



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

November 14, 2010

In Reply Refer To: WTR-7

CAPT Peter S. Lynch
Commander NAVFAC Marianas
PSC 455, Box 195
FPO AP 96540-2937

Re: May 3 and 4, 2010 Clean Water Act Inspection

Dear CAPT Lynch:

Enclosed is the November 14, 2010 report for our May 3-4, 2010 inspection of the industrial wastewater sources at Andersen Air Force Base into the domestic sewers. Please submit short responses to the findings in Sections 2 and 3 of this report to EPA, Guam EPA, and the Guam Waterworks Authority, by **January 30, 2011**. The main findings are summarized below:

1 Andersen AFB is a significant industrial user within the service area of the Northern District sewage treatment plant. No Federal categorical standards apply. GWA has not adopted local limits protective of the sewage treatment plant and its contributing sewers.

2 Andersen AFB should implement a sewer discharge certification program that sets internal discharge limits, determines BAT treatment or equivalence for each industrial wastewater source, keeps an updated industrial wastewater inventory, issues certificates to all non-domestic discharges, inspects each certified source at least annually, and submits an annual report.

3 There will be capacity limitations during the upgrade of the Northern District sewage treatment plant. The certificates should establish conditions of discharge for impoundments, require wash rack inlets to be covered when not in use, maintain the base-wide use of oil water separators, ensure contractors operate under the same level of control, and include monitoring of the 20+ Air Force Base non-domestic sources.

I appreciate the helpfulness of the staff from each of the commands extended during this inspection. We remain available to the Air Force, NAVFAC, Guam EPA, and GWA to assist in any way. Please do not hesitate to call me at (415) 972-3504, or e-mail arthur.greg@epa.gov.

Sincerely,

Original signed by:

Greg V. Arthur
CWA Compliance Office

cc: Ivan Quinata, GEPA
Paul Kemp, Gerald Fitzgibbon, Guam Waterworks Authority



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User: Andersen Air Force Base
(Non-Categorical Significant Industrial User)

Treatment Works: Guam Waterworks Authority
Northern District Sewage Treatment Plant
NPDES Permit GU0020141

Pretreatment Program: Guam Waterworks Authority

Dates of Inspection May 3-4, 2010

Inspection Participants:

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Report Prepared By: Greg V. Arthur, Environmental Engineer, USEPA Region 9
November 14 2010



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1.0 Scope and Purpose

On May 3-4, 2010, EPA conducted a compliance evaluation inspection of Andersen Air Force Base (“AFB”), Guam. The purpose was to ensure compliance with the Federal regulations covering the discharge of non-domestic wastewaters into the sewers. In particular, it was to ensure:

- Classification in the proper Federal categories;
- Application of the correct standards at the correct sampling points;
- Consistent compliance with the standards; and
- Fulfillment of Federal self-monitoring requirements.

Andersen AFB is a significant industrial user (“SIU”) within the sewer service area administered by the Guam Waterworks Authority (“GWA”) for the Northern District Wastewater Treatment Plant. Andersen AFB is one of the military installations whose compliance was assessed as part of the on-going EPA evaluation of the Federal facilities on Guam. The inspection participants are listed on the title page. Arthur conducted the inspection on May 3-4, 2010.

1.1 Description of the Facilities and Commands

Andersen Air Force Base consists of the main air field, the northwest auxiliary air field, munitions storage, and support facilities, under the operational command of the United States Air Force (“USAF”) 36th Wing. The 36th Wing is one of two wings assigned to the 13th Air Force, headquartered at Hickam Air Force Base on Oahu. Andersen AFB provides support facilities to aircraft squadrons forward deployed to Guam, as well as to tenant operations such as the US Navy Helicopter Sea Combat Squadron (HSC-25). The support operations include aircraft maintenance, air ground support maintenance, vehicle maintenance, fueling, machining, corrosion control painting, non-destructive testing, and the base physical plant.

The pertinent activities at Andersen AFB fall under three commands. Joint Region Marianas provides consolidated support management functions for Naval Base Guam and Anderson Air Force Base. The Naval Facilities Engineering Center (NAVFAC) Marianas under NAVFAC Pacific and Joint Region Marianas provides public works, asset management, operations, construction management, and facilities management. DRMO Guam under the Defense Logistics Agency collects and handles hazardous wastes.

<https://www.cnmc.navy.mil/marianas/index.htm>

https://portal.navfac.navy.mil/portal/page/portal/navfac/NAVFAC_ABOUT_PP

<http://www.andersen.af.mil/>

1.2 Non-Domestic Discharges to the Domestic Sewers

EPA identified and inspected 26 Andersen AFB sources of non-domestic wastewaters. The main non-domestic sources include: (1) emergency fire suppression waters from certain



hangers, (2) drainage from four flight line fueling pump houses and their associated tank farms, (3) and drainage from air-craft, equipment, and vehicle wash racks through oil water separators. Many of the sources discharge into the base domestic sewer collection system leading to the Northern District sewage treatment plant. The sewer discharge points are designated in this report as IWD-301 through IWD-315.

