



GUAM POWER AUTHORITY

ATURIDÁT ILEKTRESEDÁT GUAHAN
P.O. BOX 2977 HAGÁTÑA, GUAM U.S.A. 96932-2977

March 5, 2019

AMENDMENT NO.: XII

TO

INVITATION FOR MULTI-STEP BID NO.: GPA-034-18

FOR

BUILD, OPERATE & TRANSFER CONTRACT FOR 180MW OF NEW GENERATION CAPACITY
STEP 2 – TECHNICAL SPECIFICATIONS

Step 1 Qualified Bidders are hereby notified of the following changes and responses to inquiries received from the following:

CHANGES:

1. **REMOVE** page 156 of 595 and **REPLACE** with 156a of 595. Changes are necessary to include the following:
 - F. Visitor's Learning Center
Successful bidder will negotiate in good faith to develop and build a Visitor/Learning Center just outside the secured access to the plant and construct/install the required communications systems and infrastructure. The Visitor/Learning Center will provide virtual plant tours and general energy conversion information. GPA will take video/photos of the plant for use in the visitor center and on a website. GPA and successful IPP will negotiate details of providing virtual access while still maintaining plant security. The intent is to show how a power plant works to students, customers and the public. IPP will coordinate with GPA on the design details, manufacturers, wired or wireless access, etc. to create programs, models or fact sheets on the power plant and the technology.

Qualified Bidder #1 dated 12/14/18:

QUESTION:

1. Pre-Existing Condition
Amendment No.: VII dated November 30, 2018 (Page 13)
Question 5.
Answer :

"Sinkholes shall be treated in accordance with Article 6.6 of the draft ECA as applicable."

We could not find Article 6.6 of the draft ECA. Is GPA planning to add Article 6.6 in ECA?

ANSWER:

Article 6 is being added to the ECA. Please note that the definition of pre-existing conditions will be limited to artificial conditions such as man-made structures and contamination, etc. Natural conditions such as sinkholes will not be treated as pre-existing conditions and would have to be addressed by the successful Bidder by conducting detailed soil investigation early during the Project execution and adjusting their design taking into considerations findings of such investigation including possible sinkholes.

QUESTION:

2. Model Project Agreements

IFMSB, Section A (Information for Bidders), paragraph 1.1.6 (Model Project Agreements) (see page 13 of 595)

IFMSB refers to the attached model ECA, LLA, and other Project Agreements (i.e., Direct Agreement and Water Supply Agreement). The IFMSB attaches the ECA (without Schedules), and no other Project Agreements. We understand the ECA schedules 10 will be provided post-Bid.

Please confirm whether GPA will provide the missing documents (i.e., the ECA Schedules, the LLA, Direct Agreement and Water Supply Agreement) pre-Bid and, if so, when.

Please inform how much lease payment is under LLA.

ANSWER:

ECA schedules will be developed by GPA and the winning Bidder based, in part, on the winning Bidder's proposal. GPA will provide the LLA – see attachment and Direct Agreement at later time. Water Supply Agreement will have to be negotiated between the Bidder and the Guam Water Authority.

Project Company will pay to GPA as rent, with deduction, setoff, notice, or demand, the annual sum of \$100.00 (U.S Dollars) under the LLA.

QUESTION:

3. Consequences of GPA Event of Default

ECA, § 5.5(d) (Termination Notices and Rights)

On a GPA Event of Default, GPA has the right, but not the obligation, to acquire the Facility. Meanwhile, § 16.1 (Limitation of Liability) of the ECA precludes the Project Company from claiming consequential loss, loss of revenue or loss of profit. This risk allocation contrasts with prior GPA ECAs where GPA had accepted an obligation to buy the Facility for a pre-agreed price upon a GPA Event of Default or upon the occurrence of certain other events, such as certain changes in law (see, e.g., the ECA for the Piti independent power project). Such a default buy-out obligation with a pre-agreed price is common in sole-buyer power markets where the Project Company cannot sell capacity or power to another customer or into a wholesale spot market. The pre-agreed price is typically sized to cover repayment of the project's debt, capital cost and a return of and on equity.

Will GPA agree to a default buy-out obligation for this Project? If not, and combined with the exclusion in § 16.1 (Limitation of Liability) of consequential loss, loss of revenue or loss of profit, it is difficult to see how this project could be project financed by Lenders or for the Sponsors to have confidence in the security of their investment, including their equity return.

ANSWER:

GPA will incorporate a buy-out obligation applicable to GPA Events of Default in SCHEDULE 10 to the ECA. This is negotiable.

QUESTION:

4. GPA Lump Sum Payment
ECA, § 14.2 (Payment); IFMSB, Section B (Instructions to Bidders), paragraph 4.2.2 (Credits Included in Price) (see page 64 of 595)

The ECA states that "GPA intends to make an initial lump sum payment of approximately \$50 million upon COD to reduce interest fees and payments over the contract term," without specifying the consequences of such a lump sum payment. Instead, the IFMSB asks the Bidders to consider in their proposed Price credits associated with this lump sum payment.

Please confirm GPA shall pay this \$50 million to the project company upon COD and the Bidders should reflect this lump sum payment into their Price proposing.

ANSWER:

Confirmed. Please note that the payment will be made at Phase II COD. The \$50 million lump sum is reduced to \$40M. The new amount will be deposited upon completion of the project to be used toward the construction cost.

QUESTION:

5. Allocation of risk for Subsurface Conditions
IFMSB, Section C (Functional Technical Specifications), paragraph 5.6 (Geotechnical Conditions) (see page 164 of 595); ECA, § 1.1, definition of "Project Agreements"

1. The ECA appears to give deemed commissioning protection for Pre-Existing Site Conditions (obstructions and contamination, excluding archaeological discoveries). Please confirm this. If yes, why archaeological discoveries are excluded?

2. IFMSB indicates GPA will complete a preliminary survey "during the procurement period", and we understand this will be provided prior to submission of binding Bids. Please inform when this shall be provided and confirm that GPA provided this at least 60 days before the Bid Date so that the Bidders can incorporate the outputs.

ANSWER:

Pre-Existing Site Conditions will not give rise to a deemed commissioning. This will be clarified in the ECA by deletion of the relevant text in brackets.

Archaeological discoveries will be evaluated pursuant to the Force Majeure clause of the ECA. Please note that GPA conducted an archaeological survey of the site as a pre-condition of performing the preliminary geotechnical investigation, as well as a separate archeological survey with the biological survey. The archaeological survey is provided as attachment – AIS Report_GPA Power Generation_15Feb2019.pdf.

QUESTION:

6. Connection Agreement
ECA, § 1.1, definition of "Connection Agreement"

ECA refers to a Connection Agreement, but this term is not defined in the ECA or used in the IFMSB. Please explain what this Connection Agreement is for.

ANSWER:

There will be no Connection Agreement. References to the Connection Agreement will be deleted.

QUESTION:

7. Water Supply Agreement
ECA, § 1.1, definition of "Project Agreements"; IFMSB, Section A (Information for Bidders), paragraph 8.1 (Water) (see page 26 of 595)

IFMSB refers to a Water Supply Agreement with GWA, but the ECA omits any reference to a WSA.

1. Please confirm whether GWA will provide a WSA and, if so, when and on what terms.
2. Please confirm that the ECA will include FM coverage in a situation where GWA does not supply water to the Facility.

ANSWER:

1. WSA will have to be negotiated between the successful Bidder and GWA directly.
2. Failure of GWA to supply water for the Project due to a Force Majeure (as defined in the ECA) impacting GWA will be considered a Force Majeure event under the ECA. Failure of GWA to supply water to the Project for any other reason will not be considered Force Majeure under the ECA and will have to be handled in the WSA. Note: FM can be claimed only after the plant run out of the 7 days onsite water storage.

QUESTION:

8. Fuel Supply During Testing and Commissioning
ECA, § 4.3.2 (Fuel Supply During Testing and Commissioning)
§ 8.2(f)(iii)(C) (Testing of Dependable Capacity and Heat Rate of the Facility after the Commercial Operation Date)

The maximum quantity of Fuel in MMBtu to be provided by GPA for start-up and commissioning is blank. The corresponding amount for commissioning of the Natural Gas facilities is also blank. Please confirm the maximum amount for both clauses.

ANSWER:

These values will be developed based on the information provided by the winning Bidder during the document finalization.

QUESTION:

9. Liquidated Damages
ECA, § 9 (Liquidated Damages Payable by Project Company)

Please confirm the proposed daily rate for delay LDs and the per kW rate for capacity shortfall LDs.

ANSWER:

Already provided in the revised ECA in Amendment No.: X dated January 22, 2019.

QUESTION:

10. Capacity Payment, Excessive Outages
ECA, §§ 14.1(e) (viii) (Invoices), 9.3 (Excessive Outages)

Please confirm that the Project Company will still receive the full Capacity Charge for Dependable Capacity during a Scheduled Outage, Maintenance Outage or Forced Outage – but with a 1.4x penalty for Excessive Forced Outages and Excessive Total Outages.

ANSWER:

Confirmed.

QUESTION:

11. Envelope I
IFMSB, Section B (Instructions to Bidders), paragraph 3.2.2.1 (Contents of Envelope I) (see page 57 of 595)

Please confirm whether Envelope I should also include the Special Reminder to Prospective Bidders (see pages 1-2 of 595) and Invitation for Multi-Step Bid (see pages 3-4 of 595).

ANSWER:

Confirmed.

QUESTION:

12. Confidentiality

IFMSB, Section B (Instructions to Bidders), paragraph 6.2 (Confidentiality) (see page 78 of 595)

Please confirm whether Bidders may mark documents relating to the technical, commercial, and financing aspects of their Envelope I Proposal as "Confidential" if they contain trade secrets or other proprietary data in accordance with Section 3109(l)(3) of the Guam Procurement Regulations.

ANSWER:

Confirmed.

QUESTION:

13. Procurement laws

IFMSB, Section C (Functional Technical Specifications), paragraph 1.2.2 (Procurement) (see page 94 of 595)

"The Project Company shall comply with Guam Procurement Law to ensure that the Project reflects positively on GPA, the Project company, contractors and suppliers." Please confirm whether the Project Company must itself comply with the procurement procedures for invitation for bids and/or request for proposals set forth in the Guam Procurement Law and Regulations in its procurement of supplies, services and professional services for the project.

ANSWER:

Confirmed.

QUESTION:

14. Affidavit

IFMSB, Section D (Forms), Form 2 (Affidavit by the Bidder) (see page 425 of 595)

Paragraph 2 of the Form 2 refers to Attachment 1-A. Please confirm whether the reference to Attachment 1-A should be to Attachment 2-A (Certificate from Parent Company).

ANSWER:

Confirmed.

QUESTION:

15. Prolonged Force Majeure
ECA, § 5.4 (GPA Early Termination and Termination for Prolonged Force Majeure) and 5.5(g)
(Termination Notices and Rights)

The ECA defines "Prolonged Force Majeure" as "a condition in which a Force Majeure event has caused 50% or more of the Contracted Facility Capacity to be unavailable for dispatch for eighteen (18) consecutive months or more and is continuing." This definition (including its reference to the Contracted Facility Capacity being unavailable) seems to imply that GPA's termination right for prolonged FM arises only after the Facility reaches COD – please confirm.

ANSWER:

The draft ECA will be amended to include a separate definition of Prolonged Force Majeure during construction.

QUESTION:

16. Organization
o MS GPA-034-18 Step 2 Section D, 12 BIDDER'S STAFFING PLAN
There are bidder's proposed home office (off-shore) organization and bidder's proposed site organization

Please confirm,

1. Does bidder's proposed home office (off-shore) organization mean the organization of parent's company?
2. What if we only have a site organization? In that case, do we still need to fill out the Form 12.1 Bidder's proposed home office (off-shore) organization?

ANSWER:

1. As stated in Section B, Article 3.2.3 h, "the Proposal shall contain the Bidder's tentative detailed man-loading charts with resumes of its key personnel and proposed home office and field staffing for the development phase and construction phase of the Project". Therefore the Bidder shall provide their staffing plant for home office and on-shore organizations during the Project development and construction periods and Project Company's on-shore organization during the operating period.

2. Kindly refer to **ANSWER** above.

QUESTION:

17. Preference

o MS GPA-034-18 Step 2 Section D, 13.7 Local Procurement Preference Application

1. By filling in this information and placing my signature below, I understand that the Guam Power Authority will review this application and provide me with a determination whether or not the 15% preference will be applied to this bid

Please clarify;

- the 15% preference

Please give us the definition of "the preference " and the detailed explanation how to apply the 15% preference to this bid

ANSWER:

"5 GCA § 5008. Policy In Favor of Local Procurement. Procurement of supplies and services shall be made, from among businesses licensed to do business on Guam and that maintain an office or other facility on Guam, but only after compliance with Title 1 G.C.A., Chapter 7, § 715, Item 16, whenever a business that is willing to be a contractor is:

(a) a licensed bona fide manufacturing business that adds at least twenty-five percent of the value of an item, not to include administrative overhead, using workers who are U.S. Citizens or lawfully admitted permanent residents or nationals of the United States, or persons who are lawfully admitted to the United States to work, based on their former citizenship in the Trust Territory of the Pacific Islands; or

(b) a business that regularly carries an inventory for regular immediate sale of at least fifty percent (50%) of the items of supplies to be procured; or

(c) a business that has a bona fide retail or wholesale business location that regularly carries an inventory on Guam of a value of at least one half of the value of the bid or One Hundred Fifty Thousand Dollars (\$150,000) whichever is less, of supplies and items of a similar nature to those being sought; or

(d) A service business actually in business, doing a substantial portion of its business on Guam, and hiring at least 95% U. S. Citizens, lawfully admitted permanent residents or nationals of the United States, or persons who are lawfully admitted to the United States to work, based on their citizenship in any of the nations previously comprising the Trust Territory of the Pacific Islands.

Procurement of supplies and services from off Guam may not be made until there is proper posting and noticing in accordance with Title 1 G.C.A., Chapter 7, § 715, Item 16 to the effect that no business for such supplies or services may be found on Guam or that the total cost F.O.B. job site, unloaded, of procurement from off island is no greater than eighty-five percent (85%) of the total cost F.O.B. job site, unloaded, of the same supplies or services when procured from a business licensed to do business on Guam that maintains an office or other facility on Guam and that is one of the above-designated businesses entitled to preference."

Bidders wishing to avail themselves of the local procurement preference must submit proof that they comply with the Local Procurement Preference policy; more specifically, Paragraph (d) to be included with the application in Envelope I. Upon opening of envelope 1, GPA will verify that the Bidder complies with 5 GCA § 5008 (d) during the technical proposal evaluation. As part of the price proposal evaluation, GPA will determine the lowest bid by applying the 85% calculation set forth in the statute to the bid prices submitted.

QUESTION:

18. Other

- MS GPA-034-18 Step 2 Section D, Table 15.4 Proposed Variable O&M Charge VOMC on ULSD of for Non-Fossil Fuel Fired Facility(US\$/kWh)

It seems that there is a typo here, please clarify which one is right below.

- IFMSB Section D Table 15.4 : Proposed Variable O&M Charge, VOMC on ULSD of for Non-Fossil Fuel Fired Facility(US\$/kWh)

- Evaluation Model Table 15.5 : Proposed Variable O&M Charge , VOMC on ULSD or for Non-Fossil Fuel Fired Facility(US\$/kWh)

ANSWER:

This is a typo, The text in Table 15.4 should read "or for Non-Fuel Fired Facility".

QUESTION:

19. Bid Guarantee

- IFMSB page 25 - 7.4 Labor information, Attachment 1A - Form of Bid Guarantee

Form of Bid guarantee in RFP is generally accepted by insurance companies. We understand that we can issue Bid Guarantee Bond from any local 'banking institution' licensed to do business in Guam. If so, please confirm that banking institution's form of bid bond can be accepted. (Please reference sheet no.2)

In addition, please specify the list of acceptable banks for issuance of the Bid Bond (or Performance Bond).

ANSWER:

- a. GPA has accepted ANZ bank's LOC for bid bond before.
- b. Kindly refer to List of Surety Companies Licensed to do Business in Guam dated December 31, 1999 (see attached).

QUESTION:

20. Noise

- Amendment VII page 7. Qualified Bidder#1 Question No.9 and GPA's Answer

The noise level includes background noise such that the total noise level should not exceed 45db(A)

- MS GPA-034-18 Step 2 Section D, 8.10 Environmental Data

8. Noise impact analysis and mitigation; please describe technology to be employed or actions to be taken to reduce noise. Provide the guaranteed maximum sound levels for the Facility at all of the Facility boundaries and at any Facility interfaces with other entities including residential, industrial and others. Provide the guaranteed sound level for the plant at one meter from the equipment enclosures or exterior walls of the powerhouse(s), which should not exceed 85 dB(A). The measurement shall not include the existing background noise.

There is contradiction in terms of the Noise level. In common Utility Practice, the background noise should not be included in the measurement. Please re-clarify.

ANSWER:

The noise survey is provided as attachment – GPA Sound Level Study Signed.pdf. The noise requirement will be adjusted to the World Bank Group International Finance Corporation EHS Guidelines Noise 1.7 (Kindly refer to AMENDMENT NO.: X dated January 22, 2019). Bidders must apply appropriate noise control methods to assure compliance.

QUESTION:

21. Evaluation Model

- Spinning Reserve in the Evaluation Model (Excel sheet)

Based on the GPA evaluation model 15 MW spinning reserve is considered for the evaluation. Due to the algorithm used in the model the spinning serve and availability is distracted form the guaranteed capacity calculating the max. dispatchable energy for each year. Therefore the max. plant load is approx. 85% during for the evaluation which is a disadvantage for the new power plant. Considering that the new plant is the most efficient plant in the GPA grid and dispatched at base load most of the time we would propose to install additional generation capacity to satisfy the spinning reserve in addition to the 180 +/- 10% capacity to optimize the plant and provide the most efficient solution to GPA. Please confirm if this solution is acceptable to GPA.

ANSWER:

Increase of the plant firm generating capacity above the specified size of 180 MW +/-10% is not acceptable.

QUESTION:

22. Fuel Charge

- MS GPA-034-18 Step 2 Section B 4.4.2.1 ULSD Fuel Charge and 4.4.2.2 Natural Gas Fuel Charge (when it becomes available). Equation 4.6: ULSD Fuel Charge and Equation 4.7: Natural Gas Fuel Charge

When the Fuel Charge calculated in accordance with Equation 4.6 above results in a positive number, such amount will be deducted from the amount otherwise payable by GPA for the n-th billing period.

Bidder understands that there is a deduction in case the Fuel Charge calculation results in a positive number. Please confirm that if there is any incentive or bonus if the Fuel Charge calculation results in a negative number. Bidder would like to express that incentive or bonus in terms of plant efficiency is commonly used in other ECA agreements.

ANSWER:

No, there is no incentive or bonus will be given in this project regardless if the Fuel Charge calculation results in a negative number.

QUESTION:

23. Housing

- MS GPA-034-18 Step 2 Section C 1.2.5 Detailed Project Scope
Civil and structural and building works associated with the plant buildings including, but not limited to:
 - Main structures to house any Reciprocating Engine Generators and Combustion Turbine Generators, Steam Turbine Generators, Heat Recovery Steam Generators as required

Bidder believes that current HRSG technology is enough to be operated reliably without building housing.

Please clarify if Heat Recovery Steam Generators has to be housed mandatorily.

ANSWER:

The HRSG must be enclosed in a building.

QUESTION:

24. Capacity

- Amendment VII page 3 Bidder#1 Question No.2

1. The IFMSB states the response time is required for a single unit. We assume that the required response time is only applicable for gas turbine / reciprocating engine unit and not for the steam cycle. Please clarify.

GPA answer: This should apply to only gas turbines or reciprocating engines; the steam turbine capacity in combined cycle will change based on the change in gas turbine capacity with certain time delay required for the HRSG to react. Steam turbines will not be able to respond as rapidly as required.

Bidder understands from the GPA answer that the response requirement is for the prime mover (Gas turbine or reciprocating engine) only. However, in Question 3 of this Amendment; Answer 2; GPA stated that: "The response specification is for the plant as a whole".

This is a contradiction to the statement above that only the prime mover must comply to the transient response requirement.

Please confirm that only the prime mover (Gas turbine or reciprocating engine) must comply to the transient response requirement. This is essential as we understand from Question 2 answer that the steam turbine and its capacity must not comply with the transient response.

ANSWER:

The answers are not contradictory but could be better stated. When a gas turbine, reciprocating engine or other type of prime mover provides energy to a waste heat unit and that waste heat unit automatically increases its output as a result of the governor action of the prime thermal unit, then the incremental increase in energy, both through inertia and real power throughput of the steam unit can be attributed to the response of the turbine or reciprocating engine. The term "plant" as used in the answer in Question 3, Answer 2 refers to the total response attributed to a single unit. That total response is the response of itself, plus its portion of the waste heat unit response.

QUESTION:

25. Capacity / Spinning reserve

- o Amendment VII page 3 Bidder#1 Question No.3 & GPA Answer 2

The spinning reserve of 15 mw is required for 30 minutes duration.

The bidder requests clarification on this statement. From the evaluation model (it deducts 15 MW from guaranteed capacity to calculate dispatchable capacity) we assumed spinning reserve must be part of the guaranteed capacity 180 MW +/-10%.

However, from the Answer in Amendment VII we understand that the spinning reserve must only be 15 MW for 30 min. In that case a battery system could potentially be used to satisfy this requirement and installed as additional capacity in excess of 180 MW +/-10%. From our point of view this would be an efficient solution and in line with the future dispatch regime (new plant is most efficient plant and dispatched base load; older generation provide back up /spinning reserve and new plant provide instant spinning capacity for 30 min until other generation uploads.

Please clarify if:

- a) 15 mw spinning reserve capacity is required for 30 minutes duration
- b) if a battery system can be used to satisfy this requirement (this is in line with modern power plant philosophies)
- c) spinning reserve can be installed as additional capacity in excess of 180 MW +/-10%.

ANSWER:

- a) 15 MW spinning reserve is required to be available continuously and ready to be utilized at any time. When utilized, spinning reserved shall be capable to support increase in the system load of up to 15 MW for at least 30 minutes.

- b) Yes, provided that the spinning reserve based on a battery energy storage system has characteristics similar to a spinning reserve provided by fossil-fuel generators in terms of response time.
- c) Energy storage system-based spinning reserve can be installed as capacity in excess of 180 MW +/-10% (i.e. 198MW), however, energy storage system capacity will not be counted toward Contracted Capacity or Dependable Capacity. Contracted Capacity and Dependable Capacity will be established based on the firm base load dispatchable capacity which cannot exceed 198MW.

QUESTION:

26. Transient Response

IFMSB Section C, 2.2.4 Transient Response

The governor transient response shall be fast enough such that following a frequency disturbance a change of at least 5% of a single unit's capability shall be achievable within 1 second, and at least 10% of single unit's capability shall be achievable within 2 seconds following the disturbance.

Please clarify if a maximum frequency disturbance can be assumed to satisfy this requirement as an unlimited frequency drop is not a realistic scenario. Based on our experience a max. of 3 Hz frequency drop should be sufficient. Please clarify if that is exseptable. Otherwise please specify a max. frequency drop.

ANSWER:

Use 3 Hz as a maximum frequency drop.

Qualified Bidder #5 dated 12/19/18:

QUESTION:

1. Capacity

Part C, Section 2.2.1; Page Number 106 of 595

D. The plant is expected to provide inertia for the GPA system primarily through the inertia of the plant generators. As such, the generators are expected to be oversized relative to the capacity of the units to provide increased inertia. The generators MVA rating must be sized a minimum of 140% of the real power capacity of the prime mover

Please confirm that the generators MVA rating must be 140% of the real power capacity of the prime mover.

ANSWER:

Confirmed.

QUESTION:

2. Generator General Design Requirements
Part C, Section 3.2.2; Page Number 121 of 595

d. Minimum power factor: 0.80 lagging. The generators full dynamic range should be available at the Point of Interconnection (allowing for offset to reactive losses from generator terminals to the Point of Interconnection), including at full load. Under no circumstances should the dynamic power factor range at the POI be less than +/- 0.85.

Please confirm the Voltage variations at the POI that this requirement applies to.

ANSWER:

GPA provide what voltage variations have been at Harmon substation. +/- 5% can be used as a typical range but I expect it may be more on the GPA system.

QUESTION:

3. PSD permit

If a major source PSD permit is required from EPA, the minimum time required is 6 months and typically takes 1-2 years. The process includes requirements such as having all modeling protocols approved by EPA, and performing all necessary modeling analyses (air quality impacts, increment consumption, visibility analysis, soils and vegetation, impacts on any Class I areas) prior to submitting the application. This work must be completed before the application is submitted for an application to be considered complete.

To perform such modeling analyses, typically at least one year of local air quality data is required for the modeling baseline. Given Guam's clean air quality, it is unlikely that this data set currently exists, therefore it will be necessary to set up and operate an air quality monitoring station for one year to collect the data needed to perform the air quality monitoring. The requirement can significantly delay the application review process if the data has not already been collected.

Based upon the guidance of EPA, considering the schedule required, major source air permit is not achievable for this project. Please confirm that a synthetic minor source air permit will be required for the project.

ANSWER:

The project may be permitted as a minor source project ONLY if the SO_x emissions are less than 100 tpy (for all types of units), and emissions are either:

- (1) less than 100 tpy for all other pollutants if the source consists of a "fossil fuel-fired steam electric plants" or "fossil fuel boilers" of more than 250 MMBTU/hr heat input (i.e., a combined cycle gas turbine, boiler or other co-generation plant), or
- (2) less than 250 tpy for all other pollutants for other types of combustion equipment (i.e., IC engine, simple cycle turbine).

If the potential emissions from the proposed project will exceed any of these major source thresholds, then a permit must be obtained from EPA for the major source pollutant and any pollutants with a significant emission increase (as defined in 40 CFR 52.21(b)(23)). As stated in the previous responses the Project Company must provide the necessary emission control system that will meet the requirements for the Minor Source Permit.

QUESTION:

4. Site Surveys

Please provide an update on the geotech borings and report, along with status of the archeological study and an anticipated date the information will be distributed to bidders. The information significantly affects the bidders' design and proposal. Without the information bidders will be forced to provide designs contingent upon the study results.

ANSWER:

GPA has provided the Geotech report in attachment - GPA Power Plant – Geotech report (2-7-19).pdf with the following disclaimer.

DISCLAIMER. The information contained in the provided Geotechnical Report is intended to be accurate and reliable, but it is entirely the responsibility of the end user to verify the accuracy and applicability of any recommendations contained therein. The Geotechnical Report is intended for use by professional engineers who possess an understanding of geotechnical and structural engineering principles and practices. In no event will Guam Power Authority be liable to anyone for any damages, including lost profits, incidental, special, punitive or consequential damages or professional malpractice arising out of or in connection with the usage of the information contained therein.

QUESTION:

5. Please provide the planned and intended development for the area surrounding the 60 acre site the power plant will be located on.

ANSWER:

Refer to official zoning map, Dos Amantes Planning Area, Document No. 817995, Guam Department of Land Management (see attached).

QUESTION:

6. System Reserve Capacity
Sample Bid Evaluation Form - "Bidders Proposal" tab

Capacity Lost with the loss of the Largest Unit (MW)

Bidder understands that the system reserve capacity is based upon GPA procuring additional capacity and has elected to include a cost \$1500/kW for the loss of the largest Unit. We assume that this is either in the form of simple cycle gas turbines or reciprocating engines. Based on the published information from the US Energy Information Administration, the proposed \$1,101 is more reasonable for procuring this reserve capacity. Refer to Pg. 11:

https://www.eia.gov/analysis/studies/powerplants/capitalcost/pdf/capcost_assumption.pdf

ANSWER:

It is assumed that the reserve capacity will be based on reciprocating engine technology. The same publication puts the base installed cost of reciprocating engines at \$1342/kW and the cost for Hawaii (the region and conditions similar to Guam) at \$1840/kW. Based on that, the assumption of \$1500 per kW for reserve capacity used in the evaluation model will not be changed.

QUESTION:

7. Unit Size
Section C, 2.2.1; Page Number 106

The size of the Facility's individual units shall be such that a trip of a single Unit will not result in a loss of 45 MW.

Please confirm the Bidder's understand that this Unit trip can't result in any instantaneous loss to the grid over 45 MW for 25 years.

ANSWER:

Confirmed.

QUESTION:

8. ULSD Pipeline
Amendment VII; Page Number 22

The current condition of the existing 8" HFO pipeline is unknown since it is no longer active for over 5 years. It has been drained except for the approximately 2 miles underground section from Barrigada to Micronesia Mall. It has not been drained.

Please confirm that GPA will drain the RFO pipeline (in it's entirety) before the Bidder will undertake the demolition of this pipeline and that GPA will be responsible for any costs for environmental remediation required if HFO (RFO?) pipeline is not drained during the demolition process.

ANSWER:

Response shall be forthcoming.

QUESTION:

9. Fire Safety for ESS
Section C, 3.2.2; Page Number 122

Battery Energy Storage

1. Any proposed battery energy storage system shall have an integral Battery Management System (BMS).
2. Submit a battery cell maintenance and disposal plan with bid.

Bidder is concerned over the significant number of recent safety and fire events related to ESS. Recent articles for firing accidents about ESS are attached. (please check attached files) Please provide safety guidelines and design methods that GPA is comfortable with to insure site safety, including the required separation distance between ESS modules. Recent fire events with ESS may make the cost of insurance prohibitively high or impossible to obtain.

Under this circumstances bidder may have separated ESS insurance coverage and conventional power plant coverage to make low electricity tariff. Please confirm that this separated insurance coverage is possible?

ANSWER:

The IFB does not obligate Bidders to provide ESS systems and they may decide not to provide such a system in case the Bidder has any concerns about safety or obtaining insurance coverage. In case Bidders decide to provide ESS system, they are responsible for designing it in accordance with NFPA and other applicable safety requirements and for obtaining appropriate insurance acceptable to the Project lenders.

QUESTION:

10. Startup Times

Please advise how GPA will assess differences in plant startup times. Will there be any benefit to faster startup.

ANSWER:

The Facility must be able to meet the startup criteria set forth in the IFB. Differences between startup times which comply with such criteria will not impact the evaluation of the bids.

QUESTION:

11. Number of Starts

Bidder understands that 360 starts per year per unit is a project requirement. Are OEM documents required to substantiate the equipment meets this requirement?

ANSWER:

OEM documents relevant to Facility performance and capability requirements should be provided as well as other supporting documentation as necessary to sufficiently substantiate such performance and capability.

Number of starts will be lowered to 180 in pending amendment.

QUESTION:

12. Responsiveness Test

Section B, Appendix A; Page Number 86

5.12. Bidder has stated that the Facility will be designed to provide a 30-year operating life and has provided satisfactory details as to how this will be achieved.

Bidder would like to understand if the required statement shall apply to ESS

ANSWER:

The requirement to provide details to support a 30-year operating life applies to ESS. If the ESS is not designed for an operating life of 30 years or more, Bidder shall specify and provide details for its design operating life and include investments necessary to replace the ESS at the end of its operating life to ensure that the ESS remains fully functional and operational throughout the entire 30-year period. The ECA will be amended to include a provision which reduces Dependable Capacity by 15 MW for any time during which an ESS (which was considered in the Evaluation Model) is not available to offset spinning reserve.

QUESTION:

13. Loss of generation

Based upon the response time of the ESS system and its inability to maintain capacity indefinitely, we understand that the ESS capacity cannot be considered to reduce the loss of the largest unit

ANSWER:

This is correct. ESS capacity can be considered in the provision of operation spinning reserve but not to reduce the loss of the largest unit (unless the ESS is fully dispatchable and capable of continuous operation as is the case with gas turbines or reciprocating engines).

QUESTION:

14. Loss of generation

Bidder understands that 45 MW maximum loss per unit must be maintained under all trip scenarios (including multiple back-to-back unit trips and maintenance and planned outages, etc.)

ANSWER:

Correct.

QUESTION:

15. Section C, 1.1
Page Number 93

The size of the Facility's individual units shall be such that a trip of a single Unit will not result in a loss of 45MW.

RFP states that the size of the Facility's individual units shall be such that a trip of a single Unit will not result in loss of 45 MW. To comply with the requirements, in certain configurations with bigger unit size, ESS is required. However, ESS requires certain response time to produce power output into the grid, which might result in a bigger loss than 45MW impact the entire grid due to the dynamic instability. Please advise how bidders can guarantee that a bigger loss than 45MW before ESS is responded would not result in grid failure. In order for bidders to guarantee grid reliability regarding this issue, grid impact study should be done. Could GPA provide the data that is required to conduct grid impact study at bidding stage as attached?

ANSWER:

Response shall be forthcoming.

QUESTION:

16. ECA and Evaluation Model

Bidder would like to understand how to incorporate the cost of ULSD for pilot fuel into the ECA and evaluation model during natural gas operation.

ANSWER:

Provided the Guaranteed Heat Rates provided by a Bidder include heat input from both Natural Gas and pilot fuel, to consider the cost of pilot fuel, the Bidder must include in the heat rate tables 15.6 through 15.9 an additional column showing percentage of heat input per kWh from ULSD used as pilot fuel. The percentage must be guaranteed. The Fuel Charge formula for the Proposals utilizing technologies requiring USLD to be used as pilot fuel will be modified as follows:

$$FC_n = PCFR_{ngn} \times FP_{ngn} + PCFR_{ULSDn} \times FP_{ULSDn}$$

Where:

$$PCFR_{ngn} = TFC_{ngn} - GPAF_{ngn} - GPAFO_{ngn}$$

$$PCFR_{ULSDn} = TFC_{ULSDn} - GPAF_{ULSDn} - GPAFO_{ULSDn}$$

Where:

$$GPAF_{ngn} \text{ (in MMBtu)} = [GHR_m \times (E_m - E_{ren}) \times K_{tm}] \times (1 - GPULSD\%) \times [MMBtu / 106Btu]$$

$$GPAF_{USLDn} \text{ (in MMBtu)} = [GHR_m \times (E_m - E_{ren}) \times K_{tm}] \times GPULSD\% \times [MMBtu / 106Btu]$$

Where:

FC_n = Fuel Charge in n-th billing period

n = Monthly billing period

GPAF_{ngn} = GPA Natural Gas consumption in n-th billing period, MMBtu

PCFR_{ngn} = Project Company Natural Gas Responsibility in n-th billing period, MMBtu

GPAF_{USLDn} = GPA USLD consumption in n-th billing period, MMBtu

PCFR_{USLDn} = Project Company USLD Responsibility in n-th billing period, MMBtu

TFC_{ngn} = Total Natural Gas consumed at the Facility in n-th billing period expressed in MMBtu

TFC_{ngn} = Total Natural Gas consumed at the Facility in n-th billing period expressed in MMBtu

GPAFO_{ngn} = GPA Natural Gas Fuel Other is for Fuel consumed for start-ups and shut downs in the n-th billing period which are the responsibility of GPA, MMBtu

GPAFO_{USLDn} = GPA USLD Fuel Other is for Fuel consumed for start-ups and shut downs in the n-th billing period which are the responsibility of GPA, MMBtu

FP_{ngn} = Natural Gas Price in n-th billing period (USD/MMBtu)

FP_{USLDn} = USLD Price in n-th billing period (USD/MMBtu)

m = Dispatch metering interval (30 minutes, typically)

M = Total number of intervals (m) during a billing period (n), which will vary from month to month depending on the actual dispatch that period.

GHR _m	=	Guaranteed Heat Rate (KJ/kWh) for the applicable Phase, corrected for actual load conditions existing during interval m for the Fossil Fuel Fired Component that are due to GPA's Dispatch Instructions and, for a hybrid Facility, also due to the ambient conditions defining generating capacity of the Renewable Component. For load conditions that are less than per GPA Dispatch Instructions due to inability of Facility to meet GPA load requirements up to Dependable Capacity, GHR _m shall be the Guaranteed Heat Rate for the load per the Dispatch Instructions.
GPULSD%	=	Guaranteed Percentage of heat input per kWh from ULSD) for the applicable Phase for actual load conditions existing during interval m for the Fossil Fuel Fired Component that are due to GPA's Dispatch Instructions and, for a hybrid Facility, also due to the ambient conditions defining generating capacity of the Renewable Component.
Em	=	Net Energy Output by Base Bid Facility during the m-th interval (kWh)
Eren	=	Renewable Net Energy Output in the m-th interval (kWh)
Ktm	=	GHR Correction factor for Base Bid Facility for average ambient temperature during the m-th interval (based on data provided in Section D, Envelope II, Form 15.

For evaluation purposes, the Bidder must provide estimated quantities of ULSD to be used as pilot fuel based on the guaranteed percentage mentioned for each year of the ECA when the Facility is assumed to operate on Natural Gas (in MMBtu per year). These values will be used by GPA for Fuel cost calculations as follows:

- a. The annual pilot ULSD consumption estimated by the Bidder based on the pilot fuel guaranteed percentage will be subtracted from the total annual fuel consumption calculated by the evaluation model.
- b. The resulting value will be considered as annual consumption of Natural Gas.
- c. The annual Fuel cost for each year will be calculated as the sum of the products of Natural Gas consumption times the applicable Natural Gas price and USLD consumption times the applicable USLD price.

QUESTION:

17. Section C, Clause 1.2.10; Page Number 13

1.2.10 Grid Study and PICES Analysis

The Project Company is responsible for completing a grid study that will evaluate the impact of the new generating plant on the existing Grid System. Information on the existing island Grid System necessary for completing this study will be supplied by GPA to the successful Project Company. The Bidder shall provide full steady state and dynamics modeling information of the plant in GE's PSLF Rev. 21.03 software fully compatible format. (Also ref. sub-section 8.5 of Section D). The modeling information shall include all components up to the Point of Interconnection with the GPA system. This shall include,

but not necessarily limited to, modeling of generator(s), excitation system(s), governor(s), generation step-up transformer(s) (GSU), and any transmission lines.

Other software than GE should be allowed for use by Bidder?
Could GPA supply a PSSE Raw Data File and Associated Dynamics Data File?

ANSWER:

GPA uses the GE PSLF software only in its studies and analysis. Furthermore, GPA subcontractor will complete the Grid Study for the final selected plant using GE PLSF. The successful bidder will reimburse GPA, the estimated cost is \$100,000.

The bidder can use other software beside GE PLSF software to do its own study. However, GPA prefers that the bidder uses PSLF in its study so it can turn over the files to GPA for use in its Grid Study.

GPA doesn't have any other software such as the PSSE and therefore it can't supply the PSSE Raw Data file and Associated Dynamics data file. Furthermore, it doesn't have a way to convert PSLF to PSSE correctly.

QUESTION:

18. Section D, 13.8; Page Number 494

<Taxes>

Bidders are cautioned that they are subject to Guam Income Taxes as well as all other taxes on Guam Transactions. Specific information on taxes may be obtained from the Director of Revenue and Taxation.

Currently our understanding is that the Project Company is subject to Business Privilege Tax which is 5% of Gross Revenue, unless it is entitled tax incentive from the Qualifying Certificate Program, created under Public Law 8-80 and amended under PL 20-178 and PL 22-159.

Does GPA have any comment in regards to the Project Company's Qualifying Certificate Program?
Can the Project Company consider tax incentives in Qualifying Certificate Program as an option?

ANSWER:

Bidders are responsible for the tax and incentives analysis and assumptions associated with their Proposal.

QUESTION:

19. Cross-reference in the Bid Guarantee
Attachment 1A

In the form of Bid Guarantee (Attachment 1A in the bid package), the cross-reference in the footer is broken. The broken cross-references can be seen in the correct form in the MS Word version of the forms that GPA circulated together with Amendment No. 6.

Please confirm that the broken cross-reference in the footer should refer to Form 13.1.

ANSWER:

Confirmed.

QUESTION:

20. Article 6.6 of the draft ECA
GPA's answers to Bidder #6's questions 5, 25 and 28 of Amendment VII; Page Number 13, 20 and 21 of Amendment VII

In answers to Bidder #6's questions 5, 25 and 28 of Amendment VII by the GPA, the Bidders are directed to Article 6.6 as the relevant ECA clause. However, Article 6.6 in the draft ECA is not used.

As Article 6.6 in the draft ECA is not used, please clarify which provision GPA wishes to reference in response to these questions from Bidder #6 included in Amendment VII.

ANSWER:

Article 6.6 will be included in the latest versions of the ECA - GPA_ECA_Revised (01082019).pdf and GPA_ECA_Revised (02252019).pdf.

QUESTION:

21. \$50 million lump-sum payment
Article 14.2 of the draft ECA; GPA's answers to Bidder #4's questions 11 and 12; Page Number 28 and 29 of Amendment VII

QUESTION:

11.[A] 2.1; Lump sum payment means the lump sum payment in the amount of USD 50 million to be made by GPA to the Project Company upon Phase II Commercial Operation Date.

1) What forms of cash will be paid to the Project Company as Lump sum payment? Equity, Loan without Interest or Advance Payment?

ANSWER:

GPA will make a cash payment to the Project Company with an intent to lower the Fixed Capacity Charge proposed by the Bidders. It is Bidders decision to incorporate this payment into their financing plan in such a way that it would result in the Bidders offering to GPA the lowest possible Price while

continuing to comply with the equity contribution requirement (the total equity should not be less than 20% of the total Project cost both prior to and after receipt of the lump sum payment).

QUESTION:

12. [EGA] 14.2; Lump sum payment GPA intends to make an initial lump sum payment of approximately \$50 million upon COD to reduce interest fees and payments over the contract term.

2) Qualified Bidder would like to know the reason of the lump sum payment

ANSWER:

GPA has insurance proceeds associated with a previous fire at the Cabras plant that has to be applied to construction of a new power generating plant. GPA considers that providing the Lump Sum payment to the Project Company will result in lower proposed Fixed Capacity Charge and the resulting reduction in the Price of electricity purchased from the Facility would allow to lower the tariff paid by GPA customers.

(i) Where are the insurance proceeds deposited now and what is the total amount (is it exactly \$50m? How does accrued interest have to be applied, also toward construction or is it revenue for GPA)?

(ii) How can Bidders can be assured that those funds will be retained until the time they are paid to this Project Company (i.e., if the Borrower went out and got financing based on getting this cash collateral but then GPA spent it on something else between now and Second COD and has no ready cash, that could be really bad for the Borrower and its Sponsors -- they will be in Day 1 default of the covenant to have this cash collateral in place, and their only choices would be to hand a completed and operational project to lenders upon security enforcement, or to put up the \$50m themselves to cure the default, neither being palatable options). GPA has other power projects in the works and nothing prevents them from commissioning yet more in the next few years. What would prevent GPA from applying such insurance proceeds elsewhere? Bidders should (and lenders will) expect more than a good faith handshake promise that GPA will preserve (these funds, so if GPA wants Bidders to factor this into the pricing eventually more information will be needed.

(iii) Is it confirmed with the insurance company that paying the lump sum to be offset against future capacity payments is the same as applying it to "construction"? Construction will already have been completed by the time that money is paid to the Project Company so this money is not going to be applied directly to any construction costs. Certainly some of the proceeds will be used to repay the debt and equity injected during construction, but a lot of it is going somewhere else -- to pay operating expenses, taxes, maintenance, etc., which clearly are not construction costs.

(iv) In the current draft of the GPA the payment of the \$50 million lump sum is not expressly required, it simply says that GPA "intends to" make such a payment. It is unlikely that Bidders can (or lenders will) give a lot of credit enhancement value if the ECA is not clear that the GPA is required to actually provide the cash collateral. Therefore, in order for a Bidder to factor this into their pricing, GPA would have to confirm they are going to revise this wording to make it binding in the final ECA.

(v) Sponsors will want to be able to take out cash from the Project with a corporate guarantee or an LC as they do with most substantial account reserves. Assuming lenders would allow it, would doing so violate the requirement that the insurance proceeds be used for "construction"?

ANSWER:

- (i.) The \$50 million lump sum is reduced to \$40M. The new amount will be deposited upon completion of the project to be used toward the construction cost.
- (ii.) GPA has set aside these funds in a trustee account to be used toward the construction cost of the New Generation project upon completion and these funds are separated from GPA's operation funds and won't be touched. Further mechanics and documentation related to these funds and payment can be considered during document finalization with the winning Bidder.
- (iii.) GPA has set aside these funds in a trustee account to be used toward the construction cost of the New Generation project upon completion and these funds are separated from GPA's operation funds and won't be touched.
- (iv.) GPA has set aside these funds in a trustee account to be used toward the construction cost of the New Generation project upon completion and these funds are separated from GPA's operation funds and won't be touched.
- (v.) The funds will be deposited upon completion of the project to be used toward the construction cost.

QUESTION:

22. Required Phase 1 Commercial Operation Date and Required Phase 2 Commercial Operation Date
Technical Specifications 2.1 of the IFMSB; Page Number 20

Phase 1 Commercial Operation Date – that date on which the standard requirements and the guaranteed values for operation of Phase 1 are met and accepted by GPA as set forth in the ECA and the Functional Specifications.

Phase 2 Commercial Operation Date – that date on which the standard requirements and the guaranteed values for operation of the Facility are met and accepted by GPA as set forth in the ECA and the Functional Specifications.

Please confirm if the ECA is expected to have definitions of Required Phase 1 Commercial Operation Date and Required Phase 2 Commercial Operation Date that are the same as what is set out in 2.1 of the IFMSB, or if the “such later date as may apply in accordance with the provisions of the ECA” in that definition means these are the target dates under the IFMSB, but the applicable ECA dates remain TBD.

ANSWER:

The ECA will have definitions of Required Phase 1 Commercial Operation Date and Required Phase 2 Commercial Operation Date which shall be 20 and 30 months from Financial Close, respectively. The purpose of the language - “such later date as may apply in accordance with the provisions of the ECA” – is to address potential adjustment resulting from operation of other provisions in the ECA such as Force Majeure.

QUESTION:

23. Required Financial Closing Date
Technical Specifications 2.1 of the IFMSB; Page Number 21

Required Financial Closing Date - means March 23, 2020, as such date may be extended for up to ninety (90) Days in accordance with Clause 3.5 of the Energy Conversion Agreement.

Please clarify (i) if the IFMSB definition of "Required Financial Closing Date" applies to the GPA and (ii) what will be the extension terms under Clause 3.5, since it is not stated in the draft GPA.

ANSWER:

The definition of "Required Financial Closing Date" under the ECA will be amended to read as follows:

"Required Financial Closing Date" - means March 23, 2020, as such date may be extended for up to ninety (90) Days in accordance with Article 9.6(b) of this Agreement."

QUESTION:

24. Bidder's bank issuing the Affidavit for form 4A
Section D Form 4A of the IFMSB; Page Number 435

Background. Should the Bidder be selected as the Bidder to develop the Project, it will be required to furnish GPA a Performance Bond in the form of an irrevocable stand-by letter of credit issued by an international bank acceptable to GPA, a bank guarantee issued by an international bank in form and substance acceptable to GPA, or a performance bond issued by an international surety in form and substance acceptable to GPA, in each case in the amount of US seventy-five million (\$75,000,000). This Performance Bond shall be valid until three (3) months after the Project Company achieves the Commercial Operation Date of the Facility in accordance with the ECA.

Requirement. The Bidder is required to provide in this Bidder Statement (as its Form 4-A) a notarized affidavit from the Bidder's bank stating that they can issue on behalf of the Bidder the required Performance Bond, in the amount of US seventy-five million (\$75,000,000) to the benefit of GPA at the projective time that such Security will need to be issued.

With respect to the Performance Bond only, please confirm whether the Bidder's bank issuing the Affidavit for form 4A may be any reputable international bank or surety, or whether such institution is specifically required to be licensed to do business in Guam. The bid documents (including the instructions, Form 4A itself and the ECA) and the Amendment responses do not appear to be consistent in explaining this requirement

ANSWER:

The bank issuing the Affidavit form 4A must be a reputable international bank or surety licensed to do business in Guam.

QUESTION:

25. Bidder's bank issuing the Affidavit for form 4A
Section D Form 4A of the IFMSB; Page Number 435

Should the Bidder be selected as the Bidder to develop the Project, it will be required to furnish GPA a Performance Bond in the form of an irrevocable stand-by letter of credit issued by an international bank acceptable to GPA, a bank guarantee issued by an international bank in form and substance acceptable to GPA, or a performance bond issued by an international surety in form and substance acceptable to GPA, in each case in the amount of US seventy-five million (\$75,000,000). This Performance Bond shall be valid until three (3) months after the Project Company achieves the Commercial Operation Date of the Facility in accordance with the ECA.

Please confirm that a notarized affidavit from the Bidder's bank confirming the requirements set out in form 4A will be satisfactory to the GPA for meeting this requirement. If not, please provide a form of affidavit that the Bidders should use in MS Word format.

ANSWER:

The bank issuing the Affidavit form 4A must be a reputable international bank or surety licensed to do business in Guam.

QUESTION:

26. Air Quality Permits
Amendment VII

US EPA says that the plant can apply for Minor Source Permit from Guam EPA. Minor Source Permit is the fastest way to obtain the permit.

Plant will be permitted as minor source therefore, whatever is required to reach minor source status levels should be done. Emissions must be below 250 tons per year (tpy) of NO_x, SO_x, CO, particulates, ozone, and lead.

Recommend hire an environmental consultant but GPA thinks permitting as a minor source is the fastest way to achieve permitting.

The reference to 250 tpy for minor source permit is different from the guidance the bidder has received from Guam EPA. Please reconfirm the threshold for requiring a minor source permit.

ANSWER:

The project may be permitted as a minor source project ONLY if the SO_x emissions are less than 100 tpy (for all types of units), and emissions are either:

- (1) less than 100 tpy for all other pollutants if the source consists of a "fossil fuel-fired steam electric plants" or "fossil fuel boilers" of more than 250 MMBTU/hr heat input (i.e., a combined cycle gas turbine, boiler or other co-generation plant), or

- (2) less than 250 tpy for all other pollutants for other types of combustion equipment (i.e., IC engine, simple cycle turbine).

If the potential emissions from the proposed project will exceed any of these major source thresholds, then a permit must be obtained from EPA for the major source pollutant and any pollutants with a significant emission increase (as defined in 40 CFR 52.21(b)(23)). As stated in the previous responses the Project Company must provide the necessary emission control system that will meet the requirements for the Minor Source Permit.

QUESTION:

27. Maximum (Minimum) emergency level
Table 8.11: Net Generation Levels; Page Number 473

- a) Maximum emergency level: capacity that may be available during system declared emergencies
b) Minimum emergency level: used during system declared emergencies

Please clarify the meaning of "Maximum emergency level" and " Minimum emergency level"? Please clarify the meaning of "system declared emergencies", what are the emergencies here?

ANSWER:

- a. Response shall be forthcoming.
b. Response shall be forthcoming.

QUESTION:

28. Test Tolerance

Please confirm our understanding that no test tolerance will be applied for the capacity and heat rate for the Commercial Operation Tests.

ANSWER:

This is correct.

QUESTION:

29. Single Mode of Failure
Section C, 2.1.1 (A); Page Number 103

The equipment shall be designed for base load operation with potential frequent and rapid load changes. The Facility will be a primary power source for Guam; therefore, there shall be no single contingency (single mode failure) that could cause a sustained outage or partial outage for the Grid System.

Please confirm our understanding that this criteria would mean that no single contingency should also result in the loss of more than 45 MW as well. (e.g. loss of Generator step-up transformers)

ANSWER:

This applies to rotating equipment and is meant to set the maximum unit size. No single unit failure may result in the loss of more than 45 MW. Generator Step up transformers are excluded. Bidders must apply Industry standards for Generator step transformer reliability.

QUESTION:

30. Hybrid Technology Requirement
Amendment VII, Page Number 3

The operating experience requirement for the battery energy storage system can be relaxed to having similar technology used at 3 sites for at least 1 year.

Please confirm that in case of conventional power plant and ESS, Bidders are understanding that Hybrid ESS should operating not as a 45MW of unit loss back up but perfectly operating together with conventional power plant at the same time for 25years without any seconds of absence from ESS electricity.

ANSWER:

Bidders may include ESS as part of their Proposal. Subject to the requirements of the IFB, the ESS may be used to provide all or a portion of the required Facility spinning reserve which will be reflected in the operational assumptions of the Evaluation Model. However, ESS will not be considered in the determination as to whether the Bidder has met the 45MW loss of load restriction unless it is fully dispatchable and capable of continuous operation similar to gas turbine operation. ESS must be available to provide spinning reserve through the entire duration of the ECA without any interruptions.

QUESTION:

31. Experience of ESS
Amendment VII; Page Number 3

Question 3: Also, please clarify if the ESS system must have been used in combination of the installed gas turbines or engines for the commercial operation reference(requirement 3 sites in 3 years)

GPA Answer: The operating experience requirement for the battery energy storage system can be relaxed to having similar technology used at 3 sites for at least 1 year.

Bidder understands that Bidder must have operation experience of ESS in a fossil fuel combined cycle plant (hybrid plant).

ANSWER:

The ESS operation experience must have been in the same or similar technical application as the Bidder has included in its Proposal.

Qualified Bidder #3 dated 12/17/18:

QUESTION:

1. We understand that the cut-off date for question submittal is December 19th (tomorrow). Would it be possible for GPA to answer, prior to the cut-off, the questions that are currently open? GPA's responses would help bidders as they develop questions before the cut-off and as they prepare proposals to meet the January deadline.

ANSWER:

GPA has extended the January deadline to March. Kindly refer to AMENDMENT NO.: XI dated February 05, 2019.

QUESTION:

2. Please provide a copy of the GPA Cyber Security Standards and Guidelines referenced on page eight of Amendment VI.

ANSWER:

Response shall be forthcoming.

QUESTION:

3. GWA has provided two information packets for bidders to the GPA IFB. The information packets include general information regarding gray and potable water and GWA's rates for potable water and sewer services. However, GWA does not appear to be able to a) provide bidders with project-specific information regarding potential GWA system upgrade costs, b) confirm points of interconnection for potable water and sewer services, or c) evaluate their ability to accept project waste streams, e.g., reject or steam cycle blowdown. We understand that it may not be possible for GWA to provide project-specific information to multiple bidders in the time available before the bid deadline. Given this situation, what guidance does GPA have for bidders when developing their proposals to GPA?

ANSWER:

Response shall be forthcoming.

Qualified Bidder #6 dated 12/18/18:

QUESTION:

1. Section A P12

Could you confirm to form Project Company in other states of USA, such as Delaware?

ANSWER:

The Project Company must be incorporated in Guam.

QUESTION:

2. Section A P16

Could you confirm Phase1 COD? Evaluation Model show that the plant will be in commercial operation on 2021/1 while we can calculate FC/NTP is on 2020/4 and 20 months is allocated between FC/NTP and Phase1 COD which means 2022/12.

ANSWER:

The schedule in the Evaluation Model is for evaluation purposes only.

QUESTION:

3. Section A P16-18

Please confirm monthly availability factor will have no impacts on the FCC and FOMC, as long as the plant maintains the annual availability $\geq 90\%$.

ANSWER:

The monthly availability factor will not have an impact on FCC and FOMC, as long as the Facility complies with the annual availability guarantee provided in the Bidder's Proposal.

QUESTION:

4. Section A P18

Could you confirm Index is CES4422000008 instead of EES4000006 because EES4000006 haven't updated since 2003?

ANSWER:

Confirmed. The correct index is CES4422000008.

QUESTION:

5. Section A / P27 9.2 Natural Gas

Required supply gas pressure at interface point depends on the technology that bidders select (ex. Turbine, Engine). Let me confirm if it is possible for us to propose NG pipeline with less pressure capability than 60bar to make competitive quotation.

ANSWER:

The Bidder can design the pipeline based on a pressure required to be supplied to its' generation equipment and the pressure drop in the gas supply line. The supplier of the LNG storage and regasification infrastructure will meet the pressure requirements in the gas pipeline inlet specified by the Bidder.

QUESTION:

6. Section B 4.2.3

Regarding the 20% minimum equity requirement,

- will GPA consider shareholder loans as equity?
- does GPA require Project Company to maintain the minimum 20% throughout the ECA period?

Then, will GPA count retained earning as equity? (Form 7.3. says Equity Ratio = Total Equity / (Total Debt + Total Equity)

ANSWER:

- a. Shareholder loans will be considered as equity so long as such loans are subordinate to debt and have the same risk/return profile as shareholder equity.
- b. The requirement of at least 20% equity shall apply throughout the ECA period. Retained earnings will count towards equity.

QUESTION:

7. Section B / P59 3.2.3 Additional General Instructions b) ii)

We kindly ask for details of the Harmon 115 kV substation (existing substation) to which the project company has to connect and expand with one bay:

1. Maker and year of commissioning
2. Single and three line diagrams together with detailed electrical and mechanical drawings.
3. Datasheets, relay study, ct/vt calculations if any.
4. Exact point of connection/expansion with one bay.
5. Protection scheme.
6. The Short circuit level for the grid.
7. Allocated space for the bay expansion of the existing Harmon substation.

ANSWER:

Response shall be forthcoming.

QUESTION:

8. Section B / P59 3.2.3 Additional General Instructions b) xv)

The IFSMB states design and construction of the ULSD supply pipeline are coordinated with appropriate Guam entities and authorities and are in compliance with applicable environmental regulations.

Is the existing pipeline supported by stakes? And when the bidder have to dig to remove them, should the bidder comply with MEC(munitions of explosive concern)?

ANSWER:

Response shall be forthcoming.

QUESTION:

9. Section B / P85 Responsive Test 4.5

What is the requirement to show "representation of adequate interest rate protection"?
Is it sufficient for the bid Proposal to assume a fixed interest rate via utilization of an interest rate hedging instrument? Would commitment from a hedge provider be required for the bid?

ANSWER:

- a. Bidders should show that they will have adequate and financeable protection from risk associated with interest rate fluctuation.
- b. Kindly refer to **ANSWER** above.
- c. Yes, provided that it provides adequate and financeable protection from risk associated with interest rate fluctuation.

QUESTION:

10. Section C / P100 1.2.7 ULSD Supply Infrastructure

How many lanes for truck loading and unloading of ULSD shall be included in the Project Company supply, and what size of trucks shall the facilities be designed for.

ANSWER:

One lane is sufficient. See response to question 8 in set 11 and accompanying information.
Tankers can deliver 8500 US gallons of ULSD.

QUESTION:

11. Section C/p101 1.2.10 Grid study and PICES Analysis

Based on the 2nd paragraph, we would like to request the PICES program and a manual as well as the model case.

ANSWER:

PICES program no longer required since maximum unit size has been determined at 45 MW.

QUESTION:

12. Section C/p101 1.2.10 Grid study and PICES Analysis

PSLF is GE's own dynamics modeling software. We would like to ask for the possibility to provide the dynamics modeling information from OEM's own software (equivalent to GE's PSLF), e.g. DigSilent PowerFactory.

ANSWER:

GPA uses the GE PSLF software only in its studies and analysis. Furthermore, GPA subcontractor will complete the Grid Study for the final selected plant using GE PLSF. The successful bidder will reimburse GPA, the estimated cost is \$100,000.

The bidder can use other software beside GE PLSF software to do its own study. However, GPA prefers that the bidder uses PSLF in its study so it can turn over the files to GPA for use in its Grid Study.

GPA doesn't have any other software such as the PSSE and therefore it can't supply the PSSE Raw Data file and Associated Dynamics data file. Furthermore, it doesn't have a way to convert PSLF to PSSE correctly.

QUESTION:

13. Section C / P102 1.3.1 Fuel, 1.2 ULSD Scope of Supply, Appendix B 1.2

Construction space and accessibility to the ULSD & NG pipeline route is vital for new pipeline design. Please provide the detailed data (ex. space, width) of existing pipeline easement, and condition of access road to the entire existing pipeline.

ANSWER:

Response shall be forthcoming.

QUESTION:

14. Section C/p116 3.2 Electrical Plant and System requirement

Operational limits from 57,5 Hz (- 4,2 %) to 61,8 Hz (+ 3 %) ref.GPAPRC-006.

Absent information regarding the requirements mentioned in section 3.2 (operational limits from 57 (- 5 %) Hz to 63 Hz (+ 5 %)) are not consistent with the requirements shown in the diagram of GPAPRC – 006 (operational limits from 57,5 Hz (- 4,2 %) to 61,8 Hz (+ 3 %)).

Please clarify the conflicts in operational limits.

ANSWER:

The frequency limits as indicated in PRC-006, Attachment 1 govern the operational frequency range required for typical grid operation. However, the frequency range as indicated in section 3.2 (57 Hz to 63 Hz) is design margin required of this specific plant.

Further, section R3.3.1 of GPA PRC-006 states

“Portions of the BES designed to detach from the Interconnection as a result of the operation of a relay scheme or Special Protection System may exceed these frequency limits but should not exceed 63.0 Hz following the UFLS program activation.”

Therefore, the frequency range requirement of 57 Hz to 63 Hz as stated in section 3.2 is the requirement for this plant.

QUESTION:

15. Section C / P131 3.3.2 General Design Requirements

Please Clarify what is a GWA water system model.

ANSWER:

The GWA water system model is no longer required.

QUESTION:

16. Section C / P194 1.2 ULSD Scope of Supply

Current condition of the existing pipeline is essential for appropriate removal and demolition. Can we understand that existing pipeline Doesn't need to be cleaned and neutralized to cut and remove onsite?

ANSWER:

Response shall be forthcoming.

QUESTION:

17. Section C / P196 1.2.6 Natural Gas

Please inform if the minimum BTU value 950 BTU/scf at 14.7 psi dry is HHV or LHV.
Please forward specification for the natural gas with information of composition, etc.

ANSWER:

The minimum BTU value is HHV. See table below for range of natural gas composition.

Constituent	Range
Nitrogen N	0.014 to 0.32%
Methane CH ₄	87.8-91.2%
Ethane C ₂ H ₆	4.2-8.6%
Propane C ₃ H ₈	1.6-3.0%
n-Butane C ₄ H ₁₀	0.24-0.7%
n- Pentane C ₅ H ₁₂	0.01-0.02%
HHV BTU/SCF	1115-1142
HHHV MJ/scm	41.5-42.5

QUESTION:

18. Form 5

Can Bidder use any power plant experiences for Form 5 - Project Data Sheets regardless the contents of bid documents?

ANSWER:

No. The power plant experience included in the Project Data Sheets should be consistent with the type of Facility included in the Bidder's Proposal.

QUESTION:

19. P441 Form 7.1 Financing Plan

Please confirm that the Financing Plan included in the bid Proposal can be changed up to the point of finalization of the Project Agreements without consent from GPA?

ANSWER:

Any subsequent changes to the financial plan after finalization of the Project Agreements will require the approval of GPA.

QUESTION:

20. P443 Form 7.2.2 Letter of Commitment

The RfP states that the letter of commitment should be based on the draft of the Project Agreements (i.e. ECA, Direct Agreement, WSA, LLA). However, only the draft of the ECA seems to be provided with the RfP. As such, would it be sufficient for the letter of commitments to be based only on the draft ECA?

ANSWER:

GPA will issue draft LLA and the direct agreements to the Bidders later. WSA will have to be negotiated by the Bidders directly with the Guam Water Authority.

QUESTION:

21. P443 Form 7.2.7 Projected Coverage for Interest Rate Variations

We are unsure what is required for this item. Does projected coverage mean DSCR? If assuming 100% interest rate hedge, would it be sufficient to show projected DSCR assuming the fixed interest rate assumed for the Proposal? Alternatively, is the expectation for Bidders to show projected DSCR assuming several variations of the fixed interest rate (for example, base case fixed rate plus/minus 50bps)?

ANSWER:

Bidders should show that they will have adequate and financeable protection from risk associated with interest rate fluctuation.

QUESTION:

22. Form 8 - Technical Data, Section 8.7

This section requires the submittal of performance degradation curves for output and heat rate. Given the fact that no degradation is allowed in the guaranteed performance, please identify the intended use of this information.

ANSWER:

This information will be used at the time of Facility end of term transfer and must be provided with the Proposal.

QUESTION:

23. Form 15.3

Section B 4.3.2 says bidder shall provide FOMC for ULSD operation and it is adjusted in Equation 4.4 when the plants burns NG. On the other hand, Form D 15.3 requires bidders to provide FOMC for ULSD and for NG separately. Please clarify.

ANSWER:

Bidders are required to provide separate FOMC pricing for ULSD operation and NG operation. During the phase of ULSD operation the ULSD FOMC pricing will apply and during the period of NG operation the NG FOMC pricing will apply. If there is an overlap month the FOMC charge is subject to a proportional calculation. The Bidder is not required to change FOMC so that ULSD and NG operations can remain the same in case Bidder considers that their fixed O&M costs will not change with the change of fuel.

QUESTION:

24. Draft ECA / 1 "Price" Contract Price

We understand that the mechanics for calculating the "Price" (in Schedule 5 of the ECA) will be developed based on the information provided in Section B, Art. 4.2, 4.3 and 4.4 of the IFMSB and the Bidder's price proposal (as noted in Q.61 Amendment VI to IFMSB – p. 30 of 37). However, there are certain aspects of the approach for calculating the charge payment that we would like to better understand in connection with our bid submission.

A. The formula presented in Art. 4.2, 4.3 and 4.4 all include as a component the "Dependable Capacity" (DCn) factor, which is based on the most recent Dependable Capacity Test.

However, details of the "Dependable Capacity Test" (which is to be set forth in Schedule 4), is also not available.

We would like to confirm whether the "Dependable Capacity Test" will factor in reductions in the net capacity of the Facility that are the result of a condition caused by GPA or by the Grid System.

Please confirm whether such adjustment mechanism will be included in the mechanics of the Dependable Capacity Test, which will be set forth in Schedule 4 of the ECA.

B. Please confirm whether GPA will pay the various charge amounts under the ECA to the Project Company, together with all VAT and other associated taxes so that amounts received by the Project Company equals what would have been payable if no such taxes were applicable.

ANSWER:

a. Please see IFMSB Section C, Articles 4.2.5 and 4.2.6 for testing requirements.

- b. The capacity measured during the test will be corrected to the factors outside of Project Company's control such as ambient temperature, barometric pressure, relative humidity, generator power factor, fuel heating value, and fuel temperature.
- c. Confirmed.
- d. The GPA payments set forth in the IFB will not be grossed-up for any taxes. The applicable taxes must be considered in the Bidder's proposed price.

QUESTION:

25. Draft ECA / 4.3.1 (f) Fuel Supply

To avoid possible confusion, we suggest some revision on this Section that all batch of fuel delivery by GPA shall include fuel test analysis report on received batch shipment from GPA's importation.

ANSWER:

This comment can be considered during document finalization with the winning Bidder.

QUESTION:

26. Draft ECA / 4.3.1 (b)

It is indicated that GPA will supply the Fuel Supply Requirement even if the expected heat rate is higher than the Guaranteed Heat Rate. Please clarify if this is intended to mean that the fuel supply will be limited to that corresponding to the Guaranteed Heat Rate or that GPA will supply fuel corresponding to the actual, higher heat rate. The definition of "Fuel Supply Requirement" is somewhat vague.

ANSWER:

In the event that the actual heat rate is higher than the Guaranteed Heat Rate, GPA will supply the additional fuel required, but the Project Company will cover such extra fuel under the Fuel Charge component of tariff.

QUESTION:

27. Draft ECA / 4.3.1 (f), 4.7 c

This article suggests that Project Company must make commercially reasonable efforts to receive Non-Conforming Fuel. Please clarify the intent as the bidder's pricing, performance, and technical design will be based upon compliance with the fuel specifications included in the contract. Any added cost associated with commercially reasonable efforts would need to be addressed in the commercial terms.

ANSWER:

The Bidders should consider the referenced provision of the ECA as written.

QUESTION:

28. Draft ECA / 4.5 Fuel Cost Allocation

Rather than every GPA receives bills for Fuel supply, we suggest some periodic true-up reconciliation be done instead. Is this section in relation to what was consumed by the project company as fuel to produce energy and what was used by GPA to fuel their tanker trucks?

ANSWER:

This comment can be considered during document finalization with the winning Bidder.

QUESTION:

29. Draft ECA / 5.4(b) Early Transfer Price

We note that the Early Transfer Price mechanics will be set forth in Schedule 10 will be developed after award during ECA finalization based on the Proposal from Bidder. However, can you provide any general guidance on the approach for determining the Early Transfer Price and what elements will be factored in when formulating the Early Transfer Price?

ANSWER:

GPA has provided Schedule 10 in attachment GPA_ECA_Rev (06152018) Schedule 10.pdf

QUESTION:

30. Draft ECA / 5.5(d) GPA Default Transfer Price & GPA right to acquire project post-GPA EOD

Following termination by Project Company due to a GPA Event of Default, GPA has a purchase option to acquire the Facility for the applicable GPA Default Transfer Price.

Can you please provide your views on what would happen if GPA does not exercise such option to acquire the Facility for the applicable GPA Default Transfer Price?

In addition, similar to our query regarding the Early Transfer Price formulation, we would like to understand what elements will be factored in when formulating the GPA Default Transfer Price (and how this will differ from the Early Transfer Price)?

