Comments of Comite Dialogo Ambiental, Inc.-Iniciativa de Eco Desarrollo de Bahia de Jobos, Inc. to the Jobos Bay National Estuarine Research Reserve Draft Management Plan

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September, 2017

I. Introduction

Comite Dialogo Ambiental, Inc. (Dialogo) is a community environmental group composed of residents of the municipalities of Salinas and Guayama, and organized as a nonprofit corporation under the laws of the Commonwealth of Puerto Rico since 1997. The purposes of the organization are to promote the general welfare of the communities it serves through education and capacity building of residents concerning the adverse impacts of human activities on the ecologic balance of natural systems and the importance of restoring the environment and promoting conditions under which human beings and the environment can exist in harmony to fulfill economic, social and other needs of present and future generations. Dialogo is part of an umbrella organization called Iniciativa de Ecodesarrollo de Bahia de Jobos, Inc (Initiative for Jobos Bay Eco-Development, Inc. - IDEBAJO) which brings together community groups and fishing associations and other organizations. As noted in the Jobos Bay National Estuarine Research Reserve (JBNERR) Draft Management IDEBAJO and the Puerto Rico Department of Natural and Environmental Resources (DNER) entered into a collaborative agreement to promote the development of ecotourism microenterprises in the Reserve, among other activities. The agreement requires both parties to collaborate in four main areas: 1-community education, capacity building and training, 2-conservation and monitoring of Reserve protected areas, 3-development and promotion of ecotourism and sustainable livelihood alternatives for communities in proximity to the Jobos Bay Reserve and 4-collaboration on research projects

related to JBNERR. With respect to the first area, IDEBAJO worked with Reserve staff to organize a Reserve natural interpreter guide program and recruited participants who completed both the Reserve program and the National Association of Interpreters certificate program. During the span of the program and with respect to the second main area within the agreement, the conservation goal and monitoring, participants in the Reserve guide program and IDEBAJO repeatedly communicated and provided evidence to Reserve staff, DNER, the United States Fish and Wildlife Service (USFWS) and the Army Corps of Engineers (USACE) on the extensive cutting of mangroves, filling of wetlands, construction of structures, blocking access to the beach and other violations by alleged vacation home owners in Camino del Indio which forms the western portal of the Reserve. Although, DNER initiated an administrative procedure to address the violations, to date the illegal cutting of mangroves, filling of wetlands, construction of structures and blocking public access has continued apace. Program participants have been intimidated and threatened and fear for their safety. The need for enforcement in this case cannot be emphasized enough and should be emphasized in the Draft Management Plan. The lack of effective action to stop these illegal practices severely limits the ecotourism activities in the Camino del Indio area. The development of ecotourism activities and socio-productive alternatives and microenterprises require agency enforcement, mitigation and remedial action. As to collaboration on research, IDEBAJO has previously suggested certain issues as possible topics of investigation at the Reserve and the willingness to collaborate in that area. The Dialogo youth group and other members do water monitoring and participate in coastal training program workshops. Diálogo Ambiental, and IDEBAJO have organized multiple environmental awareness activities including eleven intensive one-week summer workshops for community youth at the Reserve. The workshops have exposed dozens of local youth to the Reserve for the

