



DEPARTMENT OF THE AIR FORCE
30TH SPACE WING (AFSPC)

RECEIVED

SEP 20 2013

DIVISION OF WATER QUALITY

SEP 19 2013

MEMORANDUM FOR STATE WATER RESOURCES CONTROL BOARD
DIVISION OF WATER QUALITY: OCEAN UNIT
ATTN: MARIA DE LA PAZ CARPIO-OBESO

FROM: 30 CES/CEIE
1028 Iceland Ave
Vandenberg AFB CA 93437

SUBJECT: Area of Special Biological Significance (ASBS) Compliance Plan

1. Enclosed is the ASBS Compliance Plan for Pillar Point Air Force Station prepared pursuant to the State Water Resources Control Board's *Resolution no. 2012-0031, Amending the General Exception to the California Ocean Plan for Selected Discharges into Areas of Special Biological Significance, Including Special Protections for Beneficial Uses*.
2. My point of contact on this matter is Ms. Tara Wiskowski at (805) 606-7541.


THOMAS P. DEVENOGE
Chief, Environmental

Attachment:
ASBS Compliance Plan



**Headquarters Thirtieth Space Wing
Vandenberg Air Force Base, California**

**Area of Special Biological Significance
(ASBS) Compliance Plan**

Pillar Point Air Force Station, California

September 2013

Submitted to:

State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Submitted by:

30th Civil Engineer Squadron
Environmental
1028 Iceland Avenue
Vandenberg AFB, CA 93437-6010



UNCLASSIFIED

**AREA OF SPECIAL BIOLOGICAL SIGNIFICANCE
(ASBS) COMPLIANCE PLAN
PILLAR POINT AIR FORCE STATION, CALIFORNIA**

Prepared for:

*30th Civil Engineer Squadron, Environmental
1028 Iceland Avenue
Vandenberg AFB, CA 93437-6010*

*District Engineer
U.S. Army Corps of Engineers, Mobile District
Attention: CESAM-EN-EG
109 St. Joseph Street
Mobile, AL 36602*

Prepared by:

Tetra Tech, Inc.
Santa Maria, California

Contract No. W91278-11-D-0076
Task Order No. 0011

September 2013

UNCLASSIFIED

TABLE OF CONTENTS

1.0 INTRODUCTION 1-1
 1.1 BACKGROUND 1-1
 1.2 RELATED AND SUPPORTING DOCUMENTS 1-1
 1.2.1 Spill Prevention Control and Countermeasure Plan 1-1

2.0 FACILITY DRAINAGE 2-1
 2.1 WET WEATHER FLOWS 2-3
 2.2 DRY WEATHER FLOWS 2-3

3.0 BEST MANAGEMENT PRACTICES 3-1
 3.1 STRUCTURAL BMPS 3-1
 3.1.1 Existing Structural BMPS 3-1
 3.1.2 Structural BMPS Being Considered 3-1
 3.2 NON-STRUCTURAL BMPS 3-2
 3.2.1 Existing Non-structural BMPS 3-2
 3.2.2 Planned Non-structural BMPS 3-4
 3.3 BMP IMPLEMENTATION SCHEDULE 3-4

4.0 INDIVIDUAL MONITORING PROGRAM 4-1
 4.1 AQUEOUS SAMPLING 4-1
 4.2 SEDIMENT SAMPLING 4-2
 4.3 MARINE DEBRIS MONITORING 4-2
 4.4 QUANTITATIVE SURVEY OF INTERTIDAL BENTHIC MARINE LIFE 4-2
 4.5 BIOACCUMULATION STUDY 4-3
 4.6 QUALITY CONTROL AND REPORTING 4-3

5.0 REFERENCES 5-1

LIST OF FIGURES

1-1 Pillar Point AFS Vicinity Map 1-2
 2-1 Pillar Point AFS Drainage Areas and Storm Water Conveyance Features 2-2
 3-1 Pillar Point AFS Structural Best Management Practices 3-3

LIST OF TABLES

3-1 Pillar Point AFS Best Management Practices Implementation Schedule 3-6
 4-1 Sampling Location Descriptions 4-1

This page intentionally left blank.

