NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
FACT SHEET

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NPDES Permit No.:	AS0000027

PART I - STATUS OF PERMIT

Chicken of the Sea ("COS") Samoa Packing Company, Inc. (hereinafter, the "permittee") has applied for renewal of its National Pollutant Discharge Elimination System ("NPDES") permit pursuant to U.S. Environmental Protection Agency ("EPA") regulations set forth in Title 40, Code of Federal Regulations ("CFR"), Part 122.21, for the discharge of treated effluent from its tuna processing and canning facility to Pago Pago Harbor in American Samoa. These regulations require any person who discharges or proposes to discharge pollutants from a point source into waters of the U.S. to submit a complete application for a NPDES permit, including renewal of a permit. In accordance with 40 CFR 122.21(e), on July 21, 2005, the permittee submitted a complete application for renewal of its NPDES permit. The permittee is currently discharging to Pago Pago Harbor under the NPDES permit No. AS0000027, which became effective on January 23, 2001, and expired on January 23, 2006. Pursuant to 40 CFR 122.21, the terms of the previous permit were administratively extended until the issuance of a new permit.

PART II - DESCRIPTION OF FACILITY

The permittee owns and operates a tuna processing and canning facility (the "facility") that is located in the town of Atu'u on the Island of Tutuila in the Territory of American Samoa ("American Samoa;" Attachment A). The facility receives frozen whole tuna that are processed and canned as tuna fish for human consumption and pet food, and processes fish by-products into fish meal. In the re-application, the permittee indicated that the facility has an average daily production of 359 tons or 718,000 lbs of tuna processed from per day, with a daily maximum of 445 tons or 890,000 lbs per day or (February 2001 to March 2005). During the permit term, the permittee anticipates a maximum average daily production[1] of 450 tons or 900,000 lbs of tuna processed per day.

[1]The anticipated maximum average daily production is based on the total number of lbs of tuna processed over the month divided by the number of days of operation in the month. This is not design production.

The facility is composed of a main industrial facility and a wastewater treatment facility. The main industrial facility consists of a dock, storage freezers, several fish processing areas, cannery, and shipping area. The facility's wastewater treatment facility treats production wastewater and on-site storm water collected via its wastewater collection system.

PART III - DESCRIPTION OF DISCHARGE AND RECEIVING WATER

During facility operations, the permittee discharges to Pago Pago Harbor at the following discharge point:

Discharge Point	Discharge Point Description	Effluent Description	Discharge Point Latitude	Discharge Point Longitude
001	Joint Cannery Outfall	Industrial Wastewater	S 14°16.824'	W 170°40.133'

Discharge Point No. 001 is located approximately 1.5 miles seaward from the facility and began operation in February 1992. The discharge point, also known as the Joint Cannery Outfall or "JCO", is shared by both the permittee and the adjacent tuna processing facility operated by StarKist Samoa, Inc. (Attachment B). StarKist Samoa, Inc. is currently discharging under a separate NPDES permit (AS0000019). Discharge Point No. 001 terminates in a multiport diffuser at a depth of approximately 176 feet in the Outer Harbor of Pago Pago Harbor. The diffuser consists of four active and two inactive (intentionally blocked) ports.

Effluent discharges at Discharge Point No. 001 from the COS Samoa Packing Company, Inc. facility include storm water runoff and industrial wastewater from process areas that include cold storage, thawing, butchering, and pre-cooking, spray-cooling, press-scrap reduction, can washer and boiler, and wash down (Attachment C). All discharges from the facility (i.e., storm water and non-storm water) are regulated under the existing NPDES permit and are treated by a Dissolved Air Flotation ("DAF") unit and released to Pago Pago Harbor. Accumulated sludge from the DAF unit and high-strength waste from pre-cooking and scrap reduction areas are collected and disposed of offsite at a federally-permitted ocean disposal site (EPA Ocean Disposal Permit No. OD93-01 SPECIAL). Based on effluent monitoring data, the permittee reported a maximum daily maximum flow rate of 1.26 million gallons per day ("MGD;" January 2002), and a maximum monthly average flow of 0.88 MGD (January 2002). The facility's wastewater treatment's design flow is 1.40 MGD. Table 1 provides a summary of effluent limitations contained in the previous permit and representative monitoring data during the permit term.

In summary, effluent monitoring data collected from January 2002 to December 2006 showed elevated temperatures and concentrations of oil and grease, total nitrogen, total phosphorus, and copper. As shown in Table 1, the highest concentrations of these pollutants exceeded existing permit effluent limitations.

Table 1 – Summary of Previous Technology and Water Quality-based Effluent Limitations and Monitoring Data for Discharge Point No. 001 for the COS Samoa Packing Company, Inc. facility.

Parameter	Units	Previous Effluent Limitations		Monitoring Data (From Jan. 2002 to Dec. 2006)	
		Average Monthly	Maximum Daily	Highest Average Monthly	Highest Maximum Daily
Flow Rate	MGD[1]	--	1.40	0.88	1.26
Temperature	°F	90	95	94	120
Total Suspended Solids	lbs/day	2,376	5,976	1,695	2,948
Oil and Grease	lbs/day	605	1,512	2,452	2,846
Total Nitrogen	lbs/day	800	1,935	1,136	1,775
Total Phosphorus	lbs/day	208	271	155	313
Total Ammonia (as N)	mg/l	--	133	--	107
Copper	ug/l	66	108	234	468
Zinc	ug/l	1,545	1,770	1,080	1,200

[1]MGD means million gallons per day.

To protect the designated uses of surface waters of the U.S., American Samoa has adopted water quality standards for marine waters depending on the level of protection required. Pago Pago Harbor is a near-shore territorial water of American Samoa and is classified as an embayment that consists of an Inner, Middle and Outer Harbor, with fringing reefs throughout Middle and Outer Harbor areas. The Harbor is approximately three miles long with the entrance facing to the south and depths ranging from 60 to over 200 feet. American Samoa water quality standards ("ASWQS") state that "Pago Pago Harbor has been designated by the American Samoa Government to be developed into a transshipment center for the South Pacific. Recognizing its unique position as an embayment where water quality has been degraded from the natural condition, the [Environmental Quality Commission] has established a separate set of standards for Pago Pago Harbor." These standards identify the protected uses for Pago Pago Harbor and include the following:

- recreational and subsistence fishing;
- boat-launching ramps and designated mooring areas;
- subsistence food gathering, e.g. shellfish harvesting;
- aesthetic enjoyment;
- whole and limited body-contact recreation, e.g., swimming, snorkeling, and scuba diving;

- support and propagation of marine life;
- industrial water supply;
- mari-culture development;
- normal harbor activities, e.g., ship movements, docking, loading and unloading, marine railways and floating drydocks; and
- scientific investigations.

To protect these uses, ASWQS also establish prohibited uses that include but are not limited to the following:

- dumping or discharge of solids waste;
- animal pens over or within 50 feet of any shoreline;
- dredging and filling activities; except as approved by the Environmental Quality Commission ("EQC");
- toxic, hazardous and radioactive waste discharges; and
- discharge of oil sludge, oil refuse, fuel oil, or bilge water, or any other wastewater from any vessel or unpermitted shoreside facility.

PART IV - DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

The Clean Water Act ("CWA") requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States. The control of pollutants is established through effluent limitations and other requirements in NPDES permits. When determining effluent limitations, EPA must consider limitations based on the technology used to treat the pollutant(s) (i.e., technology-based effluent limits) and limitations that are protective of water quality standards (i.e., water quality-based effluent limits). Since storm water is mixed with process wastewater, technology-based effluent limitations and water quality-based effluent limits apply to the combined discharge.

A. Applicable Technology-based Effluent Limitations

In accordance with 40 CFR 408.140, technology-based effluent limitations are established for total suspended solids and oil and grease based on nationally promulgated effluent limitation guidelines for tuna processing facilities (40 FR 55781, Dec. 1, 1975). These effluent limitations guidelines ("ELGs") represent the degree of effluent reduction attainable by the application of the best practicable control technology currently available ("BPT") and best conventional pollutant control technology ("BCT") for the processing of tuna. Table 2 provides a summary of proposed technology-based effluent limitations for Discharge Point No. 001.

1. **Total Suspended Solids**. Pursuant to 40 CFR 408.142 and 408.47, effluent limitations are proposed for total suspended solids and are based on BPT. As provided in 40 CFR 408.147, BCT limitations shall be the same as the BPT limitations. The ELGs for BPT for suspended solids include a daily maximum of 8.3 lbs/1,000 lbs of seafood processed per day and a 30-day average of 3.3 lbs/1000 of

Table 2 - Summary of Technology-based Effluent Limitations for Discharge Point No. 001 for the COS Samoa Packing Company, Inc. facility.

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
Total Suspended Solids	lbs/day	2,970	7,470
Oil and Grease	lbs/day	756	1,890

seafood processed per day. Based on the permittee's anticipated maximum average daily production of 450 tons or 900,000 lbs of tuna processed per day during the permit term, EPA establishes a maximum daily effluent limitation of 7,470 lbs/day, and an average monthly effluent limitation of 2,970 lbs/day for total suspended solids.

2. **Oil and Grease**. Pursuant to 40 CFR 408.142 and 408.47, effluent limitations are proposed for oil and grease and are based on BPT. As provided in 40 CFR 408.147, BCT limitations shall be the same as the BPT limitations. The ELGs for BPT for oil and grease include a daily maximum of 2.1 lbs/1,000 lbs of seafood processed per day and a 30-day average of 0.84 lbs/1,000 lbs of seafood processed per day. Based on the permittee's anticipated maximum average daily production of 450 tons or 900,000 lbs of tuna processed per day during the permit term, EPA establishes a maximum daily effluent limitation of 1,890 lbs/day, and an average monthly effluent limitation of 756 lbs/day for oil and grease.

3. **Compliance with Federal Anti-Backsliding Regulations and American Samoa Antidegradation Policy for Proposed Technology-based Effluent Limitations.** ELGs provide the basis for technology-based effluent limits in the permit. Section 402(o) of the CWA prohibits the renewal or reissuance of an existing NPDES permit that contains technology-based effluent limits that are less stringent than those established in the previous permit, except as provided in 40 CFR 122.44(l). This is referred to as "anti-backsliding." The permit establishes less stringent mass-based technology-based effluent limitations for total suspended solids and oil and grease based on an estimated increase in the daily production level over the term of the permit (ELGs for seafood processors are production-based). 40 CFR 122.44(l)(1) allows for backsliding to technology-based effluent limitations in the permit since circumstances on which the previous permit were based, i.e., a lower production of processed tuna than projected in the permit term, have materially and substantially changed since the time the previous permit was issued and would have constituted cause for a permit modification under 40 CFR 122.62(a).

   Furthermore, as allowed by 40 CFR 122.45(b)(ii)(A)(1), EPA may include a condition establishing alternate permit limitations based on anticipated increases in production levels (not to exceed maximum production capability). EPA believes that the projected maximum production capability (not reflected as design production) will be a reasonable measure of the facility's actual production rate during the permit term.

