



RECEIVED *B.H. Kim*
DATE: Sep. 9, '21. 13:30

GUAM ENVIRONMENTAL PROTECTION AGENCY • *AHENSIAN PRUTEKSÍON LINA'LA' GUÁHAN*
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WALTER S. LEON GUERRERO • ADMINISTRATOR | MICHELLE C. R. LASTIMOZA • DEPUTY ADMINISTRATOR

SEP 08 2021

Samsung E & C America, Inc.
(Respondent)
Mr. ByungHyup Kim, Project Manager
Mangilao Solar Project
P.O. Box 218008
Barrigada, Guam 96921
Contact # 689-1790

Subject: Compliance Assessment – Order Items 3.a and 3.b; July 29, 2021 Notice of Violation / Compliance Order / Penalty Order

This letter is to acknowledge and address the e-mailed request from Samsung E & C America, Inc. (“Respondent”) dated August 27, 2021, to inspect the work performed in response to Order Items 3.a and 3.b, from the July 29, 2021 Notice of Violation / Compliance Order / Penalty Order (“Order”). Order Item 3 required the following:

3. Within thirty (30) days of receipt of this order:

- a. Complete installation of Ponds 2, 4, and 5 in accordance with the approved E&SC plan.
- b. Complete the installation of the armored overflow weir for Pond 1.

August 28, 2021, marked the thirtieth day following the date of issuance of the Order. In addition to reviewing the materials submitted by Respondent, staff from the Guam Environmental Protection Agency (GEPA) conducted an inspection on August 30, 2021. A copy of the GEPA inspection report is attached. Based on the findings of our inspectors, and Respondent’s requests for additional time for certain items as described below, I have determined that Respondent has not adequately completed the remedial actions required under Order Item 3, and must conduct additional actions as detailed below:

1. Order Item 3.a.:

Pond 2: Respondent continues to work on Pond 2. Therefore, pond installation was not completed within the 30 day deadline as required. Respondent stated during GEPA’s August 30 inspection that they intend to increase the size of Pond 2 by extending and raising the elevation of the pond embankment.

- a. Respondent shall provide a revised design for Pond 2 within fourteen (14) days of this letter, or with the submission of the engineering evaluation required under Order Item 5, at the time that response becomes due.

Pond 4: Respondent had completed work on Pond 4, however the overflow weir (spillway) was not completed to the required minimum depth of one (1) foot below the top of the embankment, as specified in the GEPA-approved erosion & sediment control (E&SC) plans. Respondent provided to GEPA a copy of additional details contained in the E&SC plans which specified a different weir depth of four (4) inches, which conflicts with the pond plan drawing which clearly specifies a weir depth of one (1) foot, by means of contours and grading elevation call-outs.

- b. Within fourteen (14) days of receipt of this letter, Respondent must correct the construction of the overflow weir and/or pond embankment to provide the required minimum weir depth, while still maintaining the approved pond storage volume. Further, GEPA recommends that Respondent consider providing additional weir depth or “freeboard” above the required minimum one (1) foot to prevent risk of uncontrolled overtopping in the event of a storm larger than the calculated 25-year event.
- c. Respondent must implement stabilization measures (for example, erosion control blankets, hydroseeding, etc.) to prevent erosion of final embankment slopes, swales, and other disturbed ground surfaces in the area of Pond 4.

Pond 5: Respondent has completed final grading of Ponds 5A and 5B, but has not completed construction of the overflow weir, stone armored inlets, or interconnecting swale. Respondent has requested a time extension for the installation of Pond 5A overflow weir for the purpose of leaving the pond embankment available as a potential vehicle access route into the Marbo Cave area for future cleanup activities. GEPA grants this request with the following conditions:

