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

29 July 2008

MEMORANDUM FOR: SANTA BARBARA COUNTY  
AIR POLLUTION CONTROL DISTRICT  
ATTN: MR. PHIL SHEEHAN

FROM: 30 CES/CEVC  
1028 Iceland Avenue  
Vandenberg AFB, CA 93437-6010

JUL 30

SUBJECT: Environmental Investment (ENNVEST) Compliance Plan

1. At the 3 April 2008 ENNVEST meeting between Vandenberg Air Force Base (VAFB) and the Santa Barbara County Air Pollution Control District (APCD), VAFB and the APCD discussed options in order to ensure compliance with the ENNVEST Boiler Program.
- 2.
3. The ENNVEST Program forged the necessary framework within which to engage in a proactive and cooperative partnership with the regulatory community. Vandenberg Air Force Base (VAFB) united with the APCD and the United States Environmental Protection Agency (U.S. EPA) (Headquarters and Region IX) to implement the program.
4. One significant milestone of the ENNVEST Program involved boiler emission retrofits and the corresponding emission reductions. The boiler emission reductions at VAFB included 10 candidate boilers and 15 capitol improvement boilers (CIP). An additional milestone included the VAFB procurement of APCD certified oxides of nitrogen (NOx) emission reduction credits (ERC) totaling 12 tpy from Greco Minerals, Inc.<sup>1</sup> Upon Compliance Plan approval by the APCD, VAFB will relinquish title of these ERC to the APCD providing a clean air benefit in Santa Barbara County.
5. The enclosed Compliance Plan (CP) provides an overall approach to satisfy the ENNVEST Program requirements and includes the following:
  - (1) Apply for boiler permits with the APCD. This includes both candidate boilers and CIP boilers. Table 3 to the CP provides a proposed permitting schedule.
  - (2) Increase boiler emission limits for the ENNVEST candidate boilers and CIP boilers to the applicable APCD Prohibitory Rule 360 (Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers) or 361 (Small Boilers, Steam Generators, and Process Heaters).


<sup>1</sup> SBCAPCD Certification No. 0010-1103

(3) Offset the incremental increase in NO<sub>x</sub> emissions applying ERCs from the VAFB Department of Defense bank.

(4) Discontinue use of ENVVEST Protocols in lieu of APCD permits with increased offset emission rates.

(5) Relinquish the Grefco Mineral, Inc. ERC to the APCD.

6. VAFB appreciates the APCD's understanding and willingness to close out these remaining ENVVEST issues. If you have any questions, please do not hesitate to contact me at (805) 606-2068.

  
DAVID SAVINSKY, GS-12  
Air Quality Program Manager  
Environmental Flight

Attachment  
ENVEVST Compliance Plan

cc:  
File  
M&E (T. Drake)  
APCD (M. Goldman)



AIR QUALITY PROGRAM  
VANDENBERG AIR FORCE BASE



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**FINAL DRAFT ENVIRONMENTAL INVESTMENT COMPLIANCE PLAN**

Contract No. F41624-03-D-8607  
Task Order 0055-02  
CDRL A007

**27 June 2008**

Prepared for:



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## 1. SUMMARY

The purpose of this Compliance Plan is to clearly define the Environmental Investment (ENVVEST) program objectives and serve as the final documentation to achieve these goals.

## 2. BACKGROUND

The ENVVEST Program forged the necessary framework within which to engage in a proactive and cooperative partnership with the regulatory community. Vandenberg Air Force Base (VAFB) united with the Santa Barbara County Air Pollution Control District (SBCAPCD) and the United States Environmental Protection Agency (U.S. EPA) (Headquarters and Region IX) to implement the program.

One significant milestone of the ENVVEST Program involved boiler emission retrofits and the corresponding emission reductions. The boiler emission reductions at VAFB included ten candidate boilers and 15 capitol improvement boilers (CIP) resulting in nitrogen oxides (NO<sub>x</sub>) emission reduction of 2.29 tons per year (tpy).<sup>1</sup>

An additional milestone included the VAFB procurement of SBCAPCD certified NO<sub>x</sub> emission reduction credits (ERC) totaling 12 tpy from Grefco Minerals, Inc.<sup>2</sup> Upon approval of this Compliance Plan by the SBCAPCD, VAFB will relinquish title of these ERC to the SBCAPCD providing a clean air benefit in Santa Barbara County.