1.0 INTRODUCTION

This *Area of Special Biological Significance (ASBS) Compliance Plan* (the Plan) describes the Vandenberg Air Force Base (AFB) 30th Civil Engineer Squadron's (30 CES's) strategy for maintaining compliance with State Water Resources Control Board (SWRCB) Resolution Number 2012-0031, *State Water Resources Control Board Resolution No. 2012-0031 Amending the General Exception to the California Ocean Plan for Selected Discharges Into Areas Of Special Biological Significance, Including Special Protections for Beneficial Uses* (the General Exception, 2012a), at Pillar Point Air Force Station (AFS). The Plan summarizes current and planned best management practices (BMPs) for Pillar Point AFS that are intended to protect "natural water quality" in the James V. Fitzgerald Marine Reserve.

1.1 BACKGROUND

The 30th Space Wing, which is headquartered at Vandenberg AFB, conducts west coast space and missile launch operations and manages the Western Range. The operation of Pillar Point AFS includes radar tracking, telemetry reception, and communication services that support the Western Range. The station has a normal daily population of approximately 15 employees. On-site facilities include offices, antenna and radar equipment, and storage buildings. Pillar Point AFS is subject to the plans and policies applicable to Vandenberg AFB.

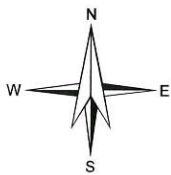
Pillar Point AFS is located on the Central California coast, approximately 20 miles south of San Francisco (see Vicinity Map, Figure 1-1). The station covers approximately 44 acres and is positioned on a coastal peninsula near Half Moon Bay. The James V. Fitzgerald Marine Reserve and the Monterey Bay National Marine Sanctuary are located along the west and north coast of the station, respectively.

The *Water Quality Control Plan, Ocean Waters of California*, known as the California Ocean Plan (SWRCB 2012b [COP]), designates the James V. Fitzgerald Marine Reserve as an ASBS and prohibits the discharge of a "waste," including urban runoff, into it. The 30 CES was notified by the SWRCB on 21 October 2004 of an alleged COP violation arising from the discharge of storm water from Pillar Point AFS into the James V. Fitzgerald ASBS. The SWRCB notification required the Air Force to cease the discharge or file a temporary request of exception to the prohibition. The 30 CES requested an exception to the discharge prohibition, which was granted upon SWRCB adoption of the General Exception (SWRCB 2012a).

1.2 RELATED AND SUPPORTING DOCUMENTS

1.2.1 Spill Prevention Control and Countermeasure Plan

Aboveground storage tanks are maintained at Pillar Point AFS for storing fuel and oil. The *Spill Prevention, Control and Countermeasure Plan, 30th Space Wing Plan 32-7044* (U.S. Air Force 2012 [SPCC Plan]) was developed to address releases of oil, since oil is stored above threshold planning quantities, as described in 40 Code of Federal Regulations 112.1(d). The SPCC Plan includes procedures, methods, equipment, and other requirements employed at Pillar Point AFS to prevent a spill or discharge of oil into the navigable waters of the United States, which includes spills or discharges to drains that potentially discharge to such waters. In addition, the plan specifies the procedures for response to a spill or release.



**United States Air Force
Pillar Point Air Force Station**

**Vandenberg AFB Geographically
Separate Units in California**

Pillar Point AFS Vicinity Map

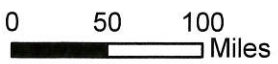


TETRA TECH

3201 Airpark Drive, Suite 108
Santa Maria, CA 93455

FOR OFFICIAL USE ONLY

Sources: VAFB GIO, Tetra Tech, ESRI



TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
26681-54	9/26/2011	REYNOLDS	8578	1-1

2.0 FACILITY DRAINAGE

At Pillar Point AFS, storm water either infiltrates into site soils, sheet flows over the cliff side into the ocean, or is channeled off-site through engineered drainages. Figure 2-1 depicts the five drainage areas (DAs) at Pillar Point AFS. A description of each DA depicted in Figure 2-1 is summarized in the following points:

