection system including grounding system. Grounding grid resistance shall be 5 ohms or less.

ATTACHMENT K
SUPPORTING DOCUMENTATION

Cardinal Contractors, Inc.
 MB-31209-05A WTP #3 Degasifier/Odor Control
 Mike Brundao

ESTIMATE SUMMARY - COSTS & BID PRICES

Bid#	Client#	Quantity	Unit	Manhours	Direct Labor	Perm Matl	Constr Matl	Equip-Ment	Sub-Contr	Direct Total	Indirect Charge	Total Cost	Total Cost Unit Price	Markup	Balanced Bid		Bid Price	Bid Total	
Bid Description															Total	Unit Price			
16000		1.00	LS						314,300	314,300	10,023	324,323	324,323.03	41,267 12.7 %	365,590	365,590.15	365,590.15	365,590.15	
ELECTRICAL WORK																			
17000		1.00	LS	82	2,708	24,229	5,538			32,475	1,036	33,511	33,510.51	4,264 12.7 %	37,774	37,774.41	37,774.41	37,774.41	
INSTRUMENTATION & CONTROLS																			
1800000		1.00	LS	2,429	187,413	500	14,004	14,283	6,870	223,069	7,114	230,183	230,182.96	29,289 12.7 %	259,472	259,471.62	259,471.62	259,471.62	
GENERAL CONDITIONS																			
Totals:				6,097	311,151	515,611	50,207	63,091	495,196	1,435,257	40,189	1,475,446	[1,475,447]	165,469	1,640,915			1,640,915.97	[11.2 %

Code between Balanced Bid & Bid Price: U-Unbalanced, F-Frozen, C-Closing Biditem (item to absorb unbalancing differences).
 [bracketed numbers represent adjusted quantities]
 ** in front of the Biditem indicates a Non-Additive item

Markup % is shown as a percentage of cost

Builders Risk Insurance	LS										24,574							
Bond	LS										15,614							
Markup on Resource Costs														165,469				

***** TOTAL	JOB =====>	6,097		311,151	515,611	50,207	63,091	495,196	1,435,257	40,189	1,475,446			165,469	1,640,915			1,640,915.97
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Spread Indirects On LABOR COST Spread Markups On TOTAL COST Spread Addons&Bonds On TOTAL COST

Bond Calculations
 Selected Bond Table: C Description: Bond Calc Design-

	Contract Amount	Rate per 1000	Bond Amount
First:	\$ 0	0.00	\$ 0.00
Next:	\$ 0	0.00	\$ 0.00
Next:	\$ 0	0.00	\$ 0.00
Next:	\$ 0	0.00	\$ 0.00
Next:	\$ 0	0.00	\$ 0.00
Remainder:	0.00		\$ 0.00
Subtotal:			\$ 0.00
Time Threshold 1: 0	Extended Time Rate 1: 0.0000 %		\$ 0.00

Cardinal Contractors, Inc.
 MB-31209-05A
 Mike Brondao

WTP #3 Degasifier/Odor Control

ESTIMATE SUMMARY - COSTS & BID PRICES

Bid#	Client# Bid Description	Quantity	Unit Manhours	Direct Labor	Perm Matl	Constr Matl	Equip- Ment	Sub- Contr	Direct Total	Indirect Charge	Total Cost	Total Cost Unit Price	Markup	Balanced Bid Total	Unit Price	Bid Price	Bid Total
	Time Threshold 2:	0		Extended Time Rate 2:	0.0000 %	\$				0.00							
	Length of Job:	10		Total Bond Amount:	\$					0.00							

Pass Through Totals

Total Pass Through Cost: 175,006.40
 Total Pass Through Adjustment: 0.00

Estimate Notes

Bid Date: _____
 Owner: _____
 Estimator in Charge: MB

Engineering Firm:

Desired Bid (if specified): 0.00 Sort: _____
 Hold Acct: N Subitem: Y NonAdd: N
 Last Summary on 08/21/2013 at 7:53 AM.
 Last Spread on 08/21/2013 at 7:53 AM.

NOTE: Bid items that are subitems (have a parent bid item) are printed in italics.

Cost Report

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Mat/Exp	Equip Ment	Sub-Contract	Total
BID ITEM = 500									
Description = OWNER'S ALLOWANCE Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000 MB 1.000									
500	OWNER'S ALLOWANCE				1.000 LS	Hrs/Shift: 8.00	Cal: 40	WG: 01=DET	
3	ALLOWANCE ALLOWANCES	1.00	LS	25,000.000			25,000		25,000
====> Item Totals: 500 - OWNER'S ALLOWANCE									
\$25,000.00				[]			25,000		25,000
25,000.000		1 LS					25,000.00		25,000.00

BID ITEM = 1000									
Description = ENGINEERING SERVICES Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000 MB 1.000									
01407	ENGINEERING SERVICES				1.000 LS	Hrs/Shift: 8.00	Cal: 40	WG: 01=DET	
4	ENGINEER Calvin Giordano & Associat	1.00	LS	150,006.400				150,006	150,006

PARENT ITEM = 2000									
Description = DIV 2 Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000 MB 1.000									

Listing of Sub-Biditems of Parent Item 2000:

BID ITEM = 2200									
Description = DEMOLITION - MISCELLANEOUS Unit = LS Takeoff Quan: 1.000 Engr Quan: 0.000 MB 0.000									

02200.1	Remove & Dispose of Sidewalk				1.000 LS	Hrs/Shift: 8.00	Cal: 40	WG: 01=DET	
Z-LAB	Labor Crew w/ Foreman	2.00	CH	Prod: 2.0000	CH	Lab Pcs: 3.00	Eqp Pcs: 0.00		
Z1-LAB	PBC Laborer	2.00	4.00 MH	28.640	115				115
Z2-FOREMAN	PBC Foreman	1.00	2.00 MH	41.800	84				84
\$198.16	6.0000 MH/LS		6.00 MH	[198.16]	198				198

02200.2	Cut & Patch Existing Anchor Bolts				1.000 LS	Hrs/Shift: 8.00	Cal: 40	WG: 01=DET	
Z-LAB	Labor Crew w/ Foreman	12.00	CH	Prod: 12.0000	CH	Lab Pcs: 3.00	Eqp Pcs: 0.00		
2PATCHMAT	PATCH MATERIAL@106.	1.00	BAG	55.000	59				59
Z1-LAB	PBC Laborer	2.00	24.00 MH	28.640	687				687
Z2-FOREMAN	PBC Foreman	1.00	12.00 MH	41.800	502				502
\$1,247.54	36.0000 MH/LS		36.00 MH	[1188.96]	1,189	59			1,248

02200.3	Demolish Blower Enclosures (2)				2.000 EA	Hrs/Shift: 8.00	Cal: 40	WG: 01=DET	
Z-LAB	Labor Crew w/ Foreman	4.00	CH	Prod: 4.0000	CH	Lab Pcs: 3.00	Eqp Pcs: 0.00		
8FL-STLULL-W	=> Forklift-Lull 5T-Weekl	20.00	HR	65.685		1,375			1,375
Z1-LAB	PBC Laborer	2.00	8.00 MH	28.640	229				229
Z2-FOREMAN	PBC Foreman	1.00	4.00 MH	41.800	167				167
\$1,771.28	6.0000 MH/EA		12.00 MH	[198.16]	396		1,375		1,771

02200.4	Demolish Filter Inlet Enclosure & Pad				1.000 EA	Hrs/Shift: 8.00	Cal: 40	WG: 01=DET	
Z-LAB	Labor Crew w/ Foreman	12.00	CH	Prod: 12.0000	CH	Lab Pcs: 3.00	Eqp Pcs: 0.00		
8AC250-R	=> Air Compressor - 250 -	16.00	HR	18.118		296			296
8CHIPPER12-R	=> Chipper - 12" - MR	16.00	HR	29.023		486			486
8H3/4X50'-RW	Air Hose-3/4"x50'-WR	16.00	HR	0.750		13			13

Cost Report

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub-Contract	Total
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BID ITEM = 2200
 Description = DEMOLITION - MISCELLANEOUS Unit = LS Takeoff Quan: 1.000 Engr Quan: 0.000 MB

Z1-LAB	PBC Laborer	2.00	24.00 MH	28.640	687					687
Z2-FOREMAN	PBC Foreman	1.00	12.00 MH	41.800	502					502
\$1,984.38	36.0000 MH/EA		36.00 MH	[1188.96]	1,189			795		1,984

02200.5 Cut and Demolish Existing FRP Ductwork Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 W/C: 01-DET

Z-LAB	Labor Crew w/ Foreman		10.00 CH	Prod: 80.641	10.0000 CH	Lab Pcs: 3.00	Eqp Pcs: 0.00			3,448
8CR22BT	=> Crane - Boom Truck 2		40.00 HR					3,448		3,448
Z1-LAB	PBC Laborer	2.00	20.00 MH	28.640	573					573
Z2-FOREMAN	PBC Foreman	1.00	10.00 MH	41.800	418					418
\$4,439.16	30.0000 MH/LS		30.00 MH	[990.8]	991			3,448		4,439

