

Part III. ENVIRONMENTAL RESOURCE IMPACTS

13. WETLANDS

Background

The Project area consists of approximately 520 acres, which were historically wetlands that were part of broad Sawgrass flats in the greater Everglades ecosystem ultimately flowing into Biscayne Bay. Over time, the Property was converted to agricultural use and has been most recently utilized as a C&D debris landfill and Material Recycling Facility (MRF). Portions of the perimeter of the Site are surrounded by a berm and a storm water treatment system has been constructed in conformance with State water quality standards. Several Florida Department of Environmental Protection (FDEP) and Miami-Dade County Department of Environmental Resource Management (DERM) Permits have been issued for the existing construction and demolition use.

Historically, the site was entirely underlain by hydric soils. According to the USDA Natural Resources Conservation Service (NRCS) Soil Survey for Dade County Area, Florida (issued January 1996), much of the Property is composed of Dania Muck, Depressional (see **Map E – Soils**). “Dania Muck, depressional” is described as a shallow, nearly level, very poorly drained soil located in poorly defined drainage-ways and adjacent to deeper organic soils within Sawgrass marshes. Most areas are typically ponded for 9 to 12 months in most years and support natural vegetation, which consists of Cattail and Sawgrass. Dania Muck is listed as a hydric soil.

Most of the remaining Property is underlain by the Lauderdale Muck, Depressional soil type. Like Areas with Dania Muck, areas with Lauderdale Muck are shallow, nearly level, very poorly drained soil located in poorly defined drainage-ways and adjacent to deeper organic soils within Sawgrass marshes. Most areas are typically ponded for 9 to 12 months in most years and support natural vegetation, which consists of Cattail and Sawgrass. Areas that are drained may become dominated by Brazilian Pepper and Melaleuca. Lauderdale Muck is also listed as a hydric soil.

According to the Miami-Dade County Soil Survey, the extreme southern portion of the Property is mapped as Udorthent soil. This condition is a result of the rock mining activity to the south, which has resulted in the deposition of fill on lands adjacent to the mining activities.

Nearly all soils on the Property have been altered through oxidation resulting from drainage and water management activities. In addition, because of the historical construction and demolition land filling activities, fill has been placed on the Site to facilitate the construction of storm water management systems as well as to implement requirements of regulatory permits for the landfill activities. Consequently, vegetation patterns have been altered due to land clearing, hydrologic manipulations and the placement of fill.

Hydrologically, a number of activities have significantly altered the historic water flow through the Site as well as the natural hydro-periods. Originally, the vast property was part of a wetland community within the extensive coastal everglades system. Water ponded on the Site through much of the rainy season and thick muck layers

have developed as a result. With the growth of Miami-Dade County the need for food supplies became greater and the area was converted to agricultural use, primarily for cattle grazing. To improve the soil conditions and convert the area to suitable grazing conditions for cattle ranches, ditches were constructed to move ponded water to Biscayne Bay. The construction of extensive drainage systems resulted in a general lowering of the water table and shift in vegetation communities to a more transitional community type.

With the northward expansion of urban development and the construction of better drainage features, canals and ditches, the remaining wetland communities no longer experienced significant ponding through the summer months and the vegetation shifted to an even drier community type. These soil disturbances and major alterations in drainage patterns enabled the establishment invasive and exotic plant species found On-Site today.

- A. 1. **Acres and percentage of Property which is currently wetlands. These wetlands should be shown on Map F, Vegetation Associations, and identified by individual reference numbers. (These numbers should be utilized in responding to the other sub-questions.)**

Evaluation and Documentation Protocol-Wetlands and Vegetation

The Property was evaluated for the presence of wetland areas pursuant to the applicable Florida wetland delineation protocol contained in § 373.019 Florida Statutes (F.S.), and the techniques included in 62-340 Florida Administrative Code (F.A.C.) and by the *US Army Corps of Engineers Wetland Delineation Manual* (1987). The wetland evaluation and review were incorporated into the evaluation of vegetation inside the Property. Initial techniques used to determine the potential extent of wetland areas On-Site include the review of past wetland permits with impacts to wetland areas On-Site and a review of recent and historic aerial photographs potential wetland areas. Subsequent field analysis was conducted to confirm the current On-Site conditions concerning vegetation, surface hydrology and soils. The preliminary analysis and initial On-Site vegetation surveys provided the primary data and information on the wetland characteristics On-Site. An additional intensive evaluation of the hydrology and a soil profile was conducted in areas that were preliminarily identified as possessing potential wetland characteristics. The areas confirmed as containing the three required wetland parameters (two confirmed parameters for the State of Florida determination) have been delineated on a suitably scaled aerial photograph of the Property and are included in the response to **Question 12 – Vegetation and Wildlife**.