ANSWER:

- a. GPA has provided Schedule 10 in attachment GPA_ECA_Rev (06152018) Schedule 10.pdf
- b. GPA has provided Schedule 10 in attachment GPA_ECA_Rev (06152018) Schedule 10.pdf

QUESTION:

31. Draft ECA / 10.11 Existing employee right of first refusal

We note that the ECA requires the Project Company to grant GPA maintenance and operations employees who may be adversely affected or separated as a result of the Project to be granted a right of first refusal by the Project Company for employment at the Facility.

Can you please provide a general estimate on how many maintenance and operations employees are expected to be affected as a result of the Project and may be entitled to such right of first refusal?

ANSWER:

This was address in *AMENDMENT NO.: X* dated January 22, 2019.

QUESTION:

32. Draft ECA / 7.2(a), 7.2(b)

These articles suggest that we have to request approval from GPA to redact commercial terms from the copies of the Construction Contract and O&M Contracts before submitting to GPA. We should clarify that we would intend to redact this information. We should also review if we are comfortable submitting these documents at Financial Close or NTP or if we will need more time. It would seem that a 15 to 30 day window would be appropriate.

ANSWER:

A request to deliver the documents shortly after Financial Close or NTP may be considered during the ECA finalization with the winning Bidder.

QUESTION:

33. Draft ECA / 7.2(k)

Bidder would request that the wording in this section be modified as Project Company will have no control over the timing of certification by the GPA Engineer. Project Company can commit to providing a complete set of test results by a fixed date and will work with GPA to resolve any comments or issues.

ANSWER:

A request to modify the wording of ECA Article 7.2(k) may be considered during ECA finalization with the winning Bidder.

QUESTION:

34. Draft ECA / 8.1c

Please clarify intent regarding associated delays from GPA on the implementation of the testing and any associated Delay Damages. It is assumed that any delays by GPA will extend the required in-service date?

ANSWER:

If GPA is unable to accommodate the schedule for the test or tests provided by Project Company in the final schedule for the program of tests pursuant to Article 8.1(b) and such inability directly results in a delay in achieving the Required Commercial Operation date which could not have been avoided by Project Company's reasonable efforts to mitigate such delay, then the applicable Required Commercial Operation Date shall be extended accordingly.

QUESTION:

35. Draft ECA / 8.2c

Please clarify who will be responsible for the cost of the additional Dependable Capacity Tests when requested by GPA.

ANSWER:

Costs for additional Dependable Capacity Tests pursuant to Article 8.2(c) of the ECA shall be to the account of Project Company.

QUESTION:

36. Draft ECA / 8.2(f)

This section suggests that Project Company will have only 25 days of gas supply/operation to commission the units on gas and perform all testing. Suggest extending this time period.

ANSWER:

The time period will not be extended.

QUESTION:

37. Draft ECA / 9.1 Liquidated Damages

The liquidated damages for delay in commissioning does not appear to take into consideration any exceptions for delays caused by GPA's failure to perform its obligations with respect to the Project (including providing land in accordance with the Land Lease Agreement, the easements relating to the fuel pipeline / transmission interconnection or applicable fuel in accordance with the ECA). Please confirm whether such exceptions will be considered by GPA.

ANSWER:

See ECA Article 8.5 (Deemed Commissioning), which is the operative provision with respect to excused delays in commissioning.

QUESTION:

38. Draft ECA / 9.7

Project team to review requirement to pay LDs within 10 days of an LD Notice from GPA.

ANSWER:

This requirement may be discussed during the ECA finalization with the winning Bidder.

QUESTION:

39. Draft ECA / p565 10.3 Scheduling of Capacities and Energy

In the ECA draft GPA says "(d) Week-Ahead Notification: Not later than 12:00 noon on Thursday before each week beginning on each Saturday, GPA shall:(i) provide Project Company estimated requirements, on an hour by hour basis, for the Net Energy Output and maximum capacity required during that week and also provisionally, during the following week, but shall not be bound by these figures; and (ii) determine which Fuel shall be used each hour during that week."
Does it mean GPA would like to compare the price of fuel and LNG every week?

ANSWER:

The referenced section provides a procedure for GPA's dispatch planning and coordination. GPA does not intend to operate on ULSD after switching to natural gas other than in case of LNG supply interruption.

QUESTION:

40. Draft ECA / 10.10 GPA Access to Site

GPA will be allowed to access the on-site ULSD Storage Facilities, without need of prior notice, to fuel GPA's tanker trucks at no charge. Since Project Company and GPA has both responsibility on allocation of Fuel Costs under Draft ECA Section 4.3, we suggest a Fuel Management Agreement or better coordination protocol be developed between GPA and Project Company to clearly define each parties responsibilities. Project Company is also concern keeping enough fuel supply on the onsite ULSD storage tank to sustain operation requirement so closely monitoring available fuel is important thus we suggest GPA to coordinate with the Project Company for any fueling of tanker trucks.

ANSWER:

Such suggestion may be considered during the document finalization with the winning Bidder.

QUESTION:

41. Draft ECA / 16.1

Project team to note that there is no Limitation of Liability identified.

ANSWER:

Noted.

QUESTION:

42. Draft ECA / 18.3

Please clarify the intent of the Final Major Overhaul. If the major equipment maintenance schedule does not require a major overhaul in the 18 month to 6 month prior to Term expiration, is GPA requiring that a major overhaul be completed, regardless?

ANSWER:

This will be discussed with the winning Bidder during the document finalization.

QUESTION:

43. Pre-bid Meeting PPT / P.28 NG pipeline

We understand that "Interstate Pipeline" is under the jurisdiction of FERC and "Intrastate Pipeline" is not. So this time, is it necessary that NG pipeline complies with FERC requirements?

ANSWER:

Response shall be forthcoming.

QUESTION:

44. Bid Guarantee / Performance Bond

Could you provide us the list of banks which can issue Bid Guarantee/Performance Bond?

ANSWER:

Kindly refer to List of Surety Companies Licensed to do Business in Guam dated December 31, 1999 (see attached).

Qualified Bidder #5 Clarification dated 12/28/2019:

QUESTION:

1. Envelope II and III

Hanwha/KDHC received Amendment VIII for GPA-034-28 on December 21, 2018. This was received after the cutoff date for inquiries. However, within the Amendment there is new information regarding the bid submission process. GPA states that there is now an Envelope III which should contain the Fixed Capacity Charge. There is a lack of information on the differences between Envelope II and Envelope III.

Please clarify the process and information that should be included in both Envelope II and Envelope III in more detail.

ANSWER:

Envelope II will contain all completed financial forms with the exception of Form 15.2 Fixed Capacity Charge. Envelope III will only contain Form 15.2 Fixed Capacity Charge.

The submittal of Proposals Envelopes I and II will be on March 21, 2019 at 4:00 P.M. Bidders shall submit Envelope II with the exception of their Fixed Capacity Charge (Form 15.2) which shall be submitted separately on April 29, 2019.

Qualified Bidder #1 dated 11/22/2018:

QUESTION:

1. Capacity

o IFMSB Section C, 2.2.1 Capacity

A. The plant net capacity is the net electric output measured at the Delivery Point / Point of Interconnection. The Contracted Facility Capacity shall be within the range of 180 (net) MW, at Site Reference Conditions specified in Section 5.5 of this Specification. Because of the variability of technologies allowed and unit sizes, GPA will consider evaluating proposals that are within plus/minus 10 % of the preferred capacity. The size of the Facility's individual units shall be such that a trip of a single Unit will not result in a loss of 45 MW.

During the Pre-Bid meeting on 5 Nov 2018, we understood that GPA agreed on adopting a battery system or any other technology to meet a single unit trip loss of 45MW in case a single unit capacity is more than 45MW. Please confirm it.

* Please note that it is critical clarification in order to configure the power plant and bidder requests a response from GPA as a matter of urgency

ANSWER:

Bidder may provide Energy Storage System or other acceptable technology that covers a single unit trip loss above 45 MW for at least 30 minutes.

QUESTION:

2. Evaluation Model

From Sample Bid Evaluation Model - Generation Calculation sheet

13 Inputs and Assumptions		
14		
15	Spinning Reserves	15 MW
16	Availability of New Power Plant	92% p.a.
17	Number of Months on Phase 1	10 months
18	Phase 1 Capacity	120 MW
19	Phase 1 Capacity minus Spinning Reserves and Considering Availability	95 MW
20	Number of Months on Phase 2	290 months
21	Total Operating Months	300 months
22	Phase 2 Capacity	180 MW
23	Phase 2 Capacity minus Spinning Reserves and Considering Availability	151 MW
..		

During Phase 2, Facility will be operated using ULSD and NG. Phase2 capacity needs to be divided into stages - Phase2(ULSD) / Phase2(NG). Without modifying it, there will be minor errors.

ANSWER:

See attached revised Sample Bid Evaluation Model Final Revision 2.1.

All other Terms and Conditions in the bid package shall remain unchanged and in full force.


JOHN M. BENAVENTE, P.E.
General Manager

Visitor's Center Section

– Page 156a of 595

-
- l. Janitors closet.
 - m. Mechanical equipment room.
 - n. Electrical equipment room.
 - o. Communications/telephone equipment closet.
 - p. Printer/Plotter room.
- D. Warehouse / Maintenance Building(s)
- 1. The Project Company shall provide dedicated space required for operations and maintenance of the plant including, but not limited to, a warehouse, mechanical maintenance area and office, electrical maintenance area and office, instrumentation and controls shop and office, welding shop, tool crib, Unisex toilet room, janitors closet, and warehouse supervisor/receiving office.
- E. Building Aesthetics
- 1. All buildings shall utilize an architectural style, colors, and finishes that are compatible with Guam's island heritage. Exterior colors and finishes shall be selected to blend in with the surrounding countryside and approved by GPA.
 - 2. All exterior and interior exposed surfaces, except factory finished items, shall be painted. Environmentally-friendly products shall be used.
 - 3. Low rise construction shall be used for all buildings except where equipment or operational requirements require structures of greater height.
- F. Visitor's Learning Center
- Successful bidder will negotiate in good faith to develop and build a Visitor/Learning Center just outside the secured access to the plant and construct/install the required communications systems and infrastructure. The visitor/Learning Center will provide virtual plant tours and general energy conversion information. GPA will take video/photos of the plant for use in the visitor center and on a website. GPA and successful IPP will negotiate details of providing virtual access while still maintaining plant security. The intent is to show how a power plant works to students, customers, and the public. IPP will coordinate with GPA on the design details, manufacturers, wired or wireless access, etc. to create programs, models or fact sheets on the power plant and the technology.

4 QUALITY ASSURANCE, INSPECTION, COMMISSIONING, AND TESTING

4.1 Quality Assurance

4.1.1 General Quality Requirements

- A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date for receiving bids, except where a specific date is established by code.
- C. When required by individual Specifications Section, obtain copy of standard. Maintain copy at job site during submittals, planning, and progress of specific work, until Completion.
- D. Abbreviations used in Drawings and Specifications are as specified in ANSI Y1.1 and IEEE 260.

4.1.2 Industry Standards

- A. Welding

**Sample Bid Evaluation Model
Final rev2.1 Protected
(Downloadable on the GPA
Website)**



INVITATION FOR MULTI-STEP BID - GPA-034-18
DEVELOPMENT OF A 180 MW POWER PLANT IN GUAM
ON A BUILD, OPERATE, TRANSFER (BOT) BASIS

BID EVALUATION MODEL

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DISCLAIMER

The information, materials, methodologies, parameters, and any other information contained herein ("Information") was prepared by K&M Advisors LLC to facilitate the general understanding of the evaluation of the proposals submitted by bidders in connection with the 180 MW Power Plant in Guam. GPA reserves the right, in its sole discretion to change, correct or otherwise modify this model at any time before or during the evaluation process at its sole discretion.

This methodology is specifically designed to enable the Guam Power Authority to calculate the Present Value of the Costs to with the implementation of this Project.

This model includes an example calculation which is a mathematical illustration of the evaluation methodology. All "Bidder" inputs are fictitious.

Although K&M has exercised professional care in preparing this Information, it has no control over Bidder's use of the Information. Bidders are further cautioned that they should perform their own independent analyses and calculations to verify that the results produced by this evaluation model correspond to the results of their own models.

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Bidders Proposal

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Project Guam 120-180 MW Power Plant
Name of Bidder XYZ
Evaluation No 1

Table 15.1: Schedule of Phase 1 Commercial Operation Period

Commercial Operation Date	Number of Months	Contracted Facility Capacity for ULSD Operation or Non-Fossil Fuel Fired Facility (MWs)	Contracted Facility Capacity for Natural Gas Operation (MWs)	Guaranteed Amount of Renewable Energy (GARE) (MWh/Yr)	Renewable Component Degradation Guarantee (% per year)
	10	120	120		

Table 15.2: Schedule of Phase 2 Commercial Operation Period

Commercial Operation Date	Number of Months	Contracted Facility Capacity for ULSD Operation or Non-Fossil Fuel Fired Facility (MWs)	Contracted Facility Capacity for Natural Gas Operation (MWs)	Guaranteed Amount of Renewable Energy (GARE) (MWh/Yr)	Renewable Component Degradation Guarantee (% per year)
	290	180	200		

These are temporary values

Data Entries in the Yellow Cells are from Bidders Proposal

Project Guam 120-180 MW Power Plant
 Name of Bidder XYZ
 Evaluation No 1

Table 15.3: Proposed Fixed Capacity Charge*

	Agreement Period	Fixed Capacity Charge (USD/kW/month)
1	Contract Year 1 (Phase 1)	25
1	Contract Year 1 (option with no Phase 1)	32
2	Contract Year 2	32
3	Contract Year 3	32
4	Contract Year 4	32
5	Contract Year 5	32
6	Contract Year 6	32
7	Contract Year 7	32
8	Contract Year 8	32
9	Contract Year 9	32
10	Contract Year 10	32
11	Contract Year 11	32
12	Contract Year 12	32
13	Contract Year 13	32
14	Contract Year 14	32
15	Contract Year 15	32
16	Contract Year 16	32
17	Contract Year 17	32
18	Contract Year 18	32
19	Contract Year 19	32
20	Contract Year 20	32
21	Contract Year 21	32
22	Contract Year 22	32
23	Contract Year 23	32
24	Contract Year 24	32
25	Contract Year 25	32

Data Entries in the Yellow Cells are from Bidders

These are temporary values

*The FCC shall not be adjusted by more than 10% (plus or minus) from any one Contract Year to the next Contract Year, provided, however, that it may be adjusted by up to 20% (plus or minus) from Contract Year 1 to Contract Year 2 (from Phase 1 operation to Phase 2 operation).

Project Guam 120-180 MW Power Plant
Name of Bidder XYZ
Evaluation No 1

Table 15.4: Proposed Fixed Operation and Maintenance Charge

Agreement Period	FOMC on ULSD or for Non-Fossil Fuel Fired Facility (USD/kW/Month)	FOMC on Natural Gas (USD/kW/Month)
Phase 1 Commercial Operation Date through Phase 2 Operation Date	0.30	0.200
Phase 2 Commercial Operation Date through end of the Term	0.30	0.200

Table 15.5: Proposed Variable O&M Charge

Agreement Period	VOMC on ULSD or for Non-Fossil Fuel Fired Facility (USD/kWh)	VOMC on Natural Gas (USD/kWh)
Phase 1 Commercial Operation Date through Phase 2 Operation Date	0.0045	0.0035
Phase 2 Commercial Operation Date through end of the Term	0.005	0.0045

Data Entries in the Yellow Cells are from Bidders Proposal

These are temporary values

Table 15.6: Phase 1 Guaranteed Heat Rates at Site Reference Conditions on ULSD

Percent of Dependable Capacity	Guaranteed Heat Rate (HHV) (Btu/kWh)	Note
100.00%	8,200	
95.00%	8,300	
90.00%	8,400	
85.00%	8,500	
80.00%	8,600	
75.00%	8,700	
70.00%	8,800	
65.00%	8,900	
60.00%	9,000	
55.00%	9,100	
50.00%	9,200	
45.00%	9,300	
40.00%	9,400	
35.00%	9,500	
30.00%	9,600	
25.00%	9,700	
20.00%	9,800	
15.00%	9,900	
10.00%	10,000	
Minimum Load		

* Use Linear Interpolation when the load values fall between the stated percentages

Table 15.7: Phase 1 Guaranteed Heat Rates at Site Reference Conditions on Natural Gas

Percent of Dependable Capacity	Guaranteed Heat Rate (HHV) (Btu/kWh)	Note
100%	7,900	
95%	8,000	
90%	8,100	
85%	8,200	
80%	8,300	
75%	8,400	
70%	8,500	
65%	8,600	
60%	8,700	
55%	8,800	
50%	8,900	
45%	9,000	
40%	9,100	
35%	9,200	
30%	9,300	
25%	9,400	
20%	9,500	
15%	9,600	
10%	9,700	
Minimum Load	9,800	

Table 15.8: Phase 2 Guaranteed Heat Rates at Site Reference Conditions on ULSD

Percent of Dependable Capacity	Guaranteed Heat Rate (HHV) (Btu/kWh)	Note
100%	8,100	
95%	8,200	
90%	8,300	
85%	8,400	
80%	8,500	
75%	8,600	
70%	8,700	
65%	8,800	
60%	8,900	
55%	9,000	
50%	9,100	
45%	9,200	
40%	9,300	
35%	9,400	
30%	9,500	
25%	9,600	
20%	9,700	
15%	9,800	
10%	9,900	
Minimum Load		

* Use Linear Interpolation when the load values fall between the stated percentages

Table 15.9: Phase 2 Guaranteed Heat Rates at Site Reference Conditions on Natural Gas

Percent of Dependable Capacity	Guaranteed Heat Rate (HHV) (Btu/kWh)	Note
100%	7,900	
95%	8,000	
90%	8,100	
85%	8,200	
80%	8,300	
75%	8,400	
70%	8,500	
65%	8,600	
60%	8,700	
55%	8,800	
50%	8,900	
45%	9,000	
40%	9,100	
35%	9,200	
30%	9,300	
25%	9,400	
20%	9,500	
15%	9,600	
10%	9,700	
Minimum Load	9,800	

* Use Linear Interpolation when the load values fall between the stated percentages

Data Entries in the Yellow Cells are from Bidders Proposal

These are temporary values

Limit on degradation.

Project
Name of Bidder
Evaluation No

Guam 120-180 MW Power Plant
XYZ
1

Table 15.11: Fuel Consumption per Unit for Startups

Type of Start	Cold Start		Warm Start		Hot Start	
	ULSD	NG	ULSD	NG	ULSD	NG
Fuel Consumption, MMBTU (HHV)	15	12	8	8	5	5

Table 15.12: Non-Fuel Supplemental Charge for Startups

Type of Start	Cold Start		Warm Start		Hot Start	
	ULSD	NG	ULSD	NG	ULSD	NG
Phase 1 Non-Fuel Supplemental Charge, USD/unit/start	300	300	300	300	300	300
Phase 2 Non-Fuel Supplemental Charge, USD//unit/start	300	300	300	300	300	300

Number of units:

10

These are temporary values

Table 15.13: Synchronous Condenser Fixed Hourly Charge

Agreement Period	SCFHC, USD/hr.
Commercial Operation Date through end of term	150

Table 15.14: Synchronous Condenser VAR Production Charge

Agreement Period	SCVARPC, USD/kVARh
Commercial Operation Date through end of term	0.001

Data Entries in the Yellow Cells are from Bidders

Project
Name of Bidder
Evaluation No

Guam 120-180 MW Power Plant
XYZ
1

Table 8.17: Annual Availability of the Facility

Parameters	Value, %
Annual Availability (Guarantee)*	92.00%
Forced Outages (Guarantee)*	3.00%
*The Bidder shall guarantee these values	

These are temporary
values

Data Entries in the
Yellow Cells are from
Bidders Proposal

Project Guam 120-180 MW Power Plant
Name of Bidder XYZ
Evaluation No 1

To be inserted by the bidder

Capacity Lost with the loss of the Largest Unit (MW)	30
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Data Entries in the
Yellow Cells are from
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Category	Code	Description	Value	...
Electricity	0119	Electricity	1,34	...
	0120	Electricity
	0121	Electricity	...	...
	0122	Electricity	...	...
	0123	Electricity	...	...
	0124	Electricity	...	...
	0125	Electricity	...	...
	0126	Electricity	...	...
	0127	Electricity	...	...
	0128	Electricity	...	...

Category	Code	Description	Value	...
Water	0201	Water
	0202	Water

Category	Code	Description	Value	...
Gas	0301	Gas
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	0303	Gas

Category	Code	Description	Value	...
Telecommunications	0401	Telecommunications
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	0409	Telecommunications
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Transportation	0501	Transportation
	0502	Transportation
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	0504	Transportation
	0505	Transportation
	0506	Transportation
	0507	Transportation
	0508	Transportation	...	...
	0509	Transportation	...	...
	0510	Transportation	...	...

Category	Code	Description	Value	...
Insurance	0601	Insurance	...	...
	0602	Insurance	...	...
	0603	Insurance	...	...
	0604	Insurance	...	...
	0605	Insurance	...	...
	0606	Insurance	...	...
	0607	Insurance	...	...
	0608	Insurance	...	...
	0609	Insurance	...	...
	0610	Insurance	...	...

Category	Code	Description	Value	...
Maintenance	0701	Maintenance	...	...
	0702	Maintenance	...	...
	0703	Maintenance	...	...
	0704	Maintenance	...	...
	0705	Maintenance	...	...
	0706	Maintenance	...	...
	0707	Maintenance	...	...
	0708	Maintenance	...	...
	0709	Maintenance
	0710	Maintenance

Category	Code	Description	Value	...
Other	0801	Other
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	0805	Other
	0806	Other
	0807	Other
	0808	Other
	0809	Other
	0810	Other

GPA Power Plant – Geotech Report (2-7-19)

REPORT

**GEOTECHNICAL INVESTIGATION
GPA NEW POWER PLANT
DEDEDO, GUAM
Re-Solicitation GPA-RFP-18-002**

Prepared for

**GUAM POWER AUTHORITY
Post Office Box 2977
Hagatna, Guam 96932**

Prepared by

**GEO-ENGINEERING & TESTING, INC.
Post Office Box 8170
Tamuning, Guam 96931**

07 February 2019

127.05

INTRODUCTION

This report presents the results of the geotechnical investigation conducted by Geo-Engineering & Testing, Inc. (GET) for the GPA New Power Plant, located at Dededo, Guam.

We understand that this project is by Re-Solicitation Request for Proposal No.: GPA-RFP-18-002, Geotechnical Investigation Services. The information presented in these services is preliminary in nature, only to provide information for GPA use, and needs to be supplemented by a more detailed, site-specific, geotechnical investigation to be performed by the Contractor's geotechnical engineer, based on the specific requirements of the project.

The purpose of the geotechnical investigation is to explore and evaluate the subsurface soil and rock conditions of the various components of the project, so as to provide discussion and recommendations concerning the earthwork and subgrade soil parameters for structural foundations, drainage structures, and pavement designs.

REGIONAL GEOLOGY

Guam is the southernmost and largest island of the Mariana Islands chain, which form an arcuate (curved like a bow) belt in the Western Pacific. The islands occur along a ridge, which rises well above the deep ocean floor and

generally divides the Philippine Sea from the Pacific Ocean. Located about 110 kilometers (68.3 miles), southeast of Guam is the deep Mariana Trench. The trench was formed approximately along the submerged surface trace of a westward dipping discontinuity in the oceanic crust, referred to as a subduction zone. The rocks constituting the crust of the Pacific Basin are being thrust under the Mariana Ridge and, in the process; the ridge is being thrust upwards. Ridge formation has also been contributed to by submarine volcanism starting in Eocene geologic time (about 50 million years ago). Volcanism continued only through the Miocene geologic epoch on Guam but continues to the present in the Northern Mariana Islands.

Geological formations on Guam are both of volcanic and organic origin, consisting predominantly of volcanic sediments and coralline limestone. The limestone ranges in age from Miocene up through the present and is principally Mariana limestone of Pliocene and Pleistocene age. The limestone has been deposited upon the crest and upper flanks of the volcanic ridge. Compared to the thousands of meters of the underlying volcanic rocks, the limestone represents a relatively thin capping layer.

Faulting and tilting of the rocks comprising the island system has occurred concurrently with volcanism and limestone deposition. All of the faults mapped on Guam are relatively high angle normal faults and most have produced relatively small displacements of the rocks over short distances. Somewhat greater displacements on the order of a few hundred meters (feet) have occurred on the northwest; striking Adelup Fault, which approximately divides the northeast

limestone plateau from the principally volcanic southwest portion of the island. In general, most faults occur in the volcanic rocks, and do not penetrate upwards and displace the overlying limestone. Some faults do; however, occur in the limestone plateau and displace the Pleistocene era Mariana limestone. The Adelup Fault has displaced the Mariana limestone against the Alutom volcanic formation; thus indicating that the fault has been active at least up until mid-Pleistocene time. The Adelup Fault lies in the Ordot-Asan village area, which is approximately in the middle portion of Guam Island, and is about 12 kilometers (7 to 8 miles) from Apra Harbor.

Late Pleistocene displacements are inferred on the basis of apparent small uplifts of the island as indicated by raised reefs in the range of a few meters above present sea level. Tracy and others (1964)¹ indicate that "In some places on jointed headlands, the 2-meter (6.6-foot) dip is slightly displaced and in a few places minor faults with displacements of about 1.5 to 3 meters (5 to 10 feet) cut the reef margin; however, no significant movements of the island of Guam appear to have taken place since the late Pleistocene". Thus, from a seismic or earthquake risk standpoint, the island of Guam is in an active seismic belt; but significant earthquakes are from movements of the deep seated under-thrust faulting. One or more of the faults visible on the island, such as the Adelup, may have been active within Holocene time (approximately last 11,000 years) but

¹ Tracey, J.I., S.O. Schlanger, J.T. Stark, D.B. Doan, H.G. May (1964), "General Geology of Guam," USGS Professional Paper 403-A, U. S. Government Printing Office, Washington, D.C.

the amount of displacement appears to have been small. Based on current knowledge, none of these relatively shallow seated faults has produced a significant magnitude earthquake; and the probability of surface displacement in the near future appears to be small.

SEISMICITY

Tracy and others (1964) have compiled a list of significant earthquakes on Guam extending back to April 1825. Between 1825 and 1936, there were 19 strongly felt or damaging earthquakes on Guam with Modified Mercalli intensities estimated in the range of VI to IX. The largest, in the more immediate vicinity, occurred on September 22, 1902, with an intensity of IX on Guam. Richter (1958) reports the magnitude as 8.1 and the epicenter at latitude 18 North, longitude 146 East, or about in the vicinity of Pagan Island north of Guam. It is reported to have caused many landslides in the mountainous areas of Guam. Another significant earthquake occurred on January 25, 1849, and also produced intensities up to IX. Gutenberg and Richter (1954) report magnitudes for earthquakes between 1904 and 1950. Four of these are significant, occurring in 1912, 1932, and October and November 1936. Magnitudes were in the range of 6 to 7 and focal depths were in the range of 60 to 170 kilometers (37 to 106 miles). In October of 1936, a severe earthquake with a Richter Magnitude of 7.7 occurred about 125 kilometers (78 miles) southwest of Guam with no severe damage reported.

The more recent magnitudes have been in the range of 6 to 7 on the Richter scale; and the epicenter depths were reported as approximately 113 kilometers (70 miles). They were centered from several to tens of kilometers north of Guam. All of the significant earthquakes for which focal depth estimates are available indicate that the active zone is the under-thrust type, which is believed to dip eastward at about 45 degrees beneath the island.

In the more recent time, from 1975 to 1983, three significant earthquakes of Richter Magnitude of 5.2 to 7.1 were recorded, with epicenters located about 20 to 40 kilometers (12.5 to 25 miles) north of Guam. Several buildings suffered damage; but all were repairable.

On August 8, 1993, a major earthquake of 8.1 Richter Magnitude, with an epicenter located at about 60 kilometers (37.3 miles) south of the island of Guam, caused near-panic on Guam during day time but no reported direct loss of lives. There were two 8- to 9-story buildings that suffered severe damage, primarily due to poor construction and insufficient reinforcement. During this earthquake, Sierra Wharf at the main Naval Base, COMNAVREG MARIANAS, suffered a deck collapse that was believed to be a result of underlying soil liquefaction. The wharf is believed to be underlain with man-made fill placed over mostly relatively loose to medium dense silty sandy soils with coral fragments to significant depths. Other naval wharves in the same general vicinity suffered only minor damages. Minor liquefaction also occurred on a small, unpaved road in the City of Hagatna not far from the ocean, with high ground water and likely fine-grained sandy soil deposits.

The nearest known fault was the Tamuning Fault that would have passed approximately a mile to the northeast of the site which is considered inactive. It is believed that the last active fault in Guam was the Adelup Fault which lies in the Ordot-Chalan Pago village area, which is approximately in the middle portion of Guam Island, and the last activity of this fault was hundreds of years ago.

Although there were three strong-motion accelerogram instruments in place on Guam at the time of the August 1993 earthquake, no strong motions were recorded because all three instruments were not functioning. Two were non-functional due to electrical outage. Dames & Moore (1994)² estimated the peak ground motion acceleration resulting from the August 1993 Guam earthquake to be 0.20 g.

SUBSURFACE EXPLORATION

Test Borings

In accordance with the subsurface exploration plan, we explored the subsurface conditions at the various project sites by drilling a total of 12 test borings to approximately 27 to 33 feet deep at the project site. The depths of the test borings were reckoned from the existing surface. The approximate locations of the test borings are shown on Plate 1.

² Dames & Moore, "Earthquake Hazard Vulnerability Study, Guam, Mariana Islands", prepared for Government of Guam, December 1994.

The test borings were drilled utilizing a truck-mounted, hollow stem auger drilling equipment with an 8-inch diameter hollow stem auger drill head, and is capable of obtaining undisturbed subsurface soil and rock samples.

Table 1 below summarizes the test boreholes performed and their approximate depths and coordinates:

Table 1: Summary of Test Borings, Depths, and Approximate Coordinates

Boring No	Depth feet	Approximate Coordinates	
		Latitude	Longitude
BH-1	33.5	13°31'35.75"	144°49'10.43"
BH-2	30	13°31'34.40"	144°49'06.54"
BH-3	27	13°31'33.40"	144°49'02.65"
BH-4	30	13°31'32.19"	144°48'58.76"
BH-5	33.5	13°31'41.00"	144°49'00.32"
BH-6	30	13°31'42.16"	144°49'04.22"
BH-7	33.5	13°31'43.38"	144°49'08.06"
BH-8	33.5	13°31'39.59"	144°49'09.27"
BH-9	30	13°31'38.40"	144°49'05.33"
BH-10	30	13°31'37.23"	144°49'01.44"
BH-11	30	13°31'36.08"	144°48'57.64"
BH-12	30	13°31'39.85"	144°48'56.41"

Note: The coordinates were obtained from a Garmin hand-held device.

During the subsurface exploration, GET's engineering staff was at the project site full-time logging the subsurface materials that were encountered in the test boreholes and also obtaining undisturbed and disturbed subsurface soil and rock samples for visual examination, classification, and laboratory testing. The logs of the test borings are presented on Plates 2 through 13.

While obtaining the subsurface soil and rock samples in the test boreholes, GET also conducted the standard penetration test (SPT) or N-values. The N-value is defined as the number of blows per one foot of penetration into

the underlying, undisturbed soil or (weak) rock of a 2.0-inch outside diameter split spoon soil sampler, driven by a 140-pound drop weight free falling 30 inches per each blow.

The N-values obtained from the test bored holes are shown on the logs of the test borings at the depths where they were taken. However, in order to obtain larger and better undisturbed subsurface soil samples for laboratory testing, GET used a 3-inch outside diameter split spoon soil sampler and the blow counts were corrected to the standard penetration test values with a correction factor of 0.68 times the field blow counts of the 3-inch diameter soil sampler.

Percolation Tests

In addition, GET had also performed six percolation tests at the approximate locations also shown on Plate 1. The percolation test holes were manually excavated using a pinch bar and post-hole digger.

Percolation Tests 1 through 6 exposed approximately nil to 9 inches thick of medium dense, silty sandy limestone gravel, and soft to medium stiff, gravelly sandy silt, overlying weak to hard coralline limestone, down to the 4- to 4.61-foot depth test holes. The percolation test holes were saturated with water first prior to conducting the percolation tests. The results of the percolation tests with the recommended design percolation rates are tabulated in Table 2 below:

Table 2: Summary of Depths, Percolation Rates, and Locations

Percolation Test No.	Depth of Test Hole, feet	Average Rate, inches/minute	Last Rate, inches/minute	Recommended Rate, inches/minute	Locations

1	4.25	2.905	1.132	1.132	Near BH-1
2	4.30	1.072	0.464	0.464	Near BH-2
3	4.17	0.844	0.164	0.164	Near BH-7
4	4.61	0.501	0.230	0.230	Near BH-11
5	4.00	2.793	1.639	1.397	Near BH-5
6	4.25	0.445	0.206	0.206	Near BH-9

Note : percolation rates may vary within short distances.

Field Resistivity Tests

Three soil resistivity tests or earth resistivity tests were conducted at the project site at approximate locations shown on Plate 1, utilizing a Miller Model 400A four-pin resistance meter. The tests were performed in accordance with ASTM Test Designation G-57 (Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method). See Appendix A for the field resistivity or earth resistivity test report. The field resistivity test results are shown in Table 4 below:

Table 3: Summary of Field Resistivity Tests

<u>Location/s</u>	<u>Spacing (feet)</u>	<u>Resistance, ohm</u>	<u>Apparent Resistivity, (ohm-cm)</u>
R-1 North- South	5	52	49790
	10	40	76600
	15	35	100538
R-1 East-West	5	55	52663
	10	41	78515
	15	33	94793
R-2 North-South	5	110	105325
	10	108	206820
	15	92	264270
R-2	5	109	104368

East-West	10	79	151285
	15	81	232673
R-3 North-South	5	55	52663
	10	26	49790
	15	16	45960
R-3 East-West	5	52	49790
	10	28	53620
	15	19	54578

The following illustrates generally adopted corrosion severity ratings:

Soil Resistivity (ohm-cm)

> 20,000
 10,000 to 20,000
 5,000 to 10,000
 3,000 to 5,000
 1,000 to 3,000
 < 1,000

Corrosivity Rating

Essentially non-corrosive
 Mildly corrosive
 Moderately corrosive
 Corrosive
 Highly Corrosive
 Extremely corrosive

LABORATORY TESTING

In GET's testing laboratory, the subsurface soil and rock samples were re-examined and the selected soil and rock samples were tested to determine their in-situ moisture content, unit weight or dry density, particle size distribution, plasticity index and liquid limit, triaxial, direct shear, and consolidation. The results of the tests are shown on the test boring logs where the tested samples were obtained, in the manner described by the Key to Test Data shown on Plate 14, and on Plates 15 through 22.

SUBSURFACE CONDITIONS

In general, the subsurface soils are variable, ranging in depths from a few inches to as deep as approximately 13.5 feet below the existing surface, consisting of both clayey silt, from soft to medium stiff to stiff and hard, and loose to medium dense to dense silty sandy gravel. The underlying coralline limestone formation varies from very weak (equivalent to loose to medium dense sand/gravel) to weak and moderately hard to hard.

The table below summarizes the subsurface soil conditions found in the 12 test borings. The weak upper overburden soils and upper weak coralline limestone are highlighted, though the actual depths will have to be estimated from the respective boring logs.

We understand that the new generator building will be located approximately in the area covered by Test Borings 1, 8 and 9, or at the western portion of the project site.

The following table shows the subsurface soil conditions found in the test borings:

Table 4: Subsurface Soil Conditions on each Test Borings

Boring No.	Depth (feet)	SPT/N-Value*	Soil Description
1	0-1.5	-	medium stiff gravelly sandy silt (MH)
	1.5-9	33	weak coralline limestone
		42	
	9-20	55	moderately hard coralline limestone
		53	
	20-32	82/9"	hard coralline limestone
		60/5"	

	32-33.5	25	very weak coralline limestone
2	0-0.5	-	medium dense silty sandy limestone gravel (GM)
	0.5-7	10	very weak coralline limestone
	7-12	45	weak coralline limestone
	12-30	14	very weak coralline limestone
		20	
16			
19			
3	0-1	-	medium dense silty sandy limestone gravel (GM)
	1-7	46	weak coralline limestone
	7-12	63	moderately hard coralline limestone
	12-17	7/0"	hard coralline limestone
	17-22	51	moderately hard coralline limestone
	22-27	46	weak coralline limestone
	27	15/0"	hard coralline limestone
4	0-0.5	-	medium dense silty sandy limestone gravel (GM)
	0.5-7	34	weak coralline limestone
	7-27	83	moderately hard coralline limestone
		86	
		66	
		64	
27-30	38	weak coralline limestone	
5	0-7	6	medium stiff gravelly sandy silt (MH)
	7-12	25	weak coralline limestone
	12-17	34/0"	hard coralline limestone
	17-27	53	moderately hard coralline limestone
		85	
	27-32	33	weak coralline limestone
32-33.5	25	very weak coralline limestone	
6	0-7	4	soft sandy silt (MH)
	7-10	8	medium stiff sandy silt (MH)
	10-22	48/1"	hard coralline limestone
		60/2"	
	22-27	31	weak coralline limestone
27-30	73	moderately hard coralline limestone	
7	0-7	6	medium stiff sandy silt (MH)
	7-12	14	stiff sandy silt (MH)
	12-18.2	36	hard sandy silt (MH)
	18.2-22	74	moderately hard coralline limestone
	22-33.5	60/5"	hard coralline limestone
		34/1"	
30/0"			
8	0-1.8	-	medium stiff gravelly sandy silt (MH)
	1.8-22	31	weak coralline limestone

		35		
		40		
		30		
	22-27	68		moderately hard coralline limestone
	27-33.5	41		weak coralline limestone
	42			
9	0-0.5	-	soft sandy silt (MH)	
	0.5-9.5	13	medium dense silty sandy limestone gravel (GM)	
		24		
	9.5-17	20	very weak coralline limestone	
	17-22	68	moderately hard coralline limestone	
	22-27	70/9"	hard coralline limestone	
27-30	42	weak coralline limestone		
10	0-2	-	soft sandy silt (MH)	
	2-6	23	very stiff sandy silt (MH)	
	6-12	97/8"	hard coralline limestone	
	12-22	55	moderately hard coralline limestone	
		81		
22-30	48	weak coralline limestone		
11	0-0.5	-	Stiff sandy silt	
	0.5-7	8	Loose silty sandy limestone gravel	
	7-12	3	Very loose silty sandy limestone gravel	
	12-13.5	22	Medium dense silty sandy limestone gravel	
	13.5-30	76	Moderately hard coralline limestone	
69				
73				
12	0-2	-	Medium stiff sandy silt	
	2-7	41/5"	Hard coralline limestone	
	7-12	20	Very weak coralline limestone	
	12-17	49	Weak coralline limestone	
	17-30	20/0	Hard coralline limestone	
		30/0		
30/0				

*SPT/N-Value = Standard penetration test or N-Value (blows/ft.)

No groundwater or seepage was found in the test borings. Groundwater at the project site is deep and will have no significance on the planned development.

Seismic Site Class

The shallow depth coralline limestone formation as found in all of the test borings and test pits should extend to much deeper than 100 feet below the existing surface; therefore, the Seismic Site Class which is based on the upper 100 feet deep of the subsurface soils and rock underneath the project, may be classified as Class C in accordance with the 2012 International Building Code (IBC), which is defined as very dense soil and soft rock. However, the thick clayey silt layer found in Test Borings 6 and 7 render the seismic site class to be Class D, for stiff soil and Class E, for soft soil, in accordance with the 2012 International Building Code (IBC).

2012 IBC indicates that the mapped acceleration parameters for short periods (S_s) and for 1 second (S_1) shall be determined from 0.2 and 1-second spectral response accelerations shown on Figures 1613.3.1(1) through 1613.1(6). For Guam, the parameters S_s and S_1 are, 1.50 and 0.60, respectively.

DISCUSSION AND OPINIONS

The proposed main generator building can be supported on rigid concrete mat foundation and the secondary buildings can be supported on conventional, shallow spread footings and/or continuous footings resting either directly on the natural coralline limestone formation or on densely compacted, approved

limestone sand/gravel soil fill having at least 95 percent of its MDD Although it is possible to support the main generator building and secondary buildings on deep foundation such as driven, precast concrete piers or drilled, cast-in-place concrete piers, it will cost more and will take longer to complete the project.

The existing sandy silt is potentially expansive that can change volume with changes in its moisture content (or shrink and swell with decrease and increase of its internal moisture content) which can be detrimental to concrete floor slabs supported on ground and asphalt pavements. Therefore, the upper sandy silt should be removed as recommended hereunder.

Specific recommendations for earthwork, foundation supports and pavements are presented in the remainder of this report.

RECOMMENDATIONS

Site Preparation and Grading Earthwork

Clearing and Stripping – Prior to site grading, any existing vegetation and trees to be removed should all be removed and hauled away. Topsoil containing roots should be stripped and disposed elsewhere, or stockpiled at appropriate locations for later reuse for landscaping.

Additional Excavations – After site clearing, stripping, and any required excavations are completed, in general, within the building areas and at least 5 feet wider all around, and also within the paved access roads, driveways, and

parking areas and at least 3 feet wider all around their edges, the upper soft to medium stiff sandy silt or loose to medium dense silty sandy limestone gravel soils should be excavated for replacement with nonexpansive, densely compacted limestone silty sand and gravel soil. The excavated silty sandy limestone gravel soils can be stockpiled separately for later reuse as backfill soils. The excavated silty soils may not be reused as compacted backfill within the building, roadway and outside concrete slabs and 3 feet wider all around, but may be reuse for backfill in non-load-bearing areas such as landscaping and utility trench backfill outside of load-bearing-areas including 3 feet wider all around, and also below the top 3 feet, or disposed off-site. In general, the following procedure should be follow in determining the thickness of the existing upper soils to be replaced or recompacted. *Note that the estimated depths are from the test boring logs.*

The following test borings will require only replacing the upper 2 feet below the existing surface elevations (adjust for final surface elevations as needed): Test Borings 1, 3, 4, 8, 10 and 12.

The following test borings will require deeper removal/replacement of soft to medium stiff silty soils or loose to medium dense silty sandy limestone gravel: Test Borings 2, 5, 6, 7, 9 and 11.

Note that Test Borings 1, 8 and 9 areas will be under the main generator building which will require deeper removal and replacement with densely compacted, nonexpansive limestone sand/gravel soils under the generator building or generator pads (see foundation support for the generator building).

Procedure of Replacing the Additional Excavated Spots –

- Excavated down to minimum 2 feet below existing surface elevations (adjust for final finished subgrade elevations as needed). If the exposed surface is tested to have at least 95 percent of its maximum dry density (MDD, as determined by ASTM D1557 laboratory compaction test), and is checked by the geotechnical engineer, based on nearest applicable boring log(s) that the soils below are similarly dense or very stiff, the additional excavation may be stopped. Similarly, if moderately hard to hard coralline limestone is exposed and is verified by the geotechnical engineer, the excavation may be stopped.
- If the above tested to have less than 95 percent of the MDD of the soil being tested, continue to excavate and test until the “undisturbed” exposed surface is at least 95 percent of its MDD, and verified by the geotechnical engineer that the soils below are as firm as the tested surface.

Recompaction – For the rest of the excavated areas where the exposed surfaces are firm and tested to have at least 95 percent of the MDD of the soil being tested, the final disturbed surfaces should be lightly scarified and leveled to about 6 to 8 inches deep, moisture conditioned (uniformly air dried or wetted) as necessary and compacted to achieve at least 95 percent of the MDD of the compacted soil with relatively uniform, unyielding surface. The compacted density may be reduced to 90 percent of the MDD of the soil being compacted for fine-grained, cohesive silty soils in the event 95 percent of its MDD cannot be

achieved. In non-load bearing areas, the compacted densities may be lowered by 5 percent.

Soft or Yielding Spot Repairs – Where soft, loose, or yielding soil is found during the above recompaction, it should be excavated for replacement with densely compacted, limestone sand/gravel soil fill. The geotechnical engineer should verify such condition and determine if deeper excavation is needed.

If the exposed bottom after the additional excavation is still soft, loose, or yielding, the backfill can be graded aggregate that is used for concrete mixing, such as 1- to 1-1/2-inch maximum size concrete coarse aggregate (meeting ASTM C-33 grading requirements), to be uniformly spread without segregation, and compacted to dense and unyielding equivalent to having 95 percent of its MDD. Under such condition, the geotechnical engineer should be notified and provide inspections as needed.

Another backfill alternative is flowable, low-strength concrete fill having at least 600 pounds per square inch (psi) 28-day compressive strength and will harden within 8 hours after it is placed.

Fill and Backfill Soils – All fill and backfill soils should be free of organic matter, debris, and rock fragments or lumps larger than 4 inches or one-half the compacted layer thickness, whichever is less, in greatest dimension. In addition, within the top 2 feet of the finished subgrade elevations, the fill soils should be non-expansive with plasticity index 12 percent maximum, liquid limit no more than 35 percent, and not more than 35 percent finer than No. 200 mesh sieve

(silt and clay sizes). The fill and backfill soils should have adequate medium- to coarse-grained sand for dense compaction.

The on-site excavated limestone sand and gravel soils meeting the above criteria will be suitable for reuse as fill and backfill soils. The on-site excavated silty soils should only be used for backfill in non-load-bearing areas such as landscaping and utility trenches outside of load-bearing-areas and below the top 2 feet of final or finished surface.

Potential Hard Rock Excavation – In general, the on-site moderately hard to hard coralline limestone rock mass will be difficult to excavate and will require an excavator with vibratory rock breaker for hard rock excavations.

Structural Foundation Supports

Main Generator Building – The main generator building should be supported on rigid concrete mat foundation at least 2 feet deep below finished floor elevation, on a 3-foot thick layer of densely compacted, subbase quality silty limestone sand/gravel soil having at least 95 percent of its MDD, extending 5 feet wider all around the concrete mat foundation.

The concrete mat foundation can be designed with the following criteria:

1. Allowable subgrade bearing pressures

Dead plus live loads (psf = pounds per square foot)	3000 psf
Total design loads, including wind or seismic forces	4000 psf

2. Resistance to lateral loads.

Friction across mat foundation bottom,

(percent of total dead load at the mat foundation bottom)	30
Passive soil resistance (with 95 percent MDD limestone sand/gravel backfill around the mat foundation) on one mat foundation face. Triangular distribution or equivalent fluid pressure (pcf = psf per foot of depth)	300 pcf

The concrete mat foundation excavation should extend at least 3 feet below the mat foundation bottom, including at least 5 feet wider all around the mat foundation. The geotechnical engineer should inspect the final exposed surface of the mat foundation subgrade to ascertain that it is adequate, and if any additional excavation is needed.

Thereafter, the final exposed surface should be lightly scarified to about 6 to 8 inches deep, moisture conditioned as necessary and compacted to at least 95 percent of its MDD, with a uniform, dense and unyielding surface. Then backfill with approved limestone sand/gravel soil of subbase quality (same as use for pavement construction) in 6-inch compacted layer to at least 95 percent of its MDD with a dense and unyielding surface, including edges and corners. During and after this process, any disturbed surface should be recompacted as necessary to have a uniform 95 percent of its MDD.

The foundation strictly constructed as recommended herein should be designed to tolerate 2-inch total settlement and 1-inch differential settlement between the center and the edges, and 1/2-inch differential settlement between the center and the corners.

Secondary Buildings – The other buildings can be supported on conventional, shallow spread footings and/or continuous footings resting either directly on the natural coralline limestone formation or on densely compacted, approved limestone sand/gravel soil fill having at least 95 percent of its MDD.

The footings can be designed with the following criteria:

1. Allowable subgrade bearing pressures

Dead plus live loads (psf = pounds per square foot)	2500 psf
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Total design loads, including wind or seismic forces	3320 psf
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2. Resistance to lateral loads.

Friction across footing bottoms, (percent of total dead loads at the footing bottoms)	30%
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Passive soil resistance (triangular Distribution) for backfill with at least 95 percent MDD, on one footing face; ignore top one foot if not directly under concrete slab or asphalt pavement. (pcf = psf per foot of depth, or pounds per cubic foot.)	300 pcf
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3. Minimum footing bottom depth, below lowest adjacent final grade	2 feet
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4. Minimum footing width	2 feet
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During construction, any exposed silt and loose to medium dense limestone sand/gravel soil should be removed entirely or to a minimum depth to be determined by the geotechnical engineer, including at least one foot wider all around the footings. The final exposed surface of the footing subgrade should be

lightly scarified and leveled to about 6" deep, moisture conditioned as necessary and compacted to at least 95 percent of its MDD with a dense and unyielding surface. Thereafter, backfill the additional excavated depth with approved limestone subbase soil not more than 8 inches in loose thickness, moisture condition as necessary and compact to at least 95 percent MDD of the compacted soil.

If the exposed footing bottom is very weak to weak limestone and tested to be less than 95 percent of its MDD, it should be excavated entirely until moderately hard to hard limestone is exposed, or to a minimum depth to be determined by the geotechnical engineer, including at least one foot wider all around the footings. Then, replaced with subbase soil compacted to at least 95 percent of its MDD in 8-inch maximum loose layers.

If the exposed footing bottom is moderately hard to hard coralline limestone formation (to be verified by the geotechnical engineer), scarify and recompact the top 4 to 6 inches and compacted to at least 95 percent of its MDD or equivalent dense and unyielding, including 6 inches wider all around. If this cannot be achieved because the exposed surface is hard to excavate or scarify, fill the uneven limestone rock surface with lean concrete or flowable fill having at least 600 psi (pounds per square inch) 28-day compressive strength that will harden within 8 hours.

The footings strictly constructed as recommended herein should be designed to tolerate 1-inch total settlement and 1-inch differential settlement across the width of the building.

Utility Trench Excavation

Prior to trenching operation, the areas should be cleared of vegetation, debris, and any obstacles. Topsoil should be stripped and removed away. Stripping depth likely will be shallow or a few to several inches.

During the excavation, the contractor should not stockpile materials or place equipment within a 10-foot distance of the trenches. The contractor should be responsible for the safety of men and equipment working or trafficking near or inside the excavations.

The on-site coralline limestone is mostly hard rock that will require rock breaker to excavate.

Backfill

Pipe Bedding - Prior to placing the new underground utility, a layer of bedding sand 6 inches thick should be uniformly spread at the trench bottom. The bedding sand should consist of non-plastic, relatively clean sandy soil meeting the following requirements:

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
3/8 inch	100
No. 4	50 – 100
No. 40	20 – 60
No. 200	0 - 6
Liquid Limit	= 25 maximum
Plasticity index	= 6 maximum

The sandy soil should be moisture conditioned as necessary and compacted to 90 percent of its maximum dry density. If clean, coarse grained sand and/or fine gravel are used, the compaction may be limited to achieving a dense and relatively unyielding surface.

From trench bottom to 12 inches above the utility - Backfill should be bedding sand meeting the above requirements. The bedding soil should be placed around the underground utilities until it is about 6 to 8 inches above the underground utilities. Thereafter, moisture condition as necessary and carefully compact until dense (without damaging the underground utility) having 90 percent of its maximum dry density.

From 12 inches above the pipes to 18 inches below finished roadway surface – The on-site excavated soils free of fragments or lumps larger than 4 inches in greatest dimension and debris or organic matter, may be used as backfill. Fill and backfill soils should be placed in 8-inch maximum loose layers, moisture conditioned as necessary and compacted to at least 90 percent of its maximum dry density.

The above backfill may be extended to the final grades for areas outside of the roadway, road shoulders, or in non-load bearing areas.

Upper 18 inches of roadway and shoulder subgrades – Backfill should be subbase or structural fill soil meeting the following requirements:

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
4 inches	100

No. 4		50 - 100
No. 40		15 - 60
No. 200		5 - 25
Liquid limit	=	25 maximum
Plasticity index	=	6 maximum
California Bearing Ratio (CBR)	=	30 minimum

The soil should be placed in 10-inch loose layers, moisture conditioned as necessary and compacted to at least 95 percent of its maximum dry density.

In areas where pipe line trench crosses or directly under existing roadway, the upper 8 inches should be crushed aggregate base course meeting the following criteria:

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
2 inches	100
1-1/2 inches	90 - 100
3/4 inch	50 - 80
No. 4	30 - 60
No. 40	15 - 30
No. 200	5 - 13
California Bearing Ratio	= 100 minimum
Los Angeles abrasion wear	= 45 maximum
Liquid limit	= 25 maximum
Plasticity index	= 6 maximum

Aggregate base course should be placed uniformly without segregation, moisture conditioned as necessary and compacted with a vibratory roller to provide a uniform, dense and non-yielding surface with 100 percent of its maximum dry density.

Thrust Block – Where it is applicable, thrust block for underground lines can be designed with 2500 psf against moderately hard to hard limestone rock that will not weaken and in undisturbed condition after the excavation, or with at least 2 feet wide of non-expansive limestone sand/gravel fill compacted to at least 95 percent of its maximum dry density.

Subgrade Preparation for Concrete On-Ground Slabs

The finished subgrade for the on-grade or on-ground concrete slabs should be compacted to a uniform, dense and unyielding surface with at least 95 percent of its MDD, as recommended above. The concrete slabs should be directly underlain with 6 inches thick of compacted aggregate base course (meeting standard road paving base course requirements), uniformly spread without segregation, moisture condition as necessary and compact to dense and unyielding with at least 95 percent of its MDD.

Where penetration of moisture vapor through the concrete on-ground slabs is objectionable, an impervious membrane or durable plastic sheet should be placed between the compacted aggregate base course and the concrete slabs.

Retaining Walls (if applicable)

The retaining walls, if there is any, can be supported on continuous wall footings resting on either directly on the native coralline limestone formation or on densely compacted limestone sand/gravel soil fill having at least 95 percent of its MDD. The wall footings can be designed with the same design values recommended for the building foundation support, except that the wall footings

should be at least 2 feet below the lowest adjacent finished grade, or 1 foot for walls less than 4 feet in height.

The retaining walls should be designed to resist active lateral earth pressure of 35 psf per foot of depth (or pcf = pounds per cubic foot) equivalent fluid pressure. However, with seismic consideration, the walls should be designed for 45 pcf, although there is no assurance of how the retaining walls will behave under severe earthquake shaking.

Wall back-drain consisting of a one-foot width of 3/4-inch to 1-inch maximum size concrete coarse aggregate should be placed immediately behind the wall to prevent buildup of hydrostatic pressure behind the wall and to act as a tension-breaker should the backfill ever settle away from the wall. Weep holes should be installed at the front of the wall approximately one foot above the ground.

Wall backfill should have at least 1.5 feet wide of approved, non-expansive limestone sand/gravel soil compacted to at least 95 percent of its MDD immediately behind the walls, in 8 inch maximum compacted layers, without over-stressing or damaging the walls. However, the top one-foot thick of the wall backfill should be densely compacted limestone sand and gravel fill with an impervious surface, or should be clayey silt compacted in two equal layers to 90 percent of its MDD. The remaining wall backfill should also be the approved, limestone sand and gravel fill similarly placed and compacted, including the top one foot thick of impervious backfill soil as recommended above. The contractor should not damage the wall during wall backfilling and compaction.

The wall footings strictly constructed as recommended above should be designed to tolerate 1/2-inch total settlement and 1/2-inch differential settlement measured every 40-foot length of the retaining walls.

Flexible Asphalt Pavement

We recommend the following new asphalt pavement sections for access road or where heavy trucks trafficking and parking areas for passenger vehicles and light pick-up trucks:

	<u>Asphalt Concrete</u>	<u>Aggregate Base</u>
Main access road and heavy truck trafficking and parking areas	3 inches	8 inches
Passenger vehicles and light pick-up truck trafficking and parking area	2 inches	6 inches

The pavement subgrades should consist of at least 12 inches of non-expansive limestone sand/gravel soil fill or equivalent subbase course, compacted to a minimum of 95 percent of its MDD in two equal layers. The pavement subgrades should be either the natural, undisturbed coralline limestone or densely compacted, non-expansive limestone sand/gravel soil fill with at least 95 percent of its MDD.

The base course aggregate should conform to the following requirements:

<u>Sieve Size</u>	<u>Cumulative Percent Finer by Weight</u>
2 inches	100
1.5 inches	90 - 100
0.75 inch	50 - 80
No. 4	30 - 60
No. 40	15 - 30
No. 200	5 - 13

Fraction passing No. 200 sieve should not be more than 1/2 of fraction passing No. 40 sieve.

California Bearing Ratio	100 minimum
Abrasion wear	40 maximum
Liquid limit	25 maximum
Plasticity index	6 maximum

The base course aggregate should be uniformly spread without segregation, moisture conditioned as necessary and compacted with a vibratory roller at least 10 tons in weight to provide a uniform, dense, and unyielding surface with at least 98 percent of its MDD. Care should be taken during the spreading of the base aggregate to avoid segregation of the aggregate.

Prior to placing the asphalt paving mixture, the prepared base course should be sprayed with emulsified bituminous prime coat that should be allowed to have a dry texture.

Construction Inspection and Testing

During construction, the earthwork and foundation preparations, including the footing excavations and backfills, and pavement installation, should be performed under geotechnical engineering inspection and testing as required to ascertain that the works are performed in accordance with the project plans and specifications and the geotechnical engineer's recommendations, and to modify the recommendations should unanticipated subsurface conditions are encountered.

INVESTIGATION LIMITATIONS

The findings and recommendations presented in this report are based on the information obtained from the test borings performed for this investigation. Unanticipated subsurface conditions may be encountered during construction and cannot be fully determined by the test borings.

Therefore, some contingency fund is thus recommended for the project to accommodate these possible costs.

This report was prepared for the exclusive use of the project design team for this project and the government; the use by others without our express written consent is prohibited.

The following plates are included to complete this geotechnical investigation report prepared for the GPA New Power Plant, to be constructed in Dededo, Guam.

- | | | |
|----------------------|---|--|
| Plate 1 | - | Test Boring and Resistivity Test Location Plan |
| Plates 2 through 13 | - | Logs of Borings 1 through 12, |
| Plate 14 | - | Soil Classification Chart and Key to Test Data |
| Plates 15 through 19 | - | Particle Size Distribution Test Report |
| Plate 20 | - | Liquid and Plastic Limits Test Report |
| Plate 21 | - | Direct Shear |
| Plate 22 | - | Consolidation |
| Appendix A | - | Earth Resistivity Test Results |

Respectfully submitted,

GEO-ENGINEERING & TESTING, INC.

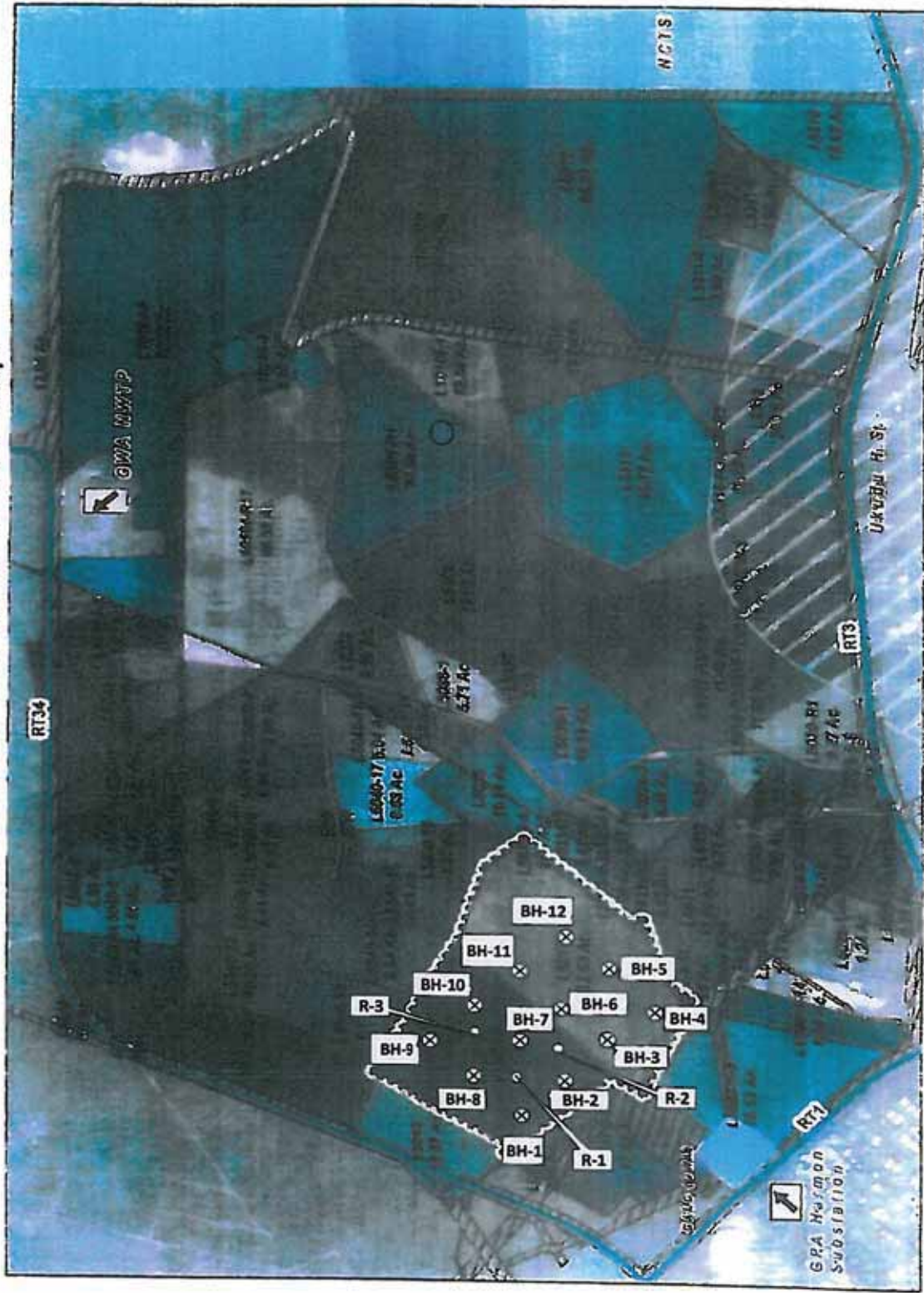


Michael C. Rayo
Project Manager



Ukrit Siriprusanan
Civil Engineer - 360

GPA Statement of Interest Map



THIS MAP WAS PREPARED FOR INFORMATIONAL PURPOSES ONLY

Ukudu, Dededo

- Major Routes
- Utility Easements
- School Buffer



Not to Scale

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TEST BORING AND RESISTIVITY TEST LOCATION PLAN
GPA NEW POWER PLANT

PLATE

1

Job No. 127.05 Appr. US/ Date 12/31/18

DEDEDO

GUAM

Notes:

Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in./)blow

LOG OF TEST BORING 1

DATE December 08, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
0	0	BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL (GM) - medium dense, moist					14.5		SA
	0.6	LIGHT BROWN-WHITE CORALLINE LIMESTONE - weak				33	10.6	98	SA
3	1.2	moderately hard from 9'				42			
6	1.8								
	2.4	hard from 20'				55			
9	2.4								
	3.6								
12	3.6					55			
	4.2								
15	4.2								
	4.8								
18	5.4					53			
	6								
21	6								

GEO-ENGINEERING & TESTING, INC. Geotechnical & Material Testing Engineers	LOG OF TEST BORING 1 GPA NEW POWER PLANT DEDEDO, GUAM	PLATE 2
	Job No. <u>127.05</u> Date <u>12/10/18</u>	

Notes:

█ Relatively undisturbed sample SPT = Standard Penetration Test
⊗ SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 1

DATE December 08, 2018
EQUIPMENT 8" Dia. Hollow Stem Auger
ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
24	6.6					82/9"			
	7.2								
	7.8								
27	8.4						60/5"		
	9								
30	9.6	very weak from 32'				25			
33	10.2	(no free water encountered)							

GEO-ENGINEERING & TESTING, INC.
Geotechnical & Materials Testing Services

Job No. 127.05 Date 12/10/18



LOG OF TEST BORING 1 (continued)

GPA NEW POWER PLANT
DEDEDO, GUAM

PLATE

2
(cont'd)

Notes:










 Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 3

DATE December 15, 2018

EQUIPMENT 8" Dia. Hollow Stem Auger

ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
0	0	BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL (GM) - medium dense, moist							SA
	0.6	LIGHT BROWN-WHITE CORALLINE LIMESTONE - weak				46	12.1	108	
3	1.2					63			
6	1.8	moderately hard from 7'				63			
9	3.0								SA
12	3.6	hard from 12'				7/0"			
15	4.5								
18	5.4	moderately hard from 17'				51			
21	6.3								

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LOG OF TEST BORING 3

GPA NEW POWER PLANT


DEDEDO, GUAM

PLATE

4

Job No. 127.05 Date 12/18/18

Notes:


 Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in./)blow

LOG OF TEST BORING 3

DATE December 15, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
	6.6								
	7.2	weak from 22'				46			
24	7.8								
27		hard at 27' (no free water encountered)				15/0"			

GEO-ENGINEERING & TESTING, INC.
 Geotechnical & Materials Testing Services

Job No. 127.05 Date 12/18/18



LOG OF TEST BORING 3 (continued)

GPA NEW POWER PLANT
 DEDEDO, GUAM

PLATE

4
(cont'd)

Notes:











 Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 4

DATE December 15, 2018

EQUIPMENT 8" Dia. Hollow Stem Auger

ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
0	0	DARK BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL (GM) - medium dense, moist LIGHT BROWN-WHITE CORALLINE LIMESTONE - weak							
3	0.6					34	8.1	104	SA
6	1.2								
9	1.8	moderately hard from 7'				83			
12	2.4								
15	3.6					86			
18	4.2								
21	4.8								
	5.4					66			
	6								

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LOG OF TEST BORING 4
GPA NEW POWER PLANT
DEDEDO, GUAM

PLATE

5

Job No. 127.05 Date 12/18/18

Notes:



█ Relatively undisturbed sample SPT = Standard Penetration Test
 ▨ SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 4

DATE December 15, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION --

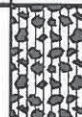

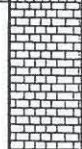
DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft.	LABORATORY TESTS
24	6.6		█			64			
	7.2		█						
	7.8		█						
27	8.4	weak from 27'	█			38			
	9	(no free water encountered)							

Notes:

 Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 5

DATE December 09, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
0	0	BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL (GM) - medium dense, moist					24.2		SA LL=56; PI=8
	0.6	REDDISH BROWN GRAVELLY GRAVELLY SILT (ML) - medium stiff, moist				6	36.7	63	SA LL=42; PI=11
3	1.2								
6	1.8								
	2.4	LIGHT BROWN-WHITE CORALLINE LIMESTONE - very weak				25			
9	3								
12	3.6	hard from 12'				34/0"			
	4.2								
15	4.8								
	5.4	moderately hard from 17'				53			
18	6								
21	6								

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Geotechnical & Material Testing Engineers

Job No. 127.05 Date 12/10/18



LOG OF TEST BORING 5

GPA NEW POWER PLANT
DEDEDO, GUAM

PLATE



6

Notes:

 Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 6

DATE December 09, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
0	0	DARK REDDISH BROWN SANDY SILT (ML) - soft, moist							
3	0.6					4	15.7	72	LL=42; PI=12
6	1.2								
9	1.8	medium stiff from 7'				8			Consol
12	2.4								
15	3.0	LIGHT BROWN-WHITE CORALLINE LIMESTONE - hard							
18	3.6					48/1"			
21	4.2								
	4.8						60/2"		

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 Geotechnical & Material Testing Engineers

Job No. 127.05 Date 12/10/18



LOG OF TEST BORING 6

GPA NEW POWER PLANT
 DEDEDO, GUAM

PLATE

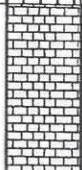
7

Notes:

 Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 7

DATE December 09, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
0	0	REDDISH BROWN CLAYEY SILT (MH) - medium stiff, moist						
3	0.6				6	44.3	63	SA LL=50; PI=13
6	1.2							
9	1.8	stiff from 7'			14			
12	2.4							
15	3.0							
18	3.6	hard from 12'			36			TX=2600 (675) psf
21	4.2							
	4.8							
	5.4							
	6	LIGHT BROWN-WHITE CORALLINE LIMESTONE - moderately hard			74			



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Job No. 127.05 Date 12/11/18

LOG OF TEST BORING 7
 GPA NEW POWER PLANT
 DEDEDO, GUAM

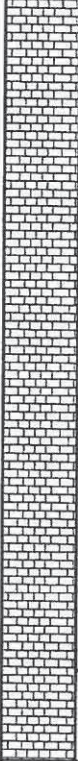
PLATE
8

Notes:

 Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 7

DATE December 09, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
24 27 30 33	6.6 7.2 7.8 8.4 9 9.6 10.2	<p>hard from 22'</p> <p>(no free water encountered)</p>		X		60/5" 34/1" 30/0"			

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Geotechnical & Materials Testing Services

LOG OF TEST BORING 7 (continued)



