



## Progressive Water Resources

Integrated Water Resources Consultants

5589 Marquesas Circle • Suite 202 • Sarasota, FL 34233 • (941) 552-5657

March 3, 2015

Anura J. Karuna-Muni, P.E.  
Operations Manager  
Lee County Natural Resources Department  
1500 Monroe Street  
Fort Myers, FL 33901

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COMMUNITY DEVELOPMENT

**RE: Response to Staff's Request for Additional Information  
CPA2015-00001 - Corkscrew Farms**

Dear Mr. Karuna-Muni:

This correspondence is provided in response to Lee County staff's additional comments after review of the information provided in the Comprehensive Plan Amendment (CPA) application dated January 12, 2015, as well as an email correspondence from Carl Barraco dated February 10, 2015, and a letter dated February 19, 2015 from Matt Noble. On behalf of the Applicant and the other consultants working on this project, Progressive Water Resources (PWR) appreciates the staff's continued coordination on the project and we are confident that your questions are comprehensively answered by the following responses. To help assist with your review of our responses we have included both the subject and staff's recent comments requiring additional information in bold text, followed by the Applicant's responses.

**1) Subject: County's MS4 system**

**Staff Comment:** This element may be satisfied with the submittal of a Water Quality Monitoring Plan. While staff encourages monitoring water quality as part of Lake Management Plan, outfall monitoring is required on a quarterly basis for 5 years. Monitoring frequency may be reduced after 5 years if water quality standards are met. The Lake Management Plan shall include remedial actions if water quality falls below state standards. Please submit the Plan for staff review. Discharge water quality from the site into the MS4 system shall meet state standards for the designated class.

Response: In addition to the Conceptual Outfall Water Quality Monitoring Plan outlined below, please see the proposed Lake Management Plan provided in response to Topic No. 5 (below).

### Conceptual Outfall Water Quality Monitoring Plan

New stormwater discharges will be authorized provided they meet all applicable requirements of the South Florida Water Management District (SFWMD) Environmental Resource Permitting (ERP) program authorized pursuant to Part IV of Chapter 373, F.S.

As part of the ERP approval (to be pursued after the approval for land use change) a quarterly water quality sampling plan will be developed to create a baseline of nutrient discharge leaving the site prior to development and to show a reduction in nutrient discharge leaving the site post-development. It is important to note that the on-site lakes will be discharging into a few hundred acres of restoration area where additional water quality treatment and storage will be provided.

Quarterly (January, April, July and October) sampling will be conducted at two proposed locations that include an upstream location where surface water enters the property (if available) and a downstream discharge outfall site proposed to be located at the southwest portion of the property. Since the stormwater management system has not been fully designed for the development, the proposed upstream and downstream monitoring locations are conceptual at this time.

Surface water samples will be collected in accordance with Florida Administrative Code (F.A.C.) 62-160, F.A.C, and Florida Department of Environmental Protection (FDEP) standard operating procedure (SOP) for surface water sampling (FDEP SOP 001/01), FS 2100.

The proposed sampling plan will be part of an approved ERP and will include quarterly sampling for the first five years with discontinuation of sampling if water quantity standards are met. Parameters to be collected and analyzed by a NELAC-certified laboratory and will include, but are not limited to, the following field and lab parameters:

- Field Parameters: Depth of Water, Dissolved Oxygen (DO), pH, Temperature, Specific Conductivity, Turbidity and Color
- Lab Parameters: Biological Oxygen Demand, Total Nitrogen, Nitrite/Nitrate, Ammonia, Total Kjeldahl Nitrogen, Total Phosphorus, and Ortho-phosphate

Results of the quarterly sampling will be provided 30 days following the sampling event and summarized in an annual report to be submitted to the SFWMD by April 15<sup>th</sup> of each year. The annual report will summarize the results for the preceding year from January 1 to December 31. The annual report will include the field and laboratory results for each quarter as well as an analysis and comparison to accepted water quality standards.

**2) Subject: Contaminants and the potential for leaching into groundwater or surface water runoff.**

**Staff Comment:** The information provided so far indicates higher levels of Arsenic in soil samples exceeding the direct exposure Soil Cleanup Target Level (SCTL) of 2.1 mg/kg. The Universal Engineering report recommended further assessment of the subject area. Please describe any actions the applicant has taken to mitigate the impacts due to higher levels of Arsenic. The staff has concerns over contamination of surface or groundwater and public water supply. The applicant must demonstrate that Arsenic levels in surface and groundwater leaving the site are below the state standards.