As a result of historical alteration and land use activities, the Property is currently composed of a plant mosaic dominated by invasive exotic and undesirable vegetation and open cleared areas. All remnant areas meeting the definition of wetlands are shown on **Map F – Vegetation Associations**. There is a total of 122 acres of disturbed wetlands on the Property (approximately 23 percent of the total area). No native or high quality natural wetland systems were observed within the Property boundaries. The existing low quality wetland systems remaining On-Site are dominated by an association of the invasive exotic Punk Tree (*Melaleuca quinquenervia*), Brazilian Pepper (*Schinus terebinthifolius*),

Australian Pine (*Casuarina equisetifolia*) and ruderal vegetation in cleared areas. All On-Site wetlands are shown on **Map F.1 – Wetlands**. These wetland areas have been significantly impacted by past clearing activities, adjacent rock mining activities, On-Site C&D landfill related uses, off-road vehicle use, and drainage. **Table 13.A.1 – Wetland Acreage** provides a list of the wetlands existing on the Property.

TABLE 13.A.1 Wetland Acreage		
Habitat Type	FLUCCS	Acreage
Melaleuca	6190	106
Disturbed Wet Prairie	6430	15
Ditch	5103	1
Total Wetland Acreage		122
Source: RS Environmental Consulting, Inc.		

As shown on **Map F.1 – Wetlands**, the larger wetland communities on the property are dominated by a dense canopy of Melaleuca. These Melaleuca wetlands form the majority of the wetlands On-Site (approximately 106 acres of the total 122 wetland acres). Because of this dense canopy, there is little vegetation in the sub-canopy and minimal ground cover. The understory contains Trema (*Trema micrantha*), Strangler Fig (*Ficus aurea*), Ear-Leaf Acacia (*Acacia auriculiformis*), and Saltbush (*Baccharis halimifolia*), with is some remnant Shield Fern, Leather Fern and Sawgrass in the ground cover (and in some locations Southern Frogfruit). However, as a result of continued water manipulations, lowered hydrologic patterns resulting from the canal to the north, drainage ditches on the Property, and the rock mining operations on adjacent properties, the ability of these wetlands to continue to support obligate wetland species is in question. These Melaleuca wetlands, as with all wetlands on the Property, are isolated and have no direct connection to off-site water bodies or adjacent wetland communities. This isolation is a result of the construction of berms surrounding the C&D landfill, access roads for agricultural operations, adjacent rock mining operations, and construction of County roads.

The Disturbed Wet Prairie habitat includes Sawgrass, Bushy Bluestem and Coinwort (*Centella asiatica*), with any combination of these filling at least 20 percent of the overall plant coverage. Other species found included Common Frogfruit (*Phyla nodiflora*), Primrose Willow (*Ludwigia peruviana*), Water Primerose (*Ludwigia octovalvis*), Dog Fennel (*Eupatorium sp.*), Goldenrod (*Solidago sp.*), Ragweed, and Beggar-ticks. This habitat type includes approximately 15 acres On-Site .

The Freshwater Marsh habitat occurred between rows of fill piles on the landfill portion of the Property. Vegetative species included Trema, Creeping Ox-Eye (*Wedelia trilobata*), Sword Fern (*Nephrolepis sp.*), Beggar-Ticks, and Sawgrass. This habitat type includes approximately 1 acre On-Site .

Perimeter ditches were noted around portions of the Property. Although too small to be mapped, these ditches were typically included in the narrow exotic

hardwood land cover type on the outer perimeter of the Property. Smaller ditch-like areas were noted with the interior of the site as well. Some of these areas were inundated and contained hydrophytes such as Sawgrass, Spatterdock (*Nuphar lutea* subsp. *advena*), Creeping Ox-Eye (*Wedelia trilobata*), and Sword Fern (*Nephrolepis* sp.). Vegetation at the top of bank of these artificial features was typically dominated by exotic hardwood species including Brazilian Pepper, Australian Pine, and Guava (*Psidium guajava*). This habitat type includes approximately 1 acre On-Site .