PLATE

Job No. 127.05 Date 12/11/18

GPA NEW POWER PLANT
 DEDEDO, GUAM

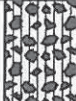
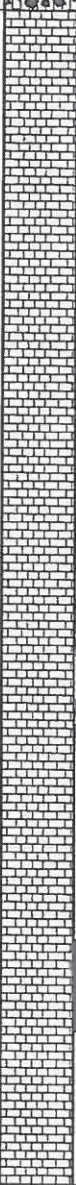
8
 (cont'd)

Notes:

 Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 8

DATE December 08, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
0	0	DARK BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL (GM) - medium dense, moist					27.6		SA
	0.6	LIGHT BROWN-WHITE CORALLINE LIMESTONE - weak				31	12.5	91	SA
	3								
	1.2								
	6					35			
	1.8								
	2.4								
	9								
	3								
	12					40			
	3.6								
	4.2								
	15								
	4.8								
	18								
	5.4					30			
	6								
21									

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LOG OF TEST BORING 8

GPA NEW POWER PLANT
DEDEDO, GUAM

PLATE
9


Job No. 127.05 Date 12/11/18

Notes:

 Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 8

DATE December 08, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
24	6.6	moderately hard from 22'				68			
	7.2								
27	7.8								
	8.4	weak from 27'				41			
30	9.0								
	9.6								
33	10.2	(no free water encountered)				42			

GEO-ENGINEERING & TESTING, INC.
Geotechnical & Materials Testing Services

LOG OF TEST BORING 8 (continued)



PLATE

Job No. 127.05 Date 12/11/18

GPA NEW POWER PLANT
 DEDEDO, GUAM



9
 (cont'd)

Notes:

 Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 9

DATE December 08, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION -

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft.	LABORATORY TESTS
0	0	DARK BROWN SANDY SILT (MH) - soft, moist				13	14.7	96	SA
0.6		LIGHT BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL (GM) - medium dense, moist							
3	1.2								
6	1.8								
9	2.4								
9	3	LIGHT BROWN-WHITE CORALLINE LIMESTONE - very weak				20			
12	3.6								
15	4.2								
18	4.8	moderately hard from 17'							
21	5.4								
	6								

GEO-ENGINEERING & TESTING, INC.
Geotechnical & Material Testing Engineers

LOG OF TEST BORING 9
GPA NEW POWER PLANT
DEDEDO, GUAM

PLATE

10


Job No. 127.05 Date 12/11/18

Notes:

■ Relatively undisturbed sample SPT = Standard Penetration Test
☒ SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 9

DATE December 08, 2018
EQUIPMENT 8" Dia. Hollow Stem Auger
ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
	6.6	hard from 22'				70/9"			
24	7.2								
27	7.8								
	8.4	weak from 27'				42			
	9	(no free water encountered)							

GEO-ENGINEERING & TESTING, INC.
Geotechnical & Materials Testing Services

LOG OF TEST BORING 9 (continued)

PLATE

Job No. 127.05 Date 12/11/18

GPA NEW POWER PLANT
DEDEDO, GUAM

10
(cont'd)

Notes:

Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 10

DATE December 08, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION -

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
0	0	DARK BROWN GRAVELLY SANDY SILT (ML) - soft, moist							
	0.6	dark reddish brown, very stiff from 2'				23	22.6	108	#200=57%
	3								
	1.2								
6	1.8	LIGHT BROWN-WHITE CORALLINE LIMESTONE - hard				97/8"	10.4	115	SA
	2.4								
9	3								
12	3.6	moderately hard from 12'				55			
	4.2								
15	4.8								
	5.4					81			
	6								
21	6								

GEO-ENGINEERING & TESTING, INC.
Geotechnical & Material Testing Engineers

LOG OF TEST BORING 10

GPA NEW POWER PLANT

DEDEDO, GUAM

PLATE

11



Job No. 127.05 Date 12/11/18

Notes:

Relatively undisturbed sample SPT = Standard Penetration Test
SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 10

DATE December 08, 2018
EQUIPMENT 8" Dia. Hollow Stem Auger
ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
	6.6	weak from 22'				48			
24	7.2								
	7.8	(no free water encountered)				36			
27	8.4								
	9								

GEO-ENGINEERING & TESTING, INC.
Geotechnical & Materials Testing Services

LOG OF TEST BORING 10 (continued)

PLATE

Job No. 127.05 Date 12/11/18

GPA NEW POWER PLANT

DEDEDO, GUAM

11
(cont'd)

Notes:

Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 11

DATE December 08, 2018

EQUIPMENT 8" Dia. Hollow Stem Auger

ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS	
0	0	DARK REDDISH BROWN SANDY SILT (ML) - stiff, moist				8	14.5		SA	
0.6	0.6	LIGHT BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL (GM) - loose, moist								
3	1.2									
6	1.8	very loose from 7'				3				
9	2.4					22				
12	3.6	medium dense from 12'								
15	4.2	LIGHT BROWN-WHITE CORALLINE LIMESTONE - very weak								
18	4.8									
21	5.4	moderately hard from 17'				76				

GEO-ENGINEERING & TESTING, INC.
Geotechnical & Material Testing Engineers

LOG OF TEST BORING 11

PLATE

Job No. 127.05 Date 12/11/18

GPA NEW POWER PLANT

12

DEDEDO, GUAM

Notes:

Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 11

DATE December 08, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION



DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
24	6.6		[Brick Pattern]			69			
27	7.2		[Brick Pattern]						
	7.8		[Brick Pattern]						
	8.4		[Brick Pattern]			73			
	9	(no free water encountered)							

GEO-ENGINEERING & TESTING, INC.
Geotechnical & Materials Testing Services
 Job No. 127.05 Date 12/11/18

LOG OF TEST BORING 11 (continued)
 GPA NEW POWER PLANT
 DEDEDO, GUAM

PLATE
12
 (cont'd)

Notes:

 Relatively undisturbed sample SPT = Standard Penetration Test
 SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
 free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 12

DATE December 09, 2018
 EQUIPMENT 8" Dia. Hollow Stem Auger
 ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
0	0	DARK REDDISH BROWN SANDY SILT (ML) - medium stiff, moist							
	0.6	LIGHT BROWN-WHITE CORALLINE LIMESTONE - hard				41/5"	7.5	98	SA
3	1.2								
6	1.8	very weak from 7'			20				
9	2.4								
12	3.6	weak from 12'				49			
15	4.2								
18	4.8	hard from 17'				20/0"			
21	6								

GEO-ENGINEERING & TESTING, INC.
Geotechnical & Material Testing Engineers

Job No. 127.05 Date 12/11/18

LOG OF TEST BORING 12
 GPA NEW POWER PLANT
 DEDEDO, GUAM

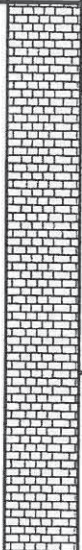
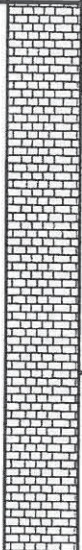
PLATE
13

Notes:

█ Relatively undisturbed sample SPT = Standard Penetration Test
⊠ SPT/Bulk Sample based on 63.5 kg (140 lb) hammer
free falling 76 cm (30 in.)/blow

LOG OF TEST BORING 12

DATE December 09, 2018
EQUIPMENT 8" Dia. Hollow Stem Auger
ELEVATION --

DEPTH (FT.)	DEPTH (M)	DESCRIPTION	GRAPHIC LOG	SAMPLE TYPE	DRILL RATE (time/foot)	SPT, N-Value (Blows/ft)	MOISTURE CONTENT, %	DRY DENSITY, lb/cu.ft	LABORATORY TESTS
24	6.6					30/0"			
	7.2								
27	7.8					30/0"			
	8.4								
	9	(no free water encountered)							

GEO-ENGINEERING & TESTING, INC.
Geotechnical & Materials Testing Services

Job No. 127.05 Date 12/11/18

LOG OF TEST BORING 12 (continued)

GPA NEW POWER PLANT

DEDEDO, GUAM

PLATE

13

(cont'd)

MAJOR DIVISIONS			SYMBOL	TYPICAL NAMES
COARSE GRAINED SOILS MORE THAN HALF IS LARGER THAN # 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN No. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL - SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL - SAND - SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL - SAND - CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN No. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, POORLY GRADED SAND - SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN HALF IS SMALLER THAN # 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILT WITH SLIGHTLY PLASTICITY	
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
		OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS	
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
HIGHLY ORGANIC SOILS		Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS	

SOIL CLASSIFICATION SYSTEM

SA = Sieve Analysis
 LL = Liquid Limit
 PI = Plasticity Index
 Tx = Triaxial
 Consol = Consolidation
 DS = Direct Shear



= "Disturbed" Sample
 = "Undisturbed" Sample

GEO-ENGINEERING & TESTING, INC.
 Geotechnical & Material Testing Engineers

SOIL CLASSIFICATION CHART
 GPA NEW POWER PLANT

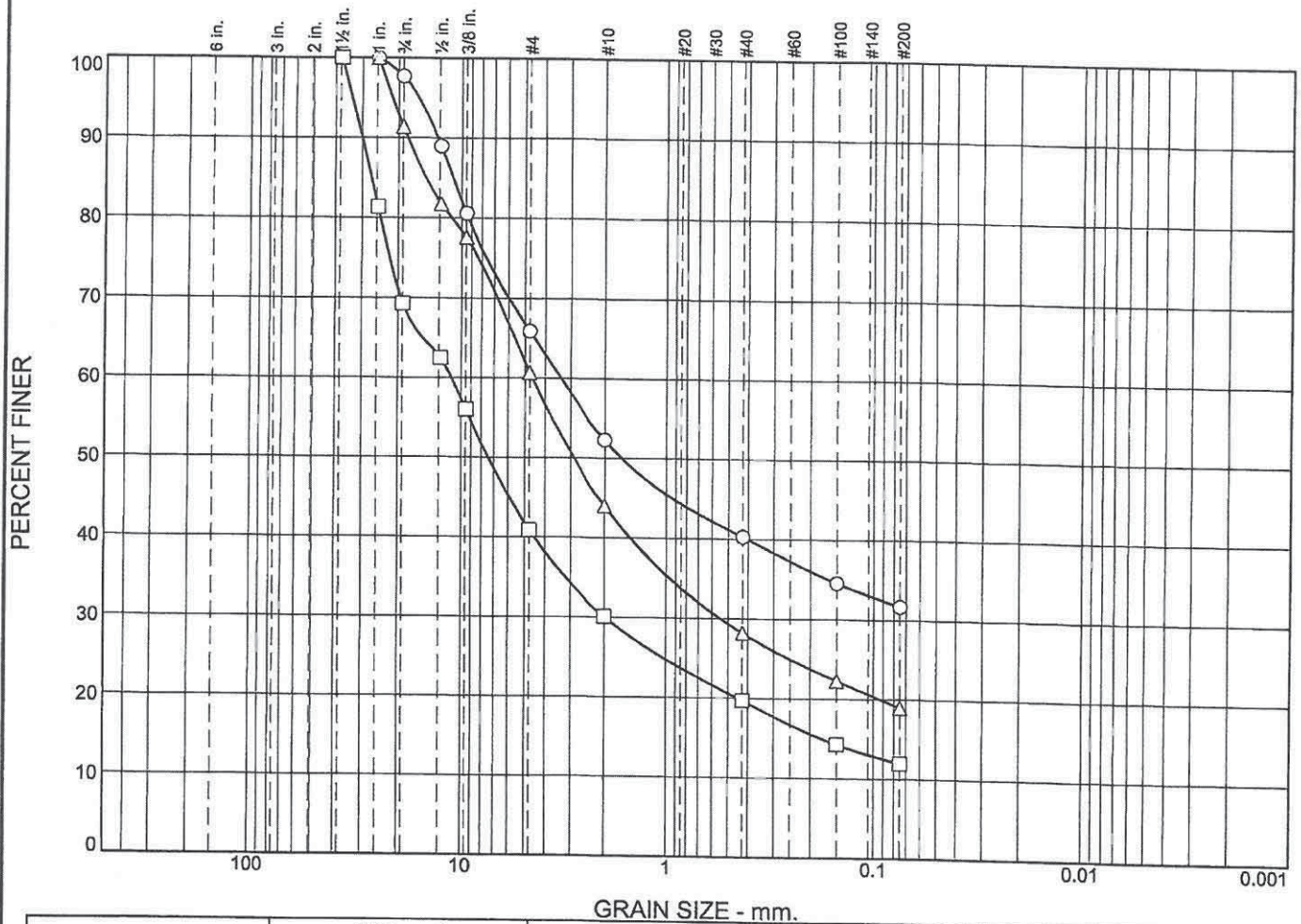
PLATE

Job No. 127.05 Appr. US/ Date: 01/28/19 DEDEDO

GUAM

14

Particle Size Distribution Report



GRAIN SIZE - mm.

	% +3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0	2	32	14	12	8	32			
□	0	31	28	11	10	8	12			
△	0	9	30	17	16	9	19			
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○			10.9633	3.3550	1.6465					
□			26.9432	11.0920	7.4513	1.9781	0.1763			
△			14.7700	4.6181	2.8836	0.5461				

Material Description

- BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL
- LIGHT BROWN-WHITE CORALLINE LIMESTONE
- △ LIGHT BROWN-WHITE CORALLINE LIMESTONE

USCS

AASHTO

GM
ROCK
ROCK

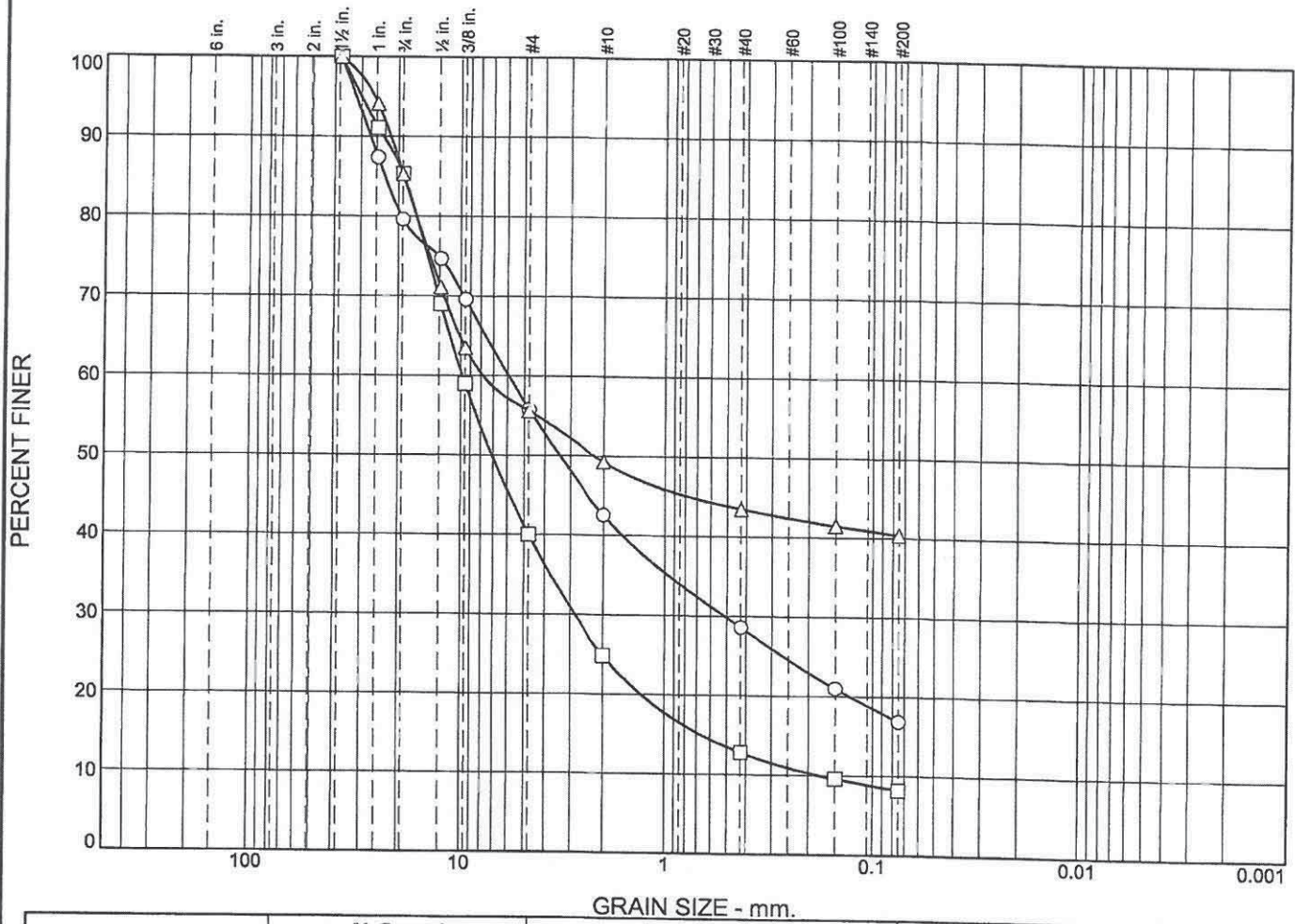
Project No. 127.05 **Client:** Guam Power Authority
Project: GPA NEW POWER PLANT

Remarks:

- **Source of Sample:** 1 **Depth:** .5
- **Source of Sample:** 1 **Depth:** 2
- △ **Source of Sample:** 2 **Depth:** 2

GEO-ENGINEERING & TESTING, INC.
 Geotechnical & Materials Testing Engineers

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0	20	24	13	14	12	17			
□	0	15	45	15	12	5	8			
△	0	15	29	7	5	4	40			
⊗	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○			23.1877	5.9353	3.3782	0.5116				
□			18.8045	9.7884	7.0752	2.8290	0.6665	0.1778	4.60	55.06
△	56	48	18.8396	7.8251	2.2193					

Material Description	USCS	AASHTO
○ LIGHT BROWN-WHITE CORALLINE LIMESTONE	ROCK ROCK GM	
□ LIGHT BROWN-WHITE CORALLINE LIMESTONE		
△ BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL		

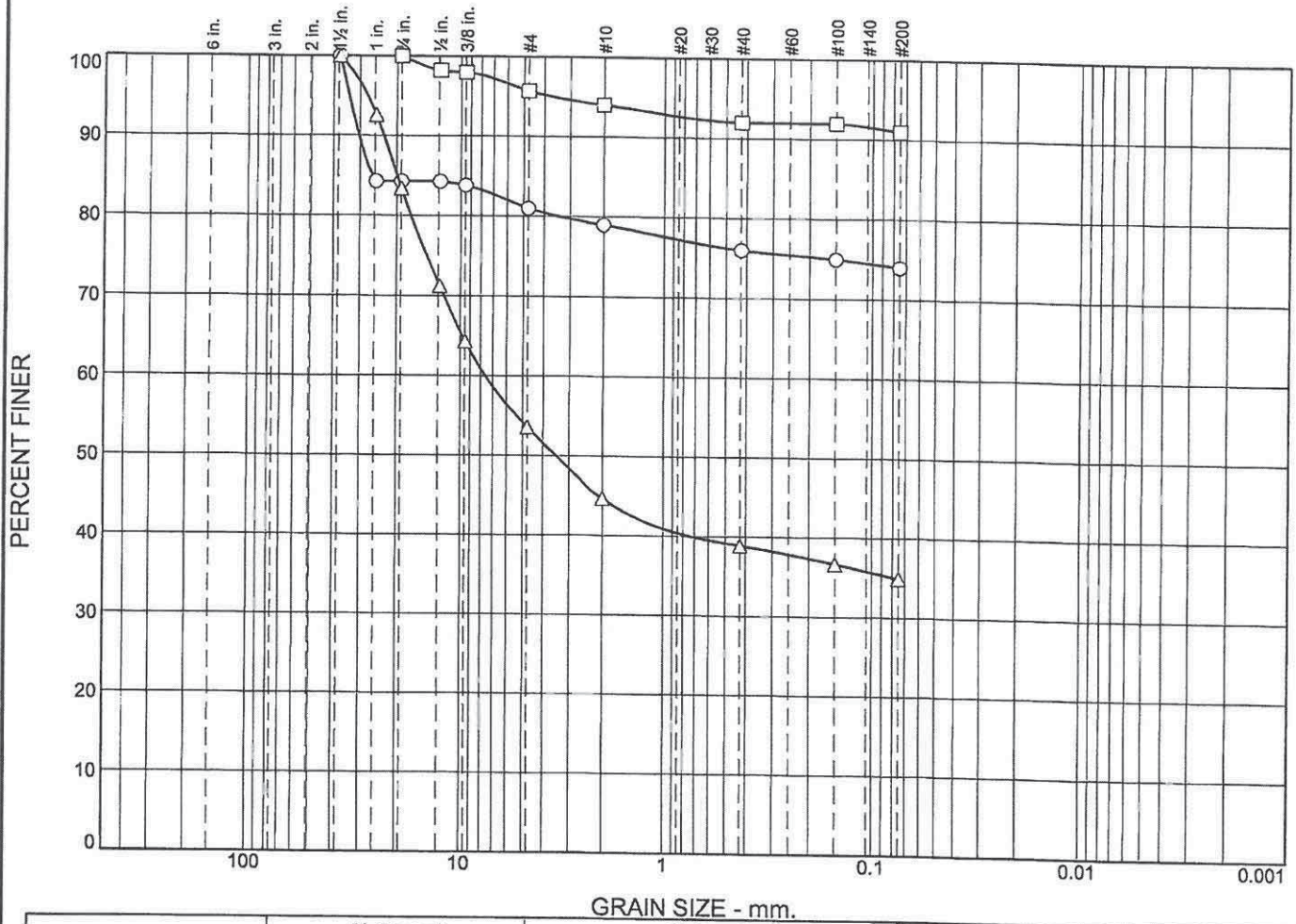
Project No. 127.05 **Client:** Guam Power Authority
Project: GPA NEW POWER PLANT

○ **Source of Sample:** 3 **Depth:** 2
 □ **Source of Sample:** 4 **Depth:** 2
 △ **Source of Sample:** 5 **Depth:** .5

Remarks:

GEO-ENGINEERING & TESTING, INC.
 Geotechnical & Materials Testing Engineers

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0	16	3	2	3	2	74			
□	0	0	4	2	2	1	91			
△	0	17	29	9	6	4	35			
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○	42	31	25.9923							
□	50	37								
△			19.9018	7.6160	3.4699					

Material Description	USCS	AASHTO
○ REDDISH BROWN GRAVELLY GRAVELLY SILT	ML	
□ REDDISH BROWN CLAYEY SILT	MH	
△ DARK BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL	GM	

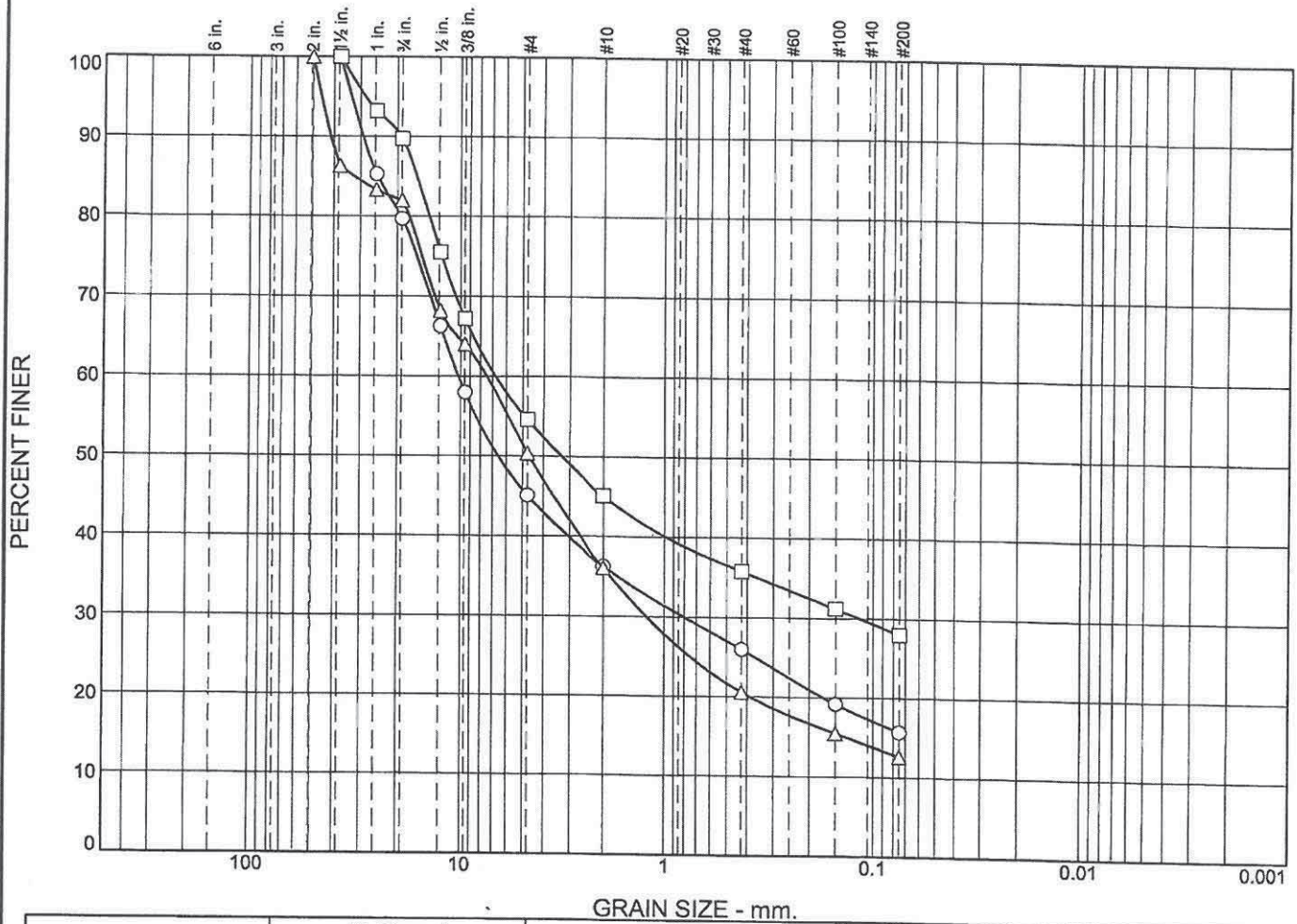
Project No. 127.05 **Client:** Guam Power Authority
Project: GPA NEW POWER PLANT

○ **Source of Sample:** 5 **Depth:** 2
 □ **Source of Sample:** 7 **Depth:** 2
 △ **Source of Sample:** 8 **Depth:** .5

Remarks:

GEO-ENGINEERING & TESTING, INC.
 Geotechnical & Materials Testing Engineers

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0	20	35	9	10	10	16			
□	0	10	35	10	9	8	28			
△	0	18	32	14	15	8	13			
×	LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
○			24.6928	10.2168	6.5679	0.8022				
□			16.1381	6.7755	3.2721	0.1153				
△			32.1107	7.4433	4.6593	1.2210	0.1330			

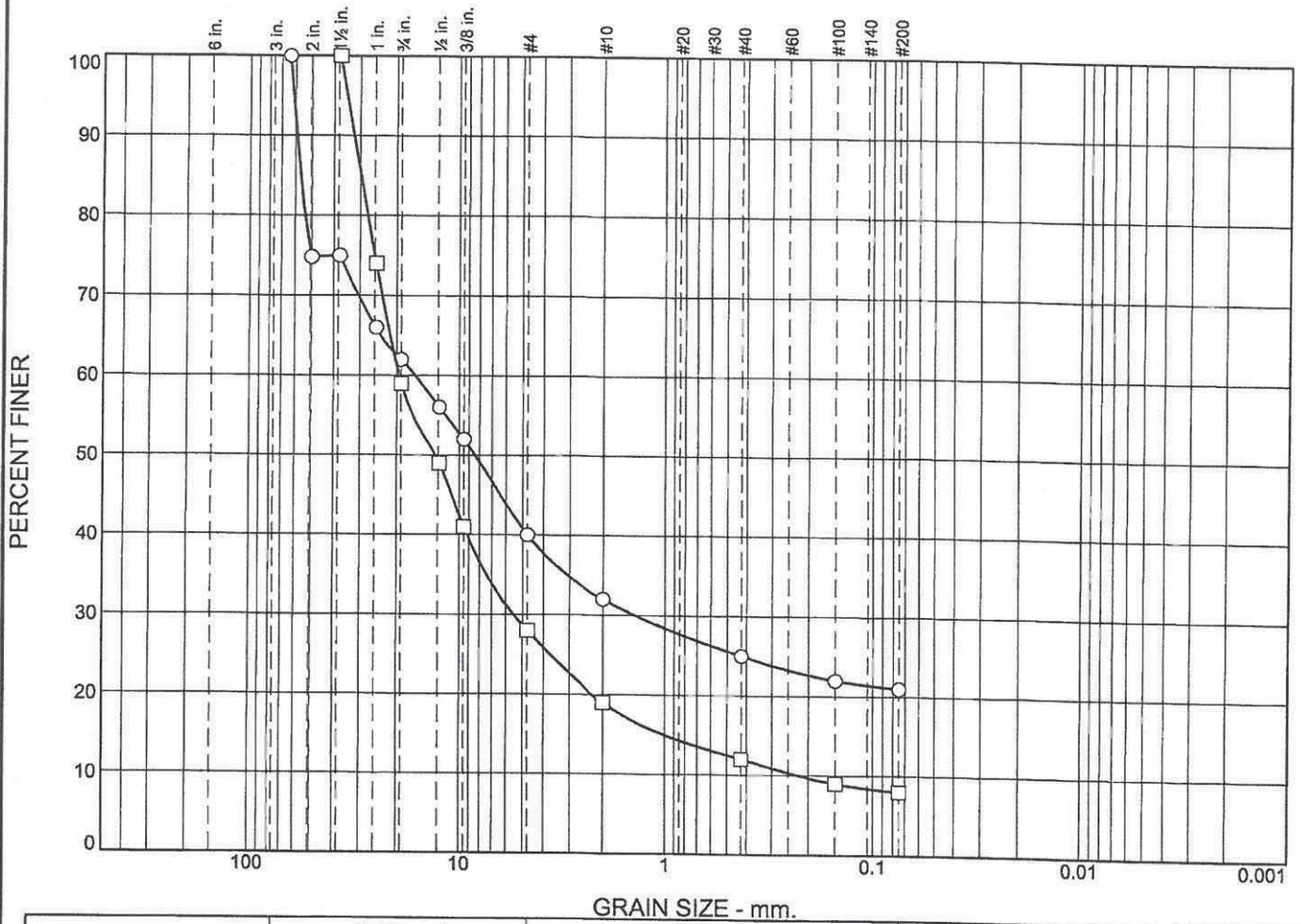
Material Description							USCS	AASHTO
○ LIGHT BROWN-WHITE CORALLINE LIMESTONE							ROCK GM ROCK	
□ LIGHT BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL								
△ LIGHT BROWN-WHITE CORALLINE LIMESTONE								

Project No. 127.05 **Client:** Guam Power Authority
Project: GPA NEW POWER PLANT

○ **Source of Sample:** 8 **Depth:** 2
 □ **Source of Sample:** 9 **Depth:** 2
 △ **Source of Sample:** 10 **Depth:** 7

Remarks:

Particle Size Distribution Report



GRAIN SIZE - mm.

	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	38	22	8	7	4	21	
□	0	41	31	9	7	4	8	

	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○			56.3607	16.3024	8.4162	1.3911				
□			29.7300	19.4597	13.0710	5.5160	1.0138	0.2235	7.00	87.08

Material Description

- LIGHT BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL
- LIGHT BROWN-WHITE CORALLINE LIMESTONE

USCS

AASHTO

GM
ROCK

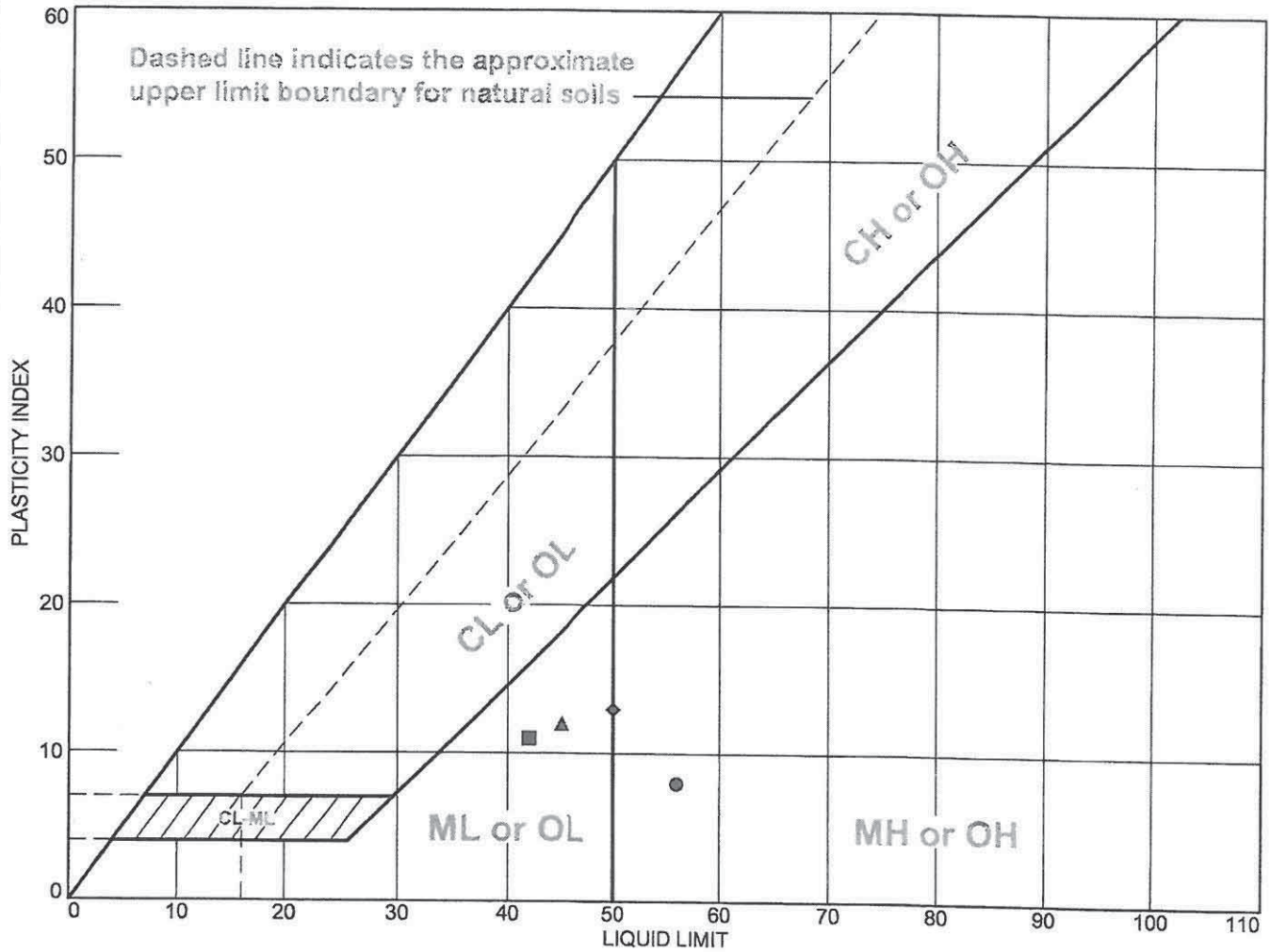
Project No. 127.05 **Client:** Guam Power Authority
Project: GPA NEW POWER PLANT

Remarks:

- **Source of Sample:** 11 **Depth:** 2
- **Source of Sample:** 12 **Depth:** 2

GEO-ENGINEERING & TESTING, INC.
 Geotechnical & Materials Testing Engineers

LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
● BROWN-WHITE SILTY SANDY LIMESTONE GRAVEL	56	48	8	44	40	GM
■ REDDISH BROWN GRAVELLY GRAVELLY SILT	42	31	11	76	74	ML
▲ DARK REDDISH BROWN SANDY SILT	45	33	12			ML
◆ REDDISH BROWN CLAYEY SILT	50	37	13	92	91	MH

Project No. 127.05 **Client:** Guam Power Authority

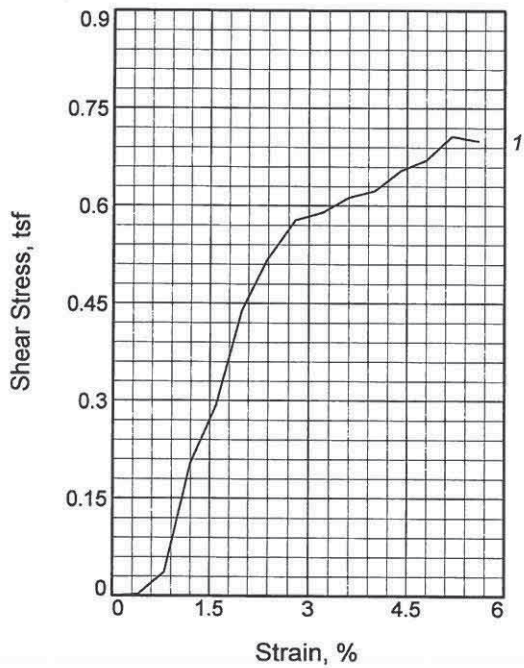
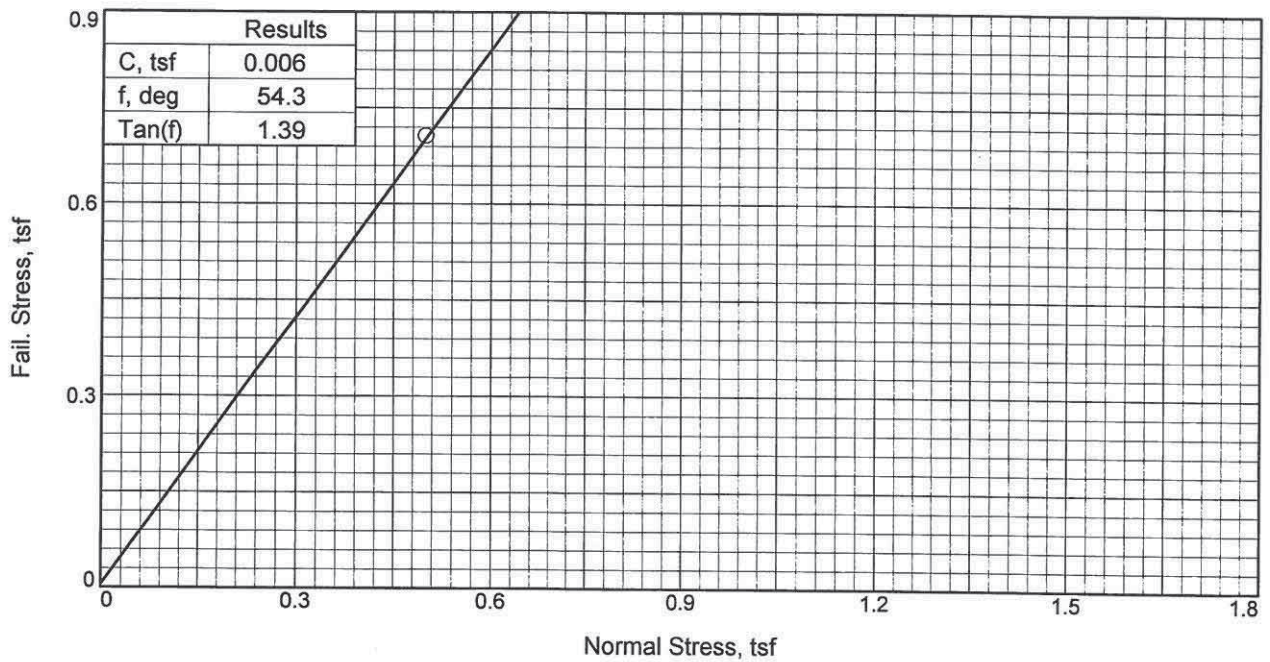
Project: GPA NEW POWER PLANT

- **Source of Sample:** 5 **Depth:** .5
- **Source of Sample:** 5 **Depth:** 2
- ▲ **Source of Sample:** 6 **Depth:** 2
- ◆ **Source of Sample:** 7 **Depth:** 2

Remarks:

● This test was performed on sample portion passing No. 40 sieve only.

GEO-ENGINEERING & TESTING, INC.
Geotechnical & Materials Testing Engineers



Sample No.		1
Initial	Water Content, %	12.0
	Dry Density, pcf	100.9
	Saturation, %	49.7
	Void Ratio	0.6397
	Diameter, in.	2.50
At Test	Height, in.	1.00
	Water Content, %	25.5
	Dry Density, pcf	102.6
	Saturation, %	110.6
	Void Ratio	0.6119
	Diameter, in.	2.50
	Height, in.	0.98
	Normal Stress, tsf	0.500
Fail. Stress, tsf	0.707	
Strain, %	5.2	
Ult. Stress, tsf		
Strain, %		
Strain rate, in./min.	0.02	

Sample Type: Remolded
Description: LIGHT BROWN-WHITE
 CORALLINE LIMESTONE

Assumed Specific Gravity= 2.65

Remarks:

Client: Guam Power Authority

Project: GPA NEW POWER PLANT

Location: B-2

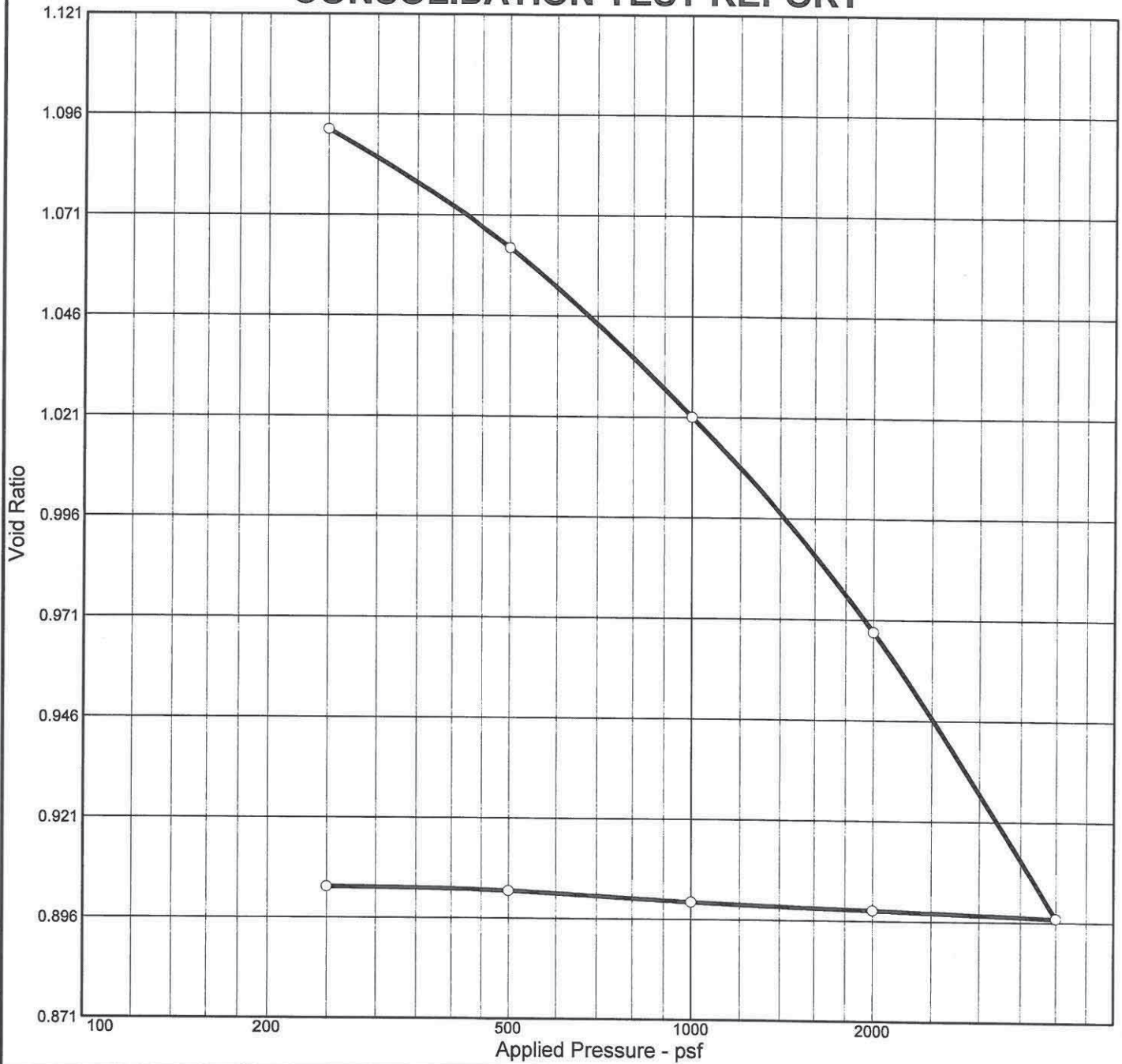
Depth: 8.5

Proj. No.: 127.05

Date Sampled:

GEO-ENGINEERING & TESTING, INC.
 Geotechnical & Materials Testing Engineers

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P _c (psf)	Initial Void Ratio
Saturation	Moisture							
91.1 %	38.6 %	77.3	42	12	2.6	700	959	1.100

MATERIAL DESCRIPTION		USCS	AASHTO
DARK REDDISH BROWN SANDY SILT		ML	

Project No. 127.05 **Client:** Guam Power Authority
Project: GPA NEW POWER PLANT
Location: B-6, 8.5'

GEO-ENGINEERING & TESTING, INC.
 Geotechnical & Materials Testing Engineers

Remarks:

APPENDIX A
SUMMARY OF EARTH RESISTIVITY TEST RESULTS

PROJECT: GPA New Power Plant
 Dededo, Guam
 TEST LOCATION: Test No. R-1

DATE: 1/22/19
 JOB NO: 127.05

EARTH RESISTIVITY TEST

Electrode Spacing, feet	Station Location	Dial Reading	Scale Multiplier	Resistance, Ω	Apparent Resistivity, ρ,Ω.cm (ohm-cm)
5	North - South	5.2	10	52	49790
10	North - South	4	10	40	76600
15	North - South	3.5	10	35	100538
5	East -West	5.5	10	55	52663
10	East -West	4.1	10	41	78515
15	East -West	3.3	10	33	94793

Note:
 $\rho, \Omega.cm = 191.5 \times \text{Spacing} \times \text{Resistance (S in feet)}$

Tested By: F.C. Baytic

PROJECT: GPA New Power Plant
 Dededo, Guam
 TEST LOCATION: Test No. R-2

DATE: 1/22/19
 JOB NO: 127.05

EARTH RESISTIVITY TEST

Electrode Spacing, feet	Station Location	Dial Reading	Scale Multiplier	Resistance, Ω	Apparent Resistivity, $\rho, \Omega \cdot \text{cm}$ (ohm-cm)
5	North - South	11	10	110	105325
10	North - South	10.8	10	108	206820
15	North - South	9.2	10	92	264270
5	East -West	10.9	10	109	104368
10	East -West	7.9	10	79	151285
15	East -West	8.1	10	81	232673

Note:
 $\rho, \Omega \cdot \text{cm} = 191.5 \times \text{Spacing} \times \text{Resistance (S in feet)}$

Tested By: F.C. Baytic

PROJECT: GPA New Power Plant
 Dededo, Guam
 TEST LOCATION: Test No. R-3

DATE: 1/22/19
 JOB NO: 127.05

EARTH RESISTIVITY TEST

Electrode Spacing, feet	Station Location	Dial Reading	Scale Multiplier	Resistance, Ω	Apparent Resistivity, ρ,Ω.cm (ohm-cm)
5	North - South	5.5	10	55	52663
10	North - South	2.6	10	26	49790
15	North - South	1.6	10	16	45960
5	East -West	5.2	10	52	49790
10	East -West	2.8	10	28	53620
15	East -West	1.9	10	19	54578

Note:
 $\rho, \Omega.cm = 191.5 \times \text{Spacing} \times \text{Resistance (S in feet)}$

Tested By: F.C. Baytic

GPA_ECA_Rev (06152018)
Schedule 10

Schedule 10. Early Transfer Price

Early Transfer Price

Reason for Termination	Price to be Paid by GPA
Project Company's Event of Default	Project Company Default Transfer Price will be equal to Project Company's outstanding debt plus applicable swap breakage costs.
GPA's Event of Default	GPA Default Transfer Price will be calculated as present value of future Fixed Capacity Charge payments from the date of termination until the end of the Term of the ECA calculated at a discount rate of [8%] per year.
Termination by GPA for convenience	Early Termination Price will be calculated as present value of future Fixed Capacity Charge payment from the date of the termination until the end of the Term of the ECA calculated at a discount rate of [8%] per year, minus any funds collected or received by Project Company under insurance policies that Project Company is required to keep in accordance with this Agreement excluding any portion of such funds reinvested in the Facility and any funds paid or payable to third parties, such as those from insurance liability payable to injured persons on the Site.
Termination due to prolonged Force Majeure	Force Majeure Transfer Price will be calculated as outstanding debt plus swap breakage costs plus [50%] of the projected equity investment determined as of Financial Close, minus any funds collected or received by Project Company under insurance policies that Project Company is required to keep in accordance with this Agreement excluding any portion of such funds reinvested in the Facility and any funds paid or payable to third parties, such as those from insurance liability payable to injured persons on the Site.

GPA_ECA_Revised (02252019)
(Downloadable on GPA Website)

[INSERT PROJECT NAME]
ENERGY CONVERSION AGREEMENT

BETWEEN

**THE GUAM POWER AUTHORITY
(GPA)**

AND

[PROJECT COMPANY]

for a

Gas Dual Fired Power Electric Facility

Located at [Insert Location], Guam

2018

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ENERGY CONVERSION AGREEMENT

THIS ENERGY CONVERSION AGREEMENT (the "**Agreement**") is entered into as of this _____ day of _____, 2017 **BETWEEN** the Guam Power Authority, a public corporation and an enterprise fund of the Government of Guam established by the Guam Power Authority Act of 1968 (herein referred to as "**GPA**"), with principal offices located at Gloria B. Nelson Public Service Building 688 Route 15 Fadian, Mangilao, Guam, **AND** [Project Company], a [insert legal name and description] (herein referred to as the "**Project Company**"), with principal offices at [insert address].

RECITALS

WHEREAS, pursuant to the Invitation For Bids issued by GPA on [insert applicable date] (as amended or supplemented), the Project Company has been chosen to develop, design, permit, finance, construct, test, commission, complete, own, insure, operate and maintain an electric power plant (the "Facility", as hereinafter defined) on a build, own and transfer basis at [insert location], Guam, to provide electric power capacity and net energy output to GPA;

WHEREAS, under [the Guam Power Authority Act of 1968] GPA is authorized to enter into contracts whereby it will purchase electric capacity and net energy output from third parties in Guam;

[INSERT WHEREAS CLAUSE REGARDING RELEVANT AND UPDATED PUC APPROVAL ORDER/S]

WHEREAS, the Project Company desires to sell electric capacity and net energy output of the Facility to GPA in accordance with the terms and conditions set forth in this Agreement; and

WHEREAS, GPA is agreeable to purchasing such electric capacity and net energy output from the Project Company in accordance with the terms and conditions set forth in this Agreement.

NOW THIS AGREEMENT WITNESSETH as follows:

[Note: Sections of this ECA and other IFMSB documents which reference Fuel or Fuel related concepts and defined terms such as Heat Rate, Guaranteed Heat Rate, Fuel Charge, etc... are only applicable to Proposals and Facilities that include a Fossil Fuel Fired Component.

ARTICLE 1 DEFINITIONS

Each of the following capitalized terms shall have the meaning set forth below unless a different meaning is expressly attributed to it in the Agreement. All units of measurement used in this Agreement shall conform to the International System of Units (SI).

"Abandonment" means a voluntarily cessation by Project Company of the development, construction or operation of the Facility and either (i) the Project Company expressly declares in writing that development, construction or operation of the Facility will not be resumed; or (ii) such cessation continues for 60 consecutive Days, provided that an Abandonment shall not occur if the Project Company is using commercially reasonable and diligent efforts to commence or reinstate development, construction or operation.

"Actual Heat Rate" means the Heat Rate expressed in BTU per kWh as determined by Commercial Operation Tests.

"AGC" means automatic generation control.

"Agent" has the meaning set forth in Article 5.2.

"Agreement" or "ECA" means this Energy Conversion Agreement, including its Schedules, as amended, supplemented or modified in accordance with the terms and conditions herein.

"Allowable Total Outages Energy" has the meaning set forth in Article 9.3.

"Allowable Forced Outages Energy" has the meaning set forth in Article 9.3.

"Annual Average Dependable Capacity" means for the relevant Contract Year, an amount equal to (a) the sum of the multiplication of each Dependable Capacity (including Initial Dependable Capacity) in effect during such Contract Year by the number of hours that each such Dependable Capacity was in effect during such Contract Year, divided by (b) the number of hours in such Contract Year.

"Average Dependable Capacity" means, for the period from the Phase 1 Commercial Operation Date to the end of the first Contract Year, an amount equal to (a) the sum of the multiplication of each Dependable Capacity (including the Initial Dependable Capacity) in effect during the period by the number of hours that each such Dependable Capacity was in effect during the period, divided by (b) the number of hours in the period.

"Bank" means the Federal Reserve Bank of the United States of America.

"Bank Rate" means the prime interest rate of the Bank from time to time.

"Bid Date" means [REDACTED].

"Bid Guarantee" means the security established in accordance with the IFMSB to secure inter alia, Project Company's obligations as set forth in this Agreement, during the period between the execution of this Agreement and Financial Close.

"Black Start" means the process of restoring an electric power station to operation without relying on the external transmission network.

"British Thermal Unit" or "Btu" means the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

"Business Day" means any Day (including partial Days) of the Year on which banks are required to be open for business in Guam.

"Capacity Charge" has the meaning set forth in Schedule 5.

"Capacity Damages" has the meaning set forth in Article 9.3.

"Cause" means, in relation to the issuance, renewal, revocation, amendment or modification of any Government Authorization, any default, neglect or failure by Project Company to abide by any Laws of Guam or any of the terms and conditions of any Government Authorization which entitles the relevant Government Authority to revoke, or refuse to issue or renew, the Government Authorization or make an amendment to its terms and conditions.

"Change in Law" means any of the following events occurring as result of any action by any Government Authority:

- (a) the adoption, imposition, promulgation, coming into effect, modification or repeal of any Law of Guam that affects the Project or Project Company; or
- (b) any change in the manner in which a Law of Guam that affects the Project or Project Company is applied or interpreted; or
- (c) the imposition by a Government Authority (other than for Cause) of any material condition or delay in connection with the issuance, renewal, or modification of any Government Authorization,

that establishes or results in requirements that affect or relate to the Project that are materially more or less restrictive or materially more or less costly for Project Company.

"Commercial Operation Date" or **"COD"** means, for each of Phase 1 and Phase 2, the earlier of (i) the Day following the Day upon which the Phase is Commissioned; or (ii) the Day following the Day upon which the Phase is deemed Commissioned in accordance with Article 8.

"Commercial Operation Period" means, with respect to the Facility, the period of time commencing on the Phase 1 COD and ending on (but including) the last day of the Term.

"Commercial Operation Tests" mean the tests specified in Schedule 4 to demonstrate that the standard requirements and the guaranteed values (set out in Schedule 4) are met to achieve the COD with respect to each Phase.

"Commissioned" means notification by Project Company, accompanied by a report of the GPA Engineer certifying that the tests for Phase 1 or Phase 2, as the case may be, have been satisfactorily completed in accordance with Schedule 4, and that the Facility meets the relevant characteristics set out in Schedule 1 and Schedule 2, provided that upon receipt of such notice and report the date on which each Phase is Commissioned shall be the date upon which the tests for such Phase (as referred to above) have been satisfactorily completed.

"Commissioning" means the process by which a Phase is Commissioned.

"Connection Agreement" has the meaning set forth in Article 5.5(i).

"Construction Contract" means the agreement/s between Project Company and the Construction Contractor/s for the design, engineering, procurement, construction and Commissioning of the Facility, as amended from time to time.

"Construction Contractor" means the construction contractor/s that are party to the Construction Contract.

"Construction Period" means the period of time commencing on the Construction Start Date and ending on the Phase 2 Commercial Operation Date.

"Construction Start Date" means the day on which Project Company issues the first Notice to Proceed to a Construction Contractor.

"Contracted Characteristics" means the characteristics of the Facility described in Schedule 2.

"Contracted Facility Capacity" means the net electric power generating capacity of the Facility guaranteed to be provided to the Delivery Point on a continuous basis, adjusted to Site Reference Conditions as set forth in Schedule 2 and to the Fuel being consumed by the Facility at any given time, if applicable.

"Contracted Phase 1 Capacity" means the net electric power generating capacity of Phase 1 guaranteed to be provided to the Delivery Point on a continuous basis, adjusted to Site Reference Conditions as set forth in Schedule 2 and to the Fuel being consumed by the Facility at any given time, if applicable.

"Contractors" means the Construction Contractor and the O&M Contractor.

"Contract Year" means a period of twelve (12) consecutive months commencing on each consecutive anniversary of the Phase 1 Commercial Operation Date and ending as of the end of the Day preceding the next anniversary of the Phase 1 Commercial Operation Date, except for the first Contract Year which shall start on the Phase 1 Commercial Operation Date.

"Day" means a twenty-four (24) hour period beginning and ending at 12:00 midnight Guam time.

"Declared Capacity" means the estimated net capacity of the Facility (adjusted to Site Reference Conditions) announced by Project Company pursuant to Article 10.3.

"Delivery Point" means the connection point of the Electrical Interconnection Facilities to the 115 kV bus bar at the Facility's switchyard where GPA receives the Net Energy Output from the Project Company, as to be specified in Schedule 2.

"Dependable Capacity" means, at any given time, the net capacity of the Facility (excluding any capacity associated with a Renewable Component and any Non-Compliant ESS Capacity) operating on ULSD or Natural Gas if and when applicable, measured in kW (adjusted to Site Reference Conditions), at the Delivery Point of the Facility as determined by the most recent Dependable Capacity Test, provided that for purposes of calculating the Capacity Charge, the Dependable Capacity shall not exceed the Contracted Facility Capacity.

"Dependable Capacity Test" has the meaning set forth in Schedule 4 and the frequency described in Article 8.2.

"Dispatch Instruction" is an instruction issued directly by the PSCC to Project Company in accordance with (i) the dispatch principles and guidelines established by GPA in accordance with the applicable system grid code for the Grid System; (ii) the Operating Procedures; (iii) the Technical Limits; (iv) Prudent Utility Practices; and this Agreement.

"Dispute" means any dispute or disagreement of any kind whatsoever between GPA and Project Company in connection with or arising out of this Agreement.

"Dollars" or **"USD"** or **"US\$"** all mean the lawful currency of the United States of America.

"Early Transfer Price" means the applicable price set forth in Schedule 10 for the purchase of the Facility by GPA from Project Company pursuant to Article 5.5 (e), as the case may be.

"Electrical Interconnection Facilities" means all of the electrical interconnection facilities and equipment described in Schedule 1 to be constructed by the Project Company and transferred to GPA at the Phase 1 Commercial Operation Date.

"Emergency" means a condition or situation that in the reasonable opinion of GPA poses an imminent threat of (a) materially adversely affecting the ability of GPA to maintain safe, adequate and continuous electrical service to its customers, having due regard to the then current standard of electrical energy provided to its customers; or (b) endangering the safety of people, plant, or equipment.

"Energy Charge" has the meaning set forth in Schedule 5.

"Environmental Attributes" means (a) credits, benefits, reductions, offsets and other beneficial allowances, howsoever named or referred to, with respect to any and all fuel, emissions, air quality, or other environmental characteristics, resulting from the use of Facility generation or the avoidance of the emission of any gas, chemical or other substance into the air, soil or water attributable to the sale of energy generated by the Project during the Term and in which Project Company has property rights or will have property rights upon such attributes coming into existence, and include any of the same arising out of legislation or regulation (i) concerned with (A) oxides of nitrogen, sulfur, or carbon, (B) particulate matter, soot, or mercury, or (C) implementing the United Nations Framework Convention on Climate Change (the **"UNFCCC"**) or protocols connected to the UNFCCC or crediting "early action" with a view thereto, and (b) all Environmental Attribute Reporting Rights.

"Environmental Attribute Reporting Rights" means the rights to report the ownership of any Environmental Attribute, including those rights accruing under any emissions trading program.

"Equity Documents" means any agreements relating to the issuance, subscription, placement or underwriting of Shares or other securities convertible into Shares issued by Project Company and any instruments constituting or evidencing Shares or other securities convertible into Shares issued by Project Company, and any documents or agreements evidencing or relating to indebtedness for money borrowed by Project Company from the Investors or their affiliates which, by its terms, is subordinated to any indebtedness for borrowed money incurred by Project Company under any Financing Document.

"ESS" means an energy storage system that meets the requirements set forth in the IFMSB.

"ESS-Related Capacity" means the portion of Dependable Capacity which (i) is expected to be available for dispatch solely because the Facility's ESS is expected to meet the spinning reserve requirement (as set forth in the IFMSB) corresponding to such capacity, and (ii) was assumed to be available for dispatch in the Evaluation Model due to the expectation that the Facility's ESS would offset the spinning reserve requirement (as set forth in the IFMSB) corresponding to such capacity.

"Excess Energy" means, for a hybrid Facility, any energy that can be made available by the Facility, for any given hour, in excess of the energy that can be generated by the Facility operating at 100% of Dependable Capacity due to the spare capacity of the Fossil Fuel Fired Component that is available during the periods when the Renewable Component is capable of generating renewable energy.

"Excess Energy Output" means any Excess Energy which is dispatched by the PSCC under a Dispatch Instruction and is subsequently delivered by the Facility to the Delivery Point.

"Excessive Forced Outages Energy" has the meaning set forth in Article 9.3.

"Excessive Total Outages Energy" has the meaning set forth in Article 9.3.

"Excusable Event" means events or circumstances constituting a Change in Law or Force Majeure event occurring after the date of this Agreement and prior to Financial Close that prevents Project Company from performing its obligations under this Agreement.

"Expected Phase 1 Commercial Operation Date" means [insert applicable date].

"Facility" means an electric generating facility with an expected continuously available fully dispatchable capacity of []MW net (when operating on ULSD if the Facility operates on fossil fuel) to be constructed by Project Company at a leased Site in Guam, whether completed or at any stage of development and construction, including, without limitation or regard to the level of development, the leased land, buildings, engineering and design documents, all power producing equipment and auxiliary equipment including Black Start capability, Fuel handling and storage infrastructures, water intakes and discharges, water treatment and pumping facilities, solid waste disposal facilities, main and plant transformers, plant switchgear, and all other installations as described in Schedule 1.

"Facility Transfer" has the meaning set forth in Article 18.1.

"FERC" means the U.S. Federal Energy Regulatory Commission.

"Final Major Overhaul" has the meaning set forth in Article 18.2.

"Financial Close" means the date on which all conditions of the Lenders under the Financing Documents have been met or waived (in accordance with the terms thereof), and initial financing disbursements can take place (as certified by the Agent in writing).

"Financing Documents" means the loan agreements, notes, bonds, note or bond purchase agreements, participation agreements, indentures, security agreements, hedging agreements, guarantees, shareholder support agreements, the Lenders' Direct Agreements and other documents relating to the construction and permanent financing (including refinancing) of the Facility or any part thereof provided by any Lender, but excluding any Equity Documents.

"First Fill" has the meaning set forth in Article 4.3.2.

"Fixed Operation and Maintenance Charge" has the meaning set forth in Schedule 5.

"Force Majeure" has the meaning set forth in Article 17.

"Force Majeure Transfer Price" means the applicable price set forth in Schedule 10 for the purchase of the Facility by GPA from Project Company pursuant to Article 5.5(g).

"Forced Outage" means a failure to make available the Dependable Capacity:

- (a) that is not the result of a request by GPA in accordance with this Agreement;
- (b) that is not the result of a Scheduled Outage or a Maintenance Outage;
- (c) that is not the result of an event or occurrence of a Force Majeure;
- (d) that is not the result of a condition caused by GPA or by the Grid System, provided that such condition would not have occurred without the action or inaction of GPA or the condition of the Grid System; or

(f) that does not occur during any period during which the Facility is deemed to provide the Dependable Capacity under Article 8.

"Forced Outages Energy" has the meaning set forth in Article 9.3.

"Fossil Fuel Fired Component" means, for a hybrid plant, the part of the Facility which utilizes Reciprocating Engine Generators or Combustion Turbine Generators.

"Fossil Fuel Fired Net Energy Output" means the portion of the Net Energy Output generated by the Fossil Fuel Fired Component and equal, for any time interval, to the Net Energy Output minus Renewable Net Energy Output.

"Fuel" means fuel used by the Facility, which will be ULSD (as specified in Schedule 7) or Natural Gas (as specified in Schedule 9).

"Fuel Delivery Point" has the meaning set forth in Schedule 1.

"Fuel Price (FP)" has the meaning set forth in Schedule 5.

"Fuel Supply Requirement" has the meaning set forth in Article 4.3.1(a).

"Functional Specifications" or **"Specification"** means the characteristics (adjusted to Site Reference Conditions) for the design, construction and operation of the Facility, as set forth in Schedule 1.

"Government" means the Government of Guam and the Government of the United States, as applicable.

"Government Authority" means the Government and/or any national or local governmental authority of Guam with jurisdiction over Project Company, the Project or any part thereof, and/or any department, regulatory, supervisory or competent authority, or political subdivision or instrumentality, agency or judicial body of the Government, or any national or local governmental authority of the Government and/or any person under the direct or indirect control of any of the foregoing.

"Government Authorizations" means all formal written permits, licenses, authorizations, consents, decrees, waivers, privileges, approvals and filings required to be obtained from or provided by any Government Authority for the execution, delivery and performance of this Agreement, any other Project Agreement or any Financing Document, including without limitation the design, development, construction, financing, ownership, maintenance and operation of the Facility (and all other activities incidental thereto), as contemplated by this Agreement, the other Project Agreements and the Financing Documents.

"GPA" has the meaning set forth in the Preamble hereto.

"GPA Default Transfer Price" means the applicable price set forth in Schedule 10 for the purchase of the Facility by GPA from Project Company pursuant to Article 5.5 (d), as the case may be.

"GPA Engineer" means the engineering company selected by GPA, the costs of whose appointment and retention shall be paid by GPA.

"GPA Event of Default" has the meaning set forth in Article 5.3.

"**Grid System**" means the transmission and distribution facilities through which the Net Energy Output may be transmitted and distributed to users.

"**Guaranteed Heat Rate**" or "**GHR**" means the Heat Rate (at the Site Reference Conditions) guaranteed by the Project Company for the Fossil Fuel Fired Component, for Phase 1 and Phase 2, as set forth in the tables included in Schedule 5.

"**Guam**" or "**Territory of Guam**" means that certain unincorporated and organized territory of the United States in Micronesia.

"**Heat Rate**" expressed in Btu per kWh, means the fuel energy consumption expressed in Btu (higher heating value) required to generate one kWh by the Fossil Fuel Fired Component at the high voltage bushings of the main power transformers. "**IFMSB**" means the invitation for bids issued by GPA on [...] and including all updates and amendments thereto between the date of its submission and the date of this Agreement.

"**Independent Engineer**" means a qualified, international, and independent engineering firm selected by Project Company and approved by GPA for purposes of certifying any claim by Project Company that the Facility should be deemed Commissioned in accordance with Article 8.5.

"**Independent Expert**" has the meaning set forth in Article 18.4.

"**Initial Dependable Capacity**" means, at the Commercial Operation Date for Phase 1 or Phase 2, as the case may be, the capacity set upon successful completion of the Dependable Capacity Test for such Phase and used to establish its respective Commercial Operation Date, which is the maximum capacity adjusted for Site Reference Conditions that the Facility is demonstrated to be capable of delivering continuously at the Delivery Point at that time, in accordance with (and subject to) Article 8.1(d)(iii) and is the capacity to apply until the next Dependable Capacity Test occurs after the Phase 2 Commercial Operation Date.

"**Initial Shareholders**" means [].

"**Investor**" means a shareholder of Project Company

"**Invoice Due Date**" has the meaning set forth in Article 14.4.

"**Joint Coordinating Committee**" is the committee established by Project Company and GPA pursuant to Article 11.

"**kW**" means kilowatts.

"**kWh**" means kilowatt-hours.

"**Law**" or "**Laws**" means the laws of Guam and the United States of America.

"**Land Lease Agreement**" or "**LLA**" means the agreement entered into by and between Project Company and GPA whereby Project Company will lease the site on which the Facility shall be built.

"**Lenders**" means the lenders, guarantors, credit providers, multilateral agencies, export credit agencies or other financial institutions or insurers providing (or supporting) the financing or refinancing arrangements for the Project pursuant to the Financing Documents, but not

including any Investor or affiliate of an Investor with respect to indebtedness for money borrowed by Project Company from any such Investor or affiliate.

"**Lenders' Direct Agreement**" means the agreement entered into by the Project Company, GPA, and the Lenders and/or their security agent on [].

"**Liquidated Damages Due Date**" has the meaning set forth in Article 9.7.