IWD	EPA ID'ed Sources	Non-Domestic Sewer Discharges	Pretreatment In-Place	gpd
301	Bldg 17061 Hanger 1	AFFF drainage, runoff	HOLD TEST HAUL(sewer)	unk
302	Bldg 18017 Hanger 2	AFFF drainage, wash water, mop	HOLD EQ O/W	unk
303	Bldg 18020 Hanger 3	aircraft wash drainage	O/W	unk
304	Bldg 18004 AGE	wash rack drainage, mop water	O/W	unk
305	Bldg 26229 Refueling	floor drainage	O/W	unk
306	Bldg 18040 Truck Wash	wash rack drainage	O/W FILT RECYL	unk
307	Bldg 26051 Auto Shop	floor drainage, car wash drainage	O/W	unk
308	Bldg 21008 Paint Shop	floor drainage, washer water	-	unk
309	Bldg 17006 NDT Shop	dye pen spray rinse, condensate	HOLD HAUL(haz)	unk
310	Bldg 2641 HSC-25 Navy	AFFF drainage	HOLD TEST	unk
	Bldg 2641 HSC-25 Navy	aircraft wash rack drainage	O/W FILT OZONE	unk
311	Andersen AFB Landfill	landfill leachate, drainage	HOLD	unk
	Andersen AFB Landfill	equipment wash rack drainage	O/W	unk
312	Bldg 25014 Chiller Plant	chiller condensate	-	unk
313	Bldg 18001 Vehicle Shop	outdoor wash rack drainage	HOLD O/W	unk
314	Bldg 18035 Base Maint	floor, outdoor wash rack drainage	O/W	unk
315	Bldg 26203 POL Wash	outdoor wash rack drainage	O/W	unk
KEY	EQ Equalization	HAUL trucked delivery	HOLD Impoundment	
	OZONE Ozonation	O/W oil water separation	TEST test prior to discharge	
	FILT Filtration	RECYC recycling or reuse		

Bldg 17061 Hanger 1 – There are six main aircraft maintenance hangers along the southern flight line. Hanger 1 has a fire suppression system that uses an aqueous film forming foam suppressant. Anderson AFB tested the use of the AFFF fire suppression system in Hanger 1 just twice in the past ten years. The hanger drains to a 50,000 gallon outdoor catchment pond for delivery by pumper truck to the on-base sewers. Accumulated rain water is off-hauled twice per year. NAVFAC has a contract to connect the catchment pond to the sewers. The current discharge from the Bldg 17061 pond to the pumper truck is designated for the purposes of this inspection report as compliance sampling point, IWD-301. See Section 1.5 on page 8 for details on the AFFF drainage handling on-site.

Bldg 18017 Hanger 2 – The aircraft maintenance work in Hanger 2 generates AFFF fire suppression waters, aircraft soap cleaning wash water, equipment wash water, and zamboni floor mop waters collected from Hanger 1 and other installations. The AFFF fire suppression waters are generated very infrequently. These wastewaters collect in a 100,000 gallon outdoor storage tank for treatment through a 10,000 gallon surge tank to an oil/water separator for discharge to the sewers. The Bldg 18017 oil water separator sewer connection is designated for the purposes of this inspection report as compliance sampling point, IWD-302. See Photos #1-1, #1-2, #1-3 and #1-4 in Section 1.8 of this report on page 10.



Bldg 18020 Hanger 3 – The aircraft maintenance work in Hanger 3 has the capacity to generate aircraft wash water from an alternate aircraft wash rack inside the hanger. Hanger 3 does not have an AFFF fire suppression system. There is a floor trench down the middle that drains to a baffled oil water separator for discharge to the sewers. The Bldg 18020 oil water separator sewer connection is designated for the purposes of this inspection report as compliance sampling point, IWD-303. See Photo #1-5 in Section 1.8 of this report on page 10.

Bldg 18004 Air Ground Equipment Maintenance – Bldg 18004 does not have floor drains. However, the ground equipment maintenance operations include jet pressure soap washing of support equipment over a wash rack with the wash down drained through an oil water separator to the sewers. Zamboni floor cleaning drainage and mop waters are also emptied into the oil water separator. The Bldg 18004 oil water separator sewer connection is designated for the purposes of this inspection report as compliance sampling point, IWD-304. See Photos #1-9 and #1-10 in Section 1.8 of this report on page 11.

Bldg 26229 Refueling – Bldg 26229 provides recovered fuels handling and maintenance for the flight line refueling trucks. Floor drains lead to an oil water separator for discharge to the sewers. On the day of this inspection, the oil water separator was found with a heavy solids blanket just below the surface to the separator bottom. Skimmed oil drains to a holding tank for off-hauling. The Bldg 26229 oil water separator connection is designated for the purposes of this inspection report as compliance sampling point, IWD-305. See Photos #1-11 and #1-12 in Section 1.8 of this report on page 11.