02226 Sawcut Sidewalk - Elec Rm to Clearwell Quan: 40.00 LR Hrs/Shift: 8.00 Cal: 40 W/C: 01-DET

Z-LAB	Labor Crew w/ Foreman		1.00 CH	Prod: 28.640	1.0000 CH	Lab Pcs: 3.00	Eqp Pcs: 0.00			57
Z1-LAB	PBC Laborer	2.00	2.00 MH		57					57
Z2-FOREMAN	PBC Foreman	1.00	1.00 MH	41.800	42					42
\$99.08	0.0750 MH/LF		3.00 MH	[2.477]	99					99

=====> Item Totals: 2200 - DEMOLITION - MISCELLANEOUS

\$9,739.60	123.0000 MH/LS		123.00 MH	[4062.28]	4,062	59		5,619		9,740
9,739.600	1 LS				4,062.28	58.58		5,618.74		9,739.60

BID ITEM = 2220
 Description = DEMOLITION - STRUCTURAL Unit = LS Takeoff Quan: 1.000 Engr Quan: 0.000 MB

02220 Sawcut 24" x 30" Opening in Clearwell Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 W/C: 01-DET

Z-LAB	Labor Crew w/ Foreman		16.00 CH	Prod: 55.000	16.0000 CH	Lab Pcs: 3.00	Eqp Pcs: 0.00			59
2PATCHMAT	PATCH MATERIAL @ 106	1.00	BAG		59					59
8CS14"GAS-WR	=> Concrete 14" Gas Cut		8.00 HR	8.955		75				75
Z1-LAB	PBC Laborer	2.00	32.00 MH	28.640	916					916
Z2-FOREMAN	PBC Foreman	1.00	16.00 MH	41.800	669					669
\$1,719.07	48.0000 MH/LS		48.00 MH	[1585.28]	1,585	59		75		1,719

=====> Item Totals: 2220 - DEMOLITION - STRUCTURAL

\$1,719.07	48.0000 MH/LS		48.00 MH	[1585.28]	1,585	59		75		1,719
1,719.070	1 LS				1,585.28	58.58		75.21		1,719.07

BID ITEM = 2221
 Description = DEMOLITION - EQUIPMENT Unit = LS Takeoff Quan: 1.000 Engr Quan: 0.000 MB

02221.1 Demolish Existing Scrubber Quan: 1.00 EA Hrs/Shift: 8.00 Cal: 40 W/C: 01-DET

Includes Dumpster costs for FRP Ductwork, Enclosures, Filter Inlet Box and Scrubber

Z-LAB	Labor Crew w/ Foreman		40.00 CH	Prod: 500.000	120.0000 MU	Lab Pcs: 3.00	Eqp Pcs: 0.00			1,500
4DUMPSTER	Dumpster Costs		3.00 EA		1,500					1,500
8CR55-R	=> Crane - 55T - RoughT		8.00 HR	83.136		692				692
Z1-LAB	PBC Laborer	2.00	80.00 MH	28.640	2,291					2,291
Z2-FOREMAN	PBC Foreman	1.00	40.00 MH	41.800	1,672					1,672
\$6,154.87	120.0000 MH/EA		120.00 MH	[3963.2]	3,963			692	1,500	6,155

02221.2 Demolish Recirc Pumps and Pads Quan: 2.00 EA Hrs/Shift: 8.00 Cal: 40 W/C: 01-DET

Cost Report

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Mat/Exp	Sub-Ment Contract	Total
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BID ITEM = 2221
 Description = DEMOLITION - EQUIPMENT Unit = LS Takeoff Quan: 1.000 Engr Quan: 0.000 MB

Z-LAB	Labor Crew w/ Foreman	6.00	CH	Prod: 9.0000	MU	Lab Pcs: 3.00	Eqp Pcs: 0.00		0.00
2PATCHMAT	PATCH MATERIAL@106.	1.00	BAG	50.000		53			53
8AC250-R	=> Air Compressor - 250 -	4.00	HR	18.118			74		74
8CHIPPER12-R	=> Chipper - 12" - MR	4.00	HR	29.023			122		122
8CR30RT	=> Crane - 30T - Rough T	8.00	HR	64.973			583		583
8H3/4X50-RW	Air Hose-3/4"x50'-WR	4.00	HR	0.750			3		3
Z1-LAB	PBC Laborer	2.00	MH	28.640	344				344
Z2-FOREMAN	PBC Foreman	1.00	MH	41.800	251				251
\$1,429.99	9.0000 MH/EA	18.00	MH	[297.24]	594	53	782		1,430
===== Item Totals: 2221 - DEMOLITION - EQUIPMENT									
\$7,584.86	138.0000 MH/LS	138.00	MH	[4557.68]	4,558	53	1,474	1,500	7,585
7,584.860	1 LS				4,557.68	53.25	1,473.93	1,500.00	7,584.86

BID ITEM = 2225
 Description = COREDRILLING Unit = LS Takeoff Quan: 1.000 Engr Quan: 0.000 MB

02225-1	Coredrill Opening for Degas F/W Discharge	Quan: 1.000 EA	Hrs/Shift: 8.00	Cal: 40	WG: 01-DET				
Z-LAB	Labor Crew w/ Foreman	1.00	CH	Prod: 3.0000	MU	Lab Pcs: 3.00	Eqp Pcs: 0.00		0.00
4COREDRILL	Coredrill Degas F/W Slab	1.00	EA	2,800.000			2,800		2,800
Z1-LAB	PBC Laborer	2.00	MH	28.640	57				57
Z2-FOREMAN	PBC Foreman	1.00	MH	41.800	42				42
\$2,899.08	3.0000 MH/EA	3.00	MH	[99.08]	99		2,800		2,899
02225-2	Coredrill 6" and Smaller Openings	Quan: 3.000 EA	Hrs/Shift: 8.00	Cal: 40	WG: 01-DET				
Z-LAB	Labor Crew w/ Foreman	1.33	CH	Prod: 0.5000	MU	Lab Pcs: 3.00	Eqp Pcs: 0.00		0.00
4COREDRILL<6	Coredrill Holes 6" and Smal	8.00	EA	225.000			1,800		1,800
Z1-LAB	PBC Laborer	2.00	MH	28.640	76				76
Z2-FOREMAN	PBC Foreman	1.00	MH	41.800	56				56
\$1,932.06	0.5000 MH/EA	4.00	MH	[16.508]	132		1,800		1,932
===== Item Totals: 2225 - COREDRILLING									
\$4,831.14	7.0000 MH/LS	7.00	MH	[231.14]	231		4,600		4,831
4,831.140	1 LS				231.14		4,600.00		4,831.14

BID ITEM = 2900
 Description = RESTORATION Unit = LS Takeoff Quan: 1.000 Engr Quan: 0.000 MB

02700-1	Sidewalk Restoration < 100LF	Quan: 40.000 LF	Hrs/Shift: 8.00	Cal: 40	WG: 01-DET				
LABOR HOURS INCLUDED TO PREP SUBGRADE, FINEGRADE, COMPACT, FORM, PLACE, FINISH, BROOM, STRIP, CLEANUP.									
Z-LAB	Labor Crew w/ Foreman	53.33	CH	Prod: 4.0000	MU	Lab Pcs: 3.00	Eqp Pcs: 0.00		0.00
3CONCRETE	CONCRETE FOR SI@106.	10.00	CY	90.000		959			959
3MATRIAL	Miscellaneous M@106.5%	1.00	LS	300.000		320			320
3MISCCONC	MISCELLANEOUS C@10	10.00	CY	90.000		959			959
Z1-LAB	PBC Laborer	2.00	MH	28.640	3,055				3,055
Z2-FOREMAN	PBC Foreman	1.00	MH	41.800	2,229				2,229
\$7,520.72	4.0000 MH/LF	160.00	MH	[132.106]	5,284	2,237			7,521
02750-1	Sod / Less Than 10,000SF	Quan: 2.5000 SF	Hrs/Shift: 8.00	Cal: 40	WG: 01-DET				
Z-LAB	Labor Crew w/ Foreman	8.00	CH	Prod: 8.0000	CH	Lab Pcs: 3.00	Eqp Pcs: 0.00		0.00

Cost Report

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Labor	Perm Material	Constr Mat/Exp	Equip Ment	Sub-Contract	Total
BID ITEM = 2900										
Description = RESTORATION										
				Unit =	LS	Takeoff Quan:		1.000	Engr Quan:	0.000
2SOD	Sod / Less Than@106.5%		2,500.00 SF	0.450		1,198				1,198
Z1-LAB	PBC Laborer	2.00	16.00 MH	28.640	458					458
Z2-FOREMAN	PBC Foreman	1.00	8.00 MH	41.800	334					334
\$1,990.77	0.0096 MH/SF		24.00 MH	[0.317]	793	1,198				1,991
=====> Item Totals: 2900 - RESTORATION										
\$9,511.49	184.0000 MH/LS		184.00 MH	[6076.86]	6,077	1,198	2,237			9,511
9,511.490	1 LS				6,076.86	1,198.13	2,236.50			9,511.49

Total of Above Sub-Biditems

=====> Item Totals: 2000 - DIV 2										
\$33,386.16	500.0000 MH/LS		500.00 MH	[16513.24]	16,513	1,369	2,237	7,168	6,100	33,386
33,386.160	1 LS				16,513.24	1,368.54	2,236.50	7,167.88	6,100.00	33,386.16

PARENT ITEM = 3000										
Description = DIV 3										
				Unit =	LS	Takeoff Quan:		1.000	Engr Quan:	1.000

