October 17, 2014

BOARD OF COUNTY COMMISSIONERS ORANGE COUNTY, FLORIDA ADDENDUM NO. 1 / IFB NO. Y15-713-PH SOUTH SERVICE AREA\EAST SERVICE AREA WATER MAIN PROJECT (MEADOW WOODS WSF ALONG RHODE ISLAND WOODS CIRCLE)

REVISED BID OPENING DATE: OCTOBER 21 28, 2014

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to and shall take precedence over the original documents. Additions are indicated by <u>underlining</u>, deletions are indicated by <u>strikethrough</u>.

The Bid Opening Date is changed to October 28, 2014 at 2:00 P.M.

Note: Failure to use the attached <u>Revised Bid Schedule</u> will result in your bid being found non-responsive and ineligible for further consideration.

A. BIDDERS QUESTIONS

Question 1a: I'd like to find out if the replacement force mains will follow the path of the existing pipes.

Response: This project is for the upsizing of the existing 12-inch and 16-inch water mains along Meadow Woods Boulevard. This is being done as part of the County's improvements to their water transmission and distribution system. The path of the new larger diameter water main generally follows the same alignment but not in all locations.

Question 1b: Would pipe bursting be an acceptable replacement method?

Response: All bids shall be based upon the current method of construction as shown. Changes to the design will not be entertained during the bidding process. Should the selected contractor wish to present alternate methods of construction after they have been awarded the contract, they may do so. Once the contractor is selected, they may present those alternatives as a part of the shop drawing review process or as a separate request for information to the County for consideration.

Question 1c: Looking at the diameters (24" and 42") I'm wondering if the design engineers and the city would accept Swagelining to rehab the steel and ductile iron.

Response: The water mains being replaced are 12-inch and 16-inch water mains. They are being replaced with a 24-inch, main. The existing pipe diameters need to be increased and not just lined; therefore, swagelining is not an option for this project. **Question 2:** Is there a Geotechnical Report or Soil Borings available for the above referenced project?

Response: A geotechnical report is available and is being included with this addendum. It shall be incorporated as **Appendix A** of the specifications.

Question 3: Are the light poles owned by the utility company, or are they private? Will the utility company allow a private contractor to remove and replace?

Response: The light poles are not private, they are owned by the power company, which is Orlando Utilities Corporation. The Contractor will need to coordinate with the power company to have them either removed and replaced or held during construction activities.

Question 4: At the pre-bid meeting it was discussed there may be other work in the area (along the route) is there any additional work going on that we may need to be aware of?

Response: There is not any work occurring at this time that would affect the construction activities of this project.

Question 5: The notes on the bid schedule regarding the mobilization indicates the sum of items 6-30 should be less than 5% of the total those items. The bid schedule includes through item 43, shouldn't the mobilization be less than 5% of the total (i.e. items 6-43)?

Response: The correct reference for determination of mobilization is for Bid items 6 – 41. On the bid schedule, in the footnote, the 30 is to be deleted and replaced with 41. Please see new bid schedule included with this addendum.

Question 6: Driveways and sidewalk restoration quantities have been included in the bid schedule by the square yard. Please advise if this is the intent?

Response: The quantities for removal and replacement of the driveways and sidewalks shall be in square yards. The quantities of these two pay items have been corrected to match this method of payment. Please refer to the revised bid schedule attached for the corrected items.

Question 7: Item 16 of the bid schedule (removal of the existing water main) appears the existing main is being installed either directly above, and/or within the same trench of the proposed main (e.g. sta 5+50 - 7+20 +/-; 10+50-13+00; 27+00-29+00; 35+00-36+20; 44+40-44+60; 46+50-49+00; 52+00-59+20; 64+00-66+20). Is the intent to remove the existing pipe within each labeled segment (A-L) prior to the installation of the proposed main in each segment?

Response: Yes. The water main is to be replaced in segments as indicated on the drawings. Each segment will be isolated and the existing main removed and the new

Addendum 1 Y15-713-PH main is to be installed and cleared for service by FDEP prior to proceeding with the next segment.

Question 8: The plans have a lettering system (A-L). Is the intent to install the proposed main in segments, starting at A, then completing before moving to segment B, etc.?

Response: *Yes, this is correct.*

Question 9: If the project is to be completed in phased segments, will the FDEP expedite the approval process so as to allow continuation without undue delay?

Response: We will be working with the County and FDEP to get the clearances issued as quickly as possible. This is addressed by note 63 on page 3 of the plans.

Question 10: Is the intent to complete the restoration in its' entirety before being allowed to continue to the next segment?

Response: *Yes, most all restoration is required to be completed with each segment of work. Please also refer to Question 11*

Question 11: Can electrical, asphalt milling & resurfacing, striping and sodding be allowed to be restored at one time or must this be relegated to the same segmental construction?

Response: All general restoration shall be completed with each phase of work. This includes backfill, compaction, sodding, sidewalks, suitable temporary driving surfaces, temporary striping and electrical/lighting. The milling and resurfacing and permanent striping can be done at one time following construction of the water main.

Question 12: Are restricted days and/or hours of work to occur within a certain radius around the school?

Response: Depending upon the time that the construction is occurring, the contractor will need to coordinate the construction activities so that they do not adversely impact school traffic, both vehicular and pedestrian. This is to be accomplished as a part of the MOT plan that is to be provided by the contractor. The coordination activities in the area of the school need to include coordination with the school principal.

Question 13: Is there a manufacturer, style or type of Light Pole to be installed after removal of existing?

Response: Contractor is responsible to coordinate with the power company to remove and reinstall the existing light poles.

Question 14: Please refer to Sheet 7 note, "Contractor to coordinate removal/replacement of gate operated key pad". Is the contractor responsible for cost to

replace hardware and materials associated with replacement since note just says to "coordinate"?

Response: The contractor is responsible for coordination and cost to temporarily remove and reinstall the key pad to allow for the water main construction. Please refer to pay item 9 that notes the key pad removal and replacement.

Question 15: Will the county permit the contractor to grout fill existing water main from station 16+70 to 22+00 instead of removal due to the current location in which it lays?

Response: For the purposes of the bid, this will remain as pipe to be removed. The bid schedule has a pay item for grout as well, and if it is determined during construction that it is better to be grouted, then the change will be made at that time.

Question 16: Temporary 12" Line stop is drawn at station 32+15 but not called out, will one be required?

Response: The line stop at this location will not be required.

Question 17: No 12" Line stop bid item provided, 2 EA found.

Response: The Bid Schedule and Quantity sheet has been revised to add this item.

Question 18: Please clarify if "temporary line stops" are to be included with the pipe or the bid item for "line stop". If we are to price with bid item corresponding to size of line stop, please revise Bid Item #37 (16" Line Stop) a total of 8 are called out on plans.

Response: The Bid Schedule and Quantity sheet has been revised to add the temporary line stops.

B. PLANS

Delete Sheet 5 of the plans in its entirety and replace with the attached Sheet 5 On Sheet 8 of the plans, the callout for a 16-inch line stop at Station 9+56 (35' RT) has been replaced by a 12-inch line stop. On sheet 12, the line stop shown at Station 32+15 was removed from the plans.

C. SPECIFICATIONS

Remove Specification Section 1025 in its entirety and replace with the attached Section 1025.

D. ATTACHMENTS:

- 1. Revised Bid Schedule
- 2. Revised 01025 Measurement and Payment Section
- 3. Revised Plan Sheet 5

E. ACKNOWLEDGEMENT OF ADDENDA

a. The Proposer shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of proposal. All other terms, conditions and specifications remain the same.

Receipt acknowledged by:

Authorized Signature

Date Signed

Title

Name of Firm

SCHEDULE OF BID PRICES SSA-ESA WATER MAIN REPLACEMENT (Meadow Woods WSF to Rhode Island Woods Circle)

ITEM NO.	DESCRIPTION	UNIT	EST QTY	UNIT COST	TOTAL COST
1	Mobilization, Demobilization & Bonds and Permits *	LS	1		
2	Pre-construction Audio-Video Documentation	LS	1		
3	Indemnification	LS	1	100.00	100.00
4	Project Record Documents**	LS	1		
5	Maintenance of Traffic	LS	1		
6	Unsuitable Materials	СҮ	20		
7	Milling and Resurfacing	SY	1020		
8	Road Crossing Pavement Restoration	SY	288		
9	Concrete Pavement Replacement (driveway)	SY	90		
10	Concrete Pavement Replacement (5-ft sidewalk)	SY	3351		
11	Storm Structure Top and Throat Reconstruction	EA	1		
12	Concrete Curb and/or Gutter Replacement	LF	375		
13	Concrete Handicap Replacement	EA	9		
14	Remove/Replacement of Existing Street Lighting	EA	29		
15	Abandon-in-Place Pipe	LF	1279		
16	Remove Existing Water Main	LF	5260		
17	Water Main Installation (6")	LF	60		
18	Water Main Installation (8")	LF	141		
19	Water Main Installation (12" DI)	LF	14		
20	Water Main Installation (16" DI)	LF	14		

21	Water Main Installation (24" DI)	LF	6876		
22	Steel Casing Installation (42" Steel Pipe)	LF	136		
23	Gate Valve with Box (6" GV)	EA	1		
24	Gate Valve with Box (8" GV)	EA	8		
25	Gate Valve with Box (12" GV)	EA	1		
26	Gate Valve with Box (24" GV)	EA	15		
27	Air Release Valve Assembly	EA	2		
28	Tapping Sleeve and Valve Assembly (6" water line)	EA	2		
29	Tapping Sleeve and Valve Assembly (8" water line)	EA	8		
30	Tapping Sleeve and Valve Assembly (12" water line)	EA	1		
31	Tapping Sleeve and Valve Assembly (16" water line)	EA	1		
32	Connection to Existing Water Main (16")	EA	1		
33	Connection to Existing Water Main (24")	EA	1		
34	Connection to Existing Water Main (36")	EA	1		
35	Line Stop Assembly (6")	EA	2		
36	Line Stop Assembly (8")	EA	2		
37	Line Stop Assembly (12")	EA	3		
38	Line Stop Assembly (16")	EA	7		
39	Line Stop Assembly (24")	EA	1		
40	Furnish and Install Fire Hydrant Assembly	EA	6		
41	Remove Fire Hydrant Assembly	EA	6		
	ESTIMATED TOTA	L BID AN	IOUNT		

* Mobilization shall not exceed 5% of pay items 6 through 41. ** Record drawings shall be a minimum of 1% of pay items 6 through 41 REVISED D-4

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. This Section specifies administrative and procedural requirements to define pay items and determine payable amounts, and includes but is not limited to:
 - 1. General Provisions
 - 2. Cash Allowances
 - 3. Work Not Paid for Separately
 - 4. Measurement for Payment
 - 5. Partial Payment for Stored Materials and Equipment

1.02 GENERAL PROVISIONS

- A. This specification includes standard descriptions for all bid items. This Contract's specific bid items are listed in the Bid Schedule.
- B. The total Contract Amount shall cover the Work required by the Contract Documents. All costs in connection with the successful completion of the Work, including furnishing all materials, equipment, supplies, and appurtenances; providing all construction, equipment, and tools; and performing all necessary labor and supervision to fully complete the Work, shall be included in the unit and lump sum prices bid. All Work not specifically set forth as a pay item in the Bid Form shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the prices bid.
- C. If used, all estimated quantities stipulated in the Bid Schedule or other Contract Documents are approximate and are to be used only (a) for the purpose of comparing the bids submitted for the Work, and (b) as a basis for determining an initial Contract Amount. The actual amounts of Work completed and materials furnished under unit price items may differ from the estimated quantities. The County does not expressly or by implication represent that the actual quantities involved will correspond exactly to the quantities stated in the Bid Schedule; nor shall the Contractor plead misunderstanding or deception because of such estimate or quantities or of the character, location or other conditions pertaining to the Work. Payment to the Contractor will be made only for the actual quantities of work performed or material furnished in accordance with the Drawings and other Contract Documents, and it is understood that the quantities may be increased or decreased as provided in the General Conditions.

- D. If used, the unit prices listed in the Bid Schedule shall include all services, obligations, responsibilities, labor, materials, devices, equipment, royalties and license fees, supervision, temporary facilities, construction equipment, bonds, insurance, taxes, clean up, traffic control, control surveys, field offices, close out, overhead and profit and all connections, appurtenances and any other incidental items of any kind or nature, as are necessary to complete the Work in accordance with the Contract Documents.
- E. Except for mobilization/demobilization and project record documents, payment for Work will be based on the percent of completed work of each item in the Schedule of Values, including stored materials, as determined by the County. Progress of work in each item of the Schedule of Values will be determined separately by the County. However, the County will issue a single payment certificate for progress on the Contract.
- F. The Contractor agrees that it will make no claim for damages, anticipated profits, or otherwise because of any difference between the amounts of work actually performed and materials actually furnished and the estimated amounts therefore.
- G. Where payment by scale weight is specified under certain items, the Contractor shall provide suitable weighing equipment which shall be kept in accurate adjustment at all times and certified. The weighing of all material shall be performed by the Contractor in the presence and under the supervision of the County.
- H. All schedules included in the Contract Documents are given for convenience and are not guaranteed to be complete. The Contractor shall assume all responsibility for the making of estimates of the size, kind, and quantity of materials and equipment included in work to be done under this Contract.
- I. Where pipe fittings are noted on the Drawings, such notation is for the Contractor's convenience and does not relieve the Contractor from laying and jointing different or additional items where required.

1.03 CASH ALLOWANCES

- A. The Contractor shall include in the Total Bid Amount, all cash allowances stated in the Contract Documents. Items covered by these allowances shall be supplied for such amounts and by such persons as the County may direct.
- B. The Contractor will obtain the County's written acceptance before providing equipment, materials or other Work under a cash allowance. Payments under a cash allowance will be made based on actual costs, excluding costs of general conditions, handling, unloading, storage, installation, testing, etc., which will be considered to be included within the Contract Price. Payments within the limits of any Allowance will exclude overhead and profit and bond and insurance premiums, since those costs will be considered to be included within the Contract Amount. The Contractor shall submit appropriate documentation to validate the actual cost of the item.

C. The amount of the allowance shall be adjusted accordingly by Change Order to recognize the allowable cost incurred by the Contractor.

1.04 WORK NOT PAID FOR SEPARATELY

- A. Delivery: Payment for equipment delivery, storage or freight shall be included in the pay items including their installation and no other separate payment will be made therefore.
- B. Bonds: Payment for bonds required by the Contract shall be included in the pay items for the Work covered by the required bonds and no separate payment will be made.
- C. Preparation of Site: Payment for preparation of site shall be included in pay items proposed for the various items of Work and no separate payment will be made therefore. Preparation of site includes setting up construction plant, offices, shops, storage areas, sanitary and other facilities required by the specifications or state law or regulations; providing access to the site; obtaining necessary permits and licenses; payments of fees; general protection, temporary heat and utilities including electrical power; providing shop and working drawings, certificates and schedules; providing required insurance; cleaning up; and all other work regardless of its nature which may not be specifically referred to in a Bid Item but is necessary for the complete construction of the project set forth by the Contract.
- D. Permitting & Permit Fees.
- E. The County reserves the right to delete any item included in the Schedule of Values and decrease the Contract Price by the scheduled amount for the item deleted.

1.05 MEASUREMENT FOR PAYMENT

A. Methods of Measurement - Generally:

- 1. Units of measurement shall be defined in general terms as follows:
 - a. Linear Feet (LF)
 - b. Square Feet (SF)
 - c. Square Yards (SY)
 - d. Cubic Yards (CY)
 - e. Each (EA)
 - f. Sacks (SK)
 - g. Lump Sum (LS)
- 2. Unit Price Contracts/Items:
 - a. Linear Feet (LF) shall be measured along the horizontal length of the centerline of the installed material, unless otherwise specified. Pipe shall be measured along the length of the completed pipeline, regardless of the type of joint required, without deduction for the length of valves or fittings. Pipe included within the limits of lump sum items will not be measured.

- b. Square Feet (SF), Square Yards (SY), Cubic Yards (CY), Each (EA) and Sacks (SK) shall be measured as the amount of the unit of measure installed and compacted within the limits specified and shown in the Specifications and Drawings. Slope angles and elevations shall be measured using land-surveying equipment. Contractor shall provide supporting documentation (i.e. drawings, delivery tickets, invoices, survey calculations, etc.) to verify actual installed quantities.
- B. Lump Sum Contracts/Items Generally:
 - 1. Quantities provided in the Schedule of Values are for the purpose of estimating the completion status for progress payments. Payment will be made for each individual item on a percentage of completion basis as estimated by the Contractor and approved by the County.
 - 2. Adjustments to costs provided in the accepted Schedule of Values may be made only by Change Order.
 - 3. The County reserves the right to delete any item included in the Schedule of Values and decrease the Contract Price by the scheduled amount for the item deleted.

1.06 MEASUREMENT AND PAYMENT ITEMS

- A. Only those bid items included in the Bid Schedule are applicable for this Contract. The County has standardized the measurement and payment items. Currently, there are approximately 100 measurement and payment items describing approximately 300 bid items. The bid item numbering system comprises five sections that are divided into 23 subsections. The sections and subsections are listed below.
- 10. General Requirements
 - 10.1 General
- 11. Site Work
 - 11.1 Miscellaneous
 - 11.2 Road Work
 - 11.3 Install/Replace Street Lighting
 - 11.4 Bypass Pumping
 - 11.5 Abandon or Remove Pipe/Structure
- 12. Pressure Pipes
 - 12.1 Pressure Pipe and Fittings and Restrained Joints
 - 12.2 Valves
 - 12.3 Tapping Sleeve and Valve Assembly
 - 12.4 Connections to Existing Water Main
 - 12.5 Piping Appurtenances
 - 12.6 Directional Drill
 - 12.7 Pipe Bursting

- 13. Wastewater Collection System (Not Used)
 - 13.1 Cleaning Sanitary Sewers
 - 13.2 CCTV Sanitary Sewers
 - 13.3 Install/Replace Sanitary Sewer
 - 13.4 Install/Replace Sanitary Manholes
 - 13.5 Sanitary Manhole Rehabilitation
 - 13.6 Sanitary Service Laterals and Cleanouts
 - 13.7 Cured-in-Place Pipe (CIPP) Liner
 - 13.8 Sanitary Sewer Pipe Bursting
- 14. Pump Stations (Not Used)
 - 14.1 Wastewater Duplex Pump Station
 - 14.2 Wastewater Triplex Pump Station

All of the subsections have bid item measurement and payment descriptions. Several bid items in the Project Bid Schedule may be described with the same bid item measurement and payment description in Table A, "Measurement and Payment Items". The bid items in the Project Bid Schedule are related to the Section 01025 Measurement and Payment items as follows:

1. All of the bid items in the Project Bid Schedule have 8 numerical digits.

- 2. Table A, "Measurement and Payment Items" for each of the bid items there are five numerical digits followed by ".xxx".
- 3. The first 5 numerical digits of the bid item in the Project Bid Schedule designate the measurement and payment item found in Table A, "Measurement and Payment Items."

	Table A
BID ITEM	Orange County Utilities MEASUREMENT AND PAYMENT ITEMS Pg 1
	10 GENERAL REQUIREMENTS
	10.1 - General
1	Reference ID 10.110.xxx Mobilization, Demobilization, Bonds, and Permits (not to exceed 5% of the total of all bid items except bid items under section 10.1 General)
	a. Measurement: Measurement of various items for Mobilization and Demobilization shall not be made for payment and all items shall be included in the lump sum price. This lump sum price shall not exceed 5% of the total of all bid items except bid items under section 10.1 General.
	 b. Payment: Payment of 75 percent of the applicable lump sum price for the item shall be full compensation for the Work consisting of the preparatory Work and operations in mobilizing for beginning Work on the Contract, including, but not limited to, movement of those personnel, equipment, supplies and incidentals to the project site, preparation of submittals, and for the establishment of temporary offices and buildings, safety equipment and first aid supplies, project signs, field surveys, sanitary and other facilities required by these specifications, and State and local laws and regulations. The costs of General Requirements (Section 01001), bonds, permits, and any required insurance, project signs, and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials, shall also be included. This Work also consist of the general project management of the Work including, but not limited to, field supervision and office management, as well as other incidental cost for management of the Work during the duration of the Contract. This Work also includes maintenance of the field offices for the duration of the Contract.
	Payment of the remaining 25 percent of the applicable lump sum price for this item also consists of demobilization or the operations normally involved in ending Work on the project including, but not limited to, termination and removal of temporary utility service and field offices; demolition and removal of temporary structures and facilities; restoration of Contractor storage areas; disposal of trash and rubbish, and any other post-construction work necessary for the proper conclusion of the Work.
2	Reference ID 10.120.xxx Preconstruction Audio-Video Documentation
	 a. Measurement: Measurement shall be based on the satisfactory submittal of a comprehensive pre-construction video in accordance with the County requirements and specifications (Section 01101). b. Payment: Payment of the applicable Contract lump sum price as stated in the proposal will be full compensation for furnishing all labor, materials, and equipment necessary to create a comprehensive pre-construction video in

	accordance with the County requirements and specification.	
3	Reference ID 10.130.xxx Indemnification	
	 a. Payment: In consideration of the Contractor's Indemnity Agreement as set out in the Contract Documents, the County specifically agrees to give the Contractor a maximum of \$100.00 and other good and valuable consideration, receipt of which is acknowledged upon signing of the Agreement. 	
	b. Payment: In consideration of the Contractor's Indemnity Agreement as set out in the Contract Documents, the County specifically agrees to give the Contractor a maximum of \$100.00 and other good and valuable consideration, receipt of which is acknowledged upon signing of the Agreement.	
4	Reference ID 10.140.xxx Project Record Documents (a minimum of 1% of the total of all bid items except bid items under section 10.1 General)	
	 a. Measurement: Measurement for this item shall be based on satisfactory progress of the Contractor to provide Project Record Documents in accordance with the County requirements and specifications (Section 01720). Various items for Project Record Documents shall not be made for individual payment and all items shall be included in the lump sum price. <u>This lump sum price shall be a minimum of 1% of the total of all bid items except bid items under section 10.1 General).</u> b. Payment: Payment of the applicable Contract lump sum price as stated in the proposal will be full compensation for furnishing all labor, materials, and equipment necessary to create the Project Record Drawings, including the certified as-built survey, in accordance with the County requirements and 	
	specifications. Payment will be made at the lump sum price divided into equal monthly payments based on the Contract Time and acceptance by County of the progressive as-builts drawings and tables.	
5	Reference ID 10.150.xxx Maintenance of Traffic	
	 Measurement: Measurement shall be based on satisfactory Maintenance of Traffic (MOT) in accordance with County requirements and Florida Department of Transportation (FDOT) standards. 	
	b. Payment: Payment of the applicable Contract lump sum price as stated in the proposal will be full compensation for furnishing all labor, materials, and equipment necessary to maintain public roadway and pedestrian traffic including flag men, uniformed police officers, barricades, warning lights/flashers, and safety ropes. Also included is furnishing, installing and maintaining a Traffic Control Plan, control and safety devices, control of dust, temporary crossing structures over trenches, any necessary detour facilities, and other special requirements for the safe and expeditious movements of traffic.	

	11 SITE WORK
	11.1 – Miscellaneous
6	Reference ID 11.120.xxx Unsuitable Materials
	a. Measurement: Unsuitable Material shall be measured in actual cubic yards removed and disposed of in accordance with the County requirements and specifications. Extra volume beyond the limits of construction will not be measured for payment. The Contractor shall provide survey calculations to verify actual removed quantities.
	 b. Payment: Payment will be made at the contract unit price bid per cubic yard as stated in the proposal and shall include all labor, materials and equipment to remove and dispose of unsuitable material including the removal of overburden.
	11.2 - Road Work
7	Reference ID 11.230.xxx Milling and Resurfacing
	a. Measurement: Milling and Resurfacing shall be measured in actual square yards over which the milling and subsequent resurfacing is completed and accepted at the thickness as indicated in the Drawings.
	 b. Payment: Payment will be made at the contract unit price bid per square yard as stated in the proposal for Milling and Resurfacing and shall include all labor, materials, and equipment to mill surface; dispose of milled materials; and apply Type S-3 asphalt surface overlay; and striping and signage in accordance with County requirements and specifications. The unit price bid shall also include traffic signalization repair, and permanent striping and markings.
8	Reference ID 11.240.xxx Road Crossing Pavement Restoration
	a. Measurement: Road Crossing Pavement Restoration shall be measured in actual square yards of existing asphalt paving and subgrade removal and replacement, furnished and installed, in accordance with the County requirements and specifications. The width measured for payment of asphalt surface repair, as measured perpendicular to the centerline of the pipe, shall be limited to the width shown on the Drawings (maximum pay width of 10-feet). The length shall be as measured along the centerline of the pipe.
	b. Payment: Payment will be made at the contract unit price bid per square yard as stated in the proposal for Road Crossing Pavement Restoration and shall include all labor, materials, and equipment necessary to provide a safe, smooth driving surface. The Work shall include saw cutting, pavement removal and proper disposal of exiting pavement, installing high early concrete and asphalt surface into a properly prepared subgrade, traffic signalization repair, and temporary and permanent striping and markings in accordance with the County requirements and specifications.
9, 10	Reference ID 11.250.xxx Concrete Pavement Replacement (various thickness)

	a. Measurement: Concrete Pavement Replacement shall be measured in actual square yards of concrete removed and replaced. Width of replaced sidewalk shall match that of existing sidewalk. Replaced portions of driveways shall conform to the lines and grades of removed portions of driveways. Scheduled in this bid item is replacement of any devices/structures within and along the work area, including gates, key pads, fences, mailboxes and others. Thickness of pavement shall be as indicated in the plans and specifications.
	b. Payment: Payment will be made at the contract unit price bid per square yard as stated in the proposal for Concrete Pavement Replacement and shall include all labor, materials, and equipment for saw-cutting, removal and proper disposal of existing concrete, compaction, form work, concrete replacement, restoration, and clean-up for a complete installation.
11	Reference ID 11.260.112 Storm Structure Top and Throat Reconstruction
	a. Measurement: Measurement for Construct Storm Structure Top and Throat shall be made per actual number of storm structure altered / modified necessary for the installation of the new utility.
	b. Payment: Payment for Storm Structure Top and Throat Reconstruction shall be made based on the authorized quantity at the unit price indicted in the Bid. Payment of the applicable Contract unit price shall be full compensation for furnishing all labor, materials, and equipment necessary for reconstruction of the existing storm structure to current FDOT Design Standards. This includes partial demolition and removal, forming, concreting and grate and/or ring cover and replacement, finishing, restoration and clean up.
12	Reference ID 11.280.xxx Concrete Curb and/or Curb and Gutter Replacement
	a. Measurement: Concrete Curb and/or Curb and Gutter Replacement shall be measured in actual linear feet removed and replaced measured along the centerline of the curb within the excavation of the trench to a maximum width equal to the width of asphalt pavement cut. All additional curb and gutter damaged shall be replaced by the Contractor at his own expense.
	b. Payment: Payment will be made at the contract unit price bid per linear feet as stated in the proposal for Concrete Curb and Gutter Replacement and shall include all labor, materials, and equipment for saw-cutting, removal and proper disposal of existing concrete curb and gutter, compaction, form work, and concrete curb and gutter replacement for a complete installation.
13	Reference ID 11.285.xxx Concrete Handicap Ramp

	Replacement
	 a. Measurement: Concrete Handicap Ramp Replacement shall be measured per actual number of handicap ramps constructed, meeting County and ADA requirements. b. Payment: Payment will be made at the contract unit price bid per each handicap ramp constructed as stated in the proposal for Handicap Ramp Replacement and shall include all labor, materials, and equipment for saw-cutting, removal and proper disposal of existing concrete sidewalk and compaction, form work, and concrete handicap ramp replacement for a complete installation.
14	11.3 - Remove/Replace Street Lighting
14	Reference ID 11.350.xxx Remove/Replacement of Existing Street Lighting
	a. Measurement: Street Lighting Replacement shall be measured by the number of street light posts removed and replaced as part of the work. All additional piping, existing curbing or pavement damaged shall be replaced by the Contractor at his own expense.
	 b. Payment: Payment will be made at the contract unit price bid per each light post removed and new post installed as stated in the proposal for Street Lighting Replacement and shall include all labor, materials, and equipment to sheet, shore, and brace; dewater; groundwater treatment and disposal; excavate; remove and properly dispose of existing light post and concrete base and proper installation of a new concrete light post and concrete base in the same location and height as the light post removed. Work includes disconnecting the existing electrical wiring from the existing light post, remove the existing light fixture, disposing of the old light post, purchase and installation of the new light post, reconnect wiring as required per electrical code, reuse of the existing light fixture for a complete installation.
	11.5 – Abandon or Remove Pipe/Structure
15	Reference ID 11.510.xxx Abandon-in-Place Pipe
	<u>a.</u> Measurement: Abandon-in-Place Pipe, regardless of size and material, shall be measured in actual linear feet satisfactorily abandoned-in—place in accordance with the County requirements and specifications (Section 02080). Pipe abandonment shall be measured along the centerline without deduction for valves and fittings.
	b. Payment: Payment will be made at the contract unit price bid per linear feet as stated in the proposal for Abandon-in-Place Pipe and shall include all

16	labor, materials, and equipment to excavate, backfill and compact; sheet, shore, and brace; dewter; completely drain and properly dispose of pipe contents; grout fill, and plug or cap existing pipes of all services and sizes designated "to be abandoned" on the Drawings. Also included in this item is the removal of existing valve boxes located on valves connected to piping designated to be retired. Valve boxes shall be removed, backfilled and compacted with suitable material.
16	Reference ID 11.530.xxx Remove Existing Water Main
	 a. Measurement: Remove Existing Pipe, regardless of size and material, shall be measured in actual linear feet satisfactorily excavated, removed, and salvaged in accordance with the County requirements and specifications (Section 02080). Pipe removal shall be measured along the centerline without deduction for valves and fittings. Also included in this item is the removal and salvage of items including air release valves and vaults, and fire hydrant assemblies.
	b. Payment: Payment will be made at the contract unit price bid per linear feet as stated in the proposal for Remove Existing Pipe and shall include all labor, materials, and equipment to sheet, shore, and brace; dewater; groundwater treatment and disposal; excavate; completely drain and properly dispose of pipe contents; plug or cap; restoration, sod, clean-up; remove and salvage pipe of all services and sizes designated "to be removed" on the Drawings, backfill and compact. Also included in this item is the removal and salvage of items (as listed in Specification Section 02080) attached to the piping to be removed.

