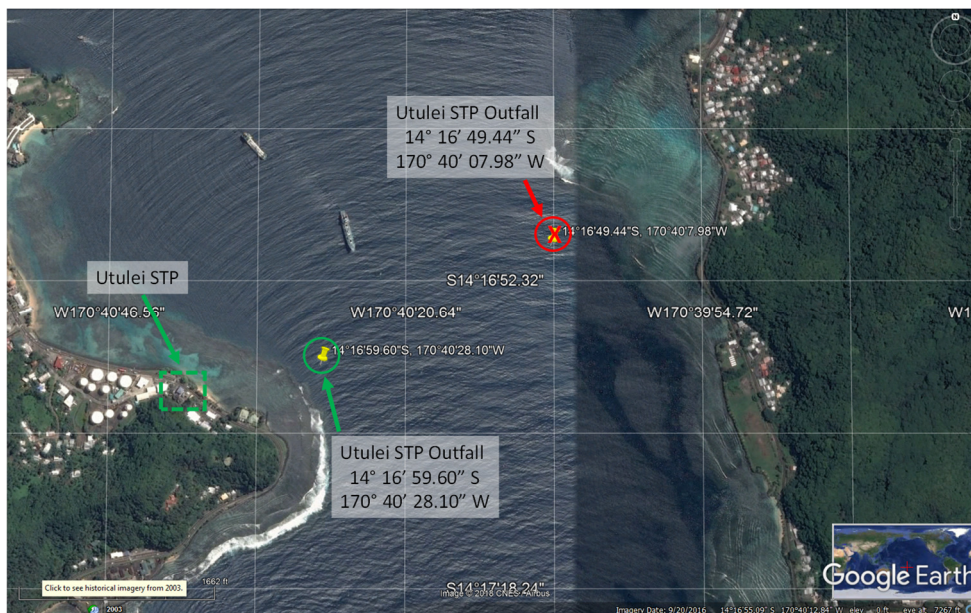


Comments on Pre-public Draft Utulei NPDES Renewal Permit and Proposed Fact Sheet (AS0020001)

A. Comments on Proposed Fact Sheet

Part II. General Description of Facility

[1] The location of the discharge appears incorrect (perhaps it is based on an older coordinate system such as NAD27). Our best information based on recent data from fathometer and diver determined locations has the coordinates as shown in the Figure below: S 14° 16' 59.6"; W 170° 40' 28.1"



[2] Note that Figures 1a, 1b, and 2 referenced in the draft fact sheet are not included with the draft fact sheet. It is assumed the missing figures are the same as in Attachment B and C in the draft NPDES permit.

[3] The diffuser description appears to be old and should be updated. Under the AO the diffuser was reconfigured to maximize initial dilution as follows¹:

- The diffuser length (end port to end port) is 42.6 feet.
- There are seven (7) ports: six 5.5-inch diameter ports at a spacing of 7.1 feet discharging horizontally in alternate directions perpendicular to the diffuser barrel and a final end gate 11-

¹ See "Recommended Modifications to Tafuna WWTP and Utulei WWTP Diffuser Configurations". Prepared by gdc for ASPA. Submitted to USEPA September 16, 2013.

inch diameter port. The end-gate port is 7.1 feet from the seaward-most 5.5-inch port and discharges at a 15° angle upwards parallel (seaward) to the diffuser barrel.

Part III. Description of Receiving Water

[4] The fact sheet indicates the Harbor is on the northeastern portion of the island. It is on the southeastern portion of the island.

[5] The characterization of the circulation in the fact sheet is:

In the application, the applicant indicated Pago Pago Harbor has a typical estuarine circulation pattern, with upper layers of water near the mouth of the harbor that move out continuously while lower layers move in.

This is a dated version and our current understanding based on more recent available information is as follows: *Pago Pago Harbor receives limited freshwater inflow with small tides and relatively deep water. The circulation is primarily wind-driven and appears to be a three-layer system. The direction of flow in the layers is controlled primarily by the wind direction with only secondary effects of tides, and virtually no effect of freshwater inflow.*

IV. Description of Discharge

[6] In addition to treatment plant upgrades described on page 3 (paragraph 4), the outfall diffuser was reconfigured under the AO to maximize critical initial dilution.