The establishment of less stringent technology-based effluent limitations is subject to the anti-degradation requirements set forth in EPA's antidegradation policy at 40 CFR 131.12 and American Samoa's antidegradation policy in section 24.0202 of ASWQS. These regulations require that existing water uses and the level of water quality necessary to protect the existing uses be maintained. ASWQS antidegradation's policy also states that "waters whose existing quality exceeds the level necessary to support existing uses shall not be degraded unless and until the it is found that allowing lower water quality is necessary to accommodate important economic or social needs of the Territory. In no event, however, may water quality be degraded to an extent that it would interfere with or become injurious to existing uses." EPA has determined that the less stringent technology-based effluent limitations, resulting in an increase in mass-loadings of total suspended solids and oil and grease into Pago Pago Harbor, will not violate water quality standards and federal and territorial antidegradation provisions based on the following reasons:

- Receiving water monitoring data show that existing mass-loadings of oil and grease have not resulted in a violation of the narrative ASWQS which states that "the discharge shall be substantially free from visible floating materials, grease, oil, scum, foam, and other floating material attributable to sewage, industrial wastes, or other activities of man";

- Receiving water monitoring data show that existing mass-loadings of total suspended solids have not resulted in a violation of the narrative ASWQS which states that "the discharge shall be substantially free from materials attributable to sewage, industrial wastes, or other activities of man that will produce visible turbidity or settle to form objectionable deposits";

- The outer portion of Pago Pago Harbor is not listed as an impaired waterbody for total suspended solids, turbidity or oil and grease under section 303(d) of the CWA; and

- Section 24.0205(e)(1) of ASWQS describes Pago Pago Harbor as an embayment where water quality has been degraded from the natural condition; EPA believes that a permitted increase in mass loadings of oil and grease and total suspended solids will not cause additional degradation to the level of water quality in Pago Pago Harbor that would interfere with or become injurious to the protected uses of the harbor, as the proposed effluent limitations for oil and grease and total suspended should result in an overall reduction of actual mass loadings.

B. Water Quality-Based Effluent Limitations ("WQBELs")

Pursuant to 40 CFR 122.44(d)(1), water quality-based effluent limitations, or WQBELS, are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard. Applicable water quality standards are established in the 2005 Revision of ASWQS (Administrative Rule No. 006-2005), which incorporated section 304(a) federal water quality criteria. Revisions to these standards were adopted by the

American Samoa Environmental Protection Agency ("ASEPA") on January 18, 2006. These standards were subsequently approved by EPA.

1. **Determining the Need for WQBELs**. When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria within State (or Territory) water quality standards, the permitting authority uses procedures which account for existing controls on point and nonpoint sources of pollution, and the variability of the pollutant or parameter in the effluent, the sensitivity of species to toxicity testing, and, where appropriate, dilution of the effluent in the receiving water. EPA conducted a Reasonable Potential Analysis ("RPA") for each monitored pollutant or parameter in the effluent, except pH. The RPA was based on statistical procedures outlined in EPA's *Technical Support Document for Water Quality-based Toxics Control,* Second Printing, herein after referred to as EPA's TSD (EPA 1991). These statistical procedures result in the calculation of the potential maximum effluent concentration based on monitoring data provided by the permittee. Except for whole effluent toxicity, no flow-weighted composite effluent data representing the combined discharge from the two canneries were used, since each cannery is independently regulated by a NPDES permit. Due to the limited monitoring data available and the high degree of effluent variability, potential maximum effluent concentrations were estimated using a coefficient of variation of 0.6 and the 99 percent confidence interval of the 99th percentile based on an assumed lognormal distribution of daily effluent values (sections 3.3.2 and 5.5.2 of EPA's TSD).

   Section 24.0207 of ASWQS provide for the application of alternate standards within an area surrounding the discharge point, or zone of mixing, when it is not feasible to achieve an effluent quality that meets water quality standards at the point of discharge (i.e., end of the pipe). Although American Samoa EQC has approved the use of dilution credits for specific pollutants (see next section) in this discharge, for the purposes of RPA, dilution credits or mixing zones were not considered in the RPA so that EPA can better assess the discharge for potential pollutant excursions above water quality standards. EPA calculated the potential maximum observed effluent concentration for each pollutant, based on the data provided by the permittee, using the following steady-state mass balance equation:

   $$MEC = C_e \times \textit{reasonable potential multiplier factor.}$$

   Where, "C_e" is the reported maximum effluent value (in mg/l, ug/l, or TU) that is adjusted for uncertainty, using the statistical procedure previously discussed, to determine the projected maximum effluent concentration or "MEC". The projected MEC is then compared directly to the applicable water quality criterion to determine reasonable potential. Table 3 provides a detailed RPA for each pollutant or parameter that causes, has the reasonable potential to cause, or contributes to an excursion above ASWQS.

   a. **Total Phosphorus**. Section 24.0205(m) of ASWQS provide that total phosphorus shall not exceed 0.0300 mg/l (as P) in Pago Pago Harbor. To

determine reasonable potential, EPA calculated the projected MEC using the maximum concentration of total phosphorus observed in the effluent (29.77 mg/l; January 2002). Using the statistical procedures outlined in EPA's TSD, EPA determined a projected MEC of 29.77 mg/l. Since the projected MEC is greater than the water quality criterion, EPA has determined that the discharge has a reasonable potential to cause, or contributes to an exceedance of ASWQS for total phosphorus.

b. **Total Nitrogen.** Section 24.0205(m) of ASWQS provide that total nitrogen shall not exceed 0.200 mg/l (as N) in Pago Pago Harbor. To determine reasonable potential, EPA calculated the projected MEC using the maximum concentration 168.81 mg/l (January 2002) of total nitrogen observed in the effluent. Using the statistical procedures outlined in EPA's TSD, EPA determined a projected receiving water concentration of 168.81 mg/l. Since the projected MEC is greater than the water quality criterion, EPA has determined that the discharge has a reasonable potential to cause, or contributes to an exceedance of ASWQS for total nitrogen.

c. **Total Ammonia**. ASWQS provide ambient water quality criteria for total ammonia for the protection of aquatic life in saltwater environments. Ammonia in aquatic environments exists in two forms, un-ionized ammonia (NH_3) and the ammonium ion (NH_4^+), of which the un-ionized form is the most toxic because it can easily diffuse across epithelial membranes of aquatic organisms. The degree of ammonia toxicity in saltwater environments is primarily a function of pH and temperature. The permittee discharges to Pago Pago Harbor, which generally has a pH of 8.2 and temperature of 28 degrees Celsius (ASEPA 2007). Using Appendix A of ASWQS, EPA has determined a CMC (acute) and CCC (chronic) of 2.2 and 0.33 mg/l[2], respectively, as the applicable water quality criteria for total ammonia (as N), for the protection of aquatic life in Pago Pago Harbor. EPA assessed RP using the maximum concentration observed in the effluent (107 mg/l reported in January 2002). In accordance with EPA's TSD, EPA calculated a MEC of 107 mg/l of total ammonia. Since the MEC is greater than the acute or chronic criterion for total ammonia, EPA has determined that there is reasonable potential for total ammonia to cause, or contributes to an exceedance of ASWQS.

d. **Copper**. Based on effluent monitoring data, copper has been detected in the effluent due to routine cannery operations. ASWQS provide acute and chronic criteria for copper for the protection of aquatic life. The CMC and CCC for copper is 4.8 and 3.1 ug/l, respectively. To determine reasonable potential, EPA calculated the projected MEC using the maximum concentration observed in the effluent (468 ug/l reported in October 2003). As a result, EPA has determined the projected MEC of 468 ug/l. Since the MEC is greater than the CMC and CCC,

[2]CCC and CMC for total ammonia in mg/l of nitrogen; the CCC and CMC of 2.7 and 0.404 mg/l of NH_3, respectively, in Appendix A of ASWQS were converted to mg/liter of nitrogen by multiplying the criterion by 0.822.

Table 3 – Summary of Reasonable Potential Analysis for Discharge Point No. 001 for the COS Samoa Packing Company, Inc. facility.

Parameter	Units	Highest Maximum Daily Concentration	*n*	RP Multiplier[1]	Projected MEC	Water Quality Criterion	Exceeds Standard?
Total Phosphorus	mg/l	29.77	44	1.0	29.77	0.0300	Y
Total Nitrogen	mg/l	168.81	44	1.0	168.81	0.200	Y
Total Ammonia (as N) - Acute	mg/l	107	44	1.0	107	2.2	Y
- Chronic	mg/l	107	44	1.0	107	0.33	Y
Copper - Acute	ug/l	468	44	1.0	468	4.8	Y
- Chronic	ug/l	468	44	1.0	468	3.1	Y
Zinc - Acute	ug/l	1,200	44	1.0	1,200	90	Y
- Chronic	ug/l	1,200	44	1.0	1,200	81	Y
Total Mercury	ug/l	0.23	5	4.2	1.15	0.05	Y
Whole Effluent Toxicity	TU_a	9.78	11	2.9	28.36	0.3	Y

[1]RP multiplier based on the coefficient of variation of 0.6 and the 99 percent confidence interval of the 99th percentile for $n < 44$. For $n = 44$, the RP multiplier is based on a 95 percent confidence level of the 95th percentile as described in Table F6-1 of Procedure 6 in Appendix F to Part 132- Great Lakes Water Quality Initiative Implementation Procedures.

EPA has determined that the discharge has a reasonable potential to cause, or contributes to an exceedance of ASWQS for copper.

e. **Zinc**. Based on effluent monitoring data, zinc has been detected in the effluent due to routine cannery operations. ASWQS provide acute and chronic criteria for zinc for the protection of aquatic life. The CMC and CCC for zinc is 90 and 81 ug/l, respectively. To determine reasonable potential, EPA calculated the projected MEC using the maximum concentration of zinc observed in the effluent (1,200 ug/l reported in July 2006). As a result, EPA estimated the projected MEC of 1,200 ug/l. Thus, EPA has determined that the discharge has a reasonable potential to cause, or contributes to an exceedance of ASWQS for zinc.

f. **Mercury**. Based on effluent monitoring data, mercury has been detected in the effluent. Section 24.0206(j) of ASWQS provide that the water column concentration of mercury shall not exceed 0.05 ug/l. In accordance with reasonable potential procedures outlined in EPA's TSD, the projected MEC was estimated using the maximum concentration of mercury observed in the effluent (0.23 ug/l; September 2004). As a result, EPA estimated the projected MEC of 1.15 ug/l. Since the projected MEC is greater than the water quality criterion for mercury, EPA has determined that the discharge has a reasonable potential to cause, or contributes to an exceedance of ASWQS for mercury.

g. **Whole Effluent Toxicity**. Pursuant to 40 CFR 122.2, whole effluent toxicity is defined as the aggregate toxic effect of an effluent measured directly by a toxicity test. There are two categories of whole effluent toxicity tests: acute and chronic. An acute toxicity test is conducted over a shorter time period and measures morality. A chronic toxicity test measures sublethal effects (e.g., impacts on reproduction and/or growth), in addition to mortality. ASWQS provide narrative water quality criteria that all territorial waters be "...substantially free from substances and conditions or combinations thereof attributable to sewage, industrial wastes, or other activities of man which may be toxic to humans, other animals, plants, and aquatic life or produce undesirable aquatic life" (Section 24.0206(d) of ASWQS). This is often referred to as "no toxics in toxic amounts." The exiting permit requires acute toxicity testing of the combined cannery effluent.

In accordance with 40 CFR 122.44(d)(i) and EPA's TSD, EPA assessed the need for effluent limits for toxicity based on acute toxicity data (2001-2006) to determine reasonable potential for the combined facility effluents to cause an excursion above the acute toxicity criterion. The existing permit did not establish a mixing zone for acute toxicity. Therefore, as specified in section 2.3.3 of EPA's TSD, the CMC is 0.3 TU_a ($TU_a = 100 \div LC_{50}$) for acute protection of aquatic life and was applied at the end of the pipe for the purposes of RPA. Pursuant to the existing permit, acute toxicity tests were conducted using combined, 24-hour flow-weighted, composite effluent samples from the permittee and the StarKist Samoa, Inc. facility.