2. Historic hydroperiods and seasonal water elevations of on-site wetlands.

October Water Level for this Project is +3.8 NGVD and May Water Level is +2.8 NGVD. However, both the hydroperiod and water levels for this area have been reduced, due to the drainage of the property for the C&D landfill.

3. Acreage and location of wetlands which are to be preserved in their natural or existing state, including proposed hydro periods, seasonal water elevations and methods for preservation.

Because of the highly disturbed nature of the remaining wetland habitat found within the Project area, the entire site is proposed to be developed. Any preservation of remnant wetland areas On-Site would not provide any high-quality wetland habitat with any significant wetland functions or valuable fish and wildlife habitat.

4. Acreage and location of wetlands which are to be enhanced in their natural or existing state, including proposed hydroperiods, seasonal water elevations and methods of enhancement.

As stated in the response to A.3, there is no pristine or high-quality wetland habitat remaining On-Site that would be feasible for enhancement of any kind. Any efforts toward restoration of wetland habitat would face significant obstacles to achieving suitable hydrology for the establishment of suitable wetland plant species. Furthermore, with the existence of nuisance and exotic plant species on adjoining properties, there would be continual invasive plant species control required to maintain wetland communities.

5. Actions taken to minimize or mitigate impacts on wetland areas, including maintaining the hydro period and providing buffers.

As stated in the response to A.3, the entire Property is proposed to be developed. With the significant adverse impacts to historic hydrologic patterns, the amount of fill and C&D debris that has been placed on the Property from the landfill activity, and with all of the exotic plant species existing on neighboring property, preservation of any remnant wetland areas On-Site would not result in maintaining any high-quality wetland habitat that would provide any significant wetland functions or provide any viable fish and wildlife habitats. Furthermore, the nuisance and exotic plant species on adjoining properties would require continual invasive plant species control to maintain the wetland communities.

It is anticipated that this Project will require mitigation to off-set impacts to the

disturbed wetlands. The mitigation plan to off-set these impacts, is expected to consist of the purchase of credits at a local mitigation bank.

6. Acreage and location of wetlands which will be disturbed or altered, including a discussion of the specific alterations and disturbances.

Since the entire Property is proposed to be developed, all 122 acres of the remaining disturbed wetlands as shown on **Map F3** are to be removed.

7. Precautions to be taken during construction to protect wetland areas.

Since all of the remaining wetlands On-Site are proposed to be filled, no plan for the protection of remaining wetlands will be required. However, all proper turbidity precautions will be taken to prevent erosion and discharge of turbidity to adjacent Property. Silt fences will be properly installed to surround the Property and will be maintained during all construction activities.

8. If available, provide jurisdictional determinations

There are no exiting jurisdictional determinations for the Property. Portions of the of the Site may contain areas that are jurisdictional to the US Army Corps of Engineers (ACOE), the State of Florida (South Florida Water Management District [SFWMD] or the FDEP depending on which state agency decides to pursue permitting for the Site), and DERM pursuant to the environmental regulations of the respective agencies. All wetlands and surface waters will be evaluated according to each agency's specific criterion.

With the recent *Rappanos* ruling by the U.S. Supreme Court and subsequent guidance published by the U.S. Environmental Protection Agency and US ACOE, consultation with the Corps will be necessary to determine the extent of any federal jurisdictional wetlands on the Property. Although there are no direct hydrologic connections to navigable waterways, the Applicant will coordinate with the Corps to determine if there is any "significant nexus" to the nearby canal located to the north of the Property.

B. Provide any proposed plans (conceptual or specific) for created or enhanced wetland areas, including littoral lake slopes, buffers, vegetative species to be planted, etc.

The analysis of the Property has significant listed species or On-Site habitat areas of sufficient quality to require preservation in their present state or location.

The wetland mitigation plan will consist of the purchase of wetland credits at a local mitigation bank. The options in Miami-Dade County include the Florida Power & Light Everglades Mitigation Bank (EMB), the Hole-in-the-Donut Mitigation Bank (HID) and any other acceptable mitigations banks. The Applicant will work with the SFWMD (or FDEP), Miami-Dade County DERM and the Corps (if required) through the environmental permitting processes to determine the appropriate number of credits required and then pursue the purchase of wetland credits, as may be required by the applicable regulatory agencies.