	12 PRESSURE PIPES
	12.1 - Pressure Pipes with Fittings and Restrained Joints
17, 18, 19, 20, 21	Reference ID 12.110 Water Main Installation (various sizes)
	a. Measurement: Water Main installation regardless of type and size shall be measured in actual linear feet satisfactorily furnished and laid, as measured along the length of the centerline of the completed pipeline, regardless of the type of joint required, without deduction for the length of valves and fittings. Pipe included within the limits of lump sum pay items will not be measured for payment under this item.
	b. Payment: Payment will be made at the contract unit price bid per linear feet as stated in the proposal for Water Main w/Fittings and restrained joints and shall include all labor, materials, and equipment to construct the respective pipeline including coordination with existing utilities, protection of existing utilities

	including service connections, tree protection, excavation, sheeting, shoring and bracing, dewatering, groundwater treatment and disposal, backfill, compaction, and grading, concrete cap, all testing, potable water system protection, disinfection, restoration, sod and clean-up. This item also includes all necessary fittings, reducers, bends, tees, wyes, plugs, restraining devices, polyethylene encasement where required, metallic tracer wire, line locator, identification markers, and removal and replacement of fences and gates,
	mailboxes, trees, shrubs, irrigation sprinklers and other obstructions. Reference ID 12.120 Steel Casing Installation
22	(various sizes)
	a. Measurement: Steel Casing installation shall be measured in actual linear feet satisfactorily furnished and laid, as measured along the length of the centerline of the completed pipeline, regardless of the type of joint required. Casing included within the limits of lump sum pay items will not be measured for payment under this item.
	 b. Payment: Payment will be made at the contract unit price bid per linear feet as stated in the proposal for Steel Casing and shall include all labor, materials, and equipment to construct the respective work including coordination with existing utilities, protection of existing utilities including service connections, tree protection, excavation, sheeting, shoring and bracing, dewatering, groundwater treatment and disposal, backfill, compaction, and grading, all testing, potable water system protection. Restoration, sod and clean-up shall be included in the cost for Water Main installation. This item also includes all necessary fittings, restraining devices, polyethylene encasement where required, line locator, identification markers, and removal and replacement of fences and gates, mailboxes, trees, shrubs, irrigation sprinklers and other obstructions.
	12.2 – Valves
23, 24, <u>25</u> , 26, <u>26</u> , 27	Reference ID 12.210.xxx Gate Valve with Box (various sizes)
	a. Measurement: Measurement for Gate Valve with Box shall be made per actual number of gate valves with valve boxes satisfactorily furnished and installed complete with covers and concrete collars. Gate valves included within tapping sleeve and valve, air release valve assembly, and fire hydrant pay items will not be measured for payment under this item.
	b. Payment: Payment for the Gate Valve with Box shall be made based on the authorized quantity at the unit price indicated in the Bid. Payment of the applicable Contract unit price shall be full compensation for furnishing all labor, materials and equipment to install the valve, valve box, valve box extensions, operating nut extensions, test station box and cap, valve wrenches, restraining devices, covers, concrete collars, excavation, sheeting, shoring, bracing, dewatering, groundwater treatment and disposal, backfill,

	compaction, restoration, and all other items required for a complete, acceptable and operable installation.
	12.3 – Air Release Valve Assembly
27	Reference ID 12.520.xxx Air Release Valve Assembly
	a. Measurement: Measurement for Air Release Valve Assembly shall be made per actual number of air release valves with enclosures satisfactorily furnished and installed to provide a complete and functional unit.
	b. Payment: Payment for the Air Release Valve Assembly shall be made based on the authorized quantity at the unit price indicated in the Bid. Payment of the applicable Contract unit price shall be full compensation for furnishing all labor, materials and equipment necessary to install the valve including saddle, fittings, pipe, concrete pad, pre-cast vault or enclosure, excavation, sheeting, shoring, bracing, dewatering, backfill, compaction, grading, restoration and all other items required for a complete, acceptable and operable installation.
	12.4 - Tapping Sleeve and Valve Assembly
28, 29, 30, 31	Reference ID 12.310.xxx Tapping Sleeve and Valve Assembly (various sizes)
	a. Measurement: Measurement for Tapping Sleeve and Valve Assembly shall be made per actual number of tapping sleeves and valves satisfactorily furnished and installed to provide a complete and functional unit.
	 b. Payment: Payment for the Tapping Sleeve and Valve Assembly shall be made based on the authorized quantity at the unit price indicated in the Bid. Payment of the applicable Contract unit price shall be full compensation for furnishing all labor, materials and equipment necessary to perform a wet tap to an existing main including excavation, sheeting, shoring, bracing, dewatering, groundwater treatment and disposal, backfill, compaction, grading, tapping sleeve, tapping valve, valve box extensions, operating nut extensions, valve wrenches, restraining devices, protection of potable water system, disinfection, restoration and all other items required for a complete, acceptable and operable installation.
32, 33, 34	12.5 – Connections to Existing Mains Reference ID 12.410.xxx Connection to Existing Water Main (various sizes)
ЭТ	 a. Measurement: Measurement for cut-in connections or connection to existing stubs to the existing water main shall be made per number of cut-in connections or connections to existing stubs made complete and in place

	regardless of the size and type from the constructed water main to the existing water main as authorized in the Contract Documents regardless of the depth of the connection.
	 b. Payment: Payment for the Cut-in Connection to the Existing Water Main or Connection to Existing Stub shall be made based on the authorized quantity at the unit price indicated in the Bid. Payment of the applicable Contract unit price shall be full compensation for furnishing all labor, materials, and equipment to make a connection from the constructed water main to the existing water main including coordination with existing utilities, protection of existing utilities and service connections, excavation, sheeting, shoring and bracing, dewatering, groundwater treatment and disposal, cutting pipe, removing existing cap and plug, completely drain and properly dispose of existing pipe contents, connection to existing main, restraint of existing main in accordance with the County requirements, backfill, compaction, grading, swabbing and disinfection, potable water protection, restoration and clean-up. This item also includes all necessary fittings, reducers, bends, tees, and wyes. 12.6 - Piping Appurtenances
35, 36, 37, 38, 39	Reference ID 12.510.xxx Line Stop Assembly (various sizes)
	a. Measurement: Measurement for Line Stopping Assembly shall be made per actual number of line stops satisfactorily furnished and installed to permanently or temporarily stop the flow within the indicated main at the locations shown on the Drawings.
	b. Payment: Payment for the Line Stopping Assembly shall be made based on the authorized quantity at the unit price indicated in the Bid. Payment of the applicable Contract unit price shall be full compensation for furnishing all labor, materials and equipment necessary to perform a permanent or temporary line stop on an existing main including excavation, sheeting, shoring, bracing, dewatering, groundwater treatment and disposal, backfill, compaction, grading, tapping sleeve, plug, retraining devices, restraint of existing piping in accordance with the County requirements, swabbing, restoration and clean-up and all other items required for a complete, acceptable and operable installation.
40	Reference ID 12.540.xxx Fire Hydrant Assembly
	a. Measurement: Measurement for Fire Hydrant Assemblies shall be made per actual number of fire hydrant assemblies satisfactorily furnished and installed to provide a complete and functional unit. The pipe and necessary restraint system connecting the fire hydrant assembly to the water main shall be included in the unit price, regardless of the length necessary to locate the hydrant at the direction of the County

i

	b. Payment: Payment for the Fire Hydrant Assembly shall be made based on the authorized quantity at the unit price indicated in the Bid. Payment of the applicable Contract unit price shall be full compensation for furnishing all labor, materials and equipment necessary to install the fire hydrant complete with hydrant tee, hydrant extension, pipe, fittings, isolation valve and box, thrust anchorage, and shear pad. Also included is excavation, sheeting, shoring and bracing, dewatering, groundwater treatment and disposal, backfill, compaction, grading, connection to pipes, restoration, and all other items required for a complete, acceptable and operable installation.
41	Reference ID 12.550.xxx Remove Fire Hydrant Assembly
	a. Measurement: Measurement for removal of existing Fire Hydrant Assemblies shall be made per actual number of fire hydrant assemblies removed. The pipe and necessary restraint system connecting the existing fire hydrant assembly to the water main shall be included in the unit price.
	b. Payment: Payment for each existing Fire Hydrant Assembly removed shall be made based on the authorized quantity at the unit price indicated in the Bid. Payment of the applicable Contract unit price shall be full compensation for furnishing all labor, materials and equipment necessary to remove the fire hydrant assembly, including the hydrant tee, hydrant extension, pipe, fittings, isolation valve and box, thrust anchorage, and shear pad. Also included are excavation, sheeting, shoring and bracing, dewatering, groundwater treatment and disposal, backfill, compaction, grading, restoration, and all other items required for a complete removal of the existing hydrant assembly.
4 2, 43, 44	Reference ID 12.560.xxx Water Service Connection (short and long)
	a. Measurement: Measurement for Water Service Connection shall be made per actual number of service connections satisfactorily furnished and installed to provide a complete and functional unit.
	b. Payment: Payment for the Water Service Connection shall be made based on the authorized quantity at the unit price indicated in the Bid. Payment of the applicable Contract unit price shall be full compensation for furnishing all labor, materials and equipment necessary to install the water service connection including service saddle, corporation stop, water service piping, curb stops, and installing meter boxes. Payment also includes excavation sheeting, shoring and bracing, dewatering, groundwater treatment and disposal, backfill, compaction, grading, pressure testing, restoration, sod and all other items required for a complete, acceptable and operable installation.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION.

ITEM No	DESCRIPTION	UNITS	QTY.	Sheet 6	Sheet 7	Sheet 8	Sheet 9	Sheet 10	Sheet 11	Sheet 12	Sheet 13	Sheet 14	Sheet 15	Sheet 16	Sheet 17	Sheet 18	Shee 19
1	Mobilization, Demobilization & Bonds	LS	1														
2	Preconstruction Video	LS	1														
3	Indemnification	LS	1														
4	Record Drawings	LS	1														
5	Maintenance of Traffic	LS	1														
6	Remove and Replace Unsuitable Materials	CY	20														
7	Mill and Resurface Roadway	SY	1020			213	147		172				173	315			
8	Open Cut and Replace Roadway	SY	288			77	55		35				16	105			
9	Concrete Pavement Replacement (Driveway)	SY	90		38		34			18							
10	Concrete Pavement Replacement (Sidewalk)	SY	3351		128	250	245	310	300	312	315	310	285	281	295	215	105
11	Inlet Top and Throat Reconstruction	EA	1										1				
12	Remove and Replace Curb and Gutter	LF	375			32	100		45				18	180			
13	Reconstruct Handicap Ramp	EA	9			2	3		2					2			
14	Remove and Replace Existing Street Lamp	EA	29		1	2	2	3	2	3	3	2	2	3	3	2	1
15	Abandon Existing Water Main	LF	1279				159	555	520								45
16	Remove Existing Water Main	LF	5260		400	575	420		36	560	565	550	515	580	560	379	120
17	Furnish and Install Water Main (6")	LF	60				13										47
18	Furnish and Install Water Main (8")	LF	141		14	40			30	11			33		13		
19	Furnish and Install Water Main (12")	LF	14													14	
20	Furnish and Install Water Main (16")	LF	14		14												
21	Furnish and Install Water Main (24")	LF	6876	350	400	564	590	553	559	565	571	551	518	584	563	379	129
22	Furnish and Install 42" Steel Casing	LF	136													136	
23	Furnish and Install Gate Valve (6")	EA	1				1										
24	Furnish and Install Gate Valve (8")	EA	8		1	2			1	1			2		1		
25	Furnish and Install Gate Valve (12")	EA	1													1	
26	Furnish and Install Gate Valve (24")	EA	15		2	2	1		1	2		1	2		1	1	2
27	Furnish and Install Air Release Valve Assembly	EA	2			1							1				
28	Furnish and Install Tapping Sleeve and Valve (6")	EA	2				1										1
29	Furnish and Install Tapping Sleeve and Valve (8")	EA	8		1	2			1	1			2		1		
30	Furnish and Install Tapping Sleeve and Valve (12")	EA	1													1	
31	Furnish and Install Tapping Sleeve and Valve (16")	EA	1		1												
32	Connect to Existing 16" WM	EA	1														1
33	Connect to Existing 24" WM	EA	1														1
34	Connect to Existing 36" WM	EA	1	1													
35	Furnish and Install Line Stop (6")	EA	2				1										1
36	Furnish and Install Line Stop (8")	EA	2			1							1				
37	Furnish and Install Line Stop (12")	EA	3			2	1										
38	Furnish and Install Line Stop (16")	EA	7		1								2	1	1	1	1
39	Furnish and Install Line Stop (24")	EA	1														1
40	Furnish and Install Fire Hydrant Assembly	EA	6		1		1		1	1		1				1	
41	Remove Fire Hydrant Assembly	EA	6		1		1		1	1		1				1	

28416	o. Date	Revision By	No.	Date	Revision By	1	A Full Service A & E Firm of	ffices in:	Designed by	BCB	Date: 10/15/2014	SSA-ESA WATER MAIN	Plans Prepared By: CPH, Inc.
	10/15/1	Revisions Per Addendum #1 DEM	♪						Drawn by:	GNP	Scale: 1"=20' H.	(MEADOW WOODS WSF TO	1117 E. Robinson St. Orlando, FL 32801
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Draw	4		A				www.cphcorp.com Landscape Architects Traffic/Transportation • 1	Texas	Job No.	O28416	©2014	Orange County, Florida	Survey L.B. No. 7143 Landscp. Llc. No. LC0000298





DAVID E. MAHLER, P.E. REG # 50041

Groundwater Sampling / Testing

Rhode Island Woods Circle Proposed 30-Inch Water Main Orange County, Florida June 20, 2013 Project No. H1127404



Prepared for: CPH Engineers, Inc. Orlando, Florida

Prepared by: Terracon Consultants, Inc. Winter Park, Florida



June 20, 2013



CPH Engineers, Inc. 1117 E. Robinson Street Orlando, Florida 32801

- Attn: Mr. Ben Buencamino, P.E. P: [407] 425-0452 Email: bbuencamino@cphcorp.com
- Re: Groundwater Sampling/Testing Rhode Island Woods Circle Proposed 30-Inch Water Main Orange County, Florida Terracon Project No. H1127404

Dear Mr. Buencamino:

Terracon Consultants, Inc. (Terracon) is providing this letter report to CPH Engineers, Inc. (client) documenting groundwater testing results at the above-referenced water main installation project site. The work was conducted in general accordance with our proposal PH1120786 dated September 24, 2012, incorporated into the Subconsultant Agreement dated December 26, 2012, authorized by CPH Engineers, Inc.

PROJECT INFORMATION

This project consists of the installation of a 30-inch ductile iron pipe water main along/near Rhode Island Woods Circle in Orange County, Florida. It is our understanding that the proposed water main alignment is approximately 6,600 lineal feet in length. Dewatering may be conducted to install the water main. A Topographic Vicinity Map showing the general location of the proposed water main is provided as Exhibit A-1 in Appendix A.

Terracon understands that dewatering is proposed that would require a NPDES Permit for off-site discharge. The intent of this groundwater sampling event was to test groundwater for parameters listed in the NPDES Generic Permit for Discharge of Produced Groundwater from Any Non-contaminated Site Activity [62-621.300(2)].

REGULATORY DATABASE SEARCH

A review of the Florida Department of Environmental Protection's (FDEP's) Map Direct website was conducted to identify regulated facilities and contaminated properties in proximity of the





proposed water main to help determine if groundwater contaminant plumes could be mobilized by proposed dewatering activities. Contaminated properties were not identified on the Map Direct website in proximity of the proposed sewer main improvements. Locations of regulated facilities on the FDEP's databases of solid waste facilities (SWF), Resource Conservation and Recovery Act - Small Quantity Generators (RCRA-SQG) and petroleum storage tanks are identified on a map obtained from the Map Direct website provided in Appendix B.

TEMPORARY MONITORING WELL INSTALLATION AND SAMPLING

Terracon installed seven 1-inch diameter shallow temporary monitoring wells (TMW-1 through TMW-7) on May 21, 2013, in the area of the proposed water main improvements along Rhode Island Woods Circle. Temporary monitoring well locations are indicated on Exhibit A-2 in Appendix A. The temporary monitor wells were installed using hollow-stem augers. Groundwater was encountered approximately 2 to 6 feet below ground surface (bgs). Sandy soils were observed at the borings. Well construction logs are included in Appendix C. The temporary monitoring wells were constructed as follows:

- Installation of 10 feet of 1-inch diameter, 0.006-inch machine slotted polyvinyl chloride (PVC) well screen with a threaded bottom cap. The screen was set to bracket the groundwater table.
- Installation of 1-inch diameter, threaded, flush-joint PVC riser pipe to stickup above the surface.
- Addition of pre-sieved 30/65 graded silica sand for annular sand pack around the well screen.
- The monitoring wells were developed by swabbing and over-pumping. Development and sampling purge water was spread on the surface adjacent to the well to evaporate or infiltrate.
- The monitoring wells were removed after sampling and the boreholes backfilled with native soils to surface.

Groundwater samples were collected from temporary monitor wells TMW-1 through TMW-7 on May 29 and 30, 2013. Sampling procedures were conducted in accordance with the Florida Department of Environmental Protection (FDEP) standard operating procedures DEP-SOP-001/01, FS2200. Physical parameters including temperature, pH, conductivity, dissolved oxygen, and turbidity were monitored while purging during groundwater sampling efforts. Turbidity above 20 nephelometric turbidity units persisted at temporary monitoring wells TMW-1, TMW-2 and TMW-3. Groundwater pH measurements at all seven monitoring wells were below the allowable 6.0 to 8.5 standard units referenced in the permit conditions. Groundwater samples were collected upon equilibration of field parameter measurements. Groundwater field equipment calibration logs and field sampling logs are included in Appendix D.



The groundwater samples were placed in laboratory prepared glassware and stored on ice in a cooler. The sample cooler and completed chain-of-custody record were delivered to Accutest Laboratories for analysis of parameters listed in the NPDES Generic Permit for the Discharge of Produced Ground Water from any Non-Contaminated Site Activity. Groundwater analysis included EPA Methods 8260 (benzene and naphthalene), 6010 (cadmium, cooper, lead, zinc), 1631E (low level mercury), 7196A (hexavalent chromium), SM5310B total organic carbon (TOC) and SM4500H (pH). Additionally, analysis of total recoverable petroleum hydrocarbons (TRPH) by the FL-PRO method was performed for samples with TOC concentrations exceeding the NPDES screening value for fresh water. The laboratory reports and chain-of-custody records are included in Appendix E.

GROUNDWATER ANALYTICAL RESULTS

The groundwater analytical results were compared to threshold screening concentrations listed in the NPDES Generic Permit for Discharge of Produced Groundwater from Any Non-contaminated Site Activity [Table 1, 62-621.300(2)]. A summary of the laboratory results is provided on the following table.

Parameter	T M W-1	T M W-2	TMW-3	T M W-4	T M W-5	T M W-6	T M W-7	NPDES Screening Values for Fresh Water	GCTLs
Total Organic Carbon [TOC (mg/L)]	48.5	25.6	25.9	9.5	16.9	14.0	10.4	10	None
TRPH (mg/L)	0.170 I	0.15 U	0.200 I	NT	0.331	0.14 U	0.157 l	Compared to TOC values	5.0
pH, (standard units) Field/Laboratory levels	4.14/5.19	5.75/5.56	4.99/5.49	4.87/5.51	4.74/5.32	4.70/5.42	4.69/5.42	6.0-8.5	None
Total Recoverable Mercury (ug/L)	0.149	0.167	0.368	0.0061	0.0041	0.0276	0.0205	0.012	2
Total Recoverable Cadmium (ug/L)	0.50 U	9.3	5						
Total Recoverable Copper (ug/L)	4.6 I	2.4	4.2 I	1.0 U	1.0 U	1.0 U	1.0 U	2.9	1000
Total Recoverable Lead (mg/L)	0.0040 I	0.0026 I	0.0073	0.0011U	0.0011U	1.1U	0.0011U	0.03	0.015
Total Recoverable Zinc (ug/L)	20.3	8.2 I	14.9 I	15.0 l	21.8	8.2	7.01	86	5000
Total Recoverable Chromium (Hex.) (ug/L)	80 U	16 U	40 U	8.0 I	9.0	8.0 U	16	11.1	100
Benzene (ug/L)	0.21U	1	1						
Naphthalene (ug/L)	1.0 U	100	14						

Laboratory Analytical Results Summary - March 27 & 29, 2013

Bold numbers exceed NPDES Generic Permit Discharge Criteria

 $\ensuremath{\mathsf{U}}$ - Indicates the compound was analyzed for, but not detected at reported concentration.

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

GCTLs-Groundwater Cleanup Target Levels

NT - Not Tested



As indicated on the table, reported concentrations exceeded the NPDES Generic Permit screening values for discharges as follows:

- Reported TOC concentrations for temporary monitoring wells TMW-1, TMW-2, TMW-3, TMW-5, TMW-6 and TMW-7. Compared to TRPH results for the same wells, the TOC concentrations appear to be naturally occurring.
- The pH levels measured in the field while purging all seven of the monitoring wells and pH reported by the laboratory in all seven monitoring wells was below the NPDES screening value range for fresh water.
- Total mercury concentration reported for temporary monitoring wells TMW-1, TMW-2, TMW-3, TMW-6 and TMW-7.
- Total copper concentration reported for temporary monitoring wells TMW-1 and TMW-3.
- Hexavalent chromium concentration reported in temporary monitoring well TMW-7. Dilution was required due to color of the samples collected from temporary monitoring wells TMW-1, TMW-2 and TMW-3 in order to perform the colormetric analysis, which raised the method detection limit above the screening value for fresh water.
- Elevated turbidity persisted while purging at temporary monitoring wells TMW-1, TMW-2 and TMW-3.

CONCLUSIONS

Based on the groundwater analytical results:

- Thresholds for a NPDES Generic Permit were exceeded. All of the groundwater samples had at least one parameter that exceeded the NPDES discharge requirements. Terracon did not consult the FDEP on the placement of monitoring wells. The sampling results in this report may not satisfy the NPDES Notice of Intent (NOI) requirements. Additional sampling may be necessary prior to dewatering discharge.
- Regulatory authorization to conduct groundwater treatment may be required in conjunction with NPDES discharge. The pH measurements indicate buffering will likely be required for NPDES discharge, which combined with bag filtration may be sufficient to reduce turbidity but may or may not be sufficient to reduce metals concentrations. Other treatment equipment may be necessary for treatment of metals concentrations to meet discharge requirements.

Groundwater Sampling / Testing Rhode Island Woods Circle, Proposed 30-Inch Water Main Orlando, Orange County, Florida June 20, 2013 Project No. H1127404



Terracon appreciates the opportunity to conduct these sampling activities requested by CPH Engineers, Inc. If you have questions concerning the work performed, please call the undersigned at 407-740-6110.

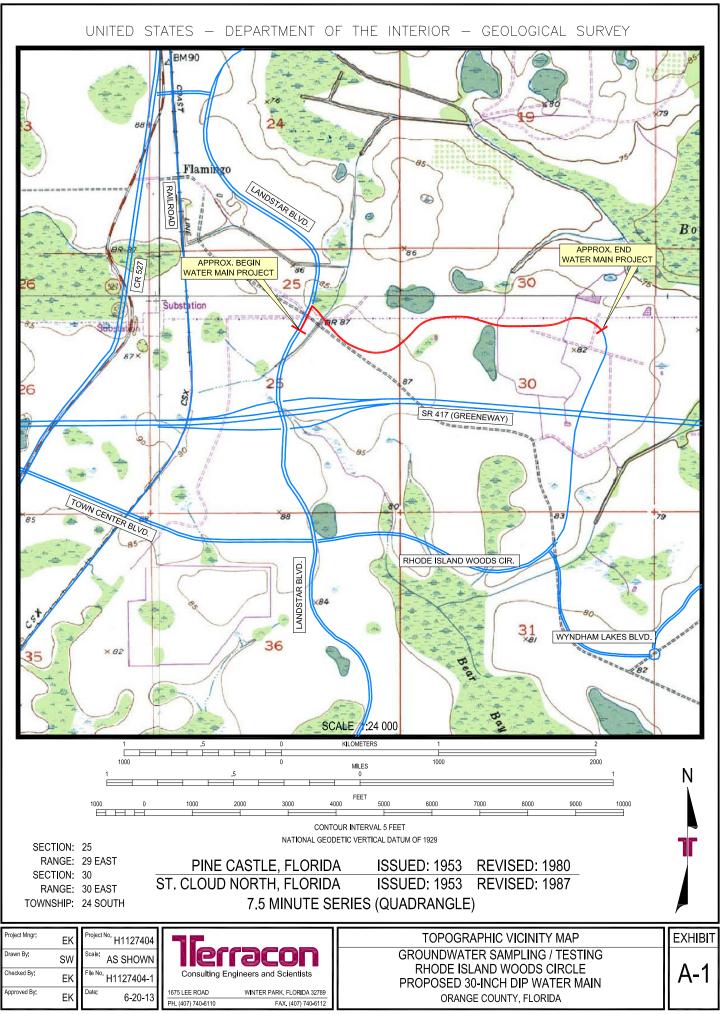
Sincerely, Terracon Consultants, Inc.