Response: In the November 17, 2014 letter from Universal Engineering Sciences (UES), (**Attachment 1**), that was previously provided, a second confirmatory investigation of soils was performed on November 10, 2014 at the same site where a single soil sample exceeded the direct exposure residential - soils cleanup target level of 2.1 mg/kg for arsenic. Five confirmatory samples were taken, with one sample at the same location previously tested and four (4) additional samples taken at distances of 5 feet from the previous test location. Arsenic was not detected above the laboratory detection limit in all five confirmatory samples. Therefore, UES concluded that no additional assessment was warranted based on the negative results. Therefore, based on the testing performed by UES, arsenic levels are below state standards.

**3) Subject: Wellfield protection zones**

**Staff Comment:** Please provide a site plan with an overlay of wellfield protection zones. It appears that based on the information provided so far, portions of the proposed development footprint fall within the wellfield protection zones. Therefore, the applicant will be required to obtain a wellfield protection permit. Conditions will be incorporated into the permit in order to comply with the provisions of the Wellfield Protection Ordinance.

Response: Please find attached **Figure 1**, the requested overlay of wellfield protection zones for the subject properties. As discussed with PWR's David Brown, P.G. on February 26, 2015, the Applicant agrees with County staff that the subject properties are located within Lee County-designated wellfield protection zones. The Applicant further acknowledges that certain types of land use activities are prohibited therein. The specifically "prohibited and regulated activities within protection zones" are identified in Sec. 14-214.

As previously stated, there is no intention to use, handle, produce or store the regulated substances in quantities greater than those set forth in Section 14-208, nor does the Applicant have any intention of disposing of wastewater effluent, liquid or solid waste, or to conduct any earth mining. No abandoned wells will be located onsite. All stormwater management activities will be conducted in conformity with applicable ERP rules and ERP permits from the SFWMD. Further, no "sanitary

hazards" will be located within 100 feet from any existing or known proposed public water supply wells.

The County's stated Purpose and Intent for Chapter 14 (Environment and Natural Resources) Article III (Wellfield Protection) is to safeguard the public health, safety and welfare through regulation of storage, handling, use or production of hazardous substances or sanitary hazards in close proximity to potable water supply wellfields. Because the Applicant has no intention of using, handling, producing or storing the regulated substances as described in the County's ordinance, the Applicant does not believe the County's ordinance and associated regulations requires them to obtain a wellfield protection permit.

#### **4) Subject: Flooding**

**Staff Comment: Response not yet submitted. The applicant will be required to maintain historic flow patterns and accommodate storm water runoff from the north through the site as depicted.**

Response: The proposed allowable land use will maintain to the greatest extent practicable the current land elevations and gradients. Therefore, the drainage pattern will generally maintain the historic northeast to southwest gradient flow-way (s), while extending the hydroperiods of the existing, drained, on-site wetlands, in addition to accommodating runoff into the proposed lakes, and the Southwest Storage Area. The lakes will also be discharging into a few hundred acres of on-site restoration area where additional water quality treatment and storage will be provided.

In addition, consistent with supporting information provided for rezoning of Corkscrew Farms property concurrent with CPA2015-0001, it is important to note the site design proposes a re-created flow-way on the western side of the property to help alleviate wet season flooding within the Burgundy Farms neighborhood. The site design also incorporates two other re-created flow-ways to address surface water movement from off-site properties as well as movement on-site.

The development of the site is also subject to SFWMD ERP rules which require that development of the site not cause flooding or adverse impacts to wetlands and other water resources.


#### **5) Subject: Lake management plan**

**Staff Response: A conceptual plan must be submitted for review and prior to approval of zoning or comprehensive plan amendment. An example of "COVENANT TO CREATE AN ENHANCED LAKE MANAGEMENT/MAINTENANCE PLAN" is attached for your reference.**

Response: Please Refer to **Attachment 2**, for the Conceptual Covenant to Create an Enhanced Lake Management / Maintenance Plan.

On behalf of the applicant, we would like to thank you for your consideration and assistance in this matter. If you have any questions or if I can be of assistance please do not hesitate to contact me at (941) 552-5657, extension 104.