Bldg 18040 Vehicle Washrack – The drive-through vehicle wash waters drain through a multi-staged oil water separator. Grey water in the last stage can be either drawn through cartridge filtering for reuse as car wash make-up or discharged into the sewers. The Bldg 18040 oil water separator connection is designated for the purposes of this inspection report as compliance sampling point, IWD-306. See Photo #1-15 in Section 1.8 of this report on page 12.

Bldg 26051 AAFEES Auto Shop – Floor drainage from the automobile garage bays and tail waters from a car wash drain by gravity to an oil water separator for discharge to the sewers. The Bldg 26051 oil water separator connection is designated for the purposes of this inspection report as compliance sampling point, IWD-307. See Photo #1-16 in Section 1.8 of this report on page 12.

Bldg 21008 DZSP Corrosion Control – The motor pool vehicle paint shop involves down draft air filter paint booths and an unused sand blast booth. Floor drains and a commercial washing machine discharge to the sewers without treatment. The Bldg 21008 sample point is unidentified but designated for the purposes of this inspection report as compliance sampling point, IWD-308. See Photos #1-17 and #1-18 in Section 1.8 of this report on page 12.

Bldg 17006 NDT Shop – The non-destructive testing shop involves an operational NDT line, consisting of the following tanks: T1-dye penetrant, T2-1st stage drag-out rinse, T3-2nd stage spray rinse, T4-alkaline soap cleaning, T5-1st stage spray rinse, T6-empty, and T7-magnaflux. The NDT line was used just three times in the past two years. The T3-dye penetrant spray rinse is pumped to two 55-gallon holding drums in series which overflow to a floor drain for



discharge to the domestic sewer. Air line condensate also drains to the same floor drain. The captured contents in the holding drums and spent solutions transferred to drums are delivered for hauling off-site for disposal. The Bldg 17006 sample point at either the floor drain or the holding drum outlet is designated as compliance sampling point, IWD-309. See Photos #1-19 and #1-20 in Section 1.8 of this report on page 13.

Bldg 2641 HSC-25 Hanger – The Navy is the tenant operator of the HSC-25 Hanger on the northern flight line. The HSC-25 Hanger generates two wastewater streams. First, the hanger has an AFFF fire suppression system that can generate AFFF drainage to an outdoor catchment pit for metered pumping into the domestic sewers and emergency overflow to the ground. Second, an outdoor aircraft wash rack for the soap wash cleaning of helicopters drains through a circulating treatment and recycling system involving oil water separation, canister filtration, and ozonation. The Navy plans to decommission this system and replace it with a wash rack connection to the sewer. The Bldg 2641 sample point is unidentified but designated for the purposes of this inspection report as compliance sampling point, IWD-310. See Photos #1-21 and #1-22 in Section 1.8 of this report on page 13.

Andersen AFB Landfill – The lined landfill generates leachate and rainfall run-off for delivery into a 135,000 gallon holding tank for pumped discharge to the sewers. The landfill also has an equipment wash rack with the tail waters discharged through an oil water separator to the sewers. An identified but as of yet undesignated landfill sample point for both waste streams is designated for the purposes of this inspection report as compliance sampling point, IWD-311. See Photo #1-23 in Section 1.8 of this report on page 13.

Bldg 25014 Chiller Plant – The chiller plant provides circulating cooling water for over a dozen building facilities including the dorms and gymnasium. The cooling towers circulate conditioned cooling waters through closed-loop chillers. Chiller condensate discharges to a floor drain to the sewers. The Bldg 25014 sample point could be the floor drain and is designated for the purposes of this inspection report as compliance sampling point, IWD-312. See Section 1.5 of this report on page 8 for a description of the chiller condensate.

Bldg 18001 Vehicle Maintenance – The general purpose vehicle maintenance shop has an unused floor drain and an outdoor wash rack draining through a pit and oil water separator for discharge to the sewers. The inside floors are vacuumed. The Bldg 18001 oil water separator connection is designated in this inspection report as compliance sampling point, IWD-313. See Photos #1-25 and #1-26 in Section 1.8 of this report on page 14.

Bldg 18035 Base Maintenance – The base maintenance shop has floor drains and an outdoor wash rack draining through a small oil water separating skimmer for discharge to the sewers. The Bldg 18035 oil skimmer connection is designated for the purposes of this inspection report as compliance sampling point, IWD-314. See Photos #1-27 and #1-28 in Section 1.8 of this report on page 14.

Bldg 26203 POL Wash Rack – The outdoor fuels maintenance wash rack drains through an oil water separator for discharge to the sewers. Storm water from the surrounding paved areas can overrun the wash rack grading into the floor drain. A normally-open valve can be shut to prevent the washout of the oil water separator. The Bldg 26203 oil water separator



connection is designated for the purposes of this inspection report as compliance sampling point, IWD-315. The photograph of this oil water separator was corrupted and not saved.