Laura Sebastian Senior Environmental Scientist

Eric R. Krebill Florida Registration N

- Appendix A Site Map Exhibits
- Appendix B FDEP Map Direct Summary
- Appendix C Temporary Monitoring Well Logs
- Appendix D Groundwater Sampling and Equipment Calibration Logs
- Appendix E Laboratory Results

APPENDIX A



Jun20, 2013-8:40am N:\Projects\2012\H1127404\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\cad\7404-usgs.dwg

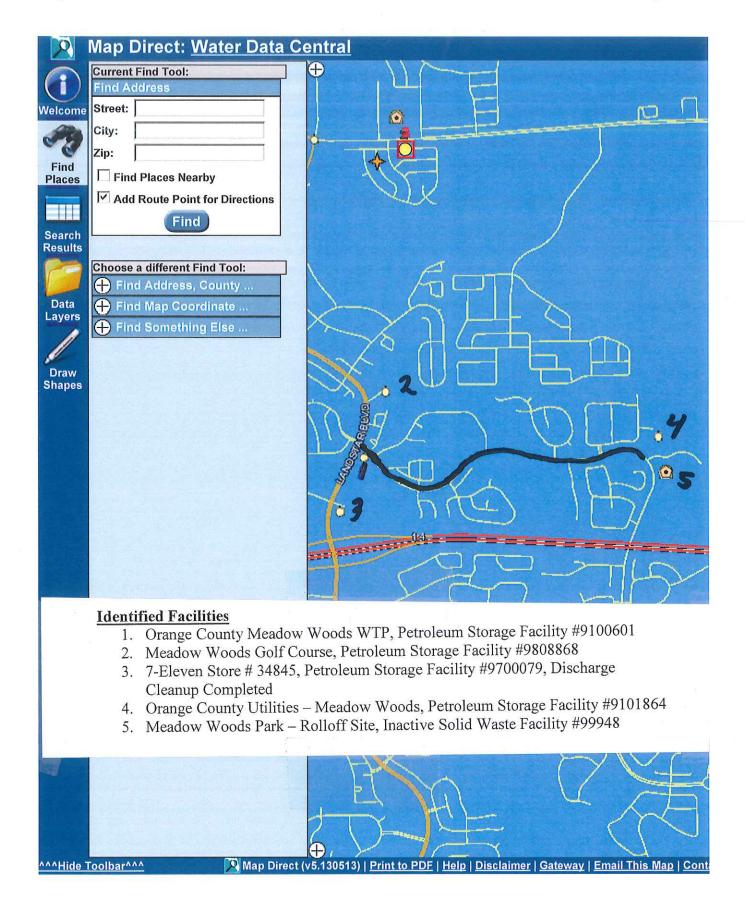


Approved By:

ΕK	Project No. H1127404		
SW	Scale: AS SHOWN	llerracon	
ΕK	File No. H1127404-2	Consulting Engineers and Scientists	
ΕK	Date: 6-20-13	1675 LEE ROAD WINTER PARK, FLORIDA 32789 PH. (407) 740-6110 FAX. (407) 740-6112	

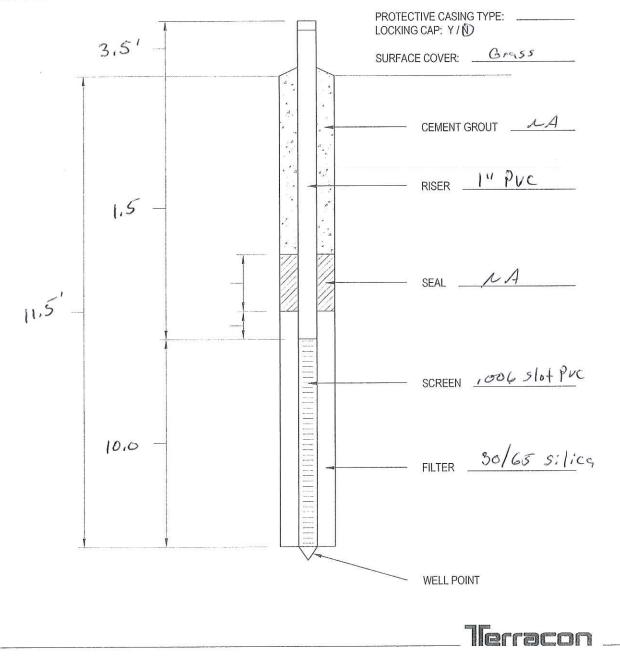
ORANGE COUNTY, FLORIDA

APPENDIX B

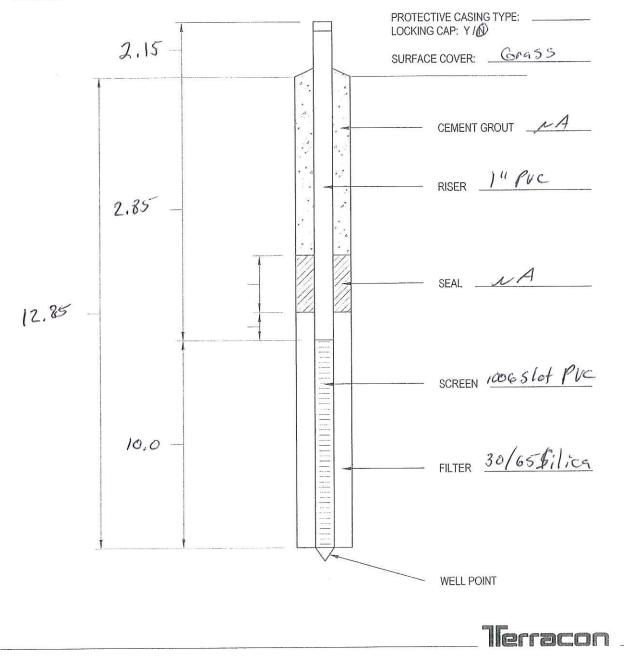


APPENDIX C

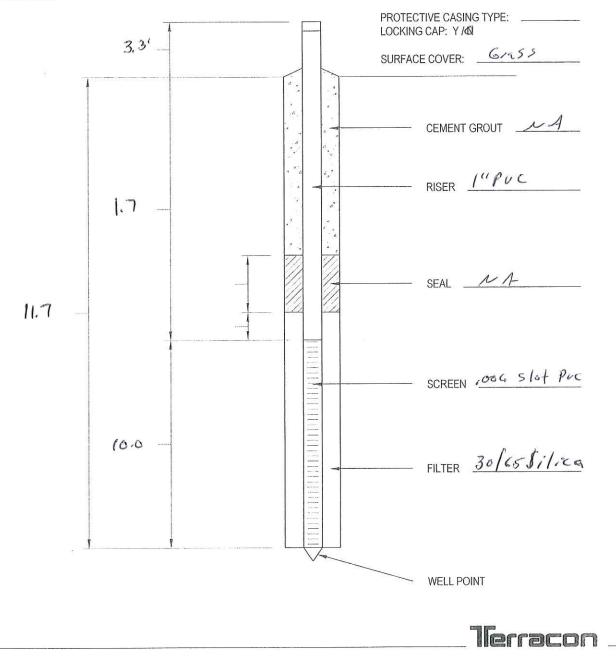
DATE: 5/21/13 SITE: 55A-ESA Main Water LOCATION: Orlands, EL. WELL LOCATION STRATEGY: TMW-1 DRILLING COMPANY: Terracon DRILLING METHOD / BORING DIAMETER: 3'/4" 140110W Stem Augen WELL DEPTH / SCREEN INTERVAL: 11.5' / 1.5-11.5' GROUNDWATER LEVEL: 9,13 BTOC / S.6'bys TOP OF CASING ELEVATION: DEVELOPMENT PROCEDURE: Surge block, feristaltic fung DISPOSITION OF INVESTIGATIVE DERIVED WASTES: Spread REMARKS:



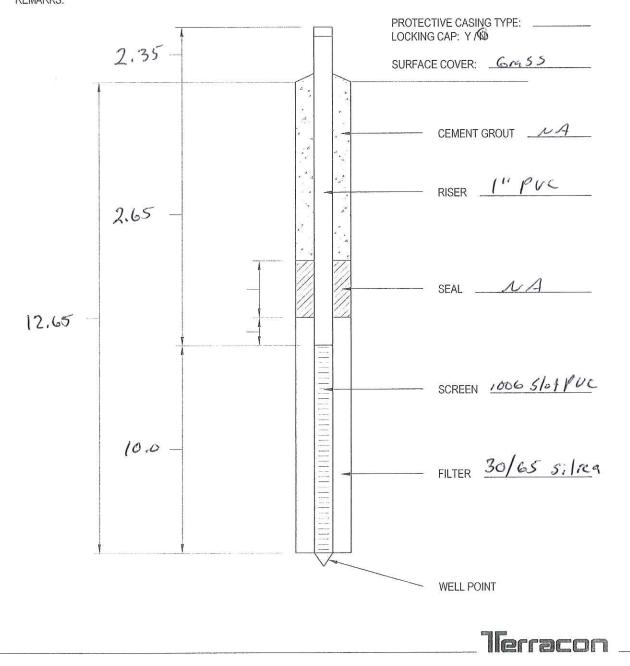
DATE: 5/21/13 SITE: SSA-ESA Main water LOCATION: Orlands, FC. WELL LOCATION STRATEGY: TMW-2 DRILLING COMPANY: Terracon DRILLING METHOD / BORING DIAMETER: 3'/4" Hollow Stem Ausen WELL DEPTH / SCREEN INTERVAL: 12.85 / 2.85-12.85 GROUNDWATER LEVEL: 7.11BTOC / 5' bgs TOP OF CASING ELEVATION: DEVELOPMENT PROCEDURE: Surge block / Peristalfic Pump DISPOSITION OF INVESTIGATIVE DERIVED WASTES: Spread REMARKS:



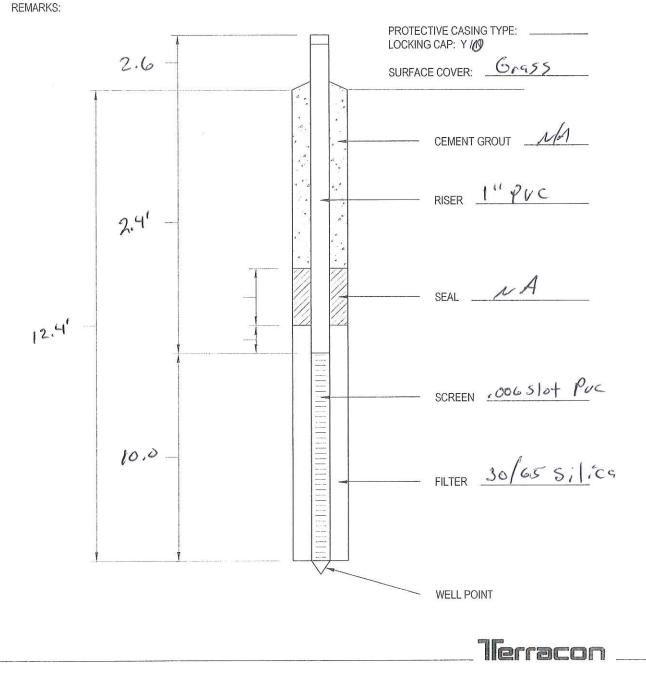
DATE: 5/21/13 SITE: 554 ESA Main Waten LOCATION: Orlandy, FC WELL LOCATION STRATEGY: TMW-3 DRILLING COMPANY: Terracon DRILLING METHOD / BORING DIAMETER: 31/4" Hollow Stem Augen WELL DEPTH / SCREEN INTERVAL: 11.7 / 1.7- 11.7' GROUNDWATER LEVEL: 9,19BTOC / 5.9' b3r TOP OF CASING ELEVATION: DEVELOPMENT PROCEDURE: Surgeblock Peristaltic Pump DISPOSITION OF INVESTIGATIVE DERIVED WASTES: Spread REMARKS:



DATE: 5121113 SITE: 55A-ESA Main water LOCATION: O-landy, FC. WELL LOCATION STRATEGY: Tome-Y DRILLING COMPANY: Terracon DRILLING METHOD/BORING DIAMETER: 3'14" Hellow Sten Augu WELL DEPTH/SCREEN INTERVAL: 12.65 / 2.65-12.65 GROUNDWATER LEVEL: 4.67 BTOC/2.3 Bgp TOP OF CASING ELEVATION: DEVELOPMENT PROCEDURE: Superblock Peristaltic Pump DISPOSITION OF INVESTIGATIVE DERIVED WASTES: Spread. REMARKS:

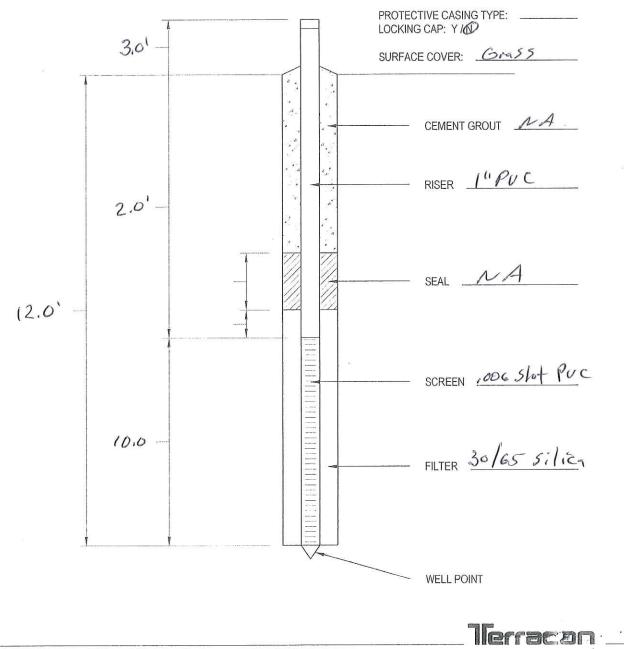


DATE: 5/21/17 SITE: 55A-ESA Main Water LOCATION: Or (ando, FC. WELL LOCATION STRATEGY: I MW-5 DRILLING COMPANY: Terracoa DRILLING METHOD / BORING DIAMETER: 31/4" Hollow Stem Augen WELL DEPTH / SCREEN INTERVAL: 12.4" / 2.4" - 12.4" GROUNDWATER LEVEL: 5.64" BTOC / 3' Bys TOP OF CASING ELEVATION: DEVELOPMENT PROCEDURE: Peristaltic Pump DISPOSITION OF INVESTIGATIVE DERIVED WASTES: Spread

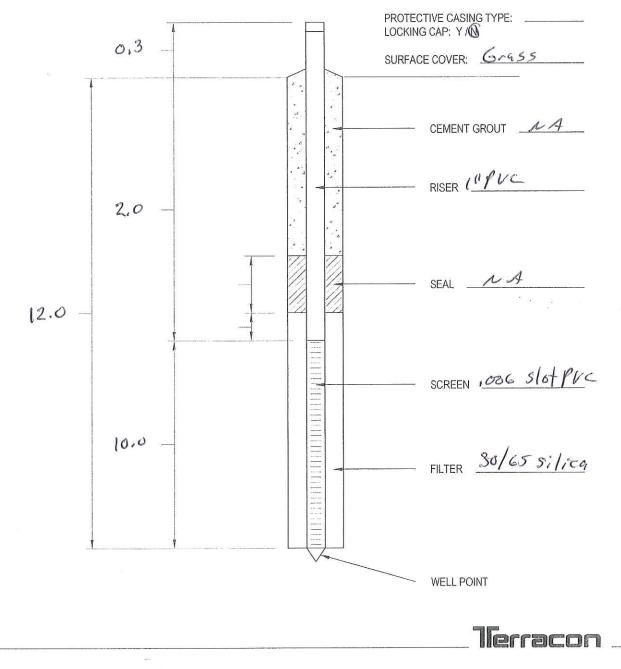


DATE: 9/21/13 SITE: 55A-ESA Main Water LOCATION: Orlands, FC. WELL LOCATION STRATEGY: TMW-6 DRILLING COMPANY: Terracon DRILLING METHOD / BORING DIAMETER: 3'/4" Hollow Stem Augen WELL DEPTH / SCREEN INTERVAL: 12' /2'12' GROUNDWATER LEVEL: 7.44' PTOC / 4.4' b35 TOP OF CASING ELEVATION: DEVELOPMENT PROCEDURE: Peristaltic Pupp DISPOSITION OF INVESTIGATIVE DERIVED WASTES:

REMARKS:



DATE: 5/21/17 SITE: 53A-ESA Main Water LOCATION: OFLANDO, FC. WELL LOCATION STRATEGY: TMW-7 DRILLING COMPANY: Terracon DRILLING METHOD / BORING DIAMETER: 31/4" Hollow Stem Augen WELL DEPTH / SCREEN INTERVAL: 12' /2-12 GROUNDWATER LEVEL: 5.04' BTOC /4.7' bgj TOP OF CASING ELEVATION: DEVELOPMENT PROCEDURE: Peristaltic Pump DISPOSITION OF INVESTIGATIVE DERIVED WASTES: Spread. REMARKS:



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APPENDIX D

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL = PUMP VOLUME - (TUBINS CAPACITY TUBINS LENTH > FLOW CELL VOLUME (only fill out if applicable) = galons + (galons + (galons) galons/co.X ten() + galons = galons galons = galons INTIAL PUMP OR TUBINS DEPTH IN WELL (deal): 12 / I INTIAL PUMP OR TUBINS (galons) 12 / I INTIAL PUMP OR TUBINS (galons) PURGINS						Form	FD 9000-2	24			8				
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Carby Bioletable)	WELL VO	LUME PURGE:	1 WELL VC	DLUME = (TOT	TAL WELL DEPTH	- STA	TIC DEPTH TO	OWATER)	WELL CAPACI	IY IC		CR. Ø /			
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WELL CAPACITY (Galoms Per Foot): $0.75^{\mu} = 0.02;$ $1^{\mu} = 0.006;$ $2^{\mu} = 0.04;$ $1.25^{\mu} = 0.06;$ $2^{\mu} = 0.37;$ $4^{\mu} = 0.65;$ $5^{\mu} = 1.02;$ $6^{\mu} = 1.47;$ $12^{\mu} = 5.88$ WELL CAPACITY (Galoms Per Foot): $0.75^{\mu} = 0.02;$ $1^{\mu} = 0.0026;$ $34^{\mu} = 0.0026;$ $34^{\mu} = 0.0026;$ $34^{\mu} = 0.0026;$ $12^{\mu} = 0.016;$ $38^{\mu} = 0.002;$ $12^{\mu} = 0.016;$ $12^{\mu} = 0.0026;$ $12^{\mu} = 0.016;$ $12^{\mu} = 0.0026;$ $12^{\mu} = 0.016;$ $12^{\mu} = 0.016;$ $12^{\mu} = 0.016;$ $12^{\mu} = 0.0026;$ $12^{\mu} = 0.016;$ <t< td=""><td></td><td>81.0</td><td>0.77</td><td></td><td></td><td></td><td>25.05</td><td></td><td>2.7%/0,27</td><td>316</td><td></td><td>10</td><td>1.</td></t<>		81.0	0.77				25.05		2.7%/0,27	316		10	1.		
TUBING INSIDE DIA. CAPACITY (Gal./F.1): 1/8" = 0.006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristallic Pump; O = Other (Specify)SAMPLENG DATASAMPLED BY (PRINT)/ AFFILIATION:SAMPLING DATASAMPLED BY (PRINT)/ AFFILIATION:SAMPLING SIGNATURE(S):SAMPLING DATAO = Other (Specify)PUMP OR TUBINGSAMPLER (S):SAMPLING SIGNATURE(S):SAMPLING SIGNATURE(S):MILED SUMPS (FILL)-FILTERED: Y COLFILTER SIZE: mPUMP OR TUBINGDUP YTUBING Y COLTE: Y COLSAMPLER (S):INTENDEDSAMPLING SIGNATURE(S):SAMPLE DECONTAMINATION: PUMP YTUBING Y COLTE: Y COLSAMPLE #COLTE: Y COLSAMPLE #SAMPLING PRESERVATIONINTENDEDSAMPLING SAMPLE PRESERVATIONSAMPLING WOLLINE PRESERVATIVE TOTAL VOLINTENDEDAMAPL RE #MIER SIGNATURE PRESERVATIONINTENDEDSAMPLING BUIPMENT CODE:Y COLSAMPLE #PESERVATIVE TOTAL VOLINTENDEDSAMPLING BUIPMENT CODESAMPLING CODEY COLY COL <th co<="" td=""><td>•</td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td><td></td><td></td><td></td><td></td><td></td></th>	<td>•</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td>	•							10						
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PUMP OR TUBING DEPTH IN WELL (feet):TUBING MATERIAL CODE:FE/SFILTER SIZE:mFILTER SIZE:MATERIAL CODE:FE/SFILTER SIZE:mFILTER SIZE:MATERIAL CODE:FE/SFILTER SIZE:mFILTER SIZE:MFILTER SIZE:mFILTER SIZE:PUMP or TUBINGY CODFILTER SIZE:mFILTER SIZE:PUMP or TUBINGY CODFILTER SIZE:mSAMPLE (cell)DUPLICATE:Y CODFILTER SIZE:mSAMPLE CONTAINER SPECIFICATIONSAMPLE PUBR or TUBINGSAMPLINGSAMPLINGSAMPLINGSAMPLE ONTAINER SPECIFICATIONSAMPLE PUBR PRESERVATIVETOTAL VOLINTENDEDSAMPLINGSAMPLINGSAMPLINGSAMPLINGSAMPLINGSAMPLE ONTAINER SPECIFICATIONSAMPLE VOLINTENDEDSAMPLE CONTAINER SPECIFICATIONSAMPLINGSAMPLINGSAMPLINGSAMPLINGSAMPLINGSAMPLINGSAMPLINGSAMPLINGSAMPLINGSAMPLIN			1		'n	2			INITIATED AT	103	9 E	ENDED AT	: 1100		
FIELD DECONTAMINATION:PUMPYYYTUBINGYØUreplaced)DUPLICATE:YØUSAMPLE CONTAINER SPECIFICATIONSAMPLE PRESERVATIONINTENDEDSAMPLING<	PUMP OR	TUBING			TUBING		1.27				F	ILTER SIZ	:E: m		
SAMPLE CONTAINER SPECIFICATIONSAMPLE PRESERVATIONINTENDED ADDED IN FIELD (mL)SAMPLE DA PHNATERIAL CODESAMPLING CODESAMPLE PUM FLOW RATE (mL per minute DODESAMPLE PUM PRESERVATIVE USEDTOTAL VOL ADDED IN FIELD (mL)INTENDED PHSAMPLING PHSAMPLE PUM FLOW RATE (mL per minute DODESAMPLE DCODECGYOLUME CODEPRESERVATIVE USEDTOTAL VOL ADDED IN FIELD (mL)FINAL PHANALYSIS AND/OR METHODSAMPLE PUM FLOW RATE (mL per minuteMW443CGYOLUME YOLUMEPRESERVATIVE USEDTOTAL VOL ADDED IN FIELD (mL)FINAL PHANALYSIS AND/OR METHODSAMPLE PUM FLOW RATE (mL per minuteWW443CGYOLUME YOLUMEPRESERVATIVE USEDTOTAL VOL ADDED IN FIELD (mL)FINAL PHANALYSIS AND/OR METHODSAMPLE PUM FLOW RATE (mL per minuteWW443CGYOLUME YOLUMEYOLUME YOLUMEPRESERVATIVE TOTAL YOL TOTAL YOL 					and the second se	non-served were a	2010 To 100				0	N)			
SAMPLE # MATERIAL ID CODE VOLUME PRESERVATIVE USED TOTAL VOL ADDED IN FIELD (mL) FINAL PH ANALYSIS AND/OR METHOD EQUIPMENT CODE FLOW RATE (mL per minute CODE 'MW4 3 C.G YOMU HCL - - 82604 MAP RFN 21034C 'MW4 3 C.G YOMU HCL - - 82604 MAP RFN 21034C 'MW4 3 C.G YOMU HCL - - 82604 MAP RFN 21034C 'MW4 3 C.G YOMU HCL - - 7002 1066Pm 'L 2 A.G 1247 N 2504 - - FLOPRO 1 1 A.G 500 ML Monter - - LA HG 1 1 A.G 500 ML Monter - - - LA HG 1 1 A.G 500 ML Monter - - - Monter 1 - - - - - - -	BROXED									D		T	SAMPLE PUMP		
$\frac{10 \text{ CODE}}{2} \frac{10 \text{ ML}}{3} \frac{10 \text{ ML}}{2} \frac{10 \text{ ML}}{4} 10 \text{ $	SAMPLE	#	MATERIAL		PRESERVATIVE	1	TOTAL VOL	FINAL	ANALYSIS AN	D/OR	EQUIP	MENT	FLOW RATE		
Z A6 40 ML HCL - TOC PP :06 GPn L A6 164r N2504 - - FC.PR0 1 I A6 500 ML Non - - L66 H6 1 I A6 500 ML Non - - L66 H6 1 I A6 500 ML Non - - L66 H6 1 I A6 500 ML Non - - L66 H6 1 I A6 500 ML Non - - L66 H6 1 I A6 500 ML Non - - Not fails 1 I A6 500 ML Non - - Not fails 1 I A6 250 ML Mos? - - Not fails 1 I A6 75 Minutes before station Starting Sampling Iog, turbidity Still high 1 MATERIAL CODES: A6 = Amber Glass; C6 = Clear Glass; PE = Polyethylene; PP = Polypropylerle;				(1) (4) (3) (4) (3) (4) (3) (4) (4)	in the second	ADDE				0.000			10		
1 AG 1647. N2504 - - FLPRO 1 AG 50mc Non - - FLPRO 1 AG 50mc Non - - LL HG 1 PE 500mc Non - - LL HG 1 PE 500mc Non - - XCK, PH 1 PE 250mc Non - - Netals 1 PE 250mc HNO? - - Netals MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylere; S = Silicone; T = Teflon; O = Other (Specify) SAMPLING EQUIPMENT CODES:	mur	3						-	4 1 1 1	VJ4[1.11		
I A.G. 500 mL Non - LL HG I P.E. 500 mL Merrice - XCK, PH I P.E. 500 mL Merrice - XCK, PH I P.E. 500 mL Merrice - XCK, PH I P.E. 250 mL Merrice - XCK, PH I P.E. 250 mL H.Vo3 - - Metfals REMARKS: forge flucelef well for 75 minutes before starting standling log, torbidity still hish MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylerle; S = Silicone; T = Teflon; O = Other (Specify) SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify) IOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.	1				29357			-			1		1		
AE StomL Missive - XCK, PH 1 PE 250 ML Missive - XCK, PH 1 PE 250 ML MNON - - Metals REMARKS: 1 PE 250 ML MNON - - Metals MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylerle; S = Silicone; T = Teflon; O = Other (Specify) SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify) IOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.	1.5	6		- F							+				
1 PE 250 ML H No? - Matals REMARKS: forge ducelof will for 75 minutes before starting stampting log, turbidity still hish MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylerie; S = Silicone; T = Teflon; O = Other (Specify) SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify) JOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.				and the second se				~		1	\rightarrow				
REMARKS: funge fluxelef well for 75 minutes before starting Jampling log, turbidity still high MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify) SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify) IOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.		1					-	-							
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropyler/le; S = Silicone; T = Teflon; O = Other (Specify) SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify) IOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.	REMARKS	5:				-				l		I_			
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify) IOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.	lurge	ducelog	well fo	175 W	inutes be	fore									
RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify) IOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C. O = Other (Specify)	index-variant according to	in Although and	Constant Constant of	r Glass; CG	= Clear Glass;	PE = Pol	yethylene;	PP = Polyprop	ylene; S = Śilico	ne; T =	Teflon;		ner (Specify)		
IOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.	SAMPLIN	G EQUIPMENT													
2 STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)										0505	. 2)				

pH: \pm 0.2 units Temperature: \pm 0.2 °C Specific Conductance: \pm 5% Dissolved Oxygen: all readings \leq 20% saturation (see Table FS 2200-2); optionally, \pm 0.2 mg/L or \pm 10% (whichever is greater) Turbidity: all readings \leq 20 NTU; optionally \pm 5 NTU or \pm 10% (whichever is greater)