- DA I is the primary area discharging to the James V. Fitzgerald ASBS. DA I is approximately 8.3 acres and 65 percent impervious. Runoff associated with this DA collects in a concrete drainage channel adjacent to the circular, facility perimeter road and is directed toward a sump near the guardhouse. Runoff is discharged to the James V. Fitzgerald ASBS on the northern side of the facility via an open, concrete channel that is approximately 2 feet wide by 2 feet deep.
- DA II includes 10.78 acres of grassy slopes located to the south of DA I, which extends to the southernmost boundary of Pillar Point AFS. Storm water that does not infiltrate collects in a depression and flows to the south over the cliff face toward Pillar Point Harbor. This drainage area does not discharge to the James V. Fitzgerald ASBS.
- DA III drains a 0.98-acre area surrounding Building 17, where the majority of the surface is impervious. Runoff is directed toward the southwest corner of the Building 17 parking lot and infiltrates into the vegetated area west of the Pillar Point AFS fence line.
- DA IV is a 2.22-acre, small, vegetated portion of this installation and does not contribute runoff to other DAs or to the James V. Fitzgerald ASBS. This area contains a septic system for Building 17.
- DA V is roughly 10 acres and encompasses the fenced and unfenced area immediately northeast of DA I. Runoff from this area collects and drains into a small, gunite v-ditch that is approximately 3 feet wide, by 1 foot deep, by 515 feet long. The gunite channel flows in a northeast direction toward Princeton Marsh and the West Shoreline Access Trail. This conveyance system discharges to Pillar Point Harbor and does not discharge to the James V. Fitzgerald ASBS.

A drainage channel on the northern shoulder of West Point Avenue (the entrance roadway) and a drainage channel on the western shoulder of the Boresight Access Road both convey surface water runoff from the areas immediately north of the guardhouse (outside of the fenced boundary) and the northern portion of the station (west of the Boresight Facility Road) to a culvert inlet located on the southwestern corner of the intersection of West Point Avenue and the Boresight Facility Road. Drainage from this culvert's outlet flows southeast into a riprap corridor immediately west of the Princeton Marsh/West Shoreline Access Trail parking area. Several other culverts and channels are located outside of Pillar Point AFS boundary. These drainage features convey runoff from Pillar Point AFS to the areas surrounding Princeton Marsh.



Legend

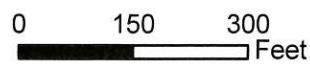
- Air Force Property Boundary
- Landslide area or area prone to erosion
- Drainage Area I - Priority Discharge
- V-Ditch
- Drainage Area
- Flow Direction
- James V. Fitzgerald ASBS
- Septic system

**United States Air Force
Pillar Point Air Force Station**

**Drainage Areas and Storm
Water Conveyance Features**

Pillar Point ASBS Compliance Plan

TETRA TECH
3201 Airpark Drive, Suite 108
Santa Maria, CA 93455



FOR OFFICIAL USE ONLY

Background: ESRI World Imagery

TC NO. 28645 .0011	DATE 9/18/2013	DRAWN BY REYNOLDS	MAP NO. 9163	FIGURE 2-1
--------------------------	-------------------	----------------------	-----------------	----------------------

2.1 WET WEATHER FLOWS

Wet weather flows that discharge to the James V. Fitzgerald ASBS are limited to storm water runoff generated in DA I. Wet weather flows from all other areas of the installation infiltrate on site or discharge to receiving waters outside of the James V. Fitzgerald ASBS. To monitor the volume of storm water flows discharging from Pillar Point AFS to the James V. Fitzgerald ASBS, 30 CES installed a Parshall flume and flow-monitoring equipment in March 2009. The flume and monitoring equipment are located adjacent to the entrance guardhouse.

2.2 DRY WEATHER FLOWS

Non-storm waters generated at Pillar Point AFS include two sources: potable water used for equipment washing and groundwater infiltration/inflow to a covered utility vault. These are described in the following bullets.

- Periodic equipment washing and maintenance is conducted on tracking station equipment and communication towers. Power washing is necessary to maintain functionality of satellite tracking equipment. Washing activities are conducted semiannually during dry weather and the volume of water generated varies. Wash waters are captured onsite, vacuumed to storage tanks, and disposed of at an off-site facility (Timmerman 2013).
- Groundwater accumulates in a utility vault located at the northeast side of Building 17. The accumulated groundwater is pumped via automatic sump pump to a concrete channel and ultimately discharges to an open, vegetated area west of Building 17. The discharge frequency is variable as the sump pump is activated by a float valve and, in most cases, is triggered only by significant rain events.