1.3 Non-Domestic Discharges to the Ground

Andersen AFB asserts there is no storm water drainage off-site to receiving waters because the ground is porous limestone. The following non-domestic wastewaters discharge to internal drainages on-site that are asserted to percolate into the ground. The discharge points to the ground are designated in this report as IWD-401 through IWD-409.

IWD	EPA ID'ed Sources	Discharges to the Ground	Treatment In-Place	gpd
401	Satellite FHP No.1	fill stand, tank farm drainages	HOLD TEST	unk
402	Satellite FHP No.1	test stand drainage	HOLD TEST	unk
403	Satellite FHP No.2	fill stand, tank farm drainages	HOLD TEST	unk
404	Satellite FHP No.2	test stand drainage	HOLD TEST	unk
405	Satellite FHP No.3, No.4	fill stand, tank farm drainages	HOLD TEST	unk
406	Satellite FHP No.3, No.4	test stand drainage	HOLD TEST	unk
407	Bldg 19017 Haz Waste	perimeter drainage	HOLD TEST	unk
408	Bldg 2641 HSC-25 Navy	AFFF drainage	HOLD to sewers	unk
409	Bldg 25014 Chiller Plant	cooling tower blowdown	RECYC	unk
KEY	HOLD impoundment	RECYC recycling or reuse	TEST test prior to discharge	

Satellite Fueling Stations – There are no connections to the domestic sewers from the four fuels hydrant pump houses (FHPs) on remote ends of the airfield. FHP Nos.1, 2 and 3 each have two fuel farm tanks, a fill stand, a test stand, and a product recovery tank. FHP No.4 has two fuel farm tanks and a product recovery tank but shares the FHP No.3 fill stand and test stand. The FHPs generate tank bottoms, fill stand drainage, and test stand drainage. Tank farm drainage is captured within the secondary containment berms. See Photos #1-7 and #1-8 in Section 1.8 of this report on pages 10 and 11.

- Tank bottoms are drawn off daily to bowlers for delivery to the Bldg 26203 Fuels Maintenance for off-site hauling to Gresco for disposal.
- The fill stands for flight line truck fueling are constructed within secondary containment with fuel spills and rainfall run-off draining to trenches leading into catchment pits. The pits have a normally-closed shut-off valve allowing either the release of the contents to the ground after visual sheen inspection or the pumped delivery to fuel recovery.
- The test stands for defueling to product recovery tanks drain to built-in, below-grade, grated pits for visual sheen inspection and normally-closed valved release to the ground.

Bldg 19017 Hazardous Waste Storage – There are no connections to the domestic sewers from the Bldg 19017 Hazardous Waste Storage facility. There are no floor drains within the building, although there are bay door floor drains completing the indoor building perimeter secondary containment. The floor drains lead to an outdoor catchment pit. The pit has a



normally-closed shut-off valve allowing Andersen AFB to either release the contents to the ground after visual inspection for sheen or to pump out for off-site disposal. See Photos #1-13 and #1-14 in Section 1.8 of this report on page 12.

Bldg 2641 HSC-25 Hanger – The outdoor catchment pit for AFFF drainage can overflow to the ground. See Photos #1-21 and #1-22 in Section 1.8 of this report on page 13.

Bldg 25014 Chiller Plant – EC-controlled blowdown from the cooling towers discharges to the ground. See Photo #1-24 in Section 1.8 of this report on page 13.

1.4 Non-Discharging Facilities

A number of on-site facilities do not generate non-domestic wastewaters. Some generate non-domestic wastewaters for collection and hauling for off-site disposal.

POL Liquid Fuels (tank farm) – There are no connections to the domestic sewers from the main fuel depot tank farm. The main tank farm generates tank bottoms, and fuel tanker truck filter water. The tank bottoms are daily drawn off and fuel tanker truck filter water is drawn to bowzers for delivery to the Bldg 26203 Fuels Maintenance for off-site hauling by DZSP-21 to Gresco for disposal. See Photo #1-6 in Section 1.8 of this report on page 10.

Hangers 4, 5, and 6 (aircraft maintenance) – There are no connections to the domestic sewers from Hangers 4 and 5 since they have no floor drains or AFFF fire suppression systems. EPA could not obtain access to Hanger 6 during this inspection.

Bldg 18006 Annex (machine shop) – The Bldg 18006 Structural Maintenance Aircraft Machine Shop does not have floor drains and does not generate wastewaters.

Bldg 18018 Corrosion Control (painting) - There are no connections to the domestic sewers from the corrosion control painting facility. Bldg 18018 involves dry filter booth painting, including the use of chromate-based primers. The drains into the paint booth appeared to be sealed. The drains were connected through an old oil water separator which now is sealed with clean fill material.