From March 2001 to March 2006, eleven acute toxicity tests were conducted jointly by the permittee and StarKist Samoa, Inc. based on flow-weighted samples collected from each facility and combined to assess joint toxicity. During this period, the maximum TU_a was observed in August 2002 and was reported as 9.78 TU_a. TU_a's ranged from less than 2.0 TU_a to 9.78 TU_a. EPA defines toxic unit acute, or TU_a, as the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end of the acute exposure period (i.e., $TU_a = 100 \div LC_{50}$). The most toxic LC_{50} was reported as 10.23 percent effluent. The existing permit did not include any toxicity trigger values for assessing when the combined effluents were acutely toxic; however, based on the CMC of 0.3 TU_a, at least eight of the eleven tests, or at least 73 percent, exhibited acute toxicity values higher than the applicable water quality criterion of 0.3 TU_a. In accordance with the statistical procedures outlined in EPA's TSD, the projected MEC was estimated using the maximum value for acute toxicity observed in the joint cannery effluent (9.78 TU_a). As a result, EPA has determined the projected MEC of 28.36 TU_a. Since the projected MEC is greater than the acute toxicity criterion of 0.3 TU_a, EPA has determined that the combined discharges have a reasonable potential to cause, or contributed to an excursion of the narrative water quality criterion for acute toxicity.

On October 31, 2007, the permittee submitted information to EPA that concluded total ammonia as the primary source of acute toxicity. When it is determined that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above the narrative water quality standard for acute toxicity, federal regulations require that the permit establish effluent limitations to control for acute toxicity. However, as allowed by 40 CFR 122.44(d)(1)(v), limitations on whole effluent toxicity are not necessary where it can be demonstrated that chemical-specific limits for the effluent are sufficient to attain and maintain applicable numeric and narrative water quality standards. EPA has reviewed the information provided by the permittee and believes that total ammonia, in addition to zinc, is the causative pollutant of acute toxicity. Therefore, as allowed by 40 CFR 122.44(d)(l)(iii) and (v), because the source of primary toxicity has been identified, the draft permit contains WQBELs for total ammonia and zinc that are adequate to control for acute toxicity. There are no requirements for whole effluent toxicity for acute toxicity in the permit.

At this time, there is inadequate information to assess whether the discharge of the combined cannery effluent has a reasonable potential to cause, or contribute to an excursion above the narrative water quality criterion for chronic toxicity. The permit establishes as special study to assess chronic toxicity of the combined effluents (see **PART VIII - SPECIAL CONDITIONS**).

2. **Application of Mixing Zones and Dilution Credits**. The CWA directs States (and Territories) to adopt water quality standards which include the designation of uses and criteria to protect those uses. Pursuant to 40 CFR 131.13, States (and Territories) are also authorized to adopt general policies, such as mixing zones, to implement

State water quality standards. Section 24.0207 of ASWQS allow the use of mixing zones for dischargers that would otherwise exceed water quality criteria for aquatic life, human health, and other water quality criteria at the point of discharge (i.e., end of the pipe). Zones of mixing are granted by the American Samoa EQC upon the finding that no other practicable means of waste treatment and disposal are available. ASWQS define a zone of mixing as a defined portion of the receiving water body around a point source within which specific modifications of applicable water quality standards are permitted by American Samoa EQC (section 24.0201 of ASWQS). Further, as specified in section 24.0207(a), a zone of mixing shall be limited to the smallest area possible as not to interfere with the designated uses.

As regulatory constructs, mixing zones are areas generally where an effluent discharge undergoes initial dilution, but can sometimes be extended to cover secondary mixing in the ambient water body. Initial dilution is the process that results in rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge. For a submerged buoyant discharge, characteristic of most industrial wastes discharged from submarine discharge points, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution, in this case, is complete when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

ASWQS have criteria for determining whether a zone of mixing can be granted for point source discharges. These include, but are not limited to, the following:

- For toxic pollutants, the size of any zone of mixing shall not exceed the dimensions and volume of the zone of initial dilution ("ZID") and in no event shall the concentration of a toxic pollutant exceed chronic toxic levels at the boundary of the zone of initial dilution (section 24.0207(b)(6) of ASWQS).[3] Except for limited portions of the zone of initial dilution, acute toxic standards shall be achieved within the zone of initial dilution;

- The narrative standards set forth in section 24.0206(a-d) shall be met at the boundary of the zone of initial dilution. (An example of a narrative standard is that all territorial waters, including open coastal waters, shall be substantially free from substances and conditions or combinations therefore attributable to sewage, industrial wastes, or other activities of man which may be toxic to humans, other animals, plants and aquatic life or produce undesirable aquatic life. This narrative statement is often referred to as "no toxics in toxic amounts."); and

- Alternate standards may be established within a zone of mixing for those standards set forth at section 24.0206(h), (j), (l), (m), (o), and (p); provided that the standards shall be met at the boundary of the zone of mixing. (Section 24.0206(m) refers to ambient water quality criteria for Pago Pago Harbor, which

[3]Pursuant to section 24.0201 of ASWQS, zone of initial dilution is defined as the area of a plume where dilution is achieved due to the combined effects of momentum and buoyancy of the effluent discharged from an orifice.

applies to the proposed discharge.) This area can be larger than the zone of initial dilution.

The previous permit contained mixing zones for total nitrogen, total phosphorus, total ammonia, copper, and zinc. On April 15, 2007, the permittee applied to the American Samoa EQC for a renewal of mixing zones for total nitrogen, total phosphorus, total ammonia, copper, and zinc for Discharge Point No. 001. A subsequent application with a more formal analysis was submitted on June 28, 2007. In the mixing zone re-application, the permittee also requested a new mixing zone for mercury. In the re-application, the permittee indicated that there have been no changes in diffuser configuration; and that the initial seawater to effluent dilution ratio of 313:1 and farfield transport simulations that were re-modeled on critical conditions in 2001 for the previous permit currently applies. In 2001, the critical initial dilution was re-modeled based on an increase in combined total flow from both canneries from 3.62 to 4.3 MGD. The change resulted in a decrease in a critical initial dilution from 337:1 to 313:1 (gdc 2007). There is no increase in the wastewater flow proposed by the permittee or adjacent StarKist Samoa, Inc. facility to Discharge Point No. 001 that would alter the critical initial dilution factor during the new permit period. On July 12, 2007, the American Samoa EQC approved the permittee's mixing zone request in its entirety. However, on October 28, 2007, the permittee submitted a revised mixing zone request for a larger zone of mixing for total ammonia. On December 18, 2008, the American Samoa EQC approved the permittee's revised mixing zone request for total ammonia.

Based on ASEPA's mixing zone approval for the draft permit, EPA re-assessed the availability of dilution in the receiving water for nutrients, total ammonia, copper, zinc, and mercury. The assessment was based on recent effluent and ambient water quality data submitted by the permittee pursuant to requirements of the existing permit. For the nutrients, total phosphorus and total nitrogen, the median concentration in the ambient water was used to determine the availability of dilution since nutrients are not directly toxic to aquatic life but may cause significant impacts, i.e., phytoplankton blooms, in ambient waters due to the overall nutrient enrichment. For toxic pollutants, such as total ammonia, copper, zinc, and mercury, the maximum concentration in the effluent and receiving water was evaluated independently to ensure the protection of aquatic life and human health.

a. **Evaluation of Available Dilution for Total Phosphorus and Total Nitrogen.** The request for a mixing zone for the nutrients, total phosphorus and total nitrogen, is based on elevated concentrations observed in the effluent. As part of the permit renewal, EPA assessed the available dilution for total nitrogen and total phosphorus in the receiving water. During January 2002 to December 2006, daily maximum concentrations of total nitrogen in the effluent ranged from to 72.10 to 168.81 mg/l, with the highest concentration reported in January 2002. During the same period, daily maximum concentrations of total phosphorus in the effluent ranged from 12.31 to 29.77 mg/l, with the highest concentration reported also in January 2002. Without dilution credits or a mixing zone for nutrients, the

discharge would not be able to meet ASWQS of 0.200 or 0.030 mg/l for total nitrogen or total phosphorus, respectively.

To assess assimilative capacity for nutrients in the receiving water, total nitrogen and total phosphorus concentrations collected from March 2001 to August 2005 were evaluated in the water column at the boundary of the ZID (Stations 8 and 8A), boundary of the existing mixing zone for nutrients (Stations 15 and 16), and at the reference site (Station 5). For total nitrogen, review of receiving water monitoring data show concentrations at the boundary of the ZID ranging from 0.035 to 1.264 mg/l, with a median of 0.112 mg/l. At the boundary of the mixing zone for total nitrogen, concentrations ranged from 0.035 to 0.517 mg/l, with a median of 0.11 mg/l. At the reference site, total nitrogen concentrations ranged from 0.035 to 1.11 mg/l, with a median of 0.118 mg/l. For total phosphorus, receiving water monitoring data show concentrations at the boundary of the ZID ranging from at or below the detection limit of 0.005 to 1.1 mg/l, with a median of 0.022 mg/l. Concentrations at the boundary of the mixing zone for total phosphorus ranged from at or below the detection limit to 0.043 mg/l, with a median of 0.02 mg/l. At the reference site, total phosphorus concentrations also ranged at or below the detection limit to 0.071 mg/l, with a median of 0.02 mg/l.

Based on the median concentrations of total nitrogen and total phosphorus in the water column at the boundary of the ZID and nutrient mixing zone, and at the reference site, it appears that there is assimilative capacity in the receiving water for nutrients since median receiving water concentrations are below the water quality criteria.[4] It is important to note that although single concentrations of total nitrogen and total phosphorus were observed above their respective water quality criterion at various depths throughout the water column during the four-year monitoring period, there is no record of algal blooms or any impact to aquatic life due to these elevated concentrations. Furthermore, during the same monitoring period, there was no pattern in the concentrations between the levels of chlorophyll-a, an indicator of algal growth, and elevated concentrations of nutrients. Therefore, it appears that there is assimilative capacity in the receiving water for nutrients.

b. **Evaluation of Available Dilution for Total Ammonia (as N).** The request for a mixing zone for total ammonia is based on elevated concentrations observed in the effluent. Based on effluent monitoring data from January 2002 to December 2006, daily maximum total ammonia concentrations ranged from to 25.5 to 107.0 mg/l. Without dilution credits or a mixing zone for total ammonia, the discharge would not be able to meet ASWQS at the end of the pipe based on the CMC of 2.2 and CCC of 0.33 mg/l of ammonia as nitrogen.[5] Based on receiving water

[4]Assimilative capacity for nutrients was based on the median concentration since ASEPA determines compliance with ambient water quality standards provided in section 24.0210 of ASWQS utilizing the median only.
[5]CMC for ammonia-N are derived from Appendix A of ASWQS and correspond to a pH of 8.2 and temperature of 28 degrees Celsius based on general observations and data collected from ASEPA.

monitoring data (March 2001 to August 2005), concentrations of total ammonia at the reference site ranged from at or below the detection limit of 0.004 to 0.11 mg/l, with a median of 0.005 mg/l. At the boundary of the ZID, total ammonia concentrations ranged from 0.004 to 0.13 mg/, also with a median of 0.005 mg/l. Since the receiving water concentrations of total ammonia are less than the water quality criteria, there is assimilative capacity in the receiving water for total ammonia.

c. **Evaluation of Available Dilution for Copper.** The request for a mixing zone for copper is based on elevated concentrations observed in the effluent due to routine cannery operations. During January 2002 to December 2006, daily maximum copper concentrations in the effluent ranged from less than the detection limit of 10 ug/l to 468 ug/l. Without dilution credits or a mixing zone for copper, the discharge would not be able to meet the CMC or CCC at the end-of-pipe for copper, which is 4.8 and 3.1 ug/l, respectively.[6] To assess assimilative capacity for copper in the receiving water, copper concentrations were evaluated in the water column at the boundary of the ZID and at the reference site. Receiving water collected from March 2001 to February 2007 at the boundary of the ZID showed concentrations of copper ranging from 0.10 to 1.63 ug/l. At the reference site, copper concentrations ranged from 0.12 to 0.88 ug/l. Since the maximum concentration of copper in the receiving water is below the water quality criteria, there is assimilative capacity in the receiving water for copper.