Sincerely,

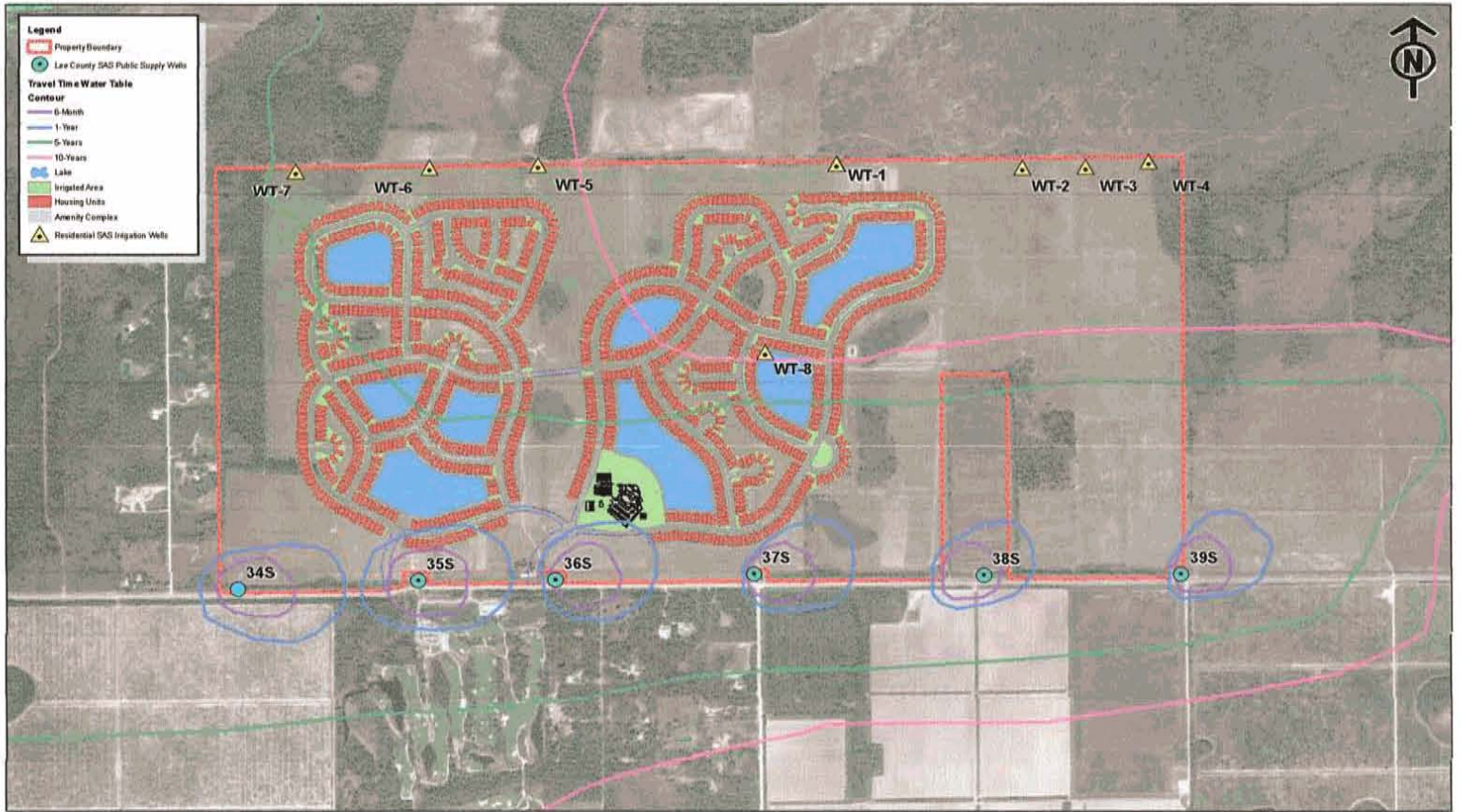


David J. Brown, P.G.  
Principal  
Progressive Water Resources, LLC

Attachments

cc: Ray Blacksmith, Cameratta Companies, LLC





Progressive Water Resources has provided the images or data presented in this map for informational purposes only. This data is not intended to be used in lieu of official survey data provided by a Professional Surveyor licensed by the State of Florida