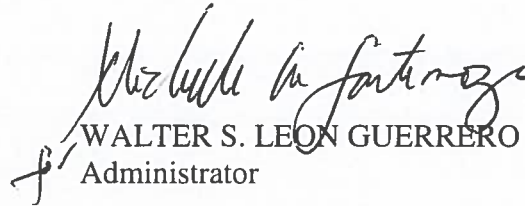
- c. Respondent must provide frequent inspection and maintenance of Pond 5A to consist of the following, at a minimum:
 - i. Inspection on a daily basis
 - ii. Repair of embankment as needed
 - iii. Removal of accumulated sediment before it reduces pond capacity by more than approximately 10 percent
- d. Respondent must complete construction of swale inlets and inter-pond connection swale in accordance with the approved plans within fourteen (14) days of this letter.
- e. Respondent must implement stabilization measures (for example, erosion control blankets, hydroseeding, etc.) to prevent erosion of final embankment slopes, swales, and other disturbed ground surfaces in the area of Pond 5.
- f. Respondent must complete installation of the armored overflow weir within 14 days following the completion of the Marbo Cave cleanup, whenever that occurs.

- 2. Order Item 3.b.: Respondent has requested a time extension in order for their engineering consultant to complete an evaluation of the flow of runoff within the site, and potentially propose a different solution to protect neighboring properties from damage caused by overflow of Pond 1. Most recently, Respondent requested an extension until September 8, 2021, to provide their analysis of the Pond 1 overflow in accordance with Order Item 2.a. GEPA grants this request and will revisit the compliance date for Order Item 3.b following review of this item.

Should you have any questions or need additional information, please do not hesitate to contact me and my staff at Water Pollution Control Program or Water Division Chief Engineer, CAPT Brian Bearden, P.E., BCEE at 300-4786 and 300-4779, respectively.

Dangkolu na si Yu'us ma'åse'.

Senseramente,



WALTER S. LEON GUERRERO
Administrator

Attachments: GEPA Inspection Report dated Aug. 30, 2021

cc: GEPA Legal Counsel



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August 30, 2021 (revised September 1 to include response from designer)

TO: FILE

FROM: Chief Engineer, Guam Environmental Protection Agency (GEPA)

SUBJECT: Site Inspection at Samsung Mangilao Solar Project, August 30, 2021

A site inspection of the Samsung Mangilao Solar Project and Marbo Cave was conducted by GEPA personnel on August 10, 2021, between approximately 9:00 a.m. and 11:00 a.m. GEPA personnel present included: Ron Charfauros, Inspector II; Helen Gumataotao, Inspector I; and CAPT Brian Bearden, Chief Engineer. Kristan Finney, Assistant Attorney General and GEPA Legal Counsel was also present.

We arrived at the project site at approximately 9:00 a.m. and drove to the field office, after waiting unsuccessfully for several minutes for the gate guard to get hold of someone to escort us. On the way in, we met up with some of Samsung's engineers, who then escorted us to the field office. Once there, we met with Mr. B. H. Kim and his staff and explained that we were there as a result of the August 27 email request to inspect the site for compliance with Order Item No. 3 from the July 29, 2021 Notice of Violation / Compliance Order / Penalty Order, which stated as follows:

3. Within thirty (30) days of receipt of this order:

- a. Complete installation of Ponds 2, 4, and 5 in accordance with the approved E&SC plan.
- b. Complete the installation of the armored overflow weir for Pond 1.

I acknowledged that Samsung had requested a time extension for Order Item 3.b., so the limit of today's inspection would be Item 3.a. Mr. Kim informed me that Samsung was also ready to submit a response to Item 7 of the Amended Compliance Order issued by GEPA on July 16, and asked to present the plan to us in person at that time. We agreed, and waited while copies of the soil stabilization and revegetation plan were printed for discussion.

In the meantime, I asked to see copies of the approved site grading and erosion and sediment control (E&SC) plans. I explained that the purpose of this plan review was to make sure that we were inspecting Ponds 2, 4, and 5 in accordance with the correct set of plans. Mr. Kim provided the plans as attachments to the Stormwater Pollution Prevention Plan dated January, 2021. I noticed that several details in these plans did not match the details in the plans I had been provided through email by Samsung's engineering consultant in 2020 and early 2021. Specifically, the overflow weir dimensions and configuration were different for ponds 4 and 3. I explained that I

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would have to ask for clarification on this, especially for the changes to the pond 3 weir, which was less than half the length shown on the plans we approved by email on June 23, 2020. The weir length on the approved plans was shown as 125 feet, while the plans attached to Samsung's 2021 SWPPP showed a weir length of 55 feet. I showed Mr. Kim the design calculation table that I had approved in June 2020, which showed the weir length of 123.58 feet corresponding to the 25-year storm, and 53.06 feet for the 10-year storm, and commented that it appeared the overflow weir had been downgraded to the smaller storm capacity without informing GEPA. Mr. Kim stated that he believed the 2021 plans had been approved by DPW and stated that he would find the approval documentation and send it to me.