No additional dry weather flows are anticipated through continuing operations at the facility.

This page intentionally left blank.

3.0 BEST MANAGEMENT PRACTICES

Several structural and non-structural BMPs are already in place at Pillar Point AFS, which are described in the following subsections. The locations of existing and planned structural BMPs are shown on Figure 3-1.

3.1 STRUCTURAL BMPS

3.1.1 Existing Structural BMPs

Existing structural BMPs include secondary containment structures, overhead coverage, and hardened drainage features intended to reduce erosive forces on site. All aboveground storage tanks are double-walled or have secondary containment structures. The one that is located outside of the building is double-walled. Secondary containment structures and overhead coverage currently prevent pollutant exposure to storm water runoff. All potential material pollutants are fully protected from precipitation. Additionally, spill containment and clean up supplies are available throughout the installation at all times. Spill response materials are selected and stationed appropriately for the size and content of any potential spill or leak.

Due to the erosive nature of soils at the installation, storm water is conveyed throughout the site in hardened swales and directed to stabilized discharge and infiltration areas. Storm water discharged to the James V. Fitzgerald ASBS is conveyed downslope through a concrete swale to minimize erosion to the adjacent slope. Active landslide areas have been identified at several locations around the perimeter of Pillar Point AFS. Landslide activity is due to wave action and natural coastal erosion processes. Infrastructure at Pillar Point AFS is engineered to minimize landslide risk and maximize soil and slope stability.

3.1.2 Structural BMPs Being Considered

In response to the alleged COP (SWRCB 2012b) violation, the 30 CES Environmental:

- Assessed the site;
- Estimated storm water runoff volumes and rates;
- Met with stakeholders (regulatory and non-regulatory);
- Evaluated water quality treatment opportunities; and
- Studied multiple storm water discharge alternatives.

The results of the *Storm Water Outfall Feasibility Study, Pillar Point Air Force Station, California* (Tetra Tech, Inc.2006) concluded that retrofitting Pillar Point AFS using low impact development (LID) techniques and continuing to discharge a portion of the site's runoff to the James V. Fitzgerald ASBS via an existing concrete channel was the most feasible alternative. The next step was to design LID features suitable for the site. A geotechnical evaluation was conducted to determine site suitability for LID retrofitting. The results of the investigation determined that substantially increasing the retention and infiltration of storm water could adversely affect slope stability to a significant degree. The geotechnical constraints were factored into the LID design to allow for storm water retention and infiltration to the maximum extent feasible, while maintaining slope integrity.

The LID features were designed such that storm water runoff generated within the developed areas of DA I is directed to a bioretention swale. The runoff will then filter through engineered soil media and infiltrate into the subsurface. Due to the aforementioned geotechnical constraints, a portion of the retrofit area will be lined and an under-drain system has been incorporated to prevent infiltration. The fully operational bioretention swale has been designed to capture and infiltrate approximately 20 percent of storm water generated from the 85th percentile rain event. The LID feature may be constructed if the results of receiving water monitoring indicate that storm water runoff from Pillar Point AFS is causing or contributing to alteration of natural ocean water quality in the James V. Fitzgerald ASBS.

3.2 NON-STRUCTURAL BMPS

Non-structural BMPs generally include those consisting of processes, prohibitions, procedures and schedules of activities, which have the ultimate goal of preventing the discharge of pollutants. Numerous non-structural BMPs are currently implemented at Pillar Point AFS and additional BMPs are scheduled for implementation.