**Figure 1**  
 Modified from Lee County  
 Wellfield Protection Ordinance Plate 2  
 Water-Table Aquifer ISO-Travel Time





# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences  
Geophysical Services • Construction Materials Testing • Threshold Inspection  
Building Inspection • Plan Review • Building Code Administration

**LOCATIONS:**

- Atlanta
- Daytona Beach
- Fort Myers
- Fort Pierce
- Gainesville
- Jacksonville
- Kissimmee
- Leesburg
- Miami
- Ocala
- Orlando (Headquarters)
- Palm Coast
- Panama City
- Pensacola
- Rockledge
- Sarasota
- Tampa
- West Palm Beach

November 17, 2014

Mr. Ray Blacksmith  
Camprop, LLC  
4954 Royal Gulf Circle  
Fort Myers, FL 33966

Reference: **CONFIRMATORY SOIL SAMPLING**  
Corkscrew Farms Property  
Estero, Lee County, Florida  
UES Project No.: 0540.1400126.0000

Dear Mr. Blacksmith:

Universal Engineering Sciences, Inc. (UES) is pleased to present the results of our confirmatory soil sampling at the above referenced site ("subject property"). Based on the results of our recent Phase II Environmental Site Assessment (ESA) performed at the subject property, arsenic was reported in one soil sample, sample B-48, at a concentration of 11 milligrams per kilogram (mg/kg) which exceeds the Direct Exposure Residential - Soil Cleanup Target Level (DER-SCTL) of 2.1 mg/kg for arsenic.

On November 10, 2014 UES obtained five (5), confirmatory surficial (0 to 6 inches below land surface) soil samples at the location of B-48 (CS-1) and five feet around the previous sample (CS-2 to CS-5). The soil samples obtained were analyzed for Arsenic using EPA Method 6010.

The soil sampling activities were conducted in accordance with the Florida Department of Environmental Protection's Standard Operating Procedures as required for General Sampling Procedures (FS 1000), Soil Sampling (FS 3000) and according to the Cleaning/Decontamination Procedures (FC 1000).

Arsenic was not detected above laboratory detection limits in the five confirmatory soil samples (CS-1 to CS-5) collected at the subject property. A summary of the soil analytical data is attached in **Tables 1 and 2**. Copies of the Chain-of-Custody Documentation and Laboratory Reports are also attached.

Based on the results of the confirmatory soil sampling no further assessment is warranted at this time.

The findings of this report represent our professional judgment; UES offers or extends no warranty, express or implied. These findings are relevant to the dates of our site work and the information cited herein. This report should not be relied upon to represent site conditions on other dates or at locations other than those specifically cited within the report. Universal Engineering Sciences, Inc. can accept no responsibility for interpretations of these data made by other parties.

Should you have any questions concerning these supplemental foundation recommendations, please contact us at your convenience.

Respectfully Submitted,  
UNIVERSAL ENGINEERING SCIENCES

Matthew A. Hoffman, E.I.  
Staff Engineer

1 cc- addressee (email: [rblacksmith@camerattacompanies.com](mailto:rblacksmith@camerattacompanies.com))

Attachments: Tables  
Laboratory Results and Chain of Custody Report

5971 Country Lakes Drive, Fort Myers, Florida 33905 (239) 995-1997 Fax (239) 313-2347  
[www.UniversalEngineering.com](http://www.UniversalEngineering.com)



**Progressive Water Resources**  
*Integrated Water Resource Consultants*

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## **Attachment 2**

### **Conceptual Covenant to Create an Enhanced Lake Management / Maintenance Plan**

This Covenant to Create an Enhanced Lake Management/Maintenance Plan (hereinafter referred to as the "Covenant") is created this \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_, by and between CAMPROP, INC., a Florida Corporation whose address is 4954 Royal Gulf Circle, Fort Myers, FL 33966 (hereinafter referred to as the "Developer"), for the benefit of LEE COUNTY, a political subdivision of the State of Florida, whose address is P.O. Box 398, Fort Myers, Florida 33902 (hereinafter referred to as the "County").