[7] It appears that Table 2 should be referenced on the bottom of page 3 for clarity.

[8] The effluent limitation for enterococci for Maximum Daily in Table 2 should be 104 rather than 130, for the water quality standards at the time the permit was issued (2001). If that is the intent of the description.

[9] In Table 2 the initial dilution is stated as 91:1. This was based on relatively old information and the diffuser has been reconfigured as described in item [3] above. In addition, the 91:1 ratio was based on background profiles at the diffuser, which, due to influence the freshwater plume may have artificially depressed the calculated dilution. Recent density profiles from the background station (Station 16) are available. More recent modeling done for the updated diffuser configuration, and using the more appropriate background profiles and model simulations, indicates a critical initial dilution (CID) of 392:1 for an effluent flow of 6 mgd. ASPA's consultant is preparing a report describing the results of the various initial dilution results previously supplied to EPA.

[10] The enterococci values in Table 2 are confusing. The columns headings say Average Monthly and Maximum Daily (for Current Permit Limitations). However, it appears that the values listed are the geomean and the single sample maximum. It is noted that the single sample maximum under the previous ASWQS was 104 and is now 130.

The same comment applies to the Discharge Monitoring Data on the right-hand side of the table. We can duplicate the values as geomean and single sample, but are not sure this is consistent with the column headings because the draft permit indicates only the geomean will be regulated. Note that these numbers change if the data set is extended through March of 2018.

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Also note that using the updated CID of 392:1 (see comment above) as the dilution credit, the geomean and single sample maximum are 8 MPN/100mL and 12 MPN/100mL, respectively.

V. Significant Changes to Previous Permit

[11] In the title row, the Permit term should be 2018 – 2023.

VI. Determination of Numerical Effluent Limitations

[12] Under VI.B.1 item (E) on page 11: it is noted that “body contact recreation” is prohibited in any zone of mixing as defined under ASWQS 24.0205 (a).

[13] Note that only the Inner Harbor is listed for lead, mercury, and PCBs. Page 11, first full paragraph, appears to indicate the entire Harbor is listed.

[14] The wording in the second paragraph on page 11 is awkward. Suggest removing “almost” in line 4.

[15] In the table on page 11: the enterococcus geomean should be 35 not 130. Also, consider giving the table a title, formal table number (Table 3), and direct reference in the text on Page 11.

[16] In the table on page 11: the 10% DNE value for Secchi depth should be ~16 feet assuming the light extinction coefficient is constant through the water column (which is a reasonable assumption based on turbidity measurements).

[17] Under VI.B.2 the average and critical initial dilutions are based on older data and calculations as noted in item [9] above. The calculations done for the reconfigured diffuser indicate that the average dilution (based on average flow assumed to be 2 mgd) is 428:1 and the CID based on 6 mgd is 392:1. Note that if the end-of-permit-term average flow is taken as 3.0 mgd then the average initial dilution would be 416:1 (see reference in item[3] above). As noted above ASPA’s consultant is preparing a report to clarify the results of the initial dilution modeling.

[18] Under VI.B.4 the text states:

The Utulei STP has historically shown very high levels of enterococci bacteria (over 1400 CFU/100 ml, versus a standard of “Exceed 130 CFU/100 mL in no more than 2% of the samples”);

It is unclear where the quoted portion of the text originated. The ASWQS (2013, page 18) state that the criterion is “130 per 100 ml (as the statistical threshold value)” and the “statistical threshold value” (ASWQS 2013, Page 4) is defined as “the approximation of the 90th percentile of the water quality distribution”, which is inconsistent with the “2% of the samples” in the fact sheet.

[19] Under VI.B.4 the text further states that:

as well as high levels of Nitrogen (over 780 µg/L versus a standard of “Exceed 280 µg/L in no more than 2% of samples”).

The reference to 280 µg/L applies to open coastal waters (for example the Tafuna WWTP). The current standard in Pago Pago Harbor would be 500 µg/L (ASWQS 2013, page 17).

[20] Under VI.B.5 the available dilution is stated as 91:1. See comment [9] above for an updated value of the CID (392:1). This would change all the calculated values shown in the “Projected Maximum Concentration column in the following table.