"**Liquidated Damages Notice**" has the meaning set forth in Article 9.7.

"**Loss**" means any loss, cost, expense damage, liability, payment or obligation (including reasonable legal fees and expenses but excluding any indirect or consequential loss, cost, expense, damage, liability, payment or obligation or any loss of revenue or loss of profit).

"**Maintenance Outage**" means an interruption or reduction of the generating capability of the Facility that:

- (a) is not a Scheduled Outage;
- (b) has been scheduled in accordance with Article 10.4(f); and
- (c) is for the purpose of performing work on specific components of the Facility which work should not, in the reasonable judgment of Project Company, be postponed until the next Scheduled Outage.

"**Major Overhaul**" means the repair and reconditioning of any Unit of the Facility that is conducted in accordance with Article 10.4(g) and Schedule 2.

"**Maximum Natural Gas Switch Quantity**" has the meaning set forth in Article 8.2(f).

"**Metering System**" means the measurement system capable of interpreting readings of all pertinent parameters required by the invoicing process.

"**Million Btu**" or "**MMBtu**" means 10⁶ Btu.

"**Month**" means a month according to the Gregorian Calendar, and "**Monthly**" shall be construed accordingly.

"**MW**" means megawatts.

"**MWh**" means megawatt hours.

"**Natural Gas**" means natural gas meeting the Fuel specifications contained in Schedule 9.

"**Net Energy Output**" means the energy output delivered by the Facility and accepted by GPA during a given period of time measured in kWh by the Metering System at the Delivery Point (including Excess Energy Output).

"**NERC**" means North American Electric Reliability Corporation.

"**Non-Compliant ESS-Related Capacity**" means (for any given hour) any portion of the ESS-Related Capacity that is not available to offset the Facility's spinning reserve requirement (as such requirement is set forth in the IFMSB).

"**Notice**" has the meaning set forth in Article 22.

"**Notice of Intent to Terminate**" has the meaning set forth in Article 5.5(a).

"**Notice to Proceed**" means the initial notice to the Construction Contractor to commence engineering, procurement or construction work pursuant to the Construction Contract.

"**O&M Contract**" means any agreement entered into between Project Company and a third party contractor for the operation and maintenance of the Facility.

"**O&M Contractor**" means the party to any O&M Contract which is responsible for the operation and maintenance of the Facility.

"**Operating Procedures**" means the operating procedures developed by the Parties pursuant to Articles 7.4 and 10.2 and in compliance with the applicable system grid code, as such procedures may be modified from time to time in accordance with Article 7.4 and the applicable system grid code.

"**Outage Hours**" means for each month during the Commercial Operation Period, the total number of full load equivalent hours during such month in which Dependable Capacity is reduced due to Forced Outages, Maintenance Outages and Scheduled Outages which shall be calculated as the summation of the duration of each such outage in the month (in hours) multiplied by the reduction in Dependable Capacity during such outage (in MW) divided by the Dependable Capacity (in MW).

"**Party or Parties**" means GPA and Project Company, either individually or collectively.

"**Performance Bond**" means the security established in accordance with Article 9.6(d) to secure the Project Company's ability to pay liquidated damages in accordance with Article 9.

"**Period of Testing**" means, with respect to each Phase, the period from initial synchronization of a Unit or Facility to the Commercial Operation Date for such Phase, during which period testing occurs and net power is produced.

"**Phase**" means either Phase 1 or Phase 2, or both, as the context indicates.

"**Phase 1**" means all work as required to put the Simple Cycle Unit in case of a combined cycle Facility or full firm base load capacity in case of other technologies into commercial operation.

"**Phase 1 Commercial Operation Date**" means the Commercial Operation Date for Phase 1.

"**Phase 2**" means all work as required to put the entire facility into commercial operation.

"**Phase 2 Commercial Operation Date**" means the Commercial Operation Date for Phase 2.

"**Power System Control Center**" or "**PSCC**" means GPA's main control center located at [] or such other control center designated by GPA from time to time (but not more than one center at a time) which shall issue Dispatch Instructions to Project Company.

"**Pre-Existing Condition**" means a Pre-Existing Site Condition or a Pre-Existing Pipeline Route Condition.

"Pre-Existing Pipeline Route Condition" means any artificial obstructions on, under, in, or affecting the land on which the new ULSD fuel pipeline is to be built, or any contamination that could not have been discovered by an experienced international engineering and construction contractor using the most sophisticated devices and personnel available at the time of the pipeline route investigation by such contractor but shall not, for the avoidance of doubt, include archaeological discoveries.

"Pre-Existing Site Condition" means any artificial obstructions on, under, in, or affecting the Site or any contamination that could not have been discovered by an experienced international engineering and construction contractor using the most sophisticated devices and personnel available at the time of Site investigation by such contractor but shall not, for the avoidance of doubt, include archaeological discoveries on the Site.

"Pre-Existing Condition Period" means the period from the date of this Agreement to the date falling 12 months after the issuance of Notice to Proceed under the Construction Contract.

"Price" means the price of electricity charged by Project Company to GPA and calculated in accordance with the formulas in Schedule 5.

"Project" means the development, design, engineering, financing, refinancing, insurance, procurement, construction, startup, testing, Commissioning, completion, ownership, operation and maintenance of the Facility, all activities incidental thereto, and the Facility itself.

"Project Agreements" means collectively, the Energy Conversion Agreement, Land Lease Agreement, O&M Contract (if applicable), Construction Contract, and any other document, contract, or agreement executed subsequent to the date hereof by Project Company that is relevant to the construction and development of the Project or the ownership or management of Project Company (other than any Financing Document, Equity Document or Government Authorization) or otherwise mutually agreed in writing to constitute a "Project Agreement".

"Project Company" has the meaning set forth in the Preamble hereto.

"Project Company Default Transfer Price" means the applicable price set forth in Schedule 10 for the purchase of the Facility by GPA from Project Company pursuant to Article 5.5(f).

"Project Company Event of Default" has the meaning set forth in Article 5.2.

"Prolonged Force Majeure" means a condition in which a Force Majeure event has caused 50% or more of the Contracted Facility Capacity to be unavailable for dispatch for eighteen (18) consecutive months or more and is continuing.

"Proposal" means Project Company's written offer and amendments based on the covenants, terms and conditions as contained in the IFMSB for the development, financing, construction, ownership, operation and transfer of the Project.

"Prudent Utility Practices" means those practices, methods, techniques and standards, as changed from time to time, that are generally accepted internationally for use in electric utility industries (taking into account conditions in Guam), and commonly used in prudent engineering and operation to design, engineer, construct, test, operate and maintain equipment lawfully, safely and economically as applicable to power stations of the size, service, and type (and operating with the contemplated Fuels) as the Facility.

"PUC" means the Public Utilities Commission of Guam.

"Remedial Actions" has the meaning set forth in Article 9.2.

"Renewable Component" means, for a hybrid plant, the part of the Facility which utilizes solar or wind power generation technology.

"Renewable Component Degradation Guarantee" means the Bidder's guaranteed rate of degradation for the Renewable Component as provided in Table 15.1 of Section D.

"Renewable Net Energy Output" means the portion of the Net Energy Output generated by the Renewable Component.

"Required Phase 1 Commercial Operation Date" means, with respect to Phase 1, the date falling 20 months from Financial Close, or such later date as may apply in accordance with the provisions of this Agreement.

"Required Phase 2 Commercial Operation Date" means, with respect to Phase 2, the date falling 30 months from Financial Close, or such later date as may apply in accordance with the provisions of this Agreement.

"Required Financial Closing Date" means March 23, 2020, as such date may be extended for up to ninety (90) Days in accordance with Article 9.6(b) of this Agreement.

"Scheduled Outage" is a planned interruption of the generating capability of the Facility that:

- (a) is not a Maintenance Outage;
- (b) has been scheduled in accordance with Article 10; and
- (c) is for inspection, testing, Major Overhauls, preventive and corrective maintenance, repairs, replacement or improvement of the Facility.

"Security" means any one or more of the following: the Bid Guarantee, the Performance Bond, or the Transfer Security.

"Security Package" consists of:

- (a) this Agreement;
- (b) the LLA;
- (e) the Construction Contract;
- (f) the O&M Contract (if applicable);
- (g) the Financing Documents;
- (i) the bylaws and articles of Project Company;
- (j) the Equity Documents;
- (k) the insurance policies required to be obtained by Project Company pursuant to Article 15;

- (m) the documents creating or evidencing the security for the Lenders (including the Lenders' Direct Agreement);
- (n) all Government Authorizations, including a generation license issued in accordance with []; and
- (o) any other Project Agreements to which Project Company is party.

"**Shares**" means shares of Project Company with voting or other rights of management and/or control.

"**Simple Cycle Unit**" means the unit of the Facility formed by the combustion turbines and the supplementary equipment for generation of electric power.

"**Site**" means the land on which the Facility is to be installed (defined by the boundaries [Insert site plot designation or coordinates]), and has been leased by GPA to Project Company by means of the LLA.].

"**Site Reference Conditions**" means the physical and meteorological conditions at which the Facility would be operating under hypothetical representative circumstances as defined in Schedule 1.

"**Start**" means the process of starting up a Unit or the Facility until its synchronization, when the corresponding Unit or Facility has been shut down.

"**Supplemental Charge**" means any additional charges agreed by the Parties which are payable by GPA to Project Company as part of the Price payments.

"**Technical Limits**" means the limits and constraints described in Schedule 2 relating to the operation and maintenance of the Facility, and which shall be in accordance with the Functional Specifications.

"**Term**" has the meaning set forth in Article 5.1.

"**Termination Notice**" has the meaning set forth in Article 5.5(b).

"**Testing**" means the process of testing the Facility pursuant to Article 8.

"**Threshold Capacity**" means a Dependable Capacity equal to ninety (90%) per cent of the Contracted Facility Capacity.

"**Transfer Date**" means the date upon which all ownership, custody and control of the Facility shall be transferred from Project Company to GPA, which date shall be the final day of the Term unless mutually agreed otherwise.

"**Transfer Security**" has the meaning set forth in Article 18.4.

"**Typical Meteorological Year**" or "**TMY**" – means, for a hybrid or renewable Facility, the set of meteorological conditions relevant to the performance of such Facility's Renewable Component or a renewable Facility, which was provided by the awarded Bidder including any subsequent changes made by GPA.

"**ULSD**" means means ultra-low sulfur diesel fuel with maximum sulfur content of 15 ppm suitable for firing by diesel engine generators or combustion turbine generators meeting Fuel quality specifications contained in Schedule 7.

"**ULSD Bulk Storage**" means GPA's existing GPA ULSD bulk storage located near the existing Cabras power station to be modified by the Project Company as required under this Agreement.

"**ULSD Storage Facilities**" has the meaning set forth in Article 4.3.1(g).

"**ULSD Supply Infrastructure**" means the ULSD Bulk Storage, and the ULSD supply pipeline between the ULSD Bulk Storage and the Site with all its associated systems, equipment, and accessories to be constructed by the Project Company and transferred to GPA on the Phase 1 Commercial Operation Date.

"**Unit**" means an individual gas turbine-generator, reciprocating engine-generator, or wind turbine-generator unit.

"**Unit Available Capacity**" means the capacity of each Unit (adjusted to Site Reference Conditions) announced by Project Company pursuant to Article 10.3(e).

"**U.S. EPA**" means the United States Environmental Protection Agency.

"**Variable Operation and Maintenance Charge**" has the meaning set forth in Schedule 5.

"**Wilful Misconduct**" means an intentional, conscious or reckless default in announcing an accurate Declared Capacity by a director, officer, manager or employee of Project Company exercising apparent authority to announce, or cause to be announced, a Declared Capacity, provided, however, that Wilful Misconduct shall not include any error of judgement or mistake made in good faith in the exercise of any function, authority or discretion arising under or in connection with the performance of this Agreement.

"**Year**" means a calendar year according to the Gregorian calendar beginning at midnight December 31 in Guam.

ARTICLE 2 INTERPRETATION

In this Agreement (including its Schedules), unless otherwise stated:

2.1 Any references to:

- (a) any agreement (including this Agreement) or document shall be construed, at any particular time, as including a reference to the relevant agreement or document as it may have been amended, novated, assigned, modified or supplemented in accordance with its terms;
- (b) the Preamble, Recitals or a particular Article or Schedule, shall be a reference to the Preamble, Recitals or relevant Article or Schedule in or to this Agreement;
- (c) a particular paragraph or sub-paragraph, if contained in an Article or Schedule, shall be a reference to the relevant paragraph or sub-paragraph of that Article or Schedule; and

- (d) a Party or any other person includes its successors in title, permitted assigns and permitted transferees.
- 2.2 Words in the singular may be interpreted as referring to the plural and vice versa.
- 2.3 A requirement that a payment be made on a Day which is not a Business Day shall be construed as a requirement that the payment be made on the next following Business Day.
- 2.4 The words "including" and "include" are to be construed as being at all times followed by the words "without limitation", unless the context otherwise requires.
- 2.5 For the purpose of any calculation under this Agreement, references to any period or periods of an hour or hours shall be rounded up to the nearest 1/10th of an hour.
- 2.6 The Schedules contained herein form an integral part of this Agreement. In the event of an inconsistency between the body of this Agreement and the Schedules thereto, the provisions of the body shall govern.
- 2.7 Where reference is made in this Agreement to a period or periods of time the periods in question shall be deemed to end at midnight on the last Day of such period unless otherwise stated.
- 2.8 Unless otherwise stated, whenever a consent or approval is required by one Party from the other Party, such consent or approval shall not be unreasonably withheld or delayed.
- 2.9 In carrying out its obligations and duties under this Agreement, each Party shall have an implied obligation of good faith.
- 2.10 Any capitalized term used but not defined in this Agreement shall have the meaning attributable thereto in the IFMSB.
- 2.11 The Parties agree that, should a situation arise where the provisions of Schedule 1 require clarification, then Form [] of the Proposal, to the extent relevant, would be used to interpret the provisions of Schedule 1, provided that this process in no event results in the modification of the Project Company's obligations hereunder or the imposition of obligations additional to those included in this Agreement.
- 2.12 Any reference to GPA's successors and permitted assigns shall be a reference to such successors and permitted assigns in all of GPA's capacities.

**ARTICLE 3
RESERVED**

**ARTICLE 4
SALE AND PURCHASE OF CAPACITY AND ENERGY**

4.1 Energy and Capacity

Subject to and in accordance with the terms and conditions of this Agreement, Project Company agrees to maintain and make available and deliver exclusively to GPA, and GPA agrees to accept and purchase from Project Company, from and after the Phase 1 Commercial Operation Date, for the consideration described in Article 14 and

Schedule 5, the entire Dependable Capacity and, subject to Dispatch Instructions, the Net Energy Output of the Facility. GPA further agrees to pay to Project Company all amounts (and adjustments to amounts) described in Article 14.1 in the circumstances contemplated in Article 14.1. [Any Environmental Attributes associated with Dependable Capacity and Net Energy Output shall accrue to GPA's benefit.]

4.2 Sales to Third Parties and Test Energy

4.2.1 No Sales to Third Parties

The Parties agree that Project Company shall not during the Term sell or deliver electric capacity or energy produced by the Facility to any other entity than GPA.

4.2.2 No Payment for Test Energy

Prior to the Phase 1 Commercial Operation Date, GPA shall not pay for energy delivered to GPA during Testing and Commissioning.

4.3 Fuel Supply

4.3.1 Fuel Supply After COD

- (a) Commencing as of the Phase 1 Commercial Operation Date, GPA shall deliver Fuel to Project Company in compliance with the Fuel Specifications for each day of operation, at such times as it may be required by Project Company to satisfy the hourly dispatch requirements to be provided by GPA (the "**Fuel Supply Requirement**"). All Fuel required to be delivered by GPA to Project Company under this Article shall be delivered to the corresponding Fuel Delivery Point and shall be measured at the corresponding Fuel Measurement Point in accordance with the provisions set forth in Schedule 12. Project Company shall be responsible for the installation, operation and maintenance of the Fuel measurement facilities.
- (b) Unless Project Company informs GPA otherwise, the Fuel Supply Requirement shall be consistent with the Guaranteed Heat Rate specified in Schedule 2, adjusted to Site Conditions and expressed in BTUs per kWh. In the event the expected operating heat rate applicable to any period of operation is higher than the corresponding Guaranteed Heat Rate, Project Company shall inform the magnitude of the deviation, the likely cause of such deviation, and the way this deviation is going to be corrected. Project Company shall use its best efforts to meet the Guaranteed Heat Rate. GPA shall supply the Fuel Supply Requirement even if the expected operating heat rate is higher than the Guaranteed Heat Rate.
- (c) Each Party shall cooperate reasonably with the other Party to coordinate the supply and transportation of Fuel to the Fuel Delivery Point with the operation of the Plant as follows: (x) by providing the other Party such information as the first Party shall reasonably request regarding the supply and transportation of the Fuel to the Fuel Delivery Point (on both a historical and estimated future basis); and (y) by maintaining personnel available at all times to address scheduling of Fuel supply and transportation.

- (d) Subject to the foregoing, GPA shall have the right to change the quantities of Fuel nominated and received on a daily basis, or more frequently, to the extent permitted, so long as such changes do not disrupt Project Company's operations.
- (e) GPA shall be deemed to be in exclusive control of, and responsible for any damage or personal injury caused by, Fuel up to the Fuel Delivery Point. Project Company shall be deemed to be in exclusive control of, and responsible for any losses of Fuel, and any damages or injury caused by, such Fuel at and from the Fuel Delivery Point. GPA warrants that Fuel caused to be delivered hereunder to Project Company shall be free and clear of all liens or other encumbrances. Title to and risk of loss of all Fuel shall transfer from GPA to Project Company upon delivery to the Fuel Delivery Point.
- (f) GPA undertakes that all Fuel delivered at the Fuel Delivery Point shall meet the Fuel Specifications. Project Company shall have the right to reject Fuel which fails to meet the Fuel Specification at the Fuel Delivery Point ("Non-Conforming Fuel") provided that Project Company has made commercially reasonable efforts to receive such Non-Conforming Fuel. If Project Company erroneously rejects Fuel that in fact meets the Fuel Specification, Project Company shall be liable to GPA for all damages caused by said rejection and shall indemnify and hold GPA harmless therefor. If either Party becomes aware that Fuel that is being or will be delivered by GPA to the Project Company fails to meet the Fuel Specification, such Party shall inform the other Party of this fact as soon as possible after becoming aware thereof.
- (g) Project Company shall, in accordance with Schedule 1, construct and maintain storage facilities at the Site for the supply of ULSD for the operation of the Facility (the "ULSD Storage Facilities"). Such storage facilities shall be capable of holding an inventory equivalent to the amount of ULSD necessary to operate the Facility at the full Contracted Facility Capacity (in accordance with the Guaranteed Heat Rate) for at least fourteen (14) consecutive Days or such larger quantities as may be required by Lenders.
- (h) Project Company shall, in accordance with Schedule 1 finance, design and construct the ULSD Supply Infrastructure and transfer it to GPA at no cost on the Phase 1 Commercial Operation Date. GPA will own, operate, and maintain the ULSD Supply Infrastructure during the Term of the ECA.

4.3.2 Fuel Supply During Testing and Commissioning

- (a) GPA shall procure and deliver the Fuel required for start-up and commissioning prior to the Phase 1 Commercial Operation Date to the ULSD Bulk Storage pursuant to the specifications in Schedule 7. GPA shall pay for the Fuel required for start-up and commissioning up to a maximum of []MMBtu and Project Company shall pay for any Fuel required and delivered in excess thereof. The Project Company shall be responsible for the operation and maintenance of the ULSD supply infrastructure prior to the Phase 1 Commercial Operation Date and the cost of first fill of ULSD in an amount equal to the Fuel storage requirements in Article 4.3.1(g) (the "First Fill"). At least eighteen (18) Months prior to the Expected Phase 1 Commercial Operation Date, Project Company and GPA shall agree to a procedure to periodically estimate and forecast the

necessary amount of Fuel expected to be required for commissioning and start-up, provided, however, that the final amount of Fuel required shall be set no later than 120 days prior to the Expected Phase 1 Commercial Operation Date.

4.4 Natural Gas Supply

The following is applicable for Natural Gas if and when it becomes available and if and when GPA so elects to supply Natural Gas to the Facility.

4.4.1 Natural Gas Procurement

At any time after the Phase 1 Commercial Operation Date, GPA, in its sole discretion may elect to supply Natural Gas to the Facility and require that the Facility burn Natural Gas. The procedure set forth in Article 8.2(f) and (g) of this Agreement shall apply to the implementation of this election.

4.4.2 Natural Gas Nominations by the Project Company

After receiving the daily Dispatch Instructions, the Project Company shall provide to GPA the Natural Gas daily nominations as required by the Project Company to satisfy the Dispatch Instructions. The detailed procedure for daily nominations and for renominations shall be determined by the Joint Coordinating Committee.

4.5 Fuel Cost Allocation

When GPA receives bills for Fuel supply and transportation for the Facility, GPA shall send a copy to the Project Company. Once received by the Project Company, the Joint Coordinating Committee shall meet to distribute the cost between the Parties. The Project Company shall be responsible for the cost of any Fuel consumed in excess of the quantity of Fuel that should have been required to produce the applicable amount of Net Energy Output had the Facility operated in compliance with the Guaranteed Heat Rate as adjusted to the operating parameters provided in the applicable Dispatch Instructions. In the event that, in any given hour or portion thereof, the Facility is unavailable to operate at 100% load due to a reason other than the fault of GPA, and this event does not occur during a Scheduled Outage or Maintenance Outage or occurs during a Scheduled Outage or Maintenance Outage after the Facility has exceeded its Allowable Total Outages Energy for the applicable Contract Year pursuant to Article 9.3, then the Guaranteed Heat Rate used to calculate the Fuel cost allocation shall be the Guaranteed Heat Rate applicable to the load at which the Facility would have been dispatched had the Facility been available to operate at 100% load.

4.6 Set-off for Fuel Costs

Any amounts owed to GPA by the Project Company with respect to Fuel, if any, shall be deducted from the monthly invoice as set forth in Article 14.

4.7 Non-Conforming Fuel

- (a) If Fuel supplied by GPA fails to conform to the specifications set out in Schedule 7 or Schedule 9 as the case may be ("Non-Conforming Fuel"), Project Company may send a Notice to GPA notifying that Project Company has received Non-Conforming Fuel.

- (b) GPA shall, promptly upon becoming aware of such delivery or promptly upon receipt of the Notice from Project Company referred to in paragraph (a) above, send a Notice to Project Company stating, to the extent known to GPA, the period during which the Non-Conforming Fuel was delivered, the quantity thereof and how its specifications vary from the ones set out in Schedule 7 or Schedule 9, as the case may be.
- (c) If, after exercising commercially reasonable efforts to receive the Non-Conforming Fuel, Project Company determines that it is unable to accept, or operate the Facility, on such Non-Conforming Fuel, then it shall be under no obligation to accept such fuel. In the event that the Dependable Capacity would otherwise be available but for the delivery of Non-Conforming Fuel, then GPA shall remain obligated to pay the Capacity Charge.

ARTICLE 5 TERM, DEFAULTS AND REMEDIES

5.1 Term of Agreement

- (a) Except for the provisions of Article 1, 2, 5, 6.6, 7, 11, 16, 17, 19, 20, 22, 23, and 23 (which shall commence and be effective upon the date of signature of this Agreement), the term of this Agreement ("**Term**") shall commence and be effective upon Financial Close (provided that this Agreement shall be effective upon satisfaction or waiver of all conditions precedent other than the condition to achieve Financial Close if the only condition precedent to Financial Close that is not satisfied or waived is that any or all of this Agreement or other Project Agreement is not in full force and effect because Financial Close has not occurred) and shall terminate twenty five (25) Contract Years after the Phase 1 Commercial Operation Date, unless extended or earlier terminated pursuant to the provisions of this Agreement. The termination of this Agreement shall be without prejudice to all rights and obligations of the Parties accrued under this Agreement prior to the date of such termination.
- (b) On or before the end of the twenty-first (21st) Contract Year the Parties shall meet to discuss whether the Term of this Agreement shall be extended. To the extent the Parties agree to extend the Term, then the terms and conditions of this Agreement shall be negotiated and mutually agreed by the Parties, as required and appropriate. To the extent this Agreement is not extended, then this Agreement shall terminate in accordance with its terms and conditions, and the Parties shall commence the implementation of the Facility Transfer procedures set forth in Article 18.

5.2 Project Company Events of Default

The Project Company shall be in default under this Agreement upon the occurrence of any of the following events set forth in subsections (a) to (r) below (each a "**Project Company Event of Default**"); provided, however, that none of such events shall constitute a Project Company Event of Default if such event (a) results from a breach or default by GPA under this Agreement or the LLA or (b) occurs as a result of, or during, a Force Majeure pursuant to Article 17.

Subject to the provision in the preceding sentence, the following are Project Company Events of Default:

- (a) the failure of Project Company to achieve Financial Close by the Required Financial Closing Date [due to the failure of the Project Company, in the reasonable opinion of GPA, to use commercially reasonable efforts to do so];
- (b) the failure of Project Company to issue Notice to Proceed to the Construction Contractor within two (2) Business Days after Financial Close;
- (c) prior to the achievement of the Phase 1 Commercial Operation Date, an Abandonment occurs without GPA's prior written consent and continues for a period of thirty (30) consecutive Days from the receipt of a Notice from GPA;
- (d) the failure of Project Company to achieve the Phase 1 Commercial Operation Date within a period of one hundred and twenty (120 Days) after the Required Phase 1 Commercial Operation Date;
- (e) the failure of the Project Company to achieve the Phase 2 Commercial Operation Date within one hundred and twenty (120) Days after the Required Phase 2 Commercial Operation Date;
- (f) the failure of Project Company to submit the Performance Bond on or before Financial Close;
- (g) the failure of the Project Company to establish and maintain any Security in accordance with the terms of this Agreement; after the Phase 1 Commercial Operation Date, an Abandonment occurs without the prior written consent of GPA and continues for a period of fifteen (15) consecutive Days from receipt of a Notice from GPA;
- (h) the failure of the Facility to achieve the Threshold Capacity upon completion of the Phase 2 Commercial Operation Tests under Article 8.1 or, after the Phase 2 Commercial Operation Date, the failure of the Facility to (A) achieve a Dependable Capacity level equal to eighty-five (85%) per cent of the Initial Dependable Capacity after any Dependable Capacity Test and (B) achieve such level of Dependable Capacity after a later Dependable Capacity Test or otherwise make available to GPA such level of capacity, in each case no later than six (6) Months after the test mentioned in (A) above, provided that, in the case of a failure of equipment where the Project Company can demonstrate that replacement equipment has been ordered, or that a repair has been undertaken, as soon as reasonably practicable after the failure (taking into account the amount of time required to determine whether a repair can be achieved), but in any event no later than the end of such 6 Month period, such period shall be extended for as long as Project Company is awaiting delivery of such equipment or is otherwise diligently pursuing a cure of the cause of the failure, up to a maximum of fifteen (15) Months;
- (i) should the Facility experience more than 285 Outage Hours in each month for a period of six (6) consecutive Months, provided that, in the case of a failure of equipment where the Project Company can demonstrate that replacement equipment has been ordered, or that a repair has been undertaken, as soon as reasonably practicable after the failure (taking into account the amount of time required to determine whether a repair can be achieved), but in any event no later than the end of such six (6) Month period, such period shall be extended for as long as the Project Company is awaiting delivery of such

equipment or is otherwise diligently pursuing a cure of the Forced Outage, up to a maximum of fifteen (15) Months;

- (j) Project Company's failure to operate, maintain, modify, or repair the Facility in accordance with Prudent Utility Practices and applicable environmental Laws, such that safety of persons and property (including the Facility) is materially adversely affected, and such failure shall continue unremedied for a period of thirty (30) Days after Notice from GPA, provided that where Project Company has implemented a remedial plan approved by GPA, such failure shall continue unremedied for a period of ninety (90) Days after Notice from GPA;
- (k) the occurrence of any of the following events: (i) the passing of a resolution by the Investors for voluntary liquidation (or other similar relief) of Project Company; (ii) the appointment of a liquidator by Project Company or by the Controller of Companies for liquidation of Project Company; (iii) submission of an application to a court of competent jurisdiction for mandatory liquidation of Project Company which application is not dismissed within ninety (90) Days, (iv) the issuance of a final and conclusive order by a court of competent jurisdiction for liquidation or winding up of Project Company; or (v) except as otherwise permitted under and pursuant to the Financing Documents or the Project Agreements, the transfer, conveyance, loss, or relinquishment to any person of Project Company's right to own and/or operate the Facility or any material part thereof or to occupy the Site without the prior written approval of GPA;
- (l) any statement, representation or warranty by Project Company in this Agreement proves to have been incorrect, in any material respect, when made and such failure or incorrect statement, representation, or warranty has a material and adverse effect on Project Company's ability to perform its obligations under this Agreement;
- (m) the failure of Project Company to make any payment or payments required to be made by it hereunder (other than payments disputed by Project Company in good faith and by Notice to GPA) within fifteen (15) Days of the due date for such payment;
- (n) any material breach by Project Company of this Agreement (other than any such breach referred to elsewhere in this Article 5.2), that is not remedied within sixty (60) Days after Notice from GPA to Project Company (which Notice shall (i) state that a material breach of this Agreement has occurred that could result in the termination of the Agreement; (ii) identify the material breach in question in reasonable detail; and (iii) demand remedy thereof);
- (o) the occurrence of a Project Company Event of Default under any project agreement (as such term is defined in each of such agreements respectively), which is not cured within the applicable cure period (if any) provided for therein;
- (p) Project Company makes an assignment of this Agreement or transfers or creates a lien on the Project in violation of Article 21.2;
- (q) The failure of Project Company to obtain or maintain the Governmental Authorizations which is not remedied within ninety (90) Days after Notice from GPA;

- (r) Except as otherwise provided in this Article 5.2, Project Company shall fail to comply with any of its other obligations under this Agreement and such failure has a material adverse effect upon GPA, and such failure shall continue uncured for sixty (60) Days after notice thereof by Company, provided that if such failure is not capable of being cured within such period of sixty (60) Days with the exercise of commercially reasonable efforts, then such cure period shall be extended for an additional reasonable period of time (not to exceed one-hundred-twenty (120) Days) so long as Project Company is exercising commercially reasonable efforts to cure such failure;

GPA shall deliver to the Lenders' agent ("**Agent**") (in accordance with the Lenders' Direct Agreement) a copy of any Notice given under this Article 5.2.

5.3 GPA Events of Default

GPA shall be in default under this Agreement upon the occurrence of any of the following events set forth in subsections (a) to (e) (each a "**GPA Event of Default**"); provided, however, that none of such events will constitute a GPA Event of Default if such event (i) results from a breach or default by Project Company under this Agreement or the LLA, or (ii) occurs as a result of a Force Majeure pursuant to Article 17. Subject to the proviso in the preceding sentence, the following are GPA Events of Default:

- (a) the submission for voluntary liquidation (or other similar relief) of GPA by GPA or any Government Entity with the authorization to make such submission, the appointment of a liquidator by GPA [or the Public Utilities Commission], the submission of an application to a court of competent jurisdiction for mandatory liquidation of GPA which application is not dismissed within ninety (90) Days, or the issuance of a final and conclusive order by a court of competent jurisdiction for liquidation or winding up of GPA;
- (b) any default or defaults by GPA in the making of any payment or payments (other than payments disputed by GPA in good faith and by Notice to Project Company) required to be made by it within thirty (30) Days of the due date for such payment;
- (c) any material breach by GPA of this Agreement (other than any such breach referred to elsewhere in this Article 5.3) that is not remedied within sixty (60) Days after Notice from the Project Company to GPA (which Notice shall (i) state that a material breach of this Agreement has occurred that could result in the termination of this Agreement, (ii) identify the material breach in reasonable detail and (iii) demand remedy thereof);
- (d) any statement, representation, or warranty made by GPA in this Agreement proves to have been incorrect in any material respect when made, and such failure or incorrect statement, representation, or warranty has a material and adverse effect on GPA's ability to perform its obligations under this Agreement; or
- (e) the occurrence of a GPA Event of Default under the LLA (as such term is defined therein) which is not cured within the applicable cure period (if any) provided for therein.

The Project Company shall deliver to the Agent a copy of any Notice given under this Article 5.3.

5.4 GPA Early Termination and Termination for Prolonged Force Majeure

- (a) GPA shall have the right to terminate this Agreement for convenience at any time subject to the terms and procedures set forth in Article 5.5(e).
- (b) GPA shall have the right to terminate this Agreement during a Prolonged Force Majeure, subject to the terms and procedures set forth in Article 5.5(g), unless the Project Company is exercising its [best efforts] to resolve the impact of the underlying Force Majeure event on the Project's performance and that such resolution is reasonably expected to occur within three (3) months and result in the Facility operating, on a continuing basis, with an annual availability of 90% or more.

5.5 Termination Notices and Rights

- (a) Upon the occurrence of a GPA Event of Default or a Project Company Event of Default, as the case may be, the non-defaulting Party may, subject to the Lenders' Direct Agreement at its option, initiate termination of this Agreement by delivering a Notice (a "**Notice of Intent to Terminate**") of its intent to terminate this Agreement to the defaulting Party and the Agent. The Notice of Intent to Terminate shall specify in reasonable detail the Project Company Event of Default or the GPA Event of Default, as the case may be, giving rise to such Notice.
- (b) Following the delivery of a Notice of Intent to Terminate, the Parties shall consult for a period of up to forty-five (45) Days in the case of a failure by either Party to make payments when due, and up to sixty (60) Days with respect to any other Event of Default (or such longer period as the Parties may mutually agree), as to what steps shall be taken with a view to mitigating the consequences of the relevant Event of Default taking into account all the circumstances. During the period following the delivery of the Notice of Intent to Terminate, the Party in default may continue to undertake efforts to cure the Event of Default, and if the Event of Default is cured at any time prior to the delivery of a Termination Notice in accordance with Article 5.5(b) then the non-defaulting Party shall have no right to terminate this Agreement in respect of such cured Event of Default.
- (c) Upon expiration of the consultation period described in Article 5.5(a) and unless the Parties shall have otherwise agreed or unless the Event of Default giving rise to the Notice of Intent to Terminate shall have been remedied, the Party having given the Notice of Intent to Terminate may, subject to the Lenders' Direct Agreement and the conditions set forth in sub-sections (d)-(h) below, terminate this Agreement by delivery of a Notice (a "**Termination Notice**") to the other Party and the Agent, whereupon, subject to the Lenders' Direct Agreement, this Agreement shall immediately terminate.
- (d) In the event of a termination by Project Company due to a GPA Event of Default, GPA shall have the right, but not the obligation, to acquire the Facility from Project Company for the applicable GPA Default Transfer Price set forth in Schedule 10. In order to exercise such right, GPA shall provide Project Company

with Notice of its election to acquire the Facility within sixty (60) Days of receiving the applicable Notice of Intent to Terminate from Project Company, after which the Parties will commence working together diligently and in good faith to effect such transfer within forty-five (45) Days or as soon as practicable thereafter.

- (e) In the event of an early termination by GPA for convenience pursuant to Article 5.4, GPA shall be required to acquire the Facility from Project Company for the applicable Early Transfer Price set forth in Schedule 10. The Parties shall work together diligently and in good faith to effect such transfer within forty-five (45) Days of Project Company's receipt of GPA's early termination Notice or as soon as practicable thereafter.
- (f) In the event of a termination by GPA due to a Project Company Event of Default, GPA shall have the right, but not the obligation, to acquire the Facility from Project Company for the applicable Project Company Default Transfer Price set forth in Schedule 10. In order to exercise such right, GPA shall provide Project Company with Notice of its election to acquire the Facility within sixty (60) Days of the date Project Company received the Notice of Intent to Terminate from GPA, after which the Parties shall commence working together diligently and in good faith to effect such transfer within forty-five (45) Days or as soon as practicable thereafter.
- (g) In the event of a termination by GPA due to a Prolonged Force Majeure pursuant to Article 5.4, GPA shall have the right, but not the obligation, to acquire the Facility from Project Company for the applicable FM Transfer Price set forth in Schedule 10. In order to exercise such right, GPA shall provide Project Company with Notice of its election to acquire the Facility within sixty (60) Days of the date Project Company receives the applicable Notice of Intent to Terminate from GPA, after which the Parties will commence working together diligently and in good faith to effect such transfer within ninety 90 days or as soon as practicable thereafter.
- (h) Any transfer contemplated in sub-sections (d)-(g) above shall be free and clear of all liens or other encumbrances and shall include all right, title and interest in and to the Facility including all fixtures, fittings, plant and equipment (including all test equipment, special tools, as-built drawings, software, documents, reports, analyses, all relevant files, plant procedures and forms as reasonably required and necessary for GPA to effectively operate the Facility after the transfer) and all improvements comprising the Facility.
- (i) In the event of a termination resulting in Project Company (or any successor thereof) continuing to be the owner of the Facility, the Parties shall enter into a connection agreement (the "Connection Agreement") whereby the Project Company shall be granted the exclusive rights to use the Electrical Interconnection Facilities and to provide Facility capacity and inject Facility energy to the Grid System at the Delivery Point as if this Agreement had not been terminated; provided that the Connection Agreement shall (i) be compliant with the applicable system grid code, (ii) have a term that is equal to or greater than the remaining term of this Agreement immediately prior to its termination, and (iii) obligate GPA to operate and maintain the Electrical Interconnection Facilities in accordance with the applicable system grid code

and Prudent Utility Practices for a reasonable and customary annual fee limited to the amount necessary to cover the reasonable costs of such operation and maintenance.

5.6 Other Remedies

- (a) The exercise of the right of a Party to terminate this Agreement, as provided herein, does not preclude such Party from exercising other remedies that are provided herein or available at law, provided that, notwithstanding the above:
 - i. no Party may terminate this Agreement other than in accordance with the express terms of this Agreement;
 - ii. the termination rights, rights to liquidated damages, and right to draw under the Performance Bond as expressly set out in this Agreement shall be the sole and exclusive remedies available to GPA against Project Company or the Project for any delay in Commissioning or failure of the Facility to be available or to meet the Dependable Capacity and/or outage requirements set out in this Agreement; and
 - iii. The termination right and right to draw under the Bid Guarantee shall be the sole and exclusive remedies available to GPA against Project Company for failure to achieve Financial Close by the Required Financial Closing Date.
- (b) Subject to Article 5 and paragraph (a) above, remedies are cumulative, and the exercise of, or failure to exercise, one or more of them by a Party shall not limit or preclude the exercise of, or constitute a waiver of, other remedies by such Party.

ARTICLE 6 COVENANTS, REPRESENTATIONS AND WARRANTIES

6.1 Project Company Covenants

The Project Company hereby covenants and agrees with GPA to:

- (a) Develop, design, permit, engineer, finance, construct and complete the Facility in a good and workmanlike manner, only with materials and equipment that are new and of international utility-grade quality, and in all material respects in accordance with:
 - i. the Functional Specifications set forth in Schedule 1;
 - ii. the plans and specifications prepared in accordance with this Agreement;
 - iii. the Technical Limits set forth in Schedule 2;
 - iv. the EPA requirements;
 - v. all applicable Laws and the Government Authorizations;

- vi. Prudent Utility Practices; and
 - vii. FERC and NERC requirements.
- (b) Design, engineer, construct and complete the Facility in such a manner as to provide, with proper maintenance and operation, that the useful life of the Facility will be at least equal to 30 years;
 - (c) After the Phase 1 Commercial Operation Date, operate and maintain the Facility in all material respects, in accordance with:
 - i. the operating procedures developed pursuant to Article 7.4 and the Dispatch Instructions;
 - ii. the Technical Limits set forth in Schedule 2;
 - iii. the Guam and U.S. EPA requirements;
 - iv. all applicable Laws and the Government Authorizations; and
 - v. Prudent Utility Practices.
 - (d) Use all reasonable efforts to procure and maintain all Government Authorizations necessary for its performance under this Agreement;
 - (e) Engage only such advisors, representatives and experts as are experienced in the development, engineering, construction, financing, operation and maintenance of power stations similar to the Facility;
 - (f) Provide at its own risk and expense the necessary facilities and services for the safety, comfort and protection of its personnel;
 - (g) Work and cooperate in good faith with GPA with respect to all of GPA's obligations and rights hereunder.

6.2 GPA Covenants

GPA hereby covenants and agrees with Project Company to:

- (a) Work with and cooperate in good faith with Project Company with respect to all of Project Company's obligations and rights hereunder;
- (b) [Upon request by Project Company, GPA shall use its reasonable efforts to support Project Company in obtaining the Government Authorizations required by the provisions of Article 7.]

6.3 The Project Company Representations and Warranties

The Project Company hereby represents and warrants at the date of this Agreement that:

- (a) The Project Company is a company duly organised, validly existing and in good standing under the Laws of Guam, and Project Company has all requisite corporate power and authority to conduct its business, to own its properties, and to execute, deliver, and perform its obligations under this Agreement;
- (b) The execution, delivery and performance by Project Company of this Agreement have been duly authorised by all necessary corporate action on the part of Project Company, and do not and will not:
 - i. require any consent or approval of Project Company's Board of Directors, shareholders or partners other than those which have been obtained (evidence of which consents and approvals shall be, if it has not heretofore been, delivered to GPA upon its request), or
 - ii. violate or result in a breach of, or constitute a default under any provisions of Project Company's articles and memorandum of association or bylaws or other organic documents, or any material indenture, contract, or agreement to which it is a party or by which it or its properties may be bound, or any material law, rule, regulation, order, writ, judgment, injunction, decree, determination, or award presently in effect applicable to Project Company.
- (c) To the best of Project Company's knowledge, no Government Authorization or approval by any other Government Authority is necessary for the due execution, delivery and performance by Project Company of this Agreement;
- (d) This Agreement is a legal, valid and binding obligation of Project Company, enforceable against Project Company in accordance with its terms; and
- (e) There is no pending or, to the best of Project Company's knowledge, threatened action or proceeding against Project Company before any court, Government Authority or arbitrator that could materially and adversely affect the financial condition or operation of Project Company or the ability of Project Company to perform its obligations hereunder, or that could affect the legality, validity or enforceability of this Agreement (as in effect on the date hereof).

6.4 GPA Representations and Warranties

GPA hereby represents and warrants at the date of this Agreement that:

- (a) GPA is a public corporation and an enterprise fund of the Government of Guam established by the Guam Power Authority Act of 1968, duly organised, validly existing, and in good standing under the Laws of Guam, and has all requisite corporate power and authority to conduct its business, to own its properties, and to execute, deliver, and perform its obligations under this Agreement.
- (b) The execution, delivery and performance by GPA of this Agreement have been duly authorised by all necessary corporate or Government action, and do not and will not:
 - i. require any consent or approval of GPA's Board of Directors, shareholders, officers, or officials other than those which have been obtained

(evidence of which consents and approvals shall be, if it has not heretofore been, delivered to the Project Company upon its request);

- ii. violate or result in a breach or constitute a default under any provisions of GPA's articles and memorandum of association or bylaws, or other organic documents, or any material indenture, contract, or agreement to which it is a party or by which it or its properties may be bound, or any material law, rule, regulation, order, writ, judgment, injunction, decree, determination, or award presently in effect applicable to GPA.
- (c) To the best of GPA's knowledge, no Government Authorization or approval by any other Government Authority is necessary for the due execution, delivery and performance by GPA of this Agreement other than [].
- (d) This Agreement is a legal, valid, and binding obligation of GPA, enforceable against GPA in accordance with its terms.
- (e) There is no pending or, to the best of GPA's knowledge, [threatened action or proceeding against GPA before any court], Government Authority, or arbitrator that could materially and adversely affect the financial condition or operation of GPA or the ability of GPA to perform its obligations hereunder, or that could affect the legality, validity or enforceability of this Agreement (as in effect on the date hereof).

6.5 Not used.

6.6 Pre-Existing Condition

- (a) If a Pre-Existing Condition is discovered during the Pre-Existing Condition Period, Project Company will notify GPA within fourteen (14) Days of such discovery (or, if later, the date when Project Company becomes aware of such discovery).
- (b) Following a notification under paragraph (a) above, Project Company will promptly submit to GPA a remediation plan and a proposal for the cost of any remedial action required to remove such Pre-Existing Condition. Within thirty (30) Days of receipt of such plan and proposal, GPA will either (i) approve the remediation plan and proposal or (ii) not approve the remediation plan and proposal (setting out in reasonable detail the reasons therefore).
- (c) In the event that GPA does not approve the remediation plan and proposal proposed by Project Company, GPA and Project Company shall discuss in good faith to attempt to agree to such a plan and proposal for a period of thirty (30) Days. In the event of a failure to agree to such a plan and proposal within such thirty (30) Days, GPA shall carry out, or shall appoint a third party to carry out, the remediation work and Project Company shall grant access to the Site or relevant portion of the pipeline route to GPA or such third party for this purpose, provided that the remediation work shall be carried out on a timely basis and in a manner that does not interfere with the activities of Project Company and its Contractors, and that all persons present on the Site on behalf of GPA (or the third party appointed by it to carry out the remediation work) will comply with Project Company or its Contractors' safety rules.

- (d) GPA may not unreasonably withhold or delay its consent in relation to any remediation plan and proposal delivered by Project Company pursuant to this Article 6.6 and failure by GPA to respond to any remediation plan and proposal within fifteen (15) Days of receipt of such proposal shall be deemed to constitute GPA's consent to such remediation plan and proposal.
- (e) Following any remediation plan and proposal being agreed (or being deemed to have been agreed) by Project Company and GPA and subject to subsections 6.6(g) and (h) below:
 - i. Project Company shall be responsible for the first one million Dollars (US\$1,000,000) (in aggregate) of remediation costs resulting from the discovery of Pre-Existing Site Condition(s) during the Pre-Existing Condition Period;
 - ii. Project Company shall be responsible for the first one million Dollars (US\$1,000,000) (in aggregate) of remediation costs resulting from the discovery of Pre-Existing Pipeline Route Condition(s) during the Pre-Existing Condition Period; and
 - iii. GPA shall be responsible for (i) all remediation costs resulting from the discovery of Pre-Existing Site Condition(s) during the Pre-Existing Condition Period in excess of the one million Dollars (US\$1,000,000) of costs (in aggregate) to be met by Project Company and (ii) all remediation costs resulting from the discovery of Pre-Existing Pipeline Route Condition(s) during the Pre-Existing Condition Period in excess of the one million Dollars (US\$1,000,000) of costs (in aggregate) to be met by Project Company, and GPA shall pay such costs to Project Company within thirty (30) Days of receipt of an invoice from Project Company in respect of such costs. Notwithstanding the above, only reasonable and documented remediation costs shall be considered in determining whether and to what extent GPA may be responsible for remediations costs under this subsection 6.6(e).
- (f) Late payment of any invoice delivered by Project Company under this Clause shall accrue interest in accordance with Clause 14.4 (Late Payment). Project Company shall not be in default or breach of any of its obligations under this Agreement where directly attributable to a Pre-Existing Condition.
- (g) Project Company shall exercise its best efforts to mitigate the effects and costs of any Pre-Existing Condition. GPA shall have no obligation to pay any remediation costs pursuant to this Article 6.6 to the extent such costs are incurred due to a failure by Project Company to meet its obligation under this subsection (g).
- (h) Prior to finalizing the Facility design, Project Company shall perform early-stage site investigation and analysis consistent with Prudent Utility Practices. GPA shall not be obligated to pay remediation costs (and subsection (f) shall not excuse Project Company from any of its obligations under this Agreement) for any Pre-Existing Condition that was not notified to GPA within fourteen (14) Days of the earlier of the date such condition was discovered and the date upon which such condition should have been discovered had Project Company complied with its obligation under this subsection (h).

ARTICLE 7 PRE-OPERATIONAL PERIOD

7.1 Permits, Licenses and Approvals

Prior to the Phase 2 Commercial Operation Date, Project Company shall, at its own expense, obtain and maintain all Government Authorizations or any other permit, license, approval or authorization required to be obtained and maintained by Project Company as and when required to comply with its obligations under this Agreement, including reaching Financial Close by the Required Financial Closing Date, achieving the Phase 1 Commercial Operation Date by the Required Phase 1 Commercial Operation Date, and achieving the Phase 2 Commercial Operation Date by the Required Phase 2 Commercial Operation Date.

7.2 Documents to be Submitted by Project Company

Project Company shall provide the following documents to GPA:

- (a) As soon as available but no later than the earlier of Financial Close and Notice to Proceed, a complete copy of the Construction Contract, including all exhibits and schedules thereto, and complete plans and specifications for the construction of the Facility, including drawings and interconnection points for SCADA and AGC, as soon as practical as these are completed, provided that the Project Company shall be entitled to request approval from GPA to redact certain commercial terms from the copy of the Construction Contract.
- (b) As soon as available but no later than the earlier of Financial Close and Notice to Proceed, a complete copy of the O&M Contract (if applicable), including all exhibits and schedules thereto, provided that Project Company shall be entitled to request approval from GPA to redact certain commercial terms from the copy of the O&M Contract supplied to the GPA.
- (c) As soon as available but no later than Financial Close, a complete copy of [placeholder for any other relevant agreements].
- (d) On or before Financial Close, complete copies of all Government Authorizations that have been issued to Project Company for the design, financing, construction, operation and maintenance of the Facility.
- (e) As soon as available, copies of all Government Authorizations other than those provided under the preceding clause that have been issued to Project Company or the Contractors (as applicable) for the design, financing, construction, operation and maintenance of the Facility.
- (f) On or before Financial Close, a copy of Project Company's quality control program, [safety program, environmental compliance program, and security (including cybersecurity) program, each] with respect to all aspects of the design, engineering, equipping, construction, and operation and maintenance of the Facility.

- (g) On or before the Construction Start Date, complete copies of all insurance policies and certificates of insurance required for construction as indicated in Article 15, provided that Project Company shall be entitled to redact from the copy of the insurance policies supplied to GPA, all commercial terms and all other information that Project Company reasonably considers to be of a confidential or proprietary nature.
- (h) As soon as available, but not later than the Phase 1 Commercial Operation Date, complete copies of all insurance policies and certificates of insurance obtained pursuant to Article 15 other than those provided under the preceding clause.
- (i) At least one hundred and twenty (120) Days (or such other period as shall be agreed between the Parties) before the scheduled commencement of the Testing and Commissioning for Phase 1, detailed programs and protocols to be used during the Testing and Commissioning of the Facility consistent with the provisions of this Agreement, including Article 8 and Schedule 4. The GPA Engineer and GPA shall have the opportunity to comment on the proposed program and protocols within thirty (30) Days of receipt from Project Company of said documentation, and the GPA Engineer, GPA, and Project Company will work together to agree on the procedures and protocols to be used for Testing and Commissioning not later than sixty (60) Days prior to the scheduled commencement of the respective Testing and Commissioning.
- (j) At least sixty (60) Days before the scheduled commencement of the Phase 1 Commercial Operation Tests, the intended start up and test schedule.
- (k) Not later than thirty (30) Days after the Commercial Operation Date for each Phase, copies of all test results, certified by the GPA Engineer, for the Commercial Operation Tests performed with respect to such Phase.
- (l) All the drawings, manuals, procedures, and other technical documents listed in Schedule 1 at the time specified in Schedule 1.

7.3 Supply of Power

- (a) The Project Company will arrange for the supply of all electrical energy and capacity required for construction of the Facility through (i) self-generation, or (ii) to the extent available, through making arrangements to purchase construction power from the GPA.
- (b) GPA will arrange for backfeed power to be available at the Harmon Substation as required for testing and commissioning in accordance with the parameters set forth in Schedule 8. Any such backfeed power shall be charged to Project Company at the prevailing rates applicable to such power.
- (c) Project Company will arrange for the supply of all electrical energy and capacity required for the maintenance and operation of the Facility by (i) generating it with Project Company's own facilities, or (ii) to the extent available, using backfeed power through GPA's Harmon substation. Any such backfeed power, to the extent it is supplied by GPA, shall be paid to GPA by Project Company at the then current rate for electricity at that location.

7.4 Operating Procedures

- (a) Not later than one hundred eighty (180) Days before the Required Phase 1 Commercial Operation Date, Project Company shall provide GPA with a first draft of its proposed operating procedures dealing with all operation interfaces between GPA and Project Company, including the method of day-to-day communication, key personnel lists, clearances and switching practices, outage scheduling, capacity and energy reporting, operating log and reactive power support, which procedures shall be consistent with this Agreement, the designs of the Facility and the Grid System (including the principles and guidelines developed by GPA for the Grid System as part of and in accordance with the applicable system grid code and as provided to Project Company), and Prudent Utility Practices (the "Operating Procedures"). GPA shall cooperate with Project Company, including by providing responses to reasonable requests for information submitted by Project Company in preparation of the Operating Procedures.
- (b) Within ninety (90) Days after GPA's receipt of the first draft of the Operating Procedures, GPA shall notify Project Company of any requested deletions, amendments or additions which, in the exercise of GPA's reasonable judgment, are necessary or desirable. Project Company shall make any deletions, amendments or additions that GPA reasonably requests unless such requests would be inconsistent with this Agreement, the designs of the Facility, and the Grid System or Prudent Utility Practices. GPA may, from time to time, require the Operating Procedures to be revised to conform to any duly established grid code binding on GPA to the extent that those revisions are not inconsistent with the terms of this Agreement, the designs of the Facility, the Grid System (including the principles and guidelines developed by GPA as part of and in accordance with the applicable system grid code for the Grid System), and Prudent Utility Practices.

7.5 GPA Observation Visits

GPA shall have the right, upon reasonable prior Notice, and subject to the safety rules and regulations of Project Company, to have its agents or employees at the Site at any time; provided that (i) such visits do not unreasonably interfere with the construction, testing, Commissioning, operation or maintenance of the Facility and (ii) such visits are at GPA's own expense. All persons visiting the Facility on behalf of GPA shall comply with the reasonable instructions and directions of Project Company and/or its Contractors. GPA shall bear responsibility for any claim, demand, action, proceeding, loss or damage to such persons or any property of Project Company caused by the negligence or wilful misconduct of any persons visiting pursuant to this Article 7.5 or the negligence or wilful misconduct of GPA during such visits. Insurance policies issued to Project Company must also cover GPA personnel and the GPA Engineer during their visits to the Site during the Term.

7.6 Project Company Progress Reports

Commencing on the date of this Agreement and continuing until the end of the Term, the Project Company shall submit progress reports to GPA prior to the fifteenth (15th) Day of each Month. Such reports shall cover in reasonable detail the progress in the

development, permitting, financing, procurement, construction, and operation of the Facility for the preceding Month.

Prior to the Phase 2 Commercial Operation Date, the progress report shall include, as a minimum, an updated critical path schedule, a list of activities completed in the preceding month, a list of activities behind schedule and reasons therefor, a recovery plan for activities more than 30 days behind schedule, a safety report specifying all safety related incidents (e.g. fatalities, lost time accidents, and near misses), and a list and description of outstanding issues or concerns impacting, or reasonably expected to impact, the Project or its implementation schedule.

Subsequent to the Phase 1 Commercial Operation Date, the progress report shall include, as a minimum, an operational performance report (including hours of operation, gross and net capacity, heat rate, auxiliary load, number of trips, outages, or derations), description of maintenance activity, an updated maintenance plan, a safety report specifying all safety related incidents (e.g. fatalities, lost time accidents, and near misses), a list and detailed description of any environmental or security violations and a list and description of outstanding issues or concerns impacting the operation and maintenance of the Facility.

ARTICLE 8 TESTING OF THE FACILITY

8.1 Testing of the Facility Prior to the Commercial Operation Date

- (a) Project Company shall provide to GPA on an on-going basis relevant information regarding its program for testing the Facility, including any delay suffered, or reasonably anticipated to be suffered, in the date of synchronization of a Unit (or Facility) or to the Expected Phase 1 or Phase 2 Commercial Operation Dates.
- (b) Not less than sixty (60) Days prior to each of the Expected Phase 1 Commercial Operation Date and Phase 2 Commercial Operation Date, Project Company will deliver to GPA in writing the final program for testing, including the expected duration of Project Company's start-up and testing program and a tentative schedule for conducting all tests required by Schedule 4. Project Company shall advise GPA in writing of its final schedule for the testing program not less than fifteen (15) Days prior to the commencement of the tests required by Schedule 4. If the schedule for any test required by Schedule 4 is adjusted after Project Company has provided GPA with the final testing program schedule, Project Company shall advise GPA not less than seventy-two (72) hours prior to the commencement of any such test. On each Day beginning with the Day on which testing commences, Project Company shall provide GPA with a schedule of the tests to be conducted on the following Day or Days, if such test will continue for more than one (1) Day. All testing of the Facility shall satisfy the requirements provided in Schedule 4 and the procedures and protocols agreed upon by GPA, Project Company, and the GPA Engineer pursuant to Article 7.2(i). GPA will make all reasonable efforts to accept all the energy generated by the Facility during the Period of Testing and enable full load operation of the Facility during Dependable Capacity Tests.
- (c) If GPA is unable to accommodate the schedule for such test or tests as provided by Project Company in the final schedule for the program of tests

pursuant to the foregoing Article 8.1(b), GPA will give Project Company a Notice regarding deferral of any test or tests within seventy-two (72) hours of its receipt of the final schedule for testing, and the Parties will mutually agree on a date for any deferred test or program of tests.

(d) Additional Commercial Operation Tests

- i. Project Company shall be entitled to attempt as many Commercial Operation Tests as are necessary to ensure that each Phase is Commissioned in accordance with the requirements of this Agreement. Project Company shall give GPA not less than seventy-two (72) Hours' Notice of each additional Commercial Operation Test it desires to attempt.
- ii. Notwithstanding Article i, if the results of a Commercial Operation Test satisfy the applicable minimum performance criteria for successful completion of such Commercial Operation Test, but Project Company is not satisfied with the results of such Commercial Operation Test, Project Company may request additional tests to establish the results of the Commercial Operation Test with at least seventy-two (72) Hours' prior Notice provided to GPA prior to a subsequent test; provided, however, that Project Company will continue to be responsible for any delay liquidated damages under Article 9.1 and will not be paid for capacity until it has notified GPA that Project Company has designated the test as the Commercial Operation Test in accordance with sub-clause (iii) below.
- iii. When Project Company is satisfied with a test to establish the Phase 1 Commercial Operation Date or Phase 2 Commercial Operation date, as the case may be, Project Company shall notify GPA that Project Company has designated such test as the Commercial Operation Test. The Initial Dependable Capacity shall be set at any level successfully demonstrated during the Commercial Operation Test up to the Contracted Facility Capacity.
- iv. The Phase 1 Commercial Operation Date and the Phase 2 Commercial Operation Date shall occur and payment for Capacity Charges shall commence as of the first Day after the Day the relevant Phase is Commissioned. In the event that Project Company is unable to demonstrate in the Phase 2 Commercial Operation Tests (carried out in accordance with the foregoing subparagraph (d)(i)) that the Facility is capable of operating at Threshold Capacity, GPA may terminate this Agreement as a Project Company Event of Default in accordance with Article 5.5.

8.2 Testing of Dependable Capacity and Heat Rate of the Facility after the Commercial Operation Date

The following provisions with respect to Testing the Facility after the Phase 2 Commercial Operation Date shall apply:

- (a) Dependable Capacity shall be tested annually (at Project Company's cost) after the Phase 2 Commercial Operation Date at times mutually agreed upon by Project Company and GPA. Project Company may, within twenty-four (24)

hours of completion of a Dependable Capacity Test, reject the test and may conduct a retest (at Project Company's cost) at a time to be mutually agreed; provided, however, that Project Company cannot conduct more than two (2) retests of any Dependable Capacity Test before the level of capacity achieved during such a test is set as the Dependable Capacity. Project Company shall give GPA at least forty eight (48) hours' prior Notice of the first retest and twenty four (24) hours' prior Notice of the second retest, and any retest shall be conducted within ten (10) Days after the completion of the rejected test.

- (b) The test period for the Dependable Capacity Test shall be for six (6) continuous hours for a fossil fuel fired Facility or a Fossil Fuel Fired Component of the hybrid Facility. The test shall be run using the Metering System and plant instrumentation for measurements, unless otherwise decided by the Joint Coordinating Committee. The Dependable Capacity shall be the Net Energy Output (excluding any Excess Energy) during those six (6) hours corrected for Site Reference Conditions divided by six (6), but may not exceed the Contracted Facility Capacity. If, as the result of a Dependable Capacity Test, the tested capacity is shown to be above the Dependable Capacity in effect prior to such test, Project Company shall set the Dependable Capacity at the new tested capacity up to the Contracted Facility Capacity, and payments for the Dependable Capacity shall be increased accordingly, effective the Day such Dependable Capacity Test is completed. If, as a result of the Dependable Capacity Test, the tested capacity is shown to be below the Dependable Capacity in effect prior to such test, the Dependable Capacity will be reduced to the newly tested capacity, and payments for the Dependable Capacity shall be decreased to the tested level, effective the Day Dependable Capacity Test is completed.
- (c) Between annual tests, GPA may request one (1) additional Dependable Capacity Test (at Project Company's cost) if GPA reasonably believes that the currently set Dependable Capacity does not accurately reflect the Dependable Capacity previously declared to GPA. GPA shall provide written Notice of its request to test fourteen (14) Days prior to the requested test date. Project Company shall be entitled to one (1) retest of such Dependable Capacity Test (at Project Company's cost) before the level of capacity achieved during such a test is set as the Dependable Capacity provided that it rejects the test within twenty-four (24) hours of completing the Dependable Capacity Test. Each such Dependable Capacity Test and, as appropriate, any retest, shall be conducted in accordance with the foregoing Subsection (b), within ten (10) Days of its request or, as the case may be, the rejection, and Project Company shall give GPA not less than seventy-two (72) hours Notice of its intention to perform such retest.
- (d) Between annual tests, Project Company may:
 - i. conduct one additional Dependable Capacity Test; and
 - ii. in addition to Project Company's right to request an additional Dependable Capacity Test under Article i above, conduct (at Project Company's cost) one additional Dependable Capacity Test if GPA has elected to conduct an additional Dependable Capacity test mentioned in Article 8.2 (c) during a Forced Outage,

in each case, if Project Company reasonably believes that the currently set Dependable Capacity does not accurately reflect the Dependable Capacity that the Facility is able to achieve.

Each such Dependable Capacity Test carried out pursuant to this Article 8.2(d) shall be conducted in accordance with Article 8.2(b) and Project Company shall give GPA not less than seventy-two (72) hours' Notice of its intention to perform each such Dependable Capacity Test.

- (e) Notwithstanding anything to the contrary in this Agreement, no Dependable Capacity Test will be conducted during a Scheduled or Maintenance Outage, during the occurrence of a Force Majeure that affects the Facility, or while the consequences of such Force Majeure continue to affect the Facility. For the avoidance of doubt, the additional Dependable Capacity Test mentioned in Article 8.2(c) may be conducted during a Forced Outage.
- (f) If GPA requires the Facility to operate on Natural Gas in accordance with the provisions of Article 4.4:
 - i. GPA shall issue a Notice to Project Company stating the date, which shall not be less than 60 Days from the date of the Notice, starting from which it could start the supply of Natural Gas;
 - ii. Project Company shall be allowed a period of twenty five (25) Days following the date set forth in the above-mentioned Notice to implement the switch to Natural Gas and to perform the tests set forth in Schedule 4;
 - iii. during such twenty five (25) Day period, which shall be extended in case of occurrence of any Force Majeure event or unavailability of Natural Gas:
 - (A) The Facility shall be deemed to provide the Dependable Capacity and the Project Company shall receive the full Capacity Charge;
 - (B) GPA shall provide sufficient quantities of Natural Gas in order to allow Project Company to implement the switch;
 - (C) Provision of Natural Gas by GPA to Project Company up to [] MMBtu of Natural Gas (the "**Maximum Natural Gas Switch Quantity**") shall be at GPA's cost;
 - (D) Provision of Natural Gas by GPA to Project Company in quantities exceeding the Maximum Natural Gas Switch Quantity shall be at Project Company's cost;
 - (E) and Project Company shall perform the tests referred to in Schedule 4 (at Project Company's cost) and shall be required to conduct (including after the expiry of such period) as many retests (at Project Company's cost) as necessary to pass these tests in accordance with the provisions of Schedule 4.

- (g) The Parties agree that the provisions of paragraph (f) above shall only apply when GPA elects to burn Natural Gas for the first time during the Term.
- (h) GPA shall have the right to request that the Facility's heat rate be tested (at Project Company's cost) concurrently with any Dependable Capacity Test and Project Company shall be obligated to comply with such request.

8.3 Notice of and Compliance with Testing Procedures

Project Company shall carry out Commissioning of Phase 1 and Phase 2, the testing of the Initial Dependable Capacity at or prior to the Phase 1 and Phase 2 Commercial Operation Dates and the testing of the Dependable Capacity of the Facility thereafter in accordance with Articles 8.2 and Schedule 4. GPA shall use its reasonable efforts to comply promptly with all reasonable requests made by Project Company for assistance in carrying out such testing and Commissioning. GPA shall be given prior Notice of the testing or Commissioning procedure in accordance with Article 8.2 and shall be entitled to be present and observe any such testing and Commissioning. The procedures and results of such Tests shall be certified by the GPA Engineer.

8.4 Copies of Test Results

Project Company shall provide GPA with copies of the results of all tests performed pursuant to Schedule 4 and after every Major Overhaul of a generating Unit at the Facility. GPA shall not use or disclose such results other than in connection with the administration and enforcement of this Agreement or subject to applicable Law.

8.5 Deemed Commissioning

- (a) In the event that for any reason (other than a breach by Project Company of its obligations under this Agreement or any other Project Agreement):
 - i. Due to (A) any action or inaction by GPA which is inconsistent with the terms of this Agreement (including any default or breach), [(B) the discovery of a Pre-Existing Site Condition, (C) any failure by GPA or any third party appointed by GPA to carry out remediation work in accordance with Article 6.6(c)] or (D) unavailability of Fuel, a Commercial Operation Test is delayed beyond the date falling fourteen (14) Days before the Required Phase 1 Commercial Operation Date or Required Phase 2 Commercial Operation date (whichever is applicable), then upon receipt of a certificate from an Independent Engineer to the effect that the Facility is, or would have been, ready for testing by the relevant Required Commercial Operation Date, the Facility shall be deemed Commissioned for the respective Phase fifteen (15) Days after the relevant Required Commercial Operation Date (provided that for the avoidance of doubt the Project Company shall in no event be required to pay delay liquidated damages under Article 9.1 for such fifteen (15) Day period) and the Facility shall be deemed to be providing Initial Dependable Capacity equal to the applicable Contracted Facility Capacity for the purposes of payments of Capacity Charges to be made by GPA to Project Company.

If the Facility has been deemed Commissioned for a Phase, the Commercial Operation Tests for such phase shall be conducted at the first available opportunity after such deemed Commissioning, and the Initial Dependable

Capacity adjusted as a result of such test in accordance with subsection (b) below. Project Company shall use reasonable efforts to mitigate the delay caused by any of the events mentioned in this Article 8.5(a).

- (b) In the event that the Initial Dependable Capacity of the Facility at the Commercial Operation Tests after the Phase has been deemed Commissioned, is less than the applicable Contracted Facility Capacity, Project Company shall refund to GPA an amount equal to:
 - i. the difference, if any, between the applicable Contracted Facility Capacity and the Initial Dependable Capacity divided by the applicable Contracted Facility Capacity; times
 - ii. the total Capacity Charges paid between the date of deemed Commissioning and the date upon which the Initial Dependable Capacity Tests take place; provided, however, that in the event that the Initial Dependable Capacity for Phase 2 is less than the Threshold Capacity, the Project Company shall refund all Capacity Charges received based on deemed Commissioning.
- (c) If, due to a delay mentioned in Article 8.5(a), either or both of the actual Phase 1 Commercial Operation Date or the actual Phase 2 Commercial Operation Date does not occur within one (1) month of the relevant Required Commercial Operation Date, GPA shall indemnify Project Company for (i) the actual reasonable documented costs of demobilisation and remobilisation of personnel of Project Company, the O&M Contractor and of the Construction Contractor, and (ii) for any other actual reasonable documented costs payable to the Construction Contractor.

ARTICLE 9

LIQUIDATED DAMAGES PAYABLE BY PROJECT COMPANY

9.1 Delay in Commissioning

Project Company covenants that Phase 1 shall be Commissioned on or before the Required Phase 1 Commercial Operation Date. If the Phase 1 Commercial Operation Date has not occurred by the Required Phase 1 Commercial Operation Date, the Project Company shall pay GPA, as liquidated damages, for the delay in Phase 1 Commissioning a sum equal to US\$240,000 for each Day of delay or fraction thereof. With respect to any day after the Required Phase 2 Commercial Operation Date, Project Company will not be liable for Phase 1 delay liquidated damages to the extent it is paying Phase 2 delay liquidated damages for such day.

Project Company covenants that Phase 2 shall be Commissioned on or before the Required Phase 2 Commercial Operation Date. If the Phase 2 Commercial Operation Date has not occurred by the Required Phase 2 Commercial Operation Date, the Project Company shall pay GPA, as liquidated damages, for the delay in Phase 2 Commissioning a sum equal to US\$240,000 for each Day of delay or fraction thereof.