first time. The activities have focused on the Jobos Bay watershed and promote a holistic approach to the area's natural environment, history and culture. Youth participants have conducted clean-up activities, experienced passive recreation such as bird watching, created art work, written essays about their experiences, participated in a radio program, photography workshops of the Reserve and the watershed, among other activities. The Committee would hope to continue collaborating with the Reserve by enabling local youth access to the Reserve. The workshop program is known as "Convivencia Ambiental" (Environmental Cohabitation). An education commission was formed to plan the promotional, financial and logistical aspects of each of the one week long intensive workshops which are conducted in different Reserve facilities, including the offshore cays. Dialogo is currently working on issues related to the AES coal combustion plant located in the Jobos Bay watershed. The Coal Ash Campaign is a collaborative effort with various groups in Puerto Rico and in the continental United States on issues related to the indiscriminate use and accumulation of coal ash in flood prone areas, over sole source aquifers and in proximity to marginalized communities and sensitive environmental areas such as the Jobos Bay Reserve. As a result of this campaign, the use of coal ash as fill material has been banned and AES was fined by the Environmental Protection Agency (EPA) for long term illegal discharges of water contaminated with coal ash into Las Mareas Bay (Outer Jobos Bay). (Administrative Compliance Order, CWA-02-2012-3100). The Puerto Rico government also recently fined AES for failing to prevent that the mountain of coal combustion residuals cause fugitive dust dispersion and storm water runoff during the passage of Hurricane Irma. Dialogo participated in the joint effort with EPA, the University of Puerto Rico (UPR) Graduate School of Public Health on a project known as the Puerto Rico Electric Power Authority (PREPA) Environmental Review Contractor from 2003 to 2007 to achieve better air

quality in the Region. Other projects include South Coast Aquifer protection from garbage dump contamination, sprawling construction over Aquifer recharge areas and a large tire fire that contaminated Jobos Bay with PAHs.(Aldarondo., et als,). Most recently, Dialogo has worked on the impacts of the proposed Aguirre Offshore GasPort project that would traverse Jobos Bay with a subsea pipeline through Boca del Infierno Pass and the Reserve and include the construction of multiple structures one mile south of Cayo Barca to accommodate a floating storage and regasification unit (FSRU) nearly 1000 feet in length and Liquified Natural Gas (LNG) carriers of similar size.

II. The Jobos Bay Environment

As noted in the JBNERR Draft Management Plan, Whitall, D.R., B.M. Costa, L.J. Bauer, A. Dieppa, and S.D. Hile (eds.). 2011, authored A Baseline Assessment of the Ecological Resources of Jobos Bay, Puerto Rico. NOAA Technical Memorandum NOS NCCOS 133. Silver Spring, MD. 188 pp. (http://ccma.nos.noaa.gov/) which documents the Jobos Bay ecology. Some of the findings that should be highlighted in the JBNERR Draft Management Plan include the following:

The mosaic of habitats, including coral reefs, seagrasses and mangroves, are home to a diversity of marine organisms that provide valuable ecosystem services to the local community, including fishing, tourism and shoreline protection (DNER, 2002). Estuarine and coral reef ecosystems in Puerto Rico and throughout the U.S. Caribbean, however, are under increasing pressure from environmental and anthropogenic stressors that threaten these important marine communities (García-Sais *et al.*, 2008). Whitall, et als., pg. 11.

In total, 93 unique concatenations of zone, major structure, detailed structure, percent hard bottom, major cover, percent cover and live coral cover were identified from the optical and acoustic imagery. Whitall et als., pg. 12.

The coral community observed in the study was represented by 24 species, 22 of which were observed on hardbottom. Species richness ranged from 0-13 species at individual sites. The spatial pattern was similar to that of that of live coral cover- sites within the bay tended to be characterized by low species richness, while aggregate reef adjacent to the cays and offshore

hardbottom tended to have higher richness (Figure 3.10). The most abundant coral was *Porites astreoides* (mustard hill coral), followed by *Siderastrea siderea* (massive starlet coral), *Montastraea cavernosa* (great star coral), and the *Montastraea annularis* complex (boulder star coral; Figure 3.11). Two additional species not included in *Manicina areolata* (rose coral) and *Oculina diffusa* (diffuse ivory bush coral), were observed only on unconsolidated sediments. Whitall et als., pg. 64.

Gorgonian cover ranged from 0-12.3% and exhibited similar spatial patterns to hard coral cover (Figure 3.12). Sites on aggregate reef adjacent to the cays, as well as one location farther offshore, exhibited the highest gorgonian cover. Encrusting gorgonians were the dominant gorgonian type on hardbottom in terms of percent cover, averaging 2.2 ± 0.6%, followed by sea plumes/rods/whips (1.6 ± 0.5%), and sea fans (0.6 ± 0.2%). Sea plumes/rods/whips were also more abundant than sea fans in the average number of individuals/m2 (2.0 ± 0.5/m2 vs. 0.6 ± 0.3/m2). Whitall et als., pg. 67.