Listing of Sub-Biditems of Parent Item 3000:

BID ITEM = 3398										
Description = EQUIPMENT PADS										
				Unit =	LS	Takeoff Quan:		1.000	Engr Quan:	0.000

03398.1 ERP New Scrubber Pad Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 WC: 01-DRT

13' diameter, 6" thick										
Z-LAB	Labor Crew w/ Foreman		40.00 CH	Prod:	40.0000 CH	Lab Pcs:	3.00	Eqp Pcs:	0.00	
2#DOWELS	#4 DOWELS@106.5%		20.00 LF		1.000		21			21
2CHAMFER	Purchase Chamfe@106.5%		42.00 LF		0.120		5			5
2CONC4000	Purchase 4000 P@106.5%		5.00 CY		90.000		479			479
2HILT500	Hilti Hit 500 E@106.5%		24.00 EA		40.000		1,022			1,022
3FORM	Form Rental Cos@106.5%		42.00 SF		2.000		89			89
4PUMPER	Concrete Pumper		5.00 CY		15.000				75	75
Z1-LAB	PBC Laborer	2.00	80.00 MH		28.640	2,291				2,291
Z2-FOREMAN	PBC Foreman	1.00	40.00 MH		41.800	1,672				1,672
\$5,655.98	120.0000 MH/LS		120.00 MH	[3963.2]	3,963	1,528	89		75	5,656

03398.2 Scrubber Recirc Pump Pads Quan: 2.00 EA Hrs/Shift: 8.00 Cal: 40 WC: 01-DRT

Z-LAB	Labor Crew w/ Foreman		16.00 CH	Prod:	24.0000 MU	Lab Pcs:	3.00	Eqp Pcs:	0.00	
2#DOWELS	#4 DOWELS@106.5%		4.00 LF		1.000		4			4
2CHAMFER	Purchase Chamfe@106.5%		9.00 LF		0.120		1			1
2CONC4000	Purchase 4000 P@106.5%		1.00 CY		90.000		96			96
2HILT500	Hilti Hit 500 E@106.5%		4.00 EA		40.000		170			170
2REBAR	Purchase Rebar @106.5%		0.00 TON		0.000					
3FORM	Form Rental Cos@106.5%		9.00 SF		2.000		19			19
4PUMPER	Concrete Pumper		1.00 CY		15.000				15	15
Z1-LAB	PBC Laborer	2.00	32.00 MH		28.640	916				916
Z2-FOREMAN	PBC Foreman	1.00	16.00 MH		41.800	669				669
\$1,891.11	24.0000 MH/EA		48.00 MH	[792.64]	1,585	272	19		15	1,891

Cost Report

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Labor	Perm Material	Constr Mat/Exp	Equip Ment	Sub-Contract	Total
BID ITEM = 3398 Description = EQUIPMENT PADS Unit = LS Takeoff Quan: 1.000 Engr Quan: MB 0.000										
03398.3 ERP Degas Blower Pad Quan: 1.00 EA Hrs/Shift: 8.00 Cal: 40 WC: 01 DET										
Z-LAB	Labor Crew w/ Foreman	8.00	CH	Prod:	8.0000	CH	Lab Pcs:	3.00	Eqp Pcs:	0.00
2#4DOWELS	#4 DOWELS@106.5%	20.00	LF	1.000			21			21
2CHAMFER	Purchase Chamfe@106.5%	24.00	LF	0.120			3			3
2CONC4000	Purchase 4000 P@106.5%	2.00	CY	90.000			192			192
2RUBBING	Rub and Patch M@106.5%	36.00	SF	0.500			19			19
3FORM	Form Rental Cos@106.5%	24.00	SF	2.000			51			51
4PUMPER	Concrete Pumper	2.00	CY	15.000					30	30
Z1-LAB	PBC Laborer	2.00	16.00 MH	28.640	458					458
Z2-FOREMAN	PBC Foreman	1.00	8.00 MH	41.800	334					334
\$1,109.00	24.0000 MH/EA	24.00	MH	[792.64]	793	235	51		30	1,109
=====> Item Totals: 3398 - EQUIPMENT PADS \$8,656.09 192.0000 MH/LS 192.00 MH [6341.12] 6,341 2,035 160 120 8,656 8,656.090 1 LS 6,341.12 2,035.22 159.75 120.00 8,656.09										

Total of Above Sub-Biditems

=====> Item Totals: 3000 - DIV 3 \$8,656.09 192.0000 MH/LS 192.00 MH [6341.12] 6,341 2,035 160 120 8,656 8,656.090 1 LS 6,341.12 2,035.22 159.75 120.00 8,656.09										
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PARENT ITEM = 9000
 Description = COATINGS Unit = LS Takeoff Quan: 1.000 Engr Quan: MB 1.000

Listing of Sub-Biditems of Parent Item 9000:

BID ITEM = 9900
 Description = Coatings Unit = LS Takeoff Quan: 1.000 Engr Quan: MB 0.000

09900.1 Patch and Paint Opening in Clearwell Quan: 40.00 SF Hrs/Shift: 8.00 Cal: 40 WC: 01 DET										
Z-FOR	Working Foreman Only	160.00	CH	Prod:	4.0000	MU	Lab Pcs:	1.00	Eqp Pcs:	0.00
4PAINT	Painting Subcontractor	1.00	LS	800.000					800	800
Z2-FOREMAN	PBC Foreman	1.00	160.00 MH	41.800	6,688					6,688
\$7,488.00	4.0000 MH/SF	160.00	MH	[167.2]	6,688				800	7,488

09900.2 Paint Piping and Labeling Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 WC: 01 DET										
Z-FOR	Working Foreman Only	16.00	CH	Prod:	16.0000	MU	Lab Pcs:	1.00	Eqp Pcs:	0.00
4PAINT	Painting Subcontractor	1.00	LS	14,000.000					14,000	14,000
Z2-FOREMAN	PBC Foreman	1.00	16.00 MH	41.800	669					669
\$14,668.80	16.0000 MH/LS	16.00	MH	[668.8]	669				14,000	14,669

=====> Item Totals: 9900 - Coatings
 \$22,156.80 176.0000 MH/LS 176.00 MH [7356.8] 7,357 14,800 22,157
 22,156.800 1 LS 7,356.80 14,800.00 22,156.80

Cost Report

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Perm Labor	Constr Material	Equip Mail/Exp	Sub-Ment Contract	Total
BID ITEM = 9901 Description = CLEARWELL RE-COAT NOT INCLUDED Unit = LS Takeoff Quan: 1.000 Engr Quan: MB 0.000 <i>There are no activities in this biditem.</i>									

Total of Above Sub-Biditems

====> Item Totals:	9000	- COATINGS							
\$22,156.80	176.0000 MH/LS		176.00 MH	[7356.8]	7,357			14,800	22,157
22,156.800	1 LS				7,356.80			14,800.00	22,156.80

BID ITEM = 13000									
Description =	SPECIAL CONSTRUCTION			Unit =	LS	Takeoff Quan:	1.000	Engr Quan:	MB 1.000

13000.0 PURCHASE EQUIPMENT Quan: 1.00 EA Hrs/Shift: 8.00 Cal: 40 WC: 01-DFT

assumed max of 5 supports, 3 (\$7k ea) high at 30" dia duct and 2 (\$1k ea) low: one at 54" and one at transition to scrubber.

2DEGAS&SCRU	Degasifier & Od@106.5%	1.00	LS	305,000.000			324,825		324,825
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13000.1 Set New Degas #3 Blower Quan: 1.00 EA Hrs/Shift: 8.00 Cal: 40 WC: 01-DFT

Z-LAB	Labor Crew w/ Foreman		10.66	CH	Prod:	32.0000	MU	Lab Pcs:	3.00	Eqp Pcs:	0.00
2ANCHORBOLT	Purchase Anchor@106.5%		8.00	EA			213				213
8CR75-R	=> Crane - 75T - RoughT		8.00	HR					716		716
Z1-LAB	PBC Laborer	2.00	21.33	MH							611
Z2-FOREMAN	PBC Foreman	1.00	10.67	MH							446
\$1,985.78	32.0000 MH/EA		32.00	MH	[1056.9]	1,057	213		716		1,986

13000.2 Install New Blower Filter Housing Quan: 3.00 EA Hrs/Shift: 8.00 Cal: 40 WC: 01-DFT

Z-LAB	Labor Crew w/ Foreman		24.00	CH	Prod:	24.0000	MU	Lab Pcs:	3.00	Eqp Pcs:	0.00
2ANCHORBOLT	Purchase Anchor@106.5%		24.00	EA			639				639
8CR75-R	=> Crane - 75T - RoughT		24.00	HR					2,148		2,148
Z1-LAB	PBC Laborer	2.00	48.00	MH							1,375
Z2-FOREMAN	PBC Foreman	1.00	24.00	MH							1,003
\$5,164.57	24.0000 MH/EA		72.00	MH	[792.64]	2,378	639		2,148		5,165

13000.3 Set New Degasifier #3 Quan: 1.00 EA Hrs/Shift: 8.00 Cal: 40 WC: 01-DFT

Z-LAB	Labor Crew w/ Foreman		80.00	CH	Prod:	240.0000	MU	Lab Pcs:	3.00	Eqp Pcs:	0.00
3HOPPER	Hopper/Packing Installation		1.00	EA			500				500
8CR75-R	=> Crane - 75T - RoughT		80.00	HR					7,159		7,159
Z1-LAB	PBC Laborer	2.00	160.00	MH							4,582
Z2-FOREMAN	PBC Foreman	1.00	80.00	MH							3,344
\$15,585.24	240.0000 MH/EA		240.00	MH	[7926.4]	7,926	500		7,159		15,585

13000.4 FRP Ductwork and Supports Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 WC: 01-DFT

assumed max of 5 supports, 3 (\$8k ea) high at 30" dia duct and 5 (\$1.5k ea) low: one at 54" and one at transition to scrubber.