The milestone requirements were specified in the Final Project Agreement (FPA) and incorporated into SBCAPCD Rules and Regulations, under Rule 1301, thus making the milestones and the strategy to achieve each milestone enforceable. As stated in Rule 1301, a stationary source is defined as any structure, facility, or installation that emits or may emit any regulated pollutant or any pollutant listed pursuant to the Clean Air Act. In the case of ENVVEST, the rule defines the requirements and elements of the Vandenberg AFB, ENVVEST program. The commitments by Vandenberg AFB to go beyond what was required by SBCAPCD Regulation XIII and achieve superior environmental performance through successful attainment of each milestone, the SBCAPCD and U.S. EPA granted Vandenberg AFB relief from the requirement of Regulation XIII. The five milestones are:

- Milestone 1: Completion of the initial assessment and cost feasibility study within 30 days of execution of the FPA;
- Milestone 2: Retrofitting 30 percent of candidate boilers identified in Milestone 1 by 30 April 1999;
- Milestone 3: Emission reductions of 2.0 tpy by 30 April 2000;

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<sup>1</sup> Ref: 28 Apr 2000 ENVVEST Summary Report.

<sup>2</sup> SBCAPCD Certification No. 0010-1103

- Milestone 4: Retrofitting 70 percent of candidate boilers identified in Milestone 1 by 30 April 2001; and
- Milestone 5: Reduction in annual emissions of ozone precursors by 10 tons or more by 30 November 2002.

In addition to the milestones, the FPA identified the need for a program plan. Source selection criteria, baseline emission protocols, technology options, emission measurement protocols, and emission reduction reporting protocols were to be included in the plan. An initial plan was submitted to SBCAPCD on 26 November 1997.

Attachment 1 to this document provides a chronology detailing significant events to the ENVVEST Program.

### **3. INTRODUCTION**

This Compliance Plan details the ENVVEST Program boiler emission sources for which improvements are required. Twenty-five boilers were included in the original ENVVEST boiler retrofit or replacement program. Ten of these boilers were identified as candidate boilers and fifteen as CIP boilers. As indicated above, these 25 boilers achieved an emission reduction of 2.29 tpy of NO<sub>x</sub>.

SBCAPCD Regulation XIII, Rule 1301 defines the requirements and elements of the VAFB ENVVEST program. The commitment by VAFB was to go beyond what is required by SBCAPCD Regulation XIII and achieve superior environmental performance through successful boiler emission reduction sustainability. VAFB realized that the promulgation of SBCAPCD rules and regulations, combined with the deterioration of boilers caused by normal wear and tear, would end the useful life of many of these boilers.

### **4. APPLICABILITY**

The candidate boilers originally included in the ENVVEST boiler retrofit or replacement program to achieve an emission reduction are identified in Table 1.

Table 1 Original ENVVEST Candidate Boilers<sup>(1)</sup>

ENVVEST Boiler Reference	Building	Original ENVVEST Boiler Manufacturer	Existing Boiler Manufacturer
1400	1800	Kewanee with a power burner manufactured by Johnson, M#DHF80G4GM, S#290938	Kewanee - Burner: Johnson DHFG4GM
1900	6523	Parker Brothers Boiler (PBB) with a pulse burner (Packaged Unit)	PPB with a Premix Metal Fiber Burner
2000	6601	Ajax with a Parker Boiler Premix Metal Fiber Burner	Ajax with a PBB Premix Metal Fiber Burner
2800	8510	Ajax with an atmospheric burner (Packaged Unit)	Ajax with a PBB Premix Metal Fiber Burner
2900	9005	PVI with a power Burner manufactured by Alzeta, M#SGM500, S#129620566	PVI with a power Burner manufactured by Alzeta, M#SGM500, S#9746423
3300	10145	Lockinvar with an atmospheric burner (Packaged Unit)	Parker Brother Boilers
		Lockinvar with an atmospheric burner (Packaged Unit)	Parker Brother Boilers
4100	13330	Kewanee with a power burner manufactured by IGT, M# FIR, S# EXP178-2	Ajax, Burner M# 5M175, S# 9734463
			Ajax, Burner M# 5M175, S# 9734463
7400	7015	Parker Brothers with a pulse burner (Packaged Unit)	Parker Brother Boilers with a Premix Metal Fiber Burner
7900	11777	Kewanee with a power burner manufactured by Johnson, M# DHF40G4DG, S# 291043	Kewanee with a power burner manufactured by Johnson, M# DHF40G4DG

(1) The original ENVVEST boiler at Building 13330 was replaced in 2004 with the two boilers identified here.

The existing candidate boilers along with the CIP boilers currently in the ENVVEST boiler retrofit or replacement program to achieve an emission reduction are identified in Table 2.

Table 2 Existing ENVVEST Candidate and CIP Boilers

BUILDING	MAKE	MODEL	RATING (MMBtu/hr)	# of Units	Candidate (C) or CIP
836	Kewanee	LSW125G	4.500	1	CIP
1800	Kewanee	M-205-KGO	2.050	1	C
3000	Ajax	WPG2500	4.980	2	CIP
6523	Parker Brothers	T2970L	2.970	1	C
6601	Ajax Boiler	WBG-2000	2.000	1	C
7015	Parker Brothers	T1995L	1.995	1	C
8510	Ajax	HPG2500	2.500	1	C
9005	PVI Industries	80WBHE100A-TP	1.250	1	C
10145	Parker Brothers	48L	3.990	2	C
11777	Kewanee	M-155-KG	1.680	1	C
12000	Hydrotherms	AM 300	1.794	6	CIP
13321	Hydrotherms	AM 300	0.897	3	CIP
13323	Hydrotherms	AM 300	0.897	3	CIP
13330	Ajax Boiler	SRFG-40	3.500	2	C