In no event shall the damages assessed under this Article 9.1 exceed [US\$40,000,000].

9.2 Failure to Meet Contracted Facility Capacity

- (a) Project Company covenants that the Initial Dependable Capacity of Phase 1 shall not be less than the Contracted Phase 1 Capacity. In the event that upon completion of the Dependable Capacity Test used to establish the Initial Dependable Capacity of Phase 1 at or prior to the Phase 1 Commercial Operation Date, pursuant to Article 8, the Initial Dependable Capacity for Phase 1 is less than the Contracted Phase 1 Capacity, Project Company shall have the option for a period of up to six (6) months from the Phase 1 Commercial Operation Date to undertake any necessary actions ("**Remedial Actions**") to increase the Initial Dependable Capacity to the Contracted Phase 1 Capacity at its own cost. Within 15 Days of the expiration of such period or any decision by Project Company not to undertake Remedial Actions (whichever is the earlier to occur), Project Company shall pay to GPA, as liquidated damages, an amount equal to US\$280 per kW of the shortfall between the most recently determined Initial Dependable Capacity and the Contracted Phase 1 Capacity.
- (b) Project Company covenants that the Initial Dependable Capacity of Phase 2 shall not be less than the Contracted Phase 2 Capacity. In the event that upon completion of the Dependable Capacity Test used to establish the Initial Dependable Capacity of Phase 2 at or prior to the Phase 2 Commercial Operation Date, pursuant to Article 8, the Initial Dependable Capacity for Phase 2 is less than the Contracted Phase 2 Capacity (but greater than the Threshold Capacity), Project Company shall have the option for a period of up to six (6) months from the Phase 2 Commercial Operation Date to undertake Remedial Actions to increase the Initial Dependable Capacity to the Contracted Phase 2 Capacity at its own cost. Within 15 Days of the expiration of such period or any decision by Project Company not to undertake Remedial Actions (whichever is the earlier to occur), Project Company shall pay to GPA, as liquidated damages, an amount equal to US\$3,100 per kW of the shortfall between the most recently determined Initial Dependable Capacity and the Contracted Phase 2 Capacity.
- (c) In no event shall the damages assessed under this Article 9.2 exceed [US\$ 35,000,000].
- (d) Results of all Initial Dependable Capacity Tests and Dependable Capacity Tests shall be valid only to the extent such tests are performed while the Facility operates within the requirements of all Government Authorizations and the environmental permits.

9.3 Excessive Outages

- (a) Excessive Forced Outages

Project Company covenants that, in respect of each Contract Year, the Excessive Forced Outages Energy ("**EFOE**") for such Contract Year shall be less than or equal to zero (0).

In the event that, during any Contract Year other than the first Contract Year, the Excessive Forced Outages Energy is greater than zero (0), then Project Company shall pay to GPA, as liquidated damages, the Capacity Damages, calculated as follows:

$$\text{Capacity Damages (US\$)} = \text{Capacity Damages Amount (US\$/MW)} \times 1.4 \times \text{Excessive Forced Outages Energy (MWh)} / \text{eight thousand seven hundred sixty (8760) hours}$$

Where the Capacity Damages Amount equals the product of (i) the Capacity Charge per MW per Month prevailing during the relevant Contract Year and (ii) 12 Months.

- i. The Excessive Forced Outages Energy (EFOE) for any Contract Year, other than as modified in Article 9.3 for the first Contract Year, will be the sum of the actual Forced Outages (FOE) minus the Allowable Forced Outages Energy (AFOE), namely:

$$\text{Excessive Forced Outages Energy (MWh)} = [\text{FOE} - (\text{AFOE})] \text{ (each term expressed in MWh)}$$

FOE (MWh) = the summation of all periods of Forced Outage of this product: duration of outage (hours) x reduction in Dependable Capacity (MW).

AFOE (MWh) = Annual Average Dependable Capacity (MW) x [insert guaranteed maximum forced outage hours included in Bidder's Proposal] hours.

- ii. If the EFOE for any Contract Year is less than or equal to zero, no liquidated damages are due.

(b) Excessive Total Outages

Project Company covenants that, in respect of each Contract Year, the Excessive Total Outages Energy ("**ETOE**") for such Contract Year shall be less than or equal to zero (0).

In the event that, during any Contract Year other than the first Contract Year, the Excessive Total Outages Energy is greater than zero (0), then Project Company shall pay to GPA, as liquidated damages, the Capacity Damages, calculated as follows:

$$\text{Capacity Damages (US\$)} = \text{Capacity Damages Amount (US\$/MW)} \times 1.4 \times \text{Excessive Total Outages Energy (MWh)} / \text{eight thousand seven hundred sixty (8760) hours}$$

Where the Capacity Damages Amount equals the product of (i) the Capacity Charge per MW per Month prevailing during the relevant Contract Year and (ii) 12 Months.

- i. The Excessive Total Outages Energy (ETOE) for any Contract Year, other than as modified in Article 9.3 for the first Contract Year, will be the sum of the actual total outages (FOE, MOE and SOE) minus the Allowable Total Outages Energy (ATOE), minus the difference between the Forced

Outages (FOE) and the Allowable Forced Outages Energy (AFOE), namely:

<i>Excessive Total Outages Energy (MWh) = [FOE + MOE + SOE - (ATOE)] - [FOE - (AFOE)] (each term expressed in MWh)</i>	
<i>FOE (MWh)</i>	= the summation of all periods of Forced Outage of this product: duration of outage (hours) x reduction in Dependable Capacity (MW).
<i>MOE (MWh)</i>	= the summation of all periods of Maintenance Outage of this product: duration of outage (hours) x reduction in Dependable Capacity (MW).
<i>SOE (MWh)</i>	= the summation of all periods of Scheduled Outage of this product: duration of outage (hours) x reduction in Dependable Capacity (MW).
<i>ATOE (MWh)</i>	= Annual Average Dependable Capacity (MW) x [insert guaranteed maximum total outage hours pursuant to the availability guarantee included in Bidder's Proposal] hours.
<i>AFOE (MWh)</i>	= Annual Average Dependable Capacity (MW) x [insert guaranteed maximum forced outage hours pursuant to the forced outage rate guarantee included in Bidder's Proposal] hours.

ii. If the ETOE for any Contract Year is less than or equal to zero, no liquidated damages are due.

9.4 Failure to Meet Guaranteed Amount of Renewable Energy

If the Facility is a hybrid Facility, the Project Company guarantees that, for each Contract Year, the Net Energy Output derived from the Renewable Component shall be equal to or greater than the Guaranteed Amount of Renewable Energy. After the end of each Contract Year, GPA shall verify the amount of Net Energy Output derived from the Renewable Component for such year and if it is less than the Guaranteed Amount of Renewable Energy applicable to such year, the Project Company shall be liable for Renewable Component Liquidated Damages which shall be payable as part of the next monthly invoice. Renewable Component Liquidated Damages shall be equal to the amount of the annual shortfall (in kWh) multiplied by the average Energy Charge (in \$/kWh) for the applicable Contract Year.

9.5 Waiver of Defences

Notwithstanding that GPA may be substantially damaged in amounts that may be difficult or impossible to determine in the event that a Phase or Renewable Component (i) is not Commissioned by the date required, (ii) is not capable of achieving and maintaining the Contracted Phase 1 Capacity or the Contracted Facility Capacity or the Guaranteed Amount of Renewable Energy, (iii) cannot minimise the number of Forced

Outages, or (iv) cannot achieve the designated operating levels, the Parties agree that the sums set out in this Article 9 constitute a genuine pre-estimate of the loss to GPA and as a result are fair and reasonable as liquidated damages and it is further understood and agreed that the payment of liquidated damages is in lieu of actual damages for such occurrences. Project Company hereby waives any defence as to the validity of any liquidated damages in this Agreement on the grounds that such damages are void as penalties.

9.6 Financial Close and Security Deposits

(a) Notice of Possible Delays to Financial Close

Project Company shall, promptly (and in no event later than seven (7) Days after becoming aware thereof) give written notice to GPA of the occurrence of any event which delays, or is reasonably likely to delay, Financial Close beyond the Required Financial Closing Date. Within fourteen (14) Days after any such initial notice, Project Company shall provide GPA with a further written notice substantiating such occurrence in reasonable detail, its effect on Project Company's ability to achieve Financial Close, and its effects, if any, on the Project, including financial implications. Further, Project Company shall thereafter provide such further information and updates as GPA may reasonably request from time to time in order to substantiate such occurrence and/or such effects.

(b) Extension of Required Financial Closing Date

If Project Company does not achieve Financial Close by the Required Financial Closing Date due to reasons other than an Excusable Event or other than Project Company's failure, then the Required Financial Closing Date shall be extended until the date that is ninety (90) Days after the original Required Financial Closing Date, provided that prior to any such extension, the validity period of the Bid Guarantee shall have been extended (by written amendment thereto delivered to GPA) until the extended Required Financial Closing Date.

(c) Failure to Achieve Financial Closing

In the event that Project Company fails to achieve Financial Close by the Required Financial Closing Date or extended Required Financial Closing Date, either Party may terminate this Agreement. In the event of such termination, GPA shall be entitled to cash the Bid Guarantee, in which event neither Party shall have any further liability or obligation to the other under this Agreement, except for liabilities accrued hereunder prior to or upon such termination (including liability for any breach of this Agreement by the Project Company).

(d) Financial Closing

At Financial Close, GPA shall return the Bid Guarantee to Project Company and Project Company shall provide to GPA a security deposit (the "**Performance Bond**") in an amount in Dollars equal to US\$75,000,000 to ensure Project Company's obligations to pay liquidated damages in accordance with Articles 9.1 and 9.2. The Performance Bond shall terminate three (3) Months after the Phase 2 Commercial Operation Date (or, in the case that Project Company opts to pursue Remedial Actions, six (6) months thereafter), at which

point GPA shall return the Performance Bond to Project Company. The Performance Bond shall consist of either: (i) an unconditional and irrevocable direct pay letter of credit issued by an international bank with an investment grade rating in form and substance reasonably acceptable to GPA; (ii) a bank guarantee issued by an international bank with an investment grade rating in form and substance reasonably acceptable to GPA; or (iii) a performance bond issued by an international surety with an investment grade rating in form and substance reasonably acceptable to GPA.

9.7 Payments of Liquidated Damages

- (a) Within fourteen (14) Days after the end of (i) each Month in respect of amounts due pursuant to Articles 9.1 and 9.2, and (ii) each Contract Year in respect of amounts due pursuant to Article 9.3 and 9.4, GPA shall compute and advise Project Company by Notice (a "**Liquidated Damages Notice**") of the amount of liquidated damages, if any, due to GPA pursuant to this Agreement for the preceding Month or Contract Year, as the case may be. Subject to Article 9.7(b), Project Company shall pay to GPA the amount of liquidated damages shown on the Liquidated Damages Notice within ten (10) Business Days of the date of the Liquidated Damages Notice (the "**Liquidated Damages Due Date**"). If Project Company fails to pay any amount due pursuant to Article 9.1, 9.2, 9.3, and 9.4 by the Liquidated Damages Due Date, GPA shall be entitled to draw such amount from the Performance Bond. Interest shall accrue on any unpaid and undrawn amount from the Liquidated Damages Due Date until the date payment is made at the rate of the Bank Rate. Save to the extent that the amount of liquidated damages reflected on the Liquidated Damages Notice is paid to GPA by Project Company or, with respect to liquidated damages pursuant to Article 9.1, 9.2, 9.3, and 9.4, drawn from the Performance Bond, the amount of liquidated damages pursuant to Article 9.1, 9.2, 9.3, or 9.4 plus accrued interest due to GPA may be set off against amounts owed to Project Company by GPA on the next statement(s) submitted to GPA pursuant to Article 14.
- (b) In the event of any Dispute as to the computation or payment of liquidated damages, Project Company shall provide Notice to GPA specifying the amount disputed and the reason therefor. In such event, the amounts not disputed shall be paid as described in this Article 9 and the Dispute shall be settled in accordance with the Dispute resolution procedures set forth in Article 19. If any such Dispute is resolved in favor of GPA, the determination of amounts due to GPA shall include interest at the rate specified for late payment in Article 9.7(a). Upon resolution, the Project Company shall pay the amount determined to be owed to GPA within ten (10) Days of such resolution, failing which GPA shall be entitled to claim such amount from the Performance Bond, as applicable.

ARTICLE 10 CONTROL AND OPERATION OF THE FACILITY

10.1 Operating Procedures

The Facility shall be operated and maintained in accordance with the Operating Procedures.

10.2 Dispatch

- (a) The PSCC will issue Dispatch Instructions to establish the Net Energy Output that the Facility is expected to feed into the Grid System during forthcoming periods of time. In coordination with GPA, Project Company shall be responsible for determining the operating modes (including but not limited to the determination of how to load each Unit) that will result in the most efficient and reliable operation.
- (b) Project Company shall notify GPA and the PSCC whenever a Dispatch Instruction results in a part of or the whole Facility being operated beyond the Technical Limits. Project Company never has an obligation to operate and GPA never has a right to dispatch the Facility beyond the Technical Limits. The Operating Procedures shall establish the circumstances under which Project Company will trip a Unit, prior to such Unit being tripped by a protective device.
- (c) Dispatch Instructions shall indicate the total amount of Net Energy Output required during the relevant period, expressed as an amount in MW, which amount may not exceed the Declared Capacity unless and to the extent Excess Energy is available.

10.3 Scheduling of Capacities and Energy

GPA and Project Company shall cooperate in establishing the following scheduling for the Facility's Dependable Capacity and Net Energy Output:

- (a) Year-Ahead Notification: Not less than ninety (90) Days before the scheduled Commercial Operation Date for a Phase and thereafter not less than ninety (90) Days before the beginning of each Contract Year, GPA shall provide to Project Company good faith estimates of its requirements on a Monthly basis, for the Net Energy Output and the maximum capacity required during that Contract Year, but shall not be bound by those figures. GPA will also indicate the desired maintenance periods for the upcoming Contract Year.
- (b) Quarter-Ahead Notification: Not less than sixty (60) Days before each quarter of each Contract Year, GPA shall provide to Project Company good faith estimates of its requirements, on a week-by-week basis for the Net Energy Output and maximum capacity required during that quarter and also provisionally for the following quarter, but shall not be bound by those figures.
- (c) Month-Ahead Notification: Not less than fourteen (14) Days before each Month, GPA shall provide to Project Company good faith estimates of its requirements on a day-by-day basis, for the Net Energy Output and maximum capacity required during that Month and also provisionally for the following Month, but shall not be bound by those figures.
- (d) Week-Ahead Notification: Not later than 12:00 noon on Thursday before each week beginning on each Saturday, GPA shall:
 - (i) provide Project Company estimated requirements, on an hour by hour basis, for the Net Energy Output and maximum capacity required during that week and also provisionally, during the following week, but shall not be bound by these figures; and

- (ii) **determine which Fuel shall be used each hour during that week.**
- (e) Declared Capacity Notification: To enable GPA to give final schedules of requirements, Project Company shall notify the PSCC, by 8:00 a.m. each Day, of the Declared Capacity available during each hour of the following Day. However, Project Company may notify the PSCC, not less than twelve (12) hours prior to its scheduled occurrence, of any reasonable modification to the Declared Capacity schedule. The Notices that Project Company is required to send to GPA pursuant to this Article 10.3(e) shall include the number of MW available for each Unit during each hour of the following day and the amount and type of Fuel required to comply with the expected dispatch. The availability of the Facility shall be based, for the purposes of determining the Declared Capacity or calculating Outage Hours, on the availability of the Facility with the Fuel that GPA instructs the Project Company to run.
- (f) Day-Ahead Notification: Not less than 8 hours before the start of each Day the PSCC shall provide to Project Company firm requirements in accordance with Article 10.2(c), on an hour-by-hour basis for capacity during that Day and also, provisionally, during the following Day. The firm requirements shall be binding upon GPA; provided, however, Project Company shall not unreasonably withhold its consent to any reasonable request from GPA for an alteration to its requirements.
- (g) Information Related to Renewable Component: Project Company shall provide the PSCC with [real time] updates of the current production and the seven (7) day hourly production forecast for the Renewable Component.
- (h) The methods for scheduling the capacity may be modified from time to time. Such modifications may be initiated by GPA, the PSCC, or Project Company and must be approved by the Joint Coordinating Committee.

10.4 Scheduled Maintenance.

- (a) Project Company shall submit its desired schedule of Scheduled Outage periods (including the duration of each such period) to GPA six (6) months before the Required Phase 2 Commercial Operation Date and thereafter on [] 1st of each calendar year. Project Company shall use commercially reasonable efforts to schedule any Scheduled Outage periods during the period from [insert applicable month] to [insert applicable month] only or such other alternative periods as GPA may specify, provided that GPA does specify at least one (1) year in advance the alternative period and that the period available for Scheduled Outages is of equal duration to the period specified herein. Within thirty (30) Days of receipt of such schedule, GPA shall notify Project Company in writing as to the acceptability of such schedule. Project Company shall use all reasonable efforts to make each such Scheduled Outage period of relatively short duration consistent with the Technical Limits, Prudent Utility Practices, and the recommendations of the manufacturers of the various components of the Facility. The Project Company shall use all reasonable efforts to perform maintenance of equipment connected with photovoltaic solar production between the hours of [8:00pm and 6:00am].
- (b) If GPA does not accept any one or more of the requested Scheduled Outage(s) periods, GPA shall advise Project Company within thirty (30) Days of

the receipt of Project Company's notification in accordance with sub-section (a) above of the acceptable period when GPA determines any such unacceptable Scheduled Outage can be rescheduled. The rescheduled time shall be as close as reasonably practicable to the requested time, shall be consistent with the Technical Limits, Prudent Utility Practices and the recommendations of the manufacturers of the various components of the Facility, and shall be of the same duration as the requested period. If GPA fails within such thirty (30) Day period to object to any Scheduled Outage for which it receives Notice pursuant to subsection (a) above or fails within such period to advise Project Company of a substitute time, Project Company may schedule and conduct the Scheduled Outage(s) as initially requested.

- (c) Project Company shall schedule Scheduled Outages only at times determined as aforesaid; provided, however, that GPA may not require Project Company to schedule Scheduled Outages in a manner or time which is outside the Technical Limits, is inconsistent with Prudent Utility Practices or the recommendations of the manufacturers of the various components of the Facility.
- (d) Notwithstanding the fixing of a time for a Scheduled Outage pursuant to subsections (a), (b) and (c) above, GPA may, upon at least ninety (90) Days prior Notice and upon agreeing to pay the documented increased cost, if any, to the Project Company resulting therefrom, require Project Company to reschedule a Scheduled Outage; provided, however, (i) GPA shall not require such Scheduled Outage to be rescheduled for a period of shorter or longer duration or in a manner or time that is outside the Technical Limits, or inconsistent with Prudent Utility Practices or the recommendations of the manufacturers of the various components of the Facility, (ii) GPA shall not require that a single Scheduled Outage period be split into two or more periods without compensating Project Company for any additional costs incurred thereby, and (iii) GPA shall not require that a Scheduled Outage be brought forward any earlier than sixty (60) Days from the date of such Notice without the consent of Project Company.
- (e) Notwithstanding the fixing of a time for a Scheduled Outage pursuant to subsections (a), (b) and (c) above, Project Company may request a rescheduling of any Scheduled Outage upon ninety (90) Days prior written Notice to GPA. GPA shall respond to such request within ten (10) Business Days and shall not unreasonably withhold its permission for such rescheduling.
- (f) When the need arises for a Maintenance Outage, Project Company shall advise GPA of such need and of the commencement and estimated duration of such work, and GPA shall allow Project Company to schedule such Maintenance Outage within a period of time that is reasonable under the circumstances, but in any event not to exceed the time required by the Technical Limits and Prudent Utility Practices. Project Company shall use all reasonable efforts to conduct such Maintenance Outage during off-peak hours, provided, however, that with respect to equipment used for photovoltaic solar production, the Project Company shall use all reasonable efforts to perform maintenance between the hours of [8:00pm and 6:00am]. Project Company may advise GPA orally of the above matters set forth in this subsection (f), and GPA shall respond orally within twenty-four (24) hours of such

notice. GPA shall confirm its communication in writing within one (1) week of such oral notice.

- (g) For those years in which Project Company plans to conduct a Major Overhaul, Project Company shall submit its Major Overhaul schedule (including the number of Units subject to Major Overhaul and outage duration of each Unit for such period) to GPA, for each Contract Year, one year in advance by Notice. It is expected that a Major Overhaul will take place approximately every [] operating hours, both as defined by the manufacturer and will not exceed [] Days in any Contract Year. Project Company shall use commercially reasonable efforts to not schedule a Major Overhaul during the months of [insert month] through [insert month] inclusive. Within thirty (30) Days of receipt of this schedule, GPA shall notify Project Company in writing as to the acceptability of such schedule. If GPA does not accept this schedule, GPA shall advise Project Company within thirty (30) Days of receipt of such Schedule of the time when GPA determines the Major Overhaul can be rescheduled. The rescheduled time shall be as close as reasonably practicable to the requested time, shall be consistent with the Technical Limits, Prudent Utility Practices, and the recommendations of the manufacturers of the various components of the Facility, and shall be of equal duration as the requested period. If GPA fails within the allowed period to object to any Major Overhaul for which it receives Notice pursuant to this Article, or fails within such period to advise Project Company of a substitute time, Project Company may schedule the Major Overhaul as initially requested.

10.5 Emergencies

- (a) Project Company shall cooperate with GPA in establishing agreed Emergency plans for the Facility at least ninety (90) Days before the Required Phase 1 Commercial Operation Date, including recovery from a local or widespread electrical blackout and voltage reduction in order to curtail load.
- (b) On or after the Phase 1 Commercial Operation Date, Project Company shall, during an Emergency, within no more than fifteen (15) minutes of GPA's request, and more quickly if possible consistent with Prudent Utility Practices, supply such power as the Facility is able to generate; provided, however, that Project Company shall not be obligated to operate the Facility beyond the Technical Limits or beyond the limits which Project Company reasonably believes could result in a trip. If a Scheduled Outage or Maintenance Outage occurs or would occur coincident with an Emergency, Project Company, upon consultation with GPA and at GPA's sole cost and expense, shall make all reasonable efforts to reschedule the Scheduled Outage or Maintenance Outage or, if the Scheduled Outage or Maintenance Outage has begun, expedite the completion of the work to restore power supply as soon as possible.

10.6 Maintenance of Operating Records

- (a) Each Party shall keep complete and accurate records and all other data required by each of them for the purposes of proper administration of this Agreement. Among, but not limited to, other records and data required hereby or elsewhere in this Agreement, Project Company shall maintain an accurate and up-to-date operating log at the Facility with records of:

- i. Net Energy Output production for each demand period and Delivery Point, and bus voltage at all times (for this purpose Project Company shall install a computerized system that will maintain an agreed data base of all pertinent parameters, as determined by the Joint Coordinating Committee).
 - ii. Changes in operating status, Scheduled Outages, Maintenance Outages and Forced Outages; and
 - iii. Any unusual conditions found during inspections.
- (b) All such records required under Article 10.6(a) shall be maintained for a minimum of sixty (60) Months after the creation of such record or data; provided, however, that the Parties shall not dispose of or destroy any such records after such sixty (60) Month period without thirty (30) Days' prior Notice to the other Party. Either Party shall have the right, upon reasonable prior Notice to the other Party, and at reasonable times during normal office hours, to examine the records and data of the other Party relating to this Agreement or the operation and dispatch of the Facility within the Grid System at any time during the period such records and data are required hereunder to be maintained.

10.7 Annual Report

Project Company shall deliver to GPA an annual operating and maintenance report for each Contract Year, within two (2) Months following the expiration of each Contract Year. Such annual report must include the operation and maintenance report for the prior year and the anticipated operation and maintenance plan and Emergency plan for the upcoming year.

10.8 Facility Improvements

Subject to the prior written consent of Project Company and the Agent (in accordance with the Lenders' Direct Agreement), if Project Company shall be requested by GPA to (a) increase the generation capacity of the Facility or (b) add equipment, then Project Company shall (once all relevant details have been agreed by Project Company and GPA) implement and prosecute such request at GPA's expense.

Notwithstanding the first sentence of this Article 10.8, the Project Company shall not prosecute and implement such request until:

- (a) GPA and the Project Company shall have agreed on the feasibility, schedule and cost of such implementation and additional construction (if any), with capital costs and operational costs being recoverable through Supplemental Charges or by direct cost-plus reimbursement at the discretion of the Project Company;
- (b) the financing for such implementation and construction (if any) has been obtained; and

- (c) appropriate adjustments to the Price (if any), including the Capacity Charge and the Energy Charge, have been agreed, and taking into account any lost revenue due to necessary Facility outages and all other costs or Losses to be incurred by Project Company consequent upon implementation of such changes.

10.9 Reactive Power

If, due to instability in the Grid System, GPA requests Project Company to operate the Facility in a power factor range outside the range mentioned in Schedule 2, Project Company shall comply with such request, provided that (i) it shall not have any obligation to operate the Facility in such a way for more than 1 hour at a time if, in the opinion of Project Company, it could damage the Facility and (ii) Project Company shall never be required to operate the Facility in a manner that is inconsistent with the Functional Specifications or the Technical Limits and the Contracted Characteristics.

10.10 GPA Acces to Site

Project Company shall allow GPA to have reasonable access to the Site subject to prior notice by GPA. GPA personnel will be required to comply with all Project Company safety rules and procedures when accessing the site.

GPA will be allowed to access the on-site ULSD Storage Facilities, without the need for prior notice, to fuel GPA's tanker trucks at no charge.

10.11 Employment of former GPA Employees by the Project Company

GPA power facilities maintenance and operations employees who may be adversely affected or separated as a result of the commissioning of the Project, shall be granted a right of first refusal by the Project Company for employment at the Facility in positions for which they are qualified. For each case of hiring an existing GPA maintenance and/or operating employee, the Project Company shall advise GPA of their plan for hiring such employee and allow a minimum of six [6] months before beginning the employment period to allow GPA to adjust its' plant operation and maintenance activities. If requested by GPA, Project Company will make reasonable efforts to assist GPA with finding a temporary labor pool for positions at their existing power plants that will be vacated by personnel hired by the Project Company.

ARTICLE 11 JOINT COORDINATING COMMITTEE

11.1 Membership

Within ninety (90) Days from the date of this Agreement, the Parties shall establish a Joint Coordinating Committee of ten (10) members, with Project Company and GPA each appointing five (5) members. Each Party shall also appoint two (2) substitutes for each of its members. The substitutes must be appointed at least thirty (30) Days prior to being able to substitute for one of the members. Substitutes may attend the Joint Coordinating Committee meetings but cannot participate in them unless they are replacing a regular member.

The Joint Coordinating Committee shall meet at least once per month.

The chairmanship of the Joint Coordinating Committee shall rotate each year between the Parties, and the first chairman shall be appointed by GPA. The Joint Coordinating Committee shall develop procedures for holding meetings, keeping minutes of meetings, maintaining records and appointing and operating sub-committees as may be required.

11.2 Duties

The power and duties of the Joint Coordinating Committee shall include only the following:

- (a) coordination of the respective programs of the Parties for the permitting, design, construction and Commissioning of the Facility, the Fuel supply and transportation interfacing, and the Electrical Interconnection Facilities, and agreement where necessary upon the respective Commissioning procedures;
- (b) discussion of the steps to be taken upon shutdown or reduction in capacity for Force Majeure or any other reason;
- (c) coordination and modification, if required, of Operating Procedures, including day-to-day communications, dispatching procedures, and Emergency plans and procedures, and compliance with Operating Procedures;
- (d) coordination and modification, if required, of scheduled maintenance programs and scheduling and acceptance of performance tests and periodic tests;
- (e) review of maintenance records, including results of periodic tests, for compliance with manufacturers' maintenance instructions and recommendations;
- (f) coordination of annual, monthly, weekly, and daily forecasts or requirements for the Facility;
- (g) developing, monitoring, and auditing the procedures to record Dependable Capacity, reliability, Net Energy Output, and any other parameters that may influence the billing or liquidated damages arising from operation;
- (h) developing protocols for invoicing and for measuring Dependable Capacity and Net Energy Output;
- (i) developing detailed procedures with respect to Natural Gas (when available) daily nominations and renominations based on Dispatch Instructions, ambient conditions for the next day and data provided in the tables entitled "Guaranteed Heat Rates at Guaranteed Conditions" and "Guaranteed Heat Rate Correction Curve" contained in Schedule 5;
- (j) dealing with safety and security matters affecting the Facility, the Parties, and their Contractors;
- (k) consultation on Emergency plans developed by the Parties for recovery from a local or widespread electrical blackout;

- (l) review of metering and protective schemes and devices; and
- (m) any other matter agreed by the Parties affecting the operation of the Facility and the Grid System.

11.3 Scope and Effect

The Parties agree and acknowledge that the jurisdiction of the Joint Coordinating Committee shall be limited to liaison and consultation only and that any decisions or agreements of the committee shall not be binding upon the Parties absent express written agreement to the contrary. The resolutions, considerations and discussions taking place from time to time within the Joint Coordinating Committee shall at all times remain subject to the express provisions of this Agreement, and, accordingly the respective rights and obligations of the Parties under this Agreement (or otherwise) shall not be affected by Articles 11.1 to 11.2.

11.4 Special Reporting

During any period in which either of the six (6) Month periods mentioned in Article 5.2(g) or Article 5.2(h) are extended in accordance with Article 5.2(g) and Article 5.2(h), as applicable, the Joint Coordinating Committee will meet every fourteen (14) Days and the members of the Joint Coordinating Committee appointed by Project Company will report on the status of the measures taken by Project Company to cure the deficiency.

**ARTICLE 12
ELECTRICAL INTERCONNECTION**

12.1 Electrical Interconnection Facilities

The Electrical Interconnection Facilities shall be designed, procured, and constructed by Project Company. Upon achieving the Phase 1 Commercial Operation Date and GPA's written acceptance thereof, the ownership, custody and control of the Electrical Interconnection Facilities shall be transferred by Project Company to GPA, after which the latter will operate and maintain the facilities in accordance with Prudent Utility Practices and the applicable system grid code at no cost to the Project Company. The transfer of the Electrical Interconnection Facilities shall be at no cost to GPA.

12.2 Testing

The Parties shall cooperate in testing the Electrical Interconnection Facilities from time to time prior to the scheduled synchronization dates of each Phase and at such other times thereafter as either Party may reasonably require. All such testing shall be carried out on a timely basis.

**ARTICLE 13
METERING**

13.1 Electrical Metering

The standards for performance measurement systems and testing are specified in Schedule 6.

- (a) All electrical metering devices used to measure Net Energy Output pursuant to this Agreement, and to monitor and coordinate operation of the Facility, shall be purchased, owned, installed and maintained by Project Company according to the specifications in Schedule 6. All electrical metering will be done jointly by the Parties, and each Party shall designate a representative for performing such metering. All electrical metering devices used to provide data for the computation of payments due under this Agreement shall be sealed, and the seal shall be jointly broken by the designated representatives of the Parties when such metering devices are to be inspected and tested or adjusted in accordance with Article 13.1(b) below. The number, type and location of such electrical metering devices shall be on the 115 kV high voltage bushings of the main power transformers and according to the single line diagram presented by Project Company and approved by GPA.
- (b) Project Company shall inspect, test, and calibrate all electrical metering devices upon installation and at least once every five (5) years thereafter. Project Company shall provide GPA with reasonable advance Notice of, and allow a representative of GPA to witness and verify such inspections, tests, and calibrations. Upon the written request by GPA, and in the presence of GPA, Project Company shall perform additional inspections, tests, or calibrations of the electrical metering devices within twenty (20) Days following the date of such written request. The actual expense of any such requested additional inspection, tests, or calibration shall be borne by GPA, unless, upon such inspection, tests or calibration, a metering device is found to register inaccurately by more than 0.2%, in which event the expense of the requested additional inspection or testing shall be borne by Project Company. If an electrical metering device is found to be defective or inaccurate, whether or not within the accuracy and repeatability tolerances set forth in Table 6.1 of Schedule 6, Project Company shall, at its own expense, adjust, repair, replace, and/or recalibrate the electrical metering device as near as practicable to a condition of zero error.
- (c) GPA may elect to install and maintain, at its own expense, back-up electrical metering devices at the Delivery Point in addition to (and identical to) those installed and maintained by Project Company, which installation and maintenance by GPA shall be in a manner reasonably acceptable to Project Company.

13.2 Adjustment for Inaccurate Electrical Meters.

If an electrical metering device fails to register, or if the measurement made by a metering device is found upon testing to be inaccurate, an adjustment shall be made correcting all measurements by the inaccurate or defective electrical metering device for the Project for the amount of the inaccuracy and the period of the inaccuracy, in the following manner:

- (a) By (i) integrating the capacity measurements obtained by the MW-meter readings which are registered every thirty (30) minutes in the PSCC, or (ii) by using the Declared Capacity, whichever is applicable; or
- (b) As may be agreed upon by the Parties; or

- (c) In the event that the Parties cannot agree on the amount of the adjustment necessary to correct the measurements made by any inaccurate or defective electrical metering device, the Parties shall use GPA's back-up electrical metering device, if installed, to determine the amount of such inaccuracy; so long as such electrical metering devices are tested and maintained in the same manner as Project Company's. In the event GPA's back-up electrical metering devices are also found to be outside the accuracy and repeatability tolerances set forth in Table 6.1 of Schedule 6, as are applied to Project Company's electrical metering devices under Article 13.1(b) above, the Parties shall estimate the amount of the necessary adjustment on the basis of deliveries of Net Energy Output during periods of similar operating conditions when the electrical metering device was registering accurately.
- (d) In the event that the Parties cannot agree on the actual period during which the inaccurate measurements were made, the period during which the measurements are to be adjusted shall be the shorter of (i) the last one-half of the period from the last previous test of the electrical metering device, or (ii) the (120) Days immediately preceding the test which found the electrical metering device to be defective or inaccurate.

To the extent that the adjustment period covers a period of deliveries for which payment has already been made by GPA, GPA shall use the corrected measurements as determined in accordance with Article 13.2(a), (b), (c), or (d) hereof to recompute the amount due for the period of the inaccuracy and shall subtract the previous payments by GPA for this period from such recomputed amount. If the difference is a positive number, the difference shall be paid by GPA to Project Company. If the difference is a negative number, the difference shall be paid by Project Company to GPA, or in the sole discretion of GPA, the difference may take the form of an offset to payments due to Project Company by GPA. Payment of such difference by the owing Party shall be made not later than thirty (30) Days after the owing Party receives Notice of the amount due, unless GPA elects payment via an offset.

13.3 Natural Gas Metering

- (a) Natural Gas Metering Equipment
 - i. GPA at its cost shall be responsible to install and maintain primary Natural Gas measurement equipment at the gas metering station in the Natural Gas pipelines supplying Natural Gas to the Facility in accordance with Schedule 6. GPA shall read its meter(s) at that point and such readings shall be considered official meters.
 - ii. Project Company may install Natural Gas backup measurement equipment downstream of GPA's measurement equipment for Natural Gas. In such case, Project Company shall be responsible for installing and maintaining the Natural Gas backup measurement equipment.
 - iii. GPA's Natural Gas metering devices shall be inspected, tested, and calibrated by GPA at least once each three (3) years. If Project Company at any time desires a special test of any meter or the computer used in the operation of the GPA's Natural Gas metering devices, it will promptly notify GPA and the Parties will then co-operate to secure a prompt test.

All tests of GPA's Natural Gas metering devices shall be made at GPA expense, except that Project Company shall bear the GPA's reasonable cost of special tests made at the Project Company's request if the inaccuracy is found to be within 1%. Following each test, GPA shall ensure that GPA's Natural Gas metering devices shall be adjusted as required to record centrally and accurately.

- iv. Project Company's Natural Gas metering devices shall be inspected, tested, and calibrated by Project Company at least once each three (3) years. If GPA at any time desires a special test of any meter or the computer used in the operation of Project Company's Natural Gas metering devices, it will promptly notify Project Company and the parties will then co-operate to secure a prompt test. All tests of Project Company's Natural Gas metering devices shall be made at Project Company's expense, except that GPA shall bear Project Company's reasonable cost of special tests made at GPA's request if the inaccuracy is found to be within 1%. Following each test, Project Company shall ensure that Project Company's Natural Gas metering devices shall be adjusted as required to record centrally and accurately.

(b) Adjustment for Inaccurate Natural Gas Meters.

- i. If, for any reason, GPA's Natural Gas meters are out of service or registering outside the specified limits, so that the quantity of Natural Gas delivered cannot be ascertained or computed from the reading thereof, the Natural Gas delivered during the period such meters are out of service shall be determined upon the basis of the best data available, using the first of the following methods which is feasible:
 - (A) By using the quantity recorded by Project Company's Natural Gas meters, if installed and accurately registering;
 - (B) By adjusting for the error, if the extent of the error is ascertainable by calibration, test or mathematical calculation; or
 - (C) By estimation on the basis of deliveries (Net Energy Output) during preceding periods of similar demand under similar conditions when the equipment was registering accurately, and for purposes of this estimation, the Parties may agree upon using data from measurements from outside of the measurement facility.
- ii. In the event that the Parties cannot agree on the actual period during which the inaccurate measurements were made, the period during which the measurements are to be adjusted shall be the shorter of (i) the last one-half of the period from the last previous test of the Natural Gas metering device, or (ii) the (120) Days immediately preceding the test which found the Natural Gas metering device to be defective or inaccurate.

To the extent that the adjustment period covers a period of deliveries for which payment has already been made by GPA, GPA shall use the corrected measurements as determined in accordance with Articles 13.3(b) (i) or (ii) hereof to recompute the amount due for the period of the inaccuracy and

shall subtract the previous payments by GPA for this period from such recomputed amount. If the difference is a positive number, the difference shall be paid by GPA to Project Company. If the difference is a negative number, the difference shall be paid by Project Company to GPA, or in the sole discretion of GPA, the difference may take the form of an offset to payments due to Project Company by GPA. Payment of such difference by the owing Party shall be made not later than thirty (30) Days after the owing Party receives Notice of the amount due, unless GPA elects payment via an offset.

13.4 ULSD Metering

(a) ULSD Fuel Metering Equipment

- i. GPA shall be responsible at its cost for installing and maintaining primary ULSD measurement equipment at the ULSD metering station in the ULSD pipelines supplying ULSD to the Facility in accordance with Schedule 6. GPA shall read its meter(s) at that point and such readings shall be considered official meters.
- ii. Project Company may install ULSD backup measurement equipment downstream of GPA's measurement equipment for ULSD. In such case, Project Company shall be responsible for installing and maintaining the ULSD backup measurement equipment.
- iii. GPA's ULSD metering devices shall be inspected, tested, and calibrated by GPA at least once each three (3) years. If Project Company at any time desires a special test of any meter or the computer used in the operation of the GPA's ULSD metering devices, it will promptly notify GPA and the Parties will then co-operate to secure a prompt test. All tests of GPA's ULSD metering devices shall be made at GPA expense, except that Project Company shall bear the GPA's reasonable cost of special tests made at the Project Company's request if the inaccuracy is found to be within 1%. Following each test, GPA shall ensure that GPA's ULSD metering devices shall be adjusted as required to record centrally and accurately.
- iv. Project Company's ULSD metering devices shall be inspected, tested, and calibrated by Project Company at least once each three (3) years. If GPA at any time desires a special test of any meter or the computer used in the operation of Project Company's ULSD metering devices, it will promptly notify Project Company and the parties will then co-operate to secure a prompt test. All tests of Project Company's ULSD metering devices shall be made at Project Company's expense, except that GPA shall bear Project Company's reasonable cost of special tests made at GPA's request if the inaccuracy is found to be within 1%. Following each test, Project Company shall ensure that Project Company's ULSD metering devices shall be adjusted as required to record centrally and accurately.
- v. Project Company shall, or shall have other party(ies) on its behalf, install and maintain measurement equipment at the ULSD truck delivery stations with the coordination and approval of GPA. The specifications and the location for ULSD Fuel meters and the associated metering system are set forth in Schedule 12. The measurement equipment for each Fuel shall be installed next to the storage tank dedicated to the respective Fuel.

- vi. The Project Company's ULSD metering devices shall be inspected tested and calibrated in accordance with the provisions of Schedule 12.
- (b) Adjustment for Inaccurate ULSD Meters.
- i. If, for any reason, Project Company's main ULSD meters are out of service or registering outside the specified limits, so that the quantity of ULSD consumed cannot be ascertained or computed from the reading thereof, the ULSD consumed during the period such meters are out of service shall be determined upon the basis of the best data available, using the first of the following methods which is feasible:
 - (A) By using the quantity recorded by Project Company's back-up ULSD meters, if accurately registering; or
 - (B) By adjusting for the error, if the extent of the error is ascertainable by calibration, test or mathematical calculation.
 - ii. In the event that the Parties cannot agree on the actual period during which the inaccurate measurements were made, the period during which the measurements are to be adjusted shall be the shorter of (i) the last one-half of the period from the last previous test of the ULSD metering device, or (ii) the (120) Days immediately preceding the test which found the ULSD metering device to be defective or inaccurate.

To the extent that the adjustment period covers a period of deliveries for which payment has already been made by GPA, GPA shall use the corrected measurements as determined in accordance with Articles 13.4(a) (i) or (ii) hereof to recompute the amount due for the period of the inaccuracy and shall subtract the previous payments by GPA for this period from such recomputed amount. If the difference is a positive number, the difference shall be paid by GPA to Project Company. If the difference is a negative number, the difference shall be paid by Project Company to GPA, or in the sole discretion of GPA, the difference may take the form of an offset to payments due to Project Company by GPA. Payment of such difference by the owing Party shall be made not later than thirty (30) Days after the owing Party receives Notice of the amount due, unless GPA elects payment via an offset.

ARTICLE 14

BILLING AND PAYMENT

14.1 Invoices

- (a) Invoices shall be prepared monthly by Project Company in accordance with this Article 14 for payment by GPA in Dollars, as specified in this Article 14.
- (b) GPA and Project Company shall read directly by their representatives or via billing centers the metering devices on the first Day of each Month at 00:00 or 10:00 a.m., commencing with the first Month of the Period of Testing.
- (c) Project Company shall render an itemized invoice to GPA by the tenth (10th) Day of each Month of the Term, commencing in respect of amounts due by GPA for deliveries of Net Energy Output and/or Dependable Capacity

hereunder, with the first Month immediately following the Month in which the Phase 1 Commercial Operation Date occurs.

- (d) Not used.
- (e) Each itemized invoice for amounts due by GPA to Project Company under Article 14.1(c) for deliveries of Net Energy Output and/or Dependable Capacity hereunder in respect of any month from and after the Phase 1 Commercial Operation Date shall show, calculated, where applicable, in accordance with Schedule 5:
 - i. Net Energy Output delivered to GPA during each half hour of the previous Month and the total Net Energy Output for such Month;
 - ii. The Energy Charge for such Net Energy Output, and the Capacity Charge for the previous Month;
 - iii. Supplemental Charges, if any;
 - iv. any adjustments or offsets pursuant to Article 13, Article 9.7, or Article 18 hereof;
 - v. any adjustments pursuant to Article 14.3;
 - vi. any adjustments pursuant to Article 7.3(c);
 - vii. any adjustment pursuant to Article 4.3.2(a);
 - viii. the total amount in Dollars that is due from GPA to Project Company with respect to such deliveries of Net Energy Output and Dependable Capacity during the preceding Month, including, for the avoidance of doubt, the full Capacity Charge for the Dependable Capacity in the event that the Dependable Capacity is unavailable, in whole or in part, due to a request by GPA in accordance with this Agreement, due to a Scheduled Outage, due to a Maintenance Outage, due to a Forced Outage, due to a condition caused by GPA or by the Grid System, or due to the unavailability of Fuel during any period during which the Facility is deemed to provide the Dependable Capacity in Article 8.

14.2 Payment

Each invoice shall be paid within thirty (30) Days of receipt thereof, with those portions of the Price to be adjusted and calculated in accordance with Schedule 5.

GPA intends to make an initial lump sum payment of \$40 million upon COD to reduce interest fees and payments over the contract term.

14.3 Estimates

In order that invoices may be rendered promptly after the end of each Month, it may be necessary, from time to time, to estimate certain factors involved in calculating the monthly billing. Adjustments for errors in such estimates shall be included in the invoice

for the first Month following the time when the information necessary to make such corrections or adjustments becomes available.

14.4 Late Payment

If an invoice is not paid within thirty (30) Days of receipt thereof (the "**Invoice Due Date**"), interest on unpaid amounts shall accrue daily from the Invoice Due Date until the date upon which payment is made at the Bank Rate plus two percent (2%).

14.5 Disputed Amounts

In the event of any Dispute as to the Capacity Charge, Energy Charge, or the Supplemental Charges, GPA shall notify Project Company of the amount in dispute. In such event, the amounts not disputed shall be paid as described in this Article 14 and GPA shall either deposit in escrow with a commercial bank selected by GPA and reasonably acceptable to Project Company an amount equal to the disputed amounts on the date such amounts, if undisputed, would otherwise be due or furnish to Project Company an irrevocable and unconditional letter of credit issued by a commercial bank selected by GPA and reasonably acceptable to the Project Company in an amount equal to the disputed amounts. This letter of credit shall be in a form and substance reasonably satisfactory to Project Company. The Dispute will be settled in accordance with the Dispute resolution procedures set forth in Article 19. The resolution of the disputed amount shall include interest at the rate specified for late payment in Article 14.4. Upon resolution, the funds in the escrow account shall be disbursed in accordance with the resolution of the matter under Article 19.

14.6 Billing Errors

Any claim regarding an error in invoices previously paid shall be made (in accordance with Article 14.5 or 14.7) within fifteen (15) Business Days from the date of discovery of such error, but in any event no later than the date six (6) Months after the date of issuance of such invoice. If such claim is not made within the six-month period referred to in the previous sentence, the original invoice and the calculations therein shall be binding upon the Parties.

14.7 Inaccurate Meters

In the event adjustments to an invoice are required as a result of corrected measurements made with respect to inaccurate meters as described in Article 13.2, the Parties shall use the method of correcting measurements described in Article 13.2 to recompute the amounts due from or to GPA for the Net Energy Output and, in the event of corrected measurements made in respect of any Dependable Capacity Test, the Dependable Capacity sold under this Agreement during the period of inaccuracy. If the total amount, as recomputed, due from a Party for the period of one inaccuracy varies from the total amount due as previously computed, and payment of the previously computed amount has been made, then, following agreement by the Parties on the amount due as a result of the recomputation, Project Company shall promptly issue an adjusted billing statement. The owing Party shall pay any amount owed as shown on such billing statement within thirty (30) Days of the issuance of the adjusted billing statement.

ARTICLE 15 INSURANCE REQUIREMENTS

15.1 Terms and Conditions

- (a) All insurance policies are subject to the jurisdiction and laws of the United States.
- (b) All insurance policies should be effected through insurers registered in the United States to the extent required by the Laws of Guam.
- (c) Re-insurance of all policies should be in accordance with the effective instructions issued by the insurance commission or any substitute authority and accordingly, insurers should prove that they have implemented the aforesaid instructions.
- (d) Insurance is subject to cut through clause and insured have the right to claim from either insurers or reinsurers or both of them.
- (e) Project Company shall not be obliged to obtain any insurance policies covering sabotage, war or terrorism risk.

15.2 Maintenance of Insurance Policies

- (a) Project Company shall obtain and maintain from and after Financial Close and throughout the term of this Agreement the policies of insurance set forth in the minimum coverage amounts (or if not set forth, on terms and conditions, including sub-limits, deductibles and exclusions that are obtained by independent power generators of comparable size, technology and location) and during the periods, provided, however, that such minimum amounts may be changed from time to time with the written consent of GPA, which consent may not be unreasonably withheld or delayed. In addition to the foregoing, the Project Company may obtain any additional coverage required by the Lenders or the Laws of Guam, or deemed necessary by Project Company. Project Company shall not be in breach of its obligations hereunder if and to the extent that any particular insurance policy, or amount of coverage or any particular term of policy is not or ceases to be available on commercially reasonable terms for reasons other than any negligence or default by, or the deterioration of the financial condition of Project Company from the date of execution of this Agreement.
- (b) In the event that any particular insurance policy or amount of coverage required to be maintained hereunder ceases to be available on commercially reasonable terms for reasons other than any negligence or default by, or the deterioration of the financial condition of Project Company from the date of this Agreement, Project Company shall notify GPA of such occurrence promptly upon becoming aware of it, and GPA shall have the option to procure such particular policy or amount of coverage and to require Project Company to reimburse it for the cost thereof up to an amount not exceeding the premium paid by Project Company immediately prior to such insurance becoming unavailable on commercially reasonable terms (provided that the terms of such policy and the insurers and reinsurers providing it are otherwise substantially the same as those of the policy that it replaces).

15.3 Insurance Requirements for the Construction Period

(a) Cargo transportation insurance (imports and re-exported items):

This insurance shall cover all materials, equipments, machineries, spares and other items for incorporation into the Facility against all risks of physical loss or damage while in transit by sea and/or air and/or by land conveyance and/or sending by post from the country of origin anywhere in the world to the site, or vice versa, from the time the insured items leave the warehouse or the factory and/or place of storage for shipment to the site (final destination named in the policy), plus war, strikes, riot and civil commotions in accordance with the provisions of institute cargo clause "A", war, strikes, and civil commotions or land transit "All Risks clause".

Coverage shall be in an amount equal to the cost, freight and all other expenses and fees.

In the alternative, Project Company may satisfy its obligations hereunder by requiring the vendor of such items to insure them in the manner specified herein, provided the vendor names Project Company and the other parties and first provides Project Company with evidence of such insurance, a copy of which shall be provided to GPA upon request.

Name of insureds include Project Company, GPA and all other concerned parties.

(b) Delay in start up following cargo transport insurance:

This insurance shall cover debt service and fixed costs incurred following delays in reaching the Required Commercial Operation Date as a direct result of physical loss or damage to the materials, equipments, machineries and other items in transit by sea and/or air and/or by motor truck to the site to the extent covered under the cargo transport insurance.

This insurance shall indicate indemnity period not less than one calendar year as from the date of the occurrence of the risk covered under the transport policy.

15.4 Insurances Required During Construction Period Plus Erection, Trial Testing and Commissioning Period Plus Debt Service and Fixed Operation and Maintenance Costs Loss Due to Delay

(a) Contractors all risks policy (C.A.R. Policy):

This insurance shall cover all permanent and temporary works at the site in the course of execution, including machinery and equipment for incorporation in the Facility, against all risks of physical loss or damage (other than nuclear risk, penalties, consequential losses, cash, vehicles, vessels and aircraft) and shall include cover for loss or damage caused by faulty design, defective workmanship and defective material. Coverage shall be not less than the probable maximum loss value of the items covered.

Coverage also shall include equipment, machinery used by the concerned parties plus removal of debris, and third party liability plus cross liability during the period of construction plus one calendar year maintenance period.

- (b) Delay in start up following C.A.R. incidents:

This insurance shall cover debt service and fixed operation and maintenance costs incurred following delays in reaching the Required Commercial Operation Date as a direct result of physical loss or damage to the works to the extent that such loss or damage is covered under the C.A.R. policy.

- (c) Professional indemnity policy:

This policy, which the Project Company shall have the option to obtain and maintain if it considers it necessary taking into account the financial standing of the Construction Contractor, covers any loss or damage due to negligence, error, mistakes, faults and/or defaults or any other risks cover under P.I. policy which occurred during the period of construction or erection.

This policy shall include a sum insured equal to the said losses and/or damage.

15.5 Insurances Requirements after Construction Stage

- (a) Properties insurance:

Subject to all risks policy to cover buildings, structures, fittings, equipments, machineries, appliances and/or other items.

This insurance to cover the said properties against:

- ix. Fire and other allied perils plus debt service and fixed operation and maintenance costs due to fire and/or other allied perils.
- x. To cover the physical loss or damage due to sudden and unforeseen cause.
- xi. This policy shall include the machinery breakdown perils subject to Munich-Re specimen or similar policy wording and also to cover debt service and fixed operation and maintenance costs due to machinery breakdown.

Note: Coverage shall be not less than the probable maximum loss value of the items covered. Indemnity period for debt service and fixed operation and maintenance costs due to fire or due to machinery breakdown is not less than one calendar year as from the date of occurrence of the original risk.

- (b) Workmen's compensations policy for all workers and employees in accordance with the provisions of Guam labour law.
- (c) Employer's liability towards temporary workers and other employees.
- (d) Motor insurance policy (comprehensive cover) to include third party liability plus the cars and all vehicles and spares and appliances.

- (e) Public liability insurance policy to cover any legal liability (bodily injuries and damages to property). Such policy should be sufficient to cover, at a minimum, US\$ [] for any one occurrence and in aggregate US\$ [] for bodily injuries and US\$ [] for property damages.

ARTICLE 16

LIABILITY AND INDEMNIFICATION

16.1 Limitation of Liability

Except as expressly provided in this Article 16, without prejudice to any rights to damages that either Party may have as expressly provided for in Articles 5, 9 and 17, neither Party shall be liable to the other Party in contract, tort, warranty, strict liability or any other legal theory for any indirect, consequential, incidental, punitive or exemplary damages or for loss of revenue or loss of profits. In respect of a breach of the provisions of this Agreement, neither Party shall have any liability to the other Party save as expressly stated in this Agreement; provided, however, that this provision is not intended to constitute a waiver of any rights of one Party against the other with regard to matters unrelated to this Agreement or to any activity not contemplated by this Agreement.

16.2 Indemnification

- (a) GPA

Subject to Article 16.5, GPA shall indemnify Project Company and Project Company's officers, directors, shareholders and employees against, and hold Project Company and Project Company's officers, directors, shareholders and employees harmless from, at all times after the date hereof, any and all Losses, and any and all actions, claims and demands in respect of such Losses, incurred, suffered, sustained, or required to be paid, directly or indirectly, by, or sought to be imposed upon, Project Company or Project Company's officers, directors, shareholders or employees for personal injury or death to persons or damage to property arising out of the negligent or intentional acts or omissions of GPA in connection with this Agreement.

- (b) The Project Company

Subject to Article 16.5, Project Company shall indemnify GPA and GPA's officers, directors, shareholders and employees against, and hold GPA and GPA's officers, directors, shareholders and employees harmless from, at all times after the date hereof, any and all Losses, and any and all actions, claims and demands in respect of such Losses, incurred, suffered, sustained, or required to be paid, directly or indirectly, by, or sought to be imposed upon, GPA or GPA's officers, directors, shareholders or employees for personal injury or death to persons or damage to property arising out of the negligent or wilful default of Project Company in connection with this Agreement.

- (c) Joint Negligence

Subject to Article 16.5, in the event that any Loss results from the joint or concurrent negligent or intentional acts or omissions of the Parties, each Party shall be liable under this indemnification in proportion to its relative degree of fault.

16.3 Indemnification for Fines and Penalties

Any fines or other penalties incurred by Project Company for non-compliance with the applicable Laws of Guam or the Government Authorizations shall not be reimbursed by GPA but shall be the sole responsibility of Project Company, except to the extent that such non-compliance is caused by the negligence or intentional acts or omissions of GPA.

16.4 Notice of Proceedings

Each Party shall promptly notify the other Party of any Loss, claim, action, demand or proceeding in respect of which it is or may be entitled to indemnification under Article 16.2. Such Notice shall be given as soon as reasonably practicable after the relevant Party becomes aware of the Loss, claim, action, demand or proceeding. Failure to give such Notice in a timely fashion shall not affect the indemnified Party's rights to indemnification except to the extent that the indemnifying Party is materially prejudiced thereby.

16.5 Limitation on Indemnification

- (a) Each Party shall be solely liable, and shall not be entitled to assert any claim for indemnification under this Agreement for any Loss that would otherwise be the subject of indemnification under this Agreement until all Losses of such Party arising during the current Contract Year exceed the equivalent of two hundred thousand Dollars (US\$ 200,000) in the aggregate in which case only the amount of Loss greater than two hundred thousand Dollars (US\$ 200,000) shall be subject to indemnification. For purposes of this Article 16.5, a Loss (or claim for indemnification) shall be deemed to arise in the Contract Year during which the event giving rise to the Loss (or claim for indemnification) occurred or, in the case where the event is continuing in more than one Contract Year, in the Contract Year during which the event ends, provided that a Party shall not be obliged to refrain from making a claim under this Article 16.5 (where it is otherwise entitled to do so) at the end of a given year ("**Year End**") by reason of the fact that the event in question ("**Relevant Event**") is still continuing, and provided further that in the event that such Party does make such a claim at the Year End it shall continue to be able to claim in relation to all remaining Losses arising from the Relevant Event regardless of when they occur.
- (b) Neither Party shall be entitled to the indemnity under Article 16.2 if and to the extent that a Party has received payment in respect of a Loss or proceeding under the indemnities contained in the Lease Agreement or any other document comprising the Security Package in respect of the relevant act or omission.

16.6 Defence of Claims

- (a) The indemnifying Party shall be entitled, at its option, to assume and control the defence of such claim, action, suit or proceeding at its expense with counsel of its selection and the indemnified Party shall provide it with a power of attorney if required for this purpose, provided it gives prompt Notice of its intention to do so to the indemnified Party and reimburses the indemnified Party for the reasonable costs and expenses incurred by the indemnified Party prior to the assumption by the indemnifying Party of such defence.

- (b) Unless and until the indemnifying Party acknowledges in writing its obligation to indemnify the indemnified Party and assumes control of the defence of a claim, suit, action or proceeding in accordance with Article 16.6(a), the indemnified Party shall have the right, but not the obligation, to contest, defend and litigate, with counsel of its own selection, any claim, action, suit or proceeding by any third party alleged or asserted against the indemnified Party in respect of, resulting from, related to or arising out of any matter for which it is entitled to be indemnified hereunder, and the reasonable costs thereof shall be subject to the indemnification obligations of the indemnifying Party hereunder.
- (c) Upon assumption by the indemnifying Party of the control of the defence of a claim, suit, action or proceeding, the indemnifying Party shall reimburse the indemnified Party for the reasonable costs and expenses of the indemnified Party in the defence of the claim, suit, action or proceeding prior to the indemnifying Party's acknowledgement of the indemnification and assumption of the defence.
- (d) Following the acknowledgement of the indemnification and the assumption of the defence by the indemnifying Party, the indemnified party shall have the right to employ its own counsel and such counsel may participate in such claim, suit, action or proceeding, but the fees and expenses of such counsel shall be at the expense of such indemnified Party, when and as incurred, unless (i) the employment of counsel by such indemnified Party has been authorised in writing by the indemnifying Party, (ii) the indemnified Party shall have reasonably concluded that there may be a conflict of interest between the indemnifying Party and the indemnified Party in the conduct of the defence of such action, (iii) the indemnifying Party shall not in fact have employed independent counsel reasonably satisfactory to the indemnified party to assume the defence of such action and shall have been so notified by the indemnified Party, or (iv) the indemnified Party shall have reasonably concluded and specifically notified the indemnifying Party either that there may be specific defences available to it that are different from or additional to those available to the indemnifying Party or that such claim, action, suit or proceeding involves or could have a material adverse effect upon it beyond the scope of this Agreement. If clauses (ii), (iii) or (iv) of the preceding sentence shall be applicable, then counsel for the indemnified Party shall have the right to direct the defence of such claim, action, suit or proceeding on behalf of the indemnified Party and the reasonable fees and disbursements of such counsel shall constitute legal or other expenses hereunder, subject to the indemnification obligations of the indemnifying Party hereunder.

ARTICLE 17 FORCE MAJEURE

17.1 Definition

For the purposes of this Agreement, a "**Force Majeure**" means a cause or event (i) that is beyond the reasonable control of the affected Party and was not due to the fault or negligence of the affected Party and that prevents such Party's performance of its obligations under or pursuant to this Agreement, and (ii) which the affected Party is unable to prevent, overcome or remedy by the exercise of diligence and reasonable care, or avoid by the exercise of reasonable foresight and mitigation [, it being understood and agreed that reasonable care includes the expenditure of sums of

money ("**Mitigating Costs**") to protect the Facility from a casualty event, which sums are reasonable in light of the likelihood of such event, the probable effect of such event if it should occur, and the likely efficacy of the protection measures].

"**Force Majeure**" shall include the following events and circumstances, but only to the extent that each satisfies the above requirements:

- (a) floods, hurricanes, tornadoes, typhoons, cyclones, earthquakes and other natural calamities;
- (b) fires or explosions that could not have been prevented by acting in accordance with industry standards or Prudent Utility Practices, as applicable;
- (c) war (declared or undeclared), riots, insurrection, rebellion, civil disturbance, acts of the public enemy, acts of terrorism and sabotage, blockades, embargoes or sanctions;
- (d) strikes which are widespread within the Territory of Guam, regional and industry-wide labor disputes unless affecting only or caused by Project Company or its Contractors (or their subcontractors of any tier) or their employees;
- (e) any Change in Law;
- (f) the unavailability of Fuel supply or Fuel transportation as a result of Force Majeure.

Force Majeure shall expressly not include the following conditions, except and to the extent that they result from a Force Majeure:

- (a) the absence of sufficient financial means to perform obligations or the failure to make payments in accordance with this Agreement;
- (b) weather conditions that could reasonably be expected to occur by an experienced contractor or electric generator in Guam other than extreme or unusually severe weather conditions that constitute a Force Majeure event in accordance with clause above;
- (c) shortages, unavailability, late delivery, or changes with respect to materials, spare parts, supplies, consumables or components of equipment for the Project;
- (d) price fluctuations with respect to materials, spare parts, supplies, consumables or components of equipment for the Project;
- (e) late delivery of materials, supplies or components of equipment;
- (f) economic hardship;
- (g) shortages of manpower;
- (h) the delay, default or failure to perform by a contractor or subcontractor;
- (i) machinery or equipment breakdown;

- (j) customs procedures
- (k) flaws in the Final Technical Specifications prepared by Contractor which require Contractor to re-design or re-engineer any portion of the Project or otherwise change or modify the Work.
- (l) normal wear and tear or random flaws in materials and equipment or breakdowns in equipment.

No event, whether or not it constitutes "Force Majeure" will excuse GPA from the obligation to:

- (a) make any payment when due and payable under this Agreement, provided that if the occurrence or effects of a Force Majeure affects the operation of all or a portion of the Facility, GPA shall continue, during the continuance of such Force Majeure or its effects, to pay the Capacity Charge for each MW of Dependable Capacity, after deducting from the Capacity Charge an amount determined by multiplying the Capacity Charge by a fraction, the numerator of which is the capacity that is unavailable due to the Force Majeure, and the denominator of which is the Dependable Capacity.
- (b) fulfill payment obligations under this Agreement including payment of the full Capacity Charge for the Dependable Capacity.

In the event that the Facility and associated energy is unavailable, in whole or in part, due to:

- i. the unavailability of Fuel supply or, subsequent to the transfer of the Electrical Interconnection Facilities to GPA, the unavailability of the Electrical Interconnection Facilities or electric transmission or distribution service sufficient to export the entire output of the Facility; or
- ii. a condition caused by GPA or the Grid System,

the Facility, to the extent it is unavailable due to the foregoing reasons, shall be deemed available and providing the Dependable Capacity for the purposes of calculating liquidated damages under Article 9.

17.2 Notification Obligations

- (a) The Party affected by a Force Majeure shall give Notice to the other Party of any event constituting a Force Majeure as soon as reasonably practicable. Any Notice shall include full particulars of the event constituting a Force Majeure, of its effects on the Party claiming relief and the remedial measures proposed, including estimated cost and time to restore the Project, if appropriate. The Party affected by a Force Majeure shall coordinate with the other Party and give the other Party regular reports on the progress of those remedial measures and such other information as the other Party may reasonably request.
- (b) The Party affected by a Force Majeure shall give Notice to the other Party of (i) the cessation of the relevant event constituting a Force Majeure, and (ii) the cessation of the effects of such event constituting a Force Majeure on the enjoyment by such Party of its rights or the performance by it of its obligations

under this Agreement, as soon as reasonably practicable after becoming aware of each of (i) and (ii) above.

17.3 Duty to Mitigate

The affected Party shall be responsible to use all reasonable efforts to mitigate the effects and costs of a Force Majeure.

17.4 Term Extension

If, during any period, the Dependable Capacity is not available due to the occurrence or effects of a Force Majeure and this Agreement is not terminated earlier than the original Term, the Term of this Agreement and the Lease Agreement shall be extended by the number of Days that the Dependable Capacity was not available due to the occurrence or effects of such Force Majeure.

17.5 Delay Caused by Force Majeure

Except as otherwise set forth below, neither Party shall be responsible or liable for or deemed in breach hereof because of any failure or delay in complying with its obligations (other than an obligation to make a payment) under or pursuant to this Agreement due to one or more events of Force Majeure or its or their effects or by any combination thereof, and the periods allowed or dates required (including the Required Commercial Operation Dates) for the performance by Parties of such obligation(s) shall be extended on a day-for-day basis to account for such event(s), effects or combination thereof; provided that no relief shall be granted to the Party claiming Force Majeure pursuant to this Article 17 to the extent that such failure or delay would have nevertheless been experienced by that Party had such Force Majeure not occurred.

17.6 Adjustments for Change in Law

- (a) In the event of a Change in Law which is of the type described in the Change in Law definition and has an impact on the Project that is equal or greater to [\$500,000] for a Contract Year , GPA shall pay to Project Company (without double recovery) a Supplemental Charge under this Agreement in such amount as is necessary to compensate Project Company for, and make Project Company whole with respect to any such additional costs and/or adverse affect on the expected financial benefit suffered as a result of such Change in Law.
- (b) In the event of a Change in Law that has a positive impact on the Project Company that is equal to or greater than [US\$500,000] for a Contract Year , Project Company shall adjust the Capacity Charge under this Agreement in such amount as is necessary to return the benefit of such increase to GPA.

ARTICLE 18
TRANSFER OF OWNERSHIP

18.1 Facility Transfer

- (a) On the Transfer Date, Project Company shall transfer to GPA, free from any lien or encumbrance and without the payment of compensation, all right, title and interest in and to the Facility including all fixtures, fittings, plant and equipment (including all test equipment, special tools, as-built drawings, software, documents, reports, analyses, all relevant files, plant procedures and forms as reasonably required and necessary for GPA to effectively operate the Facility after the transfer) and all improvements comprising the Facility (the "Facility Transfer"), provided that there is no default in payment obligations by GPA that has not been cured.
- (b) Six (6) months prior to the Transfer Date, GPA and Project Company shall meet and agree on the inventories involved and the mechanics of the Facility Transfer but Project Company shall not be liable for any discrepancies between such inventories and the actual fixtures, fittings, plant and equipment transferred, provided that following agreement on inventories Project Company shall exercise the same care regarding the fixtures, fittings, plant and equipment and all improvements therein as it did prior to agreeing to the same and provided further that GPA shall be entitled to provide a security unit within the Site.
- (c) [] shall be responsible for all costs and expenses (including legal fees and taxes or duties) incurred in connection with the Facility Transfer and shall at its own cost obtain or effect all Government Authorizations and other approvals, licenses, registrations and filings and take such other action as may be necessary for the Facility Transfer as contemplated in this Article 18, and reimburse [] on demand for all such costs and expenses incurred by [] in respect thereof.

18.2 Testing Prior to End of Term and Facility Transfer

- (a) Unless this ECA is terminated early, during the last year of the Term, the Project Company shall perform the tests described in Schedule 4 ("End of Term Tests") and the final pre-Facility Transfer overhaul described in Schedule 1 (the "Final Major Overhaul"). In the event that the End of Term Test results demonstrate that the Facility requires repair and/or replacement of equipment or parts, the Project Company shall carry out such corrective action as is required by Schedule 1.
- (b) If the Facility does not satisfy the requirements of Schedule 1, including the performance requirements set forth in Schedule 1, the Project Company shall immediately take such actions as will cause the Facility to comply with the requirements of Schedule 1. If the Project Company fails to cause the Facility to comply with the requirements of Schedule 1 within thirty (90) Days prior to the expiration of the Term, GPA (or its nominee) may take such measures as may be required for the Facility to comply with the requirements of Schedule 1 at the sole expense of the Project Company. In the event that Project Company does not make timely payments for such expenses, GPA shall have the right to draw such amounts from the Transfer Security and/or set off such amounts under Article 14.1(e)(iv).

18.3 Transfer Overhaul

Three (3) years prior to the expiration of the Term, the Project Company shall deliver to GPA a plan that is consistent with Prudent Utility Practices and reasonably acceptable to GPA setting out the anticipated costs and activities associated with the Final Major Overhaul and the Facility Transfer. The Final Major Overhaul shall occur no earlier than 18 months and no later than 6 months from the expiration of the Term. In the event that GPA, acting reasonably, does not agree with the costs and activities anticipated by the Project Company in such transfer plan and the Parties cannot agree on the costs and activities, the Dispute shall be resolved in accordance with ARTICLE 19, provided, however, that the Project Company's obligations under the transfer plan shall always be limited to the scope set out in Schedule 1. The plan shall also describe the reserves to be maintained by the Project Company to cover these anticipated costs and activities. The Project Company shall maintain adequate reserves to complete the Facility Transfer obligations required by Schedule 1.