			G	ROUND	WATI	ER SAI	MPLING	LOG		0	2.15 shel
SITE NAME:	SSA	- E.	SA M	un Wat	er Lo	ITE OCATION:	KISSIA	MMCE F	r	1 1	
VELL NO:		-2-		SAMPLE				1	DATE: 5	129/1-	3
					PUR	GING DA				/	
	R (inches):		G ETER (inches) DLUME = (TO		L SCREEN	INTERVAL eet to 12.86	eet TO WATER) X	DEPTH ER (feet): 7.1 WELL CAPACI	1 PUF OR	RGE PUMP T BAILER:	P.P.
								.04		ot = . 23	296 gallons
		URGE: 1 EQ	UIPMENT VO	2, 85	UME + (TU	BING CAPACI	TY X T	UBING LENGTH)	+ FLOW CE	LL VOLUME	ganons
only fill ou	t if applicable)			= ga	allons + (gallo	ons/foot X	feet)	+	gallons	= gallons
	JMP OR TUBIN WELL (feet):	^G 8		IMP OR TUBING I WELL (feet):	° 8	PURGIN INITIATI	IG ED AT: 1015	PURGING ENDED AT:	1040	TOTAL VO PURGED (LUME gallons):3. 25
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. ([°] C)	COND. (circle units) mhos/cm or S/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDIT (NTUs)		DR ODOR be) (describe)
1026	1.3	13	.13	7.90	5.82	24.65	112	.81/9.7	97.5		
1030	.65	1.95		7.90	5.80	24.68	112	.77/9.2	98.8		n
1035	.65	2.6	.13	7.90	5.77	24.69	(11	.72/8.7	98.0		61
1040	.65	3.25	.13	7.90	5.75	24.71	110	.68/8.2	98.9	61	4
WELL CAI TUBING IN	PACITY (Gallon	ls Per Foot): P ACI TY (Gal.	0.75" = 0.02; /Ft.): 1/8" = (1" = 0.04;).0006; 3/16 "	1.25" = 0.0 = 0.0014;	06; 2" = 0.1 1/4" = 0.002	6; 3 " = 0.37; 26; 5/16 " = 0			6" = 1.47; ' = 0.010;	12 " = 5.88 5/8 " = 0.016
PURGING	EQUIPMENT C	CODES: I	3 = Bailer;	BP = Bladder F	212/411-514 2		Submersible PL	Imp; PP = Pe	eristaltic Pum	p; O = C	other (Specify)
	BY (PRINT) / A	6		SAMPLER(S)		PLING DA		SAMPLING INITIATED AT	. 104	SAMPLI	NG AT: 1055
UMP OR	Y / M 01 TUBING WELL (feet):	masp	erroco	TUBING MATERIAL CO		PE	FIELD	D-FILTERED: Y	W		SIZE: m
	CONTAMINATIO	ON: PU	MP (Y)		TUBING	(Y) N (re	eplaced)	DUPLICATE:	Y	N	
SAM	PLE CONTAINE	R SPECIFIC	ATION		SAMPLE P	RESERVATIO	N	INTENDE		AMPLING	SAMPLE PUMP
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVAT USED		TOTAL VOL ED IN FIELD (mL) FINAL	ANALYSIS AN METHO		QUIPMENT CODE	FLOW RATE (mL per minute)
M2	2	AG	Later	ASI	no -			FI-F	200	APO	,13
1	1	PE	250ml	INNO2	7 -		_ ~	Cd. Cn. P	70	APP	.13
	1	PE	500ml		-			XCR F	h	Amp	.13
	Ì	AG	SUDM		~			HELLI	631	App	.13
	2	AG	40ml	ACI				TOC	1	SFAP	.07
	3	CG	QOMI	ACA				- 8260+	NAP	RFPP	6100
RĚMARKS	:			/ *							
MATERIAI	CODES:	AG = Amber	Glass; CG	= Clear Glass;	PE = Pol	yethylene;	PP = Polypropy	lene; S = Silico	ne; T = Te	flon; O = 0	Other (Specify)
SAMPI INC	GEQUIPMENT		APP = After P	eristaltic Pump;	B = Ba	iler: BP =	Bladder Pump;	ESP = Electri	c Submersib	le Pump:	
07 din 16114	NeS/			rse Flow Peristal			Method (Tubing		O = Other		

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: \pm 0.2 units Temperature: \pm 0.2 °C Specific Conductance: \pm 5% Dissolved Oxygen: all readings \leq 20% saturation (see Table FS 2200-2); optionally, \pm 0.2 mg/L or \pm 10% (whichever is greater) Turbidity: all readings \leq 20 NTU; optionally \pm 5 NTU or \pm 10% (whichever is greater)

		•							Ki	ser al	Dour Gra	und 2.3
SITE NAME:	\$5A-ES	A I	main U	vater	SI	TE DCATION:	orl	anc	L, FC.			(2)
WELL NO:	TMW	- 3		SAMPLE I	ID: Ta	1cc - 3					129/1	3
	•				PURC	GING DA	TA			5		
WELL DIAMETER	(inches):	DIAME	TER (inches):	//6 DEP1	L SCREEN TH:7,7 fe	et to /1.7 f	eet TO	WATE	DEPTH ER (feet): 9.1	7 OF	IRGE PUMP T R BAILER:	YPE PP
	UME PURGE: t if applicable)	1 WELL VO	LUME = (TO				O WATER) X	WELL CAPACI			
			= (15	feet - 9	.19	feel	t) X	.04	gallons/fe	$pot = \mathcal{O}_{i}$	てう gallons
	IT VOLUME PU t if applicable)	JRGE: 1 EQ	JIPMENT VOL	= PUMP VOLU	JME + (TUE			Ц	UBING LENGTH)			
					llons + (ons/foot X		feet)	+	gallons	
Th 200 00 00 00 00 00 00 00 00 00 00 00 00	IMP OR TUBIN WELL (feet):	G 12		MP OR TUBING WELL (feet):	12'	PURGIN INITIATE	ED AT: []	49	PURGING ENDED AT:	1158	TOTAL VO PURGED (gallons): 1:13
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	CONE (circle ur mhos/ <u>or</u> S/c	aits) em	DISSOLVED OXYGEN (circle upits) mg/L or % saturation	TURBID (NTUs		be) (describe)
1143	0.23	0.23	0.06	9.60	5.02	25.62	170		6.3% 0.51	204	4.brs	par
1144	0.18	0,41		9.60	4.91	25.63	168		5,8% 0.47	202	10	11
1149	0.18	0.59		9.60	5.02	25.61	169		5.8% 0.48	171	11	1.
1152	018	0,77		9.60	5,02	25.61	166		5,5% /0.45	166	el	4
1155	0.18	0.95		5.60	5.01	25,63	167		6.5%/0,53	182	1 <	٤.
1158	0.18	1.13		9.60	4.99	25.63	165	-	5,3% /0:43	179	e 1	e.,
•												
х.			+									
1												
			_									
WELL CAL	PACITY (Gallon	s Per Foot):	0.75'' = 0.02'	1" = 0.04;	1.25" = 0.0	6; 2 " = 0.1	6; 3"=	0.37:	4" = 0.65; 5	5" = 1.02;	6 " = 1.47;	12" = 5.88
TUBING IN	SIDE DIA. CA	PACITY (Gal.	/Ft.): 1/8" = 0	.0006; 3/16"	= 0.0014;	1/4" = 0.002	26; 5/16	5" = 0.	.004; 3/8'' = 0.	.006; 1/	2" = 0.010;	5/8" = 0.016
PURGING	EQUIPMENT (ODES: I	3 = Bailer;	BP = Bladder P		SP = Electric		ole Pu	imp; PP = Pe	ristaltic Pu	mp; $O = C$	Other (Specify)
SAMPLED	BY (PRINT) / A	FEILIATION.		SAMPLER(S)		E(S):	AIA				SAMPLI	
	purns /	Terra	C 4 0		h bu				SAMPLING INITIATED AT	1200	ENDED	AT: 1217
PUMP OR	TUBING '			TUBING MATERIAL CO		1			-FILTERED: Y		FILTER S	SIZE: m
	WELL (feet):	<u>ز ک</u> ' N: PU	MP Y Ó		TUBING		eplaced)	-litrati	DUPLICATE:	Y	4 5P	
	PLE CONTAINE					RESERVATIO			INTENDE		SAMPLING	SAMPLE PUMP
SAMPLE	# CONTAINERS	MATERIAL	VOLUME	PRESERVATI	VE	TOTAL VOL ED IN FIELD (FI	NAL oH	ANALYSIS AM	D/OR	EQUIPMENT	FLOW RATE (mL per minute)
Smu-3	3	CG	Yome	HCC		-		-	8240 th	API	REPP	2100 mc
	2	AG	yome	HCC		~		•	TOC		PP	0.06 GPM
	2	AG	1641.	HESOY		-		2	FC-PRO			1
	1	AC	SOOME	pore		~		~	LL Hg			
	1	PE	SOML	nor		-			XCR, PH	ł		
	1	PE	250mc	HNO3		~	5		Metals		ł	
REMARKS									720			
After			purge	start to	alling	water gua	lity #	wig	lene; S = Sflico	/ ne: T=1	Teflon; O =	Other (Specify)
	- CODES: G EQUIPMENT			= Clear Glass; eristaltic Pump;	B = Ba		Bladder P				A REAL PLACEMENTS	other (openiny)
			RFPP = Rever	se Flow Peristal	tic Pump;	SM = Straw	Method (T	ubing	g Gravity Drain);		er (Specify)	
2.	STABILIZATIC	N CRITERIA	FOR RANGE (the information	F LAST THR	EE CONSECU	TIVE REA	DING	s (see FS 2212	, SECTION	3)	

pH: \pm 0.2 molecular to the formula of the formul

			G	ROUNDW		EK SAN	IPLING	R	iser a	bove g	round	Surfe
SITE NAME:	SSA-ES	A- N	Agin	water	SI	TE DCATION:	orla	nde; FC.		9		
	TMW.			SAMPLE ID:		14-4		, , , , , , , , , , , , , , , , , , , ,	DATE: 5	129/1	3	
	1100	1				SING DAT	ГА					
WELL	11	1 TUBIN	G f					DEPTH CL	PUF	RGE PUMP T	YPE	
DIAMETER	(inches)	DIAME	TER (inches):	AL WELL DEPTH	2,65 fe	et to 12.65 fe	et TO WATER	ER (feet): 4.6	/ OR	BAILER:	pp	
(only fill out	if applicable)		= (/	5 fee	t –	4.67	feet) X	104	gallons/foo	ot = 0-4	(1	gallons
	IT VOLUME PL t if applicable)	JRGE: 1 EQ	UIPMENT VOL	= PUMP VOLUM = gallon			רץ X T א T	UBING LENGTH) feet)		gallons		gallons
	MP OR TUBIN WELL (feet):	G IQ`		MP OR TUBING WELL (feet):	10'	PURGINO	^д dat:1245	PURGING ENDED AT:	1259	TOTAL VO PURGED (1,13
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (s	pH tandard units)	TEMP. (^o C)	COND. (circle units) (mhos/cm or S/cm	DISSOLVED OXYGEN (circle units) mg/). <u>or</u> (% saturation	TURBIDIT (NTUs)	Y COLC (descri	NY 1923	ODOR describe)
1250	0.41	0,41	50.0	513 4	99	22,90	203	4.7% 0.40	9.33	clear	M	si.
1253	0124	0,65	1	and the second sec	.89	22.84	205	3.9%/0,33	6.08	i l		1 -
1256	0.24	089		5113 4	.86	22.89	205	3.0%/0,26	3.25	11	*	11
1259	0.24	1.1 3		5,13 4	,87	22.91	206	28% 10,23	2.56	11		"
		8										
					0.511 0.0	06; 2 " = 0.16	6; 3" = 0.37;	4" = 0.65;	5" = 1.02;	6 " = 1.47;	12" = 5	88
WELL CAI	PACITY (Gallon	is Per Foot): P ACITY (Gal.	0.75" = 0.02; /Ft.): 1/8" = 0	1" = 0.04; 1.2 .0006; 3/16" = 0	25" = 0.0).0014;	1/4" = 0.0026	5; 3' = 0.37; 5; 5/16'' = 0			" = 0.010;	5/8" = 0	
PURGING	EQUIPMENT (CODES:	B = Bailer;	BP = Bladder Pum		ESP = Electric		ump; PP = Pe	eristaltic Pum	$\mathbf{O} = \mathbf{O}$	Other (Sp	ecify)
CAMPLED	BY (PRINT) / A			SAMPLER(S) SIC		PLING DA				SAMPLI		
	2 BUINS	and the second se		Mil	1. 15	1 mm		SAMPLING INITIATED AT	1301	ENDED		313
PUMP OR	TUBING	101	10 UN	TUBING	P	Els		D-FILTERED: Y		FILTER S	SIZE:	m
	WELL (feet):	and a series and a	MP Y Q	MATERIAL CODI		Y AVre	placed)	DUPLICATE:	Y	(D)		
	PLE CONTAINE					RESERVATION		INTENDE	D S	SAMPLING	SAMP	LE PUMP
SAMPLE	# CONTAINERS	MATERIAL	VOLUME	PRESERVATIVE		TOTAL VOL ED IN FIELD (n	FINAL	ANALYSIS AN METHO		QUIPMENT CODE		W RATE er minute)
ID CODE	3	CG	YOML	HCL				8260 FR	APK	REPP	2100	me
11.000 1	2	AG	40 ML	HCL		-	~	Toc		PR	0.08	6Pm
	2	AG	ILtr.	HZS04		~	-	FL-PP	0		1	
	1	AG	SOOML	Nore		~	~	LL HG				
	١	PE	STOML	Mae		~	~	XCR, PH	1			
	1	PE	ZSOML	HN03		~	-	medals	(1	1	
REMARKS	i:									,		
MATERIA	L CODES:	AG = Ambe	r Glass; CG	= Clear Glass;	PE = Pol	lyethylene;	PP = Polyprop			MORE AND A	Other (Sp	becify)
SAMPLIN	G EQUIPMENT			eristaltic Pump; se Flow Peristaltic	B = Ba Pump;		Bladder Pump; Method (Tubin	; ESP = Electr g Gravity Drain);		ole Pump; r (Specify)		
NOTES: 1	The above	do not con	stitute all of	the information	require	ed by Chapte	er 62-160, F.	A.C.				

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: \pm 0.2 units Temperature: \pm 0.2 °C Specific Conductance: \pm 5% Dissolved Oxygen: all readings \leq 20% saturation (see Table FS 2200-2); optionally, \pm 0.2 mg/L or \pm 10% (whichever is greater) Turbidity: all readings \leq 20 NTU; optionally \pm 5 NTU or \pm 10% (whichever is greater)

			G	ROUND		FD 9000- ER SAN	24 MPLING		01			
SITE	CSA-FS			1		тс		Kis La El	er Ab	sure E	round	Z.6 ¹
NAME:	JA L-	- 10	ain W	SPER CAMPLE		DCATION:	orian	do, FL.	DATE	1		
WELL NO:	Tmw-	5		SAMPLE		9			DATE.	5/	29/13	2
NA/1771-1		TUDIN			17. Jonation 18.22	SING DA		DEPTH		PURGE		/PE
	R (inches): l^{ν}	1 WELL VC	ETER (inches): DLUME = (TOT	AL WELL DEP	TH:2.4 fe	et to 12.4 fo	eet TO WAT	ER (feet): 5, (WELL CAPAC	, <u>4</u> ПТҮ	OR BAI		₿ P
										ns/foot	= 0,3	7 gallons
EQUIPME	NT VOLUME P	URGE: 1 EQ	UIPMENT VOL	. = PUMP VOL	UME + (TUE	BING CAPACI	TY X T	UBING LENGTH) + FLOV	V CELL	VOLUME	
(only fill ou	t if applicable)			= ga	llons + (gallo	ons/foot X	feet) +		gallons	= gallons
	JMP OR TUBIN WELL (feet):	G 10 '		IP OR TUBING WELL (feet):	101	PURGIN	G ED AT: 1337	PURGING ENDED AT:	134		OTAL VOL URGED (g	UME allons): 0.85-
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	RATE	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^o C)	COND. (circle units) mhos/cm or S/cm	DISSOLVED OXYGEN (circle units) /mg/J2 or % saturation		BIDITY TUs)	COLO (describ	
1342	0,37	0.37	0,08	6.01	4.72	22.45	527	3.6%/0,31	5.	78	chear	pore
1345	0,24	0.61	Î	6.01	4.75	22.46	522	3.20/0/0,27	7,	33	11	
1343	0,24	0.85		6.01	61.74	22.46	520	2.9%/0.25	- 7.	53	11	(<
TUBING I	PACITY (Gallor NSIDE DIA. CA	PACITY (Gal	./Ft.): 1/8" = 0.	1" = 0.04; 0006; 3/16" BP = Bladder F	= 0.0014;	1/4" = 0.002	6; 3" = 0.37 26; 5/16" = 0 Submersible Pi		5" = 1.0. 0.006; Peristaltic	1/2." =	0.010;	12" = 5.88 5/8" = 0.016 ther (Specify)
1 Ontointe	Egon ment		D Danoi,			LING DA						
SAMPLE	E BURNS	AFFILIATION	(0 h	SAMPLER(S)	SIGNATUR		ŝ	SAMPLING INITIATED A	T: 13	57)	SAMPLIN ENDED A	G T: 1406
i olim ol	TUBING WELL (feet):	10	1	TUBING MATERIAL CO			FIELI Filtrat	D-FILTERED: Y			FILTER S	IZE: m
FIELD DE	CONTAMINATI		MP Y 🕼	D	TUBING	Y Mr	eplaced)	DUPLICATE	: Y	((\mathbb{N}	
SAM	IPLE CONTAIN	ER SPECIFIC	CATION			RESERVATIC					IPLING IPMENT	SAMPLE PUMP FLOW RATE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVAT USED		TOTAL VOL ED IN FIELD (mL) pH	METHO			ODE	(mL per minute)
mars	3	CG	40mc	HEL	100.071	-	-	8260t N	IAP	RF	PP	2100 mc
	2	AG	YOML	Hec		Aller.	Ven	TOC		Pr	1	0.086PM
	Z	AG	12+1.	H2504		er.	~	FL-PR	0	1		(
	ľ	AG	SOOML	None		~	~	LLH	3			
	1	PE	SODME	None		-	60m	XCR, I	PH			
	l	PE	250ML	HN03		-	ý	Meta	3	1		1
REMARK	S:	4										
MATERIA	L CODES:	AG = Ambe	r Glass; CG	= Clear Glass;	PE = Pol	yethylene;	PP = Polyprop	ylene; S = Silic	one; T	= Teflo	n; O = (Other (Specify)
	G EQUIPMENT		APP = After Pe RFPP = Rever		B = Ba	iller; BP = SM = Straw	Bladder Pump			ersible I Other (S		

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: \pm 0.2 units Temperature: \pm 0.2 °C Specific Conductance: \pm 5% Dissolved Oxygen: all readings \leq 20% saturation (see Table FS 2200-2); optionally, \pm 0.2 mg/L or \pm 10% (whichever is greater) Turbidity: all readings \leq 20 NTU; optionally \pm 5 NTU or \pm 10% (whichever is greater)

					1 6				r above	-	a(2		
Site Name: 💂	SSA-E:	SA 1	lain L	Vater		CATION:		land	b, FC.					
	TMW			SAMPLE ID:		MW-				DATE:	51	30/13		
	1 1 1 1 1 1	X				SING DA								
WELL DIAMETER	R (inches): l'	DIAME	TER (inches):	116 DEPTH:	2 fe	INTERVAL et to (2 f	eet -	STATIC I	ER (feet): 7.4	4 0		E PUMP TY ILER:	PE PC	1
				IL FILLE DEL TIT			-75 - 6-66-67	1.400 (M. 1.1.1.				<u> </u>	<i>(</i> ')	n.
FOUIPME	NT VOLUME PI	URGE: 1 EQU	= (JIPMENT VOL.	IS fee	t – 💋 / E + (TUB	197	TY	X T	UBING LENGTH	gallons) + FLOW	CELL	VOLUME	-	gallons
	t if applicable)	energi a d'ar		= gallor			ons/foot		feet			gallons	=	gallons
	JMP OR TUBIN WELL (feet):	GU			11'	PURGIN	IG ED AT:	0850	PURGING ENDED AT:	0906	T F	OTAL VOL PURGED (g): 1.14
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (S	pH tandard units)	TEMP. (°C)	(circl	OND. e units) nos/em S/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBI (NTL		COLO (describ	26	ODOR (describe)
0354	0,30	0.30	0,08	9.20 4.	81	24.03	136		11.5%/0.97	26.4		clea.	r	pone
08.57	0.24	0.54		9.20 4	74	24.03	127	8	10,3% 0,86	18.2		CL		61
0900	0,24	0.78			168	24,18	12	l	9.40/0/0.78	20,		CC		lı.
0903	0118	0.96	0.04		61	24,19	12	7	9.40/0 10.79	19.7		CL		61
0906	0,18	1.14	1	9,14 4.	70	24.21	12	8	9.9%/0.83	18.9		ec		11
		- Site	12 2							-				
			-											
													N.C.	
WELL CA	PACITY (Gallor	ns Per Foot):	0.75'' = 0.02;	1" = 0.04; 1.3 0006; 3/16" = 0	25" = 0.0	6; 2'' = 0.1	6; 3	" = 0.37; 5/16" = 0	4" = 0.65; .004; 3/8" = 0	5" = 1.02		' = 1.47; 0.010;	12" = 5/8" =	5.88 0.016
	EQUIPMENT (BP = Bladder Pum		SP = Electric		100 CA	1000 C	eristaltic F			(1) NO-2	Specify)
						LING DA	ATA							
	burns	AFFILIATION:		SAMPLER(S) SIC			*)		SAMPLING INITIATED A	T:090	7	SAMPLIN ENDED A	G .T: <i>O</i>	920
PUMP OR	TUBING '	11'	vi (TUBING	0	Fls		FIELD	-FILTERED: Y	6	122	FILTER S	IZE:	m
	WELL (feet): CONTAMINATI		MP Y 📣	MATERIAL COD	ubing	<u>~/~</u> Y _1%(n	eplaced	and the second second	DUPLICATE:	100		60		
Tatolia 2007-01200 (1000)	PLE CONTAIN	and the second				RESERVATIO			INTEND			MPLING	SAM	IPLE PUMP
SAMPLE	#	MATERIAL	VOLUME	PRESERVATIVE	1 -	TOTAL VOL		FINAL pH	ANALYSIS A METHO	ND/OR	EQL	IIPMENT CODE	FL	OW RATE per minute)
ID CODE TIMW-6	CONTAINERS	CODE	yome	HCL	ADDE		(IIIC)	p۱۱ م	8260fN.	4P	RI	EPP	21	00 mc
70,00 φ	2	AG	yome	HCL		~			TOC		Pr		0.0	SGPM
- L, I	2	AG	ILtr.	HZSOY				(Wine-	FC-PRA	,				
	2	1	Some	None		~		-	LL HS)			
	1	10.00	Soonc	Noni		~		-	XCR. PI	4	1			
	- 1	0	250ml	HN03		~		5	Metals		1			1
REMARKS	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -													
		The State							1		2.2	V		0
MATERIA		AG = Amber		States and States		yethylene;		Polypropy			= Teflo	10.00	Other (Specify)
	G EQUIPMENT		see stand and states and states	ristaltic Pump; e Flow Peristaltic he information	2003-200-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0	SM = Straw	Metho	22	ESP = Elect g Gravity Drain);			Pump; Specify)		
DIES 1	The above	no not cong	surure all of i	ne mormation	require	u by Glidb	102	- IUU. F./						

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: \pm 0.2 units Temperature: \pm 0.2 °C Specific Conductance: \pm 5% Dissolved Oxygen: all readings \leq 20% saturation (see Table FS 2200-2); optionally, \pm 0.2 mg/L or \pm 10% (whichever is greater) Turbidity: all readings \leq 20 NTU; optionally \pm 5 NTU or \pm 10% (whichever is greater)

Revision Date: February 12, 2009 NA-038

5 1

n.

				KOUND				R	iser al	nove stov	nd , 3'
SITE NAME: _	SSA-E	SA M	ain U	sater	SI LC	CATION:	Orlan	do, FC		129/13	
WELL NO:	TMW-	- 7		SAMPLE		nu-T			DATE: ,5	129/13	3
						SING DA					
WELL	14		G TER (inches):	3/WEL	L SCREEN	INTERVAL	STATIC I	DEPTH ER (feet): 5,0 WELL CAPACI	Y OF	RGE PUMP T BAILER:	
WELL VOL	(inches): l	1 WELL VO	LUME = (TOT	AL WELL DEP	TH - STA	TIC DEPTH T	O WATER) X	WELL CAPACI	TY	0	
(100)	if applicable)		= (]	21	feet -	5.04	feet) X	,04	gallons/fo	ot = 0,7	7 gallons
	IT VOLUME PU	JRGE: 1 EQU	JIPMENT VOL	. = PUMP VOL	UME + (TUB llons + (TY X T ns/foot X	UBING LENGTH		ELL VOLUME gallons	= gallons
	MP OR TUBIN WELL (feet):	G 19,50		IP OR TUBING WELL (feet):		PURGIN	G ED AT: /424	PURGING ENDED AT:	1439	TOTAL VO PURGED (LUME gallons): 1.23
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^o C)	COND. (circle,units) mhos/cm or S/cm	DISSOLVED OXYGEN (circle units) mg/l_or (% saturation	TURBIDI (NTUs) (descri	be) (describe)
1427	0,27	0.27	80.0	6.35	4.76	23,87	135	7.1%/0.59	53.8	grery a	por
1430	0.24	0,51		6.35	4.75	23.79	148	4.7%/0,40			
1433	0,24	0.75		1035	4.71	23.80	134	3,8%/0/0,3			1 /
1434	0.24	0,99		6.35	4.72	23.78	152	3.6%/0/0,31	-		
1439	0,24	1.2 3	1	6.35	4.69	23.76	140	3,50/0,30	7.05	CC	
						0					
			-								
WELL CA	PACITY (Gallor	s Per Foot):	0.75" = 0.02;	1" = 0.04;	1.25" = 0.0	6; 2 " = 0.1	6; 3 " = 0.37; 6; 5/16 " = 0	4" = 0.65; 0.004; 3/8" = 0	5" = 1.02;	6 " = 1.47; 2 " = 0.010;	12" = 5.88 5/8" = 0.016
	SIDE DIA. CA	Constanting and	Ht.): 1/8" = 0 B = Bailer;	BP = Bladder F			Submersible P		eristaltic Pu		ther (Specify)
TORONO	Leon MENT		Duilott		- 55.1723-254.04	LING DA					
	BY (PRINT) / A	FFILIATION:		SAMPLER(S)	4		2	SAMPLING INITIATED A	1440	SAMPLI	NG IIIAM
		erraco	6		ih B	w		D-FILTERED: Y		ENDED	AT: 1453 SIZE: m
PUMP OR DEPTH IN	TUBING WELL (feet):			TUBING MATERIAL CO	DDE:			tion Equipment Ty		TIETERS	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
FIELD DE	CONTAMINATI	ON: PUN	MP Y đ	Ð	TUBING	Y Dr	eplaced)	DUPLICATE	Y	Ċ	
SAM	PLE CONTAIN	ER SPECIFIC	ATION		SAMPLE PI	RESERVATIO	N	INTEND ANALYSIS A		SAMPLING EQUIPMENT	SAMPLE PUMP FLOW RATE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVAT USED		TOTAL VOL ED IN FIELD (FINAL mL) pH	METHO		CODE	(mL per minute)
TMUN	3		HOME	HCL	100	~	~	8260 th	IAP 1	REPP	LIOOME
	Z	and the second se	YOME	HEC		~	6	Toc		PP	0.086 Pm
	2	AG	12+r.	H2504	e	-	•	FL-PA	2		1
	l	Ac	500mL	Noce		-	5	LL HS			
	l	PE	500 m L	None		-	~	XCR, P.	6		
	(A =/	250 m L	HN03		-	-	metals		J	
REMARKS	6:										
MATERIA	L CODES:	AG = Amber	Glass; CG	= Clear Glass;	PE = Pol	yethylene;	PP = Polyprop	ylene; S = Silic	one; T =	Teflon; O =	Other (Specify)
	G EQUIPMENT			eristaltic Pump; se Flow Perista	B = Ba		Bladder Pump Method (Tubin	; ESP = Elect g Gravity Drain);		ible Pump; er (Specify)	
NOTES: 1	The above		stitute all of	the informati	ion require	ed by Chap	ter 62-160, F.				