[21] Under VI.B.5 the tabulated values of “Most stringent Water Quality Criterion” we have the following comments:

- It is unclear where the listed criterion came from. BOD₅, TSS, and Settleable Solids do not have limitations in the ASWQS and appear to be the existing effluent limitations not WQ criterion.
- The BOD₅ value of 100 mg/l is inconsistent with the proposed effluent limitation in the draft permit (78.3 mg/L) and may be a reference to the Tafuna permit
- The nitrogen and phosphorus criterion are for open coastal waters and the appropriate values for Pago Pago Harbor are 200 µg/L and 30 µg/L, respectively.

Part VII. Monitoring and Reporting Requirements

[22] Under section VIII.A the fact sheet states:

In addition, the permittee shall continue the successful receiving water monitoring program which has allowed an accurate understanding of the context and effects of the discharge. This monitoring program shall be updated to incorporate permanent ZID stations, as repeatedly recommended by the discharger’s consultant in receiving water monitoring reports.

It is noted that the routine receiving monitoring reports do not provide this recommendation. However, the need for ZID stations is recognized by ASPA.

IX. Special Conditions

[23] Under IX.E the toxicity pass/fail targets are listed. ASPA assumes these targets account for dilution.

[24] Also in XI the TRE includes both acute and chronic toxicity. Does EPA want both considered or just chronic toxicity?

X. Other Considerations Under Federal Law

[25] It might be useful to include in the last paragraph on page 20 that at the location of the discharge the bottom condition consists of sand and coral rubble indicating poor habitat conditions.

B. Comments Pre-Public Draft Permit

[1] Discharge location for the outfall should be corrected as shown in Item A[1] above.

[2] Consider a more complete reference under I.A.e(1):

All Embayments [which includes Pago Pago Harbor], Open Coastal Waters and Ocean Waters Except as may be allowed by the EQC within a Zone of Mixing (§24.0207), the concentration of toxic pollutants shall not exceed the more stringent of the aquatic life criteria for marine waters or the human health concentration criteria for consumption of organisms found in ~~the EPA 2002~~ or the most recent version of the National Recommended Water Quality Criteria.

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[3] Table 1: the dilution of 91:1 appears to be based on older data (see discussion under A[9] above and ASPA believes the critical initial dilution should be 392:1.

[4] Table 1: The turbidity limitations appear inconsistent and inappropriate. EPA should review and correct these proposed limitations based on data collected under the Administrative Order. The water quality standard is a median value of 0.75 NTU, with excursions to 1.0 NTU and 1.5 NTU at the 90th and 98th percentiles, respectively. Proposed turbidity effluent limitations in Table 1 are well below the water quality standard and do not make sense. Measured effluent turbidities range from 73.6 NTU to 21.7 NTU with a reasonable potential concentration (RPC) of 87.2 NTU (with outliers removed) based on the AO effluent data (March 2016 through March 2018).

[5] Table 1: The enterococci limitation indicates it should be based on a 24-hour composite sample. This is inconsistent with standard enterococci analysis (and single sample hold time is less than 24-hours). Perhaps the Table should reflect a geometric mean based on 5 samples taken sequentially, which is the typical approach. The enterococcus limitation appears to be based on a CID of 91:1 and should be adjusted to reflect the CID of the reconfigured diffuser (392:1).

The enterococcus limitations shown in the Table reflect the geomean under the heading of Monthly Average and the single sample maximum under the heading of Daily Maximum. Yet the limitation states geomean is indicated in the Parameter column. This is confusing and should be clarified. Perhaps a verbal description in the table, following the entries for BOD and pH, would be a better approach.

[6] Table 1: The nitrogen and phosphorus limitations are stated as daily maximum and monthly average. However, the sampling frequency is every six months meaning the daily maximum and monthly average would be the same based on only one sample. Review of the facilities past performance indicate the reported concentrations will exceed the monthly average limitation 8% of the time for TKN and 36% of the time for TP based on only one sample.

It appears that the limitations were based on applying a dilution credit (91:1) to the median and the “not to exceed more than 2% of the time” criterion in the ASWQS for the monthly average and daily maximum listed in the draft permit. However, it is noted that the value under Daily maximum for TKN was not calculated the same way or incorrectly calculated using 0.600 mg/l as the ASWQS rather than 0.500 mg/l. Using this adjustment, the reported concentrations will not exceed the daily maximum limitation for TP but the average monthly limitation will be exceeded occasionally (1%) of the time for TKN. Monthly average exceedances would be the same as noted above 8% and 36% of the time for TKN and TP, respectively.