The Revised Alternative Pass Benthic Baseline Characterization Report for the AOGP project indicates the following findings:

3.1.4 ESA and ESA proposed species

ESA and ESA proposed stony corals were regularly observed throughout the mapped hardbottom (reef) communities. *Acropora* (ESA-threatened and proposed for ESA-endangered) along with all seven ESA-proposed stony corals were observed during the survey. We must emphasize that frequency of observations during towed-diver surveys is a defensible indication of abundance; but these observations are not equivalent to abundance or density. *Acropora cervicornis* was only observed in the consolidated reef habitat (ESA reef #6) associated pipeline corridor segment 2 (see Figure 3-2). The seven ESA-proposed species were common throughout and often observed on multiple reef sites. The most frequent of the ESA-proposed species is *Montastraea faveolata* and the least frequent is *Mycetophyllia ferox*. Figure 3-2 delineates and enumerates (for cross-reference with Table 3-6) the reef sites where ESA and/or ESA proposed species were observed. Table 3-6 provides a summary of the listed and proposed coral species observations by rank order of frequency and by the corresponding reef site number presented in Figure 3-2.

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3.3 Summary of Results

Coral reef habitat ranging from low cover, discontinuous hardbottom to high relief, high coral cover was encountered along all three survey segments. The inshore reefs (segment 1) were of substantially higher habitat quality than anticipated. The reefs within the passes and the offshore route are high relief, high coral cover supporting an apparently robust assemblage of reef organisms. Stony corals are abundant (Section 3.1.3). Our surveys found 8 of the 9 ESA-listed and ESA-proposed coral species (Sections 3.1.4). *Acropora palmata* is the only ESA-listed species not documented during this survey. The lack of *Acropora palmata* observations is likely an artifact of the survey area definition (e.g., suitable habitat for the species was noted only in small portions of segments 1 and 2).Within the survey area, many coral species are not uniformly distributed on the reef but instead are relatively tightly constrained into depth zones. Similar depth-related observations were made of coral cover along the segment 2 reef. Total coral cover appears to be lower within the gorgonian zone when compared to the fore reef. This type of zonation and corresponding coral cover is very similar to the coral reef habitat of the Boca del

Infierno (Tetra Tech, 2013). Occurrences of coral bleaching and predation were rare. In general, the stony coral and gorgonian population within the survey area is robust.

A subsequent study indicates the following:

The offshore terminal area is of substantially higher habitat quality than prior surveys led us to believe. It should be noted, that these are the initial surveys for much of the offshore terminal area, as previous studies (Tetra Tech, 2012) did not include much of the current offshore terminal study area. Approximately 21% of the total survey area is discontinuous seagrass (16%) and patch reef habitat (5%). Seagrasses patches were common throughout with percent cover ranging from 5-25%. The patch reefs contained at least 11 species (as-encountered observations) of stony corals along with octocorals, macroalgae, and sponges. Several ESA coral species were also observed along the discontinuous patch reef formations.ESA Coral Mapping and Demography.pg. 4-2.

III. Threats, Challenges and Opportunities

The threats to the natural environment in the Jobos Bay watershed are serious and many as noted in the following statement; "Agriculture, road construction, housing and commercial developments, the establishment of new chemical and electro generating industries, in addition to inadequate disposal of increasing amounts of solid waste are the primary factors that alter the natural cybernetics of the (Jobos) Bay, mainly because they are large vectors of pollution and deterioration and habitat fragmentation (figure 45)."page 31, Laboy-Nieves EN. 2001. The Natural History of Jobos Bay, Puerto Rico. ISBN: 0-9714413-0-8. 158 p. https://www.cienciapr.org/en/user/dreddielaboy (Translation provided).

