DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 436TH AIRLIFT WING (AMC)

MAR 1 1 2003

MEMORANDUM FOR 436 CES/CEV

FROM: 436 MSG/CC

SUBJECT: Finding of No Significant Impact (FONSI)-Military Family Housing (MFH) Privatization Initiative

1. Dover AFB is proposing to privatize the Eagle Meadows MFH area and 152 MFH units in the Eagle Heights MFH area as described in the attached environmental assessment.

2. An environmental assessment, which is attached and incorporated by reference, was drafted and demonstrates that there are no significant environmental impacts from the proposed action. The environmental assessment was available for public review and comment from 15 December 2002 through 15 January 2003. No comments were received.

3. The proposed action and supporting documentation for environmental impacts, in accordance with the National Environmental Policy ACT (NEPA), Council on Environmental Quality Regulations and Air Force Instruction 32-7061 have been reviewed. It was determined that neither an environmental impact statement nor a formal environmental assessment is necessary. No further environmental documentation is necessary.

4. I have evaluated the attached environmental assessment and find no significant impacts on the environment from the actions.

Charles P. Smiley

CHARLES P. SMILEY, Colonel, USAF
Commander, 436th Mission Support Group

Attachments:
1. AF Form 813
2. Environmental Assessment

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
MAR 2003		**00-00-2003 to 00-00-2003**

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Eagle Meadows & 152 Eagle Heights Units Military Family Housing Privatization	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **436th Civil Engineer Squadron (CES/CEV),600 Chevron Ave,Dover AFB,DE,19902**	8. PERFORMING ORGANIZATION REPORT NUMBER
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ENVIRONMENTAL ASSESSMENT

EAGLE MEADOWS
&
152 EAGLE HEIGHTS Units

MILITARY FAMILY HOUSING PRIVATIZATION

DOVER AIR FORCE BASE
DOVER, DELAWARE

436 CES/CEV
600 Chevron Ave
Dover AFB DE 19902-5600
302-667-6820

9 December 2002

ENVIRONMENTAL ASSESSMENT
EAGLE MEADOWS PRIVATIZATION

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS

AA	Antiquities Act
AFCEE	Air Force Center for Environmental Excellence
AHPA	Archeological and Historic Preservation Act
ARPA	Archeological Resources Preservation Act
AMC	Air Mobility Command
BAH	Basic Allowance for Housing
CAA	Clean Air Act
CWA	Clean Water Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CGO	Company Grade Officer
CY	Calendar Year
CZMA	Coastal Zone Management Act
DAFB	Dover Air Force Base
dB	Decibel, a unit of measure for sound
DoD	Department of Defense
DNHI	Delaware Natural Heritage Inventory
DNREC	Delaware Department of Natural Resources and Environmental Control
DRBCR	Delaware River Basin Commission Regulation
EA	Environmental Assessment
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FGO	Field Grade Officer
FWS	U.S. Fish and Wildlife Service
FY	Fiscal Year
HAP	Hazardous Air Pollutants
IRP	Installation Restoration Program
JNCO	Junior Non-Commissioned Officer
MFH	Military Family Housing
MHPI	Military Housing Privatization Initiative
MilCon	Military Construction
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOx	Nitrogen Oxides
NPDWR	National Primary Drinking Water Regulations
NPS	U.S. National Park Service
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historical Preservation Officer

SIP	State Implementation Plan (under CAA)
SNCO	Senior Non-Commissioned Officer
U.S.	United States
USC	United States Code
USGS	United States Geologic Survey
VOCs	Volatile Organic Compounds
WQA	Water Quality Act

EXECUTIVE SUMMARY

The Military Housing Privatization Initiative (MHPI), enacted in the 1996 Defense Authorization Act, offers the Service Secretaries broad, new authority to quickly and economically provide adequate housing for military members. The MHPI allows the Department of Defense (DoD) to work in partnership with private developers and lenders to provide housing that is affordable and available to military personnel. Privatizing the construction of new housing, when compared against the traditional MilCon process, benefits the military by leveraging limited federal housing funds with private sector resources.

DAFB analyzed two alternatives in addition to the MHPI; the No Action alternative and the Replacement/Renovation with MilCon alternative.

- The No Action Alternative would result in no repair or replacement of 298 housing units in Eagle Meadows and 152 housing units in the Eagle Heights. Due to their advanced age and deterioration these units require extensive maintenance and repairs. The housing units are small and present cramped, unsatisfactory living quarters. The environmental impact of this alternative is described in detail in paragraph 4.1.

- The Privatization Alternative requires the Air Force to convey housing units in Eagle Meadows to a private developer. The Air Force will also offer financial incentives to the developer. The developer will be responsible for the renovation of 298 housing units in Eagle Meadows to meet current standards. The developer will also demolish 152 substandard housing units in the Eagle Heights area and construct 152 new units on presently undeveloped land in the vicinity of Eagle Meadows. The developer is responsible for the acquisition of the new land. After demolition, renovation and reconstruction the developer will manage the properties in Eagle Meadows and the new location in the vicinity of Eagle Meadows. The environmental impact of this alternative is described in detail in paragraph 4.2

- The Replacement/Renovation Alternative calls for the renovation of the 298 housing units in Eagle Meadows and the demolition of 152 housing units in Eagle Heights and their reconstruction at another location in the vicinity of Eagle Meadows utilizing MilCon funds. The new and renovated properties would remain under the management of the Air Force. The environmental impact of this alternative is described in detail in paragraph 4.3

The net environmental impact for the No-Action Alternative is negative. The net environmental impact for both the Privatization and the Replacement/Renovation Alternatives is positive. Of the two, the Privatization Alternative has the largest positive environmental impact. From this assessment, the preferred alternative is the Privatization Alternative. This alternative meets the requirement of acceptable housing for military families, in the most expeditious manner, with the least environmental impact.

ENVIRONMENTAL ASSESSMENT

EAGLE MEADOWS MILITARY FAMILY HOUSING PRIVATIZATION

1.0 Purpose, Need and Location of Proposed Action

1.1 Purpose and Need for the Eagle Meadows Military Family Housing Privatization

The Military Housing Privatization Initiative (MHPI), enacted in the 1996 Defense Authorization Act, offers the Service Secretaries broad, new authority to quickly and economically provide adequate housing for military members. The MHPI allows the Department of Defense (DoD) to work in partnership with private developers and lenders to provide housing that is affordable and available to military personnel. The benefits of privatized housing through MHPI, when compared to the traditional MilCon process, is the leveraging of limited housing funds with private sector resources.