d. **Evaluation of Available Dilution for Zinc.** Similar to copper, the request for a mixing zone for zinc is based on elevated concentrations of zinc observed in the effluent due to routine cannery operations. During January 2002 to December 2006, daily maximum zinc concentrations in the effluent ranged from 100 to 1,200 ug/l. Without dilution credits or a mixing zone for zinc, the discharge would not be able to meet the CMC or CCC for zinc, which is 90 and 81 ug/l, respectively. Receiving water collected from March 2001 to February 2007 at the boundary of the ZID showed zinc concentrations of 0.4 to19.3 ug/l. At the reference station, zinc concentrations ranged from 0.5 to 10.8 ug/l. Since the maximum receiving water concentration of zinc is below the water quality criteria, there is assimilative capacity in the receiving water for zinc.

e. **Evaluation of Available Dilution for Mercury.** The request for a mixing zone for mercury is based on elevated concentrations of mercury observed in the effluent. From September 2004 through February 2007, five samples of effluent were analyzed for total mercury. During this period, mercury concentrations ranged from 0.072 to 0.23 ug/l. Without dilution credits or a mixing zone for mercury, the discharge would not be able to meet the mercury water quality criterion of 0.05 ug/l at the end of the pipe. To assess assimilative capacity for mercury in the receiving water, mercury concentrations were evaluated in the water column near the outfall (at the boundary of the ZID) and at the reference

[6]This criterion is based on the CMC for the protection of aquatic life from acute toxicity in saltwater environments.

site. Receiving water monitoring data collected in October 2001 and from February 2006 to February 2007 at the boundary of the ZID showed mercury concentrations ranging from 0.0007 to 0.0193 ug/l. Receiving water monitoring data collected from March 2001 to February 2007 at the reference site showed mercury concentrations ranging from 0.0010 to 0.0466 ug/l. Since receiving water concentrations at the boundary of the ZID and reference site are lower than the ASWQS, it appears that there is an assimilative capacity for mercury in the water column of the receiving water.

3. **Establishing WQBELs**. In accordance with 40 CFR 122.44(d), the final permit establishes water quality-based effluent limits ("WQBELS") for several pollutants or parameters since EPA has determined, based on effluent data provided by the permittee and the nature of the discharge, that the effluent discharged from the facility causes, has the reasonable potential to cause, or contributes to an exceedance of ASWQS. EPA has determined that effluent from the COS Samoa Packing Company, Inc. facility, when discharged through Discharge Point No. 001, demonstrates reasonable potential to exceed water quality standards for total nitrogen, total phosphorus, total ammonia, copper, zinc, and mercury. Therefore, in accordance with federal regulations, WQBELs for these pollutants are established using the median background concentration determined at the reference site, and with consideration of dilution credits or a mixing zone (as authorized by American Samoa EQC).

   The existing permit establishes WQBELs for toxic pollutants using a permit limit derivation procedure which directly implements the acute waste load allocation ("WLA") as a MDL and the chronic WLA as an AML. EPA discourages the use of this approach since effluent variability has not been taken into account and that the possibility exists for the exceedance of the WLA due to effluent variability (section 5.4.2 of EPA's TSD). Rather, EPA recommends the use of a permit limit derivation procedure where the acute, chronic, and human health WLAs are statistically translated into an MDL and AML based on the more stringent acute, chronic, or human health WLA (section 5.4.1 of EPA's TSD). As described in section 5.2.2 of EPA's TSD, WQBELs for NPDES dischargers are established based on the need to maintain effluent quality for a pollutant at a level that will comply with water quality standards even during critical conditions in the receiving water. This level is determined by the WLA for the particular pollutant. The WLA, in turn, dictates the necessary treatment performance level for the pollutant through the calculation of a long-term average ("LTA") to ensure that the WLA is met under critical conditions over a long-term period.

Table 4 - Comparison of Dilution Factors in Previous and Final Permit used to establish Water Quality-based Effluent Limitations for Discharge Point No. 001 or Joint Cannery Outfall for the COS Samoa Packing Company, Inc. facility.

Parameter	**Dilution Factors in Previous Permit**	**Dilution Factors in Final Permit**
Total Ammonia (as N)	313:1	313:1
Copper	25:1	25:1
Zinc	25:1	25:1
Mercury	---	40:1

In the draft permit, calculations of permit limitations are based on statistical procedures outlined in section 5.4.1 and 5.4.4 of EPA's TSD and are expressed as a Maximum Daily Limitation ("MDL") or Average Monthly Limitation ("AML"). Where appropriate, mass-based MDLs and AMLs were calculated based on the waste water treatment's design flow of 2.9 MGD. Attachment D provides an example of the permit limit derivation procedure for this discharge. Table 4 provides a summary of dilution factors applied in the previous permit and those approved by American Samoa EQC for application in the final permit. However, there are no dilution factors that describe the mixing zone total nitrogen and total phosphorus. Rather, an alternative approach was used in the previous permit to determine the mixing zone for nutrients and the same approach was applied in the permit with a special condition for the permittee to re-evaluate nutrient loading in Pago Pago Harbor. In addition, for all reissued permits, section 402(o) of the CWA and 40 CFR 122.44(l) require WQBELs and other permit conditions to be as stringent as the previous permit unless specific exceptions apply. The permit contains no specific exceptions for WQBELs. Table 9 provides a summary of all WQBELs, monitoring frequency, and sample types for each pollutant or parameter in the permit that was shown reasonable potential to cause, or contribute to an exceedance of ASWQS.

a. **pH.** As provided in 40 CFR 408.142, ELGs for tuna processing provide that the pH be within the range 6.0 to 9.0 standard units. Section 24.0205(m) of ASWQS provide that the pH for Pago Pago Harbor shall be 6.5 to 8.6 and be within 0.2 pH units of that which would occur naturally. In accordance with 40 CFR 122.44(d), the more stringent limitation applies. Therefore, the WQBEL for pH is the range of 6.5 to 8.6 standard units.

b. **Temperature**. Section 24.0206(e) of ASWQS provide that the temperature for all territorial waters shall not deviate more than 1.5 degrees Fahrenheit from conditions which would occur naturally and shall not fluctuate more than 1 degree Fahrenheit on an hourly basis or exceed 85 degrees Fahrenheit due to the influence of natural causes. The existing permit established a MDL and AML of 95 and 90 degrees Fahrenheit, respectively. Therefore, the WQBEL for temperature is 95 degrees Fahrenheit for the MDL and 90 degrees Fahrenheit for the AML.

c. **Total Phosphorus**. The previous permit established a zone of mixing larger than the ZID for total phosphorus as allowed by section 24.0206((b)(8) of ASWQS. The previous permit incorporated a zone of mixing defined as either a boundary in a circle with a radius of 1,300 feet from the center of the diffuser, or the 30-foot depth contour, whichever is closer to the diffuser (Attachment E). The diffuser and zone of mixing location and geometry for total phosphorus were designed to meet the assimilative capacity of nutrients in Pago Pago Harbor. Historic mass-loading modeling conducted by the permittee in the early 1990s determined that the mixing zone for nutrients would be able to assimilate 12,000 lbs/month of total phosphorus from the canneries discharges. Model estimates concluded that there was excess capacity for total phosphorus and, therefore, the mixing zone is sized to account for future increases in cannery production and nutrient loading. On July 12, 2007, the American Samoa EQC re-approved the permittee's mixing zone request based on the historic mass loading results for total phosphorus. To date, there has been no estimate of dilution at the edge of the currently established nutrient zone of mixing to adequately determine a waste load allocation for the COS Samoa Packing Company, Inc. effluent based on procedures outlined in section 5 of EPA's TSD. Rather, based on historic mass loading modeling results, EPA re-established the mass loading effluent limits of 271 and 208 lbs/day, as the MDL and AML, respectively.

d. **Total Nitrogen**. Similar to total phosphorus, the previous permit established the same zone of mixing for total nitrogen. Historic mass-loading modeling conducted by the permittee in the early 1990s determined that a mixing zone boundary set at 1,300 feet from the diffuser, or the 30-foot depth contour, whichever is closer, would be able to assimilate 60,000 lbs/month of total nitrogen from the canneries discharges. On July 12, 2007, the American Samoa EQC approved the permittee's mixing zone request to re-establish the existing mixing zone for total nitrogen that was based on a mass loading model and assimilative capacity of the Pago Pago Harbor. Based on historic mass loading modeling results, EPA re-established the mass loading effluent limits 1,935 and 800 lbs/day, as the MDL and AML, respectively.

e. **Total Ammonia**. Appendix A of ASWQS provides ammonia toxicity standards for marine waters, such as Pago Pago Harbor. Based on the aquatic life criteria for acute and chronic ammonia toxicity in saltwater listed in Appendix A of ASWQS and using the general ambient pH of 8.2 and temperature of 28 degrees Celsius within Pago Pago Harbor, EPA calculated a CMC and CCC of 2.2 and 0.33 mg/l of ammonia as nitrogen, respectively. On December 18, 2007, the American Samoa EQC approved the permittee's revised mixing zone request of 313:1 dilution for total ammonia. A summary of WQBEL calculations and final effluent limitations for total ammonia are provided in Table 5. With consideration of dilution, EPA proposes a MDL and AML for total ammonia of 167.26 and 83.36 mg/l, respectively, for the protection of the beneficial use of saltwater aquatic life. In addition, EPA proposes a mass-based MDL and AML of 1,952.93 and 973.31 lbs/day, respectively.

Table 5 - WQBEL Calculations for Total Ammonia.

	Acute	Chronic
Aquatic Life Criteria, mg/l nitrogen	2.2	0.33
Dilution Credit Authorized by ASEQC	313:1	313:1
Background Concentration, mg/l[1]	0.005	0.005
WLA, mg/l	689.23	102.05
WLA Multiplier (99th%)	0.321	0.527
LTA, mg/l	221.24	53.78
LTA_{MDL} Multiplier (99th%)	--	3.11
MDL, mg/l	--	167.26
MDL, lbs/day	--	1,952.93
LTA_{AML} Multiplier (95th%)[2]	--	1.55
AML, mg/l	--	83.36
AML, lbs/day	--	973.31

[1]Background concentration based on the median of the combined spatial and temporal measurements taken at the reference site from March 2001 to August 2005.
[2]LTA multiplier based on sampling frequency of four times per month per section 5.5.3 of EPA's TSD.

f. **Copper**. Section 24.0206(g)(3) of ASWQS state that for all embayments, such as Pago Pago Harbor, 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 EPA 2002b or the most recent version, except as may be allowed by a zone of mixing as specified in section 24.0207. The more stringent of the criteria for copper is the aquatic life criteria. On July 12, 2007, the American Samoa EQC approved the permittee's mixing zone request of 25:1 dilution for copper. A summary of WQBEL calculations and final effluent limitations for copper are provided in Table 6. With consideration of dilution, EPA establishes a MDL and AML of 117.22 and 58.42 ug/l, respectively, for copper. In addition, EPA establishes a mass-based MDL and AML of 1.37 and 0.68 lbs/day.

g. **Zinc**. Section 24.0206(g)(3) of ASWQS state that for all embayments, such as Pago Pago Harbor, 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 EPA 2002b or the most recent version, except as may be allowed by a zone of mixing specified in section 24.0207 of ASWQS. The more stringent of the criteria for zinc is the aquatic life criteria. On July 12, 2007, the American Samoa EQC approved the permittee's mixing zone request of 25:1 for zinc. A summary of the WQBEL calculations and final MDL and AML for zinc are provided in Table 7. With consideration of dilution, EPA establishes a MDL and AML of 2,284 and 1,138 ug/l, respectively, for zinc. In addition, EPA establishes a mass-based MDL and AML of 26.67 and 13.29 lbs/day.

Table 6 - WQBEL Calculations for Copper.