## 5. ENVVEST COMPLIANCE ACTIONS

At the 3 April 2008 meeting attended by VAFB and the SBCAPCD, the overall approach to satisfy the ENVVEST Program requirements included the following:

- (1) Apply for boiler permits with the SBCAPCD. VAFB estimated that up to 14 permits may be required. This includes both candidate boilers and CIP boilers. Table 3 provides the permitting schedule.
- (2) Increase boiler emission limits for the ENVVEST candidate boilers and CIP boilers to the applicable SBCAPCD Prohibitory Rule 360 (Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers) or 361 (Small Boilers, Steam Generators, and Process Heaters).
- (3) Offset the incremental increase in NO<sub>x</sub> emissions using the VAFB Department of Defense ERC bank. NO<sub>x</sub> emissions are calculated by applying the initial ENVVEST emission test and fuel use. Offset emission requirements are based on the applicable prohibitory rule limit and the permitted fuel use.
- (4) Discontinue use of ENVVEST Protocols in lieu of SBCAPCD permits with increased offset emission rates.
- (5) Relinquish the Grefco Mineral, Inc. ERC to the SBCAPCD.

**Table 3 ENVVEST Boilers Permit Schedule <sup>(1)</sup>**

BUILDING	MAKE	MODEL	RATING	# of Units	Permit Application Date	Applicable APCD Rule
836	Kewanee	LSW125G	4.500	1	14 Apr 08 <sup>(5)</sup>	361
1800	Kewanee	M-205-KGO	2.050	1	14 Apr 08 <sup>(5)</sup>	361
3000	Ajax	WPG2500	4.980	2	14 Apr 08 <sup>(5)</sup>	361
6523	Parker Brother	T2970L	2.970	1	14 Apr 08 <sup>(5)</sup>	361
6601	Ajax Boiler	WBG-2000	2.000	1	30 Jul 08	360
7015	Parker Brothers	T1995L	1.995	1	30 Jul 08	360
8510	Ajax	HPG2500	2.500	1	14 Apr 08 <sup>(5)</sup>	361
9005	PVI Industries	80WBHE100A-TP	1.250	1	30 Jul 08 <sup>(4)</sup>	360
10145	Parker Brothers	48L	3.990	2	30 Jul 08	360
11777	Kewanee	M-155-KG	1.680	1	2, 4	360
12000	Hydrotherms	AM 300	1.794	6	30 Jul 08	360
13321	Hydrotherms	AM 300	0.897	3	30 Jul 08	360
13323	Hydrotherms	AM 300	0.897	3	30 Jul 08	360
13330	Ajax Boiler	SRFG-40	3.500	2	30 Jul 08	360

Notes:

1. Not all units identified in Table 3 require a separate permit. Some units may be combined others (e.g., the six units operated at Building-12000 will require one permit). At a minimum, each building will require a permit.
2. This unit located at B-11777 is scheduled to be removed and will be replaced with up to three separate smaller units. It is uncertain if these units will require an APCD permit.
3. These units submitted Permit to Operate applications as required per Rule 202.
4. Boiler out of service.

**6. CONCLUSIONS**

This Compliance Plan serves as the final documentation to meet the ENVVEST program objectives and goals for boilers.

**ABBREVIATIONS AND ACRONYMS**

AEI	Air Emissions Inventory
SBCAPCD	Santa Barbara County Air Pollution Control District
CARB	California Air Resources Board
CAPCOA	California Air Pollution Control Officers Association
CEMS	continuous emissions monitoring system
CFR	Code of Federal Regulations
DoD	Department of Defense
ENVVEST	Environmental Investment
ERC	emission reduction credits
FCAAA	Federal Clean Air Act Amendments
FPA	Final Project Agreement
MMBtu/hr	million British thermal units per hour
NOx	Nitrogen oxides
ppm	parts per million
PTE	potential to emit
PTO	Permit to Operate
ROC	reactive organic compound
SIP	State Implementation Plan
SUVMS	Shared Use Vehicle Management System
VAFB	Vandenberg Air Force Base
VOC	volatile organic compounds
U.S. EPA	United States Environmental Protection Agency
30 CES	30 <sup>th</sup> Civil Engineering Squadron
30 CES/CEV	30 <sup>th</sup> Civil Engineering Squadron, Environmental Management Flight