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: \pm 0.2 units Temperature: \pm 0.2 °C Specific Conductance: \pm 5% Dissolved Oxygen: all readings \leq 20% saturation (see Table FS 2200-2); optionally, \pm 0.2 mg/L or \pm 10% (whichever is greater) Turbidity: all readings \leq 20 NTU; optionally \pm 5 NTU or \pm 10% (whichever is greater)

DEP-SOP-001/01 FT 1000 General Field Testing and Measurement

								2045
				HACH 2100P	INSI	RUMENT	080800017	245
PARAME		150						
	IPERATU			The second secon	ALINITY			
v -							IER	
values, and	the date th	he standards	were prep	ndards used for ca ared or purchased	alibration,]]	the origin of the	standards, the	standard
Stand	ard A	<0.1						
Stand	ard B	20.0				•		
Stand	ard C	100						
DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
13/5/28	0944	A	01	6,12	20%	Tes	Init	mp
	0450	6	20.0	20,1	<1		1	
	0953	С	1023	99.8	21			
13/5/30	0755	A	0.1	0.12	20%	Ter	Cont	mB
ſ	0757	Б	20.0	20.0	21	/	ſ.	
ł	0758	C	100	99.9	<1		ł	
13/5/30	OCAY	A	0,1	0.11	10%	725	cont	ins
	0926	B	20,0	20.1	41			
	0928	c	100	99.9	41			1
								e
		12						
4.5								
					-			

DEP-SOP-001/01 FT 1000 General Field Testing and Measurement

	Form	FD 9000-	8: FIELI	DINSTRUMEN	IT CALI	BRATION R	ECORDS	
INSTRUM	ENT (MA	KE/MOD	EL#) _	YSI 556MP	<u>S</u>	INSTRUM	ENT # _06H	2510AF
PARAMET	ER: [c/	neck only d	one]					
	PERATUR	E 🔽 🤇	CONDUCT		ALINITY	₽H	ORP	
TURI		P	RESIDUAL				ER	
STANDAR	RDS: [Sp	pecify the typ	e(s) of star were prepa	ndards used for ca ared or purchased	libration, t 1	he origin of the	standards, the	standard
		Do jor	1.00	liou or purchases.				
		PH 4,						
		ondectio	,	1413				
DATE	TIME	STD	STD	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
(yy/mm/dd)	(hr:min)	(A, B, C)	VALUE	102.60 100.1	2.6/KI	jer	Tait	MB
13/5/29	0951	B	4.0	4.03	<1	1	(
	6956	B	7.0	7.61	4			
	1000	B	10.0	10.03	21			
	1602	e	1413	1423	<1		ł	2
13/5/30	0800	A	100%	103,3/100.3	3.3/21	Yes	Cont	MB
1515100	0807	ß	4.0	3.97	LT	(1	(
	0209	B	7.0	6.96	21			
	0812	B	10.0	10.04	41			
	0815	C	1413	1421	21	ł		
1315/30	0930	A	1000/0	6.001	41	Yes	cont	Mis
1	0934	ß	4,0	4.01	41			
	0938	ß	7.0	7.0	41			
	0941	ß	10.0	10.03	21			
	0945	C	1413	1414	21			

DEP-SOP-001/01 FT 2100 Oxidation-Reduction Potential (ORP)

		For	m FD 900	0-8: FIE	LD INSTRUM	ENTCA	LIBRATION	FORM 06	F2009A0 50400038713
INSTR	RUME	ENT (MA	KER/MOE	DEL#) 45	<u>C 556 / HACH 6</u>	1001	INSTRI	JMENT # 05	0400038713
PARA	MET	ER: [ch	eck only o	ne]					•
	ПТ	EMPERA	TURE	CONDL] SALINI		OF	
	× T	URBIDIT						R	
STAN	DAR	DS: [Sp	ecify the type	e(s) of stan	dards used for ca	libration, ti 1	he origin of the s	tandards, the s	tandard
values,				b)	red or purchased	00 Th	rb		
			7 ph		o Turb H)	1413	cond		
			4 ph	-)	DTwb I)	100%	20%		
	Sta.	TIME	JU ph STD	STD	INSTRUMENT	T	CALIBRATED	TYPE	SAMPLER
	<u>m/dď)</u>	(hr.min)	(A, B, C)	VALUE	RESPONSE	% DEV	(YES, NO).	(INIT, CONT)	RCT
5/2	9/13	945	A	7	7.0	K1.0	yes	Initi	1
	/		<u> </u>	4	3.9	<u> </u>	yes		
			C	10	10.0	: ,O</td <td>yes</td> <td></td> <td></td>	yes		
			D	,/	.1	21.0	yes	·	
			Ē	20	20	4.0			
		5	F.	100	100	4.0			
			G	800	800	40	Ŋ		
					ı				
			Н	1413	1413	<1.0	yes		
							1		
			Ĩ	100%	100%	<1,0	yes	Å	V
¥							ľ		
					,				
			12		×				
					/w/				
						н. 			

DEP-SOP-001/01 FT 2100 Oxidation-Reduction Potential (ORP)

		Foi	m FD 900	0-8: FIE			LIBRATION	FORM	F2009A0 <u>0400038</u> 713
INSTRUM	IENT	(MA	KER/MOE	DEL#) <u>451</u>	556/AACH 2	1001	INSTRU	JMENT#O	,
			eck only o	ne]					
	TEMP	ERA] SALINIT	18 C C C	OF	
X	TURBI	DIT						ER	
STANDA	RDS:	[Sp	ecify the type	e(s) of stand	jards used for cal	libration, th	ne origin of the s	standards, the s	tandard
					ed or purchased] G) & G	Ð			
			7	E) 20					
			<u> </u>	E) 100					
DATE	andar TIN		/0 STD	STD	INSTRUMENT	1	CALIBRATED	TYPE	SAMPLER
(yy/mm/dd			(A, B, C)	VALUE	RESPONSE	% DEV	(YES, NO).	(INIT, CONT)	INITIALS
5/29/1	3 111	5	14	7	7.0	21		Cont	- Peter
<i>' '</i>			B	4	4.0	<1			
			C	10	10.0	< 1			
			D	.1	,/	<u> </u>			
			E	20	20	<1			
			F.	100	100	<1			
			G	800	800	<1			
							i		
		\uparrow	14	1413	1413	<1			
	-								
	1	-	I	100%	100%	< (T	4
N		<u>_</u> V_							ν. K
				-					
			•						
		_							
			1						

APPENDIX E



06/05/13

Technical Report for

Terracon Consulting

SSA-ESA Main Water; Orlando, FL

H1127404

Accutest Job Number: FA5039



Sampling Date: 05/29/13

Report to:

Terracon 1675 Lee Rd Winter Park, FL 32789 erkrebill@terracon.com

ATTN: Eric Krebill

Total number of pages in report: 52



Harry Behzadi, Ph.D. Laboratory Director

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (04226CA), TX (T104704404), AK, AR, GA, KY, MA, NV, OK, UT, VA, WA, WI

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3.3: FA5039-3: TMW-3
3.4: FA5039-4: TMW-4
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8.1: Chain of Custody
Section 9: Metals Analysis - QC Data (Accutest New Jersey)
9.1: Prep QC MP72391: Hg





N

0



Sample Summary

Terracon Consulting

Job No: FA5039

SSA-ESA Main Water; Orlando, FL Project No: H1127404

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
FA5039-1	05/29/13	10:39 MBRT	05/29/13	AQ	Ground Water	TMW-1
FA5039-2	05/29/13	10:41 MBRT	05/29/13	AQ	Ground Water	TMW-2
FA5039-3	05/29/13	12:00 MBRT	05/29/13	AQ	Ground Water	TMW-3
FA5039-4	05/29/13	13:01 MBRT	05/29/13	AQ	Ground Water	TMW-4
FA5039-5	05/29/13	13:50 MBRT	05/29/13	AQ	Ground Water	TMW-5
FA5039-6	05/29/13	14:40 MBRT	05/29/13	AQ	Ground Water	TMW-7





Summary of Hits

Job Number:	FA5039
Account:	Terracon Consulting
Project:	SSA-ESA Main Water; Orlando, FL
Collected:	05/29/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	PQL	MDL	Units	Method
FA5039-1	TMW-1					
Copper Lead Mercury ^a Zinc Total Organic Ca pH ^b	arbon	4.6 I 4.0 I 149 20.3 48.5 5.19	25 5.0 10 20 1.0	1.0 1.1 5.6 5.0 0.23	ug/l ug/l ng/l ug/l mg/l su	SW846 6010C SW846 6010C EPA 1631 SW846 6010C SM19 5310B/SW 9060A SM 4500H B/SW 9040C
FA5039-2	TMW-2					
Copper Lead Mercury ^a Zinc Total Organic Ca pH ^b	arbon	2.4 I 2.6 I 167 8.2 I 25.6 5.56	25 5.0 5.0 20 1.0	1.0 1.1 2.8 5.0 0.23	ug/l ug/l ng/l ug/l mg/l su	SW846 6010C SW846 6010C EPA 1631 SW846 6010C SM19 5310B/SW 9060A SM 4500H B/SW 9040C
FA5039-3	TMW-3					
Copper Lead Mercury ^a Zinc Total Organic Ca pH ^b	arbon	4.2 I 7.3 368 14.9 I 25.9 5.49	25 5.0 10 20 1.0	1.0 1.1 5.6 5.0 0.23	ug/l ug/l ng/l ug/l mg/l su	SW846 6010C SW846 6010C EPA 1631 SW846 6010C SM19 5310B/SW 9060A SM 4500H B/SW 9040C
FA5039-4	TMW-4					
Mercury ^a Zinc Chromium, Hexa Total Organic Ca pH ^b		6.1 15.0 I 0.0080 I 9.5 5.51	0.50 20 0.010 1.0	0.28 5.0 0.0080 0.23	ng/l ug/l mg/l su	EPA 1631 SW846 6010C SW846 7196A SM19 5310B/SW 9060A SM 4500H B/SW 9040C
FA5039-5	TMW-5					
Mercury ^a Zinc Chromium, Hexa Total Organic Ca pH ^b		4.1 21.8 0.0090 I 16.9 5.32	0.50 20 0.010 1.0	0.28 5.0 0.0080 0.23	ng/l ug/l mg/l su	EPA 1631 SW846 6010C SW846 7196A SM19 5310B/SW 9060A SM 4500H B/SW 9040C



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Summary of Hits

Job Number:	FA5039
Account:	Terracon Consulting
Project:	SSA-ESA Main Water; Orlando, FL
Collected:	05/29/13

Lab Sample ID Client Sample ID Analyte	Result/ Qual	PQL	MDL	Units	Method
FA5039-6 TMW-7					
Mercury ^a Zinc	20.5 7.0 I	0.50 20	0.28 5.0	ng/l ug/l	EPA 1631 SW846 6010C
Chromium, Hexavalent	0.016	0.010	0.0080	mg/l	SW846 7196A
Total Organic Carbon pH ^b	10.4 5.42	1.0	0.23	mg/l su	SM19 5310B/SW 9060A SM 4500H B/SW 9040C

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.

(b) Field analysis required. Received out of hold time and analyzed by request.

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Sample Results

Report of Analysis



	nepo		ai y 515							
Client Sam Lab Sample Matrix: Method: Project:		SW846	9-1 round Wate 8260B	er ater; Orlando,	FL	Date Sampled:05/29/13Date Received:05/29/13Percent Solids:n/a				
Run #1 ^a Run #2	File ID J086760		DF 1	Analyzed 05/30/13	By MM	Prep D n/a	ate	Prep B n/a	atch	Analytical Batch VJ4395
Run #1 Run #2	Purge 5.0 ml	Volume								
CAS No.	Comp	ound		Result	PQL	MDL	Units	Q		
71-43-2 91-20-3	Benzer Naphtl			0.21 U 1.0 U	1.0 5.0	0.21 1.0	ug/l ug/l			
CAS No.	Surrog	gate Rec	overies	Run# 1	Run# 2	Lim	its			
1868-53-7 17060-07-0 2037-26-5 460-00-4	1,2-Di Toluer	nofluoro chloroetl ne-D8 nofluoro	hane-D4	104% 106% 104% 106%		79-1 85-1	18% 25% 12% 18%			

Report of Analysis

(a) Sample was treated with an anti-foaming agent.

U = Not detected MDL - Method Detection Limit PQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Client Sample ID:	TMW-1		
Lab Sample ID:	FA5039-1	Date Sampled:	05/29/13
Matrix:	AQ - Ground Water	Date Received:	05/29/13
		Percent Solids:	n/a
Project:	SSA-ESA Main Water; Orlando, FL		

Report of Analysis

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium Copper Lead Mercury ^a Zinc	0.50 U 4.6 I 4.0 I 149 20.3	5.0 25 5.0 10 20	0.50 1.0 1.1 5.6 5.0	ug/l ug/l ug/l ng/l ug/l	1 1 1 20 1	05/30/13 05/30/13 06/01/13	05/30/13 LM 05/30/13 LM 05/30/13 LM 06/04/13 ANJ 05/30/13 LM	SW846 6010C ¹ SW846 6010C ¹ SW846 6010C ¹ EPA 1631 ² SW846 6010C ¹	SW846 3010A ³ SW846 3010A ³ SW846 3010A ³ EPA 1631 ⁴ SW846 3010A ³

(1) Instrument QC Batch: MA10789

(2) Instrument QC Batch: N:MA31370

(3) Prep QC Batch: MP25236

(4) Prep QC Batch: N:MP72391

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.

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Accutest Laboratories

	Report of Analysis Page								
Client Sample ID: Lab Sample ID: Matrix:	TMW-1 FA5039-1 AQ - Ground W	^y ater			Date 1	Sampled: 05/29/1 Received: 05/29/1 nt Solids: n/a	-	သ	
Project:	SSA-ESA Main	SA-ESA Main Water; Orlando, FL							
General Chemistry								,	
Analyte	Resu	lt PQL	MDL	Units	DF	Analyzed By	Method		
Chromium, Hexaval Total Organic Carbo pH ^a		0 U 0.10 1.0	0.080 0.23	mg/l mg/l su	10 1 1	05/29/13 17:17 FN 06/01/13 08:53 FN 05/29/13 19:00 KC	SM19 5310B/SW 9		

(a) Field analysis required. Received out of hold time and analyzed by request.

					1 age 1 01 1					
Client Sam Lab Sample Matrix: Method: Project:		SW846	9-2 round Wate 8260B	er ater; Orlando,	FL		Date Date Perc	5/29/13 5/29/13 ′a		
Run #1 ^a Run #2	File ID J086761		DF 1	Analyzed 05/30/13	By MM	Prep D n/a	ate	Prep Ba n/a	itch	Analytical Batch VJ4395
Run #1 Run #2	Purge 5.0 ml	Volume								
CAS No.	Comp	ound		Result	PQL	MDL	Units	Q		
71-43-2 91-20-3	Benzer Naphtł			0.21 U 1.0 U	1.0 5.0	0.21 1.0	ug/l ug/l			
CAS No.	Surrog	gate Rec	coveries	Run# 1	Run# 2	Lim	its			
1868-53-7 17060-07-0 2037-26-5 460-00-4	1,2-Di Toluen	chloroet	omethane hane-D4 benzene	105% 105% 104% 103%		79-1 85-1	18% 25% 12% 18%			

Report of Analysis

(a) Sample was treated with an anti-foaming agent.

U = Not detected MDL - Method Detection Limit PQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Page 1 of 1

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Client Sample ID:	TMW-2		
Lab Sample ID:	FA5039-2	Date Sampled:	05/29/13
Matrix:	AQ - Ground Water	Date Received:	05/29/13
		Percent Solids:	n/a
Project:	SSA-ESA Main Water; Orlando, FL		

Report of Analysis

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium Copper Lead Mercury ^a Zinc	0.50 U 2.4 I 2.6 I 167 8.2 I	5.0 25 5.0 5.0 20	0.50 1.0 1.1 2.8 5.0	ug/l ug/l ug/l ng/l ug/l	1 1 10 1	05/30/13 05/30/13 06/01/13	05/30/13 LM 05/30/13 LM 05/30/13 LM 06/04/13 ANJ 05/30/13 LM	SW846 6010C ¹ SW846 6010C ¹ SW846 6010C ¹ EPA 1631 ² SW846 6010C ¹	SW846 3010A ³ SW846 3010A ³ SW846 3010A ³ EPA 1631 ⁴ SW846 3010A ³

(1) Instrument QC Batch: MA10789

(2) Instrument QC Batch: N:MA31370

(3) Prep QC Batch: MP25236

(4) Prep QC Batch: N:MP72391

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.



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Accutest Laboratories

	Page 1 of 1						
Client Sample ID: Lab Sample ID: Matrix:	TMW-2 FA5039-2 AQ - Ground	Water			Date H	Sampled: 05/29/13 Received: 05/29/13 nt Solids: n/a	
Project:	SSA-ESA Mai	n Water; Orlan	do, FL		1 01 001		
General Chemistry	7						
Analyte	Res	ult PQ	L MDL	Units	DF	Analyzed By	Method
Chromium, Hexava Total Organic Carb pH ^a				mg/l mg/l su	2 1 1	06/01/13 09:10 FN	SW846 7196A SM19 5310B/SW 9060A SM 4500H B/SW 9040C

(a) Field analysis required. Received out of hold time and analyzed by request.

			Repor	t of An	alysis				Page 1 of 1
Client Sam Lab Sampl Matrix: Method: Project:	e ID: FA A(SW	1W-3 .5039-3) - Ground W /846 8260B A-ESA Main	^v ater Water; Orlando, I	FL		Date	Sampled: Received: ent Solids:	05	5/29/13 5/29/13 a
Run #1 Run #2	File ID J086762.D	DF 1	Analyzed 05/30/13	By MM	Prep D n/a	ate	Prep Bat n/a	ch	Analytical Batch VJ4395
Run #1 Run #2	Purge Volu 5.0 ml	ıme							
CAS No.	Compoun	d	Result	PQL	MDL	Units	Q		
71-43-2 91-20-3	Benzene Naphthale	ne	0.21 U 1.0 U	1.0 5.0	0.21 1.0	ug/l ug/l			
CAS No.	Surrogate	Recoveries	Run# 1	Run# 2	Lim	its			
1868-53-7 17060-07-0 2037-26-5 460-00-4	060-07-0 1,2-Dichloroethane-D4 37-26-5 Toluene-D8				83-1 79-1 85-1 83-1	25%			

MDL - Method Detection Limit U = Not detectedPQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

 $I = Result > = MDL \ but < PQL \ J = Estimated \ value$

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Client Sample ID:	TMW-3		
Lab Sample ID:	FA5039-3	Date Sampled:	05/29/13
Matrix:	AQ - Ground Water	Date Received:	05/29/13
		Percent Solids:	n/a
Project:	SSA-ESA Main Water; Orlando, FL		

Report of Analysis

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium Copper Lead Mercury ^a Zinc	0.50 U 4.2 I 7.3 368 14.9 I	5.0 25 5.0 10 20	0.50 1.0 1.1 5.6 5.0	ug/l ug/l ug/l ng/l ug/l	1 1 1 20 1	05/30/13 05/30/13 06/01/13	05/30/13 LM 05/30/13 LM 05/30/13 LM 06/04/13 ANJ 05/30/13 LM	SW846 6010C ¹ SW846 6010C ¹ SW846 6010C ¹ EPA 1631 ² SW846 6010C ¹	SW846 3010A ³ SW846 3010A ³ SW846 3010A ³ EPA 1631 ⁴ SW846 3010A ³

(1) Instrument QC Batch: MA10789

(2) Instrument QC Batch: N:MA31370

(3) Prep QC Batch: MP25236

(4) Prep QC Batch: N:MP72391

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.



ယ ပ Accutest Laboratories

			Repor	rt of Ai	nalysis			Page 1 of 1	ယ သ
Client Sample ID: Lab Sample ID: Matrix:	TMW-3 FA5039-3 AQ - Grou					Date 1	Sampled: 05/29/13 Received: 05/29/13 nt Solids: n/a		ယ
Project:	SSA-ESA Main Water; Orlando, FL								
General Chemistry	7								
Analyte		Result	PQL	MDL	Units	DF	Analyzed By I	Method	
Chromium, Hexaval Total Organic Carbo pH ^a	on	0.040 U 25.9 5.49	0.050 1.0	0.040 0.23	mg/l mg/l su	5 1 1		SW846 7196A SM19 5310B/SW 90 SM 4500H B/SW 90	

(a) Field analysis required. Received out of hold time and analyzed by request.

			Repor	rt of An	alysis			Page 1 of 1
Client Sam Lab Sampl Matrix: Method: Project:	le ID: FA50 AQ - SW84	039-4 Ground Wa 46 8260B	ter Vater; Orlando,	FL		Date	I I	5/29/13 5/29/13 ⁄a
Run #1 Run #2	File ID J086763.D	DF 1	Analyzed 05/30/13	By MM	Prep D n/a	ate	Prep Batch n/a	Analytical Batch VJ4395
Run #1 Run #2	Purge Volum 5.0 ml	e						
CAS No.	Compound		Result	PQL	MDL	Units	Q	
71-43-2 91-20-3	Benzene Naphthalene		0.21 U 1.0 U	1.0 5.0	0.21 1.0	ug/l ug/l		
CAS No.	Surrogate R	ecoveries	Run# 1	Run# 2	Lim	its		
1868-53-7 17060-07-0 2037-26-5 460-00-4	7-01,2-Dichloroethane-D4104%-5Toluene-D8103%				79-1 85-1	18% 25% 12% 18%		

MDL - Method Detection Limit U = Not detectedPQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

 $I = Result > = MDL \ but < PQL \ J = Estimated \ value$

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Accutest Laboratories

Client Sample ID:	TMW-4		
Lab Sample ID:	FA5039-4	Date Sampled:	05/29/13
Matrix:	AQ - Ground Water	Date Received:	05/29/13
		Percent Solids:	n/a
Project:	SSA-ESA Main Water; Orlando, FL		

Report of Analysis

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium Copper Lead Mercury ^a Zinc	0.50 U 1.0 U 1.1 U 6.1 15.0 I	5.0 25 5.0 0.50 20	0.50 1.0 1.1 0.28 5.0	ug/l ug/l ug/l ng/l ug/l	1 1 1 1 1	05/30/13 05/30/13 06/01/13	05/30/13 LM 05/30/13 LM 05/30/13 LM 06/04/13 ANJ 05/30/13 LM	SW846 6010C ¹ SW846 6010C ¹ SW846 6010C ¹ EPA 1631 ² SW846 6010C ¹	SW846 3010A ³ SW846 3010A ³ SW846 3010A ³ EPA 1631 ⁴ SW846 3010A ³

(1) Instrument QC Batch: MA10789

(2) Instrument QC Batch: N:MA31370

(3) Prep QC Batch: MP25236

(4) Prep QC Batch: N:MP72391

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.



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Accutest Laboratories

		Repor	rt of An	alysis		Page 1 of 1	3.4
Client Sample ID: Lab Sample ID: Matrix:	TMW-4 FA5039-4 AQ - Ground Water				Date 1	Sampled: 05/29/13 Received: 05/29/13 nt Solids: n/a	ω
Project:	SSA-ESA Main Water;	Orlando,	FL		Turu	in Sonds. IV a	
General Chemistry	,						
Analyte	Result	PQL	MDL	Units	DF	Analyzed By Method	
Chromium, Hexava Total Organic Carbo pH ^a		0.010 1.0	0.0080 0.23	mg/l mg/l su	1 1 1	05/29/13 17:17 FN SW846 7196A 06/01/13 09:43 FN SM19 5310B/SW 9 05/29/13 19:00 KC SM 4500H B/SW 9	

(a) Field analysis required. Received out of hold time and analyzed by request.

			Repor	rt of An	alysis				Page 1 of 1
Client Sam Lab Sample Matrix: Method: Project:	e ID: FA50 AQ - SW8	039-5 Ground Wat 46 8260B	ter Vater; Orlando, T	FL		Date	e Sampled Received ent Solids	: 05	5/29/13 5/29/13 /a
Run #1 Run #2	File ID J086764.D	DF 1	Analyzed 05/30/13	By MM	Prep D n/a	ate	Prep Ba n/a	tch	Analytical Batch VJ4395
Run #1 Run #2	Purge Volum 5.0 ml	ie							
CAS No.	Compound		Result	PQL	MDL	Units	Q		
71-43-2 91-20-3	Benzene Naphthalene		0.21 U 1.0 U	1.0 5.0	0.21 1.0	ug/l ug/l			
CAS No.	Surrogate F	Recoveries	Run# 1	Run# 2	Lim	its			
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluo 1,2-Dichloro Toluene-D8 4-Bromofluo	bethane-D4	104% 107% 103% 94%		85-1	25%			

MDL - Method Detection Limit U = Not detectedPQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

 $I = Result > = MDL \ but < PQL \ J = Estimated \ value$

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Accutest Laboratories

Client Sample ID:	TMW-5		
Lab Sample ID:	FA5039-5	Date Sampled:	05/29/13
Matrix:	AQ - Ground Water	Date Received:	05/29/13
		Percent Solids:	n/a
Project:	SSA-ESA Main Water; Orlando, FL		

Report of Analysis

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium Copper Lead Mercury ^a Zinc	0.50 U 1.0 U 1.1 U 4.1 21.8	5.0 25 5.0 0.50 20	0.50 1.0 1.1 0.28 5.0	ug/l ug/l ug/l ng/l ug/l	1 1 1 1 1	05/30/13 05/30/13 06/01/13	05/30/13 LM 05/30/13 LM 05/30/13 LM 06/04/13 ANJ 05/30/13 LM	SW846 6010C ¹ SW846 6010C ¹ SW846 6010C ¹ EPA 1631 ² SW846 6010C ¹	SW846 3010A ³ SW846 3010A ³ SW846 3010A ³ EPA 1631 ⁴ SW846 3010A ³

(1) Instrument QC Batch: MA10789

(2) Instrument QC Batch: N:MA31370

(3) Prep QC Batch: MP25236

(4) Prep QC Batch: N:MP72391

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.