#### **I. Recitals**

WHEREAS, the County has duly adopted the Lee County Land Development Code ("LDC"), which, in §10-329, establishes the need to develop a lake maintenance plan which will provide for the long term maintenance of lakes and lake-shoreline areas and provide for the public's health and safety, preservation of property and enhancement of water quality; and

WHEREAS, the Developer owns or has acquired real property in Sections 23 and 24, Township 46 South, Range 26 East, and Section 19, Township 46 South, Range 27 East, in Lee County, Florida; and

WHEREAS, the Developer intends to develop a project to be known as Corkscrew Farms, which real property is more specifically described in Exhibit attached "A" (the "Property"), the description of which is hereby incorporated herein by reference; and

WHEREAS, the Developer must obtain a local development order from the County to plat and develop the Property; and

WHEREAS, the Developer has filed an application for the issuance of a local development order that will be known as Development Order Number \_\_\_\_\_; and

WHEREAS, DOS\_\_\_\_ will include the construction of lakes on the Property; and

WHEREAS, pursuant to Lee County Land Development Code ("LDC") §10-329, the County has agreed to approve Developer's requested DOS\_\_\_\_ upon the condition that Developer's development of the Property include a lake maintenance plan so as to achieve reasonable continuing compliance with the County regulations pertaining to lake slopes, littoral planting requirements and building setbacks on the Property; and



WHEREAS, the Developer intends this Covenant to provide guidelines and direction to any subsequent property owner(s), maintenance contractor(s) and any other persons conducting work on or in the lake bank slopes on the Property as set forth herein; and

WHEREAS, in furtherance of the agreement contained herein, the Developer hereby agrees to the terms and conditions of this Covenant and also agrees that the Property described in attached Exhibit "A" will only be sold, dedicated or conveyed subject to the terms and conditions contained herein.

NOW THEREFORE, in consideration of the County's approval of the DOS \_\_\_\_\_ and in further consideration of the mutual benefits and promises contained in the recitals contained herein, incorporated as part of this Covenant by reference thereto, the sufficiency of which is acknowledged, the Developer hereby agrees to construct and maintain the lake(s) approved in DOS \_\_\_\_\_ to the specific standards of that development order and as augmented herein, as follows:

## **II. Plan for Lake Management and Maintenance**

### **A. Purpose for Plan**

This Covenant has been created to ensure the subsequent development of the Property will be in compliance with DOS \_\_\_\_\_ 4, Lee County Zoning Resolution Number \_\_\_\_\_, LDC §10-329(d)(5) and Lee Plan Policy 33.3.3(2)(e), the terms and requirements of which are all incorporated herein by reference. This Covenant is written to identify the requirements for lake maintenance so that exotic vegetation is controlled, lake banks are maintained, desirable littoral plants flourish and water quality is enhanced within the project lakes. Generally, the below sections are applicable to every lake within the Property and as covered by the terms of DOS \_\_\_\_\_. However, due to the proximity to Lee County Well Fields there are specific guidelines herein in the section titled "PUBLIC WELL FIELD PROTECTION – ADDITIONAL REQUIREMENTS FOR LAKE CONSTRUCTION".

### **B. Maintenance Responsibility**

In conjunction with a replat of the Property it is anticipated the Developer will establish and create a homeowner's association (herein referred to as "HOA") that will be responsible for maintenance of all features of the surface water management system including all lake areas. At a minimum, the maintenance responsibilities within any subsequent or resulting dedication on a plat or replat of the Property and any resulting Declaration for a HOA will require compliance with the terms and conditions as contained herein. Notwithstanding the maintenance obligations set forth herein, Developer expressly reserves for itself, its successors and assigns, the exclusive rights in and to ownership of the water in the lakes and the related uses.

C. Exotic and Nuisance Vegetation Control

The HOA is responsible for the removal (in perpetuity) of all exotic and nuisance vegetation as defined by the Lee County Land Development Code ("LDC"), 10-329. Lakes must be inspected annually and any prohibited vegetation must be removed by the use of hand clearing or appropriate herbicidal treatment. Herbicides may only be applied by a licensed applicator and applied in accordance with manufacturer specifications, all applicable local, state and/or federal guidelines and requirements, and as further outlined in the sections below. (Refer to "Pesticide, Herbicide or Fungicide Applications" and "Public Wellfield protection within this document.)

D. Littoral Vegetation Preservation

Littoral vegetation is required to be installed and maintained in perpetuity in all the lakes within the project in accordance with the landscape plans approved as part of DOS\_\_\_\_\_. Any littoral plants approved as part of DOS\_\_\_\_\_ that die must be replaced so that the total number and type of littoral plants remain in accordance with DOS\_\_\_\_\_ and the LDC requirements.