The Eagle Heights housing area was constructed between 1958 and 1961. The Eagle Meadows housing area was built in 1975. Because of the advanced age of the military family housing and its continuing deterioration, these housing units require extensive maintenance and repair. The housing units are small and present cramped and unsatisfactory living quarters to the military members. The proposed project will bring the subject housing units up to current housing standards.

1.2 Location of the Proposed Action

DAFB is located approximately 3.5 miles southeast of the center of Dover, Kent County, Delaware. Both U.S. Route 113 and Delaware State Route 1 provide access to the base. The St. Jones River flows along the southwest boundary of Dover AFB as is shown in Figures 1-1 and 1-2. DAFB comprises approximately 4,000 acres of land, including annexes, easements and leased property. The surrounding area is primarily farmland and wetlands environment. The Eagle Meadows MFH area is southwest of the main base and on the west side of the St. Jones River. The Eagle Heights MFH area is adjacent to and on the east side of the St Jones River and immediately southwest of U.S. Routes 113 and State Route 1. The proposed project area includes a part of Eagle Heights and all of the Eagle Meadows. Additionally, the project will require the development of farmland in close proximity to Eagle Meadows.

1.3. Applicable Regulatory Requirements and Coordination

The following paragraphs provide a summary of the laws, regulations, and orders that may apply to the proposed action.