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FA5039

Accutest Laboratories

			Repor	t of An	alysis			Page 1 of 1	3.5
Client Sample ID: Lab Sample ID: Matrix:	TMW-5 FA5039-5 AQ - Grou	ind Water				Date F	Sampled: 05/29/13 Received: 05/29/13 nt Solids: n/a		မ
Project:	SSA-ESA	Main Water;	Orlando, I	FL		1000	it bonus. Iv a		
General Chemistry	7								,
Analyte		Result	PQL	MDL	Units	DF	Analyzed By	Method	
Chromium, Hexaval Total Organic Carbo pH ^a	on	0.0090 I 16.9 5.32	0.010 1.0	0.0080 0.23	mg/l mg/l su	1 1 1	05/29/13 17:17 FN 06/01/13 10:29 FN 05/29/13 19:00 KC		

(a) Field analysis required. Received out of hold time and analyzed by request.

				Repo	rt of An	alysis				Page 1 of 1
Client Sam Lab Sampl Matrix: Method: Project:	e ID: F A S	W846	9-6 round Wat 8260B	er ⁷ ater; Orlando,	FL		Date	e Sample e Receive cent Solic	d: 05	5/29/13 5/29/13 a
Run #1 Run #2	File ID J086765.1	D	DF 1	Analyzed 05/30/13	By MM	Prep D n/a	ate	Prep B n/a	atch	Analytical Batch VJ4395
Run #1 Run #2	Purge Vo 5.0 ml	olume								
CAS No.	Compou	ınd		Result	PQL	MDL	Units	Q		
71-43-2 91-20-3	Benzene Naphtha			0.21 U 1.0 U	1.0 5.0	0.21 1.0	ug/l ug/l			
CAS No.	Surroga	te Rec	overies	Run# 1	Run# 2	Lim	its			
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromo 1,2-Dich Toluene- 4-Bromo	nloroeth -D8	nane-D4	104% 105% 104% 94%		79-1 85-1	18% 25% 12% 18%			

MDL - Method Detection Limit U = Not detectedPQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

 $I = Result > = MDL \ but < PQL \ J = Estimated \ value$

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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3.6



Client Sample ID:	TMW-7		
Lab Sample ID:	FA5039-6	Date Sampled:	05/29/13
Matrix:	AQ - Ground Water	Date Received:	05/29/13
		Percent Solids:	n/a
Project:	SSA-ESA Main Water; Orlando, FL		

Report of Analysis

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium Copper Lead Mercury ^a Zinc	0.50 U 1.0 U 1.1 U 20.5 7.0 I	5.0 25 5.0 0.50 20	0.50 1.0 1.1 0.28 5.0	ug/l ug/l ug/l ng/l ug/l	1 1 1 1 1	05/30/13 05/30/13 06/01/13	05/30/13 LM 05/30/13 LM 05/30/13 LM 06/04/13 ANJ 05/30/13 LM	SW846 6010C ¹ SW846 6010C ¹ SW846 6010C ¹ EPA 1631 ² SW846 6010C ¹	SW846 3010A ³ SW846 3010A ³ SW846 3010A ³ EPA 1631 ⁴ SW846 3010A ³

(1) Instrument QC Batch: MA10789

(2) Instrument QC Batch: N:MA31370

(3) Prep QC Batch: MP25236

(4) Prep QC Batch: N:MP72391

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.



Accutest Laboratories

		Repo	rt of An	alysis			Page 1 of 1
Client Sample ID: Lab Sample ID: Matrix:	TMW-7 FA5039-6 AQ - Ground Wa	ıter			Date 1	Sampled: 05/29/13 Received: 05/29/13 nt Solids: n/a	
Project:	SSA-ESA Main	Water; Orlando,	FL		1 0100	in Solids. If a	
General Chemistry	7						
Analyte	Result	PQL	MDL	Units	DF	Analyzed By	Method
Chromium, Hexava Total Organic Carb pH ^a		0.010 1.0	0.0080 0.23	mg/l mg/l su	1 1 1		SW846 7196A SM19 5310B/SW 9060A SM 4500H B/SW 9040C

(a) Field analysis required. Received out of hold time and analyzed by request.



Section 4

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Misc. Forms								
Custody Documents and Other Forms								
ncludes the following where applicable: Chain of Custody								



Acc	ute								th	ea	st		F	7		5	0	3	C	7			
ACCUTEST.	4405				Cus								utest	-	•	•		_		•	AGE	ļ	OF 1
					FAX: 4				11			Acc	utest	000	to #								
Client / Reporting Information	No. No. of Lot.	-			test.com								uleal	Quo					SKIF				
Company Name lerracon	the Local Control	Project Na	me: SS			- China			A STREET BOARD		11.11			North Same College	1979-12-13 1979-12-13	<u>^</u>	vialytica	al Inform	nation		Million of States		Matrix Codes
Address 1675 Lee Rd.	-+	Street		<u> </u>	<u> </u>	110	Nn.	_и	vah	~							2					1	DW - Drinking Water GW - Ground Water
cityWinter Park state FL. Zp 32	781	City Co.	land				Sta	ate 🖌	Ē٢.			4	·			>	27						WW - Water SW - Surface Water
Project Conject Frie Knebill Engilknebid - Terran		Project #	4 1/2	2 74		-		C	- L . ,			⊣≥ໍ		Ηđ		3	9						SO - Soil SL - Sludge
-noner 417-118-8358		Fax #	ea# H1127404 # 407-740-6112								- +		18	2	Mercury	్ చ						OI - OII LIQ • Other Liquid	
Sampler(s) Name(s) (Printed) Mike Burns , Rory Than	د م		nt Purchase Order #							Den2		'-	9	Σ	cd.cu.Pb	'					AIR - Air SOL - Other Solid		
	F	COLLECTION				CONTAI	NER INFO	HMATIC	N			⊣ ∛a		2	a		Ĩ						WP - Wipe
Accutest Field ID / Point of Collection					TOTAL #	5 w		L.	2 3	¥4	Ę	R260	j jē	FUPR	U U	イ	1 T T T T						
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Approved By: / Rush	Code				CIAL "A" (ta Deli IBESU				n		(1000) (1000)	Control of the local diversion			and the franciscopy	A CONTRACTOR	Nillion C	Comme	ents / F	Remark	5	
7 Day RUSH														A	Ju	a	ahız		-26	211	:1	\mathbf{T}	ac is
5 Day RUSH (adgv					CIAL "B" (LTS P	LUS	QC)					0.	uy_	400	siye	L		<u> </u>	17		
3 Day EMERGENCY			∣∟⊓ª	DT1 (EI	PALEVEL	_ 3)								ch	ove	2	10	<u>.</u>	.	1	••••	~	<u>ocis</u> ny sample
2 Day EMERGENCY				ILT1 (ÉF	ALEVEL	4)											10	<u>, </u>	<u>~</u> /		on	<u> </u>	ny sample
1 Day EMERGENCY			E	D'S																			
OTHER																				_			
Emergency or Rush T/A Data Available VIA Email or Lab			L																_				
Relinquished by Sampler: Date Time:	Rec	ented be	<u>ow each i</u> Y:	ime sam 0.5-2.9	pes char	100 DO 5 45	ssess F	ion, ir Relina	ncludir Juishe	ia cou id bv	irier c	leliverv.				Date) Time		Ber	havia	But		
1 Muh De S/29/13 1543		1.WI	eived By: 15-29-73 1545 Relinquished by: Relinquished by: ALSE 3									Date			4	eived By:							
Relinquished by: Date Time:		eived B	y:				TF	lelinq	quishe	ed by	:					Date	Time):		eived	By:		
	6						7												8				
Lab Use Only: Custody Seal in Place: Y N Temp	DIANK P	rovided	: <u>Y N</u>	Pre	served w	here /	Appli	cable	9: Y	N	Tot	al # of (Coolers	s:	Co	oler T	empera	ature (s) Ce	lsius:	3.0), Z.	Y

FA5039: Chain of Custody Page 1 of 3



4.1 **4**

ACCUTEST'S JOB NUMBER: FA 5039 CLIEN DATE/TIME RECEIVED: 05-29-13 (545 (MM/DD/) METHOD OF DELIVERY: FEDEX UPS ACCU AIRBILL NUMBERS:	ES SAMPLE RECEIPT CONFIRMATION NT: Terraum PROJECT: SSA-ESA Maid Wood YY 24:00} NIMBER OF COOLERS RECEIVED: 2 TEST COURIER GREYHOUND DELIVERY OTHER	<u>sc</u>
COOLER INFORMATION CUSTODY SEAL NOT PRESENT OR NOT INTACT CHAIN OF CUSTODY NOT RECEIVED (COC) ANALYSIS REQUESTED IS UNCLEAR OR MISSING SAMPLE DATES OR TIMES UNCLEAR OR MISSING TEMPERATURE CRITHERIA NOT MET WET ICE PRESENT TRIP BLANK INFORMATION TRIP BLANK NOT PROVIDED VTRIP BLANK NOT ON COC TRIP BLANK NOT INTACT RECEIVED WATER TRIP BLANK RECEIVED WATER TRIP BLANK MISC. INFORMATION NUMBER OF ENCORES ? 25-GRAM	TEMPERATURE INFORMATION IR THERM ID 3 CORR. FACTOR 10.4 OBSERVED TEMPS: 2.4 2.4 OBSERVED TEMPS: 3.0 2.4 CORRECTED TEMPS: 3.0 2.4 SAMPLE INFORMATION SAMPLE LABELS PRESENT ON ALL BOTTLES INCORRECT NUMBER OF CONTAINERS USED SAMPLE RECEIVED IMPROPERLY PRESERVED INSUFFICIENT VOLUME FOR ANALYSIS DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL ID'S ON COC DO NOT MATCH LABEL VOC VIALS HAVE HEADSPACE (MACRO BUBBLES) BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS SAMPLE CONTAINER(S) RECEIVED BROKEN % SOLIDS JAR NOT RECEIVED 5035 FIELD KIT FROZEN WITHIN 48 HOUR'S RESIDUAL CHLORINE PRESENT	
NE 10/10		

FA5039: Chain of Custody Page 2 of 3



		Job Cha	nge Order:	FA503	39_5/3	31/2013		ź
Requested Date:	5/31/2013			Received Date:		5/29/2013		
Account Name:	Terracon Consulting			Due Date:		6/5/2013		4
Project Description:	SSA-ESA Main Water;	Orlando, FL		Deliverable:		COMMB		
CSR:	AC			TAT (Days):		3		
Sample #: FA5039-ali		Change:	Please extract a	and hold FLPRO.				
Above Changes	Eric Krebill	revisions, previ	ously discussed wit		t Service		Chain of Custody Page 3 of 3	
					F	Page 1 of 1		



S



GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary Job Number: FA5039

Account: Project:	TERCFLWP T SSA-ESA Mair		-				
Sample VJ4395-MB	File ID J086759.D	DF 1	Analyzed 05/30/13	By MM	Prep Date n/a	Prep Batch n/a	Analytical Batch VJ4395
The QC repor	ted here applies	to the fo	llowing sample	s:		Method: SW84	6 8260B

FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2 91-20-3	Benzene Naphthalene	ND ND	1.0 5.0	0.21 1.0	ug/l ug/l
CAS No.	Surrogate Recoveries		Limits		
1868-53-7 17060-07-0 2037-26-5	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8	105% 105% 104%	83-118 79-125 85-112	%	

Page 1 of 1

5.1.1 5



Blank Spike Summary Job Number: FA5039

Account:	TERCFLWP Terracon Consulting												
Project:	SSA-ESA Main Water; Orlando, FL												
Sample	File ID	DF	Analyzed 05/30/13	By	Prep Date	Prep Batch	Analytical Batch						
VJ4395-BS	J086758.D	1		MM	n/a	n/a	VJ4395						

The QC reported here applies to the following samples:

Method: SW846 8260B

FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	28.5	114	81-122
91-20-3	Naphthalene	25	23.7	95	63-132
CAS No.	Surrogate Recoveries	BSP	Lim	its	
1868-53-7	Dibromofluoromethane	100%	83-1	18%	
17060-07-0	1,2-Dichloroethane-D4	100%	79-1	25%	
2037-26-5	Toluene-D8	103%	85-1	12%	
460-00-4	4-Bromofluorobenzene	91%	83-1	18%	

G

Page 1 of 1



Matrix Spike/Matrix Spike Duplicate Summary

Job Number:	FA5039
Account:	TERCFLWP Terracon Consulting
Project:	SSA-ESA Main Water; Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA5039-4MS	J086780.D	1	05/30/13	MM	n/a	n/a	VJ4395
FA5039-4MSD	J086781.D	1	05/30/13	MM	n/a	n/a	VJ4395
FA5039-4	J086763.D	1	05/30/13	MM	n/a	n/a	VJ4395

The QC reported here applies to the following samples:

Method: SW846 8260B

FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6

CAS No.	Compound	FA5039-4 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2 91-20-3	Benzene Naphthalene	1.0 U 5.0 U	25 25	30.1 22.5	120 90	29.8 25.1	119 100	1 11	81-122/14 63-132/25
CAS No.	Surrogate Recoveries	MS	MSD	FA	5039-4	Limits			
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	97% 103% 97% 88%	100% 103% 99% 89%	105 104 103 92%	% %	83-118% 79-125% 85-112% 83-118%	-		



Section 6

6



Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries



QC Batch ID: MP25236 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:					05/30/1	3	05/30/13
Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Aluminum	200	15	15				
Antimony	6.0	1.3	1.3				
Arsenic	10	1.6	2.5				
Barium	200	1	1				
Beryllium	4.0	.5	.5				
Cadmium	5.0	.5	.5	0.0	<5.0	-0.10	<5.0
Calcium	1000	50	50				
Chromium	10	1.8	2				
Cobalt	50	.5	.5				
Copper	25	1	1	0.60	<25	0.20	<25
Iron	300	29	29				
Lead	5.0	1.1	1.1	-0.20	<5.0	-0.20	<5.0
Magnesium	5000	74	74				
Manganese	15	.7	.7				
Molybdenum	50	.6	1				
Nickel	40	.5	.5				
Potassium	10000	200	200				
Selenium	10	2	2				
Silver	10	.5	.5				
Sodium	10000	500	500				
Strontium	10	.5	.5				
Thallium	10	1.3	1.3				
Tin	50	.7	1.8				
Titanium	10	.9	1				
Vanadium	50	.5	1				
Zinc	20	3	5	0.0	<20	6.4	<20
Associated sa	amples MP2	25236: FA	.5039-1, F	A5039-2, F	A5039-3,	FA5039-4,	FA5039-5, FA5039-6

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits

(anr) Analyte not requested

QC Batch ID: MP25236 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:			05/30/13					05/30/13	
Metal	FA5039-1 Original	DUP	RPD	QC Limits	FA5039-1 Original		Spikelot MPFLICP1	% Rec	QC Limits
Aluminum	anr								
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Cadmium	0.0	0.0	NC	0-20	0.0	50.0	50	100.0	80-120
Calcium	anr								
Chromium	anr								
Cobalt									
Copper	4.6	4.9	6.3	0-20	4.6	278	250	109.4	80-120
Iron	anr								
Lead	4.0	4.8	18.2	0-20	4.0	500	500	99.2	80-120
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel									
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	20.3	22.8	11.6	0-20	20.3	531	500	102.1	80-120
Associated sam	mples MP25	236: FA50	39-1, FA5	039-2, FA	5039-3, F	A5039-4,	FA5039-5,	FA5039-6	
Results < IDL (*) Outside of (N) Matrix Spi (anr) Analyte	QC limit ke Rec. o	s utside of			rposes				

6

6.1.2



QC Batch ID: MP25236 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:					05/30/13	
Metal	FA5039-1 Original		Spikelot MPFLICP1	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Cadmium	0.0	49.6	50	99.2	0.8	20
Calcium	anr					
Chromium	anr					
Cobalt						
Copper	4.6	274	250	107.8	1.4	20
Iron	anr					
Lead	4.0	496	500	98.4	0.8	20
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel						
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	20.3	522	500	100.3	1.7	20
Associated sar	nples MP25	236: FA50	39-1, FA5	039-2, FA	5039-3, F	A5039-4, FA5039-5, FA5039-6
Results < IDL (*) Outside of (N) Matrix Spi (anr) Analyte	E QC limit ike Rec. o	s utside of			rposes	



QC Batch ID: MP25236 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:			05/30/13	
Metal	BSP Result	Spikelot MPFLICP1		QC Limits
Aluminum	anr			
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Cadmium	51.7	50	103.4	80-120
Calcium	anr			
Chromium	anr			
Cobalt				
Copper	292	250	116.8	80-120
Iron	anr			
Lead	506	500	101.2	80-120
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	521	500	104.2	80-120
Associated sam	mples MP2	5236: FA50	39-1, FA5	039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6
Results < IDL (*) Outside o: (anr) Analyte	E QC limit	ts	for calcu	lation purposes





SERIAL DILUTION RESULTS SUMMARY

Login Number: FA5039 Account: TERCFLWP - Terracon Consulting Project: SSA-ESA Main Water; Orlando, FL

QC Batch ID: MP25236 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:			05/30/13	
Metal	FA5039-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Cadmium	0.00	0.00	NC	0-10
Calcium	anr			
Chromium	anr			
Cobalt				
Copper	4.60	10.0	117.4(a)	0-10
Iron	anr			
Lead	4.00	0.00	100.0(a)	0-10
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	20.3	34.2	68.5 (a)	0-10
Associated sa	mples MP25	236: FA50	39-1, FA5	039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6
(*) Outside o (anr) Analyte	f QC limit not reque	s sted		lation purposes low initial sample concentration (< 50 times IDL).



QC Batch ID: MP25236 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:									05/30/13	3
Metal	Sample ml	Final ml	FA5039-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Cadmium	9.8	10	0	0	51	0.2	2.5	50	102.0	80-120
Calcium										
Chromium										
Cobalt										
Copper	9.8	10	4.6	4.508	111.5	0.2	5	100	107.0	80-120
Iron										
Lead	9.8	10	4	3.92	54.4	0.2	2.5	50	101.0	80-120
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium										
Selenium										
Silver										
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc	9.8	10	20.3	19.894	309.2	0.2	12.5	250	115.7	80-120
Associated sa	mples MP2	5236: FA5	039-1, FA5	039-2, F#	45039-3,	FA5039-4,	FA5039-5	, FA5039-	5	
Results < IDI (*) Outside c			for calcu	lation pu	irposes					

(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested



Section 7



General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries



METHOD BLANK AND SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: FA5039 Account: TERCFLWP - Terracon Consulting Project: SSA-ESA Main Water; Orlando, FL

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN55975	0.010	0.0	mg/l	0.100	0.11	107.2	78-120%
Total Organic Carbon	GP21758/GN56031	1.0	0.0	mg/l	15	15.5	103.3	90-110%

Associated Samples: Batch GN55975: FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6 Batch GP21758: FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6

(*) Outside of QC limits

7.1 7



DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: FA5039 Account: TERCFLWP - Terracon Consulting Project: SSA-ESA Main Water; Orlando, FL

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Total Organic Carbon	GP21758/GN56031	FA5039-1	mg/l	48.5	48.2	0.6	0-20%
pH	GN55981	FA5039-1	su	5.19	5.21	0.4	0-10%

Associated Samples: Batch GN55981: FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6 Batch GP21758: FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6

(*) Outside of QC limits

7.2 -

MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: FA5039 Account: TERCFLWP - Terracon Consulting Project: SSA-ESA Main Water; Orlando, FL

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN55975	FA5039-4	mg/l	0.0080	0.100	0.086	78.0	78-120%
Total Organic Carbon	GP21758/GN56031	FA5039-1	mg/l	48.5	15	63.6	100.7	90-110%

Associated Samples:

Batch GN55975: FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6 Batch GP21758: FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits





MATRIX SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: FA5039 Account: TERCFLWP - Terracon Consulting Project: SSA-ESA Main Water; Orlando, FL

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chromium, Hexavalent	GN55975	FA5039-4	mg/l	0.0080	0.100	0.0830	2.6(a)	34%

Associated Samples:

Batch GN55975: FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6

(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

(a) Spike recovery indicates possible matrix interference.





Section 8

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Custody Documents and Other Forms

(Accutest New Jersey)

Includes the following where applicable:

Chain of Custody



	Client / Reporting Information			122.40	www	00 FAX: accutest co	m							Fd	<u> </u>	#	79	48	83	399	3° I Info	765		F		
mpany	Name: Accutest Laboratories		Project Nr	EA											Γ	T				/uca		rmat	101			Matrix Code DW - Drinking Wa
	4405 Vineland Rd.		Project Name: FA5039								1												GW - Ground War WW - Water			
ity: Orlando State: FL Zip: 32811 hone #: (407) 425-6700 Fax#: (407) 425-0707				Please send report to dawnd@accutest.com For any other issues contact munam@accutest.com																			SW - Surface Wa SO - Soil SL- Sludge OI - Oil LIQ - Other Liqu AJR - Air			
			COLLECTION							MATIO																SOL - Other Sol WP - Wipe
ab ID #	Sample ID	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF			ID HOR		H2SO4	VAOH+ZNAC	DI WATER MEOH	HGLL1631												LAB USE ONL
	FA5039-1	05/29/13	10:39		GW	1		x						X												
	FA5039-2	05/29/13	10:41		GW	1		x						X		_										
	FA5039-3	05/29/13	12:00		GW	1		x						X	ļ					_						
	FA5039-4	05/29/13	13:01 13:50		GW	1		x						X												P.C.
	FA5039-5 FA5039-6	05/29/13	13:50		GW GW	1	-	x x						1		+										
	170000-0	00/20/10	11.10					Ŷ		+				<u>⊢^</u>			+									
										-				1				+	-		-					
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							-+		+																	
	Turnaround Time (Business days)				Da	ta Deliv	era	ble	Info	rma	tior		1							8800	Corr	mer	nte / J	Rema	rke	
	Std. 10 Business Days Approved By: 7 Day RUSH 5 Day RUSH 3 Day EMERGENCY 2 Day EMERGENCY 1 Day EMERGENCY 0 ther	/ Date/Rush (Code:		MMERCI 0T1 (EP LT1 (EF	CIAL "A" IAL "B" (PA LEVEL	RES . 3)				IC)						ip to			itory	,.F	7	L N	N V	J	am
Relinquis	shed by Sampler/Affiliation Date Time; 700 Rd	Sample Cust eceived By/Af FX eceived By/Af	filiation	be docun	nented	below ea	ch ti	R 3	Relin I	quish	led E	3y/Af	osses filiatio filiatio	on	nclud	ling co	ourier	Da 5	te Tin /3//(te Tin	3	4	ب	14	/Affili	/	AL DI

FA5039: Chain of Custody Page 1 of 2 Accutest New Jersey



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Accutest Laboratories Sample Receipt Summary

EADONAT	011120						
Accutest Job Number: F	A5039	Client:		Project:			
Date / Time Received: 5/	ate / Time Received: 5/31/2013			Airbill #'s:			
Cooler Temps (Initial/Adju	sted): <u>#1: (2/2</u>	<u>2): 0</u>					
Cooler Security	Y or N		Y or N	Sample Integrity - Documentation	Y	or N	
1. Odotody Oddio i robolit.		3. COC Present:		1. Sample labels present on bottles:	\checkmark		
2. Custody Seals Intact:	☑ 4	I. Smpl Dates/Time OK		2. Container labeling complete:	\checkmark		
Cooler Temperature	Y or I	<u>N</u>		3. Sample container label / COC agree:	\checkmark		
1. Temp criteria achieved:	✓ [Sample Integrity - Condition	Y	or N	
2. Cooler temp verification:				1. Sample recvd within HT:	\checkmark		
3. Cooler media:	Ice (Ba	ag)		2. All containers accounted for:	\checkmark		
4. No. Coolers:	1			3. Condition of sample:	I	ntact	
Quality Control _Preservat	io <u>Y</u> or	N N/A		Sample Integrity - Instructions	Y	or N	N/A
1. Trip Blank present / cooler:				1. Analysis requested is clear:			
2. Trip Blank listed on COC:				2. Bottles received for unspecified tests		\checkmark	
3. Samples preserved properl	y: 🔽 [3. Sufficient volume recvd for analysis:			
4. VOCs headspace free:				4. Compositing instructions clear:			\checkmark
				5. Filtering instructions clear:			\checkmark

Comments

Accutest Laboratories V:732.329.0200

2235 US Highway 130 F: 732.329.3499

Dayton, New Jersey www/accutest.com

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FA5039: Chain of Custody Page 2 of 2



FA5039

Section 9

9



Metals Analysis

QC Data Summaries

(Accutest New Jersey)

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries



BLANK RESULTS SUMMARY Part 2 - Method Blanks

Login Number: FA5039 Account: ALSE - Accutest Laboratories Southeast, Inc. Project: TERCFLWP: SSA-ESA Main Water; Orlando, FL

QC Batch ID: Matrix Type:				31				
Prep Date:					06/01/1	3	06/01/13	
Metal	RL	IDL	MDL	MB raw	final	MB raw	final	
Mercury	0.50	.086	.28	-0.23	<0.50	0.37	<0.50	

Associated samples MP72391: FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits (anr) Analyte not requested





MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA5039 Account: ALSE - Accutest Laboratories Southeast, Inc. Project: TERCFLWP: SSA-ESA Main Water; Orlando, FL

~	D: MP72391 De: AQUEOUS		Methods: EPA 1631 Units: ng/l				
Prep Date:		06/03/1	3				
Metal	FA5039-4 Original MS	Spikelot HGLL1 % Rec	QC Limits				

96.0 71-125

Associated samples MP72391: FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits $% \left({\left({{{\rm{A}}} \right)_{\rm{A}}} \right)$

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Mercury

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(anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA5039 Account: ALSE - Accutest Laboratories Southeast, Inc. Project: TERCFLWP: SSA-ESA Main Water; Orlando, FL

QC Batch ID:	MP72391
Matrix Type:	AQUEOUS

Methods: EPA 1631 Units: ng/l

Prep Date:						06/03/13			
Metal	FA5039 Origin		Spikelo HGLL1	% Rec	MSD RPD	QC Limit			
Mercury	6.1	11.1	5	100.0	1.8	24			

Associated samples MP72391: FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested



SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA5039 Account: ALSE - Accutest Laboratories Southeast, Inc. Project: TERCFLWP: SSA-ESA Main Water; Orlando, FL

QC Batch ID: M Matrix Type: A					Methods: Units:	EPA 1631 ng/l
Prep Date:			05/23/13			
Metal	LCS Result	Spikelot HGLL1	% Rec	QC Limits		
Mercury	4.8	5	96.0	77-123		

Associated samples MP72391: FA5039-1, FA5039-2, FA5039-3, FA5039-4, FA5039-5, FA5039-6

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits (anr) Analyte not requested







06/10/13

Technical Report for

Terracon Consulting

SSA-ESA Main Water; Orlando, FL

H1127404

Accutest Job Number: FA5039R



Sampling Date: 05/29/13

Report to:

Terracon 1675 Lee Rd Winter Park, FL 32789 erkrebill@terracon.com

ATTN: Eric Krebill

Total number of pages in report: 19



Harry Behzadi, Ph.D. Laboratory Director

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (04226CA), TX (T104704404), AK, AR, GA, KY, MA, NV, OK, UT, VA, WA, WI

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Southeast • 4405 Vineland Road • Suite C-15 • Orlando, FL 32811 • tel: 407-425-6700 • fax: 407-425-0707 • http://www.accutest.com



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Sample Summary

Terracon Consulting

Job No: FA5039R

SSA-ESA Main Water; Orlando, FL Project No: H1127404

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
FA5039-1R	05/29/13	10:39 MBRT	05/29/13	AQ	Ground Water	TMW-1
FA5039-2R	05/29/13	10:41 MBRT	05/29/13	AQ	Ground Water	TMW-2
FA5039-3R	05/29/13	12:00 MBRT	05/29/13	AQ	Ground Water	TMW-3
FA5039-5R	05/29/13	13:50 MBRT	05/29/13	AQ	Ground Water	TMW-5
FA5039-6R	05/29/13	14:40 MBRT	05/29/13	AQ	Ground Water	TMW-7



Summary of Hits

Job Number:	FA5039R
Account:	Terracon Consulting
Project:	SSA-ESA Main Water; Orlando, FL
Collected:	05/29/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	PQL	MDL	Units	Method
FA5039-1R	TMW-1					
ТРН (С8-С40) а		0.170 I	0.25	0.15	mg/l	FLORIDA-PRO
FA5039-2R	TMW-2					
No hits reported	in this sample.					
FA5039-3R	TMW-3					
ТРН (С8-С40) а		0.200 I	0.24	0.15	mg/l	FLORIDA-PRO
FA5039-5R	TMW-5					
ТРН (С8-С40) а		0.331	0.25	0.15	mg/l	FLORIDA-PRO
FA5039-6R	TMW-7					
ТРН (С8-С40) а		0.157 I	0.24	0.15	mg/l	FLORIDA-PRO

(a) Sample extracted beyond hold time.