## **ATTACHMENT 1**

### **Chronology Detailing Significant Events to the ENVVEST Program**

1. Nov 1990: Federal Clean Air Act Amendments (FCAAA). Title V of the FCAAA of 1990 required states to develop and implement a federal operating permit program (Codified under 40 Code of Federal Regulations Part 70).
2. Nov 1993: SBCAPCD developed Regulation XIII, Federal Operating Permits. Regulation XIII applied to major sources of air pollution, and required such sources obtain a federal operating permit (Title V) from the SBCAPCD once the U.S. EPA approved Regulation XIII. Later it was determined that a federal operating permit would be required by 30 Nov 1996.
3. Jan 1995: The California Air Pollution Control Officers Association (CAPCOA) and the California Air Resources Board (CARB) finalized a rule to Limit Potential to Emit (SBCAPCD Rule 370). This rule excluded small businesses and streamlined the federal operating permit program.
4. Mar 1995: The Clinton Executive Administration proposed 10 principles of regulatory reform by directing the U.S. EPA to implement 25 priority actions. The ENVVEST Program initiated strategies within the Department of Defense (DoD) and was the government equivalent to priority action #19 - Project XL (Excellence and Leadership).
5. Jun 1995: The SBCAPCD Board of Directors codified Rule 370. SBCAPCD Rule 370 was the CAPCOA/CARB model rule and included U.S. EPA-suggested changes. Rule 370 allowed a source to calculate actual emissions and if compliant with the rule received an exemption from the federal operating permit program requirements. The rule also reduced the SBCAPCD permit overloads and streamlined recordkeeping and reporting requirements for small operations.
6. Jul 1995: Vandenberg Air Force Base (VAFB) selected ENVVEST as a pilot program. The purpose of this proposal was to develop an emission reduction strategy for VAFB resulting in significant actual emission reductions.
7. Nov 1995: Memorandum of Agreement signed between the DoD and the U.S. EPA to test pilot regulatory reform initiatives at three to five military installations.
8. Dec 1995: VAFB presented air quality and water quality initiatives to DoD, U.S Air Force and U.S. EPA. VAFB continued negotiations with the respective regulatory stakeholders to pursue each initiative. The air quality initiative required both regulatory reform and regulatory relief and was selected; the water initiative was pursued under the VAFB Pollution Prevention Program. After two years of negotiations, the SBCAPCD and VAFB finalized the first ENVVEST agreement.
9. April 1996: VAFB submitted the Non-Major Stationary Source Designation Request to the SBCAPCD. This report detailed emissions considered by VAFB to be excluded or included in Title V applicability major source determination.

10. Jun 1996: VAFB submitted a Title V Operating Permit Application to SBCAPCD. The application provided a shield in the event VAFB is unable to achieve a Part 70 exemption pursuant to Rule 370.
11. Jul 1996: SBCAPCD determined that VAFB was exempt from the permitting requirements of Title V. SBCAPCD based this determination on the Air Emissions Inventory (AEI) Report (included with the April 1996 Non-Major Stationary Source Designation) regarding actual emissions at VAFB and the VAFB commitment to participate in the ENNVEST Program.
12. Jul 1996: SBCAPCD deemed the VAFB Title V Operating Permit Application complete.
13. Aug 1996: SBCAPCD Board of Directors hearing amended Rule 1301 to provide regulatory enforceability and legal protection for VAFB by dividing the base into nine separate stationary sources for Part 70 applicability. By breaking the base into nine separate stationary sources, the assumption was that each source remains below Rule 370 exemption limits even if the entire base (all nine stationary sources) exceeds these limits. Additionally, The SBCAPCD Board of Directors provided discretion regarding applicability determinations for specific emission units<sup>3</sup>.
14. 1996-present: VAFB began tracking annual emissions from each of the nine separate stationary sources in the annual Major Source Determination Report. This document, derived from the annual AEI Report, is the VAFB assessment of compliance with Rule 370 for each of the nine stationary sources. This report did not include the 12-month rolling average as required by Rule 370.
15. Nov 1997: VAFB, U.S. EPA Region IX, and the SBCAPCD entered into an ENNVEST Final Project Agreement to carry out a pilot project testing innovative approaches to environmental protection. VAFB was allowed to remain in the nine separate stationary sources in order to comply with District Rule 370 and the District's Title V Federal Operating Permit Program.
16. Dec 1997: U.S. EPA Region IX provided approval of SBCAPCD Rule 1301 amendments for inclusion into the California State Implementation Plan (SIP). Rule 1301 defines DoD facilities as nine separate stationary sources at VAFB for Rule 370 and Part 70 applicability.
  - a. The 1997 ENNVEST Program forged the necessary framework within which to engage in a proactive and cooperative partnership with the regulatory community. VAFB collaborated with the SBCAPCD and U.S. EPA to implement the program.
17. Apr 2002: ENNVEST Final Plan (Plan) was completed and submitted to the SBCAPCD. SBCAPCD reviewed the Plan and forwarded it to U.S. EPA for approval. The Plan would

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<sup>3</sup> Non-road engines including tactical support engines, building maintenance engines, and infrastructure maintenance engines are excluded from Title V applicability.

become federally enforceable upon the U.S. EPA Administrator's approval into the California SIP. The Plan identified several control strategies to reduce emissions. These included boiler retrofits, purchase of ERCs, and establishment of a Shared Use Vehicle Management System (SUVMS).