1.5 Facility Process Wastewater Handling

AFFF Fire Suppression Drainage – Aqueous film forming foam suppressants involve a mix of surfactants (fluoroalkyl, hydrocarbon detergents), salts (magnesium sulfate, sulfonates), glycols (polysaccharide, butyl ethers), amines (triethanolamine), and other hydrocarbons (alcohols). AFFF drainage is treatable through oily particle separation methods such as air sparging hydrocycloning. Andersen AFB provides impoundment and some un-aided oil water separation of AFFF drainage but does not possess air sparging hydrocyclones.

See the on-line Joint Service Pollution Prevention and Sustainability Technical Library.
www.p2sustainabilitylibrary.mil/p2_opportunity_handbook/9_IV_6.html



Tank Bottoms – The tank farm and satellite fueling station fuel tanks all generate very little internal condensate since the tanks are covered and have internal floating roofs. As a result, Andersen AFB collects small volumes of tank bottoms to bowzers for off-site disposal.

Satellite Fueling Station Drainage – The captured drainage from the fill stands and test standards of satellite fuels hydrant pump houses could entrain spilled fuels. Captured fuels in the attendant catchment pits can be skimmed to built-in fuel product recovery tanks.

Oily Wastewater Drainage – The potential oily discharges include the drainages and wash waters from all of the aircraft wash racks, aircraft maintenance bays, vehicle wash racks, equipment wash racks, and vehicle maintenance shops. All of these potential oil-bearing wastewaters discharge to the sewers through oil water separators all of which are serviced annually to remove sludges and floating oils. Three of the 11 oil water separators have built-in oil recovery tanks. The oil water separators identified during this inspection may be those previously identified by Andersen AFB, however the designations seem to differ.

IWD	EPA Identified Oil Water Separators		volume	oil recovery	discharge
302	Bldg 18017 Hanger 2	plate coalesce w/ inf surge	1000 gal	holding tank	to sewer
303	Bldg 18020 Hanger 3	gravity baffled capture	1500 gal	none	to sewer
304	Bldg 18004 AGE	gravity capture	2000 gal	none	to sewer
305	Bldg 26229 Refueling	gravity skim removal	3000 gal	holding tank	to sewer
306	Bldg 18040 Truck Wash	gravity capture, filtrd recycle	unk	none	to sewer
307	Bldg 26051 Auto Shop	gravity baffled capture	1500 gal	none	to sewer
310	Bldg 2641 HSC-25 Navy	plate coalesce, filtrd recycle	1800 gal	none	to sewer
311	Andersen AFB Landfill	wash rack gravity capture	unk	none	to sewer
313	Bldg 18001 Vehicle Shop	gravity capture w/ inf surge	1000 gal	none	to sewer
314	Bldg 18035 Base Maint	gravity skim removal	2500 gal	holding tank	to sewer
315	Bldg 26203 POL Wash	wash rack gravity capture	unk	none	to sewer

Chiller Water System Discharges – The cooling tower additives include a molybdate descaler and chlorinated dimethylamine biocides. These additives would be expected in the blow down. The closed-loop chiller water additives include sulfuric acid, sulfamic acid, and ammonium bisulfate. None of these additives would be expected in the chiller condensate.

1.6 POTW Legal Authorities

Guam Waterworks Authority – Andersen AFB discharges into the GWA Northern District sewage treatment plant, which operates under the requirements of NPDES permit No. GU0020141. The NPDES permit currently does not require the implementation of an approved pretreatment program throughout the sewer service area.

1.7 Facility SIC Codes

Andersen AFB is assigned the SIC code for national security (SIC 9711).



1.8 Photo Documentation

The 32 digital photographs taken during this inspection are saved to digital file as *guam-075-*date*.jpg* to *guam-107-*date*.jpg*. The photos on this page are of Andersen AFB sources.



Photo #1-1: Hanger 2 - Aircraft Wash Stand
Taken By: Greg V. Arthur
Date: 05/03/10



Photo #1-2: Hanger 2 - Floor Drain to O/W Sep
Taken By: Greg V. Arthur
Date: 05/03/10



Photo #1-3: Hanger 2 - Holding and Surge Tanks
Taken By: Greg V. Arthur
Date: 05/03/10

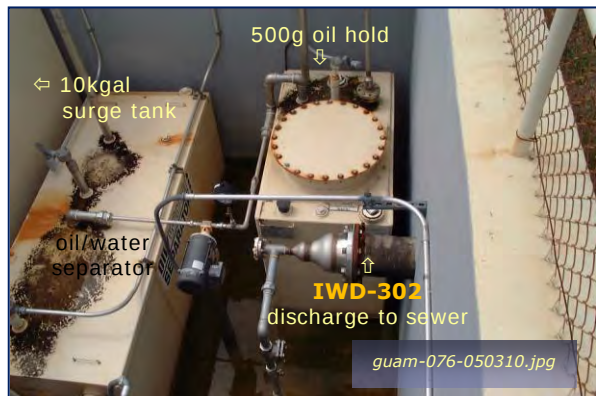


Photo #1-4: Hanger 2 - Oil Water Separator
Taken By: Greg V. Arthur
Date: 05/03/10