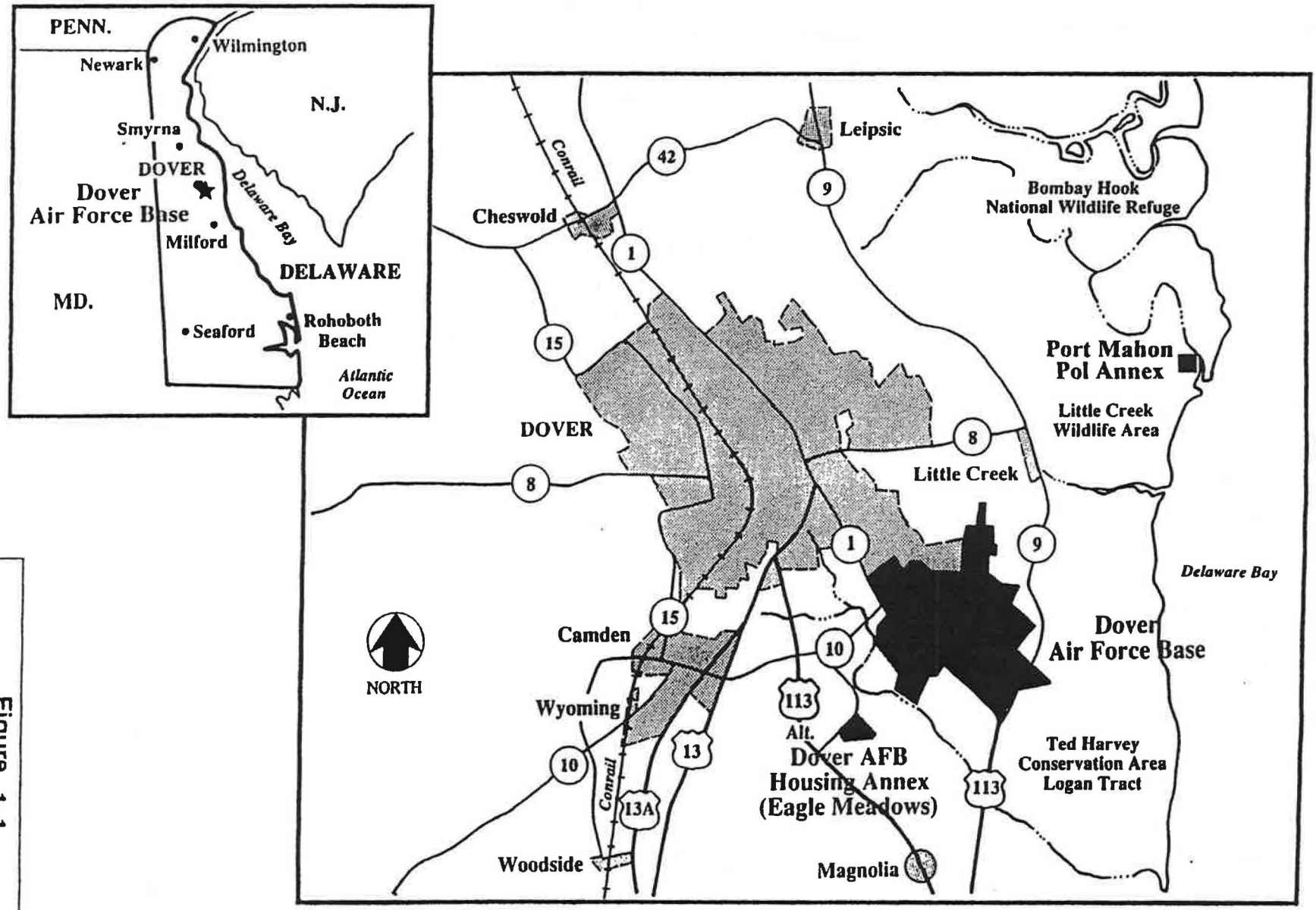


Figure 1-1
Location of Dover
Air Force Base

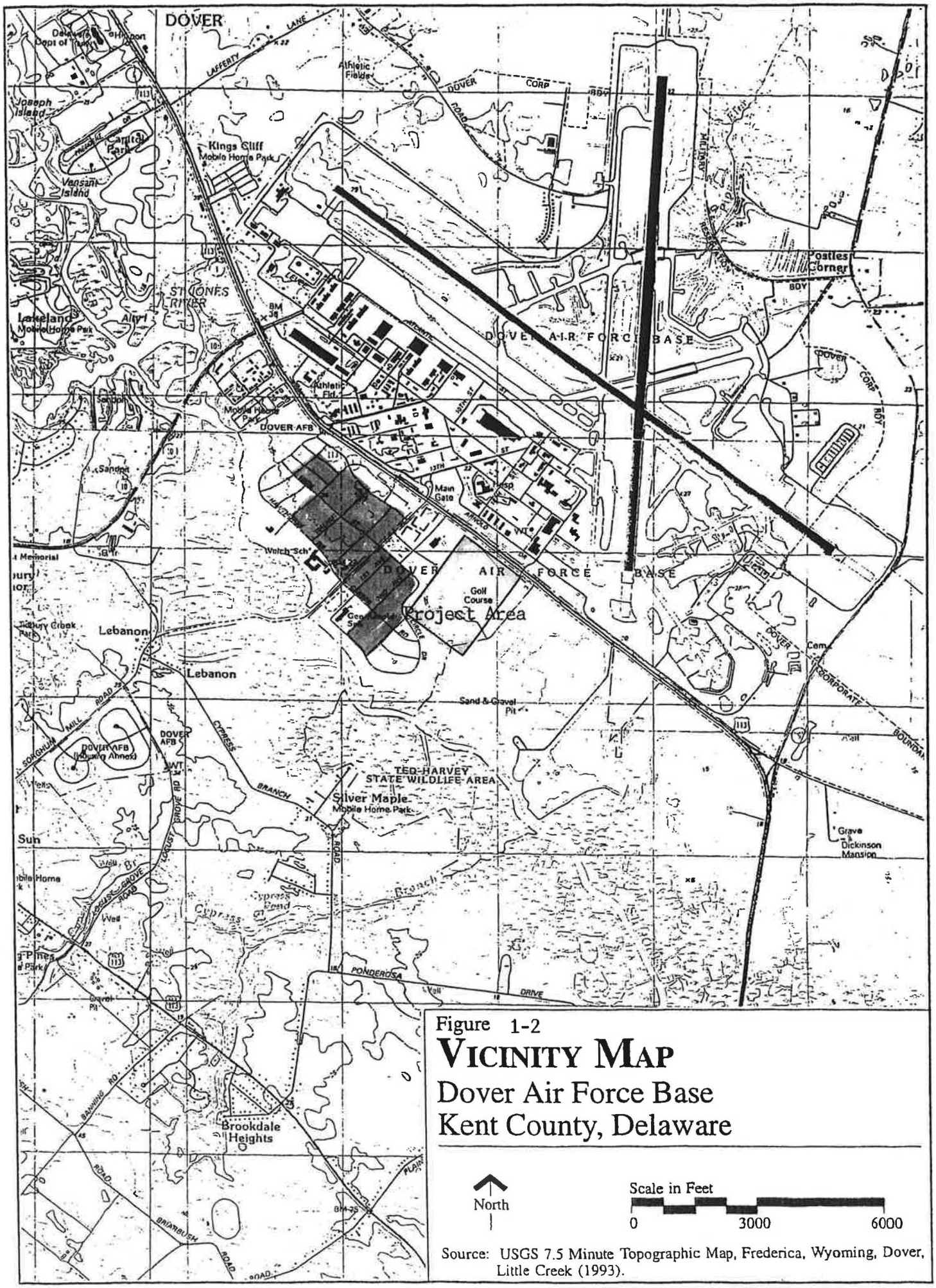


Figure 1-2

VICINITY MAP

Dover Air Force Base
Kent County, Delaware

Source: USGS 7.5 Minute Topographic Map, Frederica, Wyoming, Dover, Little Creek (1993).

1.3.1 Environmental Policy

The National Environmental Policy Act (NEPA), 42 USC §§ 4321, *et seq.* establishes federal laws designed to prevent damage to the environment. NEPA ensures that information about the environmental impact of proposed federal actions is available to public officials and citizens before actions are taken that may significantly effect the environment. Regulations promulgated by the President's Council on Environmental Quality (CEQ) implement NEPA.

Air Force Instruction 32-7061, *The Environmental Impact Analysis Process,* establishes the specific procedural requirements for the Air Force, when implementing NEPA.

Delaware Code, Title 7, *Conservation*, controls the development, utilization, and control of land, water, wetlands, and air resources of the state. These laws establish programs for pollution control and resource conservation.

Public involvement is necessary during the NEPA process. A public comment period for this proposed project is provided from December 16, 2002 through January 15, 2003. Any comments received from the public will be considered in the final version of this document. All public comments and responses will be included in Attachment 1 of the final version of this document.

1.3.2 Air Quality

The Clean Air Act (CAA), 42 USC §§ 7401, *et seq.* establishes laws protecting and enhancing the quality of the Nation's air resources. The CAA requires an agency to take adequate steps to control the release of air pollutants and prevent significant deterioration in air quality. The CAA mandates that the Environmental Protection Agency (EPA) establish a list of pollutants which "may reasonably be anticipated to endanger public health and welfare" for the purpose of establishing the national primary and secondary ambient air quality standards (NAAQS). The criteria pollutants are the six pollutants for which NAAQS have been promulgated: carbon monoxide (CO), lead (Pb), ozone (O_3), particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), nitrogen oxides (NO_x), and sulfur oxides (SO_x).

Delaware Code, Title 7, Chapter 60, Subchapter VII, *The Clean Air Act,* establishes ambient air quality standards, emission standards, and permit requirements necessary to ensure a reasonable quality of air throughout the state.

1.3.3 Water Quality

The Clean Water Act (CWA), 33 USC § 1251-, *et seq.*, establishes federal law designed to restore and maintain the chemical, physical, and biological integrity of the Nation's waters and achieve a level of water quality that provides for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water. The act mandates the regulatory authority of the United States Environmental Protection Agency (EPA) or federally authorized

states to implement permit programs for regulating the discharge of pollutants to navigable waters (including wetlands) from any point source under the National Pollutant Discharge Elimination System (NPDES) and a permit system for the use of dredge and fill material.

Delaware Code, Title 7, Chapters 61 and 62 set forth state laws designed to protect and enforce underwater lands and establish liability for oil pollution. Delaware Code, Title 7, Chapter 40, *Erosion and Sedimentation Control,* establishes procedures for the control and management of storm-water runoff to reduce erosion and sedimentation.

The Delaware Underground Storage Tank Regulations under the Resource Conservation and Recovery Act (RCRA) Subpart I provide a program for the management of underground storage tank systems for the protection of the environment and specifically groundwater.

The Delaware River Basin Commission has an administrative agreement with DNREC to regulate groundwater withdrawals and surface water quality standards for water discharged to the Delaware River.

The Coastal Zone Management Act (CZMA) of 1972, 16 USC §§ 1451, *et seq.* controls the effective protection and development of the coastal zone.

1.3.4 Cultural, Paleontological, and Archeological Resources

The primary goals of the National Historic Preservation Act (NHPA), 16 USC 470, *et seq.*, the Historic Sites Act (HSA), 16 USC 461, *et seq.* , the Antiquities Act (AA), 16 USC 431, *et seq,.* (as amended), and the Archeological and Historic Preservation Act (AHPA),16 USC 469, *et seq.* are all intended to ensure adequate consideration of the value of historic properties when carrying out federal activities. These laws require the acting agency to identify and mitigate impacts to significant historic properties.