As noted above the Utulei diffuser has been reconfigured and the CID is 392:1 based on the more recent modeling. Using this dilution, the limitations, using EPA’s calculation technique is shown in the tabulation below and in this case the reported concentrations will not exceed the daily maximum or the monthly average. If the average dilution (assuming an average flow of 3 mgd) of 416:1 the results are, of course the same. The expected exceedances are tabulated below.

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Effluent Limitations based on ASWQS			
Case Considered	Parameter	Monthly Average	Daily Maximum
As shown in pre-public draft permit: CID=91:1, using daily maximum for TKN listed in Table	TKN	18.2	54.6
	TP	2.73	8.19
Using adjusted daily maximum for TKN: CID=91:1	TKN	18.2	45.5
	TP	2.73	8.19
Using CID=392:1 Flow=6 mgd	TKN	78.4	196
	TP	11.76	35.8
Using CID=416:1 Flow=3 mgd	TKN	83.2	208
	TP	12.48	37.44

Expected Exceedances for Effluent Limitations based on ASWQS Data from the AO sampling December 2011 through March 2018 Single Sample per Month			
Case Considered	Parameter	Percent Exceedance	
		Monthly Average	Daily Maximum
As shown in pre-public draft permit: CID=91:1, using ocean waters criterion	TKN	8	0
	TP	36	0
Using open coastal waters: CID=91:1	TKN	8	1
	TP	36	0
Using CID=391:1 Flow=6 mgd	TKN	0	0
	TP	0	0
Using CID=416:1 Flow=3 mgd	TKN	0	0
	TP	0	0

The data available indicate that the Utulei discharge would meet the daily maximum limitations (using the EPA method to set limitations) for the daily maximum and monthly average for the reconfigured diffuser CID for maximum flow. The analysis of the monthly average compliance is, however, based on a single sample per month.

It is noted that ASPA could not resample within the same month if a monthly average violation were to occur because of the lag time involved in shipping samples and receiving results from the laboratory. Therefore, ASPA believes only a daily maximum limitation should be considered in the permit.

[7] Table 1 requires annual bioassay testing, this is reasonable, however, other parts of the draft permit are inconsistent as discussed below (See comments [17] and [18] below).

[8] Table 1, footnote (7): Consider allowing for exclusions approved by EPA following consultation with EPA.

[9] Part I.E.2 references quarterly receiving water monitoring, but Part I.E.3 stipulates semi-annual monitoring. The current monitoring is semi-annual. Please clarify for consistency.

[10] Part I.E.2 indicates the establishment of two ZID stations (150 feet from the discharge). Since compliance is to be assessed at these new zone of initial dilution boundary stations, ASPA does not see any reason to continue monitoring at the more distant zone of mixing (ZOM) stations (Stations A1 and

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BI) and believes these should be discontinued and removed from the sampling requirements. In addition, ASPA does not believe the station directly over the diffuser (Station U) is necessary since it is not used for compliance for the discharge (it is within the ZID and compliance is assessed at the boundary of the ZID) or for evaluation of compliance with ASWQS and believes it should be removed. ASPA believes Station FF is a better reference station than Station 5 and agrees with inclusion. Further, Station 5 is an inappropriate reference station for the ASPA discharge and the role of a reference station is better served by Station FF. Therefore, ASPA proposes the following list of Stations for the Utulei STP:

Station	Description
Z1	ZID Station
Z2	ZID Station
C	Reference Station (inshore)
16	Farfield Station
18	Farfield Station
FF	Reference Station (offshore)

It is noted that the location of the ZID stations should be based on the distance defined by the modeling done for the reconfigured diffuser and proposed locations will be supplied to EPA following additional analysis by our consultant. Locations of the Farfield Stations should be consistent with the associated cannery stations and may require adjustment when the cannery permits are issued. It is understood that station locations will be determined and submitted to EPA for approval.

[11] Part I.E.3 requires semi-annual sampling during March and August. ASPA requests that the sampling periods be specified February-April and August-October. These extended sampling periods remain within the two distinct oceanographic seasons and allow flexibility in arranging sampling episodes in American Samoa, which can be challenging.