Photo #1-5: Hanger 3 - Oil Water Separator
Taken By: Greg V. Arthur
Date: 05/03/10

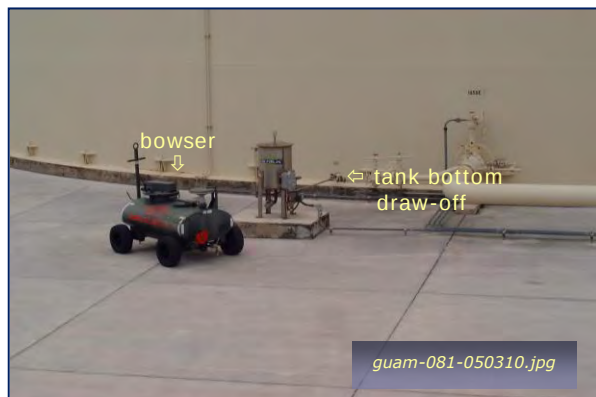


Photo #1-6: Tank Bottoms Draw-off to Bowser
Taken By: Greg V. Arthur
Date: 05/03/10



The photos on this page are of Andersen Air Force Base wastewater sources and of the discharges to the sewers or to the ground.

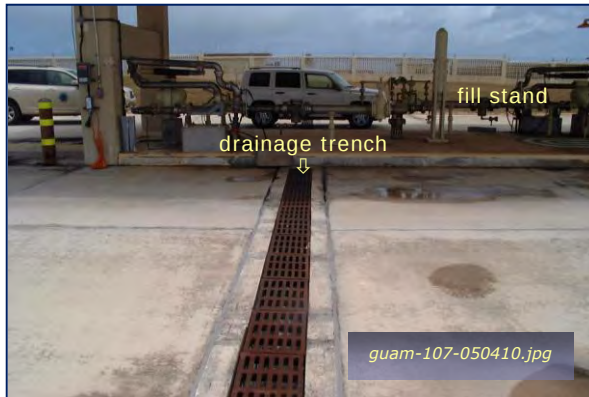


Photo #1-7: Satellite Fueling Station – Fill Stand
Taken By: Greg V. Arthur
Date: 05/04/10



Photo #1-8: Satellite Fueling Station – Catchment Pit
Taken By: Greg V. Arthur
Date: 05/04/10



Photo #1-9: Bldg 18004 – Ground Support Washrack
Taken By: Greg V. Arthur
Date: 05/03/10



Photo #1-10: Bldg 18004 – Oil Water Separator
Taken By: Greg V. Arthur
Date: 05/03/10



Photo #1-11: Bldg 26229 – Floor Drains
Taken By: Greg V. Arthur
Date: 05/03/10

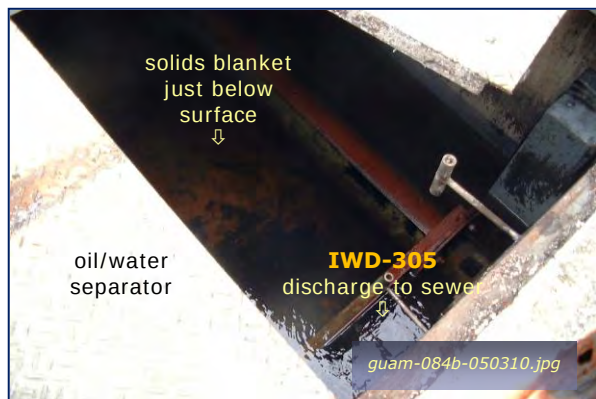


Photo #1-12: Bldg 26229 – Oil Water Separator
Taken By: Greg V. Arthur
Date: 05/03/10



The photos on this page are of Andersen Air Force Base wastewater sources and of the discharges to the sewers and to the ground.



Photo #1-13: Bldg 19017 – Bay Door Drains
Taken By: Greg V. Arthur
Date: 05/03/10



Photo #1-14: Bldg 19017 – Catchment Pit
Taken By: Greg V. Arthur
Date: 05/03/10



Photo #1-15: Bldg 18040 – Oil Water Separator
Taken By: Greg V. Arthur
Date: 05/03/10



Photo #1-16: Bldg 26051 – Oil Water Separator
Taken By: Greg V. Arthur
Date: 05/03/10



Photo #1-17: Bldg 21008 – Northside Drain Inlet
Taken By: Greg V. Arthur
Date: 05/03/10



Photo #1-18: Bldg 21008 – Southside Drain Inlet
Taken By: Greg V. Arthur
Date: 05/03/10



The photos on this page are of Andersen Air Force Base wastewater sources and of the discharges to the sewers and to the ground.