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Sample Results

Report of Analysis



			Repo	rt of An	alysis			Page 1 of 1
Client San Lab Samp Matrix: Method: Project:	le ID: FA5039 AQ - G FLORI	9-1R round Wate DA-PRO	r SW846 3510C ater; Orlando,			Date	Received: 0	5/29/13 5/29/13 /a
Run #1 ^a Run #2	File ID ZF059978.D	DF 1	Analyzed 06/06/13	By FEA	Prep D 06/06/1		Prep Batch OP47208	Analytical Batch GZF2129
Run #1 Run #2	Initial Volume 1020 ml	Final Vol 1.0 ml	ume					
CAS No.	Compound		Result	PQL	MDL	Units	Q	
	TPH (C8-C40)		0.170	0.25	0.15	mg/l	Ι	
CAS No.	Surrogate Rec	overies	Run# 1	Run# 2	Lim	its		
84-15-1	o-Terphenyl		60%		43-1	23%		

(a) Sample extracted beyond hold time.

MDL - Method Detection Limit U = Not detectedPQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

 $I = Result > = MDL \ but < PQL \ J = Estimated \ value$

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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6 of 19 ACCUTEST FA5039R

	Report of Analysis													
Client Sam Lab Samp Matrix: Method: Project:	le ID: FA503 AQ - G FLORI	9-2R Fround Wate DA-PRO	r SW846 3510C ater; Orlando,			Date	e Sampled: e Received: cent Solids:	05/29/13 05/29/13 n/a						
Run #1 ^a Run #2	File ID ZF059979.D	DF 1	Analyzed 06/06/13	By FEA	Prep D 06/06/1		Prep Bate OP47208	h Analytical Batch GZF2129						
Run #1 Run #2	Initial Volume 1020 ml	Final Vol 1.0 ml	ume											
CAS No.	Compound		Result	PQL	MDL	Units	Q							
	TPH (C8-C40))	0.15 U	0.25	0.15	mg/l								
CAS No.	Surrogate Rec	coveries	Run# 1	Run# 2	Lim	its								
84-15-1	o-Terphenyl		81%		43-1	23%								

(a) Sample extracted beyond hold time.

MDL - Method Detection Limit U = Not detectedPQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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3.2



			Repo	rt of An	alysis				Page 1 of 1
Client San Lab Samp Matrix: Method: Project:	le ID: FA503 AQ - G FLORI	9-3R round Wate DA-PRO	er SW846 3510C ater; Orlando,			Date	Sampled: Received: ent Solids:		/29/13 /29/13
Run #1 ^a Run #2	File ID ZF059980.D	DF 1	Analyzed 06/06/13	By FEA	Prep D 06/06/1		Prep Batc OP47208	h	Analytical Batch GZF2129
Run #1 Run #2	Initial Volume 1030 ml	Final Vo 1.0 ml	lume						
CAS No.	Compound		Result	PQL	MDL	Units	Q		
	TPH (C8-C40)	I	0.200	0.24	0.15	mg/l	Ι		
CAS No.	Surrogate Rec	overies	Run# 1	Run# 2	Lim	its			
84-15-1	o-Terphenyl		78%		43-1	23%			

(a) Sample extracted beyond hold time.

MDL - Method Detection Limit U = Not detectedPQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

 $I = Result > = MDL \ but < PQL \ J = Estimated \ value$

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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8 of 19 ACCUTEST FA5039R

	Report of Analysis													
Client San Lab Samp Matrix: Method: Project:	le ID: FA5039 AQ - G FLORI	9-5R round Wate DA-PRO	r SW846 3510C ater; Orlando,			Date	Received:	05/29/13 05/29/13 n/a						
Run #1 ^a Run #2	File ID ZF059981.D	DF 1	Analyzed 06/06/13	By FEA	Prep D 06/06/1		Prep Batch OP47208	n Analytical Batch GZF2129						
Run #1 Run #2	Initial Volume 1020 ml	Final Vol 1.0 ml	ume											
CAS No.	Compound		Result	PQL	MDL	Units	Q							
	TPH (C8-C40)		0.331	0.25	0.15	mg/l								
CAS No.	Surrogate Rec	overies	Run# 1	Run# 2	Lim	its								
84-15-1	o-Terphenyl		79%		43-1	23%								

(a) Sample extracted beyond hold time.

MDL - Method Detection Limit U = Not detectedPQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

 $I = Result > = MDL \ but < PQL \ J = Estimated \ value$

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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			Repo	rt of An	alysis			Page 1 of 1
Client San Lab Samp Matrix: Method: Project:	le ID: FA503 AQ - G FLORI	9-6R Fround Wate DA-PRO	r SW846 3510C ater; Orlando,			Date	Received: 0	5/29/13 5/29/13 /a
Run #1 ^a Run #2	File ID ZF059982.D	DF 1	Analyzed 06/06/13	By FEA	Prep D 06/06/1		Prep Batch OP47208	Analytical Batch GZF2129
Run #1 Run #2	Initial Volume 1030 ml	Final Vo l 1.0 ml	ume					
CAS No.	Compound		Result	PQL	MDL	Units	Q	
	TPH (C8-C40))	0.157	0.24	0.15	mg/l	Ι	
CAS No.	Surrogate Rec	coveries	Run# 1	Run# 2	Lim	its		
84-15-1	o-Terphenyl		80%		43-1	23%		

(a) Sample extracted beyond hold time.

MDL - Method Detection Limit U = Not detectedPQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Section 4

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Misc. Forms	
Custody Documents and Other Forms	
ncludes the following where applicable:	
Chain of Custody	



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		EL. 40			rAA: 4		23-0	107				Ac	cutes	t Quo	te #			IS	KIF	#		
Client / Reporting Information		Noferna Sjórðana	Projec	t Inform:	ation	No.			and a second s					- Martin Salar (1975) Salar Martin Salar (1975)		-	Analytica	l Inform	ation	246 241	langing cal	Matrix Codes
Company Name Jerracon		Project Na	^{me:}	A-E	SA	m	منہ	. 1	Wal	kr								Г		T		DW - Drinking Wate
Address 1675 Lee Rd.		Street						<u> </u>									N					GW - Ground Wate
CityWinder Park State FL. In 32	781	City A	land				s	itate	ĒI				t	+	4	>						WW - Water SW - Surface Water
Project Conject is Knebill Email Krebid & Terraco		Project #	901 lando State FL. 1907 + H1127404								- 1	Σ	H d		3	1 9					SO - Soil SL • Sludge	
Phone# 407-618-8358	<u></u>		$\frac{\pi \pi}{2}$	7114	- 61								۶l	18		1 5	3					OI - OII LIQ • Other Liquid
Sampler(s) Name(s) (Printed) Mike Burns, Rory The		_	chase Orde		- (s	12			-			4	N	1-	9	Mercury	2 ds (2)	·				AIR - Air SOL - Other Solid
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Accutest Sample # Field ID / Point of Collection			SAMPLED		TOTAL # OF BOTTLES	THER		£	B B	S F	MATE	MECH) (-	1.3	١¥		t tr					
1 Tmw-1	DATE	TIME				1 1		12	1 1	4	ō	_	_	+	1-2		┝─╊		_	-	_	LAB USE ONLY
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TURNAROUND TIME (Business Days)	anter hogo d'i halonne		U MILLION DE MILLION	ļ	L	Ц		L	ĻĻ													
Approved By: / Bush	Code								nforma	tion			ning ng Paking Containing States			Service Association	A STANDY CONTRACT	C	omme	nts / Re	marks	·····
10 Days Standard					CIAL "A"				,						۰.			-			Λ.	
7 Day RUSH				OMMER	CIAL "B"	(RESL	JLTS	PLU	S QC)					0.	νlŷ_	<u>qn</u>	<u>alyzi</u>	<u>e</u> 7	KΡ	'H_1	ť	OC is
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Emergency or Rush T/A Data Available VIA Email or La			L																			
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Relinquished by: Date Time:	Rec	eived B	ved By: 3						Date Time: Received By:													
5	6							7	•									·	8			
Lab Use Only: Custody Seal in Place: Y N Temp	Blank P	Provided	: Y N	Pre	served v	where	App	licat	ole: Y	'N	Τo	tal # of	Coole	5	Co	nier T	empera	ture (e		ei io ·	3.0.	2.5
																	5.00016		7.088	aua. <u></u>		¥

FA5039R: Chain of Custody Page 1 of 4



4.1 **4**

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION	
ACCUTEST'S JOB NUMBER: FASO39 CLIENT: Terracen PROJECT: SSH-ESA Maid We	ter
DATE/TIME RECEIVED: 05 < 24 < (MM/DD/YY 24:00) NIMBER OF COOLERS RECEIVED:	
METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER	
AIRBILL NUMBERS:	
COOLER INFORMATION TEMPERATURE INFORMATION CUSTODY SEAL NOT PRESENT OR NOT INTACT IR THERM ID_3 CHAIN OF CUSTODY NOT RECEIVED (COC) OBSERVED TEMPS: 7.4 ANALYSIS REQUESTED IS UNCLEAR OR MISSING CORRECTED TEMPS: 3.0	
SAMPLE DATES OR TIMES UNCLEAR OR MISSING SAMPLE INFORMATION	
ILBUFERATURE CRITERIA NOT MET SAMPLE LABELS PRESENT ON ALL BOTTLES	
INCORRECT NUMBER OF CONTAINERS USED	
TRIP BLANK PROVIDED SAMPLE RECEIVED IMPROPERLY PRESERVED INSUFFICIENT VOLUME FOR ANALYSIS	
V TRUE BLANK NOT PROVIDED	
ID'S ON COC DO NOT MATCH & ADW	
VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)	
BECEIVED BUT ANALYSIS NOT REQUESTED	
THE BOT ILES RECEIVED FOR ANALYSIS REQUESTED	
CITCLEAR FILLIBRING OK COMPOSITING INSTRUCTIONS	
MADE INT CAMPACITON	
NUMBER OF ENCORES 7 25-GRAM 5-GRAM 5035 FIRLD KIT FROZEN MUTTED AN MUTTED	
RESIDUAL CHLORINE PERSENT	
NUMBER OF LAB FILTERED METALS ? [APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS]	
SUMMARY OF COMMENTS:	
	· · · · · · · · · · · · · · · · · · ·
<u> </u>	
TECHNICIAN SIGNATURE/DATE // Willing REVIEWER SIGNATURE/DATE	-1-
NF 12/10 receipt confirmation 122910.xls	4/1.3

FA5039R: Chain of Custody Page 2 of 4



		Job Char	nge Order:	FA50;	39_5/3	31/2013		4.1
Requested Date: Account Name: Project Description: CSR:	5/31/2013 Terracon Consulting SSA-ESA Main Water; AC	; Orlando, FL		Received Date: Due Date: Deliverable: TAT (Days):		5/29/2013 6/5/2013 COMMB 3		4
Sample #: FA5039-ali		Change:	Please extract a	and hold FLPRO.				
Above Changes	Eric Krebill	revisions, previo	usly discussed wi				Chain of Custody Page 3 of 4	
					F	Page 1 of 1		



		Job Cha	inge Order:	FA5039_6	/5/2013		
Requested Date:	6/5/2013			Received Date:	5/29/2013		
Account Name:	Terracon Consulting			Due Date:	6/5/2013		
Project Description:	SSA-ESA Main Water;	, Orlando, FL		Deliverable:	COMMB		
CSR:	AC			TAT (Days):	7		
Sample #: FA5039-1,2,3,5,6		Change:	Please analyze been extracted.	the samples for FLPRO.	They have		
					F	∆ 5039R • C'I	nain of Custody
bove Changes	Eric Krebill			Date:	6/5/2013	1150571(Page 4 of 4
Client: This Change Ord	der is confirmation of the re	visions, previo	usly discussed with	the Accutest Client Service	Representative	е.	1 age + 01 +
					Page 1 of 1		



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GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary Job Number: FA5039R

o-Terphenyl

84-15-1

Account: Project:	TERCFLWP Terr	TERCFLWP Terracon Consulting SSA-ESA Main Water; Orlando, FL							
Sample OP47208-N			nalyzed /06/13	By FEA	-	Date 06/13	Prep Bat OP47208		Analytical Batch GZF2129
	ported here applies to 8, FA5039-2R, FA5039		-				Method: F	LORIE	DA-PRO
CAS No.	Compound	Res	sult I	RL	MDL	Units	Q		
	TPH (C8-C40)	ND	0).25	0.15	mg/l			

81% 43-123%

CAS No.	Surrogate Recoveries		Limits	
	TPH (C8-C40)	ND	0.25	0.1

5.1.1 5



Blank Spike Summary Job Number: FA5039R

Account: Project:	TERCFLWP Ter SSA-ESA Main		U				
Sample OP47208-B			a lyzed /06/13	By FEA	Prep Date 06/06/13	Prep Batch OP47208	Analytical Batch GZF2129
-	ported here applies to 2, FA5039-2R, FA5039		, -			Method: FLORI	DA-PRO
CAS No.	Compound	Spil mg/			Limits		
	TPH (C8-C40)	0.85	5 0.75	88	48-113		

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	82%	43-123%

ACCUTEST FA5039R

Matrix Spike/Matrix Spike Duplicate Summary

Job Number:	FA5039R
Account:	TERCFLWP Terracon Consulting
Project:	SSA-ESA Main Water; Orlando, FL

File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
ZF059976.D	1	06/06/13	FEA	06/06/13	OP47208	GZF2129
ZF059977.D	1	06/06/13	FEA	06/06/13	OP47208	GZF2129
ZF059975.D	1	06/06/13	FEA	06/06/13	OP47208	GZF2129
	ZF059976.D ZF059977.D	File IDDFZF059976.D1ZF059977.D1ZF059975.D1	ZF059976.D 1 06/06/13 ZF059977.D 1 06/06/13	ZF059976.D 1 06/06/13 FEA ZF059977.D 1 06/06/13 FEA	ZF059976.D 106/06/13FEA06/06/13ZF059977.D 106/06/13FEA06/06/13	ZF059976.D 106/06/13FEA06/06/13OP47208ZF059977.D 106/06/13FEA06/06/13OP47208

The QC reported here applies to the following samples:

Method: FLORIDA-PRO

FA5039-1R, FA5039-2R, FA5039-3R, FA5039-5R, FA5039-6R

CAS No.	Compound	FA5221-2 mg/l Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (C8-C40)	0.24 U	1.67	1.50	90	1.55	93	3	48-113/27
CAS No.	Surrogate Recoveries	MS	MSD	FA	5221-2	Limits			
84-15-1	o-Terphenyl	81%	83%	76%	6	43-123%	, D		

5.3.1



06/05/13

Technical Report for

Terracon Consulting

SSA-ESA Main Water; Orlando, FL

H1127404

Accutest Job Number: FA5060



Sampling Date: 05/30/13

Report to:

Terracon 1675 Lee Rd Winter Park, FL 32789 erkrebill@terracon.com

ATTN: Eric Krebill

Total number of pages in report: 36



Harry Behzadi, Ph.D. Laboratory Director

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (04226CA), TX (T104704404), AK, AR, GA, KY, MA, NV, OK, UT, VA, WA, WI

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Sample Summary

Terracon Consulting

Job No: FA5060

SSA-ESA Main Water; Orlando, FL Project No: H1127404

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
FA5060-1	05/30/13	09:07 MB	05/30/13	AQ	Ground Water	TMW-6



Summary of Hits

Job Number:	FA5060
Account:	Terracon Consulting
Project:	SSA-ESA Main Water; Orlando, FL
Collected:	05/30/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	PQL	MDL	Units	Method
FA5060-1	TMW-6					
Mercury ^a		27.6	0.50	0.28	ng/l	EPA 1631
Zinc		8.2 I	20	5.0	ug/l	SW846 6010C
Total Organic Ca	rbon	14.0	1.0	0.23	mg/l	SM19 5310B/SW 9060A
pH ^b		5.42			su	SM 4500H B/SW 9040C

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.

(b) Field analysis required. Received out of hold time and analyzed by request.

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Sample Results

Report of Analysis



			Repor	rt of An	alysis				Page 1 of 1
Client Sam Lab Sampl Matrix: Method: Project:	e ID: FA A(SW	1W-6 .5060-1) - Ground Wa /846 8260B A-ESA Main V	ter Vater; Orlando,	FL		Date	e Sampled: e Received: cent Solids:	05	//30/13 //30/13 a
Run #1 Run #2	File ID P16435.D	DF 1	Analyzed 06/04/13	By EG	Prep D n/a	ate	Prep Bat n/a	ch	Analytical Batch VP631
Run #1 Run #2	Purge Volu 5.0 ml	ime							
CAS No.	Compoun	d	Result	PQL	MDL	Units	Q		
71-43-2 91-20-3	Benzene Naphthale	ne	0.21 U 1.0 U	1.0 5.0	0.21 1.0	ug/l ug/l			
CAS No.	Surrogate	Recoveries	Run# 1	Run# 2	Lim	its			
1868-53-7 17060-07-0 2037-26-5 460-00-4	1,2-Dichlo Toluene-D	uoromethane proethane-D4 98 uorobenzene	101% 107% 98% 101%		79-1 85-1	18% 25% 12% 18%			

MDL - Method Detection Limit U = Not detectedPQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

 $I = Result > = MDL \ but < PQL \ J = Estimated \ value$

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Client Sample ID:	TMW-6		
Lab Sample ID:	FA5060-1	Date Sampled:	05/30/13
Matrix:	AQ - Ground Water	Date Received:	05/30/13
		Percent Solids:	n/a
Project:	SSA-ESA Main Water; Orlando, FL		

Report of Analysis

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cadmium Copper Lead Mercury ^a Zinc	0.50 U 1.0 U 1.1 U 27.6 8.2 I	5.0 25 5.0 0.50 20	0.50 1.0 1.1 0.28 5.0	ug/l ug/l ug/l ng/l ug/l	1 1 1 1 1	05/31/13 05/31/13 06/01/13	05/31/13 LM 05/31/13 LM 05/31/13 LM 06/04/13 ANJ 05/31/13 LM	SW846 6010C ¹ SW846 6010C ¹ SW846 6010C ¹ EPA 1631 ² SW846 6010C ¹	SW846 3010A ³ SW846 3010A ³ SW846 3010A ³ EPA 1631 ⁴ SW846 3010A ³

(1) Instrument QC Batch: MA10792

(2) Instrument QC Batch: N:MA31370

(3) Prep QC Batch: MP25242

(4) Prep QC Batch: N:MP72391

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.



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		Report of Analysis Page 1 of 1								
Client Sample ID: Lab Sample ID: Matrix:	TMW-6 FA5060-1 AQ - Ground Water				Date 1	Sampled: 05/30/13 Received: 05/30/13 nt Solids: n/a	သ			
Project:	SSA-ESA Main Water;	Orlando,	FL		Ture	in Solids. If a				
General Chemistry	7						_			
Analyte	Result	PQL	MDL	Units	DF	Analyzed By Method				
Chromium, Hexava Total Organic Carbo pH ^a		0.010 1.0	0.0080 0.23	mg/l mg/l su	1 1 1	05/30/13 12:40 JA SW846 7196A 06/01/13 17:50 FN SM19 5310B/SW 05/30/13 11:05 LE SM 4500H B/SW				

(a) Field analysis required. Received out of hold time and analyzed by request.

Section 4

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	Misc. Forms	
Includes the following where applicable: • Chain of Custody	Custody Documents and Other Forms	
• Chain of Custody		



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City Winter Park State FC, Z1032789	City Or	<u> </u>				SI	ale e				4,	.				N					WW - Water SW - Surface Water
Project Contact Krebill Email Krebilt D Termean.com	Project #	4 11		-//			ate /	- 4 _			-1 :	4		<u>ک</u>		cd, co, Pb			1	1	SO - Soil SL - Sludge
Phone# 417-742-6110 14-7, 110-8250		<u> </u>	190	14	10							+		5	t I	3					OI - Oil LIQ - Other Liquid
Sampler(s) Name(s) (Printed) Mike Burns	Client Purc	07-7	40.	- 41	12						-	M	0	ž	٩	-					AIR - Air SOL - Other Solid
rupe purns	COLLECTION				CONTA	NER INF	ORMATK	ON				ба Д	29	me		2					WP - Wipe
Accutest Sample # Field ID / Point of Collection	THE THE	SAMPLED	MATRIX	TOTAL #	other Sone	ō	HOH	ESON NOS	DWIZ+HOW	WATER	3	705	FL	77	N X X	Petals					
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TURNAROUND TIME (Business Days)		Marcal Accession in the		Da	ta Del	iverat	l leic	formati	20				1	Cardon Hannak			Con	ments	Remar	ks	
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2 Day EMERGENCY					4)								ł								
1 Day EMERGENCY OTHER		ED	υŞ																		
Emergency or Rush T/A Data Available VIA Email or Lablink																					
Sample Custody must be doo	urnented bei	ow each t	ime sam	ples cha	nge po	See	sion.	includir		urier	deliver		I								
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Lab Use Only: Custody Seal in Place: Y N Temp Blan	K Provided	: <u>Y</u> N	Pres	served v	vhere	Арр	licab	le: Y	N	To	tai#o	f Coole	rs:	Co	oler T	emperat	ure (s)	Celsius	s: <u>3</u> .	0	

FA5060: Chain of Custody Page 1 of 3



4.1 **4**

10:18	TT: <u>TELPACON</u> PROJECT: <u>SSA -ESA MAIN WATER</u> YY 24:00} NIMBER OF COOLERS RECEIVED: 1
METHOD OF DELIVERY: FEDEX UPS ACCU	TEST COURIER GREYHOUND DELIVERY OTHER
AIRBILL NUMBERS:	DELIVING OTHER
COOLER INFORMATION CUSTODY SEAL NOT PRESENT OR NOT INTACT CHAIN OF CUSTODY NOT RECEIVED (COC) ANALYSIS REQUESTED IS UNCLEAR OR MISSING SAMPLE DATES OR TIMES UNCLEAR OR MISSING TEMPERATURE CRITERIA NOT MET WET ICE PRESENT IRIP BLANK INFORMATION TRIP BLANK PROVIDED TRIP BLANK NOT PROVIDED TRIP BLANK NOT ON COC TRIP BLANK NOT ON COC TRIP BLANK INTACT TRIP BLANK NOT INTACT RECEIVED WATER TRIP BLANK RECEIVED SOIL TRIP BLANK	TEMPERATURE INFORMATION IR THERM ID3_ CORL FACTOR_40.4 OBSERVED TEMPS:
MISC. INFORMATION	SOLIDS JAR NOT RECEIVED
IUMBER OF ENCORES ? 25-GRAM 5-GRAM IUMBER OF 5035 FIELD KITS ?	5035 FIELD KIT FROZEN WITHIN 48 HOUR'S
TUMBER OF LAB FILTERED METALS ?	RESIDUAL CHLORINE PRESENT
UMMARY OF COMMENTS:	{APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}
· · · · · · · · · · · · · · · · · · ·	
ECHNICIAN SIGNATURE/DATE	REVIEWER SIGNATURE/DATE
NF 12/10	ipt confirmation 122910.xls

FA5060: Chain of Custody Page 2 of 3



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						4/0040		
		Job Chang	e Order:	FA506	50_5/3	31/2013		
Requested Date:	5/31/2013			Received Date:		5/30/2013		
Account Name:	Terracon Consulting			Due Date:		6/6/2013		
Project Description:	SSA-ESA Main Water;	Orlando, FL		Deliverable:		COMMB		
CSR:	AC			TAT (Days):		6		
Sample #: FA5060-all		Change: Pl	ease extract a	nd hold FLPRO.				
bove Changes	Eric Krebill				Date:	5/31/2013	FA50603	Chain of Custody
o Client: This Change C	rder is confirmation of the	evisions, previousl	y discussed with	n the Accutest Clier	nt Service	Representativ	e.	Page 3 of 3
					I	Page 1 of 1		



4:1

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GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary Job Number: FA5060

460-00-4

4-Bromofluorobenzene

Account: Project:	TERCFLWP Terr	acon Consulting Vater; Orlando, FL					
Sample VP631-MB	File ID D P16423.D 1	OF Analyzed 06/04/13	By EG	Pro n/a	ep Date	Prep Batch n/a	Analytical Batch VP631
	orted here applies to	the following sampl	es:			Method: SW84	6 8260B
FA5060-1							
CAS No.	Compound	Result	RL	MDL	Units	Q	
	Benzene Naphthalene	ND ND	1.0 5.0	0.21 1.0	ug/l ug/l		
CAS No.	Surrogate Recoveries		Limit	5			
17060-07-0	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8		83-11 79-12 85-11	5%			

83-118%

98%



5.1.1

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Blank Spike Summary Job Number: FA5060

17060-07-0 1,2-Dichloroethane-D4

4-Bromofluorobenzene

2037-26-5 Toluene-D8

460-00-4

Account: Project:	TERCFLWP T SSA-ESA Main		U	Ľ				
Sample VP631-BS	File ID P16421.D	DF 1	Analy 06/04/		By EG	Prep Date n/a	Prep Batch n/a	Analytical Batch VP631
The QC re FA5060-1	ported here applies	to the fol	lowing sa	mples:		:	Method: SW84	6 8260B
CAS No.	Compound		Spike ug/l	BSP ug/l	BSP %	Limits		
71-43-2 91-20-3	Benzene Naphthalene		25 25	24.5 22.0	98 88	81-122 63-132		
CAS No.	Surrogate Recover	ries	BSP	I	Limits			
1868-53-7	Dibromofluorometh	nane	101%	8	83-118%			