As noted in the JBNERR Management Plan, "there are very high concentrations of metals in the sub- watersheds. It is possible that this is related to the high concentration of industries in the area…There are two power plants in the Jobos Bay NERR watershed that may be affecting the Reserve's ecosystems. The thermal discharges from the PREPA Aguirre Power Plant are an anthropogenic stressor to the Jobos Bay marine environment (Whitall et al., 2011), and is a stressor for the manatee population. This power plant has a navigation channel, used by barges to

bring oil and gas into the power plant pier. This area is exposed to barge strandings and sediment re-suspension. Oil spills are a consistent threat (NERRS, 2011)."

The discussion in the Management Plan requires greater detail on additional imminent threats to JBNERR. The Aguirre Offshore GasPort Project (hereinafter referred to as AOGP or the Project) is a proposed liquefied natural gas (LNG) industrial installation in the Caribbean Sea and Jobos Bay that would be used to import natural gas into the Commonwealth of Puerto Rico. The file for the AOGP Project before the Federal Energy Regulatory Commission (hereinafter referred to as FERC or the Commission) can be found at: http://elibrary.ferc.gov/idmws/search/advResults.asp. There are viable alternatives to the construction of costly permanent infrastructure such as the AOGP project that would tie Puerto Rico to fossil fuel generation for the long term. Contrary to PREPA's claims, the AOGP project is not the most viable way to supply natural gas to the Aguirre Power Complex. As noted in the Institute for Energy Economics and Financial Analysis (IEEFA) Report, deployment of ship-to-ship transfer of LNG to Aguirre is feasible. http://ieefa.org/wp-content/uploads/2017/06/IEEFA-Sommer-Kunkel-Testimony-PREPA-Aguirre-Site-Economic-Analysis-PREC-060217.pdf. (The IEEFA Reports also discuss the integration of renewable energy, demand response and time of use programs, energy efficiency, microgrids, solar communities and storage as viable alternatives to central station fossil fuel electric generation in Puerto Rico.) The impacts of the AOGP project would include the proposed Horizontal Directional Drill (HDD) in critical habitat of seven species of Endangered Species Act (ESA) protected corals. The Laney Final Study, available in the project file cited above indicates that," The proposed entry point is located within Jobos Bay in approximately 12 feet of water at Mean Low Tide (MLT)", Laney Final Study, section 1.3, pg. 2. and that, "There are, however, inherent risks associated with the proposed Jobos Bay HDD."

ES-1. The proposed entry point and the boring depths do not coincide with the typical depths for HDD and fail to discuss impacts to the aquifer that provides freshwater to Jobos Bay and the offshore cays. As to the subsurface materials present in the Boca del Infierno Pass where the HDD is proposed, the Laney Final Study notes as follows:

> The subsurface materials noted in the Geo Cim Full Geotechnical Data Report (Draft No 1) Aguirre Offshore Gasport dated June 19, 2015 and Preliminary Nearshore Geotechnical Investigation Report, Rev. 3 consisted predominantly of sand, cemented sand, clay, silt, packstone, and wackestone. Laney Final Study, section 1.3, pg. 2.
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> Gravel contents along sections of the HDD profile generally ranged between 10 percent and 72 percent based on the laboratory testing results. Of the 36 samples analyzed for grain size distribution, 17 indicated gravel contents in excess of 40 percent. **The high gravel content soils are present throughout the subsurface strata such that the HDD profile will likely progress through the high gravel content materials.** Although laboratory analysis indicated high gravel contents, photographs of the geotechnical samples taken in the field indicate that the overall soil matrix may provide stability to the soil and reduce the potential for issues normally associated with high gravel content soils. Laney Final Study, Pg.3. (Emphasis added).

The Laney Final Study indicates that; "Although we anticipate that bore hole stability may be provided by the soil matrix, **the risk of formational fluid loss may be high in the granular soils anticipated along the HDD profile**". Laney Final Study, pg.6. (Emphasis added).

