6.0 VALUED ECOSYSTEM COMPONENTS

6.1 Issues Scoping and Selection of VECs

This section describes the process used to identify Valued Ecosystem Components (VECs), which involves issues scoping and pathway analysis. As suggested by Beanlands and Duinker (1983), the VECs are determined on the basis of perceived public concerns related to social, cultural, economic, or aesthetic values.

The issues scoping process for this assessment included: review of past, relevant environmental reports; review of concerns raised during the consultation process; regulatory agency consultation; and the study team's professional judgment. From previous projects conducted in Barbados, a preliminary list of environmental and socio-economic components of concern (ECC) were developed.

From the initial ECC list, VECs were selected. The approach to the assessment of potential effects involved an initial evaluation to determine the likelihood of an interaction or linkage between ECCs and Project activities, including construction, operation, and malfunctions and accidents. Where linkages between ECCs and Project activities existed and potential effects were of concern, these components were selected as VECs and subjected to further analysis in the assessment of effects (Sections 7 and 8). Where a linkage between proposed Project activities and the ECCs was absent, or was deemed unlikely to result in an effect, no further analysis was required.

6.2 Use of VECs in the Environmental Assessment Process

The analysis of effects (Sections 7 and 8) considers whether it is adverse and significant, and whether the identified significant adverse effect is likely to occur if appropriate mitigation measures are used. The significance of an effect is determined by its magnitude, geographic extent, duration and reversibility. The geographic extent of the effect is assessed by considering over what portion of the bounded area (identified for each VEC) the effect is likely to occur. The magnitude of the effect is evaluated by comparing it to existing standards or information that describes effect-levels from activities as well as consideration of how much of the VEC or function of the VEC is removed by the effect. The duration considers the length of time that the VEC may be exposed to the effect. Reversibility relates to the permanence of the effect (i.e., can the effect be reversed).

6.3 Assessment Boundaries

An important aspect of the effects assessment process is the determination of the boundaries of the assessment. Temporal and spatial boundaries encompass those periods during, and areas within which, the VECs are likely to interact with, or be influenced by, the Project.

The temporal boundaries considered for this assessment include the construction and operational life of the Project.

Spatial boundaries for the assessment are specific to each VEC, and may extend beyond the Project footprint area. For example, effects on traffic may include a more regional perspective, while effects on soils are limited to the immediate Project area. The boundaries may be physical (e.g., watersheds), biological (e.g., habitats), or political (e.g., counties).

6.4 Valued Ecosystem Components

A summary of the selected ECCs and the rationale for their exclusion or inclusion as a VEC is presented in Table 6-1. The selected VECs are highlighted in the Table.

The VECs identified in Table 6-1 are assessed in Section 7 to determine the significance of potential effects and additional mitigation measures required to minimize effects.

Table 6-1 Issues Scoping/Pathway Analysis Summary Matrix Valued Ecosystem Components of Concern (VECs)

Environmental Components of Concern (ECCs)	Pathway of Concern		Possible Pathways	VEC		Rationale for Inclusion/Exclusion as Valued Ecosystem Component (VECs)
	Yes	No		Yes	No	
Air Quality	X		Construction Operations	X		Included as a VEC – International guidelines exist for impacts to ambient air quality. Potential effect on air quality during construction (dust, vehicle emissions) and operations (gas turbine / low speed diesel emissions)
Water Protection Zones	X		None		X	Excluded as a VEC – Project area is outside Zone 1 and meets requirements of other Groundwater Protection areas
Groundwater Resources - Agricultural Irrigation Wells	X		Operations	X		Included as a VEC – Irrigation wells are in proximity to the Project. Some groundwater will be utilized as make-up water during operations.
Soil Quality		X	None		X	Excluded as a VEC – No potential erosion areas. Not expected to encounter contaminated soils during construction.
Fauna and Flora		X	None		X	Excluded as a VEC – Populations and critical habitats of these species are either not present or not effected by Project.
Environmentally Sensitive Areas and Designated Areas	X		Construction	X		Included as a VEC for construction only. – Use of roll-on/roll-off barge for equipment delivery at the Arawak plant. The effects of constructing the submarine gas pipeline on coastal and Marine zones is excluded as it will be addressed in a separate EIA for the submarine gas pipeline. Excluded as a VEC during operations – Project is compatible with existing land uses and distant from tourism centres. No critical habitat features impacted by Project during operations.
Ambient Noise	X		Construction Operations	X		Included as VEC – Potential effect of noise on surrounding areas during construction and operations
Land Use		X	None		X	Excluded as a VEC – Project is compatible with existing land uses and distant from tourism centres.
Archaeological/ Heritage Resources	X		Construction Operations		X	Excluded as a VEC – St. Lucy's Church is heritage resource located in Project area. Excluded as a VEC because potential effects on St. Lucy's church have been addressed with other VECs (air and noise)
Traffic	X		Construction Operations	X		Included as VEC – Potential effect from construction and operations related traffic on existing traffic patterns.