	Acute	Chronic
Aquatic Life Criteria, ug/l	4.8	3.1
Dilution Credit Authorized by ASEQC	25:1	25:1
Background Concentration, ug/l[1]	0.296	0.296
WLA, ug/l	117.4	73.2
WLA Multiplier (99th%)	0.321	0.527
LTA, ug/l	37.69	38.58
LTA_{MDL} Multiplier (99th%)	3.11	--
MDL, ug/l	117.22	--
MDL, lbs/day	1.37	--
LTA_{AML} Multiplier (95th%)[2]	1.55	--
AML, ug/l	58.42	--
AML, lbs/day	0.68	--

[1]Background concentration based on the median of the combined spatial and temporal measurements taken at the reference site from March 2001 to August 2005.
[2]LTA multiplier based on sampling frequency of four times per month per section 5.5.3 of EPA's TSD.

Table 7 - WQBEL Calculations for Zinc.

	Acute	Chronic
Aquatic Life Criteria, ug/l	90	81
Dilution Credit Authorized by ASEQC	25:1	25:1
Background Concentration, ug/l[1]	2.093	2.093
WLA, ug/l	2,287.675	2,028.675
WLA Multiplier (99th%)	0.321	0.527
LTA, ug/l	734.34	1,069.11
LTA_{MDL} Multiplier (99th%)	3.11	--
MDL, ug/l	2,284	--
MDL, lbs/day	26.67	--
LTA_{AML} Multiplier (95th%)[2]	1.55	--
AML, ug/l	1,138	--
AML, lbs/day	13.29	--

[1]Background concentration based on the median of the combined spatial and temporal measurements taken at the reference site from March 2001 to August 2005.
[2]LTA multiplier based on sampling frequency of four times per month per section 5.5.3 of EPA's TSD.

h. **Total Mercury**. Section 24.0206(g)(3) of ASWQS state that for all embayments, such as Pago Pago Harbor, 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 EPA 2002 or the most recent version, except as may be allowed by a zone of mixing specified in section 24.0207 of ASWQS. The more stringent of the criteria for mercury is the human health criteria. Section 24.0206(j) of ASWQS provide that the water column concentration of mercury shall not exceed 0.05 ug/l, except as may be allowed by a zone of mixing (section 24.0207 of ASWQS). On July 12, 2007, the American Samoa EQC approved the permittee's mixing zone request of

Table 8 - WQBEL Calculations for Mercury.

	Human Health
Water Column Criterion, ug/l	0.05
Dilution Credit Authorized by ASEQC	40:1
Background Concentration, ug/l[1]	0.0062
WLA, ug/l	1.802
AML = WLA, ug/l[2]	1.80
AML = WLA, lbs/day	0.02
AML Multiplier (95th%)[3]	2.62
MDL, ug/l	4.72
MDL, lbs/day	0.06

[1]Background concentration based on the median concentration at reference station.
[2]Based on section 5.4.4 of EPA's TSD, EPA Recommendations for Permitting for Human Health Protection
[3]The AML Multiplier was determined from Table 5-3 of EPA's TSD for bioaccumulative pollutants based on the sampling frequency of 30 times per month since water quality criterion is based on chronic 30-day (section 5.5.3 of EPA's TSD).

40:1 dilution for total mercury. A summary of the WQBEL calculations and final AML and MDL for total mercury are provided in Table 8. With consideration of dilution, EPA establishes a MDL and AML for mercury of 4.72 and 1.80 ug/l, respectively. In addition, EPA establishes a mass-based MDL and AML of 0.06 and 0.02 lbs/day, respectively. This is a new WQBEL.

4. **Compliance with Federal Anti-Backsliding Provisions and American Samoa's Antidegradation Policy for Proposed WQBELS.** Section 402(o) of the CWA prohibits the renewal or reissuance of an NPDES permit that contains WQBELs less stringent than those established in the previous permit, except as provided in the statute. This is referred to as "anti-backsliding." The permit proposes numeric WQBELs that are sometimes higher for total ammonia, copper, and zinc than those established in the existing permit. These effluent limitations may be relaxed, following section 402(o)(2)(b)(i) of the CWA, because they are based on new information not available at the time of permit reissuance that would have justified less stringent WQBELs (i.e., the application of revised background concentrations, in conjunction with EPA's recommended limit derivation procedures applied for the first time to this discharge) and since the proposed more stringent numeric average monthly limits for these pollutants will necessitate an overall reduction in mass emission rates to Pago Pago Harbor.

The establishment of less stringent water quality-based effluent limitations for the maximum daily limitation for total ammonia, copper, and zinc is subject to the anti-degradation requirements set forth in EPA's antidegradation policy at 40 CFR 131.12 and American Samoa's antidegradation policy in section 24.0202 of ASWQS. EPA believes that the proposed more stringent numeric average monthly limits for these pollutants will result in the discharge's overall compliance with water quality standards and federal and territorial antidegradation provisions.

Table 9 - Effluent limitations and monitoring, monitoring frequency, and sample type for each pollutant or parameter for Discharge Outfall No. 001 for the COS Samoa Packing Company, Inc. facility.

Parameter	Units	Previous Permit Effluent Limitations		Permit Effluent Limitations[1]		Monitoring Requirements	
		Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Monitoring Frequency	Sample Type
Flow Rate	MGD	--	1.40	--	--	Continuous	Metered
pH	std. units	6.5	8.6	6.5[2]	8.6[3]	Continuous	Continuous
		The total time during which the pH values are outside the required range of pH shall not exceed 7 hours and 26 minutes in any calendar month; and no individual excursions from the range of pH values shall exceed 60 minutes.					
Temperature	°F	90	95	90	95	Continuous	Continuous
Biological Oxygen Demand	mg/l	--	--	--	--	Once/Week	24-hr Composite
Total Suspended Solids	lbs/day	2,376	5,976	2,970	7,470	Once/Week	24-hr Composite
Oil and Grease	lbs/day	605	1,512	756	1,890	Once/Week	Grab
Total Nitrogen	lbs/day	800	1,935	800	1,935	2x/Week[4]	24-hr Composite
Total Phosphorus	lbs/day	208	271	208	271	2x/Week	24-hr Composite
Total Ammonia (as N)	mg/l	--	133	83.36	167.26	Once/Week	24-hr Composite
	lbs/day	--	--	973.31	1,952.93	Once/Week	24-hr Composite
Mercury (total recoverable)	ug/l	--	--	1.80	4.72	Semi-annual	24-hr Composite
	lbs/day	--	--	0.02	0.06	Semi-annual	24-hr Composite
Copper (total recoverable)	ug/l	66	108	58.42	117.22	Semi-annual	24-hr Composite
	lbs/day	--	--	0.68	1.37	Semi-annual	24-hr Composite
Zinc (total recoverable)	ug/l	1,545	1,770	1,138	2,284	Semi-annual	24-hr Composite
	lbs/day	--	--	13.29	26.67	Semi-annual	24-hr Composite

[1]Mass-based effluent limitations for total ammonia, total mercury, copper, and zinc based on facility's design flow of 1.40 MGD.
[2]Instantaneous Minimum
[3]Instantaneous Maximum
[4]Monitoring frequency based on sampling 2x per week for total nitrogen and total phosphorus means 24-hour composite samples are collected twice on production days only during a 7-day period.

PART V – DETERMINATION OF NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS

Section 24.0206 of ASWQS contain narrative water quality standards that apply to all territorial waters including but not limited to fresh surface waters, ground waters, embayments, open coastal waters, and oceanic waters of the Territory. On February 11, 2008, the permittee requested zones of mixing for dissolved oxygen, turbidity, and light penetration from the American Samoa government in accordance with section 24.0207 of ASWQS. On February 20, 2008, ASEPA approved mixing zones for these parameters as reflected below.

The permit establishes the following narrative water quality-based effluent limits in the receiving water based on narrative ASWQS:

A. The discharge shall be substantially free from materials attributable to sewage, industrial wastes, or other activities of man that will produce objectionable color, odor, or taste, either of itself or in combinations, or in the biota;

B. The discharge shall be substantially free from visible floating materials, grease, oil, scum, foam, and other floating material attributable to sewage, industrial wastes, or other activities of man;

C. The discharge shall be substantially free from materials attributable to sewage, industrial wastes, or other activities of man that will produce visible turbidity or settle to form objectionable deposits;

D. The discharge shall be substantially free from substances and conditions or combinations thereof attributable to sewage, industrial wastes, or other activities of man which may be toxic to humans, other animals, plants, and aquatic life or produce undesirable aquatic life;

E. The discharge shall not cause the temperature in the receiving water deviate more than 1.5 degrees Fahrenheit from conditions which would occur naturally and shall not fluctuate more than 1 degree Fahrenheit on an hourly basis or exceed 85 degrees Fahrenheit due to the influence of other than natural causes;

F. The discharge shall not cause the concentration of toxic pollutants in the receiving water to exceed the more stringent of the aquatic life criteria for marine waters or the human health concentration criteria for consumption of organisms found in EPA 2002 or the more recent version, and section 24.0206 of ASWQS for arsenic and mercury, or outside the zones of mixing established for copper, zinc, mercury, and ammonia;

G. The discharge shall not cause the turbidity in the receiving water to exceed 0.75 Nephelometric Units at and beyond the zone of initial dilution;

H. The discharge shall not cause the light penetration depth to be less than 65.0 feet. The light penetration depth in Pago Pago Harbor shall be 65.0 feet at and beyond the zone of initial diluton, which shall be exceeded fifty percent of the time; and

I. The discharge shall not cause the concentration of dissolved oxygen to be less than 70 percent of saturation or less than 5.0 mg/l at and beyond the zone of initial dilution. If the natural level of dissolved oxygen is less than 5.0 mg/l, the natural level shall become the standard.

The permit establishes the following narrative water quality-based effluent limits at the boundary of the zone of mixing for mercury based on narrative ASWQS:

A. The discharge shall not cause the water column concentration of mercury to exceed 0.05 ug/l.

The permit establishes the following narrative water quality-based effluent limits at the boundary of the zone of mixing for nutrients based on narrative ASWQS:

A. The discharge shall not cause the total phosphorus concentration in the receiving water beyond the boundary of the zone of mixing to exceed 30.0 ug/l as phosphorus;

B. The discharge shall not cause the total nitrogen concentration in the receiving water beyond the boundary of the zone of mixing to exceed 200.0 ug/l as nitrogen; and

C. The discharge shall not cause the concentration of chlorophyll-*a* to exceed 1.0 ug/l.

PART VI - MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to continue to monitor for pollutants or parameters with technology-based effluent limits (i.e., total suspended solids and oil and grease) and water quality-based effluent limits (i.e., pH, copper, zinc, etc.) in the effluent for the duration of the permit term.

A. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the draft permit. All monitoring data shall be reported on DMR forms and submitted quarterly or semi-annually, as specified in the draft permit.

B. Priority Toxic Pollutants Scan

A Priority Toxics Pollutants scan shall be conducted during the fourth or fifth year of the five-year permit term to ensure that the discharge does not contain toxic pollutants in concentrations that may cause a violation of water quality standards. The permittee shall

perform all effluent sampling and analyses for the priority pollutants scan in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the draft permit or EPA. 40 CFR 131.36 provides a complete list of Priority Toxic Pollutants.

C. Outfall Monitoring and Reporting

The permittee, in coordination with StarKist Samoa, Inc., shall conduct outfall monitoring to evaluate the condition of the Joint Cannery Outfall. During the permit period the outfall must be inspected along its entire length, from, and including, the discharge connection at the pump(s) for each of COS Samoa Packing Company Inc. and StarKist Samoa, Inc. facilities, to the junction of the COS Samoa Packing Company Inc. and StarKist Samoa, Inc. discharge lines, and from the junction of the lines to the diffuser cap at the termination of the outfall.