"On the exit side of the crossing a large dredge pit would be the likely option selected to attempt to contain drilling fluid returns within a limited area. Because the entry and exit sides of the crossing are located in water, we anticipate that the estimated volume of drilling fluid that would likely be expelled to a dredge pit at exit or on the seafloor could be on the order of approximately 3 million gallons. The environmental risk of inadvertent returns within the Boca del Infierno coral reef habitat is an additional concern for the proposed crossing. While the HDD method of construction is being considered as a means to reduce the surface impacts to the Boca del Infierno coral reef habitat, no HDD installation is without some level of risk for inadvertent drilling fluid returns." Laney Final Study, pg. 6.

The Laney Final Study actual findings, aside from conclusory remarks, confirm Dialogo's contention that HDD impacts including geotechnical considerations, drilling fluid contamination and higher risks posed by drilling in deeper water as previously anticipated in the Laney Horizontal Directional Drill Preliminary Feasibility Study (Laney Preliminary Study) could pose significant and unreasonably high risks to the coral reef and surrounding habitats of Jobos Bay and the Jobos Bay National Estuarine Research Reserve. Laney previously indicated that HDD would generate 'on the order of 2 million gallons' of drilling fluid that would either remain on the seafloor or require a large dredge pit be constructed on the exit side to contain the fluid. The Laney Preliminary Study found that, "The potential risks identified for the proposed HDD are: (i) gravel contents in excess of 40 percent that cause borehole instability and the inability to maintain an opened hole while jetting the pilot hole, reaming the hole or while installing the carrier pipe; (ii) potential for hydraulic fracture and inadvertent drilling fluid returns within the estuary and coral reef; and (iii) logistical concerns associated with working in an offshore environment in water in excess of 50 feet and in an area prone to rough seas and weather. "Laney Horizontal Directional Drill Preliminary Feasibility Study, Page 1. Note that all of the risk factors listed in the Laney Preliminary Study are confirmed in the Laney Final Study. The Laney Preliminary Study determined that; "Regardless of the potential for hydraulic fracture and inadvertent drilling fluid returns during HDD operations, a significant volume of drilling fluid will be expelled to the seafloor as a result of HDD operations. The proposed Jobos Bay HDD would require entry and exit locations in water and the majority of drilling fluid pumped downhole will likely remain on the sea floor. **Typically a large dredge pit would be constructed on the exit side to contain drilling fluid returns within a limited area; however, we are unaware of any effective method of recovering drilling fluid returns from the**

seafloor or dredge pits. We anticipate that the estimated volume of drilling fluid that would likely be expelled to the dredge pit at exit or on the seafloor during HDD operations would be on the order of 2 million gallons." Laney Horizontal Directional Drill Preliminary Feasibility Study, Page 2. The Laney Preliminary Study emphasizes that when, as in this case:

"the entry and exit sides of the crossing are located in water, we anticipate that the estimated volume of drilling fluid that would likely be expelled to a dredge pit at exit or on the seafloor would be on the order of 2 million gallons of drilling fluid between entry and exit. Containing and collecting of the drilling fluid on the exit side of the crossing in 70 feet of water would be difficult if not impossible due to sea state, tide, and flow paths of water in the area and any attempts to recover drilling fluid from the sea floor would likely create more disturbance to the site than if left undisturbed. At the entry side in approximately 17 feet of water, containing and collecting of the drilling fluid may be considered possible with fair to limited results likely. **Containing and collecting drilling fluid will likely increase the turbidity of the water and also create unintended consequences of potentially collecting sea life while attempting to collect the drilling fluid at the seafloor. Currently, there is no industry for containing and collecting drilling fluid returns offshore.**"Laney Horizontal Directional Drill Preliminary Feasibility Study, Page 7. (Emphasis added).