The presence and spread of littoral plants throughout the lakes is desirable and may help to improve the water quality within the lakes. The spread of littoral plants will be encouraged throughout the designated planted littoral shelves ("PLS's"). Mechanical trimming, mowing or the use of herbicides on desirable littoral plants is prohibited. Any trimming or removal of vegetation within PLS's required to promote the survival and viability of littoral vegetation must be performed by hand or by approved herbicides and methods as outlined herein. (Refer to section "Public Well field Protection herein for additional standards for herbicide application.)

Inspections of PLS's to verify the survival of required plants and replanting of littoral vegetation when required must be in accordance with County requirements.

E. Fertilizer Application

Beginning January 1, 2014, per Florida Statute 482.1562, any person applying commercial fertilizer to an urban landscape must receive a limited certification for urban landscape commercial fertilizer application. The limited certification provides a means of documenting and ensuring compliance with best management practices for commercial fertilizer application to urban landscapes.

Any person(s) applying fertilizers within the project must have received a limited certification in compliance with Florida Statute 482.1562 prior to application of any and all fertilizers.

Additionally, fertilizer content and application rate must be in compliance with Code of Laws and Ordinances of Lee County Florida Chapter 26, 26-60. (See also Lee County Ordinance No.

08-08.)

Certain general requirements are identified below:

1. Fertilizers containing nitrogen and/or phosphorus may not be applied to turf and/or landscape plants during the rainy season (June 1 through September 30 of each calendar year).
2. Fertilizer may not be applied, spilled or otherwise deposited on any impervious surfaces. Any fertilizer applied, spilled or deposited, either intentionally or accidentally, on any impervious surface must be immediately and completely removed. Fertilizer released on an impervious surface must be immediately contained and either legally applied to turf or any other legal site, or returned to the original or other appropriate container,
3. Fertilizer may not be applied in or within ten (10) feet from the top of bank of any water body, seawall, designated wetland or wetland as defined by the rules of the Florida Department of Environmental Protection (Chapter 62-340 F.A.C).
4. Spreader deflector shields are required when fertilizing by use of any broadcast or rotary spreaders. Deflectors must be positioned such that fertilizer granules are deflected away from all impervious surfaces and water bodies, including wetlands.
5. Grass clippings and/or vegetative material may not be washed, swept or blown into storm *water drains, ditches, conveyances, water bodies, roadways or other impervious surfaces.*
6. A low maintenance zone is recommended adjacent to and on the sloped portion of lake banks not stabilized with hardened structures. The grass within the low maintenance zone is encouraged to be maintained higher than surrounding areas to allow the vegetation to help absorb and filter nutrients from runoff. Fertilizer usage in the low maintenance area is discouraged.

#### F. Erosion Protection and Lake Bank Maintenance

Lake banks are generally susceptible to erosion due to overland flow of storm water runoff, wave action and the natural seasonal fluctuation of water levels. Accordingly, lake banks within the project are designed to minimize this potential for erosion. Where the potential for bank erosion due to wave action is low, banks are designed at a 6:1 slope stabilized by sod. Where the potential for bank erosion due to wave action is high, banks may be designed with an enhanced stabilization cross-section consisting of a 4:1 slope with rip-rap stabilization.

Lake banks must be inspected annually to identify areas of erosion. Once identified, the erosion must be repaired and source of erosion shall be eliminated if possible. Where excessive erosion occurs, repair of the lake bank and/or enhancement of the stabilization cross-section may be necessary. Erosion repair on the lake banks may require permitting by the County.

Where applicable, roof drainage gutter outfall must be directed away from lake shorelines. The general layout of residential homes within the project prohibits such discharge, but the developer and home builders must ensure that roof drainage outfall is located so as to prevent the possibility of erosion of lake shorelines. If roof drainage results in lake bank erosion, the roof drainage must be corrected by the lot owner as directed by the HOA.

#### G. Lake Education Program

A narrative explaining the benefits of littoral vegetation, lake maintenance and water quality must be provided in the project newsletter as one is created and distributed. In addition, lake experts may be invited to the HOA meetings annually to discuss the lake system operation and maintenance requirements.