Z-LAB	Labor Crew w/ Foreman		100.00	CH	Prod:	100.0000	CH	Lab Pcs:	3.00	Eqp Pcs:	0.00
2ANCHORBOLT	Purchase Anchor@106.5%		32.00	EA			852				852
2FRPJOINT	FIELD JOINT KIT@106.5		8.00	EA			17,040				17,040
2NSGROUT	Non-Shrink Grou@106.5%		16.00	EA			239				239

Cost Report

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Perm Labor	Constr Material	Equip Mat/Exp	Sub-Ment Contract	Total
BID ITEM = 13000 Description = SPECIAL CONSTRUCTION Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000 MB									
2SUPPORTS	FRP Ductwork Su@106.5%		1.00 LS	31,500.000		33,548			33,548
8CR75-R	==> Crane - 75T - RoughT		100.00 HR	85.977			8,949		8,949
Z1-LAB	PBC Laborer	2.00	200.00 MH	28.640	5,728				5,728
Z2-FOREMAN	PBC Foreman	1.00	100.00 MH	41.800	4,180				4,180
\$70,534.61	300.0000 MH/LS		300.00 MH	[9908]	9,908	51,678	8,949		70,535
13000.5 Erect Ladders & Platforms Quan: 4.00 LS Hrs/Shift: 8.00 Gal: 40 WG: 01-DET									
Z-LAB	Labor Crew w/ Foreman		144.00 CH	Prod: 144.0000	CH	Lab Pcs: 3.00	Eq Pcs: 0.00		
2ANCHORBOLT	Purchase Anchor@106.5%		32.00 EA	25.000		852			852
2NSGROUT	Non-Shrink Grou@106.5%		4.00 EA	14.000		60			60
8CR75-R	==> Crane - 75T - RoughT		128.00 HR	85.977			11,454		11,454
Z1-LAB	PBC Laborer	2.00	288.00 MH	28.640	8,248				8,248
Z2-FOREMAN	PBC Foreman	1.00	144.00 MH	41.800	6,019				6,019
\$26,633.30	108.0000 MH/LS		432.00 MH	[3566.88]	14,268	912	11,454		26,633
13000.6 Clean/Disinfect Degasifier Quan: 3.00 EA Hrs/Shift: 8.00 Gal: 40 WG: 01-DET									
Z-LAB	Labor Crew w/ Foreman		48.00 CH	Prod: 48.0000	MU	Lab Pcs: 3.00	Eq Pcs: 0.00		
3CLEAN	HTH / CLEAN SUP@106.		1.00 LS	300.000		320			320
Z1-LAB	PBC Laborer	2.00	96.00 MH	28.640	2,749				2,749
Z2-FOREMAN	PBC Foreman	1.00	48.00 MH	41.800	2,006				2,006
\$5,075.34	48.0000 MH/EA		144.00 MH	[1585.28]	4,756	320			5,075
13000.7 Install Analyzers, Gauges and Sensors Quan: 1.00 LS Hrs/Shift: 8.00 Gal: 40 WG: 01-DET									
Z-LAB	Labor Crew w/ Foreman		26.66 CH	Prod: 80.0000	MU	Lab Pcs: 3.00	Eq Pcs: 0.00		
Z1-LAB	PBC Laborer	2.00	53.33 MH	28.640	1,527				1,527
Z2-FOREMAN	PBC Foreman	1.00	26.67 MH	41.800	1,115				1,115
\$2,642.18	80.0000 MH/LS		80.00 MH	[2642.18]	2,642				2,642
13000.8 Startup & Testing Quan: 3.00 EA Hrs/Shift: 8.00 Gal: 40 WG: 01-DET									
Z-FOR	Working Foreman Only		120.00 CH	Prod: 40.0000	MU	Lab Pcs: 1.00	Eq Pcs: 0.00		
2STARTUP	Manufacturer's @106.5%		5.00 DAY	2,400.000		12,780			12,780
Z2-FOREMAN	PBC Foreman	1.00	120.00 MH	41.800	5,016				5,016
\$17,796.00	40.0000 MH/EA		120.00 MH	[1672]	5,016	12,780			17,796
13000.9 Set New Scrubber Quan: 1.00 EA Hrs/Shift: 8.00 Gal: 40 WG: 01-DET									
Z-LAB	Labor Crew w/ Foreman		53.33 CH	Prod: 160.0000	MU	Lab Pcs: 3.00	Eq Pcs: 0.00		
8CR75-R	==> Crane - 75T - RoughT		40.00 HR	85.977			3,579		3,579
Z1-LAB	PBC Laborer	2.00	106.67 MH	28.640	3,055				3,055
Z2-FOREMAN	PBC Foreman	1.00	53.33 MH	41.800	2,229				2,229
\$8,863.64	160.0000 MH/EA		160.00 MH	[5284.22]	5,284		3,579		8,864
13001.0 Set/Recirc Pumps Quan: 2.00 EA Hrs/Shift: 8.00 Gal: 40 WG: 01-DET									
Z-LAB	Labor Crew w/ Foreman		14.00 CH	Prod: 21.0000	MU	Lab Pcs: 3.00	Eq Pcs: 0.00		
2ANCHORBOLT	Purchase Anchor@106.5%		4.00 EA	25.000		107			107
Z1-LAB	PBC Laborer	2.00	28.00 MH	28.640	802				802
Z2-FOREMAN	PBC Foreman	1.00	14.00 MH	41.800	585				585
\$1,493.62	21.0000 MH/EA		42.00 MH	[693.56]	1,387	107			1,494
13001.1 Cleaning System Recirc Pump Quan: 1.00 EA Hrs/Shift: 8.00 Gal: 40 WG: 01-DET									
Z-LAB	Labor Crew w/ Foreman		40.00 CH	Prod: 120.0000	MU	Lab Pcs: 3.00	Eq Pcs: 0.00		
2ANCHORBOLT	Purchase Anchor@106.5%		4.00 EA	25.000		107			107
Z1-LAB	PBC Laborer	2.00	80.00 MH	28.640	2,291				2,291

Cost Report

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Labor	Material	Perm	Constr	Equip	Sub-Contract	Total
BID ITEM = 13000											
Description =	SPECIAL CONSTRUCTION			Unit =	LS	Takeoff Quan:		1.000	Engr Quan:		MB 1.000
Z2-FOREMAN	PBC Foreman	1.00	40.00 MH	41.800	1,672						1,672
\$4,069.70	120.0000 MH/EA		120.00 MH	[3963.2]	3,963	107					4,070
130012 Modify Existing Degassifiers for Cleaning											
Quan: 2.00 EA Hrs/Shift: 8.00 Cal: 40 W/C: 01-DET											
Z-LAB	Labor Crew w/ Foreman		80.00 CH	Prod:	120.0000 MU	Lab Pcs:	3.00	Eqp Pcs:	0.00		
2HEADERS	Chemical Spray @106.5%		1.00 LS	6,000.000		6,390					6,390
Z1-LAB	PBC Laborer	2.00	160.00 MH	28.640	4,582						4,582
Z2-FOREMAN	PBC Foreman	1.00	80.00 MH	41.800	3,344						3,344
\$14,316.40	120.0000 MH/EA		240.00 MH	[3963.2]	7,926	6,390					14,316
130013 Scrubber Investigation & Evaluation											
Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 W/C: 01-DET											
preliminary investigation/manufacturer's services prior to CSA.											
4EVAL	Scrubber Investigation & Ev		1.00 LS	3,000.000						3,000	3,000
====> Item Totals: 13000 - SPECIAL CONSTRUCTION											
\$501,985.38	1,982.0000 MH/LS		1,982.00 MH	[66511.7]	66,512	397,650		820	34,004	3,000	501,985
501,985.380	1 LS				66,511.70	397,649.70		819.50	34,004.48	3,000.00	501,985.38