- a. Emission reductions from boilers at VAFB included 10 candidate boilers and 15 capital improvement boilers (CIP) resulting in an emission reduction of 2.29 tons per year (Ref: 28 Apr 2000 ENVVEST Summary Report).
- b. NO<sub>x</sub> ERCs purchased from Grefco Minerals, Inc total 12 tons.
- c. Quantified emission reductions from the SUVMS were included but not applied to the final Plan total for emission reductions.
- d. U.S. EPA was to review and incorporate the final Plan into the California SIP within two years as identified in SBCAPCD Rule 1301.

18. Apr 2004: U.S. EPA failed to approve the Plan in the California SIP within two years as required by SBCAPCD Rule 1301. In order to prevent the termination of the ENVVEST Program, VAFB met with U.S. EPA and the SBCAPCD to discuss measures to incorporate the Plan into the California SIP.

19. Oct 2004: VAFB performed site assessments of ENVVEST candidate and CIP boilers.

20. Nov 2004: VAFB, U.S. EPA and the SBCAPCD met to discuss air quality issues associated with the ENVVEST Program. All parties affirmed their interest and commitment to finalizing the VAFB ENVVEST project because of the positive accomplishments associated with the program.

- a. SBCAPCD (Mike Goldman) indicated that ENVVEST Program approval authorization and the application of the Grefco Mineral, Inc. ERCs was contingent on the development and use of the SUVMS. Removal of the electric vehicles placed the SBCAPCD in an awkward position and could affect the U.S. EPA approval of the Plan.
- b. U.S. EPA indicated that the emission reductions associated with boilers identified in the Plan were not real, quantifiable, surplus and enforceable unless SBCAPCD permits were issued. SBCAPCD (Mike Goldman) was unclear whether the 10 ENVVEST boilers or an additional 15 CIP boilers provided the 2.29 tons of emission reduction identified in the Plan. The Plan indicated it was ten ENVVEST Boilers but the annual summary reports indicate that the CIP boilers also contributed to the emission reductions. VAFB committed to permitting the ten boilers identified in the Plan. VAFB also committed and submitted a straw man ENVVEST boiler application to the SBCAPCD on 19 Nov 04.

21. Dec 2004: VAFB, U.S. EPA and the SBCAPCD met to discuss air quality issues associated with the ENVVEST Program.

- a. 30 CES/CEVC (George Croll) provided an update of the ENVVEST boilers to the SBCAPCD and U.S. EPA. Mr. Croll indicated that the program suffered when the

previous 30 CES/CEVC program manager left in 2001/2002. This caused serious problems in meeting the ENVVEST boiler emission reduction goals. Mr. Croll stated that VAFB could fix these problems but that it would take time, money and resources.

- b. U.S. EPA stated they would initiate an approval letter for the ENVVEST Program following completion of the boiler applications and permits.

22. 10 May 2005: At a meeting between George Croll and Terry Dressler, Air Pollution Control Office for the SBCAPCD, Mr. Dressler stated that since the County was in attainment for the Federal Ozone Standard (June 2004) VAFB no longer required the flexibility and protection provided by the ENVVEST Program. Mr. Dressler indicated that VAFB and the SBCAPCD should conclude the program. This caused VAFB to consider how to remain exempt from Title V permitting as a single stationary source under SBCAPCD Rule 370. Mr. Dressler concurred with VAFB regarding Rule 370 annual reporting and indicated that these records/reports for VAFB did not require completion on a monthly basis. Mr. Dressler stated that the 12 tons of NO<sub>x</sub> ERCs should not be retired but applied elsewhere.

23. Oct 2005: As required by SBCAPCD Rule 212 and part of an SBCAPCD request for information, VAFB submitted stationary source emissions information to SBCAPCD for review. This emission information provided VAFB justification for emissions counted towards Part 70 (Title V) applicability assuming VAFB was a single stationary source. Justification applied the same 1996 logic previously provided and approved by the SBCAPCD (Doug Allard). VAFB requested that the SBCAPCD review and comment on this submittal. A draft PTO application for the ENVVEST boilers was received by SBCAPCD on November 19, 2004 and was never acted on.

24. Jan 2006: The VAFB single stationary source qualified for the Part 70 exclusion through Rule 370. Rule 370 required a stationary source seeking exemptions to Part 70 to maintain a rolling 12-month actual emissions report. One purpose of the rolling 12-month report was to provide the facility operator sufficient time to submit a Part 70 application in order to obtain the Part 70 application shield prior to exceeding applicable thresholds. Failure to obtain a Part 70 application shield prior to exceeding applicable thresholds subjected the facility to federal enforcement action.