*Individual owners of homes developed within the Property must be informed that they are prohibited from removing or trimming littoral vegetation within the project.*

Additionally, the lake information package must include information specifying that the development is located in proximity to Lee County Well Fields, and express the extreme importance related to the elimination of introduction of hazardous materials into the lakes.

#### H. Pesticide, Herbicide or Fungicide Applications

All applications of pesticides, herbicides and/or fungicides shall be applied by a licensed applicator and applied in accordance with manufacturer specifications, all applicable local, state and/or federal guidelines and requirements and as further outlined in this section.

Commercial applicators of chemical lawn products must register annually with the HOA, its successors or assigns, and provide a copy of their current occupational license, proof of business liability insurance, and proof of compliance with licensing requirements. It should be noted that the HOA will be required to contract for the application of all pesticides, herbicides and/or fungicides within the Project, including on all residential lots, and individual lot owners shall be prohibited from applying pesticides, herbicides and/or fungicides to their lots without prior approval of the HOA.

The use of any chemical product in a manner that will allow airborne or waterborne entry of such products into surface water is prohibited. This rule will not apply to the use of chemical agents by certified lake management specialists or the development's maintenance staff for the control of

algae and nuisance vegetation within the storm water lakes or ponds; however, application of such agents must be in compliance with this section.

It is recommended that pesticides, fungicides, and herbicides be used only in response to a specific problem and in the manner and amount recommended by the manufacturer to address the specific problem. Broad application of pesticides, fungicides and herbicides as a preventative measure is strongly discouraged.

The use of pesticides, fungicides, or herbicides is limited to products that meet the following criteria:

1. Must be consistent with the USDA-NRCS Soil Rating for Selecting Pesticides.
2. Must have the minimum potential for leaching into groundwater or loss from runoff.
3. Products must be FDEP- and EPA-approved.
4. The half-life of products used may not exceed seventy (70) days.

#### I. Public Wellfield Protection– Stormwater Treatment

As required per Lee County Zoning Resolution No. \_\_\_\_\_, storm water runoff within the Property must be directed to specifically designed and designated storm water treatment areas.

Accordingly, storm water runoff must be first routed to pre-treatment areas, consisting of either dry-detention areas or wet-detention areas (lakes). The detention areas provide a minimum of 0.5" of pre-treatment prior to discharge. Additionally, plantings within the pre-treatment dry detention areas, will serve to further enhance water quality treatment prior to discharge. These plantings must be maintained in perpetuity (or as long as the development remains viable) by the HOA, its successors or assigns. Lakes shall provide an additional 1.5" of water quality treatment prior to discharge off-site. It is important to note that the lakes will be discharging into a few hundred acres of restoration area where additional water quality treatment and storage will be provided prior to discharge off-site.

Pre-treatment of storm water discharge prior to entry into the lakes serves to enhance the water quality treatment of storm water and reduce undesirable nutrient loading, thereby minimizing contaminants and pollutants from entering the lake and water table.

#### J. Public Wellfield Protection – Additional Requirements

##### 1. Herbicide Application

Herbicide application to maintain littoral vegetation and rip-rap stabilized shoreline areas within the Property must be conducted in a manner that reduces potential impacts to human health and the environment and in compliance with local, state and federal regulatory guidelines. Because the lakes are located hydraulically upgradient and within the five and ten – year travel time zone of the Lee



County drinking water wells, every precaution will be taken to preserve the quality of surface and groundwater within the Property.

All herbicides used near the lake(s) may only have the active ingredient 3,5,6-trichloro-2-pyridinyloxyacetic acid (triclopyr) such as Garlon® 3A specialty herbicide manufactured by Dow Agrosciences. Only aquatic-approved herbicides may be utilized in all lakes. Other commonly available triclopyr-based products (typically used in smaller residential settings), including Brush Killer® and Brush-B-Oon®, may be used. All must be catalogued or inventoried and monitored for movement toward any and all municipal water supply wells. These products are non-volatile and labeled for foliar applications including emerged weeds and brush in standing water or on the banks and shores of ponds and lakes. Only chemical constituents approved for use or application by Lee County, the State of Florida or the Federal Department of Environmental Protection may be utilized. Any deviation from these specifications will require County approval.