The inspection shall include complete video recording of all submerged piping, anchors, fastening hardware, cathodic protection, diffuser ports, and diffuser end cap. The video recording shall include an audio portion that describes in detail the video captured. Where piping is located above the water surface still photographs shall be acceptable.

All circumstances that may possibly threaten the integrity of the outfall, and which may impede its normal operation and function, in the present or future, such as deteriorated hardware and fasteners, anchoring, pipe alignment, or the presence of debris, shall be specifically highlighted in the inspection report.

PART VII - STANDARD CONDITIONS

A. Reopenor Provision

In accordance with 40 CFR 122 and 124, the final permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

B. Standard Provisions

The permit requires the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions, dated July 1, 2001.

PART VIII - SPECIAL CONDITIONS

A. Development and Implementation of Best Management Practices

Pursuant to 40 CFR 122.44(k)(4), EPA may impose Best Management Practices ("BMPs") which are "reasonably necessary…to carry out the purposes of the Act." The

pollution prevention requirements or BMPs proposed in the draft permit operate as technology-based limitations on effluent discharges that reflect the application of Best Available Technology and Best Control Technology. Therefore, the permit requires that the permittee develop (or update) and implement a Pollution Prevention Plan with appropriate pollution prevention measures or BMPs designed to prevent pollutants from entering Pago Pago Harbor and other surface waters while performing normal processing operations at the facility.

The permittee shall develop and implement BMPs that are necessary to control total suspended solids and oil and grease.

B. Development and Implementation of a Pollutant Minimization Plan

The permittee is required to develop and implement a Pollutant Minimization Plan. As specified in the draft permit, the permittee must submit a workplan to EPA and ASEPA no later than one year after the effective date of the permit and implement the Pollutant Minimization Plan in year four and five of the five-year permit term. For the purposes of the plan, toxic pollutants include, but are not limited to, copper, zinc, and mercury. Copper, zinc, and mercury have been observed in the effluent at high concentrations due to routine cannery operations. Although mixing zones for these pollutants have been approved by American Samoa EQC, the permittee shall make every effort to identify the sources of these pollutants within the facility and develop a program to minimize their entry into the facility's wastewater and subsequent discharge to the receiving water. The goal of the toxic pollutant minimization program shall be to achieve as soon as practicable for the discharge to meet water quality standards copper, zinc, and mercury with a minimal mixing zone.

C. Development and Implementation of Pago Pago Receiving Water Monitoring Program

Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impact of the discharge on the receiving water. Pursuant to the previous permit, the permittee established a joint Pago Pago Receiving Water Monitoring Program with StarKist Samoa, Inc. that included water column and sediment monitoring, coral reef surveys, and a bioaccumulation fish tissue study throughout Pago Pago Harbor. EPA has reviewed the information collected from this monitoring program and proposes a revised receiving water monitoring program in the draft permit that includes the following requirements:

1. The permittee shall conduct semi-annual receiving water monitoring that corresponds to tradewind and non-tradewind seasons;

2. The permittee shall monitor at the following previously established receiving water monitoring locations the specified pollutant or parameter at three depths, i.e., surface, mid-depth and bottom depth:

a. Reference site, Station 5, for monitoring of background concentrations for total phosphorus, total nitrogen, zinc, copper, total mercury, and total ammonia;

b. End of the Pipe, Station 14, for monitoring of zinc, copper, total mercury, total ammonia to evaluate mixing zones within the zone of initial dilution;

c. Zone of initial dilution, Stations 8 and 8A, for monitoring of zinc, copper, total mercury, and total ammonia to evaluate their respective mixing zones that were authorized for this permit term; Stations 8 and 8A are located at the boundary of the zone of initial dilution;

d. Zone of initial dilution, Stations 8 and 8A, for monitoring of light penetration and dissolved oxygen to determine compliance with narrative WQBELs and ASWQS;

e. Zone of mixing, Station 16, for monitoring of total phosphorus, total nitrogen, and light penetration to evaluate the size of the mixing zone for nutrients that was authorized for this permit term and to determine compliance with narrative WQBELs; Station 16 is located at the boundary of the zone of mixing;

f. All stations at the zone of initial dilution and zone of mixing for monitoring of visible floating materials, grease, oil, scum or foam; and

g. All stations at the zone of initial dilution, zone of mixing, and reference site vertical profiles of temperature, salinity, light penetration, and dissolved oxygen to determine compliance with narrative WQBELs and/or ASWQS, and for future initial dilution and mixing zone re-analyses if determined necessary by EPA and ASEPA.

D. Assessment of Nutrient Loading and Assimilative Capacity in Pago Pago Harbor

No dilution factors are currently available to accurately assess the size of the mixing zone for nutrients and establish water quality-based effluent limitations based on statistical procedures outline in EPA's TSD in the draft permit. The effluent limitations for total nitrogen and total phosphorus are re-established in the permit from previous permit limitations based on information derived from several mass-based models and subsequent dye studies conducted in the early 1990s. These models determined that a mixing zone boundary set at 1,300 feet from the diffuser, or the 30-foot depth contour, whichever is closer, would be able to assimilate 60,000 lbs/month of total nitrogen and 12,000 lbs/month of total phosphorus from the canneries discharges. For total nitrogen, assuming a 30-day month, approximately 2,000 lbs/day could be discharged between the two canneries, with the discharge still meeting water quality standards. For total phosphorus, approximately 400 lbs/day could be discharged. Consequently, COS Samoa Packing Company, Inc. and StarKist Samoa Inc. agreed to portion the total mass between them, for which permit effluent limitations were established.

Although nutrients discharged from the combined cannery outfall may not be significantly impacting water quality in Pago Pago Harbor based on receiving water monitoring data, EPA believes that it is important to re-assess nutrient loading from the canneries due to the availability of new effluent and water quality data, and advanced modeling applications that have been developed since the early 1990s. The purpose of the assessment is to determine whether the previous mass-based effluent limitations for nutrients are indeed set at the upper bounds of acceptable performance or the WLA. For water quality-based water quality standards, such as those for nutrients approved as part of ASWQS, effluent limits must be based on maintaining the effluent quality at a level that will comply with water quality standards, even during critical conditions in the receiving water (EPA 1991). The level of treatment necessary to meet the water quality standard is determined by the WLA. Once a WLA has been developed, accounting for all appropriate considerations, a water quality-based permit can be derived to enforce the WLA. Currently, is not clear that existing mass-based effluent limitations for nutrients are based on WLAs necessary to protect water quality standards.

The permit requires the permittee, in coordination with StarKist Samoa Inc., to conduct an assessment of nutrient loading and the existing mixing zone for nutrients. The permit requires the permittee, in coordination with StarKist Samoa Inc., to submit a brief workplan (no more than five pages) that describes the techniques and procedures it will use to assess nutrient loading in the receiving water. The permit requires that permittee to submit the workplan to EPA and ASEPA no later than one year after the effective date of the permit and that the assessment is completed no later than the end of the third year of the permit cycle. The final report is due to EPA and ASEPA no later than the end of the third year of the permit cycle.

E. Chronic Toxicity Special Study

No chronic toxicity data is currently available for the combined cannery effluent discharged from the Joint Cannery Outfall. Since COS Samoa Packing Company, Inc. and StarKist Samoa Inc. share the same outfall and, therefore, individually discharge effluent to Discharge Point No. 001, the combined mixture of the effluent shall be evaluated for chronic toxicity. The combined mixture is a more representative sample of the waste water being discharged into the receiving water. Therefore, the permit requires that the permittee, in coordination with StarKist Samoa Inc., to conduct a special study to simulate and evaluate chronic toxicity levels of the combined cannery effluent following initial mixing with the receiving water, under critical conditions. As part of the special study, the permittee, in coordination with StarKist Samoa Inc., shall conduct semi-annual chronic toxicity tests in accordance with EPA testing procedures described in the draft permit. The purposes of the study are to determine 1) the levels of chronic toxicity in the discharge, 2) the appropriate seawater-to-effluent dilution ratio where the threshold for chronic toxicity is observed using range finding testing procedures, and 3) effluent triggers or limits. The study shall begin within one year of the effective date of the permit and continue for a three year period. Upon completion of the study, study results will be reviewed by EPA and ASEPA and used to develop appropriate monitoring requirements and triggers (i.e., chronic in-stream waste concentration) to assess chronic

Table 10 - List of endangered or threatened species that may occur near the discharge outfall from the COS Samoa Packing Company, Inc. facility.

ESA Endangered or Threatened Species	Activity
Endangered humpback whale (*Megaptera novaeangliae*)	Feeding/Swimming
Endangered hawksbill turtle (*Eretmochelys imbricata*)	Feeding/Swimming
Threatened green sea turtle (*Chelonia mydas*)	Feeding/Swimming

toxicity of the combined effluents. In addition, the permittee is required to prepare a brief (1-2 pages) Initial Investigation TRE Workplan no later than one year of the effective date of the permit, as specified in the permit. The TRE workplan shall include steps the permittee intends to follow if toxicity is measured below the chronic in-stream waste concentration (as determined by the study) for the combined cannery effluent discharge. The TRE workplan shall be submitted to EPA and ASEPA for review and approval.

PART IX - OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Impact to Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does not jeopardize the continued existence of a listed or candidate species, or result in the destruction or adverse modification of its habitat. Pago Pago Harbor is considered an embayment that is generally used for recreational and subsistence fishing, boating and mooring activities, aesthetic enjoyment, support and propagation of marine life, industrial water supply. On January 17, 2007, EPA requested informal consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service (collectively referred to as "the Services") to identify any federally listed, proposed and candidate endangered or threatened species and designated and proposed critical habitats that occur in Pago Pago Harbor or in the vicinity of the effluent discharge. As specified in Table 10, the U.S. Fish and Wildlife Service and National Marine Fisheries Service provided a list of endangered and threatened species under their jurisdiction that may be present in the vicinity of the effluent discharged to Pago Pago Harbor. No additional marine species are proposed or are candidates for listing at this time, and no critical habitat has been designated or proposed for any marine protected species around Tutuila, American Samoa.

The effluent discharged from the facility is characterized as industrial processing wastewater that contains primarily fish byproducts. Although effluent monitoring data have shown exceedances of effluent limitations during the previous five-year permitting period (see Table 1), EPA believes that the technology and water quality-based effluent limits in the draft permit <u>will not affect</u> the humpback whale (*Megaptera novaeangliae*), hawksbill turtle (*Eretmochelys imbricate*), or green sea turtle (*Chelonia mydas*).

According to the National Marine Fisheries Service, humpback whales only occasionally enter Pago Pago Harbor, and only during their annual migration into the region from June to December, with peak abundances in September and October. In addition, while hawksbill and green sea turtles are known to occur in the area, the National Marine Fisheries Service believes that "the outfall and diffuser location with a depth of approximately 176 feet may be too deep to provide optimal foraging or resting habitat for the turtles" (NOAA 2007).

EPA believes that the proposed effluent limitations and permit conditions also are not likely to affect the availability or distribution of prey species or produce undesirable aquatic life within Pago Pago Harbor that may directly impact the humpback whale, hawksbill or green sea turtle. As previously described, technology-based effluent limitations are based on ELGs and numerical and narrative water quality-based effluent limitations proposed in the draft permit are based on ASWQS for the protection of aquatic life uses and human health. Therefore, EPA has determined that reissuance of the NPDES permit for the COS Samoa Packing Company, Inc. facility will not affect listed species, such as humpback whales or hawksbill and green sea turtles, or critical habitat.

EPA provided the Services with copies of the draft fact sheet and the draft permit during the public notice period. No comments were received from the Services during the public comment period regarding this determination.