Other risks noted in the Laney Study are that; "The hole-opening process may require a significant time to enlarge the hole to the required diameter. The probability of failure increases with time required to complete the hole opening process. Laney Horizontal Directional Drill Preliminary Feasibility Study, Page 3 and; "The proposed Jobos Bay HDD exit point is located in the Caribbean Sea offshore in approximately 70 feet of water. Based on Laney's knowledge and experience, HDDs completed in water have generally been completed in water depths of 50-

foot or less due to substantially increased risks of failure in water 50 feet or deeper." Laney Horizontal Directional Drill Preliminary Feasibility Study, Pages 5-6. The Laney Preliminary Study concluded that the impacts of HDD would be devastating to the ecosystem in the area of Boca de Infierno. The Laney Final Study confirms the high risks associated with HDD and increases the estimate of drilling fluid contamination to 3 million gallons yet inexplicably reverses its conclusion on the feasibility of HDD. The facts as to the large amount of granular material in the proposed HDD drill area, the deeper waters where drilling would take place and the high probability of more drilling fluid contamination than previously anticipated contradict the alleged viability of HDD drill and point to the probability of significant environmental impacts to ESA listed corals and the benthic habitats of Jobos Bay and the Reserve.

The AOGP project documents indicate the fact that; "Information regarding the total landings located specifically within the municipalities of Guayama and Salinas was not readily available" (DEIS 4-116). Repeated references in the JBNERR Draft Management Plan to illegal fishing practices and over fishing are controverted. For example, the Tetra Tech, Inc., Jan. 2014, Aguirre GasPort Project ESA Coral Mapping and Demography, (p.4-3) study indicates that the lack of habitat is the reason why few spiny lobsters were observed, it does not mention overfishing:

> Spiny lobster (*Panulirus argus*) were also rare. Only two individuals were observed on the reef during the Survey and Sampling efforts and one was observed utilizing the offshore patch reef habitat. Although the reef habitat is relatively rich and diverse, it lacks several substrates that are important in the spiny lobster life cycle. The reef is relatively low relief in most places (median relief of 22 cm within a 1 m span; Table 3-6), lacking many of the large outcrops and overhangs that provide shelter for lobster. These large overhangs are present, but not common. The algae *Laurencia*, a favored substrate for early settlement, and the sponge *Xestospongia*, a favored habitat for juvenile spiny lobster were present in the reef and back-reef, but these habitats were not particularly common. ESA Coral Mapping and Demography, (p.4-3)

IDEBAJO and Dialogo contend that livelihood opportunities for local coastal communities seem more likely in ecotourism and value added activities such as seafood processing and/or

restaurants as all local fishing groups have started to implement. To that end, IDEBAJO and Dialogo have collaborated extensively with Reserve management and staff on community outreach, capacity building and socio-productive alternatives including promotion of ecotourism and other sustainable activities. IDEBAJO and Dialogo have proposed the restoration and development of fish hatcheries according to traditional custom as described by Don Celedonio in "Los Placeres". This practice included selective trimming of mangrove roots, creating canals with access to the Bay. This allows small fish access to the Bay during low tide avoiding fish kills due to high heat and low oxygen levels of trapped water in congested mangrove canals. Host communities can be involved in managing these mangrove canals. A new research area previously suggested by IDEBAJO and Dialogo is the carbon storage capacity of the Reserve. Wetland areas are generally able to sequester carbon at higher rates than other land-based systems. Research could be conducted on the current Reserve baseline and the potential for additional carbon storage. Wetlands such as those in the Jobos Bay NERR can be a tool in combating climate change. Biomass baselines should be determined for the Reserve. Performance goals for additional carbon storage can be established in collaboration with community NGO's who can provide surveillance and maintenance to ensure permanence and protection against carbon leakage. Perpetual conservation easements, land trusts or payment for ecosystem services can be used to create buffer zones for the Reserve.

Ongoing massive mangrove cutting and destruction, filling of wetlands and construction of structures in Camino del Indio in Las Mareas reflects the urgent need for Federal and Commonwealth agency enforcement action against the alleged owners of the summer homes and properties which requires further emphasis in the Draft Management Plan.

Similarly, although the Draft Management Plan indicates that the use of jet skis is prohibited in all Reserve waters, jet skis operating at high speeds are commonly seen in Jobos Bay.