Similarly, I noted a discrepancy between the more recent plans held by Samsung, and the revised Pond 4 plans that I had approved via email on July 20, 2020. The 2020 GEPA-approved plans showed a weir length of 77.50 feet, but the 2021 SWPPP plan set showed a weir length of 85.00 feet. The calculation table included with the GEPA-approved 2020 plan revision showed a weir length of 77.08 feet corresponding to the 25 year storm. The larger weir provided in the 2021 plan for Pond 4 was therefore okay, I stated, because it was larger than required.

REVISION (Sept. 1, 2021): Based on email clarification from Mr. Kin Flores, P.E., of TG Engineers, PC dated August 31, 2021, the observed weir lengths are correct and were included in revised calculations based on changes to the size of the project "tributary areas" made as a result of the addition of Pond 5. Mr. Flores provided revised site plans and drainage calculations dated January 13, 2021, which corroborated the observed weir lengths.

Samsung then presented their soil stabilization and revegetation plan. I stated that I had a number of concerns with the plan, and that GEPA would provide a written response with specific comments that will need to be addressed. Briefly, I stated that the plan focuses too much on the longer-term revegetation of the site, and seems to ignore short term soil stabilization measures designed to keep soil on the site prior to revegetation, and that it would require revision to address the 14-day stabilization requirement of both the USEPA Construction General Permit and the CNMI & Guam Stormwater Management Manual.

We then proceeded on foot to Pond 5. On the way there, we observed the placement of stone check dams in the perimeter swale, which appeared to have been installed per the standard details. Pond 5B has not been completed: the berm has been completed to final dimensions and elevation, but the overflow weir (spillway) has not been constructed. Per Samsung's earlier communications, they intend to utilize the Pond 5B berm as an access road for the future cleanup of Marbo Cave. The pond had a significant amount of sediment which had washed in from the slopes of the project site above the pond, primarily in the form of coarse-grained materials that appeared to be base course materials, which Mr. Kim stated was from the site roads that are slated to be paved, as soon as DPW approves. I agreed with Mr. Kim that paving roadway surfaces needs to be completed because it is a recognized form of stabilization. I stated that Samsung would need to remove the accumulated sediment on a regular basis to prevent the pond from losing capacity. Pond 5A appeared to be complete, based on the approved plans.

On the way back, I asked Mr. Kim how high the water level had gotten in Pond 5B, because it appeared that sediment had accumulated as high as the top of the berm. Mr. Kim stated that Pond 5B had been overtopped, but in his words the overflow was “minor”. I did not observe any evidence of damage to the silt fence beyond Pond 5B, but it was difficult to distinguish between any potential recent discharge and older sedimentation (prior to our initial July 23 inspection) beyond the project boundaries.

We then walked to Pond 4. With the assistance of Mr. Charfauros, I measured the length of the overflow weir (spillway) and the depth. The measured length was greater than the 85 feet shown on Samsung’s 2021 plans, but the depth of the weir was generally less than the 1 foot depth that had been approved. Mr. Kim showed me a cross sectional detail drawing from the 2021 plans, which indicated a weir depth of just 4 inches. This is in direct conflict with other portions of the plan and the approved pond calculations. I showed Mr. Kim that in the same plans, the elevation of the weir bottom was plainly labeled 1 foot lower than the adjacent berm top (96.00 feet at the weir bottom, versus 97.00 feet at the adjacent berm top), which matched the design calculation table that I had approved in 2020. I explained that this is important because if the weir is undersized, a large storm event will spill over the sides of the weir and wash out the berm, resulting in a failure of the entire embankment which could cause significant damage to downstream properties. Mr. Kim stated that Samsung would correct this.

REVISION (Sept. 1, 2021): Based on email clarification from Mr. Kin Flores, P.E., of TG Engineers, PC dated August 31, 2021, the correct weir depth is 1.0 feet as shown on the grading plan.