B. Impact to Coastal Zones

The Coastal Zone Management Act ("CZMA") requires that Federal activities and licenses, including Federally permitted activities, must be consistent with an approved state Coastal Management Plan (CZMA Sections 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR 930 prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State (or Territory) Coastal Zone Management program, and the State (or Territory) or its designated agency concurs with the certification. On July 5, 2007, the permittee requested a coastal zone consistency certification from the American Samoa Department of Commerce. On January 16, 2008, the American Samoa Department of Commerce issued a coastal zone consistency certification that certified that the permittee's renewal of a NPDES permit for the discharge of treated wastewater to Pago Pago Harbor complies with the "goals and policies of the American Samoa Coastal Zone Management Program and shall be conducted in a manner consistent with this program."

C. Impact to Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act ("MSA") set forth a number of new mandates for the National Marine Fisheries Service, regional fishery management councils and other federal agencies to identify and protect important marine and anadromous fish species and habitat. The MSA requires Federal agencies to make a determination on Federal actions that may adversely impact

Essential Fish Habitat ("EFH"). The Pago Pago Harbor contains EFH that includes coral reef ecosystems and habitats for precious corals, crustaceans, and the production of eggs and larvae of tropical fish species (NOAA 2007). Since effluent limitations in the draft permit are based on ELGs or water quality standards, EPA has determined that there will be no adverse impacts to the marine environment, including EFH and sensitive marine species and habitats from the issuance of the COS Samoa Company, Inc. NPDES permit. In addition, the draft permit establishes chronic toxicity monitoring using the purple sea urchin, *Strongylocentrotus purpuratus*, (a sensitive marine species) to assess effluent toxicity. On May 15, 2007, EPA requested a general concurrence from the National Marine Fisheries Service for EPA NPDES permitting activities in the Pacific Islands and is currently awaiting a response.

EPA provided the National Marine Fisheries Service with copies of the draft fact sheet and the draft permit during the public notice period. No comments were received from the National Marine Fisheries Service regarding this determination during the public comment period.

PART X - ADMINISTRATIVE INFORMATION

A. Public Notice

In accordance with 40 CFR 124.10, the EPA Director shall give public notice that a proposed permit has been prepared under 40 CFR 124.6(d) by mailing a copy of the notice to the permit applicant and other federal and state agencies, and through publication of a notice in a daily or weekly newspaper within the area affected by the facility. On January 9, 2008, EPA provided public notice of the proposed action to issue a renewal of the permittee's permit in the Samoa News. The public notice allowed 30 days for the public to comment on the draft permit. The public comment closed on February 7, 2008.

B. Public Comment Period

In accordance with 40 CFR 124.11 and 12, during the public comment period, any interested person may submit written comments on the proposed permit and may request a public hearing, if no hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. In accordance with 40 CFR 124.13, all persons must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period.

EPA considered all oral and written comments received at the during the public comment period. After the close of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued. EPA's responses to such comments are included in the Response to Comment document.

C. Public Hearing

In accordance with 40 CFR 124.12, the EPA Director shall hold a public hearing whenever she finds, on the basis of requests, a significant degree of public interest in the draft permit. The Director may also hold a public hearing when, for instance, such a hearing might clarify one or more issues involved in the permit decision. Public notice of such hearing shall be given as specified in 40 CFR 124.10.

A public hearing was not conducted for the draft permit.

D. Territorial Certification

In accordance with 40 CFR 124.53, under section 401 of the CWA, EPA may not issue a permit until certification is granted or waived in accordance with that section by the State or Territory in which the discharge originates. Territorial certification under section 401 of the CWA shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Territory law. On July 12, 2007, in conjunction with ASEPA's approval of a mixing zone for the proposed discharge, ASEPA certified that the permittee's discharge was found to be consistent with the protected uses of Pago Pago Harbor, as stated in ASWQS, and the CWA. Further, ASEPA determined that there is reasonable assurance that the discharge will not cause violations of ASWQS.

PART XI - REFERENCES

ASEPA. 2007. Electronic memo from Peter Peshut, American Samoa Environmental Protection Agency, to Sara Greiner, U.S. Environmental Protection Agency on June 22, 2007.

EPA. 1991. Technical Support Document for Water Quality-based Toxics Control. Prepared by EPA, Office of Water Enforcement and Permits, in March 1991. EPA/505/2-90-001.

EPA. 2002. National Recommended Water Quality Criteria. Office of Water, EPA. EPA/822/R-02/047.

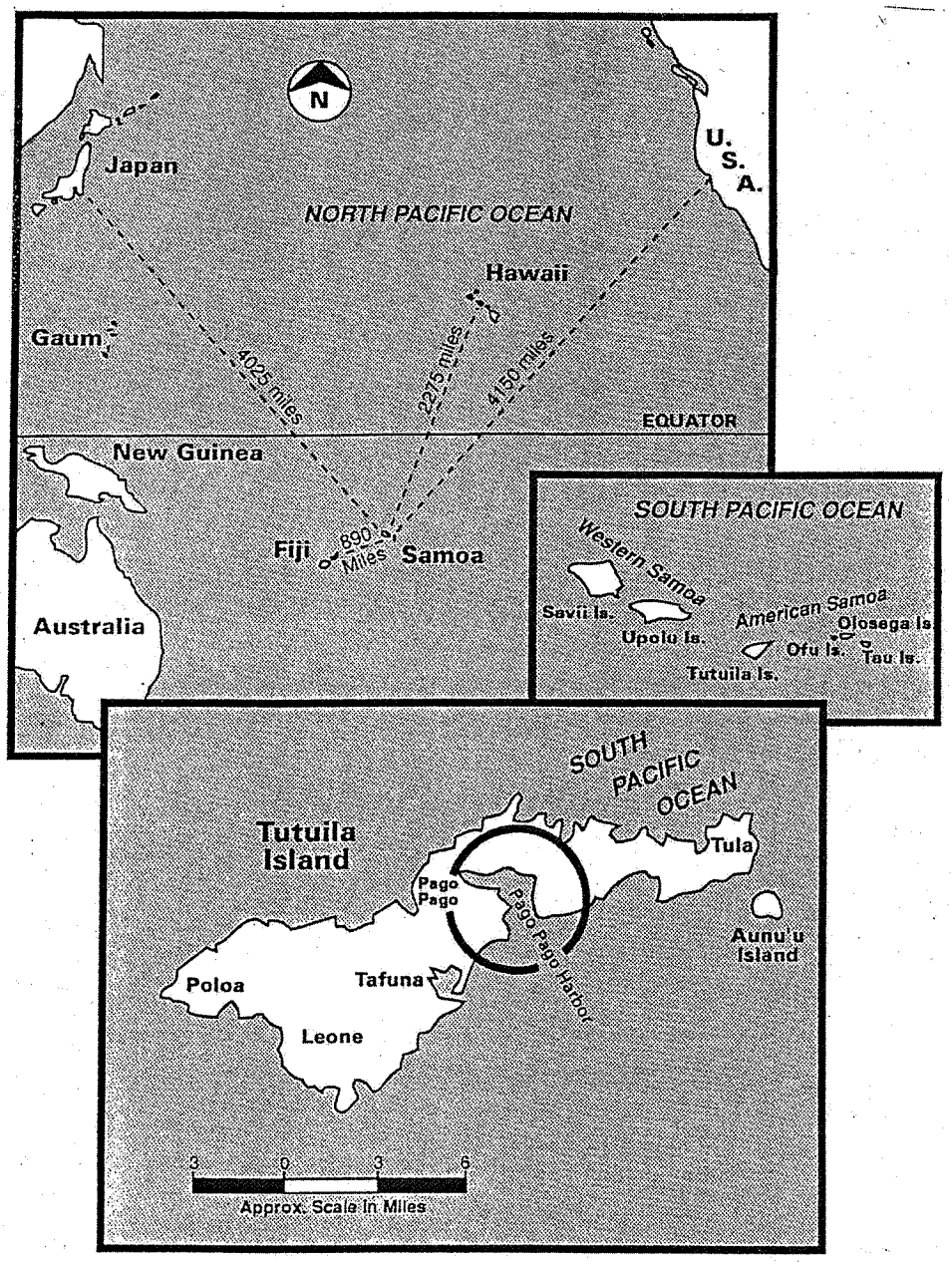
gdc. 2007. Request for Water Quality Certification and the Definition of Mixing Zone. Submitted to American Samoa Environmental Protection Agency by StarKist Samoa (NPDES Permit AS0000019) and COS Samoa Packing (NPDES Permit AS0000027) on June 28, 2007.

NOAA. 2007. Letter from National Oceanic Atmospheric Administration, National Marine Fisheries Service, to EPA Region IX, dated March 15, 2007.