25. 16 May 2007 meeting VAFB and SBCAPCD:

- a. Following the breakdown of the agenda and introductions, Mr. Cattle provided a SBCAPCD letter detailing the SBCAPCD position with respect to the ENVVEST Program. The letter indicated that the ENVVEST Program at VAFB has not been maintained pursuant to the requirements identified in Regulation XIII and also cited U.S. EPA's failure to approve the final Plan in the California SIP. The SBCAPCD provided two options as detailed in Attachment 2. The SBCAPCD expressed a willingness to work with VAFB with regards to applying Option 2.
- b. Mr. Cattle stated that original approval of the ENVVEST Program included four distinct actions. The actions were 2.29 tons of NO<sub>x</sub> reductions through boiler retrofits, 12 tons of ERCs purchased from Grefco Mineral, Inc., and the electric vehicle program with the associated SUVMS. All four were important concepts to the ENVVEST Program

approval because the original ten tons of emission reductions were not achieved as envisioned in the ENVVEST project agreement.

A crucial part of any decision must include the 2.29 tons of NOx emission reductions for boiler controls cited in the Plan. George Croll pointed out concerns and potential flaws regarding the original calculation methodology. One specific example involved the shut down of an ENVVEST boiler. Boiler inactivity did not equate to emission reductions when clearly an emission reduction has occurred. The SBCAPCD agreed that potential issues regarding the calculation methodology need to be evaluated and recommended VAFB review the methodology and provide an evaluation.

VAFB commented that fluctuations in boiler emissions resulted from changes in the weather (e.g., a warm winter versus a cold winter) might impact the 2.29 tons of NOx emission reductions. The SBCAPCD suggested that changes in the load for buildings where ENVVEST boilers operated might affect these boiler emissions and suggested VAFB determine if a shift in load, such as a Flight moving to another building, could cause the lower boiler emissions identified by VAFB.

The SBCAPCD indicated that if an ENVVEST unit is replaced with another boiler, then the replacement boiler must achieve the original ENVVEST boiler emission limits. The SBCAPCD requested VAFB develop a list of the ENVVEST boilers (candidate and CIP) detailing the NOx emission levels tested to in the original baseline year.

Peter Cantle indicated that ENVVEST approval and the application of the Grefco Mineral, Inc. ERCs were contingent on the development and use of the electric vehicles with the SUVMS. George Croll and Monte McVay stated that the lease on electric vehicles ended and that Ford removed them even though VAFB lobbied to keep them on base. No options were available to either extend the lease or purchase these vehicles. VAFB stated that the Grefco Minerals, Inc. ERCs had been ready to be transferred to the SBCAPCD when requested to do so.

26. 27 Jun 2007 meeting VAFB and SBCAPCD:

Dave Savinsky provided a detailed summary documenting emission rates and fuel use for the ENVVEST boilers. This summary illustrated the varying values of emissions reductions and how these are a function of fuel use. The presentation also portrayed issues requiring resolution including the need to tune, retrofit or replace boilers that had fallen into disrepair.

Mr. Savinsky stated that there was a correlation between fuel use reductions and launch activities at VAFB. Reductions in launch activity resulted in lower fuel use.

Peter Cantle indicated that the SBCAPCD had not had time to review the VAFB submittal and would provide comments sometime after they had reviewed the documents.

George Croll proposed that the ENVVEST boilers could be revised by permitting all the boilers at the emission rates originally tested at in 1999. Fuel use would be monitored through the

ENVVEST Fuel Use Monitoring Plan. Mr. Croll also proposed a modification to the fuel use requirement that addressed the issue of lower fuel use.

VAFB also suggested that permitting of the ENVVEST boilers would meet the federally enforceable issues specified by the U.S. EPA in a December 2004 meeting between VAFB, the SBCAPCD and U.S. EPA. The SBCAPCD did not follow-up on the 2004 U.S. EPA proposal to fix ENVVEST by permitting the ENVVEST boilers (Ref. SBCAPCD ATC application for the boiler at Building 6523).

Peter Cantle reiterated the SBCAPCD position that a crucial part of any decision must include the 2.29 tons of NOx emission reductions for boiler controls cited in the 2002 Plan. George Croll again pointed out concerns and potential flaws regarding the original calculation methodology and provided an alternative approach.

The issues of replacement boilers were not discussed. However, the SBCAPCD position from the May 07 meeting is that if an ENVVEST unit is replaced with another boiler, then the replacement boiler must achieve the original ENVVEST boiler emission limits (Note: This appears inconsistent with the ENVVEST Protocols).

Peter Cantle reiterated that ENVVEST approval and the application of the Grefco Mineral, Inc. ERCs were contingent on the development and use of the electric vehicles with the SUVMS. Peter's expectations were that VAFB would come back with a revised proposal and that permitting the ENVVEST boilers did not meet their expectations.

