

Total acreage for the proposed well site involves 2.91 acres (inside the existing ring levee), including the existing elevated well pad (0.142 acres), western portion of the existing access road (0.048 acres) and the proposed well pad expansion (0.671 acres) that involve permanent wetland impacts for the proposed well pad (pad totals 0.861 acres). The permanent access road to the expanded well pad involves 0.097 acres over the previous 20-foot wide oyster shell road. Permanent imported fill impacts total 0.958 acres of regenerative emergent wetlands on the proposed access road and well pad, which were previously impacted by past oil/gas exploration activities. The necessary ring levee repairs (totals 0.030 acres) are considered as permanent impacts, although indigenous soils will be used to repair the previously elevated community back to the pre-existing conditions (currently regenerative wetlands).

The expanded well pad and access road will impact regenerative wetlands, with previously elevated communities to remain above the current grade (see Cross-Sections on Figure 3) for required stability during operation and maintenance of the wells. No adverse impacts to the adjacent natural waterways are anticipated from utilizing the existing well site, with 0.958 acres of previously disturbed emergent wetlands impacted by fill materials (see labels on Figure 2).

Given the proposed permanent access road and well pad, no on-site restoration of wetlands is anticipated. However, soils along the ecotone of the waters edge will be smoothed and prepared for the anticipated regeneration of hydrophytic species (coastal salt grass, salt-meadow cordgrass, and Gulf cordgrass). Regardless of the season, natural regeneration of sedges/rushes, high-tide bush and sea ox-eye are expected from rhizomes/seeds within the indigenous soils, and are considered additive to the re-vegetation efforts. According to observations from previous restoration activities on similar sites, rushes/sedges, cordgrass, high-tide bush and sea ox-eyes will quickly regenerate on the restored ecotone without the need for seeding or transplanting. The edge of the access road and well pad are anticipated to support adequate vegetational cover within one growing season, which should provide sufficient soil stabilization to prevent soil erosion. Natural recruitment of adjacent native species is expected to add to the revegetation efforts. Erosion control devices (especially a silt fence along the down-slope perimeters) may be required and should remain in place until adequate vegetative cover is established.

In accordance with the *Compensatory Mitigation for Losses of Aquatic Resources* (Federal Register, Thursday, April 10, 2008, Vol. 73, No. 70, pp. 19670-19705), a preference has been established to utilize existing mitigation banks for compensatory mitigation needs. Kingwood intended to utilize an USACE approved mitigation bank to offset the proposed impacts of 0.988 acres (see Table 7.1). However, it is Virtus' understanding that no USACE-approved mitigation bank's service area covers the proposed impact acreage. Virtus realizes that the Department of the Army (USACE Galveston District) is responsible for determining the appropriate form and amount of compensatory mitigation required to offset any proposed adverse impacts. However, it is Virtus' opinion that the proposed impacts involving previously disturbed wetlands should be considered lower quality due to previous disturbances, with higher quality marsh/wetland impacts purposely avoided. Given that no mitigation banks are available, alternate mitigation activities are necessarily proposed.

In efforts to develop alternative mitigation, Kingwood Exploration has conducted meetings with Texas Parks and Wildlife Department's (TPWD) Project Leader Dr. Michael Rezsutek to discuss alternative mitigative opportunities to offset approximately 1-acre of proposed impacts for the pending McFaddin Ranch #17 and #18 multi-well pad within the TPWD tract.

TPWD has existing plans for improved drainage and water exchange within specific portions of the Salt Bayou Unit of the J.D. Murphree Wildlife Management Area (JDMWMA), which is located just ~3,750' north of the proposed well site. This necessary water management project is in response to recent changes in hydrologic patterns from the beneficial use of dredge material and existing infrastructure. With the assistance of Kingwood, the current plan is to place water control structures (WCS) at or in the immediate vicinity of the 3 alternative locations shown on the attached map (Figure 4.0). These water control structures will allow water level manipulation and allow water to be funneled through two existing JDMWMA compartments and/or into the nearby Gulf Intracoastal Waterway.

Kingwood Exploration has proposed financial obligations to begin with the WCS Alternative #1 to improve hydrologic conditions of approximately 195 acres that is prone to excessive flooding (green areas on Figure 4), as a result of recently pumped spoil illustrated by the purple areas on Figure 4. Annotated maps on Figure 4.0 show the locations of the proposed Water Control Structures (WCS Alternatives 1-3) to improve water drainage from the marsh and can also serve as water inflow during periods of drought. This project could restore or at least enhance +/- 195 acres of tidal influenced wetlands (green areas on Figure 4.0).

In addition, Figure 4.0 includes aerial photography indicating the progression of the hydrologic changes in the proposed mitigation area over the last fourteen years. It is evident from the aerial photos that a decrease in wetland habitat has occurred since approximately 2010, with increased spoil materials deposited in the purple portion illustrated on Figure 4.0. The upper left map (Aerial Photograph 01-2018) indicates significant increases to open water acreage, with degradation of previous vegetative cover (within the green portion). Installation of the proposed water control structures will allow these affected areas to be hydrologically managed, with the proposed enhancement of at least 195 acres of impaired coastal wetlands.

Positively manipulating the existing hydrology of the impaired wetlands may not create any wetlands, although the expected ecological lift of at least 195 acres should sufficiently offset the proposed impact of approximately one acre. In the event that open water portions of the proposed mitigation acreage (green portions on Figure 4.0) are not functioning as wetlands, then the creation or restoration of wetlands can occur. Baseline studies to document the current impaired conditions of the previous wetlands have not been initiated at this time, although are a necessity. Kingwood is pleased to provide baseline documentation in regards to the proposed mitigation project, should this alternative be considered as a viable mitigation effort. Furthermore, adequate documentation of the anticipated ecological lift resulting from the proposed water control structures will be necessary to substantiate the proposed increase of wetland functions. Specific details of the methodologies, required monitoring, and duration of the proposed alternative mitigation will be subsequently supplied when the particulars are determined.