18.4 Transfer Security

On or prior to the end of the twenty-first (21st) Contract Year, the Project Company shall deliver to GPA a security deposit in the amount of US\$15,000,000 (the "Transfer Security"). The security deposit shall be issued in one of the forms set out in Article 6 as security for performance of the Project Company's obligations under this ARTICLE 18. The deposit shall remain valid for one (1) year subsequent to the date of Facility Transfer. In the event that Project Company has not delivered the security deposit in favor of GPA by the end of the twenty-first (21st) Contract Year, GPA shall have the right to withhold payments to Project Company (including payment amounts owed pursuant to Article 14) up to the Transfer Security amount.

ARTICLE 19 CHOICE OF LAW AND RESOLUTION OF DISPUTES

19.1 Governing Law

This Agreement and the rights and obligations hereunder shall be interpreted, construed and governed by the laws of Guam and all applicable laws of the United States of America.

19.2 Initiation of Dispute Resolution

- (a) In the event that a Dispute arises, the Parties shall attempt in good faith to settle such Dispute by mutual discussions within thirty (30) Days after the date that the disputing Party gives Notice of the Dispute to the other Party which may include referring the Dispute to the Joint Coordinating Committee for a specified time period, subject to mutual agreement of the Parties.
- (b) In the event that the Dispute is not resolved in accordance with Article 19.2(a), either Party may refer the Dispute to the chief executive officer or chief operating officer of Project Company and GPA for further consideration. In the event that such individuals are unable to reach agreement within fifteen (15) Days, or such longer period as they may agree, then either Party may commence mediation of the Dispute in accordance with Article 19.3

19.3 Mediation

- (a) In the event that a Dispute arises, all claims or controversies subject to final resolution under this Article will be submitted to mediation in accordance with the rules of the American Arbitration Association, subject to the conditions and limitations of this paragraph. This agreement to mediate is authorized under 5 GCA §5427 (b) and 2 GAR §9103 (a)(1). The Parties shall each pay one-half of the mediation expenses.
- (b) In the event the matter or controversy is not resolved through mediation, the GPA General Manager shall, after written request by the Project Company for a final decision, issue a written decision within 30 days. A copy of the decision shall be immediately transmitted to the Project Company by a method that provides evidence of receipt.
- (c) Any such decision shall be final and conclusive unless the Project Company files an appeal with the Guam Office of Public Accountability ("OPA") after receipt of the decision. In the event the Dispute is not resolved by the OPA, the Project Company may seek redress through the Guam Government Claims Act and/or the Guam Superior Court.
- (d) Any mediation shall be conducted in English
- (e) The place of mediation shall be Guam.
- (f) Unless otherwise provided in this Agreement, during the conduct of Dispute resolution the Parties shall continue to perform their respective obligations under this Agreement.

19.4 Consent to Jurisdiction

ARTICLE 20 Each Party hereby consents to the jurisdiction of the courts of Guam for any action filed by the other Party pursuant to this Agreement.

NO LIABILITY FOR REVIEW

No review, non-objection or approval by GPA of any agreement, document, instrument, drawing, specifications or design proposed by Project Company shall relieve Project Company from any liability that it would otherwise have had for its negligence or wilful misconduct (i) in the preparation of such agreement, document, instrument, drawing, specification or design or (ii) the failure to comply with the applicable Laws of Guam with respect thereto.

ARTICLE 21

SHARE TRANSFER AND DISPOSAL OF ASSETS

21.1 Shares Certificate Legend Requirement

With respect to the transfer of the registered ownership of any Shares, Project Company (i) shall include appropriate legends on all share certificates evidencing Shares of Project Company to put prospective purchasers of such Shares on notice of the restrictions in the following provisions and, (ii) to the extent permitted by the Laws, shall

not register or give effect to any purported transfer of Shares that is not in compliance with such restrictions or do not bear such legend.

21.2 Transfer Restriction

Prior to the second anniversary of the Phase 2 Commercial Operation Date, none of the Initial Shareholders shall (i) transfer any Shares owned by them or (ii) merge into or consolidate with any other individual, corporation, company, voluntary association, partnership, joint venture, trust, or (iii) dispose of assets of Project Company at any time, except for:

- (a) a transfer required by any Laws or by the operation of the Laws or by order of a court, tribunal, or Governmental Authority with appropriate jurisdiction; or
- (b) a transfer resulting from the enforcement of a pledge or security interest in or over any Shares in accordance with the Security Package; or
- (c) a transfer of Shares in accordance with the Lenders' Direct Agreement; or
- (d) a transfer to which GPA has given its prior written approval.

**ARTICLE 22
NOTICES**

Except as otherwise expressly provided in this Agreement, all notices, communications, or other documents (together "**Notices**") to be given or made by one Party to the other Party pursuant to this Agreement shall be in English and in writing, shall be addressed for the attention of the person indicated below, and shall be delivered by hand or sent by reputable international express courier by facsimile, or registered mail. Any Notice given by facsimile shall be confirmed by sending a copy of the same by personal delivery or by registered mail, but the failure to so confirm shall not void or invalidate the original Notice if it is in fact received by the Party to which it is addressed. The addresses for service of the Parties and their respective facsimile numbers are:

[.....]

or such other addresses and facsimile numbers as either Party may have notified to the other Party in accordance with this Article 22.

All Notices shall be deemed delivered (a) when presented personally, (b) when transmitted by facsimile to the receiving Party's facsimile number specified above, (c) one (1) Day after being delivered to a courier for express delivery, addressed to the receiving Party, at the address indicated above (or such other address as such Party may have specified by written Notice), or (d) five (5) Days after being sent by registered mail addressed to the receiving Party, at the address indicated above (or such other address as the receiving Party may have specified by written Notice). Any Notice given by facsimile shall be confirmed in writing delivered personally or sent by registered mail, but the failure to so confirm shall not void or invalidate the original Notice if it is in fact received by the Party to which it is addressed.

**ARTICLE 23
MISCELLANEOUS PROVISIONS**

23.1 Amendment

This Agreement cannot be amended except by prior written agreement between the Parties.

23.2 Headings

The headings contained in this Agreement are used solely for convenience and do not constitute a part of this Agreement nor shall such headings be used in any manner to aid in the construction of this Agreement.

23.3 Third Parties

This Agreement is intended solely for the benefit of the Parties hereto. Nothing in this Agreement shall be construed to create any duty or any liability to or any right of suit or action whatsoever, to any person not a Party to this Agreement.

23.4 No Implied Waiver

The failure or delay of either Party to enforce at any time any of the provisions of this Agreement, or to require at any time performance by the other Party of any provision hereof, shall neither be construed to be a waiver of such provisions nor affect the validity of this Agreement or any part hereof or the right of such Party thereafter to enforce each and every such provision.

23.5 Relationship of the Parties

This Agreement shall not be interpreted or construed to create an association, joint venture, partnership or agency between the Parties or to impose any partnership obligation or liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party. Nothing in this Agreement shall be construed as creating any relationship between the Parties other than that of independent sale and purchase of capacity and electricity generated at the Facility. Except as otherwise set forth herein, the Parties do not intend to create any rights, or grant any remedies to, any third party beneficiary of this Agreement. Therefore, Project Company shall be solely responsible for the payment of salaries, wages and mandatory and fringe benefits of its employees, which will not have any labour relationship with GPA.

23.6 Rights of Inspection

Project Company shall promptly furnish to GPA such information as GPA may from time to time reasonably request. Subject to Article 7.5, Project Company shall permit representatives of GPA on reasonable notice and during reasonable hours to visit the Facility, such visit to be at the cost of GPA.

23.7 Periodic Reports

- (a) Each Party shall, as soon as available but in any event within one hundred twenty (120) Days after the end of each fiscal year, furnish to the other Party:
 - (a) two (2) copies of its complete financial statements for such fiscal year (which are in agreement with its books of accounts and are prepared in

accordance with accounting principles which are generally accepted in Guam and consistently applied), together with an audited report thereon; (b) a copy of any management letter or other communication sent by the auditors to the Party or to its management in relation to the Party's financial, accounting and other systems, management and accounts; and (c) a report by the auditors certifying that, based on its financial statements, the Party was in compliance with its financial obligations as of the end of the relevant fiscal year or, as the case may be, detailing any non-compliance. In addition, each Party shall authorise its auditors (whose fees and expenses shall be for the account of the Party) to communicate directly with the other Party at any time regarding the Party's accounts and operations and shall furnish to the other Party a copy of such Authorization.

- (b) Each Party shall, as soon as available but in any event within sixty (60) Days after the end of each six (6) Month period of each fiscal year, furnish to the other Party: (i) two (2) copies of balance sheets of such Party, as of the close of that period, and statements of sources and uses of income and retained earnings and changes in the Party's capital accounts and financial position, for the period and for the portion of the fiscal year ending with that period, in each case setting forth in comparative form the figures for the corresponding period for the preceding fiscal year, all in reasonable detail and in accordance with the generally accepted accounting principles in Guam consistently applied and certified as complete and correct, subject to changes resulting from year-end adjustments, by the chief accounting officer of the Party; and (ii) a report on any factors materially and adversely affecting or that might materially and adversely affect the Project or the Party's business and operations or its financial condition.

23.8 Survival

Articles [1, 2, 6.3, 6.4, 16, 19, 23, and 23] shall survive the cancellation, expiration or termination of this Agreement.

23.9 Language

The language of this Agreement shall be English. All documents, Notices, waivers and all other communication written or otherwise between the Parties in connection with this Agreement shall be in English.

23.10 Entirety

This Agreement and Schedules attached hereto [and the LLA] and any scedules or annexes thereto, taken together, are intended by the Parties as the final expression of their agreement and are intended also as a complete and exclusive statement of the terms of their agreement with respect to the subject matter of this Agreement and the LLA. All prior written or oral understandings, offers or other communications of every kind pertaining to the sale or purchase of capacity and energy hereunder to GPA by Project Company or to Project Company by GPA or pertaining to the connection of the Facility to the Grid System are hereby abrogated and withdrawn.

23.11 Assignment

This Agreement may not be assigned by either Party other than by mutual agreement between the Parties in writing. Notwithstanding the foregoing, for the purpose of financing or refinancing the Facility, GPA agrees that Project Company may assign to the Lenders its rights and interest or create security over its rights and interest under or pursuant to (i) this Agreement, (ii) the Facility, (iii) the movable property and intellectual property of Project Company and (iv) the revenues or any of the rights or assets of Project Company. The Parties acknowledge and agree that provisions, which shall be agreed with the Lenders, will be included in the Lenders' Direct Agreement which will provide, inter alia, for the Lenders' security interest and cure and step-in rights in and under this Agreement.

23.12 Successors and Assigns

This Agreement shall be binding upon, and inure to the benefit of, the Parties hereto and their respective legal successors and assigns permitted in accordance with Article 23.11.

23.13 Confidentiality

Each of the Parties shall hold in confidence the agreements relating to the Project and all documents and other information, whether technical or commercial, which is of a confidential nature supplied to it by or on behalf of the other Party relating to the design, construction, insurance, operation, maintenance, management and financing of the Project and shall not publish, disclose or use the same for its own purposes other than as may be required to perform its obligations under this Agreement or as may be required by law.

23.14 Counterparts

This Agreement may be executed in more than one counterpart, each of which shall be deemed to be an original and all of which when taken together shall be deemed to constitute one and the same instrument.

23.15 Severability

If one or more provisions contained in this Agreement are held or found to be invalid, illegal, or unenforceable in any respect, the provision(s) shall be given effect to the extent permitted by law and the invalidity, illegality, or unenforceability of any provisions shall not affect the validity of the remaining provisions of this Agreement.

AIS Report_GPA Power Generation_15Feb2019

DRAFT—Phase I Archaeological Inventory Survey of Lot 5010-1NEW-NEW for Guam Power Authority New Power Generator Project

Prepared For:

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GANDA Report No. 2412-2-1



31 January 2019

ABSTRACT

At the request of EA Engineering, Science, and Technology, Inc, PBC and on behalf of Stanley Consultants and the Guam Power Authority, Garcia and Associates conducted a Phase I archaeological inventory survey of Lot 5010-1NEW-NEW for GPA's New Power Generator Project (RC2018-0240). The objective of the survey was to identify and record any significant historic or cultural resources that may have been present in the project area (which totals 24.50 hectares). The results of this investigation are intended to aid in the preparation of an Environmental Assessment.

The transect survey and excavation of 30 shovel test pits yielded no National Register of Historic Places-eligible historic properties. Three surface sites recorded during the survey, a concrete pad complex (TS-1) and two historic artifact scatters (TS-2 and -3), are recommended as ineligible for National Register of Historic Places listing. Intensive land clearing associated with military development of Harmon Air Force Base in the 1940s and a radio facility in the 1950s was encountered throughout the Area of Potential Effect. These disturbance events have likely removed any pre-World War II cultural or archaeological resources that may have been present on the parcel. World War II activity also does not appear to have left any significant surface structures or subsurface deposits. Thus, there is a low potential for encountering significant historic properties during development for GPA's New Power Generator Project.

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1.0 INTRODUCTION

At the request of EA Engineering, Science, and Technology, Inc, PBC and on behalf of Stanley Consultants and the Guam Power Authority (GPA), Garcia and Associates conducted a Phase I archaeological inventory survey of Lot 5010-1NEW-NEW in Dededo, Guam for GPA's New Power Generator Project (RC2018-0240) (Figure 1). The objective of the survey was to identify and record any significant historic or cultural resources that may have been present in the project area. The results of this investigation are intended to aid in the preparation of an Environmental Assessment.

1.1 Nature of Planned Development

Planned development will involve the construction and operation of a new 180-megawatt power generation plant, accessories, and related facilities to improve the island's power grid and meet future energy demands. The new power plant will replace the two Cabras power plants left inoperable by an explosion and fire in August 2015 and will allow integration of existing solar photovoltaic sources of renewable energy. The footprint for this development will comprise 10.11 hectares (25 acres) within Lot 5010-1NEW-NEW.

1.2 Project Area Description

The project area consists of Lot 5010-1NEW-NEW (formerly adjoining Lots 5010 and 5042), which comprises 24.50 hectares (60.55 acres) in the Ukudu area of Dededo Municipality in northern Guam (Figure 2). This parcel was formerly developed for Harmon Air Force Base from 1944 to 1949 but has seemingly sat vacant through the ensuing decades.



Figure 1. Project area within the Western Pacific and the island of Guam.

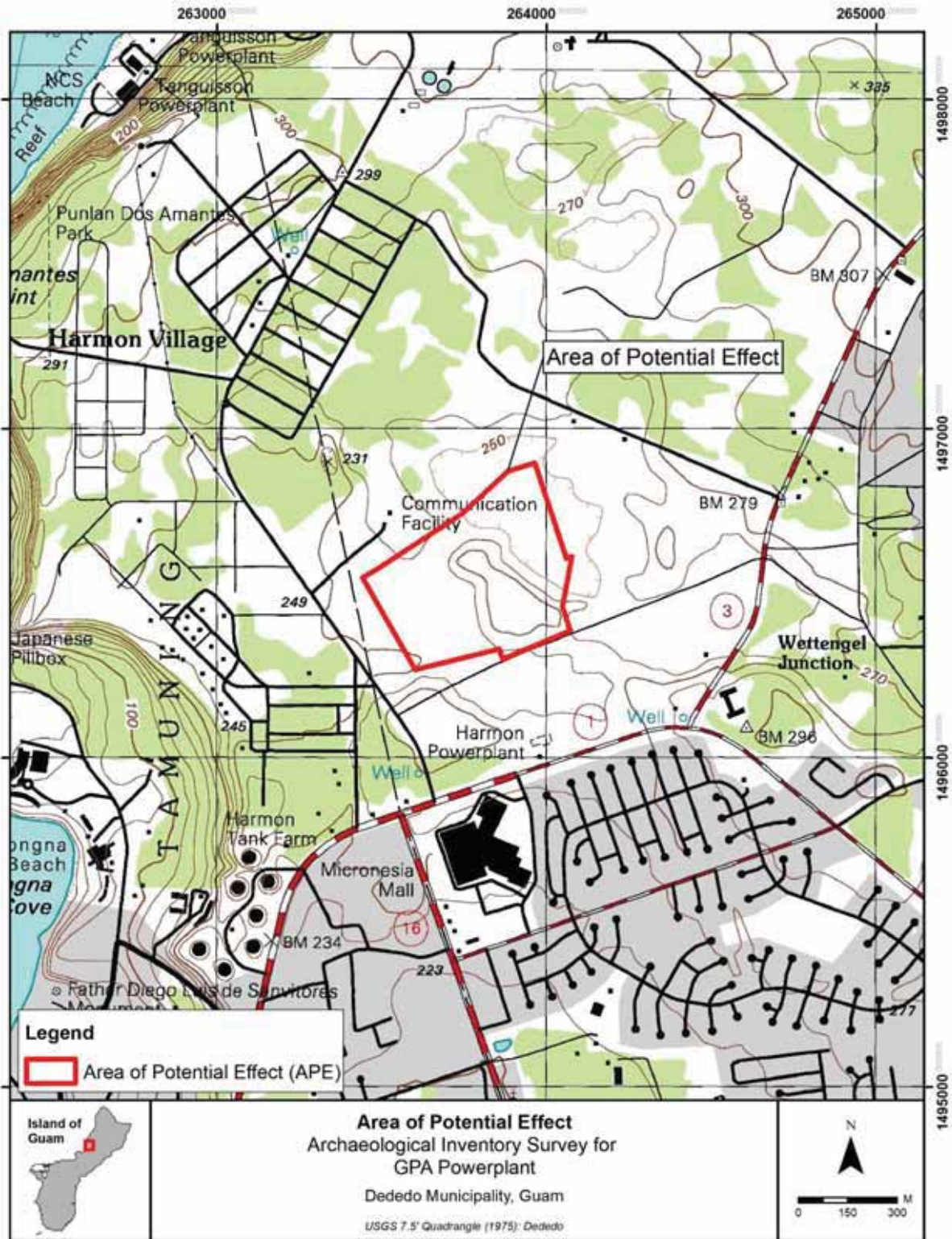


Figure 2. Project area in Ukudu, Dededo Municipality.

2.0 BACKGROUND

The background information presented below provides an environmental, historical, and archaeological context for the project area. This information is important for interpreting results of the archaeological investigation.

2.1 Environmental Context

Guam is the largest and southernmost island in the Mariana Islands archipelago. Situated at 13 degrees north latitude and 144 degrees east longitude, the island experiences a tropical marine climate that is typically hot and humid throughout the year. Precipitation averages from 216 to 292 centimeters per year with the wet season beginning in July and the dry season beginning from the end of November to the beginning of December (Gingerich 2003:1).

Geologically, Guam is divided into two distinct regions separated by the Pago-Adelup Fault line. The northern half of Guam is a broad undulating uplifted limestone plateau bounded by sea cliffs, while the southern portion of Guam features rugged volcanic highlands with ravines and protected embayments. The project area is situated within the west coast interior of the northern limestone plateau where fresh water resources are limited due to the permeability of the porous limestone.

Soils on the northern plateau of Guam are generally entisols, consisting of poorly-developed soils without B-horizons (Young 1988). These typically very shallow soils developed from the erosion of the limestone plateau and the decomposition of organic matter. Soils classified within the project area consist primarily of the Guam cobbly clay loam series with 3 to 7 percent slopes (Young 1988) (Figure 3). Guam cobbly clay loam with 7 to 15 percent slopes is present in the

central portion of the project area where there is a slight increase in elevation. This soil series consists of very shallow, well-drained soils that developed from the underlying parent material consisting of porous coralline limestone. Depth to limestone ranges from 5 to 40 centimeters. Permeability of these shallow soils is moderately rapid, runoff is slow, and the hazard of water erosion is slight. This soil series is primarily suited for urban development and grazing. Without extensive landscape alterations, the shallow soil depth and cobbles limit agricultural production.

Vegetation in the project area consists of secondary growth thicket with simple structure and canopy height no more than 4.6 meters (15 feet), indicating a history of recent disturbance. Dominant trees/shrubs include *tangantangan* (*Leuceana leucocephala*), *lada* (*Morinda citrifolia*), and custard apple (*Annona reticulata*). Native trees/shrubs, such as *pago* (*Talipariti tiliaceum*), *ahgao* (*Premna serratifolia*), and *abas duendes* (*Phyllanthus mariannensis*), were observed occasionally. False ratan (*Flagellaria indica*) and the invasive mile-a-minute (*Mikania micrantha*) are the most abundant vines in the forest. The understory consists of native and introduced herbs and subshrubs. Common understory species include sword fern (*Nephrolepis hirsutula*), coral-berry (*Rivina humilis*), and caesarweed (*Urena lobata*) in shaded areas and mission grass (*Pennisetum polystachion*) and *escobilla sabana* (*Waltheria indica*) in open areas. Satellite imagery indicates areas of cleared vegetation and exposed limestone with minimal soil development in the northwestern portion of the project area. The plants found in this area are species that commonly occur in coastal strand communities, such as *gago* (*Casuarina equisetifolia*), *pago*, *nanaso* (*Scaevola taccada*), and *lesaga* (*Lepturus repens*). Portions of the project area are also covered by a dense stand of Napier grass or elephant grass (*Pennisetum purpureum*) and wild cane (*Saccharum spontaneum*), likely the result of previous clearing.

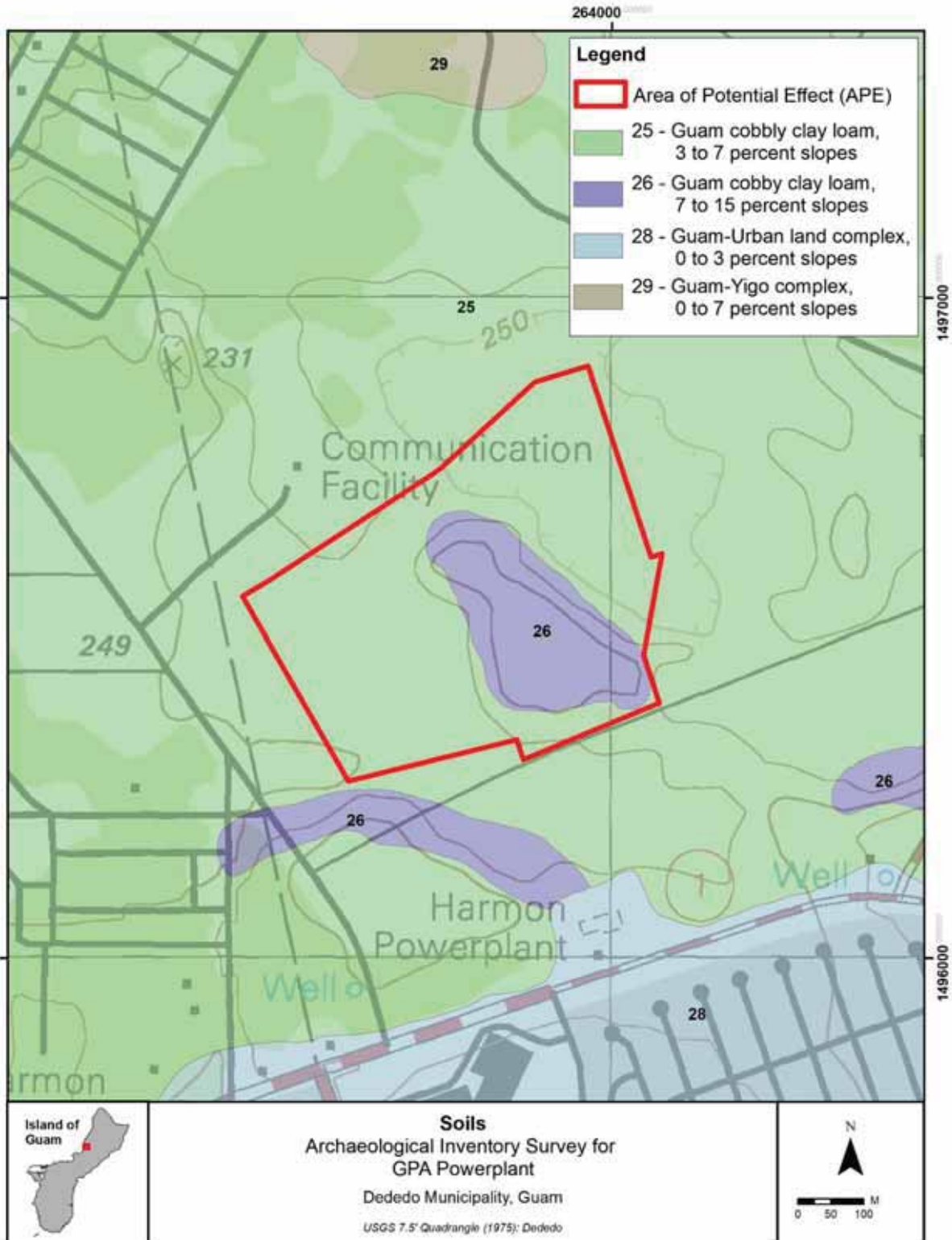


Figure 3. Soils in and around the project area.

2.2 Cultural History

Guam's cultural history is broadly divided into the Pre-Contact and Historic eras. The Pre-Contact Era encompasses indigenous settlement of the Marianas during the Pre-Latte, Transitional, and Latte periods. Guam's Historic Era is characterized by increasing influence by colonial powers during the Pre-Colonial European Trade, Spanish Missionization/ Chamoru Spanish Wars, Spanish Colonial, First American Territorial, World War II/ Japanese Military Occupation, Post-World War II/ Second American Territorial, and Organic Act/ Home Rule/Economic Development periods (Guam Historic Resources Division [GHRD] 2014). These chronological divisions are used to structure the following overview of Guam's cultural history as it relates to the current project area.

2.2.1 Pre-Latte Period (1500 BCE–500CE) and Transitional Period (500–800 CE)

The Pre-Latte Period, extending from 1500 BCE to 500 CE, can be divided into the Early (1500–1000 BCE), Middle (1000–500 BCE), and Late (500 BCE–500 CE) Pre-Latte periods (GHRD 2014). Archaeological evidence, although sparse when compared to the subsequent Latte Period, indicates that the island's early settlers favored resource-rich coastal environments where they exploited reef flats for fish and shellfish. Habitation sites during the Pre-Latte Period probably consisted of small, nucleated groups of stilt houses near the shoreline as well as caves and rockshelters useful for storm protection (Russell 1998:90–91). The Transitional Period (500–800 CE) is marked by an expansion from coastal sites to the island's interior (potentially including the project region), likely for exploitation of natural resources and fresh water.

On the island's northwest coast, leeward embayments and smaller coves were occupied or utilized during this period, including Ague Cove and Pugua Point north of the project area (Hunter-Anderson et al. 2001; Olmo et al. 2000). Tumon Bay, southwest of the project area, supported extensive coastal habitation during this long period (Graves and Moore 1985). The limestone plateau abutting these coastal environments, including the project area, presumably did not support Pre-Latte habitation, although nearby populations may have exploited its native forest communities for food and other resources.

2.2.2 Latte Period (800–1521 CE)

The Latte Period (800–1521 CE) is differentiated from the Pre-Latte largely by the appearance of stone foundation structures called *latte*. Relatively few Latte Period habitation sites are documented in the northern interior of the island (Reinman 1977). And yet an increase in population densities during this period led to increased demands for “firewood, construction materials, forest fruits, and agriculturally produced foods,” which led to greater use of inland environments in the Marianas (Dixon et al. 2011a:393). Latte Period pottery scatters, ubiquitously documented in lieu of long-term habitation sites in Guam's northern interior, may represent inland field camps where coastal populations managed and collected from native forest communities and farmed arable soil (Dixon et al. 2011a; Dixon et al. 2012; Moore 2005). Inland forest clearing and associated occupation (often brief or intermittent) of the northern interior is also represented archaeologically by dark middle soil, lithic and artifact scatters, rock walls and platforms, and stone mounds often situated directly above large coastal embayments (Dixon et al. 2011a; Dixon et al. 2012; Liston 1996).

The current study area's proximity to extensive coastal habitation sites, consisting of *latte* complexes, human burials, artifact scatters, and utilized caves and rockshelters at Tumon, Hila'an, and Haputo, indicates that this portion of the limestone plateau may also have been occupied or utilized at least intermittently by nearby populations.

2.2.3 Pre-Colonial European Trade Period (1521–1668 CE)

The Magellan expedition landed in Guam in 1521, ushering in the Pre-Colonial European Trade Period (1521–1668 CE). Soon thereafter, foreign seafarers anchored in Guam and bartered with the local population for fresh provisions in exchange for foreign materials, iron being the local favorite. Spain did not formally acknowledge colonial possession of the Mariana Island chain until 1565, the same year the Manila-Acapulco galleon trade made its first stop in the Marianas. The Marianas became a regular stop — weather permitting — for the galleons during their annual trade route, where they would offload provisions, soldiers, and eventually missionaries.

2.2.4 Spanish Missionization Period/ CHamoru Spanish Wars (1668–1700 CE)

Indigenous settlement patterns largely continued during the early phases of European encounters, but in 1668 a Jesuit mission, led by Pale Diego Luis de San Vitores, arrived in the Marianas on a mission to convert the local population to Christianity. The ensuing Spanish missionization and colonization of the Marianas disrupted traditional settlement patterns and transformed local villages into Spanish mission parishes. The Spanish cartographer, Alonso Lopez, recorded this transformation in an early map depicting Spanish villages and churches across the island (Figure 4). The main village of Agaña (later Agaña, now Hagåtña) and its church are

shown, along with several subsidiary and mostly coastal villages. The project region on the northwest coast is shown only with a trail bracketed by church settlements along the coastline.

The indigenous population had dwindled by the 1690s, after roughly two centuries of introduced disease and almost 30 years of confrontation with the Spanish missionaries and colonizers. The Spanish government ultimately relocated the archipelago's dwindling population into seven mission villages, none of which were in the project vicinity (Rogers 1995). The dissolution of indigenous settlement practices thereby ended with the intensification of Spanish colonialism and missionization in the late seventeenth century.

2.2.5 Spanish Colonial Period (1700–1898 CE)

By 1886, most of the island's population was concentrated in the Spanish capital at Hagåtña, which supported 5,979 people by that time (Garcia 2006:59). Spanish municipalities were largely confined to the coasts, particularly along the coastal route (*el Camino Real*) from the port of Umatac north to Hagåtña. Nonetheless, CHamoru maintained *lâncos* (ranches) in the island interior. The Spanish government encouraged cattle ranching in the northern interior by offering land grants to CHamoru-Spanish families to establish small ranches on the limestone plateau.



Figure 4. Seventeenth-century Spanish map of Guam designating village names and locations (Le Gobien 1700).

2.2.6 First American Territorial Period (1898–1941)

In 1898, the United States won the Spanish-American War and secured Guam from Spain. The island was put under the jurisdiction of the U.S. Department of the Navy and commanded like a battleship, with over two dozen naval officers acting as governors from 1903 until the Japanese occupation in December 1941 (Rogers 1995:119–120).

The Spanish-CHamoru way of life persisted for the first several years of the early 20th century as naval officers took varying levels of interest in governing the island and bettering the lives of its inhabitants (Rogers 1995:120). The northern region of the island received telephone service during this period through the extension of a line from Agaña. Such improvements likely contributed to intensified utilization of the area. Otherwise, the northern interior, including the project area, remained largely uninhabited during this period, albeit with scattered *lanchos* and copra production plantations. Maps from this period note the traditional place name of Ukudu in the project vicinity and show road and trail networks traversing the area, but no farms or ranches are recorded in the project area vicinity (Figure 5).

2.2.7 World War II/ Japanese Military Occupation Period (1941–1944)

Guam was unfortified in 1941 in compliance with the 1922 Washington Naval Treaty, enabling Japan to easily take possession of the island. Japanese forces, numbering almost 6,000, overtook the capital and other major villages, occupying public buildings and many residences (Rogers 1995:158). Throughout the occupation, the CHamoru population was forced to toil in agricultural fields to feed the influx of troops and administrators and to construct airfields and defensive positions, often with inadequate tools over long, grueling hours.

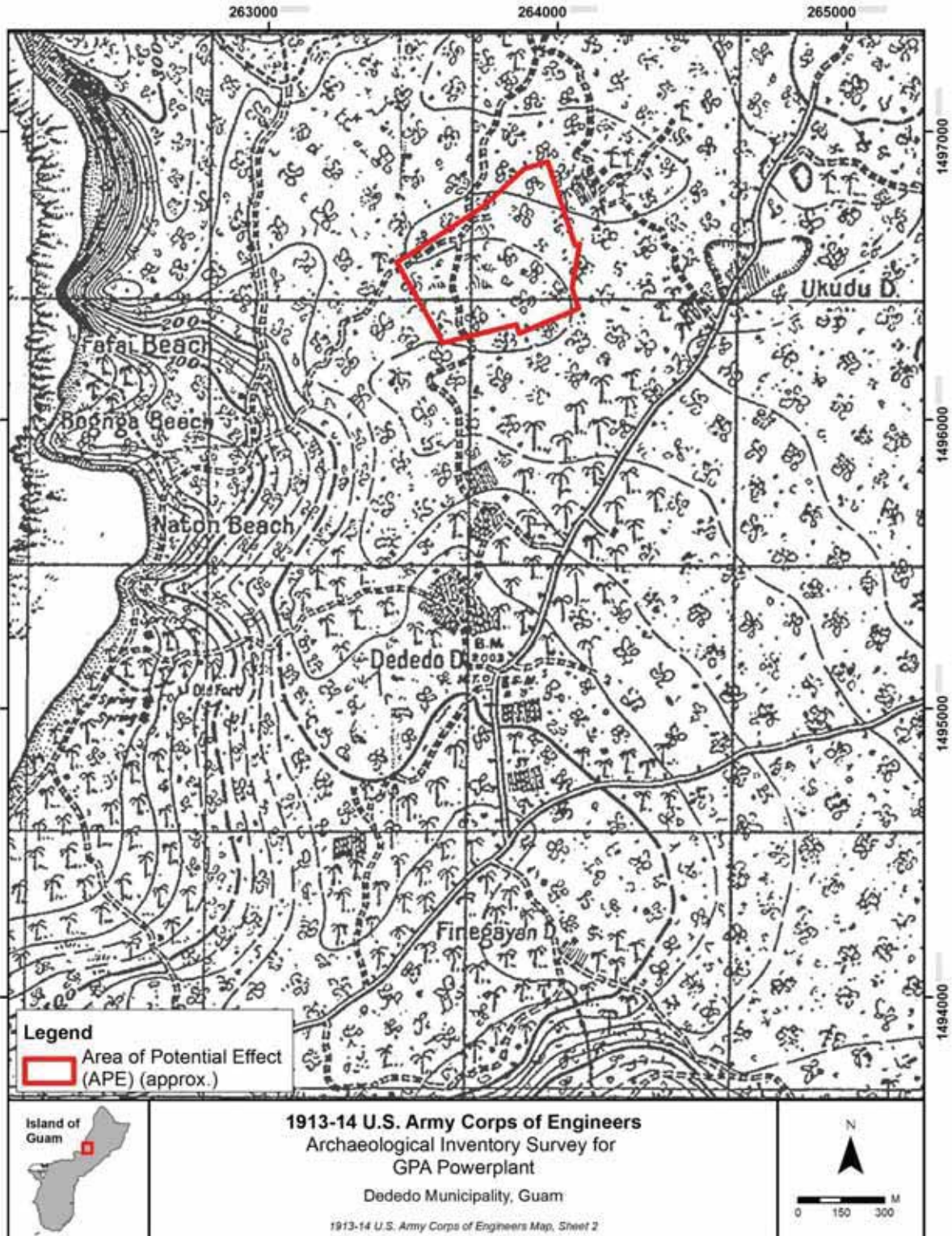


Figure 5. Portion of Army Corps of Engineers 1913–1914 cartographic survey of Guam (on file at MARC).

The project area does not appear to have been occupied or utilized by the Japanese during this period. Military fortification during the Japanese occupation was not extensive in the project region since Japanese efforts focused on airfields and defenses along the island's southern coasts and Orote Peninsula. In addition to limited military activity in the project area, CHamorus may have accessed the general region during the occupation, as many families permanently relocated to pre-war *lanchos* in an attempt to avoid the Japanese (Blaz 2008). The U.S. Military's Special Air and Gunnery Target maps prepared for the subsequent invasion of the island show a trail traversing the project area, similar to earlier maps, but no *lanchos* are marked within the boundaries of the project area (Figure 6).

2.2.7.1 Battle of Guam

U.S. troops invaded Asan and Agat beaches on Guam's southwest coast on July 21, 1944. On July 28, after heavy fighting on both sides, U.S. forces joined the northern and southern beachheads. On July 30, General Roy S. Geiger (USMC) ordered his troops to pursue the retreating Japanese Army north. Elements of the 3rd Marines passed through the project area vicinity between the 5th and 6th of August. They moved easily through the area and reported little to no opposition (Crowl 1993:417). In contrast, the 9th Marines on their right flank encountered organized resistance from embedded Japanese soldiers in the Finegayan area north of the project area (Crowl 1993:417).

Following the battle for Mount Santa Rosa and grueling reconnaissance of the island's northern plateau, General Geiger announced the end of organized resistance on Guam on August 10th, following the campaign to secure the northern plateau. The remaining Japanese forces,

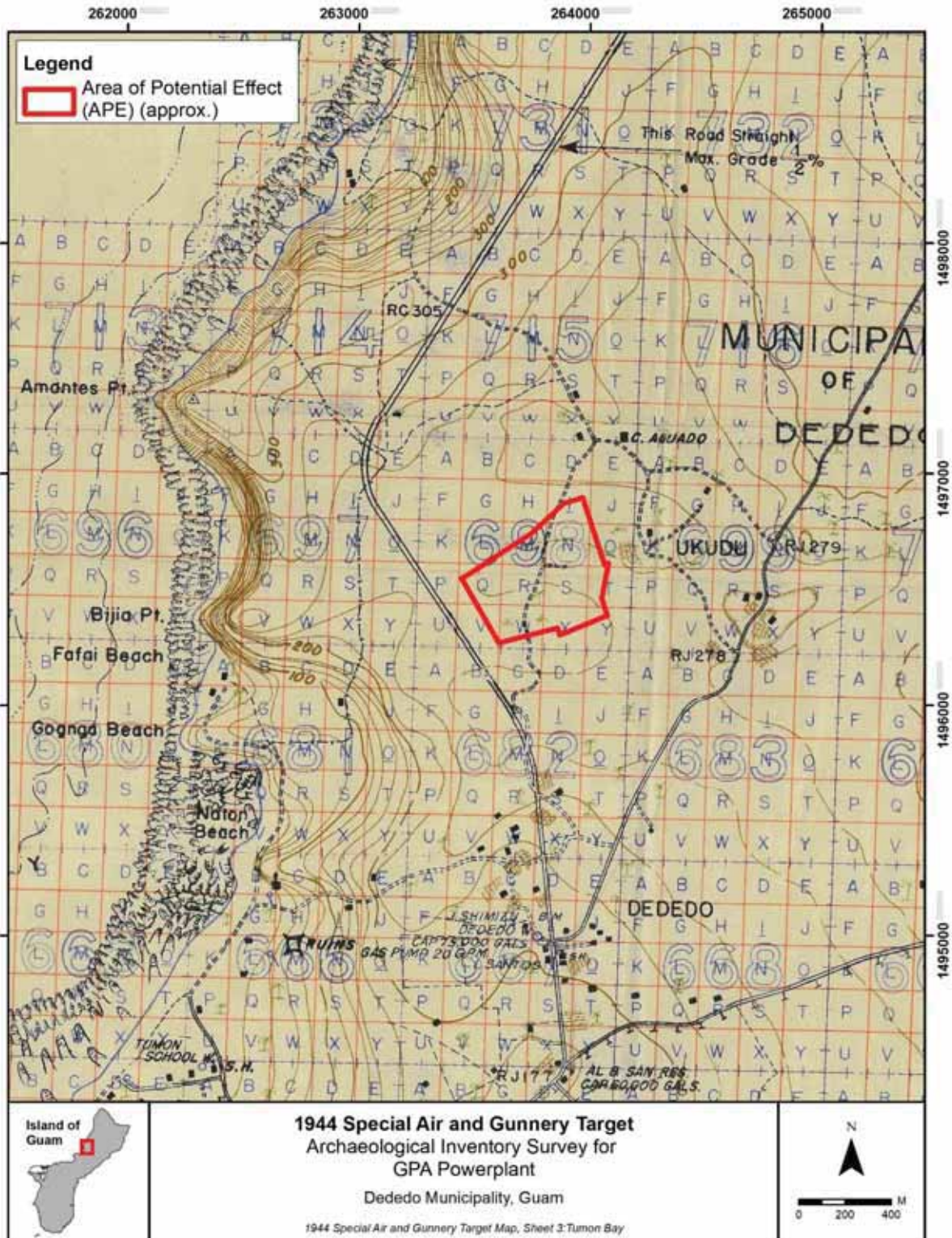


Figure 6. Portion of 1944 U.S. Marine Corp Special Air and Gunnery Target Map, Tumon Quadrangle, Guam.

numbering more than 9,000, were dispersed and unorganized within the jungles of Guam, necessitating extensive reconnaissance operations long after the island was declared secure.

2.2.8 Post-World War II/ Second American Territorial Period (1944–1950)

After the American invasion, the U.S. military embarked on a rapid and extensive construction program to position Guam as a major forward operating base in the Western Pacific. Large plots of land were acquired and bulldozed to accommodate new airfields, depots, headquarters, and related facilities. The United States' goal of securing the Mariana Islands was fully realized with the construction of specialized airfields to support long-range, high-altitude bombers, known as the B-29 Superfortress, which were commanded by the XXI Bomber Command. The unique capability of the Superfortress allowed for air strikes on the Japanese home islands. Two of these new airfields were constructed in northern Guam: North Field and Northwest Field.

The XXI Bomber Command was headquartered at Depot Field (later Harmon Air Force Base) located just inland of Puntan Dos Amantes in the area of the current project area. Construction of Depot Field began shortly after the invasion of the island in July 1944. Brigadier General Haywood moved the XXI Bomber Command from its former headquarters at Isley Field on Saipan to Guam Depot Field on December 4, 1944. The installation was later renamed Harmon Air Force Base in honor of Lieutenant General Millard Harmon who went missing on a mission flight to Hawai'i.

A map depicting the Navy's area allocations by 1945 shows the project area squarely within the Army Base Yard (demarcated by "127" on the map) within "Area 3," or Harmon Field (Figure 7). Navy aerial imagery from this period indicates that the southern extent of the project area was

used for stockpiling materiel, such as military vehicles, while warehouses and other temporary storage facilities were erected in the northeast corner of the project area (Figure 8 and Figure 9).

The XXI Bomber Command conducted strategic long-range bombing missions against the primary Japanese Islands until July 1945, when the bomber command was deactivated (Maurer 1983:486). The command of Harmon Field was transferred to the Twentieth Air Force which continued the air offensive against Japan until the end of the war (Maurer 1983:487). After World War II, Harmon Air Force Base was occupied by the 9th Bombardment Group and the 374th Troop Carrier Group, which flew courier, passenger, and cargo routes throughout the western Pacific (Maurer 1983:262).

On November 15, 1949 Typhoon Allyn hit Guam causing severe damage to the island and destroying many of the structures at Harmon Field (Meyer 2014:8). Harmon Air Force Base was subsequently closed due to budget constraints and the inadequate condition of its facilities.

2.2.9 Organic Act/ Home Rule/ Economic Development Period (1950–Present)

U.S. Navy aerial photographs from the 1950s show the now abandoned extent of the former Army Base Yard within the project area (Figure 10). By the 1950s, vegetation is slowly coming back to the area, although foundation structures are still evident in the northeast corner of the parcel. A 1956 aerial photograph shows the project area almost completely re-vegetated except for a small access road and extensive land clearing for a radio facility that encroaches into the project area's northwest corner (Figure 11). Several structures are also still evident in the project area's northeast corner.

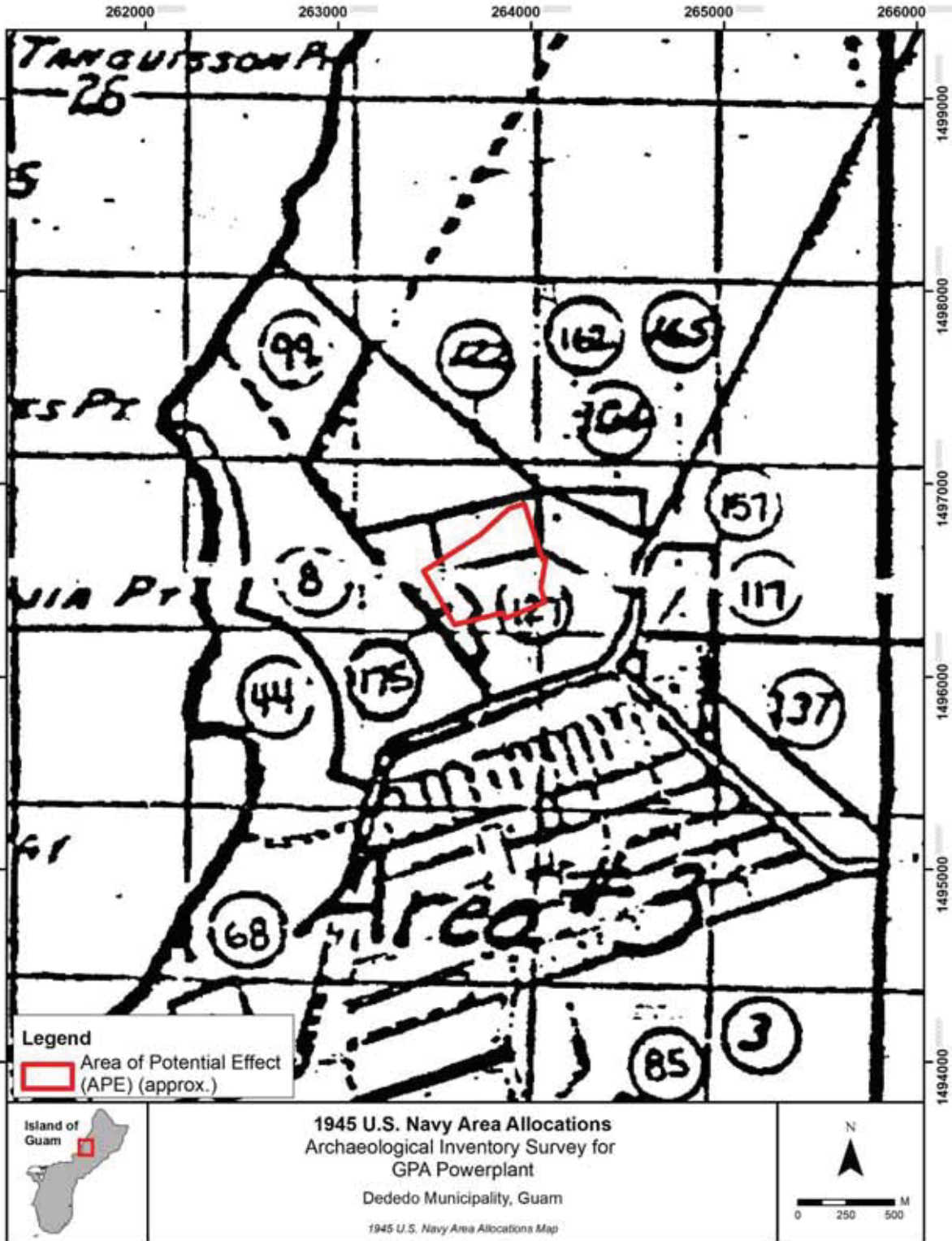


Figure 7. Portion of 1945 U.S. Navy Area Allocations Map of Guam.



Figure 8. Portion of 1948 U.S. Navy aerial photograph showing Army Base Yard within the project area.



Figure 9. Portion of 1949 U.S. Navy oblique aerial photograph showing Army Base Yard within the project area (red circle).

The project area remained largely abandoned through the ensuing decades. The southwest to northeast trending easement, just south of the project area, appears on Government of Guam maps by 1966 (on file at Micronesian Area Research Center, University of Guam). Small episodic land clearings appear on recent (within the last decade or so) satellite imagery of the project area, including one for what appears to be a small homestead near the middle of the project area's southern boundary.

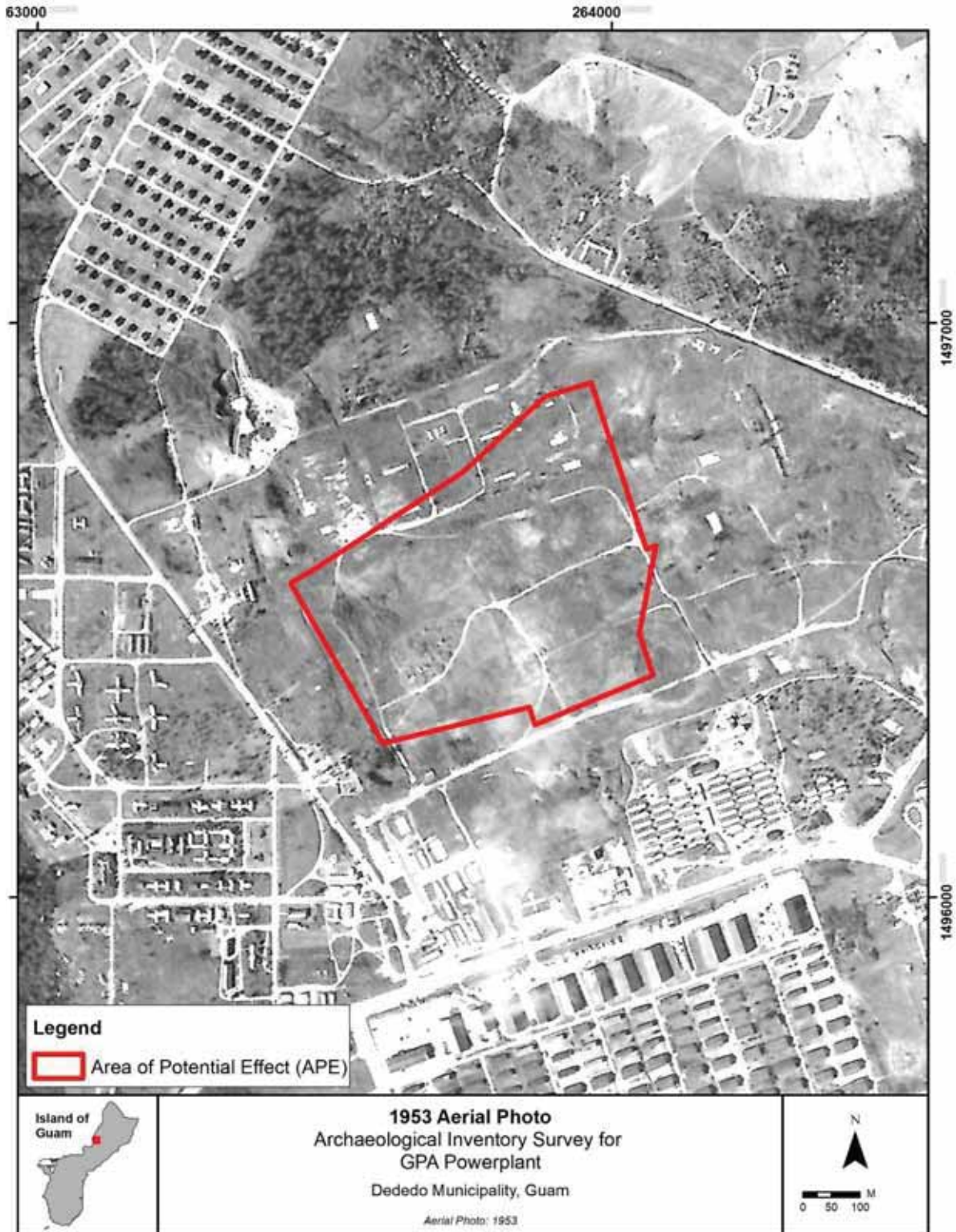


Figure 10. Portion of 1953 U.S. Navy aerial photograph showing remnants of Army Base Yard within the project area (on file at MARC).

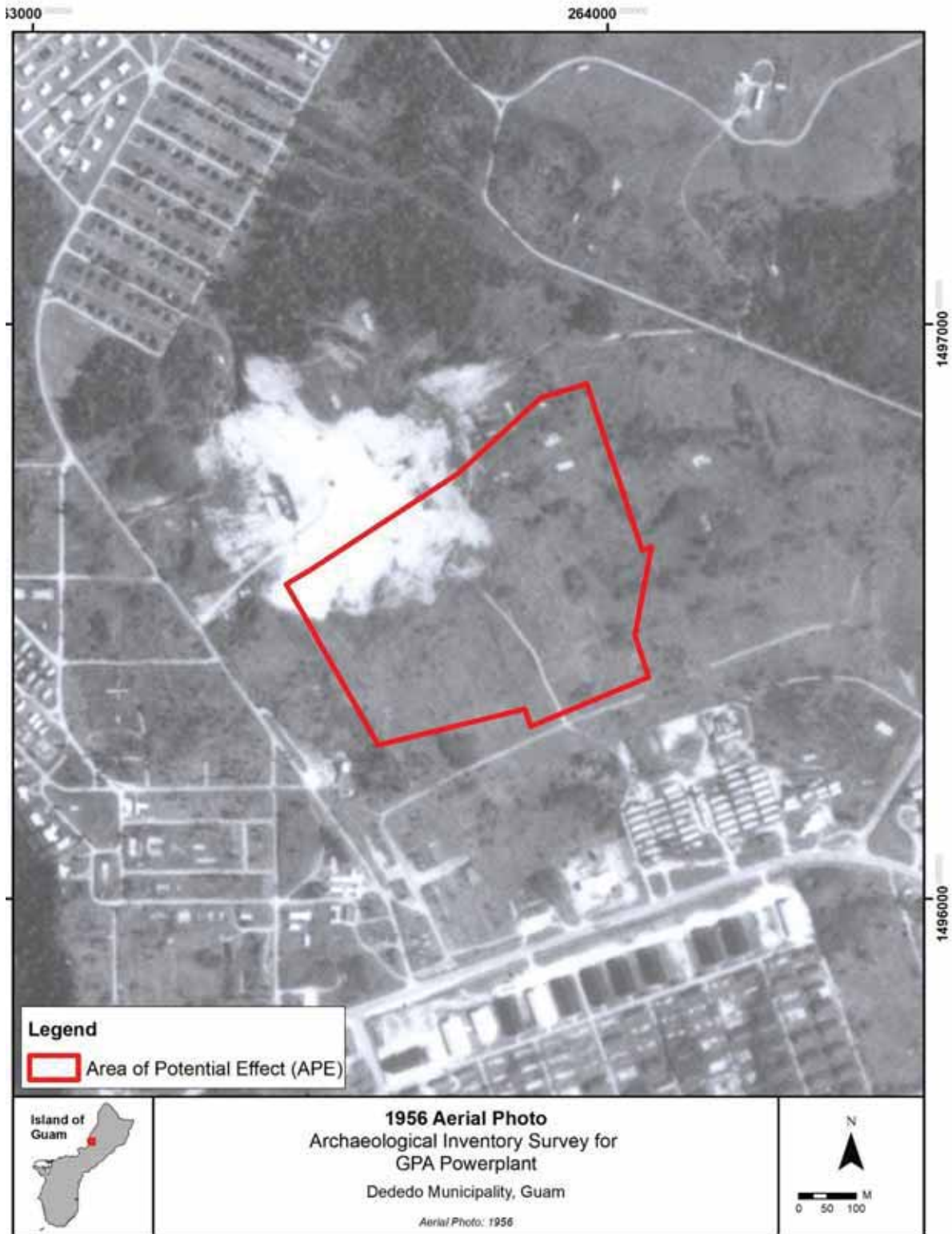


Figure 11. Portion of 1956 U.S. Navy aerial photograph. Note land clearance in the project area and vicinity.

2.3 Archaeological Context

While no archaeological investigations have previously been conducted within the project area (see Section 2.3.1 for note), ten archaeological studies have been conducted within a 0.25-mile/0.4-kilometer radius of the project area: Haun (1989), Burtchard (1991), Craft (2011), Dixon et al. (2011b), Craft and Vernon (2012), Vernon (2012), Vernon and O'Day (2012), DeFant et al. (2013), Leppard et al. (2015), and Craft (2018) (Figure 12; Table 1). Most of these studies yielded an absence of historic properties and are summarized in Table 1. Four of the studies documented potential cultural or historical resources and are discussed briefly below (Craft 2011; Craft and Vernon 2012; Leppard et al. 2015; and Craft 2018).

Craft (2011) conducted an archaeological inventory survey and subsurface testing for the Guam Regional Medical Center on Lots 5009-2-10, 5009-2-9R/W, 5009-2-15 and 5009-2-16, totaling 3.5 hectares (8.6 acres) and located east of the current study parcel (Figure 12). Overall, the project area was found to be highly disturbed, with spoil piles, modern refuse, and mixed secondary vegetation throughout. Two modern concrete foundations (which were later designated GHPI 60-04-2483 and -2484) and a concrete cap for a utility line were recorded during the survey. Soil cores spaced across the study parcel sectioned a thin layer of clay loam overlying degraded limestone bedrock. The project area produced no evidence of National Register of Historic Places (NRHP)-eligible properties. During subsequent construction of the Guam Regional Medical Center, the inadvertent discovery of buried metal was reported. GHRD determined that the metal was associated with Quonset hut frames and likely related to the disposal of these structures in the 1940s and 1950s (on file at GHRD).

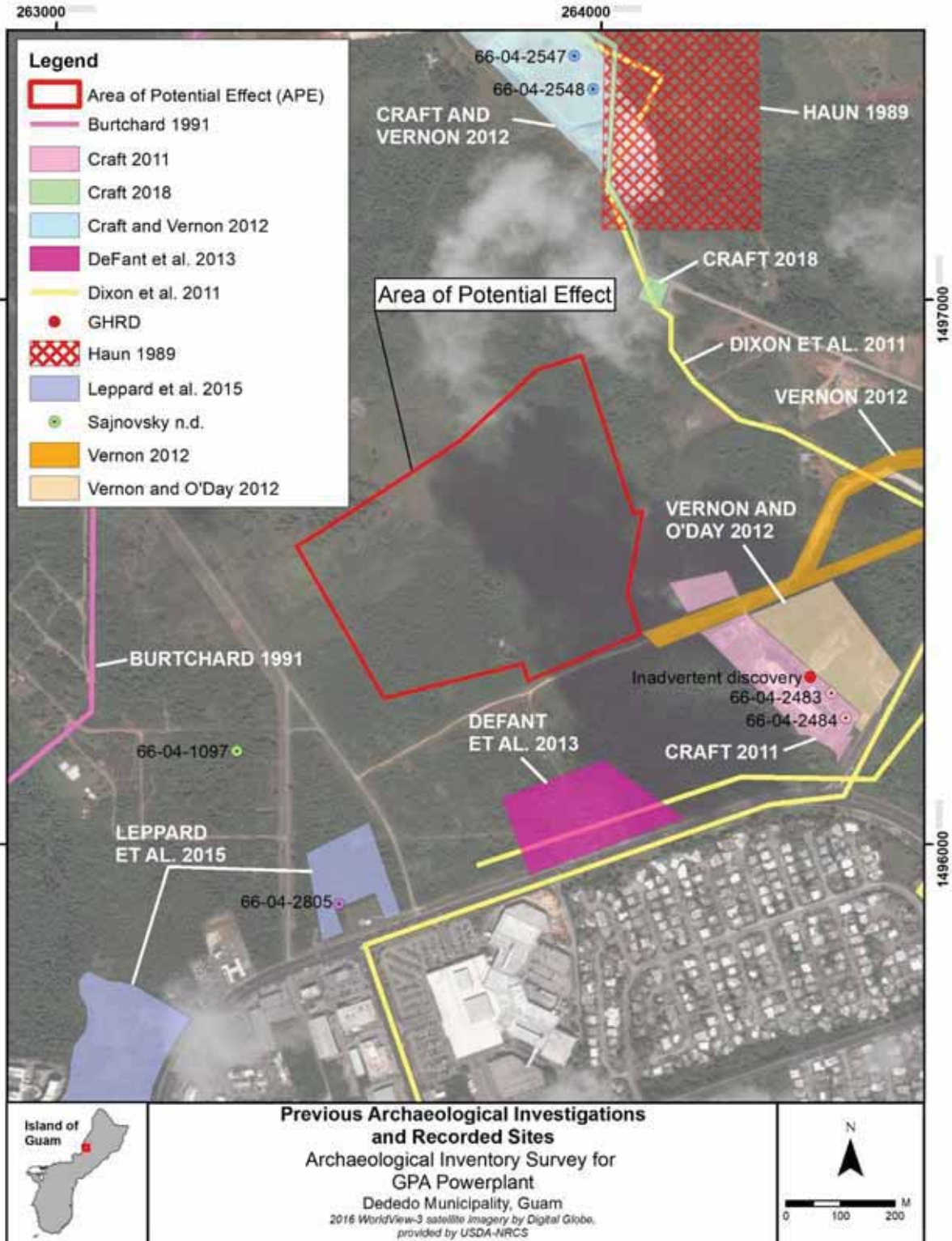


Figure 12. Previous archaeological investigations and recorded sites in the project area vicinity.

Table 1. Previous Archaeological Investigations Conducted within 0.25 mile of Project Area

<i>Reference</i>	<i>Study Type</i>	<i>Findings</i>
Sajnovsky n.d.	Guam Historic Properties Inventory (GHPI) Site Form	GHPI 66-04-1097, 20th Air Force headquarters site.
Haun 1989	Reconnaissance survey	No Findings within 0.25 mile/0.4 kilometer of the project area.
Burtchard 1991	Inventory survey	No Findings within 0.25 mile/0.4 kilometer of the project area.
Craft 2011	Inventory survey	GHPI 66-04-2483 and -2484, two concrete foundations.
Dixon et al. 2011b	Inventory survey	No Findings within 0.25 mile/0.4 kilometer of the project area.
Craft and Vernon 2012	Inventory survey	GHPI 66-04-2547 and -2548, two concrete foundations.
Vernon 2012	Inventory survey	No Findings within 0.25 mile/0.4 kilometer of the project area.
Vernon and O'Day 2012	Inventory survey	No Findings within 0.25 mile/0.4 kilometer of the project area.
DeFant et al. 2013	Inventory survey	No Findings within 0.25 mile/0.4 kilometer of the project area.
Leppard et al. 2015	Inventory survey	GHPI 66-04-2805, concrete foundation.
Craft 2018	Inventory survey	Two isolated artifacts: an undiagnostic pre-Contact pottery sherd and a 20th century glass bottle.

Craft and Vernon (2012) conducted an archaeological inventory survey with subsurface testing of a 6.3-hectare (15.56-acre) parcel situated north of the current project area for the Marianas Stone Company (Figure 12). Extensive land clearing and bulldozer berms associated with the U.S. military's development of the Harmon Annex were noted. Additionally, three Post-World War II U.S. military concrete foundation slabs (GHPI 66-04-2547 and -2548) were recorded but were recommended as ineligible for NRHP listing. Shovel testing conducted during the survey

exposed a thin layer (ca. 20-centimeter-thick) of light red to dark reddish brown cobbly clay loam overlying degrading limestone bedrock.

Leppard et al. (2015) conducted an archaeological inventory survey with subsurface testing at multiple locations in support of the Navy's Renewable Energy Projects on Guam (Figure 12). One of the parcels surveyed was located directly southwest of the current project area. The study documented one 5 by 5-meter concrete pad (GHPI 60-04-2805), which was thought to post-date 1945.

Craft (2018) conducted an archaeological inventory survey in support of upgrades to the Guam Waterworks Authority's Northern District Secondary Wastewater Treatment Plant (Figure 12). The two disconnected survey parcels totaling 12.45 hectares (30.77 acres) were located north of the current study area. The survey area exhibited widespread evidence of Post-World War II and recent disturbance, including large pushpiles, modern rubbish heaps, and secondary growth vegetation. No NRHP-eligible historic properties were encountered during archaeological investigations. Two isolated artifacts were recorded: an undiagnostic Pre-Contact pottery sherd (ISO-1) and a 20th century glass bottle (ISO-2). Subsurface testing produced no pre-Contact or Historic Period deposition.

In addition to the four investigations described above, an additional site is known from a GHPI Site Form on file at GHRD (Sajnovsky n.d.): GHPI 66-04-1097, the previous headquarters of the 20th Air Force, located to the west of the current project area (Figure 12). The site includes a circular concrete platform, a low stone wall, and a sidewalk.

2.3.1 Archaeological Monitoring for Geotechnical Testing

While no archaeological investigations have been previously conducted in the project area, it was discovered during the project that an archaeological investigation was currently occurring on a portion of the project area per a GHRD-approved Archaeological Monitoring and Discovery Plan (Maxwell and Hlatky 2018). This investigation involves archaeological monitoring for limited vegetation clearance to provide access for geotechnical drilling at 12 borehole locations spaced across the southern extent of the project area. The results of the current survey will help fill in the remainder of the project area not investigated during archaeological monitoring for geotechnical drilling, while the results of archaeological monitoring will help document areas already disturbed by vegetation clearance.

3.0 PROJECT DESIGN

Archaeological investigations involved three primary work tasks:

- Preparation of research objectives based on historical research, previous archaeological investigations, and the environmental context of the project area.
- Identification of significant cultural or historic resources in the project area.
- Evaluation of historic or cultural resources, preparation of archaeological recommendations, and production of a technical report.

Research objectives and methods and protocols followed during archaeological investigations are detailed in the following sections.

3.1 Research Objectives and Archaeological Expectations

The primary research goal for the current investigation was to identify whether significant historic or cultural resources exist within the project area. It should be noted that archival research and U.S. Navy aerial photography indicates the U.S. military engaged in extensive land clearing activities in the project area and its immediate vicinity in the World War II to Post-World War II periods, which would have greatly impacted if not obliterated historic properties that may have been present before that period.

The project area's proximity to the edge of the plateau, as well as the Pre-Contact coastal habitation centers below, indicates that brief or intermittent use sites, represented by pottery and artifact scatters, may have once been present within the project area. Dryland agricultural features, as encountered in other upland areas in the Marianas (Dixon et al. 2011a; Dixon et al. 2012; Moore 2005), may also have once been present within the project area. Such features would have potentially yielded important information regarding Pre-Contact utilization or occupation of the upland limestone plateau and information about how these sites compare or contrast with nearby coastal sites.

Due to the extent of previous disturbance, it is likely that only re-deposited resources void of their original context may be encountered in the project area, which will have limited research potential. However, a valid research question for the investigation was to what extent did World War II to Post-World War II land clearing completely remove surface or subsurface cultural deposition?

While it is anticipated that U.S. military infrastructure in the project area is associated with minimal subsurface deposition, research goals for the current investigation tested this assumption by subsurface testing areas around any encountered surface structures; U.S. Navy aerial photography indicated that five such structures may have still been extant in the northeast corner of the project area. This had the potential to contribute information on military development of the area and associated activities of its personnel in the World War II to immediate Post-World War II periods.

3.2 Field Methods

Archaeological fieldwork included a pedestrian survey and subsurface testing to determine the presence or absence of historic properties in the project area. The survey included pedestrian transects spaced at approximately 5 meters (depending on vegetation and terrain) to inspect the ground surface for the presence of cultural resources in the form of artifacts, surface structures, and cultural material. Any cultural resources encountered during the survey were described, mapped, photographed, and recorded with a Trimble Global Positioning System (GPS) device with sub-meter accuracy (field data was post-processed following fieldwork) and a digital camera (5-megapixels or higher). All photographs were taken with a photograph board, scale, and north arrow, as appropriate (e.g., landscape photos may not include a photograph board but included a scale or scale references).

Thirty (30) 50- by 50-centimeter shovel tests were systematically distributed throughout the project area to determine the presence or absence of subsurface cultural deposition and to document a representative sample of project area soils. In the event surface structures or other

cultural material were encountered, shovel tests were used to test for associated subsurface cultural deposition and approximate site boundaries.

Shovel tests were manually excavated (i.e., by shovel and trowel) and terminated 30 centimeters into culturally sterile soil or at limestone bedrock. Excavated material was sieved through a ¼-inch mesh screen when possible. Stratigraphic profiles were recorded for each shovel test with soil and sediment descriptions prepared following U.S. Soil Conservation Service standards and the Munsell color notation system. Each shovel test was digitally photographed and recorded with a Trimble GPS following excavation.

3.2.1 Site Documentation

Documentation and analysis of archaeological sites and materials aimed to collect metric and descriptive data relevant to determining the age, nature, cultural affiliation, integrity, and depositional history of any sites encountered in accordance with the Secretary of the Interior's *Standards and Guidelines for Archaeological Documentation*. Any encountered sites were also assessed for significance and eligibility for nomination to the NRHP.

4.0 RESULTS

Three historic sites were recorded during the surface survey: TS-1, a concrete pad complex; TS-2, a historic artifact scatter; and TS-3, a historic electrical insulator scatter (Figure 13; Table 2). Two isolated artifacts were also recorded, including a 1945 Coca-Cola bottle (ISO-1) and an electrical insulator (ISO-2) (Table 3). Subsurface testing produced no pre-Contact or Historic Period deposition.