27. 19 Jul 2007 meeting VAFB and SBCAPCD:

George Croll commented that ENVVEST consisted of four key elements. George Croll emphasized that these basic elements remain in place at VAFB even though the "think cars" and SUVMS were no longer maintained

George Croll suggested that maintaining compliance with the parts per million (ppm) limits achieved in 1999 for the 25 ENVVEST boilers through SBCAPCD permitting and use of the SBCAPCD-approved ENVVEST protocols ensured compliance with SBCAPCD Rule 1301 and satisfied the U.S. EPA concern over the federally enforceable issue discussed in November of 2004. VAFB suggested the SBCAPCD issue permits for the ten ENVVEST candidate boilers with one permit for the fifteen CIP boilers.

George Croll stated that VAFB was ready to turn over the 12 tons of NOx ERCs purchased from Grefco Mineral, Inc. VAFB was also willing to discuss other ERC issues (e.g., VAFB ERC bank) although this was not the preferred option.

George Croll also indicated that VAFB was also willing to consider other ENVVEST options.

During the presentation, the SBCAPCD asked several questions requesting clarification and/or additional detail. Following the presentation, Peter Cantle indicated that the SBCAPCD appreciated the VAFB proposal and would review it. Peter Cantle further stated that the

SBCAPCD might be receptive to several of the concepts laid out in the VAFB presentation. However, Peter Cantle indicated that the SBCAPCD needs some time to assess this new proposal and scheduled another ENVVEST meeting for 5 September 2007.

28 10 Dec 2007 meeting VAFB and SBCAPCD:

Peter Cantle stated that VAFB must come into compliance with Regulation XIII. This means:

- a. That a Title V permit was required if applicable thresholds are exceeded.
- b. All emission reductions achieved by ENVVEST (e.g., boiler controls) must remain in place.
- c. The Grefco Mineral, Inc. ERC should be submitted to the SBCAPCD. Peter expanded on the Grefco Mineral, Inc. ERC and indicated that they should have been turned over some time ago. Dave Savinsky informed the SBCAPCD that the ERC were always available and that the SBCAPCD needed only to ask for them. Dave Savinsky stated that he would start the coordination to turn over the Grefco Mineral, Inc. ERC certificate. Considering the cost and significance of the ERC, VAFB senior command might want some sort of turn-over ceremony.

Peter Cantle indicated that VAFB might require a Title V permit or a synthetic minor permit to prevent the exceedance of the Title V thresholds. A synthetic minor permit reduced the facility potential to emit (PTE) to less than applicable requirements. The applicable PTE threshold for Santa Barbara County was 100 tons per year for criteria pollutants<sup>4</sup>. John Gilliland (M&E) indicated that a synthetic minor permit might not be required because Rule 370 provided a Title V exclusion based on actual emissions and that these emissions are reported to the SBCAPCD annually. The threshold for actual emissions is 50 tons per year for criteria pollutants<sup>5</sup>. Mr. Cantle did not define the exact format of the permit, considering perhaps a list of VAFB permits with an emission cap would suffice.

Mike Goldman identified the following areas requiring resolution:

- a. ENVVEST Protocols required updating to address changes in calibrations, testing procedures, and emission reduction calculations.
- b. ENVVEST boilers may require SBCAPCD permits.
- c. Work through Rule 370 issues.

Peter Cantle indicated that enforcement actions were not pending while the SBCAPCD and VAFB work through the ENVVEST Protocols.

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<sup>4</sup> Hazardous air pollutants (HAP) have a 10 ton and 25 ton PTE threshold for single HAP or cumulative HAP, respectively.

<sup>5</sup> HAPs have a 5 ton and 12.5 ton actual threshold for single HAP or cumulative HAP, respectively.

29 18 Jan 2008 meeting VAFB and SBCAPCD:

The following detailed the Summary/Action Items.

- a. Work closely with Mike Goldman and revise the three ENVVEST Protocols:
    1. Provide revised protocols to Mike Goldman.
    2. Reschedule the 23 Jan 2008 SBCAPCD meeting to discuss the ENVVEST Protocols.
    3. Resolve the emission reduction calculation methodology issues.
    4. The SBCAPCD stated that enforcement actions were not pending while SBCAPCD and VAFB work through protocols.
    5. Decommissioning. This issue will be worked at the SBCAPCD/VAFB technical meeting tentatively scheduled for early February.
  
  - b. VAFB would provide an itemized Rule 370 list of questions that discuss the following:
    1. Resubmit and update the SBCAPCD-approved 1997 finalized list of what is in and out for applicability determination, taking into account any new regulations.
    2. Money issues.
    3. VAFB sources.
    4. Averaging period – Rolling versus annual. What is tracked? Permitted and unpermitted sources?
    5. Rule 212 requirement and Rule 370.
  
  - c. The SBCAPCD stated that VAFB must comply with Regulation XIII. This meant:
    1. That a Title V permit was required if applicable thresholds are exceeded.
    2. All achieved ENVVEST emission reductions shall remain in place (e.g., boiler controls).
    3. VAFB must relinquish the Grefco Mineral, Inc. ERCs certificate to the SBCAPCD.
  