The Archeological Resources Protection Act (ARPA),16 USC 470a-47011(as amended) protects archeological resources on federal lands. The act requires permits prior to the excavation or removal of any archeological resources that are discovered during the agency activity.

1.3.5 Biological Resources

The Endangered Species Act (ESA), 16 USC §§ 1531-1543 requires federal agencies that authorize, fund, or carry out actions, to avoid jeopardizing the continued existence of endangered or threatened species, and to avoid destroying or adversely modifying their critical habitat. Federal agencies must evaluate the effects of their actions on endangered or threatened species of fish, wildlife, and plants, and their critical habitats and take steps to conserve and protect these species. All potentially adverse impacts to endangered and threatened species must be avoided or mitigated.

Delaware Code, Title 7, chapter 66, *The Wetlands Act*, sets forth requirements to preserve and protect wetlands and establish permitting procedures for activities that may adversely affect wetland environment.

1.3.6 Public Health and Safety/Hazardous Waste

The Occupational Safety and Health Act (OSHA), 29 USC §§ 657- 667 assures workers a healthy work environment., limiting their exposure to contaminated soil, water and other hazardous substances.

The Resource Conservation and Recovery Act (RCRA) 42 USC §§ 6901, *et seq.* as amended by the Hazardous and Solid Waste Amendments of 1984, is a comprehensive program for regulating and managing both hazardous and non-hazardous solid wastes, the federal procurement of reclaimed products, and underground storage tanks. RCRA requires federal agencies to comply with all federal, state, interstate, and local regulations with respect to the control and abatement of solid waste or hazardous waste disposal.

Delaware Code, Title 7, Chapter 64, *The Solid Waste Authority Act,* and the associated Solid Waste Disposal Regulations provide a comprehensive program for the management of solid waste, including their collection, transport, disposal, and recovery. These regulations are intended to protect Delaware's land, air, and water resources.

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 USC §§ 9601, *et seq.),* as amended by the Superfund Amendments and Reauthorization Act (SARA-42 USC §§ 9601, *et seq.*) provides the Air Force and EPA with the authority to inventory, investigate, and clean up uncontrolled or abandoned waste sites. The EPA has established a series of programs to clean up hazardous waste disposal and spill sites nationwide. This act provides enforcement, response, and liability for the release or threatened release of hazardous substances into the environment.

The Installation Restoration Program (IRP) is the DoD program designed to identify, confirm, quantify, and remediate suspected environmental problems associated with past hazardous material disposal sites on DoD installations in accordance with CERCLA.

2.0 Description of the Proposed Action and Alternatives

2.1 Description of the No Action Alternative

The No Action Alternative would result in the current housing arrangement to remain unchanged for the 298 housing units in Eagle Meadows and 152 housing units in the Eagle Heights housing area.

All of the housing units in Eagle Meadows and 124 of the 152 housing units in Eagle Heights are heated with fuel oil. The other units in Eagle Heights have been converted to natural gas. Heating with fuel oil is inefficient and expense relative to heating with natural gas. Additionally,

burning fuel oil results in increased air pollution through the release of nitrogen oxide (NOx), a criteria air pollutant. Dover AFB is in a severe non-attainment area for ozone and NOx is one of the primary pollutants of concern.

The housing units in Eagle Meadows have asbestos containing material in the floor tiles and the mastic that holds the tiles in place. A lead-based paint survey conducted in 1994 indicated the presence of lead-based paint in all of the housing units sampled in Eagle Meadows. Roughly 5% of the sampled units had lead levels above the action level of 0.5% lead by weight (EA Engineering, 1994). See Attachment 4 for a summary of lead-based paint analyses. All of the other units sampled in Eagle Meadows were well below the action level.

Many, if not all, of the housing units in Eagle Heights also have asbestos containing materials in both the floor tiles and the mastic that holds the tiles in place. Considerable asbestos abatement has already occurred in Eagle Heights. A lead-based paint survey conducted in 1994 indicated lead-based paint in all of the housing units sampled. Most of the units with lead levels above the action level exhibited the higher lead levels in exterior paint. Exterior paint samples had lead content up to 6.6% by weight. One interior sample was found with a lead content of up to 9.09% by weight. All other interior paint samples had lead levels below the 0.5% action level with lead content ranging between 0.0004% and 0.12% by weight.

Within the Eagle Heights MFH area, there are 152 housing units not scheduled for any MilCon project upgrades. These housing units are composed of 126 three-bedroom units and 26 four-bedroom units. These units lie adjacent to the newly renovated and highly traveled State Route 1 highway and currently have a Condition Assessment Level 2, indicating that they require renovation or replacement. The supporting utility systems for these units are deficient and the surrounding neighborhoods are stark and lack adequate designed landscaping.

All of these housing units will continue to require extensive maintenance and repairs. Except as previously noted, all of the units burn fuel oil for heating. Burning fuel oil is a source of VOC's and NOx, which are primary air pollutants. VOCs and NOx are precursors to the formation of ozone. (O3)

2.2 Description of the Privatization Alternative

The Privatization Alternative calls for the Air Force to convey the housing units in Eagle Meadows to a private developer for renovation and reconstruction. The Air Force will also offer a direct second mortgage and a limited guarantee for a private first mortgage. The developer will be responsible for the revitalization of the 298 Eagle Meadows housing units to current housing standards, the demolition of 152 substandard housing units in the Eagle Heights area and the construction of 152 new housing units on land within in the vicinity of Eagle Meadows. Where the 152 housing units are demolished in Eagle Heights, the developer will create a "green space" and buffer area between MFH and State Route 1. The newly constructed housing units will consist of 126 three-bedroom units and 26 four-bedroom units.

The renovated Eagle Meadows housing units and the 152 replacement units will be owned, operated and maintained by the private developer. Rental rates will be set at the Air Force Basic Allowance for Housing allotment (BAH) for the Dover Area, minus 110% of the average utility expense for a unit of similar size. Members will be responsible for their own utility bills.

2.3 Description of the Replacement/Renovation Alternative

The Replacement/Renovation Alternative calls for the renovation of the 298 housing units in Eagle Meadows and the replacement of 152 units in Eagle Heights. The base will be required to acquire additional land (approximately 50 acres) in the vicinity of Eagle Meadows to build the 152 replacement units, after which the 152 housing units in Eagle Heights will be demolished. The new housing units will have 126 three-bedroom units and 26 four- bedroom units. All new units will meet or exceed the current standards for energy efficiency. The entire project will be accomplished in seven phases, over a nine-year period. Each phase will last approximately one year and be funded through MilCon. Similar to the privatization alternative, where the 152 housing units are demolished in Eagle Heights, Dover AFB will create a "green space" and buffer area between MFH and State Route 1.