Photo #1-19: Bldg 17006 – NDT Holding Drums
Taken By: Greg V. Arthur
Date: 05/04/10



Photo #1-20: Bldg 17006 – NDT Discharge to Sewer
Taken By: Greg V. Arthur
Date: 05/04/10



Photo #1-21: Bldg 2641 – HSC-25 Catchment Pit
Taken By: Greg V. Arthur
Date: 05/04/10



Photo #1-22: Bldg 2641 – Wash Rack Recycling Sys
Taken By: Greg V. Arthur
Date: 05/04/10



Photo #1-23: Andersen AFB Landfill – Holding Tank
Taken By: Greg V. Arthur
Date: 05/04/10



Photo #1-24: Bldg 25014 Chiller Plant - blowdown
Taken By: Greg V. Arthur
Date: 05/04/10



The photos on this page are of Andersen Air Force Base wastewater sources and discharge to the sewers and to the ground.



Photo #1-25: Bldg 18001 – Wash Rack Drains
Taken By: Greg V. Arthur
Date: 05/04/10



Photo #1-26: Bldg 18001 – Pit Prior to Oil Water Sep
Taken By: Greg V. Arthur
Date: 05/04/10



Photo #1-27: Bldg 18035 – Outdoor Wash Rack
Taken By: Greg V. Arthur
Date: 05/04/10



Photo #1-28: Bldg 18035 – Oil Water Separator
Taken By: Greg V. Arthur
Date: 05/04/10



2.0 Sewer Discharge Standards and Limits

- *Federal categorical pretreatment standards (where they exist), national prohibitions, and State groundwater and local limits (where they exist) must be applied to the sewer discharges from industrial users. (40 CFR 403.5 and 403.6)*

Summary

National prohibitions apply to the sewer discharges from Andersen AFB. However no Federal categorical pretreatment standards apply. If Andersen AFB adds a qualifying core metal finishing operation, such as electroplating, etching, or coating, then the Federal metal finishing standards would apply to many of the identified internal sewer discharges.

GWA has not developed and adopted local limits approved by EPA as technically-based to be protective of the Northern District sewage treatment plant and its contributing sewers. Nevertheless, there are many non-domestic internal discharges into the base sewers including eleven oily water sources through oil water separators, and three potential AFFF-bearing drainages. The 1986 NPDES permit for the Northern District sewage treatment plant does not require (1) GWA to develop a pretreatment program, or (2) list Andersen AFB as a co-permittee and require the Joint Region Marianas to implement an internal sewer discharge certification program for Andersen Air Force Base as the BPJ expression of BAT/NSPS to the non-domestic sources. The application of Federal standards, national prohibitions, and local limits was determined through visual inspection.

Requirements

- Upon reissuance, the NPDES permit for the Northern District sewage treatment plant must either require GWA to develop and implement a pretreatment program or must list Andersen AFB as a co-permittee subject to internal BAT requirements.

Recommendations

- Joint Region Marianas should revise the COMNAVREG Marianas Instructions to set internal wastewater discharge limits, and to implement a sewer discharge certification program that applies to all Andersen AFB non-domestic sources into the sewers.
- Implementation of the sewer discharge certification program should involve determinations of BAT treatment or equivalence for each non-domestic source, maintaining an industrial wastewater inventory, issuing certificates to all non-domestic discharges, inspecting each certified source at least annually, and generating an annual report.

2.1 Classification by Federal Point Source Category

Andersen AFB does not qualify for regulation under any of the Federal categorical pretreatment standards in 40 CFR 403-471. In particular, Andersen AFB does not perform any of the qualifying core metal finishing operations of electroplating, electroless plating, anodiz-



ing, etching (ie. descale, desmut, pickling), chemical coating (ie. phosphating, alodining, conversion coating), or printed circuit board manufacturing. As a result, discharges from any of the ancillary metal finishing operation (ie. cleaning, painting, depainting, assembly, testing, deburring) are not regulated under the Federal metal finishing standards in 40 CFR 433.

Andersen AFB does qualify as a significant industrial user under the definitions in 40 CFR 403.3 because the discharge flow rates and potential pollutant loadings are great enough to pose a risk of adversely impacting the municipal sewerage works. Significant industrial users are required to self-report compliance at least twice per year.

2.2 Local Limits and National Prohibitions

National prohibitions in 40 CFR 403.5 and local limits are meant to express the limitations on non-domestic discharges necessary to protect against adverse impact in the sewers, treatment plants and receiving waters. In particular, they prohibit discharges that can cause the pass-through of pollutants into the receiving waters or reuse, the operational interference of the sewage treatment works, the contamination of the sewage sludge, sewer worker health and safety risks, fire or explosive risks, and corrosive sewer damage. The national prohibitions apply nationwide to all non-domestic sewer discharges.