79-125%

85-112%

83-118%

103%

98%

101%

5.2.1

G

Matrix Spike/Matrix Spike Duplicate Summary

Job Number:	FA5060
Account:	TERCFLWP Terracon Consulting
Project:	SSA-ESA Main Water; Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA5073-3MS	P16431.D	25	06/04/13	EG	n/a	n/a	VP631
FA5073-3MSD	P16432.D	25	06/04/13	EG	n/a	n/a	VP631
FA5073-3	P16430.D	25	06/04/13	EG	n/a	n/a	VP631

The QC reported here applies to the following samples:

Method: SW846 8260B

FA5060-1

CAS No.	Compound	FA5073- ug/l	.3 Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2 91-20-3	Benzene Naphthalene	363 129	J	625 625	999 722	102 95	1020 791	105 106	2 9	81-122/14 63-132/25
CAS No.	Surrogate Recoveries	MS		MSD	FA5073-3		Limits			
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	104% 107% 96% 99%		104% 110% 96% 98%	101 109 97% 100	%	83-1189 79-1259 85-1129 83-1189	6 6		

5.3.1

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Section 6

6



Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries



QC Batch ID: MP25242 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:					05/31/13
Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	15	15		
Antimony	6.0	1.3	1.3		
Arsenic	10	1.6	2.5		
Barium	200	1	1		
Beryllium	4.0	.5	.5		
Cadmium	5.0	.5	.5	0.0	<5.0
Calcium	1000	50	50		
Chromium	10	1.8	2		
Cobalt	50	.5	.5		
Copper	25	1	1	0.20	<25
Iron	300	29	29		
Lead	5.0	1.1	1.1	-0.60	<5.0
Magnesium	5000	74	74		
Manganese	15	.7	.7		
Molybdenum	50	.6	1		
Nickel	40	.5	.5		
Potassium	10000	200	200		
Selenium	10	2	2		
Silver	10	.5	.5		
Sodium	10000	500	500		
Strontium	10	.5	.5		
Thallium	10	1.3	1.3		
Tin	50	.7	1.8		
Titanium	10	.9	1		
Vanadium	50	.5	1		
Zinc	20	3	5	-0.10	<20

Associated samples MP25242: FA5060-1

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits (anr) Analyte not requested

6.1.1 6



QC Batch I	D: MP25242
Matrix Typ	e: AQUEOUS

Methods: SW846 6010C Units: ug/l

Prep Date:			05/31/13					05/31/13	
Metal	FA5041-1 Original		RPD	QC Limits	FA5041-1 Original	MS	Spikelot MPFLICP1		QC Limits
Aluminum									
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Cadmium	0.0	0.0	NC	0-20	0.0	50.1	50	100.2	80-120
Calcium									
Chromium	anr								
Cobalt									
Copper	0.0	0.0	NC	0-20	0.0	254	250	101.6	80-120
Iron									
Lead	0.0	0.0	NC	0-20	0.0	453	500	90.6	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	anr								
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	3.0	3.0	0.0	0-20	3.0	481	500	95.6	80-120
Associated sa	mples MP25	242: FA50	60-1						
Results < IDL			for calcu	lation pu	rposes				

(*) Outside of QC limits(N) Matrix Spike Rec. outside of QC limits(anr) Analyte not requested



QC Batch ID: MP25242 Matrix Type: AQUEOUS

(anr) Analyte not requested

Methods: SW846 6010C Units: ug/l

Prep Date:					05/31/13	
Metal	FA5041-1 Original		Spikelot MPFLICP1	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Cadmium	0.0	51.0	50	102.0	1.8	20
Calcium						
Chromium	anr					
Cobalt						
Copper	0.0	257	250	102.8	1.2	20
Iron						
Lead	0.0	460	500	92.0	1.5	20
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	3.0	490	500	97.4	1.9	20
Associated sam	ples MP25:	242: FA50	60-1			

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QC Batch ID: MP25242 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:			05/31/13	
Metal	BSP Result	Spikelot MPFLICP1		QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Cadmium	52.6	50	105.2	80-120
Calcium				
Chromium	anr			
Cobalt				
Copper	265	250	106.0	80-120
Iron				
Lead	474	500	94.8	80-120
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	507	500	101.4	80-120
Associated sa	mples MP2	5242: FA50	60-1	

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits (anr) Analyte not requested



SERIAL DILUTION RESULTS SUMMARY

Login Number: FA5060 Account: TERCFLWP - Terracon Consulting Project: SSA-ESA Main Water; Orlando, FL

QC Batch ID: MP25242 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:			05/31/13	
Metal	FA5041-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Cadmium	0.00	0.00	NC	0-10
Calcium				
Chromium	anr			
Cobalt				
Copper	0.00	0.00	NC	0-10
Iron				
Lead	0.00	0.00	NC	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	3.00	0.00	100.0(a)	0-10
Associated sa	mples MP25	242: FA50	60-1	
(*) Outside o (anr) Analyte	f QC limit not reque	s sted		lation purposes low initial sample concentration (< 50 times IDL).



QC Batch ID: MP25242 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:									05/31/13	
Metal	Sample ml	Final ml	FA5041-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Cadmium	9.8	10	0	0	51.9	0.2	2.5	50	103.8	80-120
Calcium										
Chromium										
Cobalt										
Copper	9.8	10	0	0	104.7	0.2	5	100	104.7	80-120
Iron										
Lead	9.8	10	0	0	44.3	0.2	2.5	50	88.6	80-120
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium										
Selenium										
Silver										
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc	9.8	10	3	2.94	285.7	0.2	12.5	250	113.1	80-120
Associated sam	ples MP2	5242: FA50	060-1							
Results < IDL (*) Outside of			for calcu		irposes					

(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested



Section 7



General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries



METHOD BLANK AND SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: FA5060 Account: TERCFLWP - Terracon Consulting Project: SSA-ESA Main Water; Orlando, FL

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN55988	0.010	0.0	mg/l	0.100	0.11	105.0	78-120%
Total Organic Carbon	GP21759/GN56031	1.0	0.0	mg/l	15	14.4	96.0	90-110%

Associated Samples: Batch GN55988: FA5060-1 Batch GP21759: FA5060-1 (*) Outside of QC limits





DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: FA5060 Account: TERCFLWP - Terracon Consulting Project: SSA-ESA Main Water; Orlando, FL

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Total Organic Carbon	GP21759/GN56031	FA4911-1	mg/l	6.4	6.3	1.6	0-20%
pH	GN55986	FA5043-1	su	6.95	6.89	0.9	0-10%

Associated Samples: Batch GN55986: FA5060-1 Batch GP21759: FA5060-1 (*) Outside of QC limits





MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: FA5060 Account: TERCFLWP - Terracon Consulting Project: SSA-ESA Main Water; Orlando, FL

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN55988	FA5060-1	mg/l	0.0080 U	0.100	0.075	72.6*(a)	78-120%
Total Organic Carbon	GP21759/GN56031	FA4911-1	mg/l	6.4	15	22.3	106.0	90-110%

Associated Samples: Batch GN55988: FA5060-1

Batch GP21759: FA5060-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits
 (a) Spike recovery indicates possible matrix interference.





MATRIX SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: FA5060 Account: TERCFLWP - Terracon Consulting Project: SSA-ESA Main Water; Orlando, FL

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chromium, Hexavalent	GN55988	FA5060-1	mg/l	0.0080 U	0.100	0.0750	0.0(a)	34%

Associated Samples:

Batch GN55988: FA5060-1

(*) Outside of QC limits(N) Matrix Spike Rec. outside of QC limits

(a) Spike recovery indicates possible matrix interference.





Section 8

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Custody Documents and Other Forms

(Accutest New Jersey)

Includes the following where applicable:

Chain of Custody



M.					est L																				1	
	IACCUT	EST _s atories	2	Subc	Ontra 4405 Vinela TEL 4	and Road. 07-425-6	, Suite C-15 700 FAX:	Orlanc 407-42	lo, F1 :	32811	sto	ody	7		F	6.8.	Ĺ	H-	70	69	0é		PA	GE	L. 2)F
	Client / Reporting	Information				Proje	ect Info	matio	on						`		F	r' T	/ ٦ Δης	ر ۲ abrtic	ر آ ^ب al Inf	orma	5 tion	65	0	
Company	Name: Accutest Laborato	ries		Project N	_{lame:} FA	1506	0			-Lonney					1000000000	Т	215200210	0.0022.0	Alla	nyuc		I			T	Matrix Code
ddress:	4405 Vineland Rd.																									GW - Ground Wa WW - Water
ity: Orla	ando	State: FL 07) 425-0707	Zip: 32811		end repor other issu					est.coi	n															SW - Surface Wa SO - Soil SL- Sludge OI - Oil LIQ - Other Liqu
	1																									AIR - Air SOL - Other Soli
				COLLECTIO							T	2	œ	-	631											WP - Wipe
Lab ID #	Sample		DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	Ę	NaOH	H2SO4	INZ+HOWN	DI WATER	MEOH	HGLL1631											LAB USE ONL
	FA506	50-1	05/30/13	9:07		GW	1	×						X	(÷		N.C.
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	Turnaround Time	(Business day	(S)			Da	ta Deliv	orahl		form					5551-01/345	0.00000										
	Std. 10 Business Days		By: / Date/Rush (Code:			IAL "A"					n s									Cor	nmer	nts / F	Rema	rks	
	7 Day RUSH		-				IAL "B" (Sh	nin fe	0 I a	hor	ator	. I) (V	5	
	5 Day RUSH			~			ALEVEL				,					-	<u></u>	0 20	501	ator	<u>y - </u>		<u></u> (
	3 Day EMERGENCY	~	nor	13	FUL	LT1 (EP	A LEVEL	. 4)								Ap	pro	ved	bv ·			n	\bigcap	in	n	\sim
	2 Day EMERGENCY	()+0	-06-	-	EDC)'S											-							~	0~	<u></u>
	1 Day EMERGENCY Other	·																								
	Other																									
Relinguia	hed by Sampler/Affiliation	Data Time:	Sample Cust	ody must	be docum	ented t	below ear	ch time	sam	nples	char	nge po	osses	sion,	includ	ing co	ourier	deliv	ery.		E					
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Relinquis	shed by/Affiliation	Date Time:	Received By/Af	filiation					3 Rollin	nquis			fillat'						1/13		4	1 4	×J	-	$\overline{}$	(ALNJ
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ab Use	Only : Custody Seal in Plac	CerY N Tomo	Blank Brouid - d	V N 5					Ľ <u></u>				*								18					
		st. in remp	Diank Provided:	T N Pr	eserved V	nere A	pplicable	Y N	Т	otal #	of C	ooler	rs:_1	Co	oler Te	emper	ature	(s) Ce	Isius	:ċ	1.3					
																										DI

Z.G.

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FA5060: Chain of Custody Page 1 of 2 Accutest New Jersey





Accutest Laboratories Sample Receipt Summary

Accutest Job Number: FA	5060	Client:			Project:			
Date / Time Received: 6/1	1/2013		Delivery Method:		Airbill #'s:			
Cooler Temps (Initial/Adjus	sted): <u>#1: (2.3/</u>	<u>2.3); 0</u>						
Cooler Security	<u>í or N</u>		<u>Y</u> or	N	Sample Integrity - Documentation	<u>Y</u>	or N	
1. Custody Seals Present:		3. COC Pre	•		1. Sample labels present on bottles:	\checkmark		
2. Custody Seals Intact:	2	Smpl Dates	/Time OK 🔽		2. Container labeling complete:	\checkmark		
Cooler Temperature	Y or N	_			3. Sample container label / COC agree:	\checkmark		
1. Temp criteria achieved:					Sample Integrity - Condition	Y	or N	
2. Cooler temp verification:	IR Gun				1. Sample recvd within HT:	\checkmark		
3. Cooler media:	Ice (Bag)			2. All containers accounted for:	\checkmark		
4. No. Coolers:	1				3. Condition of sample:		Intact	
Quality Control _Preservation	<u>o YorN</u>	N/A			Sample Integrity - Instructions	Y	or N	N/A
1. Trip Blank present / cooler:					1. Analysis requested is clear:			
2. Trip Blank listed on COC:					2. Bottles received for unspecified tests		\checkmark	
3. Samples preserved properly	r: 🗸 🗌				3. Sufficient volume recvd for analysis:			
4. VOCs headspace free:		\checkmark			4. Compositing instructions clear:			\checkmark
					5. Filtering instructions clear:			

Comments

Accutest Laboratories V:732.329.0200 2235 US Highway 130 F: 732.329.3499 Dayton, New Jersey www/accutest.com <u>.</u>

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FA5060: Chain of Custody Page 2 of 2



Section 9

9



Metals Analysis

QC Data Summaries

(Accutest New Jersey)

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries



BLANK RESULTS SUMMARY Part 2 - Method Blanks

Login Number: FA5060 Account: ALSE - Accutest Laboratories Southeast, Inc. Project: TERCFLWP: SSA-ESA Main Water; Orlando, FL

QC Batch ID: Matrix Type:							ds: EPA 1631 ts: ng/l
Prep Date:					06/01/1	3	06/01/13
Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Mercury	0.50	.086	.28	-0.23	<0.50	0.37	<0.50

Associated samples MP72391: FA5060-1

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits (anr) Analyte not requested





MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA5060 Account: ALSE - Accutest Laboratories Southeast, Inc. Project: TERCFLWP: SSA-ESA Main Water; Orlando, FL

QC Batch ID: MP72391	Methods:	EPA 1631
Matrix Type: AQUEOUS	Units:	ng/l
Prep Date:	06/03/13	

Metal	FA5060-1 Original		Spikelot HGLL1	% Rec	QC Limits
Mercury	27.6	33.3	5	114.0	71-125

Associated samples MP72391: FA5060-1

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits $% \left({\left({{{\bf{r}}_{\rm{s}}} \right)} \right)$

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA5060 Account: ALSE - Accutest Laboratories Southeast, Inc. Project: TERCFLWP: SSA-ESA Main Water; Orlando, FL

QC Batch ID: Matrix Type:				Methods: EPA 1631 Units: ng/l	
Prep Date:			06/03/	13	
Metal	FA5060-1 Original MSD	Spikelot HGLLl % Rec	MSD RPD	QC Limit	

Associated samples MP72391: FA5060-1

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits $% \left({\left({{{\rm{A}}} \right)_{\rm{A}}} \right)$

27.6 33.8 5 124.0 1.5 24

Mercury

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested



Login Number: FA5060 Account: ALSE - Accutest Laboratories Southeast, Inc. Project: TERCFLWP: SSA-ESA Main Water; Orlando, FL

QC Batch ID: Matrix Type:					Methods: Units:	EPA 1631 ng/l
Prep Date:			05/23/13			
Metal	LCS Result	Spikelot HGLL1		QC Limits		

Mercury 4.8 5 96.0 77-123

Associated samples MP72391: FA5060-1

Results < IDL are shown as zero for calculation purposes (*) Outside of QC limits (anr) Analyte not requested







06/10/13

Technical Report for

Terracon Consulting

SSA-ESA Main Water; Orlando, FL

H1127404

Accutest Job Number: FA5060R



Sampling Date: 05/30/13

Report to:

Terracon 1675 Lee Rd Winter Park, FL 32789 erkrebill@terracon.com

ATTN: Eric Krebill

Total number of pages in report: 15



Harry Behzadi, Ph.D. Laboratory Director

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (04226CA), TX (T104704404), AK, AR, GA, KY, MA, NV, OK, UT, VA, WA, WI

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Southeast • 4405 Vineland Road • Suite C-15 • Orlando, FL 32811 • tel: 407-425-6700 • fax: 407-425-0707 • http://www.accutest.com



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5.2: Blank Spike Summary	14
5.3: Matrix Spike/Matrix Spike Duplicate Summary	15



Sample Summary

Terracon Consulting

Job No: FA5060R

SSA-ESA Main Water; Orlando, FL Project No: H1127404

Sample	Collected			Matr	ix	Client
Number	Date	Time By	Received	Code	Туре	Sample ID
FA5060-1R	05/30/13	09:07 MB	05/30/13	AQ	Ground Water	TMW-6



FA5060R

Summary of Hits Job Number: FA5060R

Job Number:FA5060RAccount:Terracon ConsultingProject:SSA-ESA Main Water; Orlando, FLCollected:05/30/13

Lab Sample ID	Client Sample ID	Result/				
Analyte		Qual	PQL	MDL	Units	Method

FA5060-1R TMW-6

No hits reported in this sample.

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Sample Results

Report of Analysis



Accutest Laboratories

			Repo	rt of An	alysis			Page 1 of 1
Client San Lab Samp Matrix: Method: Project:	le ID: FA506 AQ - C FLORI	0-1R Fround Wate DA-PRO	er SW846 3510C ater; Orlando,			Date	Received: 0	5/30/13 5/30/13 /a
Run #1 Run #2	File ID ZF059904.D	DF 1	Analyzed 06/03/13	By FEA	Prep D 06/03/1		Prep Batch OP47143	Analytical Batch GZF2126
Run #1 Run #2	Initial Volume 1050 ml	Final Vo 1.0 ml	lume					
CAS No.	Compound		Result	PQL	MDL	Units	Q	
	TPH (C8-C40))	0.14 U	0.24	0.14	mg/l		
CAS No.	Surrogate Rec	coveries	Run# 1	Run# 2	Lim	its		
84-15-1	o-Terphenyl		92%		43-1	23%		

MDL - Method Detection Limit U = Not detectedPQL = Practical Quantitation Limit

L = Indicates value exceeds calibration range

 $I = Result > = MDL \ but < PQL \ J = Estimated \ value$

V = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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6 of 15 ACCUTEST FA5060R

Section 4

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	Misc. Forms	
Includes the following where applicable: • Chain of Custody	Custody Documents and Other Forms	
• Chain of Custody		



		ain d Road, -425-670 www	of Suite C	Cus C-15 O FAX: 4	rland	dy ₀, Fi	7 328		ea	st		cutest		# (SK	IFF#	RGE		1
Company Name Terracon	Project Nar	Project	Informat	tion	n Gano		1 Dillopice	A A A A A A A A A A A A A A A A A A A	And Landaux	- Pittelijning	0Nilbarrana	And the second second		With an operation of the second se	A	nalytical I	nformati	on	1	A CONTRACTOR	Matrix Codes
Address 1675 Lee Rd.	Project Nar Street	55/	9-E	SA_	M	<u>zin</u>	<u>u</u>	<u>ra</u> t	er		-					2					DW - Drinking Water GW - Ground Water
City Winter Park State FC, Z1032789	City Or	<u> </u>				SI	ale e				4,	.				N					WW - Water SW - Surface Water
Project Contact Krebill Email Krebilt D Termean.com	Project #	4 11		-//			ate /	- 4 _			-1 :	4		<u>ک</u>		cd, co, Pb			1	1	SO - Soil SL - Sludge
Phone# 417-742-6110 14-7, 110-8250		<u> </u>	190	14	10							+		5	t I	3					OI - Oil LIQ - Other Liquid
Sampler(s) Name(s) (Printed) Mike Burns	Client Purc	07-7	40.	- 41	12						-	M	0	ž	٩	-					AIR - Air SOL - Other Solid
rupe purns	COLLECTION				CONTA	NER INF	ORMATK	ON				ба Д	29	me		2					WP - Wipe
Accutest Sample # Field ID / Point of Collection	THE THE	SAMPLED	MATRIX	TOTAL #	other Sone	ō	HOH	ESON NOS	DWIZ+HOW	WATER	3	705	FL	77	N X X	Petals					
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TURNAROUND TIME (Business Days)		Marcal Accession in the		Da	ta Del	iverat	l leic	formati	20				1	Cardon Hannak			Con	ments	Remar	ks	
10 Days Standard Approved By: / Rush Code 7 Day RUSH 5 Day RUSH			MMERC	CIAL "A" (CIAL "B" (PA LEVEL	RESU												<u>e_</u> T				ic is
3 Day EMERGENCY				ALEVEL									9790	ve	/0	.o p	2/4				
2 Day EMERGENCY					4)								ł								
1 Day EMERGENCY OTHER		ED	υŞ																		
Emergency or Rush T/A Data Available VIA Email or Lablink																					
Sample Custody must be doo	urnented bei	ow each t	ime sam	ples cha	nge po	See	sion.	includir		urier	deliver		I								
1 Mil Bur Stadis 21018 2		1 Le	05	130	/13	_ I !	Relin 3	quishe	ed by	/:					Date	Time:	F	Receive	d By:		
1_ 1 1	Received B	y:		- 1	6:1	8	Relin	quishe	ed by	/: /					Date	e Time:	F	leceive	ed By:		
5 6							7							r			8				
Lab Use Only: Custody Seal in Place: Y N Temp Blan	K Provided	: <u>Y</u> N	Pres	served v	vhere	Арр	licab	le: Y	N	To	tai#o	f Coole	rs:	Co	oler T	emperat	ure (s)	Celsius	s: <u>3</u> .	0	

FA5060R: Chain of Custody Page 1 of 4



4.1 **4**

10:18	TT: <u>TELPACON</u> PROJECT: <u>SSA -ESA MAIN WATER</u> YY 24:00} NIMBER OF COOLERS RECEIVED: 1
METHOD OF DELIVERY: FEDEX UPS ACCU	TEST COURIER GREYHOUND DELIVERY OTHER
AIRBILL NUMBERS:	DELIVING OTHER
COOLER INFORMATION CUSTODY SEAL NOT PRESENT OR NOT INTACT CHAIN OF CUSTODY NOT RECEIVED (COC) ANALYSIS REQUESTED IS UNCLEAR OR MISSING SAMPLE DATES OR TIMES UNCLEAR OR MISSING TEMPERATURE CRITERIA NOT MET WET ICE PRESENT IRIP BLANK INFORMATION TRIP BLANK PROVIDED TRIP BLANK NOT PROVIDED TRIP BLANK NOT ON COC TRIP BLANK NOT ON COC TRIP BLANK INTACT TRIP BLANK NOT INTACT RECEIVED WATER TRIP BLANK RECEIVED SOIL TRIP BLANK	TEMPERATURE INFORMATION IR THERM ID3_ CORL FACTOR_40.4 OBSERVED TEMPS:
MISC. INFORMATION	SOLIDS JAR NOT RECEIVED
IUMBER OF ENCORES ? 25-GRAM 5-GRAM IUMBER OF 5035 FIELD KITS ?	5035 FIELD KIT FROZEN WITHIN 48 HOUR'S
TUMBER OF LAB FILTERED METALS ?	RESIDUAL CHLORINE PRESENT
UMMARY OF COMMENTS:	{APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}
· · · · · · · · · · · · · · · · · · ·	
ECHNICIAN SIGNATURE/DATE	REVIEWER SIGNATURE/DATE
NF 12/10	ipt confirmation 122910.xls

FA5060R: Chain of Custody Page 2 of 4

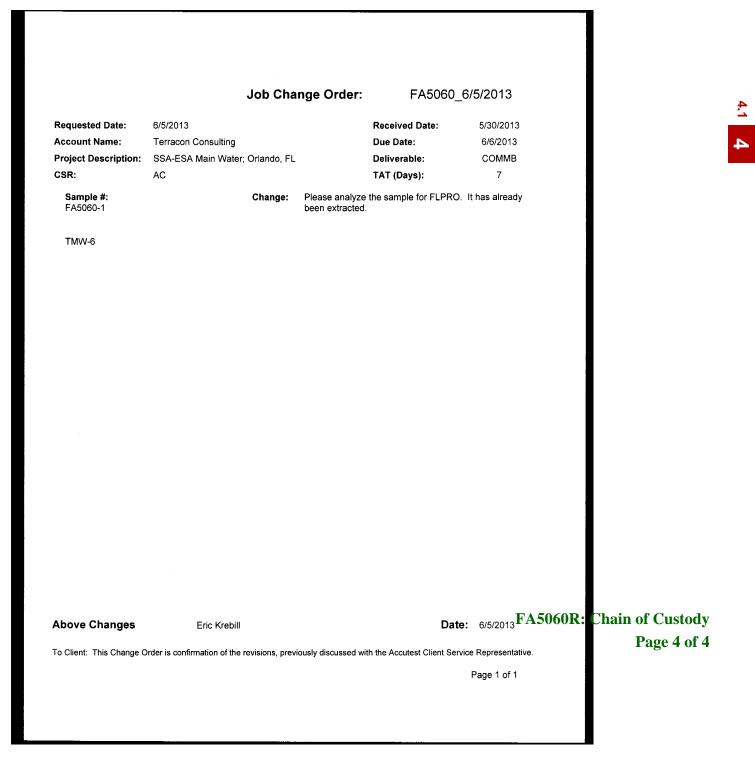


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		Job Cha	nge Order:	FA50	60_5/3	31/2013			
Requested Date:	5/31/2013			Received Date	:	5/30/2013			
Account Name:	Terracon Consulting			Due Date:		6/6/2013			
Project Description:	SSA-ESA Main Water;	Orlando, FL		Deliverable:		COMMB			
CSR:	AC			TAT (Days):		6			
Sample #: FA5060-all		Change:	Please extract a	and hold FLPRO.					
		•							
hovo Changes					Data	FILLING	A5060R	Chain of Custod	y
bove Changes	Eric Krebill				Date:	5/31/2013		Page 3 of	
o Client: This Change C	order is confirmation of the r	evisions, previ	iously discussed wi	th the Accutest Clie			e.		
					F	Page 1 of 1			
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GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary Job Number: FA5060R

Account: Project:	TERCFLWP Ter SSA-ESA Main V		-				
Sample OP47143-N			lyzed By 3/13 FEA		ep Date /03/13	Prep Batch OP47143	Analytical Batch GZF2126
The QC re FA5060-1F	eported here applies to	the following s	amples:			Method: FLOR	IDA-PRO
CAS No.	Compound TPH (C8-C40)	Resul ND	t RL 0.25	MDL 0.15	Units mg/l	Q	
CAS No.	Surrogate Recoverie			Limits			
84-15-1	o-Terphenyl	81%	43-12	23%			

5.1.1 5



Blank Spike Summary Job Number: FA5060R

Account: Project:	TERCFLWP Terrac SSA-ESA Main Wat	0	Ľ								
Sample OP47143-F	File ID DF 3S ZF059891.D 1	•	Analyzed By 06/03/13 FEA		Prep Date 06/03/13	Prep Batch OP47143	Analytical Batch GZF2126				
The QC re FA5060-1F	eported here applies to th	e following sa	mples:			Method: FLOR	IDA-PRO				
CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits						
	TPH (C8-C40)	0.85	0.667	78	48-113						
CAS No.	Surrogate Recoveries	BSP	Liı	mits							
84-15-1	o-Terphenyl	84%	43-	-123%							

5.2.1

S

Matrix Spike/Matrix Spike Duplicate Summary

Job Number:	FA5060R
Account:	TERCFLWP Terracon Consulting
Project:	SSA-ESA Main Water; Orlando, FL

Sample OP47143-N OP47143-N FA5090-5		1	Analyz 06/03/1 06/03/1 06/03/1	3 3	By FEA FEA FEA	06/03/13		Prep Batch OP47143 OP47143 OP47143		Analyti GZF212 GZF212 GZF212	26	
The QC reported here applies to the following samples: Method: FLORIDA-PRO FA5060-1R FA5060-1R												
CAS No.	Compound		FA5090- mg/l	-5 Q	Spike mg/l	MS mg		MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (C8-C40)		1.43		1.67	2.6	50	70	2.63	72	1	48-113/27
CAS No.	Surrogate Recover	ies	MS		MSD		FA	5090-5	Limits			
84-15-1	o-Terphenyl		82%		91%		81%	6	43-1239	6		



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