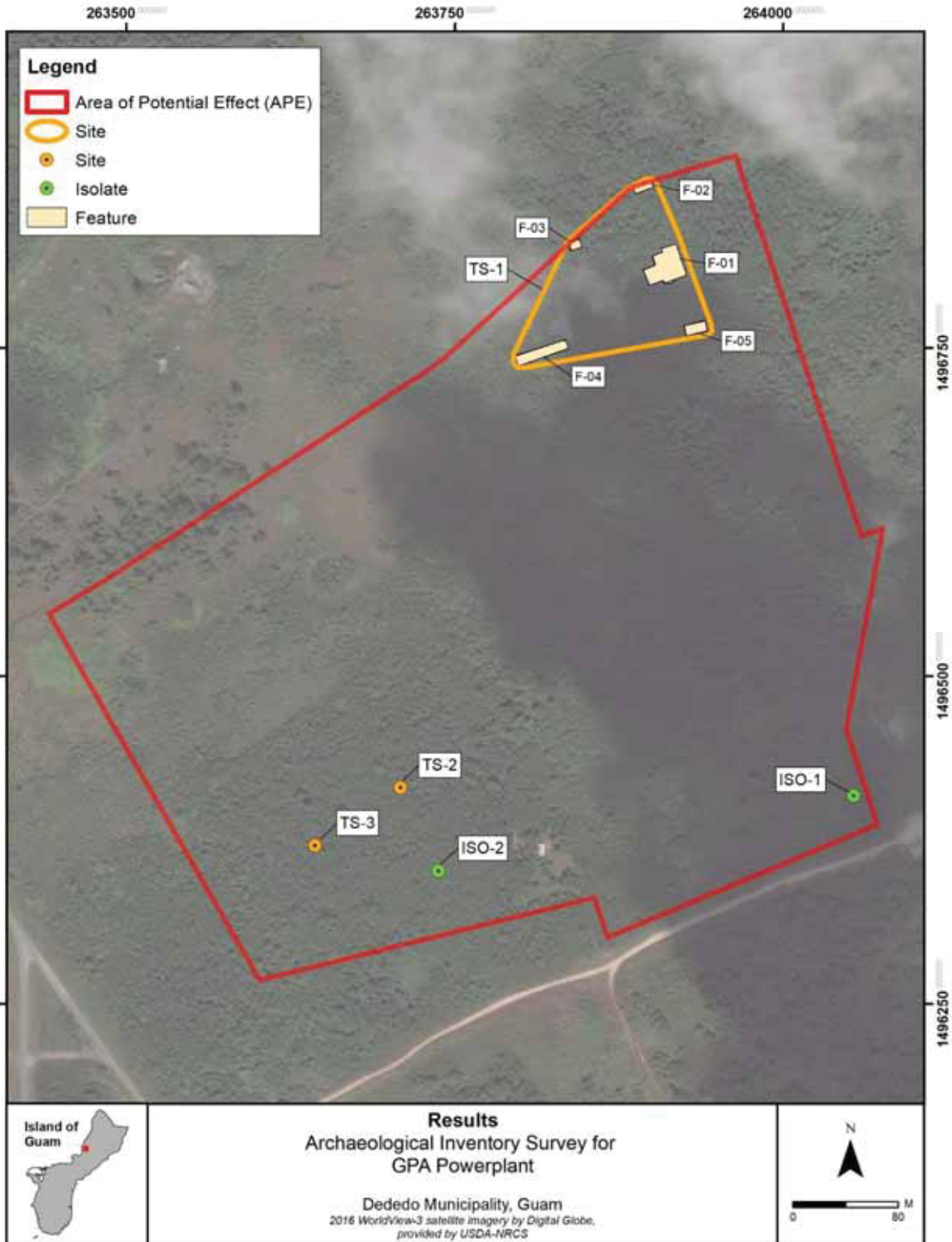


Figure 13. Results of surface survey.

Table 2. Recorded Sites

<i>Site No.</i>	<i>Description</i>	<i>Feature Count</i>	<i>Dimensions (m)</i>	<i>Size (acres)</i>	<i>Time Period(s)</i>
TS-1	Concrete Pad Complex	5	152 x 127 m (max)	3.1	World War II to Post-World War II
TS-2	Historic Artifact Scatter	1	10.0 x 5.0 m	0.012	World War II to Post-World War II
TS-3	Historic Electrical Insulator Scatter	1	8.0 x 4.0 m	0.008	World War II to Post-World War II

Table 3. Recorded Isolated Artifacts

<i>ISO No.</i>	<i>Description</i>	<i>Time Period</i>
ISO-1	1945 Coca-Cola Bottle	World War II
ISO-2	Electrical Insulator	World War II to Post-World War II

4.1 Surface Survey

The surface survey covered approximately 90 percent of the project area (systematic survey of the remaining 10 percent was precluded by ongoing vegetation clearance associated with geotechnical testing). Transects were oriented north-south and utilized a Trimble GPS and the government easement located along most of the southern boundary of the project area for control. Thick vegetation limited ground visibility to roughly 10 percent through much of the survey area (Figure 14). The northwest corner of the project area, however, proved to be an exception. This area is very flat and level with large exposures of limestone bedrock, little to no soil development, and a distinct change in vegetation (easily penetrable *gago* and Napier or elephant grass allowed for near 100 percent ground visibility) (Figure 15). Background research indicates that military



Figure 14. Vegetation in the project area, along with remnants of modern homestead (facing west).



Figure 15. Vegetation in northwest corner of project area (facing north).

construction associated with installation of a radio facility in the 1950s had cut and leveled this area down to the limestone substrate (see Figure 11). Ground truthing conducted during the current survey corroborates this background evidence: the area has been extensively modified, precluding any potential for encountering pre-Contact to immediate post-World War II historic properties.

Although not as intensive as military land clearing in the 1950s, vegetation clearance and development of the Army Base Yard in the 1940s also impacted the project area, evidence of which was encountered during the surface survey. Extensive land clearing is indicated by secondary growth vegetation present throughout the study parcel, large pushpiles and boulder concentrations, and modern refuse. Two concentrations of large limestone boulders were encountered just outside the project area's northern and southern boundaries and appeared to have been pushed or stockpiled outside of freshly cleared areas. None of the boulders appeared to have been modified (i.e., shaped *latte* elements).

A low-density but widespread scattering of twentieth century to recent (e.g., within the last few decades) refuse was encountered throughout the study area. Recent refuse is predictably present along the southern boundary of the project area, adjacent to the easily-accessed government easement where modern dumping is common. Refuse throughout the remaining project area includes isolated occurrences of ceramic utility fragments, broken metal piping, wooden and metal posts, and metal beams (Figure 16 and Figure 17), often associated with push piles. None of the items contained diagnostic features and appeared to be miscellaneous utility components or building material refuse that were dumped on the parcel or pushed around during prior land clearing activities.



Figure 16. Isolated wooden post encountered during survey (facing west).



Figure 17. Metal pole and push pile encountered during survey (facing north).

The remnants of a modern homestead are present in the south-central portion of the project area (Figure 14). The homestead consists of a now-abandoned and dilapidated structure comprised of six concrete block pillars and remnants of a wooden retaining wall and corrugated metal roofing panels. There are large concentrations of modern refuse (e.g., bathtub, household appliances, rubbish bins, ceramic and metal pipe, 1990s four-door sedan) surrounding the structure.

Concentrations of distinctly historic material (e.g., electrical insulators and historic bottles) were recorded as historic scatters, two of which were encountered in the southwest corner of the project area (TS-2 and -3). A complex of concrete foundation pads and limestone gravel (TS-1) was also encountered in the northeast corner of the project area. Descriptions for these sites and recorded isolated artifacts are provided in the following sections.

4.1.1 TS-1: Concrete Pad Complex

TS-1 is a concrete pad complex in the northeastern corner of the project area (Figure 13). The site has maximum dimensions of 152 by 127 meters and consists of five features: four concrete foundation pads (Features 1 to 4) and one rectangular area of compacted limestone gravel (Feature 5). These features are distributed over 3.1 acres.

Feature 1 is a large, irregularly-shaped concrete foundation measuring approximately 22.3 by 21.0 meters (Figure 18 and Figure 19). The slab sits 12 centimeters above the ground surface and is overgrown with dense vegetation. The foundation is comprised of multiple concrete pours (several joints are evident through the dense vegetation cover) creating a staggered or stepped arrangement on its northern end. Remnants of two concrete columns are also present, which appear

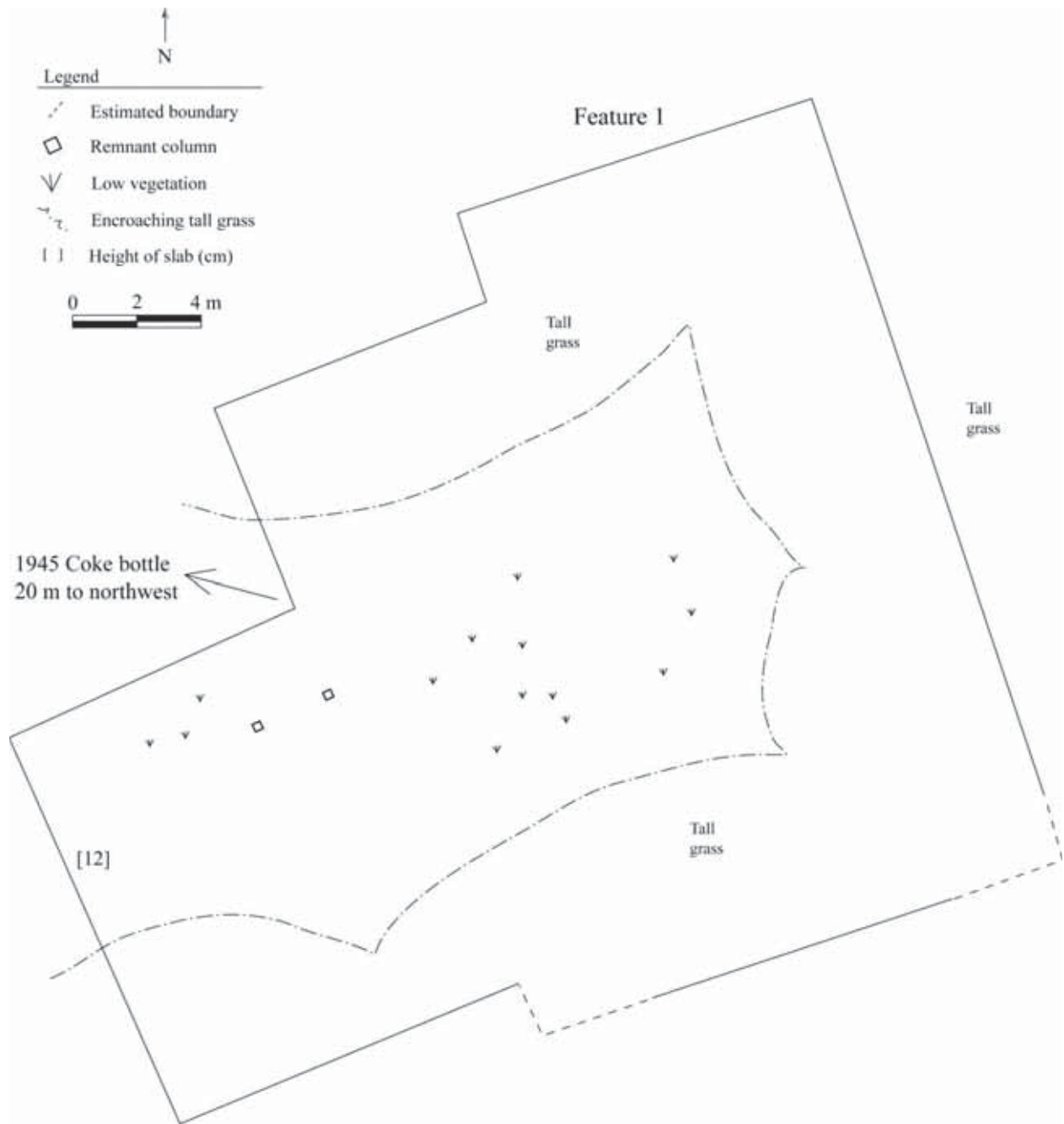


Figure 18. TS-1 Feature 1 planview.



Figure 19. TS-1 Feature 1 overview (facing northeast).

to have been broken off at the base (possibly when the associated superstructure was demolished) (Figure 20). A 1945 Coca-Cola bottle (aqua-colored, hobble skirt design) was encountered 20 meters northwest of Feature 1, but no artifacts were encountered in direct association with the slab (Figure 21).

Feature 2 is a rectangular concrete foundation measuring 14.7 by 6 meters (Figure 22 and Figure 23). The pad sits about 12 centimeters above the ground surface (Figure 24). Feature 2 is the northern most feature of TS-1 and was encountered on the project area's northern boundary, 46 meters north of Feature 1. The pad is densely overgrown with vegetation, and much of the concrete surface is obscured by soil and grass. No artifacts were observed on the pad or in the vicinity.



Figure 20. TS-1 Feature 1, remnant pillar closeup.



Figure 21. 1945 Coca-Cola bottle near TS-1 Feature 1.

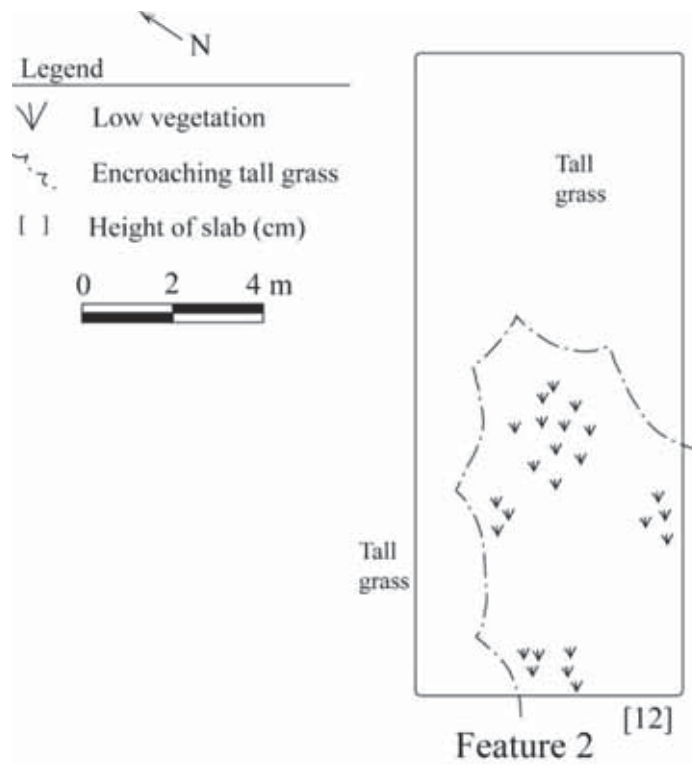


Figure 22. TS-1 Feature 2 planview.



Figure 23. TS-1 Feature 2 overview (facing north).



Figure 24. TS-1 Feature 2 concrete foundation (facing northwest).

Feature 3 is a rectangular concrete foundation situated 50 meters northwest of Feature 1 which, like Feature 2, was encountered on the project area's northern boundary (Figure 25 and Figure 26). The concrete foundation measures 9 by 6 meters and is roughly 20 centimeters thick. The pad features raised curbing on its northeastern end and a shallow (18-centimeter deep) 40-centimeter-wide channel that runs along its length. A 1950 Coca-Cola bottle (aqua-colored, hobble skirt design) was encountered on top of the slab (Figure 27). No other artifacts were encountered in the vicinity.

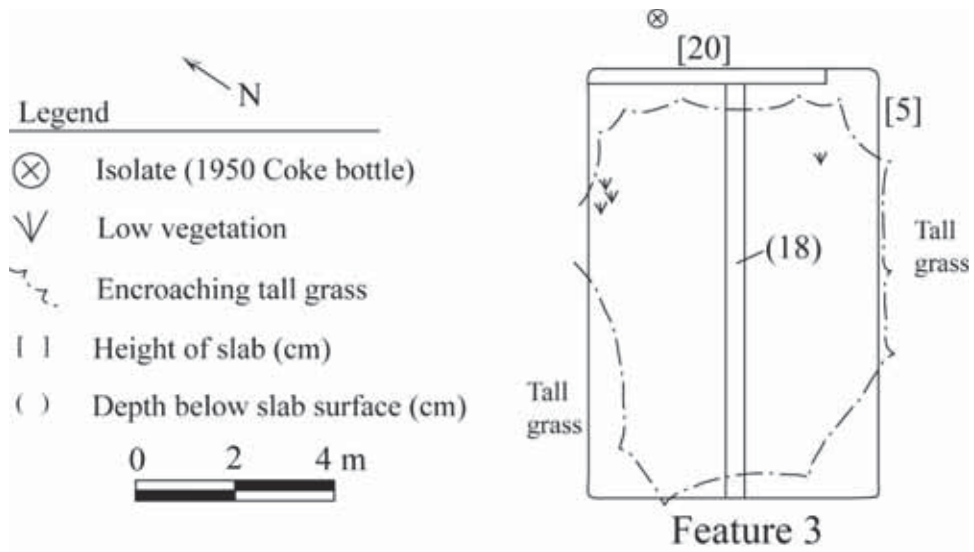


Figure 25. TS-1 Feature 3 planview.



Figure 26. TS-1 Feature 3 overview (facing northeast).



Figure 27. 1950 Coca-Cola bottle on top of TS-1 Feature 3.

Feature 4 is an abnormally long rectangular concrete foundation pad measuring 41.6 by 11.4 meters with a thickness of 24 centimeters (Figure 28 and Figure 29). It is 77 meters southwest of Feature 1 and is the westernmost feature of TS-1. The slab's northeast corner sits at a diagonal precluding a true rectangular shape. A lower step or lip is present along the slab's north-facing long axis, which wraps around the northeast diagonal (Figure 30). Several electrical insulators of white porcelain material were encountered scattered on and around the pad (Figure 31). These insulators are of the split-knob type and bear the manufacture's mark: "P.P. INC" for Porcelain Products Incorporated. This insulator type was historically very common and widely used in "knob and tube" wiring, which was the chief method for wiring structures from the 1890s to the 1930s and continued to be used in rural areas into the 1950s (Myers 2010:33–34).

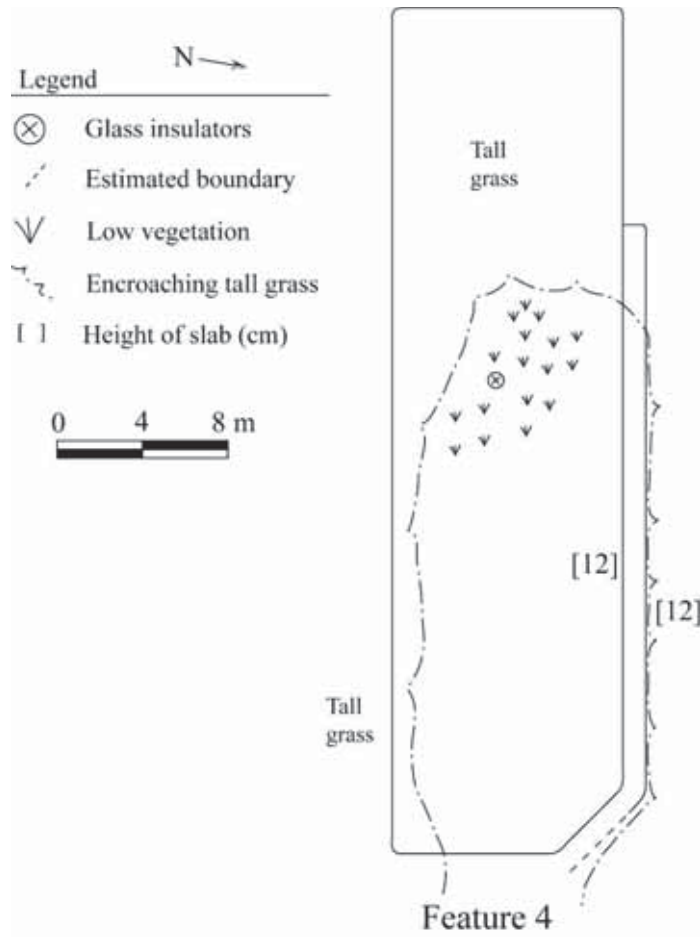


Figure 28. TS-1 Feature 4 planview.



Figure 29. TS-1 Feature 4 overview (facing west).



Figure 30. TS-1 Feature 4 lower step along slab's north-facing axis (facing east).



Figure 31. White porcelain insulator at TS-1 Feature 4.

Feature 5 is a rectangular-shaped area of crushed and compacted limestone gravel located 36 meters southeast of Feature 1 (Figure 32 and Figure 33). The extent of the limestone gravel appears to cover an approximate area measuring 18 by 9.5 meters. The gravel concentration may be the remnant of a military road or a foundation for stockpiling materiel within Army Depot Field. No artifacts were encountered at Feature 5.

4.1.1.1 Discussion

According to U.S. Navy aerial imagery and maps from the period (see Section 2.2.8), TS-1 is associated with storage facilities built and occupied between ca. 1944 and 1949 for the Army Base Yard at Harmon Field. The concrete pads would have served as foundation slabs for hastily constructed superstructures, such as Quonset Huts and other temporary storage facilities. The dimensions of Features 2 and 3 adhere to the standard Quonset Hut width of 6 meters (20 feet). Standard Quonset Hut length was typically 15 meters (48 feet), which could be altered by adding or removing the 2-foot-wide metal bands used to construct the Quonset Hut shell. Features 1 and 2 seem to have supported larger warehouses, which is supported by aerial imagery from the period.

These facilities would have been abandoned with the closure of Harmon Field in 1949 following the devastation caused by Typhoon Allyn. It appears the temporary superstructures (e.g., Quonset Huts) were demolished, while the concrete or compacted limestone foundations remained, soon to be overrun by the encroaching jungle.

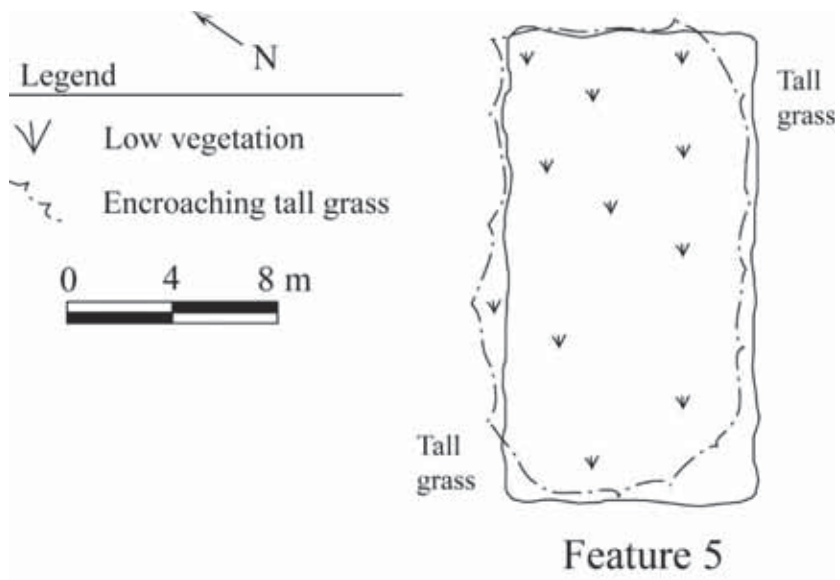


Figure 32. TS-1 Feature 5 planview.



Figure 33. TS-1 Feature 5 overview (facing east).

Relatively few artifacts were encountered at TS-1. These include a 1945 Coca-Cola bottle encountered 20 meters northwest of Feature 1 (Figure 21), a 1950 Coca-Cola bottle encountered on top of the Feature 3 slab (Figure 27), and electrical insulators encountered around Feature 4 (Figure 31). The bottles indicate historic activity both during the site's occupation and after it was abandoned. It is possible that the superstructures and surrounding materiel from the Army Base Yard were deconstructed and demobilized from the area in 1950, when the 1950 Coca-Cola bottle was deposited. The electrical insulators, which are fabricated from white porcelain, would have been used for "knob and tube" electrical wiring. But it is unclear if the insulators are directly associated with Feature 4 or were dumped in this location sometime after its abandonment.

4.1.2 TS-2: Historic Artifact Scatter

TS-2, a historic artifact scatter, was recorded in the southwest portion of the project area (Figure 13). This site consists of steel cable, a 1945 Coca-Cola bottle, and numerous electrical insulators scattered over an approximate 10.0 by 5.0-meter area (Figure 34 and Figure 35). The electrical insulators are split-knob type insulators fabricated from white porcelain. They contain the manufacture's mark of "Knox" and a "9420" model number.

4.1.2.1 Discussion

The Knox Porcelain Corporation produced dry process electrical porcelain, such as knobs, tubes, and insulators from the early 1920s to 1975. The presence of Knox insulators within the project area indicates they were used in electrical wiring for Harmon Field facilities during World War II. TS-2 does not, however, appear to be associated with any nearby structure or utility line



Figure 34. TS-2 historic artifact scatter, including steel cable, bottle, and insulator.



Figure 35. TS-2 historic artifact scatter, two insulators.

configuration. Rather, the material seems to have been dumped at this location, perhaps during the decommission of base facilities around 1950.

4.1.3 TS-3: Historic Electrical Insulator Scatter

TS-3 is a scatter of electrical insulators recorded in the southwest portion of the project area, about 78 meters southwest of TS-2 (Figure 13). The site consists of a dense concentration of over 15 brown porcelain, spool-type electrical insulators (Figure 36). The approximate dimensions of the scatter are 8.0 by 4.0 meters. The ink-stamped manufacturers mark features a triangle within a circle followed by the letter “L.”

4.1.3.1 Discussion

The U.S. electrical porcelain industry utilized the letter “L” to designate “unattributed, wireholders” (Tod 1977:110), but the manufacture’s marks on these spool insulators are otherwise unidentifiable. Spool insulators were historically very common, having been utilized in a variety of ways, including as part of an insulating clevis for dead-ending secondary circuits, for dead-ending service drops at the end of an electrical pole, or as part of a rack used to run secondary feeder lines from pole to pole. Assigning a date range is therefore challenging since they have been in prolific use from the early twentieth century up to today with little modification over time.

The electrical insulators recorded at TS-3 are relatively large and were likely used for the transmission of large utility lines, possibly for Harmon Field. However, large utility lines do not appear to be present within the direct project area during its use as the Army Base Yard or its subsequent abandonment in the 1950s, according to historic imagery. The concentrated nature and



Figure 36. TS-3 electrical insulator scatter.

lack of historical evidence of large transmission lines suggest these insulators were stockpiled or dumped in this area.

4.1.4 Isolated Artifacts

Two isolated artifacts were recorded during the survey. ISO-1 includes two aqua-colored Coca-Cola bottles, including one with a visible date stamp of 1945, encountered in the southeast corner of the project area (Figure 37).

ISO-2 consists of the top portion of a split-knob type white porcelain electrical insulator, the same type of insulator encountered at TS-2 and TS-1, Feature 4 (Figure 38). ISO-2 was recorded in the southwest corner of the project area, about 70 meters southeast of TS-2.



Figure 37. ISO-1 Coca-Cola bottles.



Figure 38. ISO-2 electrical insulator.

4.2 Subsurface Testing

In addition to the transect survey, 30 shovel test pits (STPs) were excavated within the project area to assess the presence of subsurface archaeological deposits as well as the extent of prior disturbance (Figure 39). Subsurface testing yielded no evidence of pre-Contact or Historic Period deposition. Stratigraphic descriptions, profiles, and photographs are presented in Appendix B.

Seventeen (n=17) of the 30 STPs were placed at TS-1 to determine if the site contained a subsurface component. STPs were placed off each long axis of the four concrete pads (Features 1 to 4) and along one side of the compacted limestone gravel (Feature 5). The field crew experimented with placing a STP on top of Feature 5 to test its thickness and compaction, but the material was too compact. Overall, no subsurface cultural deposition was found to be associated with TS-1.

Two STPs were placed at TS-2 (STP No. 28) and TS-3 (STP No. 29), which also yielded no evidence of a subsurface site component. The remaining STPs (n=11) were systematically distributed throughout the southern portion of the project area, all of which sectioned culturally sterile sediment. It is important to note that STPs were not placed in the northwest section of the project area, since this area was extensively modified in the 1950s and features little to no soil development.

4.2.1 Project Area Stratigraphy

Project area stratigraphy was highly consistent throughout the project area. Three primary strata were encountered (Table 4): Layer I, a shallow (7 to 22 centimeters thick) and weakly formed

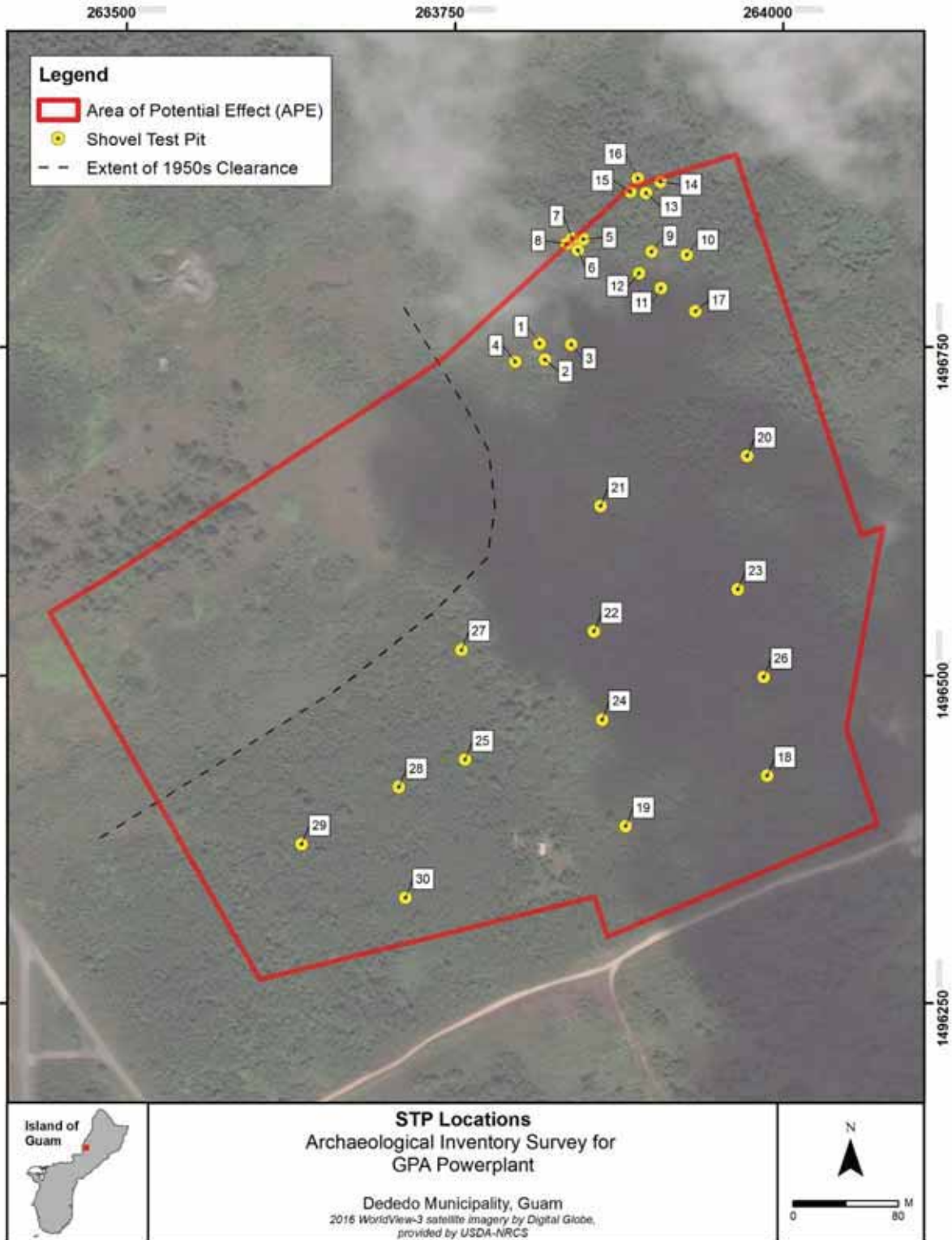


Figure 39. Location of STPs.

Table 4. Primary Strata Observed during Subsurface Testing

<i>Layer</i>	<i>Description</i>	<i>Interpretation</i>
I	Silty clay loam; 5YR 3/3, 5YR 3/4 (dark reddish brown) to 7.5YR 3/3 (dark brown); loose, moist, rootlets common, 3–10% inclusions of limestone pebbles.	Weakly formed topsoil
II	Clay; 2.5YR 3/3 to 2.5YR 3/4 (dark reddish brown); very compact, very fine crumb structure, moist, 0–5% inclusions of limestone pebbles.	Intact subsoil
III	Limestone; 7.5YR 6/4 (light brown) to 5YR 8/1 (white); ranges from coarse gravel, cemented structure, to solid mass.	Intact parent material

topsoil; Layer II, intact subsoil (observed as a narrow band overlying limestone bedrock, or in some cases, within small depressions or undulations in the limestone bedrock); and Layer III, limestone bedrock (observed as a solid mass or as naturally degrading limestone).

4.2.2 Discussion

Although no subsurface cultural deposition was encountered, subsurface testing did expose evidence of large-scale land clearing associated with development of the Army Base Yard in the late-1940s. Intact subsoil (Layer II) was observed in only eight (n=8) of the 30 STPs. When encountered, it was typically observed as a very shallow band overlying the limestone substrate, or as deeper pockets within small fissures and depression within the underlying limestone. The project area’s weakly-formed topsoil (Layer I) was often encountered directly overlying limestone. The low presence of intact subsoil and weakly-formed topsoil directly overlying limestone aligns with the area having been cut and graded in the last several decades and largely precludes the potential of encountering intact subsurface cultural deposition within the project area.

4.3 Eligibility Evaluation

TS-1, -2, and -3 are evaluated below according to the NRHP eligibility criteria. To be eligible for listing in the NRHP, a building, structure, object, site, or district must be 50 years old or older and possess both historic significance and integrity when evaluated within its historic context (U.S. Department of the Interior 1991a). A property's historical significance is assessed under one or more of the following criteria:

- Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history.
- Criterion B: It is associated with the lives of persons who are significant in our past.
- Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history.

Once a property's significance is established, it must also be shown to retain its historic integrity. Historic integrity is "the survival of physical characteristics that existed during the property's prehistoric or historic period" that authenticates the property's historic identity (U.S. Department of the Interior 1991b:4). For a historic property to retain integrity it must meet an appropriate combination of the following aspects:

- Location: the place where the historic property was constructed or the place where the historic event occurred.
- Design: the combination of elements that create the form, plan, space, structure, and style of a property.
- Setting: the physical environment of a historic property.
- Materials: the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- Workmanship: the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
- Feeling: a property's expression of the aesthetic or historic sense of a particular period of time.
- Association: the direct link between an important historic event or person and a historic property.

4.3.1 TS-1: Concrete Pad Complex

TS-1 is associated with the U.S. military's Army Depot Field at Harmon Air Force Base from 1944 to 1949. Although broadly associated with World War II activity in the Pacific, archival research does not indicate that TS-1 relates to any singularly important historical event that occurred at Army Depot Field (Criterion A) or that it is associated with persons significant in the past (Criterion B). Archival research and field observations do not indicate that the concrete foundations have any singularly important architectural or engineering value (Criterion C),

especially given the ubiquitous nature of similar site types on Guam. Subsurface testing indicates that there is no associated subsurface component to the site, so TS-1 is unlikely to yield additional information (Criterion D). TS-1 is therefore recommended as ineligible for NRHP listing.

4.3.2 TS-2: Historic Artifact Scatter

TS-2 is likely associated with military activities at Harmon Air Force Base in the World War II to immediate Post-World War II periods, but there is no indication that TS-2 is associated with singularly important events (Criterion A), persons significant in the past (Criterion B), or anything of architectural or engineering value (Criterion C). TS-2 has not yielded and is unlikely to yield information important to the twentieth century development of military infrastructure on Guam or to other historical research queries (Criterion D). TS-2 is therefore recommended as ineligible for NRHP listing.

4.3.3 TS-3: Historic Electrical Insulator Scatter

The nature of the deposition at TS-3 indicates a stockpiling or dumping episode, possibly associated with the Army Base Yard at Harmon Air Force Base in the World War II to immediate Post-World War II periods, but it is unclear if this event occurred during military use of the Army Base Yard or sometime since its abandonment. It does not appear to be associated with singularly important events (Criterion A), persons significant in the past (Criterion B), or anything of architectural or engineering value (Criterion C). TS-3 has not yielded and is unlikely to yield historically important information (Criterion D). TS-3 is therefore recommended as ineligible for NRHP listing.

5.0 DISCUSSION AND CONCLUSIONS

Project objectives included assessing the presence and nature of significant historic properties in the project area as well as determining the extent to which World War II to Post-World War II land clearing may have removed pre-World War II surface or subsurface cultural deposition.

Significant historic properties eligible for NRHP listing were not encountered in the project area. The three historic sites documented during the survey, including a concrete pad complex (TS-1) and two historic artifact scatters (TS-2 and -3), are recommended as ineligible for NRHP listing. These sites do not meet any of the NRHP significance criteria.

Archival research and field investigations further indicate that significant cultural or historical deposits are unlikely to be encountered in the project area. Although pre-Contact activity may have occurred within the project area, intensive land clearing associated with World War II to immediate Post-World War II military development appears to have removed any chance of encountering intact cultural deposition that pre-dates the World War II Period. Most of the significant infrastructure related to Army Depot Field during World War II also appears to have been removed from the area during its decommissioning from 1949 to the early 1950s.

5.1 Recommendations

Although significant historic properties are not expected to be encountered during subsequent development for GPA's New Power Generator Project, we stress that ground visibility during the current survey was relatively low and approximately 10 percent of the project area was not systematically surveyed due to ongoing vegetation clearance associated with geotechnical testing. Archaeological monitoring is therefore recommended during initial vegetation clearance and

grubbing for GPA's New Power Generator Project. The objective of archaeological monitoring should be to identify and record isolated artifacts or features that may have been missed during the current investigation.

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APPENDIX A:
ARCHAEOLOGICAL REPORT SUMMARY FORM

**Guam Historic Resource Division
(State Historic Preservation Office)
Department of Parks and Recreation**

Archaeological Report Summary Form (ARSF)

Please print clearly when completing this form. Include completed forms in all reports to be submitted to the Department, such as management summaries, abbreviated reports, draft and final reports, etc. This form may be downloaded or expanded as needed, but do not eliminate any fields.

GHRD USE ONLY	
RC #:	_____
Date:	_____
Reviewer:	_____
GIS Logger:	_____
Date:	_____
GHRD #	_____
MS	__ AB __ Draft __ Final __

1. Report Title: Archaeological Inventory Survey of Lot 5010-1NEW-NEW for Guam Power Authority New Power Generator Project

2. PI Cacilie Craft MA PhD / Firm or Institution Garcia and Associates

3. Report Date: (01-06-2002) 01-31-2019 Number of Pages 100 Draft Report

Revised Report Letter of Acceptance of Final Report Two (2) Final Reports (spiraled) and one CD

Research Design: Yes No Scope of Work: Yes No RC # 2018-0240

4. Type of Report: Terrestrial Marine Architecture: Historic Prehistoric

Type of Work: Identification Evaluation Data Recovery Monitoring Shapefiles Provided: Y / N

Further work recommended Yes No What? Archaeological Monitoring during development Preservation Y / N

5. Agency/Lessee's Name: _____ Federal Guam Private

Company / Land Owner: Guam Power Authority Lot No. (s): 5010-1NEW-NEW

6. Project Area: Quad, Municipality, Village, (list all) Place Name/s: Dededo Quad, Dededo Municipality

Quad	Municipality	Village	Place Name
4	Dededo	Dededo	Ukudu

7. Nearest Project Area Drainage (s): N/A Distance from site: N/A

8. Basic Field Information: Series of Soil: Guam cobbly clay loam

a. Area of Potential Effect (APE) / Project Area in Hectares: 25.50 Acres: 60.55 Square Miles: 0.09

b. Type of Proposed Project/ Impacts: Development Dates of Field Investigation(s): TBD

c. Closest Recorded Historic Property to APE (Site Name, Site #, Reference): 66-04-2483 (concrete foundation)

d. Description of Field Conditions and Disturbance (wooded, previously cleared, recently bulldozed, untouched, etc.): Previously cleared for Army Depot in WWII, currently secondary growth thicket

9. GHPI Site Numbers, for unrecorded sites, if any: N/A

a. Guam Historic Properties Inventory (GHPI) Data Form/s submitted : Yes No

10. Number of sites "Meeting" National Register Criteria: 0 Guam Register Criteria 0

11. Number of sites "Not Meeting" National Register Criteria: 3 Guam Register Criteria: 3

12. Number of Sites with No Effect Determination N/A No Adverse Effect N/A Adverse Effect N/A

13. Other agreements or requirements: Certificate of Approval # N/A Notice of Violation # N/A

Memorandum of Agreement N/A Programmatic Agreement N/A Artifact Catalog # N/A

14. Disposition of Artifacts / Stored With / At / Date: N/A

APPENDIX B:
STRATIGRAPHIC DESCRIPTIONS, PROFILES, AND PHOTOGRAPHS

Table B-1. Stratigraphic Descriptions for Shovel Test Pits

<i>STP No.</i>	<i>Layer</i>	<i>Depth (cmbs)</i>	<i>Description</i>	<i>Interpretation</i>
1	I	0–9	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	III	9–13	7.5YR 6/4 (light brown) degrading limestone bedrock; coarse gravel to cemented structure.	Intact parent material
2	I	0–7	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	III	7–11	7.5YR 6/4 (light brown) degrading limestone bedrock; coarse gravel to cemented structure.	Intact parent material
3	I	0–8	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, irregular lower boundary.	Topsoil
	II	8–15	2.5YR 3/3 (dark reddish brown) clay; very compact, very fine crumb structure, moist, 0–5% inclusions of limestone pebbles; abrupt, irregular lower boundary.	Intact subsoil
	III	8–10	7.5YR 6/4 (light brown) degrading limestone bedrock; coarse gravel to cemented structure.	Intact parent material
4	I	0–11	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	III	11–13	7.5YR 6/4 (light brown) degrading limestone bedrock; coarse gravel to cemented structure.	Intact parent material
5	I	0–10	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	III	10–16	5YR 8/1 (white) degrading limestone bedrock; cemented structure to solid mass.	Intact parent material

Table B-1. (cont.)

<i>STP No.</i>	<i>Layer</i>	<i>Depth (cmbs)</i>	<i>Description</i>	<i>Interpretation</i>
6	I	0–8	7.5YR 3/3 (dark brown) silty clay loam; loose, moist, rootlets common, 5–10% inclusions of limestone pebbles and cobbles; abrupt, smooth lower boundary.	Topsoil
	III	8–13	5YR 8/1 (white) degrading limestone bedrock; cemented structure to solid mass.	Intact parent material
7	I	0–10	5YR 3/1 (very dark gray) silty clay loam; loose, moist, fine rootlets, 10% inclusions of limestone pebbles and cobbles; abrupt, smooth lower boundary.	Topsoil
	III	10–25	5YR 8/1 (white) degrading limestone bedrock; cemented structure to solid mass.	Intact parent material
8	I	0–10	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	III	10–16	5YR 8/1 (white) degrading limestone bedrock; cemented structure to solid mass.	Intact parent material
9	I	0–17	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt lower boundary.	Topsoil
	III	17–34	7.5YR 6/4 (light brown) degrading limestone bedrock; coarse gravel to cemented structure.	Intact parent material
10	I	0–14	5YR 3/4 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 10% inclusions of limestone pebbles; abrupt, smooth contact with solid limestone bedrock.	Topsoil
11	I	0–19	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt lower boundary.	Topsoil
	III	19–23	7.5YR 6/4 (light brown) degrading limestone bedrock; coarse gravel to cemented structure.	Intact parent material

Table B-1. (cont.)

<i>STP No.</i>	<i>Layer</i>	<i>Depth (cmbs)</i>	<i>Description</i>	<i>Interpretation</i>
12	I	0–10	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	II	10–20	2.5YR 3/3 (dark reddish brown) clay; very compact, very fine crumb structure, moist, 0–5% inclusions of limestone pebbles; abrupt, smooth contact with solid limestone bedrock.	Intact subsoil
13	I	0–17	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth contact with limestone bedrock.	Topsoil
14	I	0–9	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	III	9–13	5YR 8/1 (white) degrading limestone bedrock; cemented structure to solid mass.	Intact parent material
15	I	0–12	5YR 3/3 (dark reddish brown) silty clay loam with lens of 7.5YR 6/4 (light brown) crushed and compacted limestone gravel; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	II	12–28	2.5YR 3/3 (dark reddish brown) clay; very compact, very fine crumb structure, moist, 0–5% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Intact subsoil
	III	28–36	5YR 8/1 (white) degrading limestone bedrock; cemented structure to solid mass.	Intact parent material
16	I	0–8	7.5YR 3/3 (dark brown) silty clay loam; loose, moist, rootlets common, 5–10% inclusions of limestone pebbles and cobbles; abrupt, smooth lower boundary.	Topsoil
	III	8–13	7.5YR 6/4 (light brown) degrading limestone bedrock; coarse gravel to cemented structure.	Intact parent material

Table B-1. (cont.)

<i>STP No.</i>	<i>Layer</i>	<i>Depth (cmbs)</i>	<i>Description</i>	<i>Interpretation</i>
17	I	0–11	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	III	11–25	5YR 8/1 (white) degrading limestone bedrock; cemented structure to solid mass.	Intact parent material
18	I	0–22	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	III	22–25	7.5YR 6/4 (light brown) degrading limestone bedrock; coarse gravel to cemented structure.	Intact parent material
19	I	0–8	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth contact with solid limestone bedrock.	Topsoil
20	I	0–8	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	II	8–12	2.5YR 3/4 (dark reddish brown) clay; very compact, very fine crumb structure, moist, 0–5% inclusions of limestone pebbles; abrupt, smooth contact with solid limestone bedrock.	Intact subsoil
21	I	0–20	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth contact with solid limestone bedrock.	Topsoil
22	I	0–10	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth contact with solid limestone bedrock.	Topsoil

Table B-1. (cont.)

<i>STP No.</i>	<i>Layer</i>	<i>Depth (cmbs)</i>	<i>Description</i>	<i>Interpretation</i>
23	I	0–16	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, irregular lower boundary.	Topsoil
	II	16–90+	2.5YR 3/3 (dark reddish brown) clay; very compact, very fine crumb structure, moist, 0–5% inclusions of limestone pebbles (excavation terminated 30 cm into sterile subsoil).	Intact subsoil
24	I	0–12	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, irregular lower boundary.	Topsoil
	II	12–42	2.5YR 3/3 (dark reddish brown) clay; very compact, very fine crumb structure, moist, 0–5% inclusions of limestone pebbles; abrupt, irregular lower boundary.	Intact subsoil
	III	35–42	5YR 8/1 (white) degrading limestone bedrock; cemented structure to solid mass.	Intact parent material
25	I	0–10	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	III	10–42	7.5YR 6/4 (light brown) degrading limestone bedrock; coarse gravel to cemented structure.	Intact parent material
26	I	0–10	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth contact with solid limestone bedrock.	Topsoil
27	I	0–10	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth lower boundary.	Topsoil
	II	10–25	2.5YR 3/4 (dark reddish brown) clay; very compact, very fine crumb structure, moist, 0–5% inclusions of limestone pebbles; abrupt, smooth contact with solid limestone bedrock.	Intact subsoil

Table B-1. (cont.)

<i>STP No.</i>	<i>Layer</i>	<i>Depth (cms)</i>	<i>Description</i>	<i>Interpretation</i>
28	I	0–17	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth contact with solid limestone bedrock.	Topsoil
29	I	0–12	5YR 3/3 (dark reddish brown) silty clay loam; loose, moist, rootlets common, 3–10% inclusions of limestone pebbles; abrupt, smooth contact with solid limestone bedrock.	Topsoil
30	I	0–12	7.5YR 3/3 (dark brown) silty clay loam; loose, moist, rootlets common, 5–10% inclusions of limestone pebbles and cobbles; abrupt, irregular lower boundary.	Topsoil
	II	12–46	2.5YR 3/3 (dark reddish brown) clay; very compact, very fine crumb structure, moist, 0–5% inclusions of limestone pebbles; abrupt, irregular lower boundary.	Intact subsoil
	III	6–46	5YR 8/1 (white) degrading limestone bedrock; cemented structure to solid mass.	Intact parent material

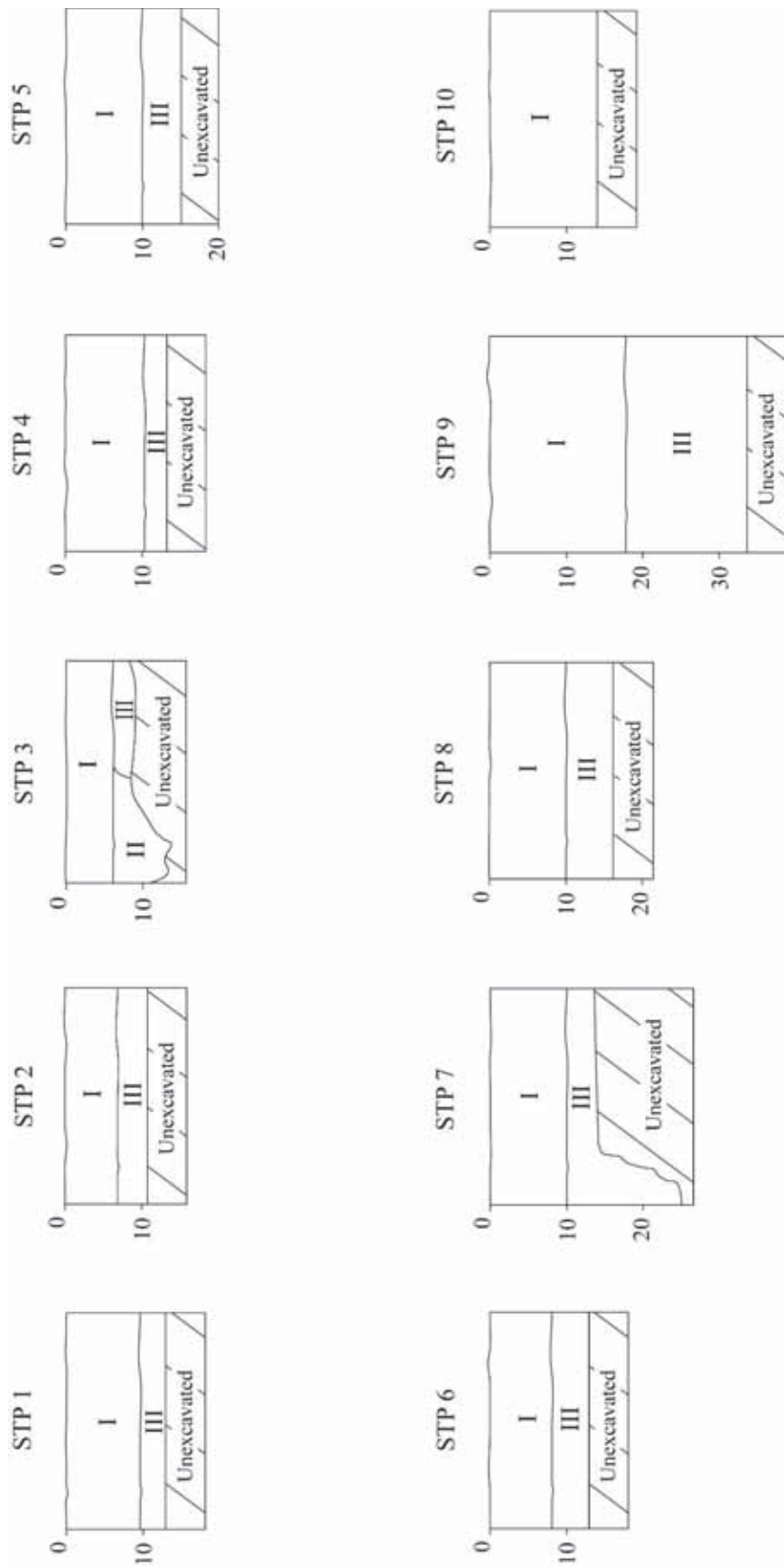


Figure 40. Stratigraphic profiles for Shovel Test Pits 1–10.



Figure 41. Shovel Test Pit 1.



Figure 42. Shovel Test Pit 2.



Figure 43. Shovel Test Pit 3.



Figure 44. Shovel Test Pit 4.



Figure 45. Shovel Test Pit 5.



Figure 46. Shovel Test Pit 6.



Figure 47. Shovel Test Pit 7.



Figure 48. Shovel Test Pit 8.



Figure 49. Shovel Test Pit 9.



Figure 50. Shovel Test Pit 10.

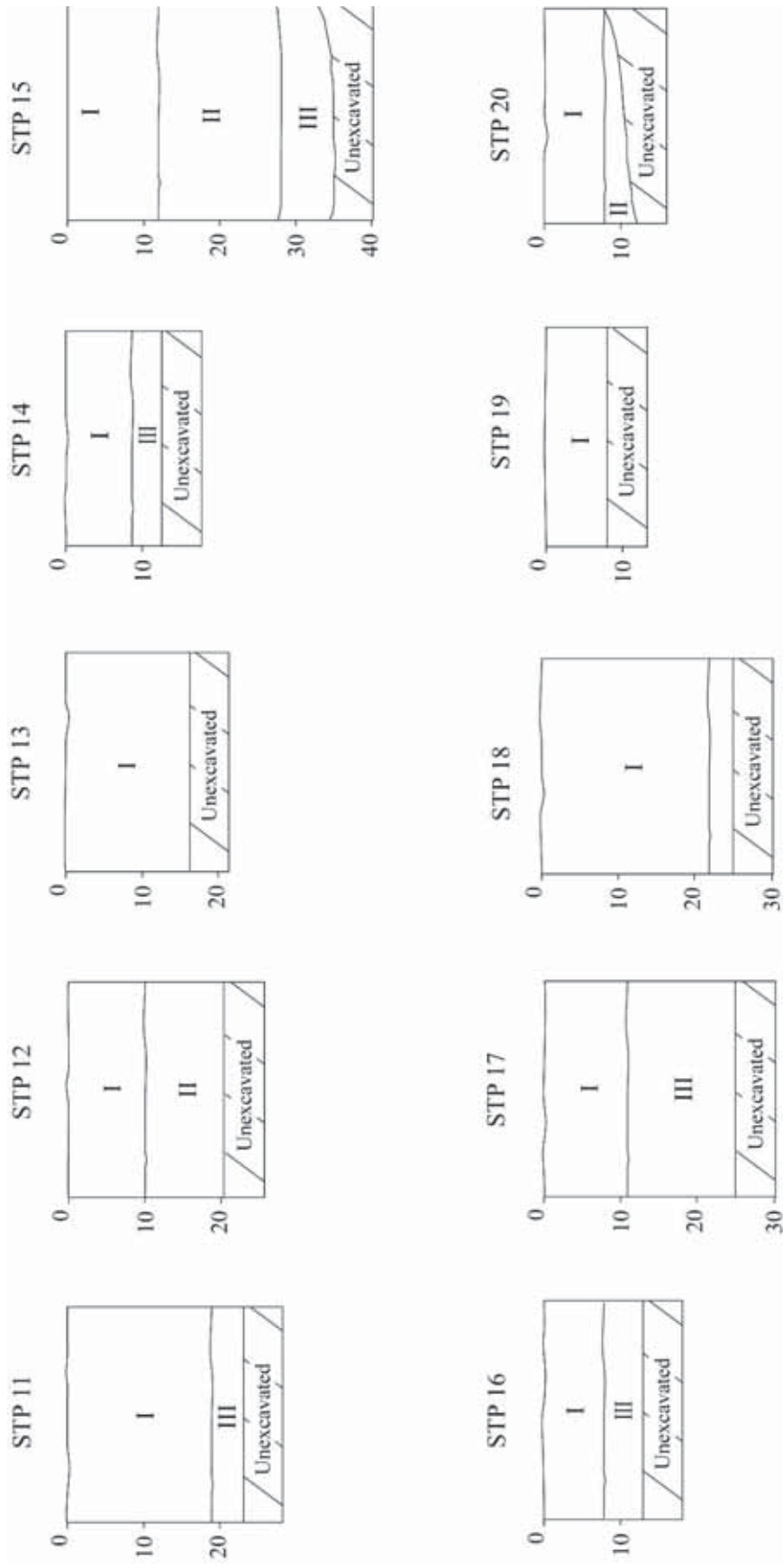


Figure 51. Stratigraphic profiles for Shovel Test Pits 11–20.



Figure 52. Shovel Test Pit 11.



Figure 53. Shovel Test Pit 12.



Figure 54. Shovel Test Pit 13.



Figure 55. Shovel Test Pit 14.



Figure 56. Shovel Test Pit 15.



Figure 57. Shovel Test Pit 16.



Figure 58. Shovel Test Pit 17.



Figure 59. Shovel Test Pit 18.



Figure 60. Shovel Test Pit 19.



Figure 61. Shovel Test Pit 20.

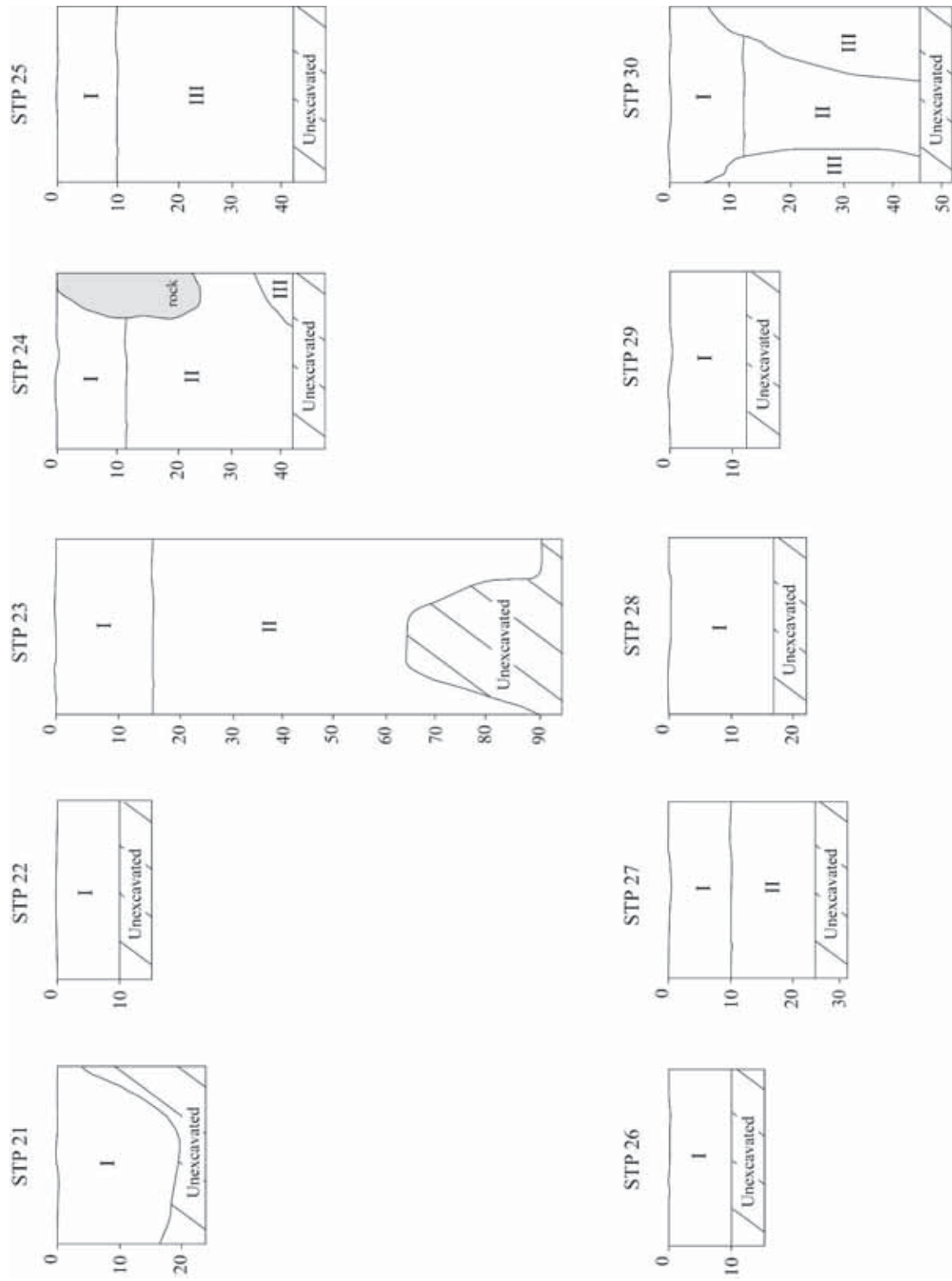


Figure 62. Stratigraphic profiles for Shovel Test Pits 21–30.



Figure 63. Shovel Test Pit 21.



Figure 64. Shovel Test Pit 22.



Figure 65. Shovel Test Pit 23.



Figure 66. Shovel Test Pit 24.



Figure 67. Shovel Test Pit 25.



Figure 68. Shovel Test Pit 26.



Figure 69. Shovel Test Pit 27.



Figure 70. Shovel Test Pit 28.



Figure 71. Shovel Test Pit 29.



Figure 72. Shovel Test Pit 30.

GPA Sound Level Study Signed



February 15, 2019

Chuck Spooner
Senior Project Manager, PMP
Stanley Consultants
8000 S Chester Street
Centennial, Colorado 80112

Via email: spoonercharles@stanleygroup.com

Regarding: Background Sound Level Study Final Report
Guam Power Authority Project
Dededo, Guam
PBS Project 25830.000, Phase 0001, Task 001

Dear Mr. Spooner:

PBS Engineering and Environmental Inc. (PBS) has recently performed testing of background sound levels on the property that will be the site of the new Guam Power Authority (GPB) power generating plant located in Dededo, Guam. It is PBS' understanding that background sound levels are needed in order to establish baseline sound levels that will be used to calculate limits on the amount of noise that may be generated by the new power plant.

BACKGROUND

PBS measured background sound levels using Extech 668 SD Class 2 handheld sound level meters. The meters meet American National Standards Institute (ANSI) and International Electrotechnical Commission (IEC) 61672-1 standards and were configured to collect and data-log sound levels measured in fast response mode using the A-weighted scale. These instruments were calibrated at the beginning of each day using a Quest AC-10 calibrator. The sampling interval for these studies was 1 second. In the placement and configuration of the sampling equipment, PBS followed ASTM Designation E 1779-96a Standard Guide for Preparing a Measurement Plan for Conducting Outdoor Sound Measurements and Guide E 1014 Measurement of Outdoor A Weighted Sound Levels using sound level meters.

The property is predominantly flat and heavily vegetated. Large areas of the property are covered with trees. In some of these areas, the trees are densely packed and there is a full canopy overhead. There are no anthropogenic noise sources on the property. While testing, feral chickens could be heard throughout the property. Other "anomalous" noises included birds, toads, and some insects.

The greatest contribution to the apparent sound levels on the property are related to wind, vehicle traffic along Highway 1 (USMC Highway) located to the south of the property, and Highway 3 that runs along the east side of the property. Of a less significant contribution to the average sound levels on the property are small planes, commercial airliners, and military aircraft. While these last sources presented the greatest sound levels, their duration was relatively short. During commuter hours, the sound of traffic could be heard throughout the testing process in all test locations. Generally, wind related sound levels were lower in the mornings and picked up in the afternoons.

The sound level meters used during this study measure, average, and record the sound level over the course of one second. For a typical 2-hour monitoring period, there would be 7,200 data points. These data points were averaged and presented as an L(ave) or L(eq). For the purposes of this investigation, PBS uses the designation of L(eq) as the average sound level as measured over the course of the monitoring period. During a typical sound level assessment, there are often transient noise sources that are not representative of the normal background conditions. These "anomalies" can be corrected by removing the highest 10 percent of the recorded sound level data. This corrected figure is then designated L(eq) 90 which means that 90 percent of the data falls within this upper limit. L(eq) 50 removes the highest 50 percent of the data; L(eq) 10 removes the highest 90 percent of the data leaving on the lowest 10 percent of data.



Typical sound level monitoring event; note dense foliage and canopy

SOUND LEVELS

Project Boundary Screening and Noise Source Assessment

PBS drove around the property and where feasible, walked to the edge of the property boundary or to areas that were similarly vegetated to the property boundary. At these locations, PBS measured ambient sound levels and inventoried sources of noise that were perceptible.

The southern edge of the property can be accessed by a gravel road that connects Highway 34 to the west with Highway 3 to the east. The section of this road that parallels the property is seldom used. The east end of the road is used to access a parking lot for the adjacent hospital. Along the east side of the property is a stockpile area for a local rock quarry and a waste water pumping station. The areas to the north and west of the property are undeveloped and are very difficult to access. There were no significant noise sources associated with hospital or the rock quarry operations during PBS' study. The waste water pumping station presents a low level humming sound that can be audibly perceived at a distance of up to a few hundred feet from the station.

During the morning hours of Sunday, January 27, there was very little vehicle traffic and very little aircraft activity in the area. Using the sound level meter, PBS recorded low levels of sound that ranged between 36 and 38 decibels (dBA) along the border of the property. These short durations of low sound levels were interrupted by animal sounds and short gusts of wind.

Background Sound Levels at 5 Designated Sensitive Receptor Test Locations

In collaboration with Stanley Consultants, PBS identified five distinct sound level test locations along the boundary of the project. These locations were selected due to their proximity to nearby businesses and residences. Test site 1 was located at the southwest corner of the property. Test site 2 was located along the south central border of the property near an abandoned driveway. Test site 3 was located at the portion of the property that is nearest the Guam Regional Medical City, a large municipal hospital located southeast of the project. Test site 4 was located due north and a little east of the hospital at the southeast corner of the property. Finally, test site 5 was located at the northeast corner of the property. At each of these test sites, PBS set up a sound level meter in an area that was representative of the vegetation and terrain in the vicinity. The meter then collected data for a minimum of two hours. Below is a table that summarizes the findings of this phase of the testing.

Table 1. Sound Level Monitoring Results

Test Site	L(eq)	L(eq) 90	L(eq) 50	L(eq) 10	Notes
1	36.2	47.4	35.5	27.6	End of driveway inside heavy tree canopy
2	41.6	50.8	39.1	36.1	Entrance to driveway in partial tree canopy
3	45.5	53.0	44.3	38.8	Off gravel access road in tall grass area near trees
4	47.8	54.0	46.4	43.2	North of hospital parking lot in fern meadow
5	50.4	60.6	48.2	41.1	West of water plant in partial tree canopy

All sound levels are presented in dBA collected at low range setting (30–80 dBA) in Fast Response Mode. It should be noted that samples 1 and 2 were collected at the quietest time of the day (morning) during a period of very calm or absent winds. Conversely, samples 3, 4, and 5 were collected in the afternoon during a period of strong breezes. Sample 5 was collected during a period of moderate breezes but heaviest regional traffic.

Long duration sound level testing

In addition to the collection of these five location samples, PBS collected a long duration sample (approximately 24 hours) from sample location 2 which is nearest the hospital. Below is a table that summarizes the findings of this phase of the investigation.

Table 2. Sound Level Monitoring Results – Long Duration

Test Site	L(eq)	L(eq) 90	L(eq) 50	L(eq) 10	Notes
2	49.7	68.2	44.4	37.3	Entrance to driveway in partial tree canopy

All sound levels are presented in dBA collected at low range setting (30–80 dBA) in Fast Response Mode.

CONCLUSIONS

PBS measured sound levels in a variety of locations through out the proposed GPA Power Plant Property. The lowest measured sound levels during the entire study ranged from 26 to 28 dBA and were collected from an area of the property that is protected from ambient noise sources by a heavy canopy of trees. These results were obtained during a period of stillness that was not the case during the sampling of other areas of the property. The

highest sound levels recorded occurred when a large military aircraft flew over the test location. Levels associated with this short term event exceeded 80 dBA.

In presenting a calculated background sound level for this property, PBS has taken each of the 5 separate L(eq) 90 values and averaged them. The background sound level for this investigation calculates to be 44.3 dBA.

LIMITATIONS OF SCOPE

This study was limited to the tests and locations as indicated above. The findings and conclusions of this work are probabilities based on professional judgment concerning the significance of the data gathered during the course of this investigation. PBS is not able to represent conditions on the site or adjoining sites beyond those detected or observed by PBS.

PBS respectfully submits these results of our sound level investigation. Please feel free to contact me at 503.417.7597 or douglas@pbsusa.com with any questions or comments.