BID ITEM = 15000											
Description =	PROCESS PIPING			Unit =	LS	Takeoff Quan:		1.000	Engr Quan:		MB 1.000
15052.1 316SS Pipe Valves & Fittings											
Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 W/C: 01-DET											
Z-LAB	Labor Crew w/ Foreman		53.33 CH	Prod:	160.0000 MU	Lab Pcs:	3.00	Eqp Pcs:	0.00		**Unreviewed
2-20INDEPEND	20" Stainless D@106.5%		1.00 EA	9,000.000		9,585					9,585
2-20INDLOK	20" Stainless D@106.5%		0.00 EA	0.000							
2-20INVALVE	20" BFV w/ Chai@106.5%		1.00 EA	18,000.000		19,170					19,170
2ESC	Stainless Esc t@106.5%		1.00 LS	900.000		959					959
2STAINLESS	Stainless & Dis@106.5%		1.00 LS	18,947.000		20,179					20,179
3DEPENDTOOL	Dependolok Clam@106.5%		1.00 EA	1,500.000		1,598					1,598
3HARDWARE	NUTS, BOLTS, GA@106.		1.00 LS	800.000		852					852
8CR75-R	=> Crane - 75T - RoughT		53.33 HR	85.977				4,772			4,772
Z1-LAB	PBC Laborer	2.00	106.67 MH	28.640	3,055						3,055
Z2-FOREMAN	PBC Foreman	1.00	53.33 MH	41.800	2,229						2,229
\$62,398.04	160.0000 MH/LS		160.00 MH	[5284.22]	5,284	49,892		2,450	4,772		62,398
15061 FRP Drop Pipe & Base 90											
Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 W/C: 01-DET											
Z-LAB	Labor Crew w/ Foreman		32.00 CH	Prod:	96.0000 MU	Lab Pcs:	3.00	Eqp Pcs:	0.00		
2FRPIPE	FRP Drop Pipe @106.5%		1.00 LS	16,000.000		17,040					17,040
8CR75-R	=> Crane - 75T - RoughT		32.00 HR	85.977				2,864			2,864
Z1-LAB	PBC Laborer	2.00	64.00 MH	28.640	1,833						1,833
Z2-FOREMAN	PBC Foreman	1.00	32.00 MH	41.800	1,338						1,338
\$23,074.09	96.0000 MH/LS		96.00 MH	[3170.56]	3,171	17,040		2,864			23,074
15067.0 Purchase PVC Pipe Valves & Fittings											
Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 W/C: 01-DET											
2PVC	PVC Pipe Valves@106.5%		1.00 LS	18,000.000		19,170					19,170
15067.1 Install PVC Pipe Valves & Fittings											
Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 W/C: 01-DET											
Z-LAB	Labor Crew w/ Foreman		106.66 CH	Prod:	320.0000 MU	Lab Pcs:	3.00	Eqp Pcs:	0.00		
Z1-LAB	PBC Laborer	2.00	213.33 MH	28.640	6,110						6,110
Z2-FOREMAN	PBC Foreman	1.00	106.67 MH	41.800	4,459						4,459

Cost Report

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub-Contract	Total
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BID ITEM = 15000
 Description = PROCESS PIPING Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000 MB
 \$10,568.58 320.0000 MH/LS 320.00 MH [10568.58] 10,569 10,569

15067.2 Pipe Supports Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 WG: 01-DET

Z-LAB	Labor Crew w/ Foreman		53.33 CH	Prod:	160.0000 MU	Lab Pcs:	3.00	Eqp Pcs:	0.00
2STRUT	Unistrut, Clamp@106.5%		1.00 LS		3,500.000		3,728		3,728
Z1-LAB	PBC Laborer	2.00	106.67 MH		28.640		3,055		3,055
Z2-FOREMAN	PBC Foreman	1.00	53.33 MH		41.800		2,229		2,229
\$9,011.72	160.0000 MH/LS		160.00 MH	[5284.22]	5,284		3,728		9,012

=====> Item Totals: 15000 - PROCESS PIPING
 \$124,222.43 736.0000 MH/LS 736.00 MH [24307.58] 24,308 89,830 2,450 7,636 124,222
 124,222.430 1 LS 24,307.58 89,829.56 2,449.50 7,635.79 124,222.43

BID ITEM = 16000
 Description = ELECTRICAL WORK Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000 MB

16100 ELECTRICAL SUBCONTRACTOR Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 WG: 01-DET

NON SBE INCLUDES LIGHTNING PROTECTION, BONDING, OTHER NON-SBE SERVICES
 4ELECEQUIP Electrical Equipment 1.00 LS 234,300.000 234,300 234,300
 4ELECTRICAL Electrical Subcontractor 1.00 1.00 LS 80,000.000 80,000 80,000
 \$314,300.00 [] 314,300 314,300

=====> Item Totals: 16000 - ELECTRICAL WORK
 \$314,300.00 [] 314,300 314,300
 314,300.000 1 LS 314,300.00 314,300.00

BID ITEM = 17000
 Description = INSTRUMENTATION & CONTROLS Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000 MB

17000 I&C Integrator/Supplier Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 WG: 01-DET

2I&C I&C Subcontract@106.5% 1.00 LS 22,000.000 23,430 23,430

17000.1 Mag/Meter Quan: 1.00 EA Hrs/Shift: 8.00 Cal: 40 WG: 01-DET

Z-LAB	Labor Crew w/ Foreman		7.33 CH	Prod:	22.0000 MU	Lab Pcs:	3.00	Eqp Pcs:	0.00
2MAGMETER	PURCHASE MAGMET@1		1.00 EA		0.000				
3MATERIALS	INSTALLATION@106.5%		1.00 LS		200.000		213		213
Z1-LAB	PBC Laborer	2.00	14.67 MH		28.640		420		420
Z2-FOREMAN	PBC Foreman	1.00	7.33 MH		41.800		306		306
\$939.54	22.0000 MH/EA		22.00 MH	[726.54]	727		213		940

17000.2 Instrument Piping Quan: 1.00 LS Hrs/Shift: 8.00 Cal: 40 WG: 01-DET

Z-LAB	Labor Crew w/ Foreman		20.00 CH	Prod:	60.0000 MU	Lab Pcs:	3.00	Eqp Pcs:	0.00
3MATERIALS	INSTALLATION@106.5%		1.00 LS		5,000.000		5,325		5,325
Z1-LAB	PBC Laborer	2.00	40.00 MH		28.640		1,146		1,146
Z2-FOREMAN	PBC Foreman	1.00	20.00 MH		41.800		836		836
\$7,306.60	60.0000 MH/LS		60.00 MH	[1981.6]	1,982		5,325		7,307

17000.3 Fiber Switch Quan: 1.00 EA Hrs/Shift: 8.00 Cal: 40 WG: 01-DET

Cost Report

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Matl/Exp	Equip Ment	Sub-Contract	Total
BID ITEM = 17000									
Description =	INSTRUMENTATION & CONTROLS		Unit = LS		Takeoff Quan:	1.000		Engr Quan:	MB 1.000
2FIBERSWITCH	Fiber Optic Swi@106.5%	1.00 EA		750.000		799			799
====> Item Totals: 17000 - INSTRUMENTATION & CONTROLS									
\$32,474.89	82.0000 MH/LS	82.00 MH	[2708.14]		2,708	24,229	5,538		32,475
32,474.890	1 LS				2,708.14	24,228.75	5,538.00		32,474.89

BID ITEM = 1000000									
Description =	GENERAL CONDITIONS		Unit = LS		Takeoff Quan:	1.000		Engr Quan:	1.000
01501	DUMPSTERS		Quan: 1.00 MON		Hrs/Shift: 8.00	Cal: 40	WC: 01	DET	
4DUMPSTER	Dumpster Costs	6.00 MON		500.000				3,000	3,000
01503	CONTINGENCY		Quan: 1.00 LS		Hrs/Shift: 8.00	Cal: 40	WC: 01	DET	

There are no cost resources for this activity.

01504	CONTRACT DEVELOPMENT		Quan: 1.00 LS		Hrs/Shift: 8.00	Cal: 40	WC: 01	DET	
P2	=> Project Manager II	80.00 MH		122.560	9,805				9,805
\$9,804.80	80.0000 MH/LS	80.00 MH	[9804.8]		9,805				9,805

01506	FINAL CLEANING		Quan: 5.00 DAY		Hrs/Shift: 8.00	Cal: 40	WC: 01	DET	
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**** Copied and adjusted from EM-2012-007 ****

Z-LAB	Labor Crew w/ Foreman	40.00 CH	Prod: 40.0000 CH	Lab Pcs: 3.00	Eqp Pcs: 0.00				
Z1-LAB	PBC Laborer	2.00 80.00 MH	28.640	2,291					2,291
Z2-FOREMAN	PBC Foreman	1.00 40.00 MH	41.800	1,672					1,672
\$3,963.20	24.0000 MH/DAYS	120.00 MH	[792.64]	3,963					3,963

**Unreviewed

01508	MOBILIZATION/DEMOBILIZATION		Quan: 1.00 LS		Hrs/Shift: 8.00	Cal: 40	WC: 01	DET	
Z-LAB	Labor Crew w/ Foreman	8.00 CH	Prod: 24.0000 MU	Lab Pcs: 3.00	Eqp Pcs: 0.00				
3HAULING	Hauling Costs	6.00 EA	1,000.000	6,000					6,000
Z1-LAB	PBC Laborer	2.00 16.00 MH	28.640	458					458
Z2-FOREMAN	PBC Foreman	1.00 8.00 MH	41.800	334					334
\$6,792.64	24.0000 MH/LS	24.00 MH	[792.64]	793	6,000				6,793

01509	PHOTOGRAPHS		Quan: 1.00 MON		Hrs/Shift: 8.00	Cal: 40	WC: 01	DET	
3PHOTO	Construction Photos	3.00 MON		75.000		225			225
4AERIALPHOTO	Aerial Photos	0.00 EA		80.000					
4PHOTO	Professional Photo Service	0.00 MON		150.000					
4VIDEO	Professional Video Service	1.00 EA		650.000			650		650
\$875.00			[]			225	650		875