3.0 Affected Environment

Potential impacts of the proposed action at DAFB are assessed against a "baseline" environment. This section describes in detail the environmental components that may be affected by the renovation, demolition and construction related to the proposed action. Each of the three alternatives will be analyzed in turn.

3.1 Location, History and Current Situation

DAFB is located in Kent County, Delaware. It is situated 3.5 miles southeast of the center of Dover, Delaware, the state capital (Figure 1-1). Bounded on the southwest by the St Jones River. DAFB began operating in December 1941, at the site of the partially constructed Dover Municipal Airfield. At that time it also became the site for the development of air-launched rockets. The base was deactivated in September 1946 and was periodically used by the Air National Guard for training exercises between 1946 and 1950. In July 1950, the base was reactivated and designated the Dover Air Force Base. The base has been used to support a number of different combat and airlift missions since 1950. Currently, DAFB maintains a fleet of C-5 Galaxy aircraft that provide the United States armed forces with global airlift capability. The present host organization of DAFB is the 436th Airlift Wing, whose primary mission is to provide the airlift of troops, cargo, military equipment, and humanitarian relief materials to any location in the world.

3.2 Environmental Resources

3.2.1 Air Resources

Dover AFB is included in the Philadelphia Consolidated Metropolitan Statistical Area and is regulated by the Division of Air and Waste Management of the Delaware Department of Natural

Resources and Environmental Control (DNREC). Kent County is in a severe non-attainment area for ozone (O_3), as is much of the Northeast of the United States, especially the Mid-Atlantic coastal areas between Virginia and Maine. Kent County is in attainment for the other five priority air pollutants. Volatile organic compounds (VOC) and nitrogen oxides (NOx) are precursors for ozone and are the emissions of concern under the federal implementation plans in an area of severe nonattainment for ozone.

Two sources of emissions serve as the baseline for Kent County and Dover Air Force Base. Kent County emissions (in tons per day for the peak ozone season) are found in the *Base Year Ozone State Implementation Plan (SIP) Emissions Inventory*. The 1994 Emissions Survey Report, Dover Air Force Base, Delaware (PES, 1996), inventories annual air emissions for Dover AFB. These inventories of emission sources and the associated estimates of generated pollutant quantities serve as a baseline to track and plan future changes in base pollutant emission quantities.

The estimated emissions (tons/day for 1990 peak ozone season) for Kent County are: 65.233 tons/day of volatile organic compounds (VOCs) and 25.843 tons/day nitrogen oxides (NOx).

The estimated 1994 emissions in tons per year (tons/yr) from Dover AFB were: 31.49 tons/yr of PM_{10}; 1519.94 tons/yr of CO; 1082.92 tons/yr nitrogen oxides NOx (which includes NO_2); 224.77 tons/yr SO_2; 507.72 tons/yr of volatile organic compounds (VOCs); and 86.85 tons/year of hazardous air pollutants (HAPS). (DAFB, 1996) Included in the DAFB figures are VOCs from commuter traffic at DAFB, estimated at 36.83 tons/yr, and NOx at 24.01 tons/yr.

3.2.2 Biological Resources

A biological and ecological inventory of DAFB, done by the Delaware Natural Heritage Inventory (DNHI) of DNREC in 1993, indicated no federally listed or candidate rare or endangered species on DAFB Eagle Meadows or Eagle Heights MFH properties. The inventory identified 6 plant species and 6 animal species in the DAFB area that are of State Special Concern. None of the species of concern were located in the project area as shown in Figures 3-1, nor will the proposed project otherwise affect any species of state concern. No jurisdictional wetlands are found in the project areas.

3.2.3 Cultural Resources

No cultural resources exist in the Eagle Meadows or Eagle Heights housing areas (Parsons, 1999). Historic homes are not present on the USGS topographic maps between 1930 and 1934 for the area now occupied by Eagle Meadows. No streams are in close enough proximity to indicate the possible presence of prehistoric resources on the adjacent farmlands. No intact cultural resources or items of historical or pre-historical significance are expected within the project area.