40 CFR 403.5(a) – The general prohibitions are against the non-domestic discharge of pollutants that (1) passes through the sewage treatment plant and results in an NPDES permit violation, or (2) causes operational interference of the sewerage works, also resulting in an NPDES permit violation.

40 CFR 403.5(b) – The specific prohibitions are against the introduction into the sewerage works of (1) pollutants that can create a fire or explosion hazard, or have a closed-cup flashpoint of less than 140°F, (2) pollutants that cause corrosive structural damage, or register a pH below 5.0 s.u., (3) solid or viscous pollutants that cause obstruction of flow, (4) oxygen demanding pollutants that cause operational interference, (5) heat that causes operational interference, (6) oils that cause operational interference or pass-through, (7) pollutants that form toxic gases, vapors, and fumes, and (8) trucked wastes discharged at undesignated locations.

40 CFR 403.5(c) – As part of obtaining EPA-approval of a pretreatment program, the sewerage agency is required to develop local limits protective of the sewage treatment plant and collection system. GWA has not developed and adopted local limits approved by EPA as technically-based as specifically protective of the Northern District sewage treatment plant and its contributing sewers.

2.3 Federal Prohibitions

The Federal standards in 40 CFR 403.17 also prohibit the bypassing of any on-site treatment necessary to comply with standards unless the bypass was unavoidable to prevent the loss of life, injury, or property damage, and there were no feasible alternatives. This provision ex-



plicitly prohibits bypasses that are the result of a short-sighted lack of back-up equipment for normal downtimes or preventive maintenance. It also explicitly prohibits bypasses that could be prevented through wastewater retention or the procurement of auxiliary equipment. It specifically allows bypasses that do not result in violations of the standards as long as there is prior notice and approval from the sewerage agency or State.

2.4 Source Control Instructions

The 1986 NPDES permit for the GWA Northern District sewage treatment plant does not require Andersen AFB to develop and implement a sewer discharge certification program. However, a reissued permit would be expected to either (1) require the development and implementation of a pretreatment program by GWA or (2) institute direct implementation of BAT/NSPS requirements to the non-domestic sources at Andersen AFB as a co-permittee. In either case, Andersen AFB would likely need to develop a sewer discharge certification program like the ones used at the Pearl Harbor Naval Complex and Hickam AFB, and proposed for Naval Base Guam.

COMNAVREG MARIANAS Instruction 5090.3A provides Joint Region Marianas the authority for a sewer discharge certification program. This program is not implemented and does not appear to apply to all Andersen AFB sources. The instruction also does not include the source control measures that would qualify as a BPJ expression of BAT/NSPS for the industrial wastewaters sources into the Andersen AFB sewer system -- such as (1) discharge limits, (2) procedures for sewer discharge certification, (3) procedures to update the source inventory, (4) procedures for source inspections, or (5) the submittal of an annual report. An example of this sort of source control can be found in Part F of the NPDES permit for the Fort Kam wastewater treatment plant which required the Navy to implement COMNAVREG HAWAII Instructions 11345.5A and 11345.2D to apply to all Pearl Harbor and Hickam Air Force Base sources.



3.0 Compliance with Local Limits and National Prohibitions

All non-domestic wastewater discharges to the sewers must comply with local limits and the national prohibitions. 40 CFR 403.5(a,b,d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

GWA does not have the legal authority to issue an industrial user permit to Andersen AFB covering the non-domestic discharges to the sewers. There also are no requirements specifically applied to Andersen AFB in the NPDES permit for the GWA Northern District sewage treatment plant. As a result, there are no substantive sampling records demonstrating consistent compliance with the national prohibitions at the internal discharge points or sampling results comparable to expected GWA local limits. Nevertheless, the narrative national prohibitions do apply against causing the pass-through or operational interference of the Northern District sewage treatment plant.

The Northern District sewage treatment plant currently cannot operate at its design capacity and achieve consistent compliance with its NPDES permit limits. There will continue to be capacity limitations during the future rehabilitation and upgrade of the sewage treatment plant expected in response to both current non-compliance and the future demand from the Guam military expansion. As a result, the principal potential impacts from Andersen AFB upon the Northern District sewage treatment plant involve hydraulic loadings, the toxicity of AFFF-bearing drainage, and oily wastewater waters.

Requirements

- None.

Recommendations

- The identified non-domestic discharges to the sewers should be monitored monthly for pH, oil and grease, and discharge flowrate.
- The sewer discharge certification program should establish the conditions of discharge for the impoundments (to minimize hydraulic loading impacts), and for AFFF-bearing drainages (to prevent the pass-through of toxicity).
- All wash rack inlets should be covered when not in use.
- The oil water separators should be routinely inspected by base environmental in order to ensure consistent servicing, and frequent removal of accumulated solids and oily skim.
- Andersen AFB should consider directing into the domestic sewers the contact drainages discharged to the ground, in particular the cooling tower blowdown from the chiller plant.