Sincerely,

Douglas Hancock, CIH, CSP
Senior Project Manager

Attached: Test area site plan

DH:mo

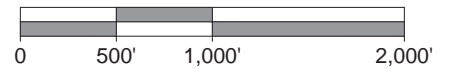




SOURCE: © 2019 GOOGLE EARTH PRO



SCALE: 1" = 1,000'



PREPARED FOR: STANLEY CONSULTANTS



TEST AREA MAP
 GPA POWER PLANT
 DEDEDO, GUAM

FEB 2019
 25830.000

FIGURE

1

**List of Surety Companies
Licensed to do Business in
Guam dated December 31, 1999**

List of Surety Companies Licensed To Do Business In Guam

NAMES AND ADDRESSES OF ALL INSURANCE COMPANIES
AND THEIR GENERAL AGENTS
LICENSED TO TRANSACT INSURANCE BUSINESS IN GUAM
AS OF **DECEMBER 31, 1999**

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

NAME AND ADDRESS
OF GENERAL AGENT

Academy Life Insurance Co
20 Moores Road
Frazer PA 19355

Prescott R. Hoeck
1036S Route 1
Yigo GU 96929

Admiral Life Insurance Co of America
206 Eight Street
Des Moines IA 50309

Francisco B. Salas
145 Aspinall Avenue
Hagatna GU 96910

Alexander Hamilton Life Insurance Co
100 North Greene Street
Greensboro NC 27401

Money Resources Inc
415 Chalan San Antonio #210
Tamuning GU 96911

All American Life Insurance Co
707 North Eleventh Street
PO Box 2074
Milwaukee WI 53201

Independent Research Agency for
Life Insurance
Hong's Building Suite 5
Route 10 & 32
Mangilao GU 96923

Joseph M. Casey
Holiday Tower Condo, Apt. 615
Route 4
Sinajana GU 96926

Ambac Assurance Corporation
One State Street Plaza
New York NY 10004

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

American Family Life Assurance Co
1932 Wynnton Road
Columbus GA 31999

Pioneer Pacific Financial Services
Inc of Guam
231 Hesler Place
Hagatna GU 96910

American Fidelity Life Insurance Co
4060 Barrancas Avenue
Pensacola FL 32507

Dale M. Donovan
790 N Marine Drive # 496
Tumon GU 96911

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

American Home Assurance Co
70 Pine Street
New York NY 10270

American International Assurance
Company (Bermuda) LTD
29 Richmond Road
Pembroke HKO8 Bermuda

American International Life
Assurance Company
P O Box 727
Wall Street Station
New York NY 10268

American National Insurance Co
One Moody Plaza
Galveston TX 77550

American National Life Insurance
Company of Texas
One Moody Plaza
Galveston TX 77550

American-Amicable Life Insurance
Company of Texas
425 Austin Avenue
Waco TX 76702

Amwest Surety Insurance Co
5230 Las Virgenes Road
Calabasas CA 91302

Argonaut Insurance Co
250 Middlefield Road
Menlo Park CA 94025

NAME AND ADDRESS
OF GENERAL AGENT

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Randolph C. Biscoe
130 Aspinall Avenue Suite 1 E
Hagatna GU 96910

Randolph C. Biscoe
130 Aspinall Avenue Suite 1 E
Hagatna GU 96910

Winfred T. Profitt
106 Lily Court
Mangilao GU 96923

Takagi & Associates Inc
414 W Soledad Avenue Suite 100
Hagatna GU 96910

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

Balboa Insurance Co
18581 Teller Avenue
Irvine CA 92612

Balboa Life Insurance Co
18581 Teller Avenue
Irvine CA 92612

Best Life Assurance Co of California
P O Box 19721
Irvine CA 96612

Canada Life Assurance Co The
330 University Avenue
Ontario Toronto Canada M5G1 R

Capital Markets Assurance
Corporation
113 King Street
Armonk NY 10504

Central States Health & Life
Co of Omaha
P O Box 34350
Omaha NE 68134-0350

Central States Indemnity Co.
of Omaha
P O Box 34350
Omaha NE 68134

Centurion Life Insurance Co
206 Eighth Street
Des Moines IA 50309

NAME AND ADDRESS
OF GENERAL AGENT

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

D B Davis & Associates
Staywell Building
430 West Soledad Avenue
Hagatna GU 96910

Joaquin C. Arriola
259 Martyr Street Suite 201
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

The Brass Group Inc
479 West O'Brien Drive Suite 102
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Francisco B. Salas
267 S Marine Drive Suite 2F
Tamuning GU 96911

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

CGU International Insurance PLC
Multinational Bancorporation Ctr 10th Flr
6805 Ayala Avenue
Makati City Philippines

Chung Kuo Insurance Co Ltd
10th Floor ICBC Bldg
No 100 Chilin Road
Taipei Taiwan

Conseco Life Insurance Co
11815 N Pennsylvania Street
Carmel IN 46032

Continental Insurance Co
CNA Plaza
Chicago IL 60685

Cumberland Casualty & Surety Co
4311 W Waters Avenue #401
Tampa FL 33614

NAME AND ADDRESS
OF GENERAL AGENT

AON Insurance Micronesia (Guam) I
Hengi Plaza #203
278 South Marine Drive
Tamuning GU 96911

Great National Ins Underwriters Inc
Great National Insurance Building
Chalan San Antonio
Tamuning GU 96911

Alpha Insurers
123 Archbishop Flores Street
Hagatna GU 96910

Rodolfo B. Batimana
Suite 202 Julale Center
Hagatna GU 96910

Carmencita C. Estrada
114 Abas Court Liguana Terrace
Dededo GU 96912

Pacific Financial Corporation
973 S Marine Drive Suite 101
Tamuning GU 96911

Edward B. Senato
P O Box 11945
Tamuning GU 96931

Farley A. Young
132 Kayen Mapagahes
Dededo GU 96912

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

Dai-Tokyo Fire & Marine Insurance
Company Ltd The
25-3, Yoyogi 3-Chome Shlbuya-ku
Tokyo Japan

Delaware American Life Insurance Co
P O Box 667
Wilmington DE 19899

Dongbu Insurance Co
21-9 Cho-Dong, Chung-Gu
CPO Box 658
Seoul Korea 100

Eagle Pacific Insurance Co
2101 4th Avenue Suite 1700
Seattle WA 98121

Federal Insurance Co
P O Box 1615
Warren NJ 07061

Fireman's Fund Insurance Company
777 San Marin Drive
Novato CA 94998

First American Title Insurance Co
114 East Fifth Street
Santa Ana CA 92702

First Fire & Casualty Insurance
Hawaii Inc
P O Box 2866
Honolulu HI 96803

First Indemnity Insurance of Hawaii Inc
P O Box 2866
Honolulu HI 96803

NAME AND ADDRESS
OF GENERAL AGENT

Takagi & Associates Inc
414 W Soledad Avenue
GCIC Building Suite 100
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Pacific American Title Insurance &
Escrow Company
715 Chalan Machaute Suite 101
Maite GU 96927

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

First Insurance Company of Hawaii Ltd
P O Box 2866
Honolulu Hi 96803

First Liberty Insurance Corporation
175 Berkeley Street
Boston MA 02117

First Net Insurance Company
101 Agana Shopping Center
Hagatna GU 96910

Fortis Benefits Insurance Company
P O Box 62471
St Paul MN 55164

General Security Insurance Company
Two World Trade Center
New York NY 10048

Globe Life & Accident Ins Company
204 North Robinson Avenue
Oklahoma City OK 73102

GMHP Health Insurance LTD
177 Chalan Pasaheru Suite A
Tamuning GU 96911

NAME AND ADDRESS
OF GENERAL AGENT

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

Takagi & Associates Inc
414 W Soledad Avenue
GCIC Building
Hagatna GU 96910

Anne Palacios
414 West Soledad Avenue
GCIC Building
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

World Marketing Alliance Inc Guam
Calvo's Insurance Bldg Suite 200
115 Chalan Santo Papa
Hagatna GU 96910

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

Joseph M. Casey
Holiday Tower Condo Apt 615
788 Route 4
Sinajana GU 96926

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

TS Inc
845 N Marine Drive Suite 11
Tumon GU 96911

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

Grand Pacific Life Insurance Co Ltd
1164 Bishop Street Suite 500
Honolulu HI 96813

Grand Pacific Life Insurance Co Ltd
1164 Bishop Street Suite 500
Honolulu HI 96813

Great American Life Insurance Co
P O Box 5420 Mail Drop 250-23-5 C
Cincinnati OH 45201

Great-West Life & Annuity Insurance Co
8515 East Orchard Road
Englewood CO 80111

Gulf Insurance Company
4600 Fuller Drive
Irving Texas 75038

Hartford Life & Accident Insurance Co
P O Box 2999
Hartford CT 06104

Individual Assurance Company
Life Health & Accident
1600 OAK Street
Kansas City MO 64108

Insurance Company of North America
1601 Chestnut Street
P O Box 7716
Philadelphia PA 19192

NAME AND ADDRESS
OF GENERAL AGENT

Great National Insurance Underwriter
Great National Insurance Bldg
Chalan San Antonio
Tamuning GU 96911

Pacific Financial Corporation
973 S Marine Drive Suite 101
Tamuning GU 96911

Takagi & Associates Inc
414 W Soledad Avenue
GCIC Building
Hagatna GU 96910

Guam Imperial International Inc
231 Hesler Place
Hagatna GU 96910

Benefits Communication Corp
424B Route 8
Mongmong GU 96927

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

Primo Mabesa
1296 North Marine Drive Suite 2
Tamuning GU 96911

Joaquin C. Arriola
259 Martyr Street Suite 201
Hagatna GU 96910

Anne M. Palacios
414 W Soledad Avenue
GCIC Building Suite 9
Hagatna GU 96910

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

Insurance Company of North America
1601 Chestnut Street
P O Box 7716
Philadelphia PA 19192

Intercargo Insurance Company
1450 E American Lane 20th Floor
Schaumburg IL 60173

Jefferson Pilot Financial Insurance
One Granite Place
Concord NH 03301

Jefferson-Pilot Life Insurance Company
100 North Greene Street
Greensboro NC 27401

John Alden Life Insurance Company
5100 Gamble Drive
St Louis Park MN 55416

John Hancock Life Insurance Company
PO Box 111
Boston MA 02117

Knights of Columbus
One Columbus Plaza
New Haven CT 06510

Liberty National Life Insurance Company
P O Box 2612
Birmingham AL 35202

NAME AND ADDRESS
OF GENERAL AGENT

Takagi & Associates Inc
414 W Soledad Avenue
GCIC Building Suite 100
Hagatna GU 96910

Takagi & Associates Inc
414 W Soledad Avenue
GCIC Building Suite 100
Hagatna GU 96910

Money Resources Inc
415 Chalan San Antonio #210
Tamuning GU 96911

Money Resources Inc
415 Chalan San Antonio # 210
Tamuning GU 96911

William A. Dippel
Terrace Condominium #D 50
Tumon GU 96911

Money Resources Inc
415 Chalan San Antonio #210
Tamuning GU 96911

Jesus A. Baza
125 Granada Lane
Sinajana GU 96910

Joseph M. Casey
Holiday Tower Condo Apt 615
Route 4
Sinajana GU 96926

Independent Research Agency for
Life Insurance
Hong's Building Suite 5
Route 10 & 32
Mangilao GU 96923

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

Lincoln Benefit Life Company
3075 Sanders Road H2C
Northbrook IL 60062

Lincoln National Life Insurance Co
1300 South Clinton Street
Fort Wayne IN 46802

LM Insurance Corporation
175 Berkeley Street
Boston MA 02117

NAME AND ADDRESS
OF GENERAL AGENT

Jesus Dela Cruz
231 Hesler Street
Hagatna GU 96910

Patrocel N. Duque
231 Hesler Street
Hagatna GU 96910

Jacqueline T. Flores
231 Hesler Street
Hagatna GU 96910

Roger Surban
615 Harmon Loop Road Suite 201
(C) Tonko Reyes Comm Complex
Dededo GU 96912

Takagi & Associates Inc
414 W Soledad Avenue
GCIC Building Suite 100
Hagatna GU 96910

The Money Tree Inc
231 Hesler Street
Hagatna GU 96910

Dale M. Donovan
790 N Marine Drive #496
Tumon GU 96911

David W. Cassidy
376 West O'Brien Drive
Hagatna GU 96910

Anne M. Palacios
414 W Soledad Avenue
GCIC Building Suite 9
Hagatna GU 96910

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

LM Insurance Corporation
175 Berkeley Street
Boston MA 02117

Lumbermens Mutual Casualty Co
One Kemper Drive
Long Grove IL 60049

Lyndon Life Insurance Company
520 Maryville Center Drive Suite 500
St Louis MO 63141

Manufacturers Life Insurance Co (USA)
P O Box 6400
Buffalo NY 14201-0604

MBIA Insurance Corporation
113 King Street
Armonk NY 10504

Merrill Lynch Life Insurance Co.
4804 Deer Lane Drive East 4th Floor
Jacksonville FL 33246

Midland Life Insurance Company The
250 East Broad Street
Columbus OH 43215

Midland National Life Insurance Co
One Midland Plaza
Sioux Falls SD 57193

Mitsui Marine & Fire Insurance
Company LTD
9 Kanda Surugadai, 3-Chome
Chiyoda-Ku, Tokyo, Japan

NAME AND ADDRESS
OF GENERAL AGENT

Takagi & Associates Inc
414 W Soledad Avenue
GCIC Building Suite 100
Hagatna GU 96910

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

Joaquin C. Arriola
259 Martyr Street Suite 201
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Hagatna Shopping Center
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Hagatna Shopping Center
Hagatna GU 96910

Merrill Lynch Life Agency Inc
134 Soledad Avenue Suite 406
Hagatna GU 96910

Billy C. Acebron
119 South Marine Drive Suite B1
Tamuning GU 96911

Earl F. Foley
Julale Shopping Center Suite 216
424 W O'Brien Drive
Hagatna GU 96910

AON Insurance Micronesia (Guam) I
Hengi Plaza Suite 203
278 South Marine Drive
Tamuning GU 96911

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

MMI General Insurance Limited
135 C Kayen Chando
Sateena Mail Suite 207/208
Dededo GU 96912

Monumental Life Insurance Company
2 East Chase Street
Baltimore MD 21202

MONY Life Insurance Company
1740 Broadway
New York NY 10019

National Travelers Life Company
5700 Westown Parkway West
Des Moines IA 50266

National Union Fire Insurance
Company of Pittsburgh PA
70 Pine Street
New York NY 10270

National Western Life Insurance Co
850 East Anderson Lane
Austin TX 78752

Nationwide Life Insurance Company
One Nationwide Plaza 1-27-08
Columbus OH 43215

Nauru Insurance Corporation
P O Box 82 AIWO District
Republic of Nauru
Central Pacific Nauru

NAME AND ADDRESS
OF GENERAL AGENT

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Joseph M. Casey
Holiday Tower Condo Apt 615
788 Route 4
Sinajana GU 96926

Independent Research Agency for
Life Insurance
Hong's Building Suite 5
Route 10 & 32
Mangilao GU 96923

Gayle & Teker
300 Hernan Cortez Avenue #200
Hagatna GU 96910

Joaquin C. Arriola
259 Martyr Street Suite 201
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

BWC Investment Services, Inc.
1855 Gateway Blvd Suite 500
Concord CA 94590

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

Netcare Life & Health Insurance
101 Agana Shopping Center
Hagatna GU 96910

New Hampshire Insurance Company
70 Pine Street
New York NY 10270

Nichido Fire & Marine Insurance Co
N0 3-16 Ginza 5-Chome Chuo-Ku
Tokyo 104 Japan

Nippon Fire & Marine Insurance
Company, Ltd.
2-10 Nihonbashi 2-Chome
Tokyo 103 Japan

North Coast Life Insurance Company
1116 West Riverside Avenue
Spokane WA 99201

Occidental Life Insurance Company
of America
425 Austin Avenue
P O Box 2595
Waco TX 76702

Old Line Life Insurance Company
of America The
707 North Eleventh Street
P O Box 401
Milwaukee WI 53201

Old Republic Insurance Company
414 West Pittsburgh Street
Greensboro PA 15601

NAME AND ADDRESS
OF GENERAL AGENT

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Nanbo Guam Ltd DBA:
Nanbo Insurance Underwriters
434 West O'Brien Drive
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Joseph M. Casey
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Sinajana GU 96926

Independent Research Agency for
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Hong's Building Suite 5
Route 10 & 32
Mangilao GU 96923

David W. Cassidy
376 W O'Brien Drive
Hagatna GU 96910

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

Old Republic National Title Ins Co
400 Second Avenue S
Minneapolis MN 55401

Pacific Guardian Life Insurance
Company Ltd
1440 Kapiolani Boulevard
Suites 1600 & 1700
Honolulu HI 96814

Pacific Indemnity Insurance Company
P O Box 3580
Hagatna GU 96932

Pacific Indemnity Insurance Company
P O Box 3580
Hagatna GU 96932

Pacificare Life Assurance Company
3515 Harbor Boulevard
Costa Mesa CA 92626

NAME AND ADDRESS
OF GENERAL AGENT

Takagi Title Security Inc
414 W Soledad Avenue
GCIC Building
Hagatna GU 96910

Dwayne K. Brown
866 Chalan Palasyo (Rt.7) Ste.205
Maina, Guam 96927

Calvo's Insurance Underwriters, Inc.
115 Chalan Santo Papa
Hagatna, Guam 96910

Citadel Trading Corporation DBA:
Citadel Insurance Underwriters
615 Harmon Loop Road Suite 201 C
Tonko Reyes Comm Complex
Dededo GU 96912

Nanbo Guam Ltd DBA
Nanbo Insurance Underwriters
434 West O'Brien Drive
Hagatna GU 96910

Anacleto Q. Nicholas
145 Chichirica Street
Kaiser Dededo GU 96912

Cassidy's Associated Insurers Inc
376 W O'Brien Drive
Hagatna GU 96910

Prescott Hoeck dba:
Guam Ventures
121 Taison Way
Barrigada GU 96913

The Baldwin Corporation
790 S Marine Drive #1
Tamuning GU 96911

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

PFL Life Insurance Company
4333 Edgewood Road NE
Cedar Rapids IA 52499

Primerica Life Insurance Company
3120 Breckinridge Boulevard
Duluth GA 30199

Progressive Casualty Insurance Co
6300 Wilson Mills Road
Mayfield Village OH 44143

Protective Life Insurance Company
2801 Highway 280 South Birmingham
Birmingham AL 35223

Pruco Life Insurance Company
213 Washington Street
Newark NJ 07102

NAME AND ADDRESS
OF GENERAL AGENT

William A. Dippel
Terrace Condominium #D 50
Tumon GU 96911

Carmelita S. Concepcion
Ada's Comm & Proff Center #202 B
130 Marine Drive
Hagatna GU 96910

Primerica Financial Services
Insurance Marketing Inc
Ada's Comm & Proff Center #202 B
130 Marine Drive
Hagatna GU 96910

Bernadita S. Quitugua
136 Sampaguita Lane Latte Heights
Mangilao GU 96923

The Baldwin Corporation
790 South Marine Drive #1
Tamuning GU 96911

Nanbo Guam Ltd., dba:
Nanbo Insurance Underwriters
434 West O'Brien Drive
Hagatna GU 96910

Pacific Financial Corporation
973 S Marine Drive Suite 101
Tamuning GU 96911

John S. Pillsbury
267 South Marine Drive 2F
Tamuning GU 96911

Francisco B. Salas
267 South Marine Drive Suite 2F
Tamuning GU 96911

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

Prudential Insurance Company
of America
751 Broad Street
Newark NJ 07102

QBE Insurance (International) Limited
82 Pitt Street
Sydney NSW 2000 Australia

Reliance Insurance Company
Three Parkway
5th Floor Compliance Department
Philadelphia PA 19102

Reliance National Indemnity Company
Three Parkway
5th Floor Compliance Department
Philadelphia PA 19102

Royal State National Insurance
Company LTD
819 South Beretania Street
Honolulu HI 96813

Safeco Insurance Co of America
Safeco Plaza
Seattle WA 98185

Seaboard Surety Company of NY
6225 Centennial Way
Baltimore MD 21209

Security Benefit Life Insurance Co
700 Harrison Street
Topeka KS 66636

Security-Connecticut Life Insurance Co
20 Security Drive
Avon CT 06001

NAME AND ADDRESS
OF GENERAL AGENT

John S. Pillsbury
267 South Marine Drive Suite 2F
Tamuning GU 96911

Sally E. Mondia
674 Harmon Loop
Dededo GU 96912

Takagi & Associates Inc
414 West Soledad Avenue
GCIC Building Suite 100
Hagatna GU 96910

Takagi & Associates Inc
414 West Soledad Avenue
GCIC Building Suite 100
Hagatna GU 96910

Gayle & Teker
330 Hernan Cortez Avenue
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Independent Research Agency for
Life Insurance
Hong's Building Suite 5
Route 10 & 32
Mangilao GU 96923

Life Investment Consultants Inc
121 Basa Street
Tamuning GU 96911

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

Security-Connecticut Life Insurance Co
20 Security Drive
Avon CT 06001

St Paul Fire & Marine Insurance Co
385 Washington Street
St Paul MN 55102

Standard Insurance Company
1100 SW Sixth Avenue
Portland OR 97204

Stewart Title Guaranty Company
PO Box 2029
Houston TX 77252

Surety Life Insurance Company
3075 Sanders Road H2C
Northbrook IL 60062

Surety Life Insurance Company
3075 Sanders Road H2C
Northbrook IL 60062

NAME AND ADDRESS
OF GENERAL AGENT

Pacific Financial Corporation
973 South Marine Drive Suite 101
Tamuning GU 96911

Primo Mabesa dba: PM Ins
& Financial Planning Svcs
790 North Marine Drive Suite 880
Tamuning GU 96911

Regis Insurance Inc
118 East Marine Drive Suite B2
Dededo GU 96912

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Joaquin C. Arriola
259 Martyr Street Suite 201
Hagatna GU 96910

Manu P. Melwani
715 Chalan Machaute Suite 101
Maite GU 96927

Jesus M. Dela Cruz
166 Carlos Lane
Mangilao GU 96923

Jacqueline T. Flores
231 Hesler Place
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

Surety Life Insurance Company
3075 Sanders Road H2C
Northbrook IL 60062

Terrace Guam Ltd
134 West Soledad Avenue
Bank of Hawaii Building Suite 401
Hagatna GU 96910

Ticor Title Insurance Company
171 North Clark Street 6th Floor
Chicago IL 60601

Tokio Marine & Fire Insurance
Company Limited
2-1 Marunouchi 1-Chome Chiyoda-Ku
Tokyo Japan

Trans World Assurance Company
885 South El Camino Real
San Mateo CA 94402

Transamerica Assurance Company
PO Box 2101
Los Angeles CA 90051

Transamerica Life Insurance &
Annuity Company
PO Box 54178
Los Angeles CA 90054

Transamerica Occidental Life Ins Co
1150 South Olive Street
Los Angeles CA 90054

NAME AND ADDRESS
OF GENERAL AGENT

Roger S. Surban
46 Anaco Lane
Nimitz Hill Estate
Piti GU 96910

The Money Tree Inc
231 Hesler Place
Hagatna GU 96910

Title Guaranty of Guam
Hernan Cortez Avenue
Hagatna GU 96910

Nanbo Guam Ltd dba:
Nanbo Insurance Underwriters
434 West O'Brien Drive
Hagatna GU 96910

Dale M. Donovan
790 North Marine Drive Suite 496
Tumon GU 96911

Ralph G. Taitano
130 Aspinall Street Suite 2BE
Hagatna GU 96910

Ralph G. Taitano
130 Aspinall Street Suite 2BE
Hagatna GU 96910

Ralph G. Taitano
130 Aspinall Street Suite 2BE
Hagatna GU 96910

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

Travelers Casualty and Surety Co
One Tower Square
Hartford CT 06183

Travelers Indemnity Company
One Tower Square
Hartford CT 06183

Travelers Insurance Company
One Tower Square
Hartford CT 06183

United of Omaha Life Insurance Co
Mutual of Omaha Plaza
Omaha NE 68175

United Pacific Insurance Company
Three Parkway
Compliance Department 5th Floor
Philadelphia PA 19102

United Services Automobile Assn
9800 Fredericksburg Road
San Antonio TX 78288

United States Fire Insurance Company
305 Madison Avenue
Morrison NJ 07960

UNUM Life Insurance Company
of America
2211 Congress Street
Portland ME 04122

USAA Casualty Insurance Company
9800 Fredericksburg Road
San Antonio TX 78288

NAME AND ADDRESS
OF GENERAL AGENT

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Moylan's Insurance Underwriters Inc
101 Agana Shopping Center
Hagatna GU 96910

Earl L. Foley
P O Box BO
Hagatna GU 96910

Takagi & Associates Inc
414 West Soledad Avenue
GCIC Building Suite 100
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

Moylan's Insurance Underwriters
101 Agana Shopping Center
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Cassidy's Associated Insurers Inc
376 West O'Brien Drive
Hagatna GU 96910

NAME AND HOME ADDRESS
OF INSURANCE COMPANY

USAA General Indemnity Company
9800 Fredericksburg Road
San Antonio TX 78288

Western Reserve Life Assurance
Company of Ohio
P O Box 5068
Clearwater FL 33758

Western-Southern Life Assurance Co
P O Box 1119
Cincinnati OH 45202

Westport Insurance Corporation
P O Box 2979
Overland KA 66201

Zurich Insurance (Guam) Inc
GCIC Building Suite 900
414 West Soledad Avenue
Hagatna GU 96910

NAME AND ADDRESS
OF GENERAL AGENT

Nanbo Insurance Underwriters
434 West O'Brien Drive
Hagatna GU 96910

Calvo's Insurance Underwriters Inc
115 Chalan Santo Papa
Hagatna GU 96910

Billy C. Acebron
119 South Marine Drive Suite B1
Tamuning GU 96911

Glenn Meno
400 Route 8
Maite GU 96927

AON Insurance Micronesia (Guam) I
Hengi Plaza #203
278 South Marine Drive
Tamuning GU 96911

D B Davis & Associates
430 West Soledad Avenue
Staywell Building
Hagatna GU 96910

LLA

**GUAM POWER AUTHORITY
LEASE**

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**LEASE AGREEMENT
BETWEEN
GUAM POWER AUTHORITY
AND**

This LEASE, is made and executed this ____ day of _____2019, by and between GUAM POWER AUTHORITY, (hereinafter referred to as “GPA”), a public corporation and autonomous instrumentality of the Government of Guam, and (COMPANY) (hereinafter referred to as the “Project Company”), a private corporation, duly organized and existing under the laws of Guam, duly registered to do business in Guam, with its local address at _____. (GPA and the Project Company may sometimes jointly be referred to herein as the “Parties”.)

R E C I T A L S

WHEREAS, GPA holds the title for property _____; and

WHEREAS, GPA, through its solicitation process (**MS BID GPA-034-18**) has entered into an Energy Conversion Agreement with the Project Company on (Insert ECA Date) (hereinafter referred to the “ECA”) in relation to a 180MW power generation facility to be built owned and operated by Project Company on the Premises (as hereinafter defined); and

WHEREAS, GPA desires to lease the Premises to the Project Company and the Project Company desires to accept such lease upon and subject to terms and conditions set forth herein for the purposes of implementing the ECA.

NOW THEREFORE, in consideration of the mutual agreements herein contained and other good and valuable consideration, receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows:

ARTICLE 1: LEASE

GPA leases to the Project Company on the terms and conditions in this Lease Agreement the Premises set forth in Exhibit “A”, Survey Maps & Legal Description, attached hereto and incorporated herein by this reference.

As used in this Lease Agreement, the term “Premises” refers to the real property described in Exhibit “A” and to any personal property and improvements located on said real property on the effective date of this Lease Agreement.

Capitalized terms included but not defined in this Lease Agreement shall have the meanings set forth in the ECA. In the event of any inconsistency between any provisions of this Lease Agreement and those of the ECA, the provisions of the ECA shall prevail.

ARTICLE 2: TERM

The term of this Lease Agreement (the “term”) will commence on Financial Close (the “Commencement Date”) and shall terminate twenty five (25) Contract Years after the Phase 1

Commercial Operation Date(the “Termination Date”), provided, however, that the term shall be extended or earlier terminated to match any extension or early termination to the ECA

ARTICLE 3: DELIVERY OF POSSESSION

Possession of the Premises will be delivered to Project Company on the Commencement Date. If GPA, for any reason whatsoever, cannot deliver possession of the Premises to Project Company on the Commencement Date, this Lease Agreement shall not be void or voidable, nor shall GPA be liable to Project Company for any loss or damage resulting from any delay in delivery.

Project Company (together with its agents (including independent consultants), lenders, employees, contractors and subcontractors) shall have the right to enter onto or upon and exit the Premises at any time prior to the Commencement Date for the purpose of making necessary investigations and conducting site studies; provided, however, that Project Company shall not commence construction or other activity upon the Premises that alters or changes the Premises in any manner prior to the Commencement Date, except in relation to the carrying out of site investigations and studies Site surveys by the Project Company or its construction contractors.

ARTICLE 4: RENT

Project Company will pay to GPA as rent, with deduction, setoff, notice, or demand, the annual sum of \$100.00 (U.S Dollars).

The Project Company shall be responsible for any and all of the costs related to compliance with its obligations set forth herein.

ARTICLE 5: USE OF PREMISES

The Premises will be used and occupied by Project Company only for the purpose of its planning, development, construction, commissioning, testing, operation, repair, and maintenance of the 180 MW power generation and fuel storage and loading facility and all things reasonably incidental to the foregoing.

ARTICLE 6: CONDITION OF PREMISES

Project Company has inspected, and accepts the condition and state of the Premises. Project Company acknowledges that no representations, statements, or warranties, express or implied, have been made by or on behalf of GPA in respect to the condition of the Premises, including all facilities located thereon, or whether the intended use or occupation may be made of them, and that GPA shall in no event whatsoever be liable for any latent defects in or on the Premises.

In the event this Lease Agreement is terminated and the Parties have not agreed to enter into a new Lease Agreement, Project Company shall transfer the Facility to GPA in accordance with the ECA and return the Premises to GPA in the same condition in which it was received excepting the existence of the Facility and the Electrical Connection Facilities and taking into account reasonable wear and tear and the intended use of the Premises for electricity generation in accordance with Prudent Utility Practices.

ARTICLE 7: OWNERSHIP OF IMPROVEMENTS

All improvements erected or placed on the Premises after the Commencement Date by and on behalf of Project Company are and shall be the property of Project Company during the term hereof, subject to the terms and condition of this Lease Agreement. Upon the expiration or termination of the Lease Agreement, all such improvements shall become the property of GPA.

ARTICLE 8: ALTERATIONS

Project Company will not make, or cause to be made any alterations, improvements, additions and changes in or to the Premises without the prior written consent of GPA unless such alterations, improvements, additions and changes are part of the design, construction, commissioning, operation or maintenance of the Facility or the Electrical Connection Facilities pursuant to the ECA.

Project Company shall not undertake any activity that may affect a historic or archeological property, including excavation, construction, alteration, or repairs of the Premises, without the prior approval of the applicable Government Authority and in compliance with section 106 of the National Historic Preservation Act (16 U.S.C. § 470), and the Archeological Resources Protection Act of 1979 (16 U.S.C. §470aa). Buried cultural materials may be present on the Premises. If those materials are encountered, Project Company shall stop work immediately and notify GPA and the relevant Government Authority.

ARTICLE 9: ENTRY / ACCESS

GPA shall have the right to enter the Premises pursuant to the applicable terms of the ECA to inspect the Premises or the performance by Project Company of the terms and conditions of this Lease Agreement and the ECA. Any claims by the Project Company against GPA for damages arising from such entry shall be governed by the Government Claims Act (5 GCA Section 6101 et. seq.). Nothing in this Lease Agreement shall be deemed to prejudice the rights of the Project Company under any contract, other agreement or law including, but not limited to the Government Claims Act. All necessary keys to the buildings and Premises occupied by Project Company shall be made available to GPA upon request.

Project Company, its employees, vendors, and invitees will be granted reasonable access to the Premises under this Lease Agreement. As a condition, ***Project Company***, and their employees, vendors, and invitees, agree to adhere to local and federal regulations regarding installation security, ingress, egress, safety and sanitation.

ARTICLE 10: ASSIGNMENT AND SUBLETTING

Project Company shall neither transfer, assign, nor sublet this Lease Agreement or any interest in it, or any property on the Premises, or grant any interest, privilege, or license whatsoever in connection with this Lease Agreement without the prior written consent of GPA.

ARTICLE 11: COMPLIANCE WITH LAW - WASTE AND NUISANCE PROHIBITED

During the term of this Lease Agreement, Project Company shall observe and comply with all present and future laws and regulations of all federal, territorial and other governmental authorities affecting the Premises, the equipment and any improvements by Project Company in and on the Premises, or any part of the Premises, and of all governmental departments, agencies, bureaus and officials.

Project Company shall not commit, or suffer to be committed, any waste on the Premises, or any nuisance unless related to the design, construction, commissioning, operation and maintenance of the Facility and the Electrical Connection Facilities in compliance with Prudent Utility Practices.

ARTICLE 12: ABANDONMENT OF PREMISES

Project Company shall not vacate or abandon the Premises at any time during the term of this Lease Agreement. If Project Company abandons, vacates, or surrenders the Premises or is dispossessed by process of law, or otherwise, any personal property belonging to Project Company and left on the Premises shall be deemed to be abandoned.

ARTICLE 13: Not used

ARTICLE 14: PROJECT FINANCING

GPA acknowledges and accepts that the Project Company plans to obtain third party debt financing from Lenders to construct the Facility and hereby consents to customary lender mortgage/s and rights to step-in and assume the rights and obligations of the Project Company under this Lease Agreement as set forth in the Lenders Direct Agreement.

ARTICLE 15: LIABILITY FOR LIENS ON PREMISES

Project Company shall not permit any lien, charge, or encumbrance to be filed against the title of GPA with respect to the Premises including, but not limited to, by reason of work, labor, services or materials supplied to Project Company or anyone holding the Premises or any part of the Premises by, through or under Project Company. As to any and all alterations, additions, improvements, repairs and work installed or performed by Project Company on the Premises, or labor performed or material furnished in connection therewith, neither GPA nor the Premises shall under any circumstances be liable for the payment of any expense incurred or for the value of any work done or material furnished, but rather, all alterations, additions, improvements, and repairs, and labor and material, shall be made, furnished, and performed at the expense of Project Company unless specified otherwise in the ECA. Project Company shall be solely responsible to contractors, laborers, and material suppliers furnishing and performing the labor and material unless specified otherwise in the ECA.

If any lien, charge, or order for the payment of money shall hereafter be filed against the title or other estate of GPA in Premises or any buildings or improvements on the Premises, or against GPA, whether or not the lien, charge, or order is valid or enforceable, Project Company shall, at the expense of Project Company cause the lien to be cancelled and discharged of record or bonded within thirty (30) days after the notice to Project Company of the filing of such item.

ARTICLE 16: REPAIRS, UTILITIES AND TAXES TO BE LIABILITY OF PROJECT COMPANY

Project Company shall maintain, or cause to be maintained, the Premises in reasonable order and condition in light of the use of the Premises and the condition of the Premises immediately prior to the Commencement Date.

Project Company, shall, at all times during the term of this Lease Agreement, at the expense of Project Company, keep and maintain in thorough repair and good, safe, and substantial order and condition, having regard to normal wear and tear, all buildings and improvements, and all building service equipment, on the land portion of the Premises at the commencement of the term hereof and thereafter erected on the Premises, or forming part of the Premises, and promptly make all necessary repairs, both inside and outside, structural and non-structural, extraordinary and ordinary, whether or not the repairs were necessitated by wear, tear, obsolescence, or defects, latent or otherwise.

Project Company shall use reasonable precaution to prevent waste, damage, or injury, and shall at the expense of Project Company, keep, replace, and maintain in thorough repair, good order, and safe

condition, and free from rubbish, and other obstructions or encumbrances, the areas in front of and adjacent to the Premises.

GPA shall in no event be required to make any alterations, additions, improvements, replacements, renewals or repairs of any kind, nature, or description, whatsoever during the term of this Lease Agreement, nor shall GPA be required to furnish Project Company any utilities or services of any kind whatsoever during the term unless specified otherwise in the ECA.

Project Company shall be responsible for obtaining utilities and services for the Premises unless specified otherwise in the ECA. It is expressly agreed and understood that GPA in no way warrants the continued maintenance or adequacy of any utilities or services furnished by it to the Premises. Project Company shall have the right, subject to Article 8, to install utilities, or make improvements to existing utilities on the Premises, including but without limitation, the installation of emergency power generators, that may be necessary for the operation of Project Company equipment.

Project Company shall pay to the proper authority when and as the same become due and payable all taxes, assessments, and similar charges that, at any time during the term of this Lease may be imposed on the Premises.

ARTICLE 17: LIABILITY ON DESTRUCTION OF PREMISES

If, during the term of this Lease Agreement, buildings, improvements, or the building service equipment in and on the Premises at the commencement of the term or thereafter erected on or in the Premises shall be destroyed or damaged in whole or in part by fire or other cause, Project Company shall give to GPA notice thereof. Project Company shall, at the expense of Project Company, promptly repair, replace, and rebuild the destroyed premises, at least to the extent of the value and as nearly as possible to the character of the building and improvements and the building service equipment on the Premises at the commencement of the term and thereafter erected on the Premises. In no event shall GPA be called on to repair, replace, or rebuild any buildings, improvements, or equipment, or to pay any of the expenses thereof.

ARTICLE 18: LIABILITY FOR INJURY OR DAMAGE UNDER LEASE AGREEMENT

Project Company is and shall be in exclusive control and possession of the Premises as provided in this Lease Agreement, and in no event shall GPA be liable for any injury or damage to any property or to any person happening on or about the Premises, or for any injury or damage to the Premises, nor to any property of Project Company, or of any other person contained in or on the Premises.

ARTICLE 19: LIABILITY FOR INSURANCE FOR LEASE

During the term of this Lease Agreement, Project Company, at the expense of Project Company, shall be responsible to ensure that there is effective insurance covering Project Company's use of the Premises and operations allowed under this Lease Agreement, as provided for in Article 15 of the ECA.

ARTICLE 20: ENVIRONMENTAL PROTECTION

20.1. Compliance with Law. Project Company shall comply, at its sole cost and expense, with the Federal, state, and local laws, regulations, and standards that are or may become applicable to Project Company's activities on the Premises. Project Company shall be financially responsible for environmental contamination of the Premises which occurs during the term of this Lease Agreement, unless otherwise specified in the ECA.

20.2. Permits. Project Company shall be solely responsible for obtaining at its cost and expense any Governmental Authorizations required for its operations under this Lease Agreement as set forth in the ECA.

20.3. Indemnification. Project Company shall, to the extent permitted under applicable law, indemnify and hold harmless GPA, and defend GPA against, any damages, costs, expenses, liabilities, fines, or penalties resulting from releases, discharges, emissions, spills, storage, treatment, disposal, or any other acts or omissions by Project Company, its officers, agents, employees, or contractors, or licensees, or the invitees of any of them, giving rise to GPA liability, civil or criminal, or responsibility under Federal, state, or local environmental laws. This Paragraph shall survive the termination of this Lease Agreement, and Project Company's obligations under this Paragraph shall apply whenever GPA incurs costs or liabilities for Project Company's actions of the types described in this Paragraph 20.

20.4. Inspection. GPA's rights under this Lease Agreement specifically include the right for the GPA or its officials to inspect upon reasonable notice (as set forth in the ECA) the Premises for compliance with environmental, safety, and occupational health laws and regulations, whether or not GPA is responsible for enforcing them. Those inspections may be made without prejudice to the right of duly constituted enforcement officials to make them. GPA normally will give Project Company twenty-four (24) hours prior notice of its intention to enter the Premises unless it determines the entry is required for safety, environmental, operations, or security purposes. Any claims by Project Company against GPA for damages arising from such entry shall be governed by the Government Claims Act.

20.5. Not Used.

20.6. Not Used.

20.7. Environmental Liability of (COMPANY). Notwithstanding any other provision of this Lease, Project Company does not assume any liability or responsibility for environmental impacts and damage caused by the prior property owner's use of toxic or hazardous wastes, substances, or materials on any portion of the installation, including the Premises unless such liability or responsibility is provided for in the ECA. Project Company has no obligation under this Lease Agreement to undertake the defense of any claim or action, whether in existence now or brought in the future, solely arising out of the use or release of any toxic or hazardous wastes, substances, or materials on or from any part of the area, including the Premises, which occurred prior to the Commencement Date. This Paragraph 20.7 does not relieve Project Company of any obligation or liability it might have or acquire with regard to third parties or regulatory authorities by operation of law.

This Paragraph 20.7 shall survive the expiration or termination of this Lease Agreement.

20.8. Not Used

20.9. Response or Remedial Actions. Project Company agrees to comply with the provisions of any health or safety plan in effect or any hazardous substance remediation or response agreement with environmental regulatory authorities during the course of any of the above described response or remedial actions. Any inspection, survey, investigation, or other response or remedial action will, to the extent practicable, be coordinated with representatives designated by Project Company. Any claims by Project Company or subcontractor against GPA for damages arising from such actions shall be governed by the Government Claims Act.

20.10. Storage of Hazardous Wastes. Project Company must comply with all applicable Federal, state, and local laws, regulations, and other requirements relating to occupational safety and health, the

handling and storage of hazardous materials, and the proper generation, handling, accumulation, treatment, storage, disposal, and transportation of hazardous wastes. Project Company shall not treat, store, transport, or dispose of hazardous waste unless Project Company is in possession of any required permit issued to it under the Resource Conservation and Recovery Act, as amended (RCRA). Project Company shall not treat, store, transport, or dispose of any hazardous waste under, pursuant to, or in reliance upon any permit issued to GPA. Project Company shall be liable for the cost of proper disposal of any hazardous waste generated by its approved subcontractors in the event of failure of the subcontractors to dispose properly of those wastes.

20.11. Environmental Records. Project Company must maintain and make available to GPA all records, inspection logs, and manifests that track the generation, handling, storage, treatment, and disposal of hazardous waste relevant to the Premises, as well as all other environmental records required to be maintained by Project Company in connection with its use and activities on the Premises by applicable laws and requirements. GPA reserves the right to inspect the Premises and Project Company's records for compliance with Federal, state, local laws, regulations, and other requirements relating to the generation, handling, storage, treatment, and disposal of hazardous waste, as well as to the discharge or release of hazardous substances. Violations will be reported by GPA to appropriate regulatory agencies, as required by applicable law. Project Company shall be liable for the payment of any fines and penalties that may accrue as a result of the actions of Project Company.

20.12. Spill Plans. If hazardous waste, fuel, chemicals, or other regulated hazardous substances will be present on the Premises, Project Company shall prepare a completed and approved plan prior to commencement of operations on the Premises for responding to hazardous waste, fuel, and other chemical spills. The plan shall comply with all applicable requirements and shall be updated from time to time as may be required to comply with changes in site conditions or applicable requirements, and where required, shall be approved by all agencies having regulatory jurisdiction over the plan. The plan shall be independent of GPA spill prevention and response plans. Project Company shall not rely on use of the GPA's personnel or equipment in execution of its plan. Project Company shall file a copy of the approved plan and approved amendments thereto with the _____ within fifteen (15) days of approval. Notwithstanding the foregoing, should GPA provide any personnel or equipment, whether for initial fire response or spill containment or otherwise on request of Project Company, or because Project Company was not, in the sole opinion of GPA, conducting timely cleanup actions as required of Project Company under applicable laws and regulations, Project Company agrees to reimburse GPA for its costs in accordance with all applicable laws and regulations.

20.13. RCRA Compliance. Project Company shall comply with the hazardous waste permit requirements under the RCRA or its state equivalent and any other applicable hazardous waste laws, rules, and regulations pertaining to Project Company's use or activities on the Premises. Project Company must provide at its own expense hazardous waste storage facilities that comply with all laws and regulations that it may need for storage. GPA hazardous waste storage facilities will not be available to Project Company. Any violation of the requirements of this Paragraph shall be deemed a material breach of this Lease Agreement.

20.14. Not Used.

20.15. Discharge of Fill. Project Company shall not discharge, or allow the discharge of, any dredged or fill material into any waters or wetlands on the Premises except in compliance with the express written consent of the applicable Governmental Authority with jurisdiction over such matters.

20.16. Pesticides. Prior to the storage, mixing, or application of any pesticide, as that term is defined under the Federal Insecticide, Fungicide, and Rodenticide Act, Project Company shall prepare a

plan for storage, mixing, and application of pesticides (Pesticide Management Plan). The Pesticide Management Plan shall be sufficient to meet all applicable Federal, state, and local pesticide requirements. Project Company shall store, mix, and apply all pesticides within the Premises only in strict compliance with the Pesticide Management Plan. The pesticides will only be applied by a licensed applicator.

20.17. National Pollutant Discharge Elimination System (NPDES) Permit. Project Company shall comply with all requirements of the Federal Water Pollution Control Act, as amended, the NPDES, and any applicable State or local requirements. If Project Company discharges wastewater to a publicly owned treatment works, Project Company must submit an application for its discharge prior to the start of this Lease Agreement. Project Company shall be responsible for meeting all applicable wastewater discharge permit standards. Project Company shall not discharge wastewater under the authority of any NPDES permit, pretreatment permit, or any other permit issued to the installation. Project Company shall not install or use any septic tank facility.

20.18. Not Used.

20.19. Not Used.

20.20. Not Used.

20.21. Environmental Access. GPA, EPA/Guam EPA, and the territory and their respective officers, agents, employees, contractors, and subcontractors have the right, upon reasonable notice to Project Company to enter upon the Premises for the purposes enumerated in this subparagraph, if applicable:

20.21.1. To conduct investigations and surveys, including, where necessary, drilling, soil and water sampling, test pitting, and testing soil borings, if applicable;

ARTICLE 21: INDEMNIFICATION

GPA shall not be liable for any loss, injury, death, or damage to persons or property that at any time may be suffered or sustained by Project Company or by any person whosoever may at any time be using or occupying or visiting the Premises or be in, on or about the Premises, whether the loss, injury, death, or damage shall be caused by or in any way result from or arise out of any act, omission, or negligence of Project Company or of any occupation, visitor, or user of any portion of the Premises, or shall result from or be caused by any other matter or thing whether of the same kind as or of a different kind than the matters of things above set forth. Project Company shall indemnify and hold harmless GPA against any and all claims, liabilities, losses, or damage whatsoever on account of any such loss, injury, death, or damage. Project Company waives all claims against GPA for damages to the buildings and improvements that are now on or hereafter placed or build on the Premises and to the property of Project Company in, on, or about the Premises, and for injuries to persons or property in or about the Premises, from any cause arising at any time. As to Project Company's obligations to GPA, the two preceding sentences shall not apply to loss, injury, death, or damage arising by reason of the gross negligence or misconduct of GPA, its agents, or employees.

ARTICLE 22: PROHIBITION OF VOLUNTARY ASSIGNMENT – EFFECT OF BANKRUPTCY OR INSOLVENCY

Neither this Lease Agreement nor the Premises nor any interest of GPA under this Lease Agreement in the Premises or in the building of improvements of the Premises shall be subject to

involuntary assignment, transfer, sale, or to assignment, transfer or sale by operation of law in any manner whatsoever; any attempt at involuntary assignment, transfer, or sale shall be void and of no effect.

Without limiting the generality of the provisions of the preceding paragraph of this Article 22, Project Company agrees that termination of the ECA shall result in automatic termination of this Lease and all rights of Project Company under this Lease Agreement in and to the Premises and also all rights of any and all persons claiming under Project Company.

ARTICLE 23: DEFAULT AND REMEDIES ON DEFAULT

23.01. Default. This Lease Agreement is entered into on the condition that Project Company shall perform all the terms and conditions set forth herein to be performed by Project Company, and the failure of Project Company to perform said terms and conditions shall constitute a default under this Lease Agreement. GPA may, at its option and without limiting GPA in the exercise of any other right or remedy it may have on account of a default or breach by Project Company, exercise the rights and remedies specified in Section 23.02. if:

- (a) Project Company defaults in the payment of any money agreed to be paid by Project Company to GPA for rent or for any other purpose under this Lease Agreement, and if such default continues for fifteen (15) days after written notice to Project Company by GPA;
- (b) The Premises are used for an unlawful purpose;
- (c) The Premises are left vacant, unoccupied, or deserted for a period of thirty (30) days or more (unless caused by circumstances beyond the reasonable control of Project Company) and such circumstance continues for thirty (30) days after written notice to Project Company by GPA,;
- (d) Project Company defaults in the performance of any other of its agreements, conditions or covenants under this Lease Agreement and such default continues for sixty (60) days after written notice to Project Company by GPA.

GPA shall deliver to the Lenders' agent (in accordance with the Lenders' Direct Agreement) a copy of any notice given under this Article 23.

23.02. Remedies. On any breach, default, or abandonment by Project Company, GPA may exercise any of the following rights after the periods of time stated in Section 23.01:

- (a) Immediately reenter and, at GPA's election, remove all persons and property from the Premises, store the personal property in a public warehouse or elsewhere at the cost of, for the account of, and at the risk of Project Company. In the event of any such reentry by GPA, GPA may make any repairs, additions, or improvements in, to or upon the Premises which may be necessary or convenient.
- (b) Collect by suit or otherwise each installment of rent or other sum as it becomes due hereunder, or enforce, by suit or otherwise, any other term or provision hereof on the part of Project Company required to be kept or performed, it being specifically agreed that all unpaid installments of rent other sums shall bear interest at the highest legal rate from the due date thereof until paid.
- (c) Terminate this Lease Agreement, in which event Project Company agrees to immediately surrender possession of the Premises and any improvements thereon, and to pay GPA, in addition to any other remedy GPA may have, all damages GPA may incur by reason of Project Company's defaults, including the cost of recovering the Premises.

23.03. No Waiver of Default. GPA's failure to take advantage of any default or breach of covenant on the part of Project Company shall not be, or be construed as, a waiver thereof, nor shall any

custom or practice which may arise between the Parties in the course of administering this Lease Agreement be construed to waive or to lessen the right of GPA to insist upon the performance by Project Company of any term, covenant, or condition hereof, or to exercise any rights given on account of any such default. A waiver of a particular breach, or default, shall not be deemed to be a waiver of the same or any other subsequent breach or default. The acceptance of rent hereunder shall not be, or be construed to be, a waiver or any term, covenant, or condition of this Lease Agreement.

23.04. Project Company's Waiver of Statute of Limitations. Project Company does further waive the benefit of any statute of limitations to which it might be entitled.

23.05. Remedies Cumulative. The rights, powers, elections, and remedies of GPA contained in this Lease Agreement shall be construed as cumulative and no one of them is or shall be considered exclusive of the other or exclusive of any rights or remedies allowed by law, and the exercise of one or more rights, powers, elections, or remedies shall not impair GPA's right to exercise any other.

ARTICLE 24: Not Used.

ARTICLE 25: TERMINATION OF LEASE AGREEMENT UPON MUTUAL AGREEMENT

This Lease Agreement may be terminated upon the written mutual agreement of GPA and Project Company.

ARTICLE 26: SURRENDER OF PREMISES

Upon the voluntary or other termination of this Lease Agreement or any early termination of the term from whatever cause, Project Company shall peaceably and quietly surrender and deliver up to GPA the Premises, including all buildings, alterations, rebuilding, replacements, and changes, additions, and improvements, constructed, erected, added, or placed on the Premises by Project Company, with all building service equipment in or appurtenant to the Premises, in as good condition, repair, and as clean as at the commencement of the term, and as any new buildings, structures, replacements, additions, or improvements constructed, erected, added, or placed on the Premises by Project Company were when completed, excepting the existence of the Facility and the Electrical Connection Facilities and taking into account reasonable wear and tear and the intended use of the Premises for electricity generation in accordance with Prudent Utility Practices.

ARTICLE 27: NOTICES

All notices and demands that may be required or permitted by either party to the other will be in writing. All notices and demands shall be sent by telefax or mail, postage prepaid, addressed to:

To: *(Post Office Address)*
GUAM POWER AUTHORITY
General Manager
P.O. Box 2977
Hagatña, Guam 96932

Or

(Physical Address)
GUAM POWER AUTHORITY

General Manager
Gloria B. Nelson Public Service Bldg
688, Route 15-Suite 100
Mangilao, Guam 96913-6203

To: (PROJECT COMPANY Address)

ARTICLE 28: PARTIES BOUND

The covenants, agreements, terms, provisions and conditions contained in this Lease Agreement shall apply to and bind the successors, executors, administrators, and assigns of the Parties.

ARTICLE 29: RELATIONSHIP OF PARTIES

Nothing contained in this Lease Agreement shall be deemed or construed by the Parties or by any third person to create the relationship of principal and agent or of partnership or of joint venture or of any association between GPA and Project Company.

ARTICLE 30: DISPUTE RESOLUTION

30.01. Disputes. In the event that a dispute arises under this Lease Agreement, the Parties shall attempt in good faith to settle such dispute by mutual discussions within thirty (30) Days after the date that the disputing Party gives notice of the dispute to the other Party which may include referring the dispute to the Joint Coordinating Committee pursuant to the ECA for a specified time period, subject to mutual agreement of the Parties.

In the event that the dispute is not resolved in accordance with the paragraph above, either Party may refer the dispute to the chief executive officer or chief operating officer of Project Company and GPA for further consideration. In the event that such individuals are unable to reach agreement within fifteen (15) Days, or such longer period as they may agree, then either Party may commence mediation of the dispute in accordance with Article 30.02 below.

30.02. Dispute Mediation. In the event that a dispute arises, all claims or controversies subject to final resolution under this Article will be submitted to mediation in accordance with the rules of the American Arbitration Association, subject to the conditions and limitations of this paragraph. This agreement to mediate is authorized under 5 GCA §5427 (b) and 2 GAR §9103 (a)(1). The Parties shall each pay one-half of the mediation expenses.

In the event the matter or controversy is not resolved through mediation, the GPA General Manager shall, after written request by the Project Company for a final decision, issue a written decision within 30 days. A copy of the decision shall be immediately transmitted to the Project Company by a method that provides evidence of receipt. Any such decision shall be final and conclusive unless the Project Company files an appeal with the Guam Office of Public Accountability (“OPA”) after receipt of the decision. In the event the dispute is not resolved by the OPA, the Project Company may seek redress through the Guam Government Claims Act and/or the Guam Superior Court.

Mediation shall be conducted in English and take place in Guam.

During the conduct of dispute resolution the Parties shall continue to perform their respective obligations under this Agreement.

30.02. Consent to Jurisdiction. Each Party hereby consents to the jurisdiction of the courts of Guam for any action filed by the other Party pursuant to this Lease Agreement.

ARTICLE 31: GOVERNING LAW

This Lease Agreement will be governed by and construed in accordance with the laws of the Territory Guam and the applicable laws of the United States of America.

ARTICLE 32: NO WAIVER

The failure of either party to this Lease Agreement to insist on the performance of any of its terms and conditions, or the waiver of any breach of any of the terms and conditions of this Lease Agreement, shall not be construed as thereafter waiving any such terms and conditions, but they shall continue and remain in full force and effect as if no such forbearance or waiver had occurred.

ARTICLE 33: ATTORNEYS' FEE

If either party commences an action against the other in connection with this Lease Agreement, the prevailing party will be entitled to recover costs of suit and reasonable attorneys' fees.

ARTICLE 34: EFFECT OF PARTIAL INVALIDITY

The invalidity of any part of this Lease Agreement will not and shall not be deemed to affect the validity of any other part. In the event that any provision of this Lease Agreement is held to be invalid, the Parties agree that the remaining provisions shall be deemed to be in full force and effect as if they had been executed by both Parties subsequent to the expungement of the invalid provision.

ARTICLE 35: ENTIRE AGREEMENT

This Lease Agreement, the ECA, the Lenders Direct Agreement [insert other agreements as applicable] set forth all the agreements between GPA and Project Company concerning the Premises, and there are no agreements, either oral or written, other than as set forth in the aforementioned agreements.

ARTICLE 36: MODIFICATION OF LEASE AGREEMENT

Any modification of this Lease Agreement or additional obligation assumed by either party in connection with this Lease Agreement shall be binding only if evidenced by a document in writing signed by each party or an authorized representative of each party.

ARTICLE 37: COUNTERPARTS

This Lease Agreement may be executed in any number of counterparts, each which shall be deemed to be an original, but all of which together shall constitute but one and the same instrument.

ARTICLE 38: FURTHER ASSURANCES

The Parties agree to execute whatever papers and documents and assurances may be necessary to effectuate the terms of this Lease Agreement and take such further action required by law or as GPA or Project Company may from time to time reasonably request in order to carry out more effectively the intent and purpose of this Lease Agreement and to establish and protect the rights and remedies created in favor of GPA or Project Company.

ARTICLE 39: PARAGRAPH HEADINGS

The titles to the paragraphs of this Lease Agreement are solely for the convenience of the Parties and shall not be used to explain, modify, simply, or aid in the interpretation of the provisions of this Lease Agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties hereto have caused this Lease Agreement to be executed on the dates provided below to be effective as of the day and year first above written.

WITNESS:

GUAM POWER AUTHORITY

By: _____

D. GRAHAM BOTHA
GPA LEGAL COUNSEL
GUAM POWER AUTHORITY

By: _____

JOHN M. BENAVENTE, P.E.
GENERAL MANAGER
GUAM POWER AUTHORITY

Date: _____

Date: _____

APPROVED BY THE CONSOLIDATED COMMISSION ON UTILITIES:

By: _____

JOSEPH T. DUENAS
CHAIRMAN
CONSOLIDATED COMMISSION ON UTILITIES

Date: _____

WITNESS:

Project Company

By: _____

WITNESS NAME
Title
Division
Company

By: _____

LESSEE SIGNATORY
Title
Division
Company

Date: _____

Date: _____

Dos Amantes Planning Area

OFFICIAL ZONING MAP

COVERING THE MUNICIPALITY OF DEDEDO
"DOS AMANTES" PLANNING AREA
NAME PLACE OF "UKUDU"

Adopted By the Guam Land Use Commission on February 28, 2009.

Jay L. Lather
Chairman, Guam Land Use Commission

Approved by the Governor of Guam on 4th day of December, 2009.

Felix P. Camacho
Governor of Guam

Approved by the Committee on Rules of the Guam Legislature on 5th day of January, 2010.

Senator Rory J. Respcio
Chairman, Committee on Rules

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Department of Land Management Office of the Director
After the Record in Department No. **817995**
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Deputy Recorder Jane Yaman

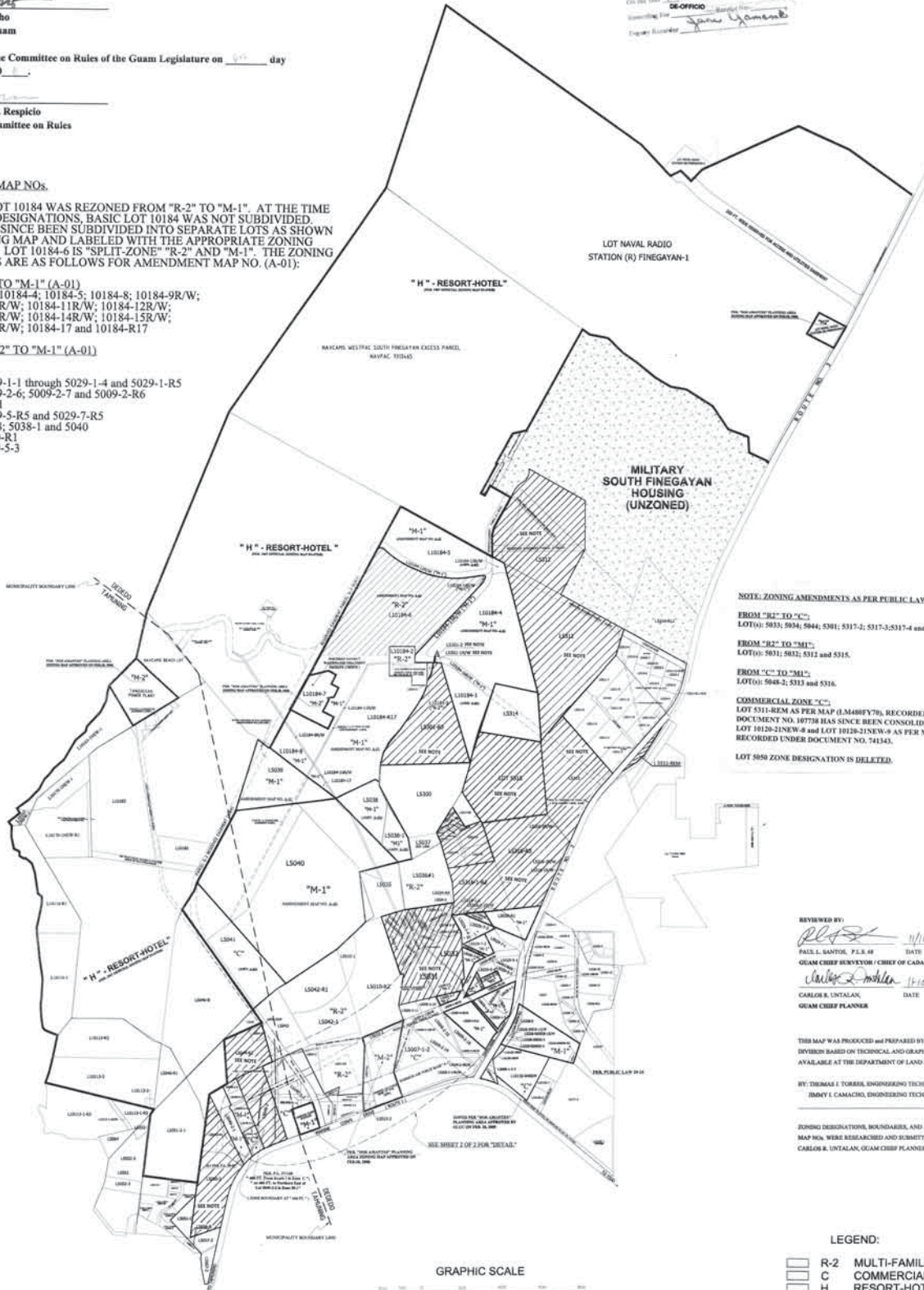
AMENDMENT MAP NOS.

A-01 - BASIC LOT 10184 WAS REZONED FROM "R-2" TO "M-1". AT THE TIME OF THE ZONE DESIGNATIONS, BASIC LOT 10184 WAS NOT SUBDIVIDED. LOT 10184 HAS SINCE BEEN SUBDIVIDED INTO SEPARATE LOTS AS SHOWN ON THIS ZONING MAP AND LABELED WITH THE APPROPRIATE ZONING DESIGNATION. LOT 10184-6 IS "SPLIT-ZONE" "R-2" AND "M-1". THE ZONING DESIGNATIONS ARE AS FOLLOWS FOR AMENDMENT MAP NO. (A-01):

FROM "R-2" TO "M-1" (A-01)
LOT(s) 10184-1; 10184-4; 10184-5; 10184-8; 10184-9R/W;
10184-10R/W; 10184-11R/W; 10184-12R/W;
10184-13R/W; 10184-14R/W; 10184-15R/W;
10184-16R/W; 10184-17 and 10184-17

SPLIT ZONE "R-2" TO "M-1" (A-01)
LOT 10184-6

A-02 - LOTS 5029-1-1 through 5029-1-4 and 5029-1-R5
A-03 - LOTS 5009-2-6; 5009-2-7 and 5009-2-R6
A-04 - LOT 5041
A-05 - LOTS 5029-S-R5 and 5029-7-R5
A-06 - LOTS 5038; 5038-1 and 5040
A-07 - LOT 5030-R1
A-08 - LOT 5029-5-3



NOTE: ZONING AMENDMENTS AS PER PUBLIC LAW 30-211

FROM "R-2" TO "C";
LOT(s): 5933, 5934, 5944, 5945, 5917-2, 5317-3, 5317-4 and 5317-5.

FROM "R-2" TO "M-1";
LOT(s): 5031, 5032, 5312 and 5315.

FROM "C" TO "M-1";
LOT(s): 5048-2, 5313 and 5316.

COMMERCIAL ZONE "C";
LOT 5311-REM AS PER MAP (L2488770), RECORDED UNDER DOCUMENT NO. 10770 HAS SINCE BEEN CONSOLIDATED INTO LOT 10128-21NEW-8 and LOT 10128-21NEW-9 AS PER MAP (L252472008) RECORDED UNDER DOCUMENT NO. 74134.

LOT 5050 ZONE DESIGNATION IS DELETED.

REVIEWED BY:

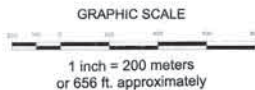
PAUL L. SANTOS, P.L.S. #8 DATE 11/10/09
GUAM CHIEF SURVEYOR / CHIEF OF CADASTRE

CARLOS B. UNTALAN DATE 11/10/09
GUAM CHIEF PLANNER

THIS MAP WAS PRODUCED AND PREPARED BY THE SURVEY DIVISION BASED ON TECHNICAL AND GRAPHICAL DATA AVAILABLE AT THE DEPARTMENT OF LAND MANAGEMENT.

BY: THOMAS J. TORRES, ENGINEERING TECHNICIAN II
JIMMY I. CAMACHO, ENGINEERING TECHNICIAN II

ZONING DESIGNATIONS, BOUNDARIES, AND AMENDMENT MAP NOS. WERE RESEARCHED AND SUBMITTED BY CARLOS B. UNTALAN, GUAM CHIEF PLANNER



- LEGEND:
- R-2 MULTI-FAMILY DWELLING
 - C COMMERCIAL
 - H RESORT-HOTEL
 - M-1 LIGHT-INDUSTRIAL
 - M-2 HEAVY-INDUSTRIAL
 - UNZONED
 - SPLIT ZONES
 - MUNICIPALITY BOUNDARY
 - AMN AMENDMENT MAP NO.

DISCLAIMER: This map is for zoning and planning purposes only. Not for use in litigation or for mapping requiring survey level accuracy. Though efforts have been made to obtain and accurately display data the Department does not assume any liability for any inaccuracies in the map.

Jay L. Lather
Chairman, Guam Land Use Commission

Approved by the Governor of Guam on _____ day of _____, 20____.

Felix P. Camacho
Governor of Guam

Approved by the Committee on Rules of the Guam Legislature on _____ day of _____, 20____.

Senator Rory J. Respcio
Chairman, Committee on Rules

OFFICIAL ZONING MAP (DETAIL SHEET)

COVERING THE MUNICIPALITY OF DEDEDO
"DOS AMANTES" PLANNING AREA
NAME PLACE OF "UKUDU"

Island of Guam, Government of Guam
Department of Land Management Office of the Director
File No. Revised to Encumbered No. 817995
On the Year 11 Month 02, Day 15 Year 1955
DE-OFICIO
Director: *[Signature]*



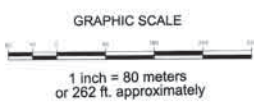
ZONED PER "DOS AMANTES"
PLANNING AREA APPROVED BY
GLUC ON FEB. 28, 2009

PER "DOS AMANTES" PLANNING
AREA ZONING MAP APPROVED ON
FEB. 28, 2008.

PER P.L. 27-160
"400 FT. From Route 1 is Zone C";
"At 400 FT. to Northern End of
Lot 5049-2 is Zone M-1"
(ZONE BOUNDARY AT "400 FT.")

AMENDMENT MAP NOS.

- A-02 - LOTS 5029-1-1 through 5029-1-4 and 5029-1-R5
- A-03 - LOTS 5009-2-6; 5009-2-7 and 5009-2-R6
- A-04 - LOT 5041
- A-05 - LOTS 5029-5-R5 and 5029-7-R5
- A-06 - LOTS 5038; 5038-1 and 5040
- A-07 - LOT 5030-R1
- A-08 - LOT 5029-5-3



NOTE: ZONING AMENDMENTS AS PER PUBLIC LAW 30-211

FROM "R-2" TO "C":
LOT(s): 5033; 5034; 5044; 5301; 5317-2; 5317-3; 5317-4 and 5317-5.

FROM "R-2" TO "M-1":
LOT(s): 5031; 5032; 5312 and 5315.

FROM "C" TO "M-1":
LOT(s): 5048-2; 5313 and 5316.

COMMERCIAL ZONE "C":
LOT 5311-REM AS PER MAP (LM488F76), RECORDED UNDER DOCUMENT NO. 107738 HAS BEEN CONSOLIDATED INTO LOT 10120-21NEW-8 and LOT 10120-21NEW-9 AS PER MAP (LM254F2086) RECORDED UNDER DOCUMENT NO. 741345.

LOT 5050 ZONE DESIGNATION IS DELETED.

LEGEND:

[Symbol]	R-2	MULTI-FAMILY DWELLING
[Symbol]	C	COMMERCIAL
[Symbol]	H	RESORT-HOTEL
[Symbol]	M-1	LIGHT-INDUSTRIAL
[Symbol]	M-2	HEAVY-INDUSTRIAL
[Symbol]	UNZONED	
[Symbol]	SPLIT ZONES	
[Symbol]	MUNICIPALITY BOUNDARY	
[Symbol]	AMN	AMENDMENT MAP NO.

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