3.2.1 Existing Non-structural BMPs

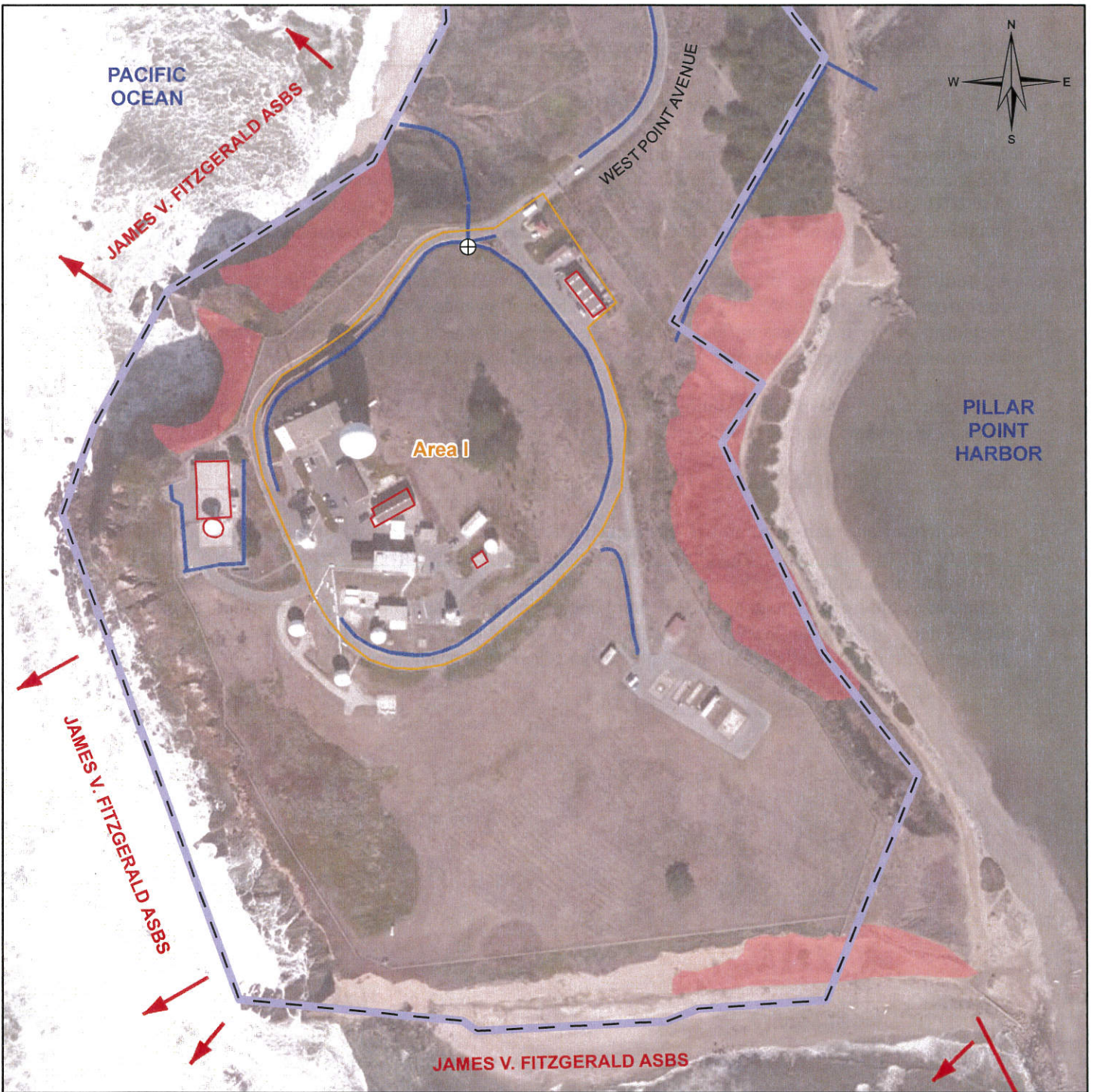
Non-structural BMPs currently implemented at Pillar Point AFS include measures for good housekeeping, spill and leak response, proper material and waste handling, material storage, employee training, inspections, and record keeping. The majority of operations and maintenance activities are performed indoors, which isolates these activities from storm water contact. If outdoor maintenance is necessary, it occurs during fair weather. Maintenance areas are swept clean after use.

The 30 CES implements an Environmental Impact Analysis Process which is the Air Force's method for complying with the National Environmental Policy Act (NEPA). This process allows the 30 CES to review proposed construction activities so that applicable BMPs for erosion and sediment control, and non-stormwater management, are selected for implementation.

Pillar Point AFS is included in the Department of Defense pesticide usage reduction mandate for Vandenberg AFB. Only Department of Defense-approved pesticides and herbicides may be applied and applicators are urged to employ alternative methods of pest control. The use of pesticides by contracted companies is extremely limited and all use is strictly monitored and reported to 30 CES Service Contracts. Pesticide usage records are maintained at Vandenberg AFB.