  - d. The SBCAPCD indicated they are short staffed, not looking for additional work and will fulfill the regulatory requirements as best as possible.
  
  - e. A discussion occurred regarding the requirements for a Title V permit. Peter Cantle indicated that there are benefits to obtaining a Title V permit versus a synthetic minor permit that prevented the exceedance of the Title V thresholds. (Note: VAFB tasked M&E to explore the differences between a Part 70 permit and existing Rule 370 requirements.)
  
  - f. VAFB stated that they continued boiler tuning and retrofits. Unfortunately, VAFB encountered similar issues as in 1999 with boiler flame-outs and other issues associated with low fire. It may not be cost effective to maintain the 9 ppm standard. VAFB suggested a possible work around by permitting ENVVEST boilers for 20 or 30 ppm and offset the difference.
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30. 03 Apr 2008 meeting VAFB and SBCAPCD:

VAFB proposed an overall approach to satisfy the ENVVEST requirements. This approach included the following:

- a. Increase boiler emission limits for the ENVVEST candidate boilers and CIP boilers to the applicable SBCAPCD Prohibitory Rule 360 (Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers) or 361 (Small Boilers, Steam Generators, and Process Heaters).
- b. Offset the incremental increase in NO<sub>x</sub> emissions using the VAFB DoD ERC. NO<sub>x</sub> emissions were calculated by applying the initial ENVVEST emission test and fuel use. Offset emission requirements were based on the applicable prohibitory rule limit and the permitted fuel use.
- c. Discontinued use of ENVVEST Protocols in lieu of SBCAPCD permits with increased emission rates which would be offset.
- d. Return of the Grefco Mineral, Inc. ERC. VAFB stated that the Grefco Mineral, Inc. ERC certificate would be relinquished to the SBCAPCD within a month or so.
- e. Apply for permits with the SBCAPCD. This included both Candidate boilers and CIP boilers.
- f. Mike Goldman appeared favorable to this approach and provided the following comments:
  1. He would check with the Air Pollution Control Officer, Terry Dressler, for his concurrence.
  2. He expressed some reservation with the use of the VAFB DoD ERC but did not go into details.
  3. ENVVEST boiler permits would include applicable prohibitory rule limits and conditions (e.g., boiler tuning). He also suggested that VAFB determine the peak hourly, daily, and quarterly emission rate for proposed offsetting. These rates could be lowered from the potential to emit if SBCAPCD-approved fuel meters are installed.<sup>6</sup>
  4. Mike Goldman requested that any ENVVEST boiler subject to Rule 361, clearly be identified as such in the application.

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<sup>6</sup> Most existing ENVVEST fuel meters do not meet all the specifications identified in the prohibitory rules (e.g., pressure and temperature corrected).

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g. SBCAPCD Rule 370 Requirements.

1. VAFB stated that the process for obtaining the information required by Rule 370 was an arduous process requiring significant coordination with the numerous base operators to collect the required operating parameters to calculate the emissions.
2. VAFB stated that the Annual Report submitted to the SBCAPCD meets the Rule 370 12-month requirement<sup>7</sup>. VAFB also creates an annual internal Major Source Determination Report that documents that VAFB was below any Part 70/Rule 370 thresholds.
3. VAFB stated that the base could provide an SBCAPCD-requested specific 12-month report provided the SBCAPCD allow up to 60 days for VAFB to obtain the required information. The SBCAPCD appeared receptive to this proposal.

h. ENVVEST Annual Emission Report.

VAFB explained that they had discovered some computational errors in the submitted ENVVEST Annual Emission Report. Correction of the errors resulted in an increase in the emission reductions for the ENVVEST Program. VAFB explained that the computational error occurred due to incorrect meter readings. When corrected, the emission reductions for the ENVVEST boilers increased to 2.29 tons. The SBCAPCD requested VAFB resubmit the Annual Emission Report with a cover letter describing the computational errors specifically related to Building 12000.

i. ENVVEST Boiler Retirement.

1. VAFB suggested that ENVVEST boilers at Buildings 11777 and 9005 are scheduled to be replaced and should no longer be subject to the ENVVEST Program<sup>8</sup>. The SBCAPCD did not appear receptive with the VAFB ENVVEST Protocol interpretation and stated that replaced units still perform the same function and should remain subject to the same requirements.
2. VAFB and the SBCAPCD agreed to discuss this subject in additional detail at the next scheduled quarterly SBCAPCD/VAFB meeting.

31. Rule 370 Rolling 12-month reporting requirement.

- a. On 27 May 08, VAFB letter provided to APCD providing a Rule 370 Interpretation.
- b. On 18 Jun 08, the APCD approved the VAFB request.

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<sup>7</sup> The Rule 370 12-month requirement was for permitted sources only.

<sup>8</sup> Regulation XIII, Rule 1301 specified that any achieved emission reductions shall remain in place and shall be enforceable.