3.2.4 Noise Issues and Safety

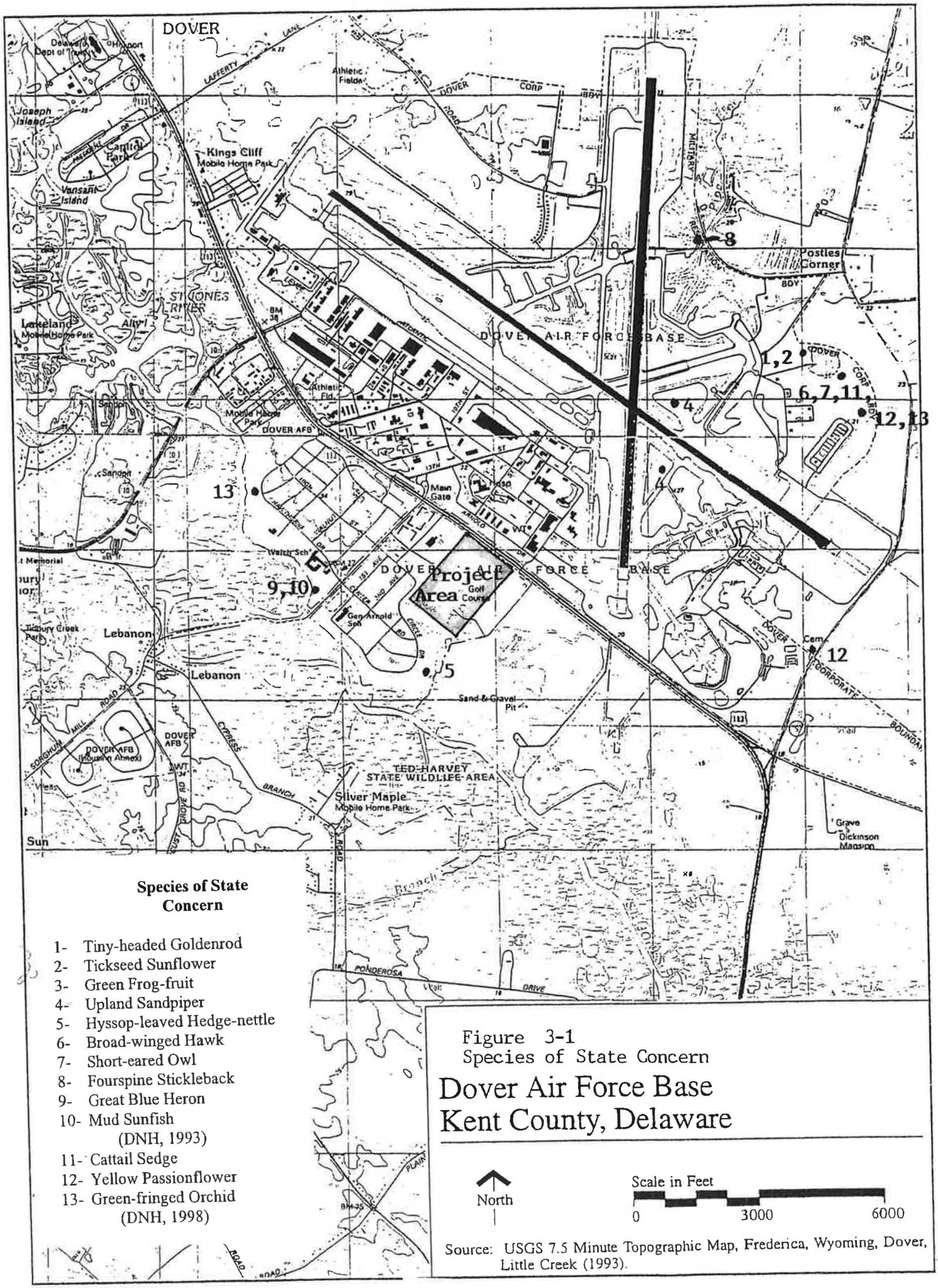


Figure 3-1
Species of State Concern

Dover Air Force Base
Kent County, Delaware

Source: USGS 7.5 Minute Topographic Map, Frederica, Wyoming, Dover, Little Creek (1993).

Dover AFB conducted an Air Installation Compatible Use Zone (AICUZ) Study in 1999 to safeguard public safety and health while ensuring the operational capabilities of DAFB. The study evaluated noise levels and accident potential resulting from aircraft operations. The noise level contours are shown in Figure 3-2. The full AICUZ report is located in the Office of the Community Planner, Civil Engineer Squadron, 600 Chevron Ave, Dover AFB DE 19902-6500.

The noise contour lines of Figure 3-2 represent noise levels of 65 to 80 decibels (dB). The 70 dB level would be similar to the noise of a busy office or normal speech at a distance of 1 meter and the 80 dB level is similar to riding in an open sports car (Malmstrom, 1997). An estimated 2110 homes, in the area surrounding DAFB, are within the 65 decibel (dB) contour line in Figure 3-3, with 1251 of those homes located in DAFB MFH. This means that there are approximately 860 off base houses within the 65 dB level contour. The 152 Eagle Heights housing units are within the 65 to 75 dB contours. The entire Eagle Meadows housing area is outside of the 65 dB range. Neither housing area is within any accident potential zone of DAFB.

3.2.5 Socioeconomic Resources

The socioeconomic resources involved with this project are the 298 housing units in Eagle Meadows and 152 housing units in Eagle Heights, along with the associated community services and infrastructure. This includes the schools of the Caesar Rodney School District, the nearby community facilities of Rising Sun and the recreational facilities of Dover AFB. The Air Force conducted an economic analysis to determine which alternative would be the most cost effective, which alternative best meets the housing requirements of Dover AFB, and which alternative best meets those requirements in a timely manner. The economic analysis is available for review, at the Dover Air Force Base Civil Engineering Squadron, Environmental Flight, upon request.

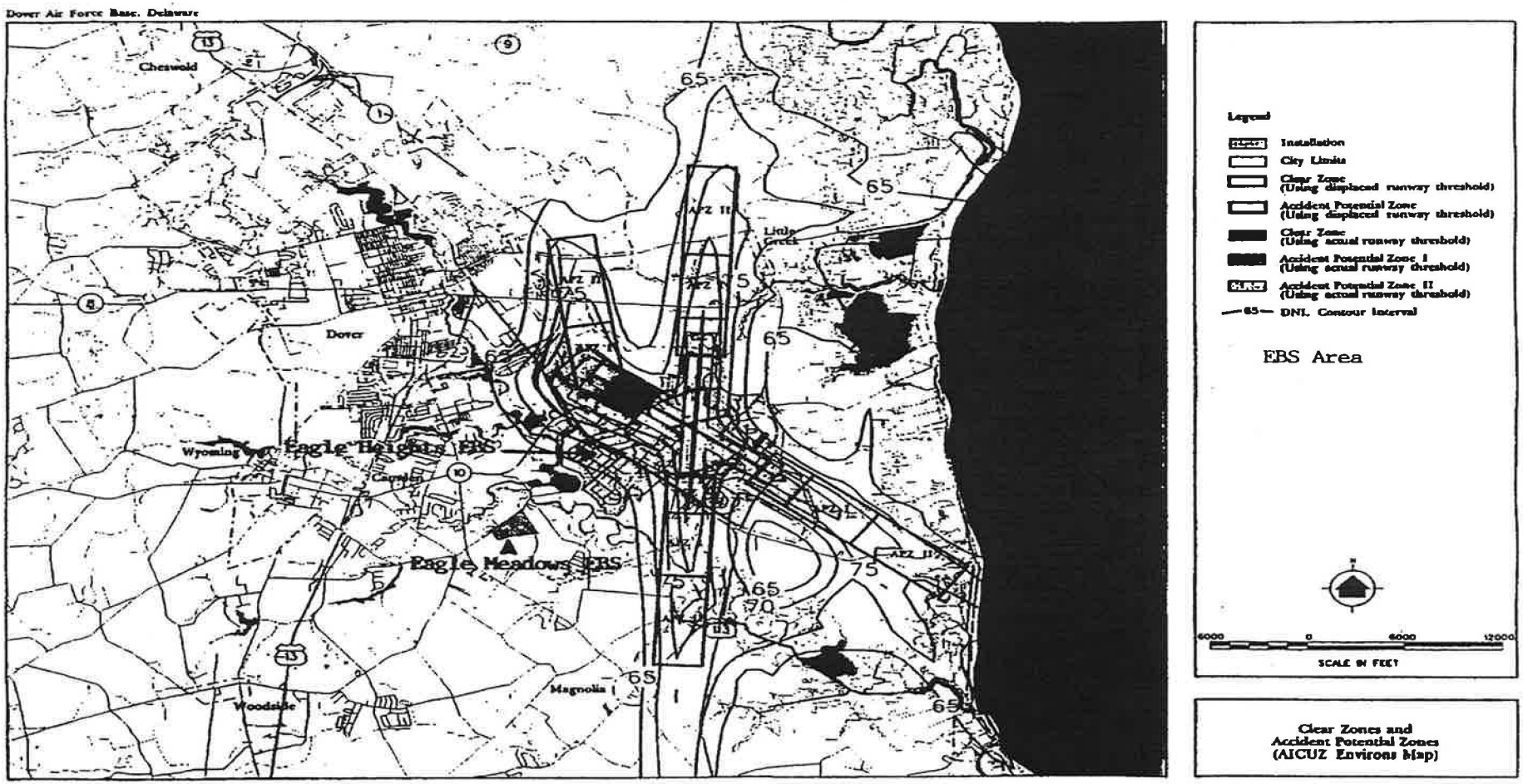
Kent County currently has a population of 121,695 (CDED, 1995). Kent County was designated the Dover Metropolitan Statistical Area by the Office of Management and Budget in 1994 with an aggregate population of 50,000 plus. The annual growth rate is approximately 1.5% to 2.0% in Kent County with population projections of 146,477 in 2010, 152,171 in 2015 and 157,036 in 2020.