01511	TEMPORARY ELECTRIC BILLS		Quan: 1.00 MON		Hrs/Shift: 8.00	Cal: 40	WC: 01	DET	
3ELECSTARTUP	Electric Bill Start-up	0.00 MON		750.000					
3ELECTBILL	Temp Monthly Electrical Bi	1.00 MON		250.000		250			250
4TEMPELECT	Temporary Electric Hook-u	1.00 LS		1,500.000			1,500		1,500
\$1,750.00			[]			250	1,500		1,750

01512	PUNCHLIST		Quan: 4.00 DAY		Hrs/Shift: 8.00	Cal: 40	WC: 01	DET	
Z-LAB	Labor Crew w/ Foreman	42.66 CH	Prod: 32.0000 MU	Lab Pcs: 3.00	Eqp Pcs: 0.00				
2	MATERIALS	1.00 LS	500.000	500					500

Cost Report

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Labor	Perm Material	Constr Mat/Exp	Equip Ment	Sub-Contract	Total	
BID ITEM = 1000000											
Description =	GENERAL CONDITIONS			Unit =	LS	Takeoff	Quan:	1.000	Engr	Quan:	1.000
Z1-LAB	PBC Laborer	2.00	85.33 MH		28.640	2,444					2,444
Z2-FOREMAN	PBC Foreman	1.00	42.67 MH		41.800	1,784					1,784
\$4,727.46	32.0000 MH/DAYS		128.00 MH		[1056.865]	4,227	500				4,727
01514 SAFETY/EQUIPMENT											
3SAFETY	Safety Supplies		1.00 LS		850.000			850			850
3SAFETYCONC	Concrete Safety@106.5%		48.00 MH		0.800			41			41
\$890.90					[]			891			891
01516 SANITARY/FACILITIES											
4TOILET	Temporary Sanitary Toilets		6.00 MON		200.000				1,200		1,200
01517 PROJECT SIGN											
Z-LAB	Labor Crew w/ Foreman		2.66 CH		Prod:	8.0000 MU	Lab Pcs:	3.00	Eqp Pcs:	0.00	
3SIGN	Purchase Projec@106.5%		1.00 EA		650.000			692			692
3SIGNAGE	Site Signage		1.00 LS		500.000			500			500
Z1-LAB	PBC Laborer	2.00	5.33 MH		28.640	153					153
Z2-FOREMAN	PBC Foreman	1.00	2.67 MH		41.800	112					112
\$1,456.51	8.0000 MH/LS		8.00 MH		[264.26]	264		1,192			1,457
01518 SMALL TOOLS & SUPPLIES											
3SMALLTOOLS	Small Tools@106.5%		700.00 MH		1.790			1,334			1,334
01527 DRINKING WATER											
3WATERDRINK	Drinking Water, Cups, Ice		6.00 MON		125.000			750			750
01528 O&M/MANUALS											
PE1	==> Asst. Project Manager		25.00 MH		42.570	1,064					1,064
\$1,064.25	25.0000 MH/LS		25.00 MH		[1064.25]	1,064					1,064
01530 COURIER											
4COURIER	Courier Service		34.64 WK		15.000				520		520
01612 RICK UPS											
8VEHICLE	Super/Project Mgr Vehi		0.00 HR		8.332						
01613 JOBSITE PICKUP											
8TRUCK	==> JOBSITE PICKUP		6.00 MO		400.000			2,400			2,400
01618 STORAGE TRAILERS											
3STORAGE	Purch Field Storage Trailer		1.00 LS		2,850.000			2,850			2,850
01634 BACKHOE											
8LDRBH-R	==> Loader - Backho %20		704.00 HR		29.104			11,883			11,883
01664 SCAFFOLDING											
ONE COMPLETE SECTION 5' X 5-6.5' - STEP FRAME OR OPEN FRAME STYLE - \$60/WEEK - INLCUDES BOARDS AND											

Cost Report

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Labor	Perm Material	Constr Mat/Exp	Equip Ment	Sub-Contract	Total
BID ITEM = 1000000 Description = GENERAL CONDITIONS Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000 GUARDRAILS 3SCAFFOLDING Scaffolding Equ@106.5% 8.00 WK 60.000 511 511										
01700 CONSTRUCTIONMANAGER Quan: 1.000 LS Hrs/Shift: 8.00 Cal: 40 WC:01-DET										
MAN-CM	Construction Manager		8.00 CH	Prod:	8.0000 MU	Lab Pcs:	1.00	Eqp Pcs:		0.00
C1	Vice President	1.00	8.00 MH	219.920	1,759					1,759
\$1,759.36	8.0000 MH/LS		8.00 MH	[1759.36]	1,759					1,759
01701 PROJECTMANAGER Quan: 1.000 MON Hrs/Shift: 8.00 Cal: 40 WC:01-DET										
P2	==> Project Manager II		616.00 MH	122.560	75,497					75,497
\$75,496.96	616.0000 MH/MON		616.00 MH	[75496.96]	75,497					75,497
01702 SUPERINTENDENT Quan: 1.000 MON Hrs/Shift: 8.00 Cal: 40 WC:01-DET										
S1	==> Superintendent		1,056.00 MH	70.700	74,659					74,659
\$74,659.20	1,056.0000 MH/MON		1,056.00 MH	[74659.2]	74,659					74,659
01703 PROJECTENGINEER Quan: 1.000 LS Hrs/Shift: 8.00 Cal: 40 WC:01-DET										
MAN-PE	Project Engineer		352.00 CH	Prod:	352.0000 MU	Lab Pcs:	1.00	Eqp Pcs:		0.00
PE1	Asst. Project Manager	1.00	352.00 MH	42.570	14,985					14,985
\$14,984.64	352.0000 MH/LS		352.00 MH	[14984.64]	14,985					14,985
01705 SECURITY Quan: 1.000 LS Hrs/Shift: 8.00 Cal: 40 WC:01-DET										
Z-LAB	Labor Crew w/ Foreman		4.00 CH	Prod:	12.0000 MU	Lab Pcs:	3.00	Eqp Pcs:		0.00
Z1-LAB	PBC Laborer	2.00	8.00 MH	28.640	229					229
Z2-FOREMAN	PBC Foreman	1.00	4.00 MH	41.800	167					167
\$396.32	12.0000 MH/LS		12.00 MH	[396.32]	396					396
01803 INSURANCES Quan: 1.000 LS Hrs/Shift: 8.00 Cal: 40 WC:01-DET										
3INSURANCE	Purchase Insurance		1.00 \$	0.001						
01804 PERMITS Quan: 1.000 LS Hrs/Shift: 8.00 Cal: 40 WC:01-DET										
3BLDGPERMIT	Building Permit		0.00 LS	0.000						
=====> Item Totals: 1000000 - GENERAL CONDITIONS \$223,069.27 2,429.0000 MH/LS 2,429.00 MH [187413.09] 187,413 500 14,004 14,283 6,870 223,069 223,069.270 1 LS 187,413.09 500.00 14,003.80 14,282.78 6,869.60 223,069.27										
\$1,435,257.42	*** Report Totals ***		6,097.00 MH		311,152	515,612	50,207	63,091	495,196	1,435,257

>>> indicates Non Additive Activity

-----Report Notes:-----

The estimate was prepared with TAKEOFF Quantities.

This report shows TAKEOFF Quantities with the resources.

"Unreviewed" Activities are marked.

Bid Date: Owner: Engineering Firm:

Estimator-In-Charge: MB

Cost Report

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Labor	Perm Material	Constr Mat/Exp	Equip Ment	Sub-Contract	Total
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BID ITEM = 1000000
 Description = GENERAL CONDITIONS Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

JOB NOTES
 1-800-444-3196
 APPEND

Estimate created on: 05/18/2011 by User#: 0 -
 Source used: D:\PLANT MASTER.zip (a backup) from 05/18/2011 10:56:10 AM

*****Estimate created on: 11/04/2011 by User#: 1 -
 Source used: C:\HEAVYBID\HBSAVE\PLANT MASTER ESTIMATE\PLANTMASTER.zip (a backup) from 11/04/2011 8:39:58 AM

*****Estimate created on: 06/14/2013 by User#: 6 - Mike Brandao
 Source estimate used: I:\HEAVYBID\EST\PLANTMASTER

* on units of MH indicate average labor unit cost was used rather than base rate.
 [] in the Unit Cost Column = Labor Unit Cost Without Labor Burdens
 In equipment resources, rent % and EOE % not = 100% are represented as XXX%YYY where XXX=Rent% and YYY=EOE%

Calendar Codes-----
 40 40 Hour Week (5-8's) (Default Calendar)
 410 40 Hour Week (4-10's)
 45 45 Hour Week (5-9's)
 50 50 Hour Week (5-10's)
 AOT All Overtime

ESTIMATE RECAP - BID QUANTITIES

	DIRECT	INDIRECT	TOTAL	% OF TOTAL
Labor	311,151.67		311,151.67	21.679%
Burden				0.000%
Lab+Bur	311,151.67		311,151.67	21.679%
Perm Matl	515,611.77		515,611.77	35.925%
ConstrMtl	50,207.05		50,207.05	3.498%
Co. Equip	1,718.19		1,718.19	0.120%
Rented Eq	38,430.16		38,430.16	2.678%
Eqp Oper	22,942.66		22,942.66	1.599%
Sub	495,196.00		495,196.00	34.502%
Total Costs:	1,435,257.50		1,435,257.50	100.001%
% of Total	100.000%	0.000%	100.000%	

Escalation on:	Labor	Burden	Perm Matl	Const Matl	Co Eqp	Rented Eqp
	0	0	0	0	0	0
	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
	Eq Op Exp	Sub	Misc1	Misc2	Misc3	Total Escalation
	0	0	0	0	0	0
	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

* Data Below here is dependent on the Summary Process. *
 The Summary Process was last run 08/21/2013 at 7:53 AM

Markup on Resource Costs	165,469.07	11.5289%
MARKUP TOTALS ==>	<u>165,469.07</u>	11.5289%
<i>Cost Addons</i>		
Builders Risk Insurance	Lump Sum 24,574.91	1.7122%
Bond	Lump Sum 15,614.50	1.0879%
MARKUP, ADDON & BOND TOTALS ==>	<u>205,658.48</u>	14.3290%
COST + MARKUP ----->	<u><u>\$1,640,915.98</u></u>	(% of costs)
	(On Takeoff Quantity)	

There * ARE NOT * closing accounts for this bid.