Triclopyr has been classified by the United States Environmental Protection Agency ("U.S. EPA") as "practically nontoxic" (the least toxic category designated by U.S. EPA) to mammals, insects, freshwater fish and invertebrates. Toxicological studies have produced no evidence of cancer, birth defects, genetic damage, genetic mutation, or adverse effects on the immune or nervous system in humans.

Following application, residual herbicide not absorbed by vegetation is rapidly degraded by sunlight as well as microorganisms in soil and groundwater. Under normal conditions, triclopyr photodegradation in surface water is approximately one-half day. Triclopyr half-life in soil is approximately 30 to 45 days and no detectable levels are typically present 6 to 12 months following application. The final degradation products of triclopyr include carbon dioxide, water, and other organic molecules.

Based on the rapid plant absorption rates, adsorptive characteristics binding triclopyr to soil particles, active degradation by photolysis at the surface, and microbial degradation in soil and groundwater, the potential for herbicide application to impact downgradient drinking water supplies is considered low.

## 2. Lake Monitoring Plan

The Developer and/or HOA will maintain an inventory of the type and quantity of pesticides and herbicides used within the Property boundary to ensure the lake monitoring plan provides a complete assessment of all potential contaminants of concern ("COC or CDC's").

Development and maintenance of the Property under DOS\_\_\_\_\_ must follow water quality sampling in accordance with Florida Administrative Code (F.A.C.) 62-160, F.A.C, and Florida Department of Environmental Protection (FDEP) standard operating procedure (SOP) for surface water

sampling (FDEP SOP 001/01), FS 2100 , and parameters are to be collected and analyzed by a NELAC-certified laboratory.

A surface water sample will be collected from each lake, including samples taken prior to herbicide/pesticide application to establish baseline surface water conditions. Surface water quality will be evaluated on a quarterly basis and more frequently in the event of a spill or release. The sampling interval may be adjusted as necessary based on the findings of the first four quarters of routine sampling. In the event of a spill that poses a potential impact to surface waters, additional *surface water samples will be collected to evaluate changes in COC's concentrations.*

Additionally, in the event of a spill or release into lakes, potential impacts to soils in proximity to the lakes will also be assessed and remediated according to the procedures outlined in the following section.

### 3. Remediation Plan

In the event significant impacts (as defined below) to surface waters are identified as a result of pesticide/herbicide application at the Property, the president of the HOA or his/her designee must notify the operator of the Lee County municipal water supply system and the Director of the Natural Resources Division within no less than 6-12 hours (or next business day) and a surface water remediation plan will be developed and implemented. If a spill or release "presents an immediate threat to human health and/or the environment or exceeds the Reportable Quantity (RQ) for the COC, the FDEP Office of Emergency Response ("OER") will be contacted within 12 to 24 hours. Guidance outlining the definition of a release as well as reporting procedures is presented in the OER Web page located at: [http://www.dep.state.fl.us/per/reportable incident.htm](http://www.dep.state.fl.us/per/reportable%20incident.htm).

A significant impact to surface water will be defined as a surface water sample analytical result for a COC's exceeding its respective U.S. EPA MCL as well as HAL concentration.

The Developer and/or their successors or assigns must coordinate assessment and remediation efforts with Lee County and will comply with applicable local, state, and federal permitting requirements.

The initial phase of the remediation plan may consist of temporary monitoring wells installed for short-term temporal monitoring of potential subsurface impacts and to evaluate the horizontal and vertical distribution of potential COCs. Based on the findings of the initial phase, if necessary, a comprehensive assessment may be required.

#### K. Overall Reporting for Lake Monitoring Plan

Reporting for surface water sampling, at a minimum:

1. Evaluate the COC results
2. Based on the COC results; propose a remedial action to determine the source of excess (as necessary)

3. Propose any appropriate changes in material handling, application schedule, etc. which caused or contributed to the release or excess.
4. Propose appropriate changes to the monitoring plan when the COC has been discontinued or no longer on property. This could be in the form of reduced testing frequency or a discontinuing sampling as appropriate (only applicable after two consecutive years of non-detection).
5. All field activities shall be conducted in accordance with FDEP's *Standard Operating Procedures for Field Activities, FDEP-SOP-00101/01, FS 2100, July 30, 2014 (or current revision)*. Analytical test shall be conducted by a Florida DOH NELAC certified laboratory.