An annual employee training and orientation course is performed at Pillar Point AFS for personnel involved in the management of regulated oil storage containers at the facility. As part of the SPCC Plan, monthly and annual inspections are conducted to monitor and record the condition of all oil storage containers at Pillar Point AFS. The SPCC Plan includes detailed spill response procedures and is updated annually and/or in conjunction with any changes in facility design, construction, operation, or maintenance that substantively affects the potential to spill. The facility SPCC Plan is maintained on-site at Pillar Point AFS. The following facility maintenance and operations checklists are used:

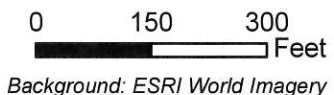
- Daily Checklist – Oil, Fuel, Hazardous Material/Waste Storage Facilities;
- Hazardous Waste Storage Weekly Inspection Log; and
- Oil and Fuel Transfer Operation Checklist.



Legend

- Air Force Property Boundary
- Sample location PP-1
- Secondary Containment BMPs
- Drainage Area I - Priority Discharge
- James V. Fitzgerald ASBS
- Landslide area or area prone to erosion
- V-Ditch

FOR OFFICIAL USE ONLY



**United States Air Force
Pillar Point Air Force Station**

**Structural
Best Management Practices**

Pillar Point ASBS Compliance Plan



3201 Airpark Drive, Suite 108
Santa Maria, CA 93455

TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
28645 .0011	9/18/2013	REYNOLDS	9164	3-1

3.2.2 Planned Non-structural BMPs

An additional employee training program at Pillar Point AFS will begin in the 2013 - 2014 storm season. The training will include an overview and orientation of requirements specified in the General Exception (SWRCB 2012a) and associated Special Protections. This will be conducted annually in order to train incoming site employees and provide compliance updates to long-term site employees.

An additional inspection program will also be implemented to inspect the storm water conveyance that discharges to the James V. Fitzgerald ASBS. The conveyance will be inspected annually prior to the beginning of the rainy season, and once during the rainy season to assess the need for maintenance to remove trash and debris. Maintenance will be scheduled as necessary.

There are no private property inholdings at Pillar Point AFS. Therefore, public outreach to private property owners will not be conducted.

3.3 BMP IMPLEMENTATION SCHEDULE

The structural and non-structural BMPs selected for Pillar Point AFS will protect water quality in the James V. Fitzgerald ASBS. In combination, the selected BMPs will reduce the volume of runoff to the ASBS and also reduce the discharge of potential pollutants. The 30 CES has targeted pollutant load reduction as the immediate goal of BMP implementation and has implemented non-structural controls per the General Exception (SWRCB 2012a). Additional non-structural BMPs are planned for implementation. A detailed BMP implementation schedule is provided in Table 3-1.

Table 3-1
Pillar Point AFS Best Management Practices Implementation Schedule

BMP Class	BMP Type	Frequency	Implementation Date	Description
Employee Training	Non-Structural	Annual	Implemented, ongoing.	Conduct annual SPCC Training for personnel who handle hazardous materials.
Employee Training	Non-Structural	Annual	Beginning 2013, ongoing.	Implement an ASBS Compliance and Storm Water Discharge Training.
Inspections	Non-Structural	Annual	Beginning 2013, ongoing.	Inspect the storm water outfall prior to the beginning of each rainy season, and three times during each rainy season concurrent with sampling events.
Inspections	Non-Structural	Monthly	Implemented, ongoing.	Conduct monthly inspections of all SPCC-identified equipment to verify the integrity of equipment containing diesel, mineral oil, or hydraulic fluid.
Inspections	Non-Structural	Annual	Implemented, ongoing.	Conduct annual inspections for all SPCC-identified equipment, containment facilities, and spill cleanup supplies.
Spill Prevention and Control	Structural	N/A	Implemented, ongoing.	Maintain all tanks containing potential pollutants under cover and with secondary containment.
Spill Prevention and Control	Structural	N/A	Implemented, ongoing.	Maintain spill containment and cleanup kits throughout the facility.