	-Effect on Bid-
Rounding difference:	
Unbalancing difference:	
From Cut&Add Sheet-costs:	(on Bid Quantity)
From Cut&Add Sheet-markup:	(on Bid Quantity)
Pass Through Adjustments:	None

Net Adjustments (to the balanced bid): [or desired bid]

BALANCED BID TOTAL	\$1,640,915.97
DESIRED BID (if specified)	

BID TOTAL (on bid quantities)	\$1,640,915.97	
BID COSTS (on bid quantities)	\$1,300,440.51	
MARKUP (on bid quantities)	\$165,469.06	12.724%
EXPECTED JOB VALUE (on takeoff quantities):	\$1,640,915.97	
EXPECTED COSTS (on takeoff quantities):	\$1,300,440.51	
EXPECTED MARKUP (on takeoff quantities):	\$165,469.06	12.724%
Adjust to Bid Quantities =	Y	
Report Variation =	Uses customized report headings	

On Takeoff Quantities

Labor Hrs. (MH/MHS) 6,097	0	6,097
(incl burden) 311,151	0	311,151
Labor (DAY/DAYS) 0	0	0
(incl burden) 0	0	0
Labor (OtherUnits) 0	0	0
(incl burden)		
Labor Burden 0	0	0

Spread Indirects on:	Labor Cost	Spread Markup on:	Total Cost
Spread Addons&Bond on:	Total Cost		

Markup on:	Labor	Burden	PermMatl	CM	CoEqp	RentedEqp
	15.00%	15.00%	15.00%	15.00%	5.00%	5.00%
	EOE	Sub	Misc1	Misc2	Misc3	
	5.00%	10.00%	0.00%	0.00%	0.00%	

Key Indicators

Balanced Markup	/	Total Labor	=	Balanced Markup/Total Labor
165,469.07	/	311,151.67	=	53.18%
Indirect Cost	/	Direct Cost	=	Indirect Cost/Direct Cost
0.00	/	1,435,257.50	=	0.00%

----- ESTIMATE NOTES: -----

Bid Date:	Owner:
Engr Firm:	
Estimator-In-Charge: MB	Desired Bid (if specified) = 0.00
Notes: 1-800-444-3196	
APPEND	

Cardinal Contractors, Inc.

MB-31209-05A

*** Mike Brandao

WTP #3 Degasifier/Odor Control

08/21/2013

8:01

Estimate created on: 05/18/2011 by User#: 0 -
Source used: D:\PLANT MASTER.zip (a backup) from 05/18/2011 10:56:10 AM

*****Estimate created on: 11/04/2011 by User#: 1 -
Source used: C:\HEAVYBID\HBSAVE\PLANT MASTER ESTIMATE\PLANTMASTER.zip (a
backup) from 11/04/2011 8:39:58 AM

*****Estimate created on: 06/14/2013 by User#: 6 - Mike Brandao
Source estimate used: I:\HEAVYBID\EST\PLANTMASTER

Last Summary on 08/21/2013 at 7:53 AM.

Last Spread on 08/21/2013 at 7:53 AM.

Bid Summary Totals Report

Standard Markup Instructions

	Cost Basis	Markup %	Markup
Labor:	311,152	15.00	46,673
Burden:	0	15.00	0
Perm Matl:	515,612	15.00	77,342
Const Matl:	25,207	15.00	3,781
Sub:	345,190	10.00	34,519
Eq. Op. Exp:	22,942	5.00	1,147
Co. Equip:	1,718	5.00	86
Rented Eq.:	38,430	5.00	1,922
Misc1:	0	0.00	0
Misc2:	0	0.00	0
Misc3:	0	0.00	0
Overrides:	175,006		0
Total:	1,435,257	11.53	165,469

Selected Bond Table: C

Previous Run

Summary: 08/21/2013 7:53 AM
 Spread: 08/21/2013 7:53 AM

Summary run on Takeoff Quan and Adjusted to Bid Quan.

Standard Spreads

Indirect Spread: Labor
 Markup Spread: Total
 Addon/Bond Spread: Total

Totals as of Last Spread

	Cost:	Markup:	Total:
Direct:	1,260,251	165,469	1,425,720
Indirect:	0	0	0
Addons:	40,189	0	40,189
Bond:	0	0	0
SubTotal:	1,300,440	165,469	1,465,909
Pass Through:	175,006		175,006
Total:	1,475,446	165,469	1,640,915

Key Indicators

Balanced Markup	/	Total Labor	=	Balanced Markup/Total Labor
165,469.07	/	311,151.67	=	53.18%
Indirect Cost	/	Direct Cost	=	Indirect Cost/Direct Cost
0.00	/	1,435,257.50	=	0.00%



Date: 14 Jun. 2013

Revised: 8 Jul 2013

Cardinal Contractors, Inc.

5365 Stirling Rd.

Ft. Lauderdale, FL 33314

Reference: Design Build

PBCWUD WTP#3 DEGASIFIER/Odor Control WUD 12-083

Drawings/Written Info

Electrical Installation

Subtotal 80,000.00

711 Commerce Way Suite # 6 Jupiter, FL 33458
Ph. 861-575-4270 Fax 861-575-4269 Email: PowerlineOfSouth@bellsouth.net

1. Scrubber Panel
2. Blower & Motors
3. Recirc. Pump & motors
4. Cleaning Recirc. Pump & motor
5. Chemical metering pump & motor
6. Magnetic flow meter

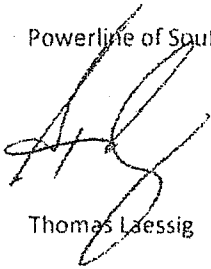
Subtotal 234,300.00

Total Proposed Amount: 314,300.00 (Three Hundred Fourteen Thousand Three Hundred Dollars)

If you have any questions or require additional information, please do not hesitate to contact us.

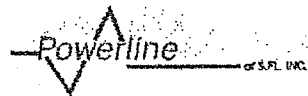
Sincerely

Powerline of South FL Inc.



Thomas Laessig

President



State Certificate # EC-13003753

Daniel Alonso

From: Michael Brandao
Sent: Monday, August 19, 2013 12:20 PM
To: Daniel Alonso
Subject: WTP #3 Degasifier - ELECTRICAL SCOPE AND PRICING

Danny,

We solicited (3) electrical subcontractor bids formally. Powerline was the low bidder at \$80,000.00 for the electrical scope of work as defined in the design criteria documents and our bid package with photos and sketches. Electron was the high bid and Energy Efficient did not bid after making the site visit.

After being the low bidder, we've asked him to purchase all the electrical items directly from the equipment manufacturer so he has system responsibility for the electrical work and equipment normally supplied by us. The dollar value added to his subcontract price for that equipment is \$314,300 which includes all sales tax.

He revised his pricing to reflect this additional scope.

Mike

Michael Brandao

From: Tom Donnick [tdonnick@aerexglobal.com]
Sent: Friday, June 21, 2013 12:27 PM
To: Michael Brandao
Cc: John McGlynn; Jason Carlson; Jack Parolski; 'Bob Brayton'
Subject: Aerex Proposal PN-13-053 / PBC - WTP No. 3 Degas Riser Pipe

Michael

Please reference Aerex Proposal PN-13-053 when requesting information concerning this pricing.

PBC - WTP No. 3 Degas Riser Pipe for Clearwell No.1 as detailed on Drawing 121006-302 Elevation Section 4 (QTY: 1)

Total price \$18,947.00

- Payment Terms: Net 30 Days
- F.O.B. PBC – WTP No. 3 Jobsite with Full Freight Cost Included
- Price is valid for 30 days
- Allow four weeks ARO and drawing approval for delivery

Note:

- 1) Proposal includes engineering design and shop fabrication drawings for submittal and approval, ASME Sect. IX Welder Qualifications submittals, all specified materials and labor required to fabricate and deliver the 20" Degas Riser Pipe Spools, Pickling and Passivating by full immersion after all fabrication is completed, Plastic flange face protectors and ASNT – ACCT Level II QA inspection and ASME B31.3 conformance report including Material Test Reports.
- 2) Not included: Taxes, Permits, Installation, Flange Hardware and Gaskets, Instrumentation, Valves, Pipe Supports and all other appurtenances not specifically stated with inclusions.