3.2.6 Water Resources

3.2.6.1 Water Resources of the Eagle Meadows MFH Area

The topography of the project area is relatively flat, with a surface elevation of 20 ft above mean sea level. The local topographic gradient, slopes slightly down to the northeast, towards the St Jones River. Runoff from the paved portions of the existing housing areas flows into a storm drain system, which discharges into the St Jones River. Runoff in non-paved areas either drains into stormwater drains or percolates through the surface soils and into the water-table aquifer.

Groundwater flow within the unconfined Columbia aquifer generally follows the topographic gradient. Locally the flow direction is northeast, towards the St Jones River. There is no known groundwater contamination underneath the Eagle Meadows area. The potable water for Eagle



Clear Zones and Accident Potential Zones (AICUZ Environs Map)

Figure 3-2

Meadows is supplied by two deep wells within the housing area. The wells draw water from the Piney Point aquifer at 364 feet below the ground surface (Allocation No. 88-0020B). Well water is sampled and analyzed on a regular basis for protection of human health. The water has natural corrosive characteristics capable of dissolving the lead in the existing plumbing systems in the housing units in Eagle Meadows. The water is now treated to reduce its corrosive characteristics, which has eliminated the lead problem. The water is also chlorinated and fluoridated prior to distribution and it meets all current Safe Drinking Water (SDW) standards. Recent promulgation of lowered SDW arsenic standards may require DAFB to treat the current wells to ensure compliance with the new arsenic standard by January 2006.

3.2.6.2 Water Resources of the Eagle Heights MFH Area

The topography of the project area is relatively flat, with a surface elevation of 20 ft above mean sea level. The local topographic gradient slopes slightly down to the southwest, towards the St Jones River. Runoff from the paved portions of the project housing areas flows into storm drain systems that discharge into the St Jones River. Runoff in non-paved areas either drains into stormwater drains or percolates through the surface soils and into the water-table aquifer.

Groundwater contamination exists in Portions of the Eagle Heights area. IRP studies were carried out for Eagle Heights, which indicated the migration of chlorinated solvent contaminated groundwater from the base industrial area to areas under Eagle Heights. The contaminants include tetrachloroethylene (PCE), trichloroethylene (TCE), 1,2 Dichloroethylene (1,2-DCE) and vinyl chloride (VC). The first two contaminants are solvents that were used for degreasing, or cleaning aircraft parts. They are considered to be carcinogenic. The last two contaminants are by-products of the biological breakdown of PCE and TCE. The highest level of PCE found under Eagle Heights was 230 parts per billion (ppb). The highest level of TCE found under Eagle Heights was 2600 ppb. 1,2 DCE and VC were found at levels of 1,200 and 280 ppb respectively. The groundwater contamination does not represent a threat to human health because the contaminated water is below an uncontaminated layer starting at 30 feet below the surface of the ground. The contaminated groundwater is not used for potable purposes. There is no route by which people in Eagle Heights could be exposed to the contaminated water. Reference the attached maps in Attachment 3.

The shallow groundwater is not used for domestic supply within one and one half miles of the proposed project area. A hydrologic divide separates the proposed project area from locations of known groundwater contamination, meaning that the water under the proposed project area and the groundwater where there is known contamination flow away from each other and will not mix or carry contaminants to the domestic wells. The average water quality of the Columbia aquifer meets most secondary criteria set for esthetic reasons (taste rather than for health and safety); however, the average total iron content of the aquifer is high (1.7 milligrams per liter). Water with this amount of iron would require treatment before use because of the unpleasant taste of the water.

The water supply for the Eagle Heights MFH area is derived from the Piney Point aquifer at 360 feet below the ground surface and from the Cheswold aquifer at 195 to 230 feet below the ground

surface. The water is treated with chlorine and fluoride and meets current Safe Drinking Water standards. DAFB is prepared to ensure that the Eagle Heights drinking water meet the new SDW standards for drinking water. Provisions are being planned to ensure the new arsenic standards are satisfied in association with the Eagle Heights drinking water.

3.2.7. Underground Storage Tanks (USTs)

3.2.7.1 USTs in Eagle Heights

124 of the 152 subject housing units in Eagle Heights use fuel oil for heating, utilizing 22 under ground storage tanks for fuel oil storage (each UST provides fuel to multiple MFH units). No leak detection or tank integrity data is available for these USTs. All 22 of these USTs have a capacity of 1,500 gallons, a volume that is eligible for regulation by the State of Delaware, but are exempt from state regulation under 42 USC §§ 6991(1)(B). Under this federal law USTs of any volume, which is used to store heating oil for consumptive use on premises, are exempt from state regulation.

3.2.7.2 USTs in Eagle Meadows

All of the housing units in Eagle Meadows are supplied with heating oil from USTs not exceeding 550 gallons, which were installed during construction in 1975. No leak detection data is currently available for these tanks. Since they do not exceed 1,100 gallons, state or federal law does not regulate them.

3.2.8 Pesticides Application in Eagle Heights and Eagle Meadows

Both the Eagle Heights and Eagle Meadows MFH Areas have had various pesticides applied to their structures and surrounding soil since their construction. Pesticides of concern to the proposed project are aldrin, heptachlor and chlorodane. Levels of these pesticides may still exist around the foundations of the buildings and all soil shall be analyzed prior to removing from government property. The land was farmed prior to its acquisition of the property by the Air Force. Agricultural use of pesticides prior to the Air Force ownership may have resulted in low levels of pesticides remaining in the soils.