Table 4-1, Page 1 of 2

Table 3-1 (Continued)
Pillar Point AFS Best Management Practices Implementation Schedule

BMP Class	BMP Type	Frequency	Implementation Date	Description
Spill Prevention and Control	Non-Structural	N/A	Implemented, ongoing.	Document spill response, cleanup, and reporting procedures in the SPCC Plan.
Record Keeping	Non-Structural	Annual	Implemented, ongoing.	Review and evaluate the SPCC Plan annually, and/or in conjunction with a change in facility design, construction, operation, or maintenance that substantively affects the potential to spill.
Record Keeping	Non-Structural	Annual	Implemented, ongoing.	Track all approved non-storm water discharges to land under the Vandenberg AFB 'Discharge to Grade' program.
Record Keeping	Non-Structural	Annual	2014, ongoing.	Review <i>ASBS Compliance Plan</i> and site map. Update when changes are made to storm water drainage system or if additional BMPs are needed.
Record Keeping	Non-Structural	Annual	2014, ongoing.	Review <i>Pillar Point Sampling and Analysis Plan</i> and <i>Quality Assurance Project Plan</i> . Update as needed for SWAMP compatibility.
Planning	Non-Structural	As Needed	Implemented, ongoing.	Review NEPA documents and condition to apply BMPs for erosion and non-storm water control.
Erosion Control	Structural	N/A	As needed, ongoing.	All construction activities that result in soil disturbance will be addressed with erosion control BMPs until final stabilization criteria are met.

Table 4-1, Page 2 of 2

- Notes: AFB Air Force Base
 NEPA National Environmental Policy Act
 SPCC Spill Prevention, Control, and Countermeasure
 SWAMP Surface Water Ambient Monitoring Program

4.0 INDIVIDUAL MONITORING PROGRAM

The 30 CES elected to implement an Individual Monitoring Program in accordance with the General Exception (SWRCB 2012a). All sampling and analysis will be conducted in accordance with California Surface Water Ambient Monitoring Program (SWAMP) protocols and procedures. The Pillar Point AFS *Sampling and Analysis Plan* (Tetra Tech, Inc. 2012a) and *Quality Assurance Project Plan* (Tetra Tech, Inc. 2012b) will be fully implemented and updated as needed on an annual basis to ensure SWAMP protocols and quality control measures are used.

Monitoring will consist of:

- Aqueous sampling (Core Discharge, Ocean Receiving Water, and Reference Area monitoring);
- Sediment sampling;
- Marine debris tracking;
- Quantitative survey of intertidal benthic marine life; and
- Bioaccumulation study.

Sampling locations are described in Table 4-1.

**Table 4-1
Sampling Location Descriptions**

Sample ID	Latitude/Longitude	Description
PP-1	37.499182N / -122.498182W	Core Discharge. The storm water flume adjacent to the Pillar Point AFS security gate (see Figure 3-1), representing storm water quality of storm water runoff from DA I.
FMR-1	37.499744N / -122.49880W	Ocean Receiving Water. The Pacific Ocean surf zone at the point where storm water from DA I discharges to the ocean, representing water quality of receiving waters at the Pacific Ocean.
FMR-2	37.358237 / -122.401519	Reference Area. The Pacific Ocean reference site at Tunitas Creek, which will be representative of water quality that is outside of the influence of the Pillar Point AFS storm water runoff.

4.1 AQUEOUS SAMPLING

Core Discharge monitoring will be performed three times annually during a storm event that is greater than 0.1 inch and generates runoff and is at least 72 hours from the previously measureable event. Ocean Receiving Water and Reference Area monitoring will be performed at approximately the same time prior to (pre-storm) and during or immediately after the same storm (post-storm). The following will be measured in aqueous samples:

- COP (SWRCB 2012b) Table A constituents;
- COP (SWRCB 2012b) Table B constituents for *Marine Aquatic Life Protection* (except for toxicity; only chronic toxicity for three species are required);
- Dichlorodiphenyltrichloroethane (DDT);
- Polychlorinated biphenyls (PCBs);
- Polycyclic aromatic hydrocarbons (PAHs, arochlors);
- Organophosphate pesticides;
- Pyrethroid pesticides;
- Nitrates;
- Phosphates;
- COP (SWRCB 2012b) indicator bacteria; and
- Critical life stage chronic toxicity with 100 percent concentration (using *Mytilus edulis*, *Macrocystis pyrifera*, and *Atherinops affinis*).