PART XII - ATTACHMENTS

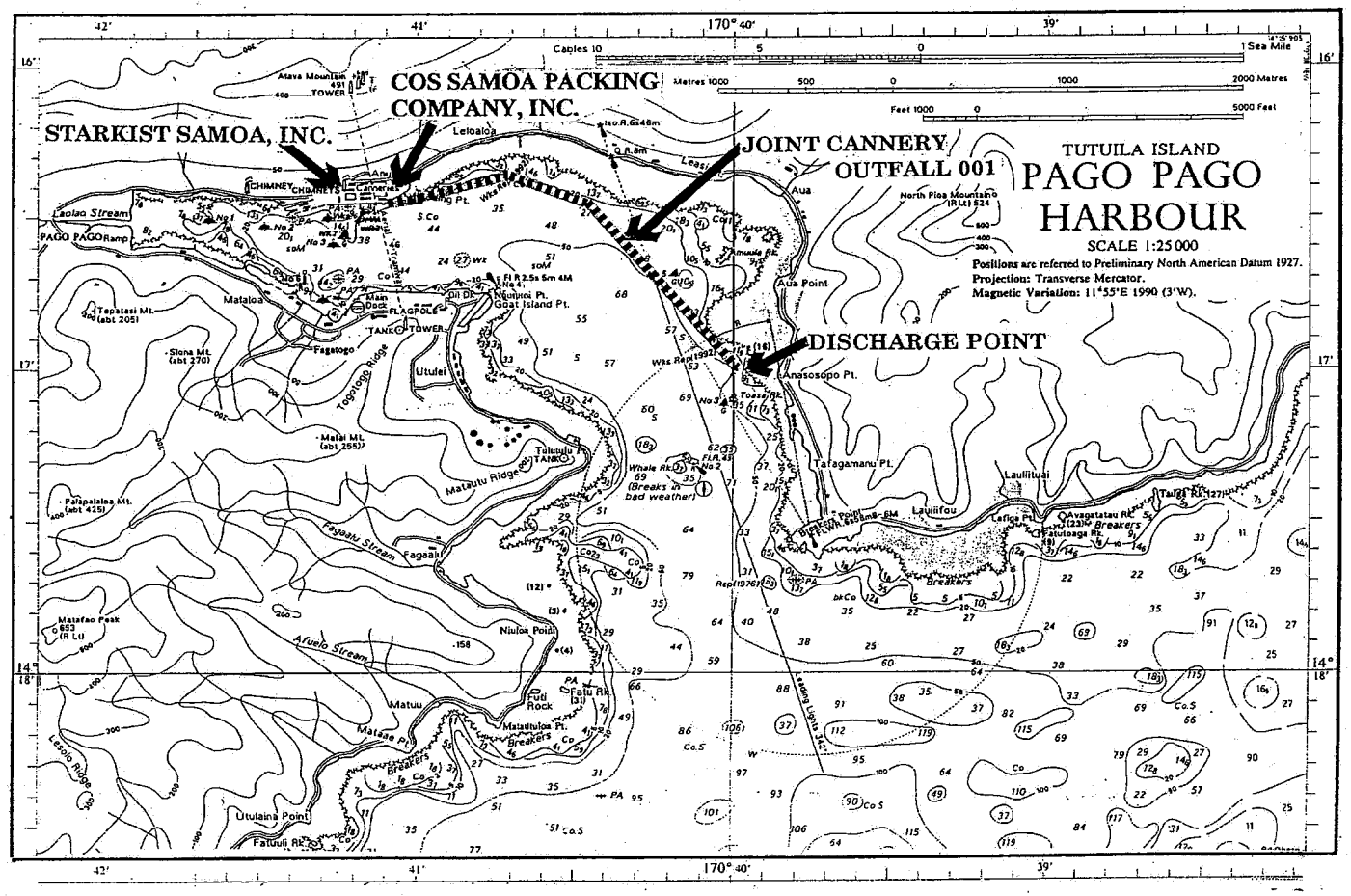
ATTACHMENT A

Location of American Samoa and the Island of Tutuila



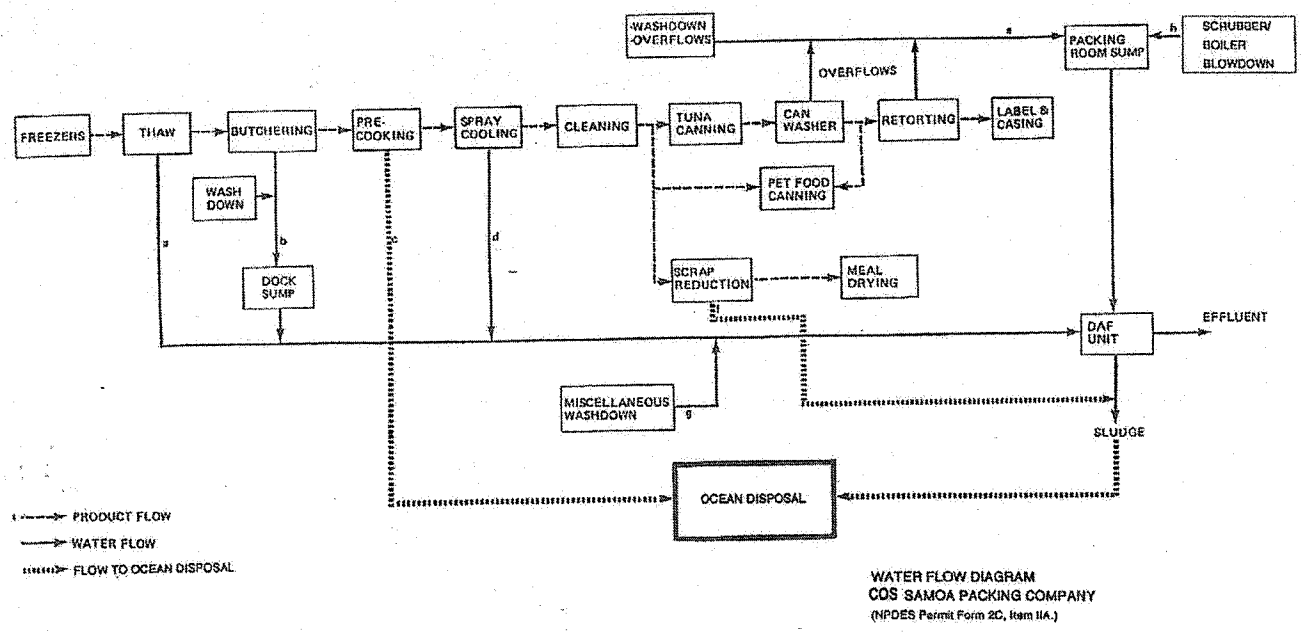
ATTACHMENT B

Location of StarKist Samoa, Inc. and COS Samoa Packing Company, Inc. and the Joint Cannery Outfall No. 001 in Pago Pago Harbor.



ATTACHMENT C

Wastewater flow diagram for the COS Samoa Packing Company, Inc. facility.



WATER FLOW DIAGRAM
COS SAMOA PACKING COMPANY
(NPDES Permit Form 2C, Item IIA.)

ATTACHMENT D

Calculations for Water Quality-based Effluent Limitations

In accordance with EPA's Technical Support Document for Water Quality-based Toxics Control ("TSD"), EPA calculated water quality-based effluent limitations for the draft permit using the following statistical procedures. Using copper as an example, the following demonstrates how water quality based effluent limitations were established for the COS Samoa Packing Company, Inc. NPDES permit.

Step 1: For each constituent requiring an effluent limit, identify the applicable water quality criteria. For each criterion, determine the effluent concentration or waste load allocation ("WLA") using the following steady state equation:

$$WLA = C + D(C-C_a)$$

Where: C = Applicable water quality criterion
D = Dilution Ratio
C_a = Ambient Background Concentration

For copper, the applicable water quality criteria for the protection of aquatic life in saltwater and other parameters include the following,

C_{acute} = 4.8 ug/l
$C_{chronic}$ = 3.1 ug/l
D = 25:1
C_a = 0.296 ug/l.

Based on the equation above, the WLA for both acute and chronic are 117.4 and 73.2 ug/l, respectively.

Step 2: For each WLA based on aquatic life criterion, determine the long-term average discharge condition ("LTA") by multiplying the WLA by a WLA multiplier. The multiplier is a statistically-based factor that adjusts the WLA to account for effluent variability. The value of the multiplier varies depending on the coefficient of variation ("CV") of the data set and whether it is an acute or chronic criterion. Table 5-1 of EPA's TSD provides pre-calculated WLA multipliers based on the value of the CV and the probability basis (i.e., the 95th or 99th percentile level). As specified in the TSD, a CV of 0.6 is typical of the range of variability of effluents measured by EPA and represents a reasonable degree of relative variability. Therefore, EPA recommends a CV of 0.6 and the 99th percentile when data sets are limited.

$$LTA_{acute} = WLA_{acute} \times \text{WLA multiplier}_{acute}$$
$$LTA_{chronic} = WLA_{chronic} \times \text{WLA multiplier}_{chronic}$$

For copper, the following information was used to develop the LTA_{acute} and $LTA_{chronic}$ using Table 5-1 of the TSD.

WLA_{acute} = 117.4 ug/l
$WLA_{chronic}$ = 73.2 ug/l
WLA $multiplier_{acute}$ = 0.321
WLA $multiplier_{chronic}$ = 0.527

Thus,

$$LTA_{acute} = 117.4 \times 0.321 = 37.69 \text{ ug/l}$$
$$LTA_{chronic} = 73.2 \times 0.527 = 38.576 \text{ ug/l.}$$

Step 3: Select the most limiting (lowest) LTA. For copper, the most limiting LTA was the LTA_{acute}.

Step 4. Calculate the water quality based effluent limits by multiplying the LTA by an AML and MDL multiplier. Water quality based effluent limits are expressed an Average Monthly Limit ("AML") and Maximum Daily Limit ("MDL"). The multiplier is a statistically based factor that adjusts the LTA for the averaging periods and exceedances frequencies of the criteria and the effluent limitation. The value of the multiplier varies depending on the probability, the CV, and the number of samples (AML only). Table 5-2 of the TSD provides pre-calculated AML and MDL multipliers.

$$AML = LTA_{acute} \times \text{AML multiplier}$$
$$MDL = LTA_{acute} \times \text{MDL multiplier}$$

For limited data, the TSD recommends the 95th percentile (n=4) and 99th occurrence probability for the AML and MDL multipliers, respectively. For copper, the following information was used to develop the AML and MDL for aquatic life using Table 5-2 of the TSD.

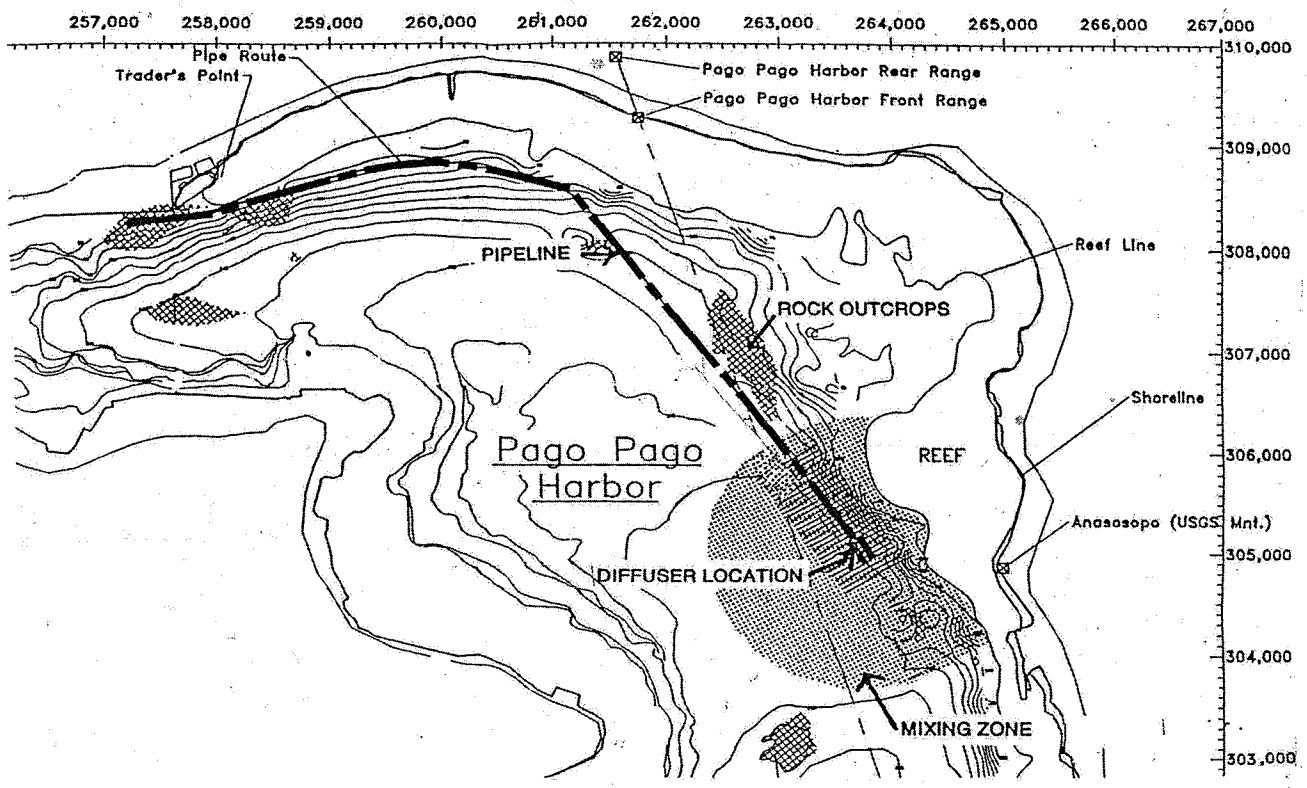
$$AML = 37.69 \times 1.55 = 58.42 \text{ ug/l}$$
$$MDL = 37.69 \times 3.11 = 117.22 \text{ ug/l}$$

Step 6: For mass-based limitations for copper, calculate the mass limit based on the AML and MDL using the maximum daily maximum flow rate of 2.57 MGD, maximum monthly average flow rate of 1.56 MGD, and a standard conversion factor.

$$AML_{mass} = 58.42 \text{ ug/l} \times 1.40 \text{ MGD} \times 0.00834 \text{ lbs/MG/ug/L} = 0.68 \text{ lbs/day}$$
$$MDL_{mass} = 117.22 \text{ ug/l} \times 1.40 \text{ MGD} \times 0.00834 \text{ lbs/MG/ug/L} = 1.37 \text{ lbs/day}$$

Thus,

$$AML_{mass} = 0.68 \text{ lbs/day}$$
$$MDL_{mass} = 1.37 \text{ lbs/day.}$$

ATTACHMENT E

Location of Discharge Point and mixing zone area for total phosphorus and total nitrogen. The boundary of the zone of mixing is approximately 1,300 feet from the end of the diffuser or the 30 foot contour, whichever is closer.