Thank you,
Thomas Donnick, Jr.
President

Aerex Industries, Inc.
3504 Industrial 27th Street
Fort Pierce, Florida 34946
(772) 461-0004 Ext. 13

From: Michael Brandao [<mailto:mbrandao@cardinalco.com>]
Sent: Monday, June 17, 2013 12:13 PM
To: tdonnick@aerexglobal.com
Subject: Contact Information and Drawing.
Importance: High

Hi Tom,

Good talking to you. Please call me if you have any questions. Let me know if you have problems reading the attached or if it isn't enough information to reference your corresponding spool drawing.

Also, please include in your price an extra 20" flange and weld.

Thanks,

Michael Brandao
Cardinal Contractors
5365 Stirling Rd
Fort Lauderdale, FL 33314
954.587.0520 ext 727 office
954.587.6653 fax
954.695.2545 cel
mbrandao@cardinalco.com

Michael Brandao

From: Tom Donnicks [tdonnick@aerexglobal.com]
Sent: Thursday, August 15, 2013 2:18 PM
To: Michael Brandao
Cc: 'John McGlynn'; 'Jason Carlson'; 'Jack Parolski'; 'Bob Brayton'
Subject: RE: Aerex Proposal PN-13-053 / PBC - WTP No. 3 Degas Riser Pipe

Michael

Our pricing remains valid through August. Stainless surcharge increases will apply to all material orders after August 31st.

Labor will remain the same through September.

Thank you,
Thomas Donnicks, Jr.
President
Aerex Industries, Inc.
3504 Industrial 27th Street
Fort Pierce, Florida 34946
(772) 461-0004 Ext. 13

From: Michael Brandao [mailto:mbrandao@cardinalco.com]
Sent: Thursday, August 15, 2013 10:28 AM
To: Tom Donnicks
Cc: John McGlynn; Jason Carlson; Jack Parolski; 'Bob Brayton'
Subject: RE: Aerex Proposal PN-13-053 / PBC - WTP No. 3 Degas Riser Pipe

Can you confirm your pricing is still valid?

Thanks!
Michael Brandao
Cardinal Contractors, Inc.
5365 Stirling Road
Fort Lauderdale, FL 33314
954.587.0520 ext. 727 office
954.587.6653 fax
mbrandao@cardinalco.com

From: Tom Donnicks [mailto:tdonnick@aerexglobal.com]
Sent: Friday, June 21, 2013 12:27 PM
To: Michael Brandao
Cc: John McGlynn; Jason Carlson; Jack Parolski; 'Bob Brayton'
Subject: Aerex Proposal PN-13-053 / PBC - WTP No. 3 Degas Riser Pipe

Michael

Please reference Aerex Proposal PN-13-053 when requesting information concerning this pricing.

PBC - WTP No. 3 Degas Riser Pipe for Clearwell No.1 as detailed on Drawing 121006-302 Elevation Section 4 (QTY: 1)

Total price \$18,947.00

- Payment Terms: Net 30 Days
- F.O.B. PBC – WTP No. 3 Jobsite with Full Freight Cost Included
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Thank you,

Thomas Donnick, Jr.

President

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3504 Industrial 27th Street

Fort Pierce, Florida 34946

(772) 461-0004 Ext. 13

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Sent: Monday, June 17, 2013 12:13 PM

To: tdonnick@aerexglobal.com

Subject: Contact Information and Drawing.

Importance: High

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Also, please include in your price an extra 20" flange and weld.

Thanks,

Michael Brandao

Cardinal Contractors

5365 Stirling Rd

Fort Lauderdale, FL 33314

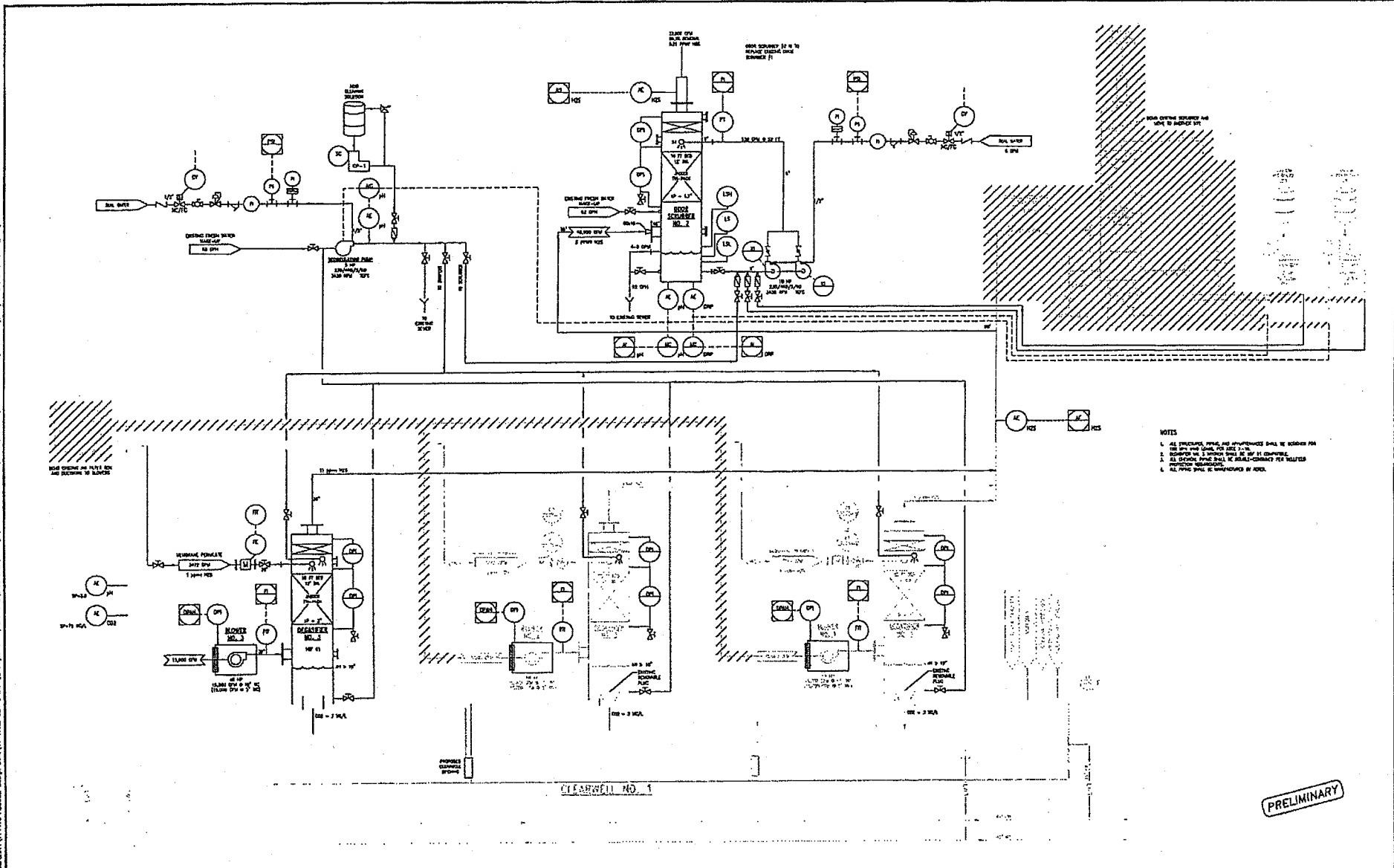
954.587.0520 ext 727 office

954.587.6653 fax

954.695.2545 cel

mbrandao@cardinalco.com

File Name: P:\Projects\0111\14418\14418.dwg Date Plotted: 05/25/2012 10:53:53 AM Plotter: HP DesignJet 5000 PS Driver: HP-GL/PS2 PLOTTER Date Plotted: 05/25/2012 10:53:53 AM Plotter: HP DesignJet 5000 PS Driver: HP-GL/PS2 PLOTTER



- NOTES**
1. ALL DIMENSIONS, UNLESS OTHERWISE SPECIFIED, SHALL BE IN INCHES.
 2. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE SPECIFIED.
 3. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE SPECIFIED.
 4. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE SPECIFIED.

PRELIMINARY

NO.	DATE	BY	CHKD	DATE	REVISION

DESIGNED: JAH
 DATE: 05/25/2012
 CHECKED: JAH
 DATE: 05/25/2012
 REVISION FOR: 0000000000
 DATE: 0000000000

Calve, Giordano & Associates, Inc.
 PROFESSIONAL SOLUTIONS
 14001 S.W. 15th Street, Suite 100, Boca Raton, FL 33433
 Phone: 561-371-2700 Fax: 561-371-2707
 Certificate of Authorization 519

DEGASIFIER IMPROVEMENTS
 PALM BEACH COUNTY, FLORIDA

PROCESS FLOW DIAGRAM

JAMES ALVAREZ, P.E.
 STATE OF FLORIDA PROFESSIONAL ENGINEER
 LICENSE NO. 14202

SCALE: 1/8" = 1'
 PROJECT NO: 14418-D
 DRAWING TITLE: BIDDING
 SHEET NO: G1
 OF 8 SHEETS