Runoff flow measurements will be recorded throughout the year. The results will be reported annually for each precipitation season to the SWRCB and San Francisco Bay Regional Water Quality Control Board (SFBRWQCB).

4.2 SEDIMENT SAMPLING

Subtidal sediment (sand or finer, if present) samples will be collected three times over a five-year period. Samples will be collected from the Receiving Water monitoring site (FMR-1) during low tide using an Eckman grab (or equivalent). The following analytes will be measured in sediment: COP (SWRCB 2012b) Table B constituents for *Marine Aquatic Life Protection*, DDT, PCBs, PAHs (arochlors), pyrethroid pesticides, and organophosphate pesticides. Acute toxicity will be monitored using *Eohaustorius estaurius*.

4.3 MARINE DEBRIS MONITORING

Marine debris monitoring will be performed on the day after each storm event. Additionally, a baseline survey will be performed in order to compare to post-storm results. Representative quantitative observations for trash by type and source will be performed along the coast of the James V. Fitzgerald ASBS within the influence of outfall. The influence of the outfalls will be considered a ten-foot radius of the outfall at sampling point FMR-1.

4.4 QUANTITATIVE SURVEY OF INTERTIDAL BENTHIC MARINE LIFE

Once during each five-year period, a quantitative survey of intertidal benthic marine life will be performed at the Receiving Water sampling site and at the Reference Area. The results of the survey will be submitted to the SWRCB and SFBRWQCB at least six months prior to the end of the permit cycle.

4.5 BIOACCUMULATION STUDY

Once during each five-year period, a bioaccumulation study will be conducted to determine the concentrations of metals and synthetic organic pollutants at representative discharge sites and at representative reference sites. The bioaccumulation study may include California mussels (*Mytilus californianus*) and/or sand crabs (*Emerita analoga* or *Blepharipoda occidentalis*).

4.6 QUALITY CONTROL AND REPORTING

A designated Quality Assurance Officer will review all data to ensure that quality control metrics are achieved. Receiving water samples will be evaluated against the *Flowchart to Determine Compliance with Natural Water Quality* (General Exception, Attachment 1; SWRCB 2012a). If the results of the receiving water monitoring indicate that storm water from Pillar Point AFS is causing or contributing to an alteration of natural ocean water quality in the James V. Fitzgerald ASBS, a report will be submitted to the SWRCB and the SFBRWQCB within thirty days of receiving the results.

This page intentionally left blank.

5.0 REFERENCES

State Water Resources Control Board

2012a *State Water Resources Control Board Resolution No. 2012-0031 Amending the General Exception to the California Ocean Plan for Selected Discharges Into Areas Of Special Biological Significance, Including Special Protections for Beneficial Uses.* Available online at: http://www.waterboards.ca.gov/water_issues/programs/ocean/asbs.shtml.

State Water Resources Control Board

2012b *Water Quality Control Plan, Ocean Waters of California (California Ocean Plan).* Available online at: http://www.waterboards.ca.gov/water_issues/programs/ocean/docs/cop2012.pdf.

Tetra Tech, Inc.

2006 *Storm Water Outfall Feasibility Study, Pillar Point Air Force Station, California.* Prepared for U.S. Air Force. 15 August.

Tetra Tech, Inc.

1999 *Final Environmental Assessment for the Pillar Point Repair Project, Pillar Point Air Force Station, California.* Prepared for U.S. Air Force. 2 September.

Tetra Tech, Inc.

2012a *Sampling and Analysis Plan for Storm Water and Receiving Water Monitoring at Pillar Point Air Force Station, California, FY11 Clean Water Act and Water Program Technical Support for Vandenberg Air Force Base, California/AFSPC.* Prepared for U.S. Air Force. 27 October.

Tetra Tech, Inc.

2012b *Quality Assurance Project Plan for Storm Water and Receiving Water Monitoring at Pillar Point Air Force Station, California.* Prepared for U.S. Air Force. December.

Timmerman, Doug

2013 Personal conversation. August.

U.S. Air Force

2012 *Spill Prevention, Control and Countermeasure Plan, 30th Space Wing Plan 32-7044.*

This page intentionally left blank.