We then examined Pond 2. Mr. Kim stated that by his observation, Pond 2 was receiving too much runoff and needed to be enlarged. He stated that Pond 2 had overflowed. Accumulation of sediment behind the perimeter silt fence at this location was visible, but the fence appeared to have remained in place. He stated that Samsung would create a higher berm and expand the size of Pond 2. I asked him to make sure this is included in the analysis and revised plans, if any, included with the engineering analysis of the site grading and runoff. Samsung had emplaced a stone-armored overflow at the designed outlet to Pond 2, but Mr. Kim explained that he intended to raise the elevation of the outlet to increase storage.

We then proceeded to Pond 3 to measure the overflow weir. Samsung staff assisted Mr. Charfauros with measuring the weir, which at about 64 feet was longer than the 55 feet shown on Samsung’s 2021 plans, but significantly shorter than the 125-foot weir length approved by GEPA in 2020.

We then went to Pond 1 to take a look and did not observe any significant difference from previous inspections, except that the high water mark was higher than previously observed (but not as high as on the first inspection on July 23), and that the pond bottom was visibly covered in sediment that was likely reducing the percolation ability of the pond.

At Mr. Kim’s request, we then visited the upper side of the project in between the two entrances, where Samsung was excavating a trench or swale to capture off-site runoff entering the site from the public highway. Mr. Kim stated that the purpose of this new swale would be to divert off-site runoff which currently enters the site uncontrolled, to Pond 3 which still appears to be receiving

much less runoff than it was originally designed for. I stated that I hoped to see an analysis of this in the engineering evaluation that was still due to GEPA.

We then departed the site at about 11:00.

See attached photos.

BRIAN G BEARDEN
CAPT, U.S. Public Health Service
Chief Engineer, Guam EPA

Stone check dams placed in perimeter swale above Pond 5B (Aug. 30, 2021)



Pond 5B showing final berm height, and accumulation of sediment (right) that requires removal. According to Mr. Kim, this pond overflowed during recent rain events, but in his words, the overflow was minor. (Aug. 30, 2021)



View of Pond 5B, looking toward Pond 5A. Pond 5B overflow weir has not been constructed per Samsung's request to leave the Pond 5B berm available as a potential access route for the Marbo Cave cleanup. The swale connecting Ponds 5A and 5B is also not complete. (Aug. 30, 2021)



Pond 5A grading appears to be complete. The swale inlet (right) and inlet riprap has not been completed according to the approved plans. (Aug. 30, 2021)



The temporary berm remains in place behind Pond 5A, however this provides no additional protection at this time because Pond 5A overflows to Pond 5B, which is at a significantly lower controlling elevation than the top of the temporary berm shown here. (Aug. 30, 2021)



Pond 4 final configuration. (Aug. 30, 2021)



View toward the area behind Pond 4, leading to Pond 2, which is almost directly adjacent and downhill. The removal of the temporary berm is underway as shown on the left side. Samsung is proposing to extend the Pond 2 berm to expand its capacity in the area shown. (Aug. 30, 2021)



Pond 4 armored overflow weir (spillway) viewed from the downstream side, directly above Pond 2. (Aug. 30, 2021)



Pond 2, looking back toward the Pond 4 berm. (Aug. 30, 2021)



Pond 2 armored overflow weir (spillway). Samsung stated they intend to raise the elevation and expand the Pond 2 berm to provide more storage space. (Aug. 30, 2021)



Project perimeter downslope of Pond 2, showing accumulation of sediment from overflow rain events which has been trapped by silt fence in this area.



Pond 3 overflow weir (spillway). (Aug. 30, 2021)



Samsung staff assisting with measuring length of Pond 3 overflow weir. (Aug. 30, 2021)



Excavation activities underway at the upper perimeter of the site, to create a channel intended to intercept off-site runoff coming from the public road and divert it to the perimeter swales which discharge to Pond 3. (Aug. 30, 2021)



Intercept channel excavated along upper project perimeter intended to capture and divert off-site runoff from the land and public roadway above the site, and send this water to Pond 3. (Aug. 30, 2021).