[12] Part I.E.3 requires sampling at three depths: 1-m, mid-depth, and 1 meter above the bottom. ASPA believes the sampling depths should be at 3 feet (1-meter), 60 feet (18 meters), and 120 feet (36.5 meters) below the surface for water greater than 120 feet deep (otherwise, for depths <120 feet, depths as stated in the draft permit). These are the depth of the current sampling as previously approved by EPA. The reasons for the proposed depths (chances of fouling and losing equipment at the near bottom depth notwithstanding) is that the effluent plume is buoyant freshwater and virtually never near the bottom and the best chance of seeing effects of the plume is at these depths. This is based on ~25 years of sampling in the Harbor as well as the dilution model predictions. Furthermore, the depths proposed by ASPA are consistent with the ASWQS Implementation Guidance Manual for assessing compliance.

[13] Part I.E.3 States specific methods for analysis of phosphorus, nitrogen, and ammonia. Although ASPA is generally in agreement with the methods, some flexibility should be allowed. Perhaps adding a table note to the 'Sample Type / Methods' column indicating 'or similar EPA approved methodology'. Further, with regards to Ammonia, it is unlikely, based on recent communications with ASEPA and the recent departure of the long-time laboratory director and current staffing availability that analysis of ammonia samples will be offered. Also, method 351.2 does allow for low-level TKN analysis, but locating laboratories that are willing to run such samples with procedures (without dilutions) for seawater at a low-level MDL is not always possible, based on recent experience. Therefore, this method may not be the best method under all circumstances.

[14] Part I.E.3 (top of page 12) indicates sampling at the outfall itself, which ASPA believes is unnecessary (see comment B [10]) as the establishment of a ZID means there are no permit defined parameters to be assessed for compliance at the outfall (within the ZID).

[15] Part I.E.3 requires receiving water sampling for ammonia in the afternoon. However, ASPA believes this is unnecessary, and unduly complicates the receiving water sampling schedules and effort. Diurnal water temperature variability in Pago Pago Harbor is insignificant except, perhaps, in the top few centimeters. It is unlikely the diurnal changes are even measurable below the top few centimeters and certainly not at the required sampling depths.

[16] Part I.E.3 requires:

A description of the sampling locations (e.g., distance from the outfall, seafloor depth, local currents etc.) shall be submitted to EPA for review and approval within 120 days of the permit effective date.

The requirement under Part E.1.2 appears to require this information be supplied with the first sampling report. Please clarify.

[17] Part II.C.1 indicates WET tests semi-annually. However, Table 1 in Part I indicates a requirement for annual WET tests. These are inconsistent.

[18] Part II.C.2 indicates WET tests semi-annually. However, Table 1 in Part I indicates a requirement for annual WET tests. These are inconsistent.

[19] Part II.C.2 (first paragraph) requires tests on three organisms. It appears that the MOA with the EPA laboratory includes only Urchin tests. Did EPA intend for ASPA to do the additional test for the other species listed independent of the EPA laboratory, or is this misstated in the draft permit? It is noted that the MOA requires shipping by FedEx or DHL and a 36-hour holding time. Experience indicates that it is impossible to meet a 36-hour holding time using DHL (Fed-Ex is not an option in American Samoa). Therefore, ASPA requires relief on the holding time requirement.

[20] Part II.C.4 states an IWC of 0.54 based on a dilution of 187:1. The IWC should be modified to use dilution for the reconfigured diffuser, which is higher than 187:1 as noted in item A[16] above.

[21] Part II.C.5.b has the same IWC as in item [20] above.

[22] Part II.C.5.f indicates resampling for toxicity shall resample within 14 days. This should be clarified to indicate "14 days following receipt of test results".

[23] Part II.C.5.h requires pH testing to determine the potential for artefactual toxicity. Will this be done by the EPA laboratory under the MOA?

[24] Part II.C.5.8.c indicates notification of exceedance within 14 days. This should be clarified to indicate "14 days following receipt of test results".

[25] Part II.F.1 refers to the requirement of submitting public educational materials as "shall be submitted with the quarterly water column monitoring report" . . ASPA believes this should reference the quarterly DMR reports since receiving water monitoring is semi-annual.