As noted in comments to a previous draft of the Management Plan, the community of San Felipe was omitted from the list of neighboring communities and the spelling of La Margarita should be corrected.

The unemployment rate in the Municipality of Salinas cited in the Draft Management Plan seems to be substantially understated.

The JBNERR Management Plan should include information on air emissions and impacts in the Jobos Bay airshed. The Jobos Bay airshed receives emissions from AES Puerto Rico Limited Liability Company (AES) in Guayama is the second source of toxic pollutants in Puerto Rico – including arsenic, chromium, hydrochloric acid, lead, mercury, nickel, and selenium according to Toxic Release Inventory (TRI) data. The AES coal-fired power plant in Guayama emits NOx, CO, VOCs, particulate matter, SO2, sulfuric acid, various metals, and GHGs. With respect to the existing Aguirre Power Complex, the largest source of toxic air emissions in Puerto Rico and a Prevention of Significant Deterioration (PSD) major source for every regulated NSR pollutant except Volatile Organic Compounds (VOC). These emissions impact the air quality of the coastal and nearby communities and the unique environment of Jobos Bay and the Reserve. The AOGP project is a major source of Hazardous Air Pollutants (HAPs) because it would have the potential to emit 10 tpy (9 mtpy) of any single HAP or 25 tpy (23 mtpy) of HAPs in aggregate. If the FSRU needs to operate on oil only, AP-42 emission factors indicate that emissions of hydrogen chloride could potentially exceed the applicable limits (See the Draft Environmental Impact Statement at 4-131). Sulfur emissions from the propulsion boilers on the AOGP project FSRU and LNG carriers will exceed the 0.1 percent sulfur standard

(4-133). Emissions from hoteling and other functions of the project such as the incinerator, emergency generator engines, and lifeboat engines emissions are not considered part of the permitted stationary source under the PSD program (4-138). Emissions from the support vessel and the four tugboats that would accompany each LNG carrier are not included as part of the facility's emission total for PSD permitting (4-139). The Draft EIS indicates that it is not assessing all project emissions because; "The proposed Project is subject to Title V operating permit requirements (including the Title V portion of the EPA's Greenhouse Gas Tailoring Rule) and because the Offshore GasPort and the Aguirre Plant would be permitted as one stationary source, the modification to the Aguirre Plant's current Title V operating permit is considered a 'significant modification.'" (PFE-TV-4911-63-0796-0005) (4-126). "The FSRU would be subject to a Title V Operating Permit, each FSRU boiler would have uncontrolled nitrogen oxides (NOx) emissions in excess of the major source threshold (100 tons per year [tpy]) (91 metric tons per year [mtpy]), and each FSRU boiler would be using add-on control equipment to comply with a NOx emissions limit. (4-127). Construction and operation of the Project would generate emissions from construction equipment, equipment on the FSRU, the terminal platform, LNG carriers, support vessels, and tugs (ES-7, 8). Although EPA (2013) estimates of average air emissions from coal-fired generation compared to natural gas combustion indicate that natural gas related emissions are half the amount of carbon dioxide (CO2), less than a third as much nitrogen oxides, and one percent as much sulfur oxides, the benefits of natural gas combustion are reduced when regasification emissions are considered. Even with the currently proposed operational controls, the AOGP project would increase CO2e emissions from the Aguirre Power Complex baseline GHG emissions and contribute incrementally to climate change. The potential AOGP project emissions of CO2e are 321,773 tpy, which is well in excess of the PSD significant

threshold of 75,000 tpy. The incremental CO2e emissions from the GasPort are 36,980 tpy (4-196) and contribute incrementally to climate change.

The cumulative CO2e emissions from the AES coal burning power plant, the Aguirre Power Complex and other air pollution emission sources in the Jobos Bay air shed, such as the pharmaceutical companies in Guayama, the Salinas and Guayama landfills and other industries also impact the Jobos Bay Reserve and the waters of the Caribbean Sea including through ocean pollution and acidification and should be discussed in greater detail in the JBNERR Draft Management Plan.