3.2.9 Asbestos and Lead Based Paint Management

Both the Eagle Heights and Eagle Meadows MFH units had lead based paint and asbestos used in their construction. On-going asbestos abatement has removed the floor tile and associated mastic in approximately 1/3 of all of the DAFB MFH units. In the remaining 2/3 of the MFH units, asbestos is present in the floor tiles, and associated mastic. In units with basements asbestos may be present in piping and the associated piping insulation.

Lead based paint is most likely present in all of the DAFB MFH units. Testing for lead base paint has not been completed in every unit but, considering the construction process and repair

history of all of the units, it is safe to assume that lead based paints were used in every unit. Available testing results can be found at Attachment 4.

4.0 Environmental Consequences of the Proposed Action and Alternatives

4.1..Environmental Consequences of the No Action Alternative

4.1.1 Air Resources

The No Action Alternative would leave the military members and families living in substandard housing units. Asbestos and lead-based paint abatement would continue as needed. Repairs and maintenance of the aging housing would continue. Reduction of the primary air pollutants would be delayed until Dover AFB was able to upgrade the heating systems in each unit currently utilizing heating oil.

4.1.2 Biological Resources

The No Action Alternative would have no effect on biological resources.

4.1.3 Cultural Resources

The No Action Alternative would have no effect on cultural resources.

4.1.4 Noise and Safety Issues

The No Action Alternative would have no effect on noise and safety issues, with no improvement over existing conditions.

4.1.5 Socioeconomic Resources

The no-action alternative would likely result in the continuing deterioration of the Eagle Meadows MFH units and the 152 MFH units in Eagle Heights. Also, the occupants in the 152 MFH units in Eagle Heights will continue to reside in close proximity to the newly constructed State Route 1.

4.1.6 Water Resources

The No Action Alternative would have no effect on water resources, with no improvement over existing conditions.

4.1.7. USTs

The No Action Alternative would not address the closure or removal of any of the USTs located in Eagle Heights or Eagle Meadows.

4.1.8. Pesticides

The No Action Alternative would leave in place the pesticide contaminated soils in and around the MFH units.

4.1.9 Lead Based Paint and Asbestos

The No Action Alternative would not address the removal and abatement of lead based paint and asbestos. Lead based paint and asbestos would be removed from the MFH units over time, under other maintenance projects.

4.2 Environmental Consequences of the Privatization Alternative

4.2.1 Air Resources

Heating with fuel oil would be discontinued as part of the repair, renovation and replacement of the project MFH units. Both the new and renovated units would utilize energy efficient heaters with a substitute fuel source. The new heating equipment will produce less NOx and release less volatile organic compounds (VOC) than the current fuel oil systems. Reductions in air pollutants from heating system upgrades are projected at 90% for carbon monoxide, 70% for NOx, 100% for sulfur dioxide, and 90% for particulates. VOCs, will also be reduced. Reducing the emission of air pollutants from DAFB MFH will reduce total DAFB air emissions and help prevent limitations on mission capability associated with exceeding permitted air emissions.

The demolition of the housing units in Eagle Heights and their reconstruction in the vicinity of Eagle Meadows will produce an estimated release of 0.77 tons of VOC and 5.68 tons of NOx. This is a one time release of these contaminants. By placing the new housing units further from the base, the residents will have an increased travel distance to work. Assuming that one resident from each unit travels to and from work, via automobile, five days a week, the estimated total emissions increase is 0.87 tons per year of VOC and 0.56 tons per year of NOx (reference Attachment 2, Clean Air Act Conformity Analysis). The reduction of air emissions for heating will offset much of the air emissions from the increased travel requirements under this alternative.

The air emissions from the proposed projects would not exceed the *de minimis* limits of 25 tons per year for VOC and NOx under the ozone severe non-attainment status for Kent County Delaware. The emissions would also not be regionally significant. Cumulative impacts of this proposed project with other assessed projects would be *de minimis* and not regionally significant.

4.2.2 Biological Resources

No biological resources are known to exist in the project area. No impact is expected from the privatization alternative.

4.2.3 Cultural Resources

No cultural resources are known to exist in the project area. No impact to cultural resources is expected from the privatization alternative.

4.2.4 Noise and Safety Issues

The Eagle Meadows area is outside of the 65 dB noise zones from Dover AFB operations. Replacement of 152 housing units in Eagle Heights with new units near Eagle Meadows will reduce the number of units within the 65 dB noise zone and reduce the number of units close to the busy State Route 1 highway. The "green area" buffer zone, created by the demolition of 152 old housing units, will also reduce the noise impact of the highway upon the residents of Eagle Heights.

4.2.5 Socioeconomic Resources

The proposed project will not result in an increase in demand on socioeconomic resources. The reduction of units in the Eagle Heights area and concurrent increase in the Eagle Meadows area will shift students from the on base schools to other schools in the Caesar Rodney School District. School district administration personnel have informed Dover AFB personnel that the shift of students will not adversely affect the district and they are prepared to absorb the additional students. The proposed project will not significantly impact the socioeconomic resources of the general area.

4.2.6 Water Resources

As part of the redevelopment of Eagle Meadows the developer must provide a source of water independent of the existing base wells. After renovation, the base would proceed with abandoning and closing the wells in Eagle Meadows. Shifting some of the population of Eagle Heights to the vicinity of Eagle Meadows will have a nominal impact on water usage for the area. Additionally, the bathrooms in the new and renovated housing will utilize low flow toilets, resulting in a decreased demand on the water resources in the area.

Sediment and Stormwater Regulations must be reviewed to determine if any permanent stormwater quantity or quality best management practices need to be implemented due to perspective demolition of the impacted Eagle Heights MFH units. Also, the developer would need to coordinate with DNREC regarding sediment and stormwater requirements pertaining to the development of the newly acquired land.

No impact on groundwater quality, through the release of potential contaminants is expected as a result of the proposed project.

4.2.7 USTs

All of the USTs in Eagle Heights (22 USTs with capacity of 1,500 gallons) will remain property of the government. The government will fund and contract with a firm, independent of the

developer, for the removal of the USTs to ensure proper closure and follow on with any long term sampling requirements.

Ownership of the USTs in Eagle Meadows (149 USTs with capacity of 550 gallons) will be transferred to the developer. The developer would be required to remove the USTs and provide a new source of heat within the first several years of this agreement. Because the land will remain property of the government, the developer shall work closely with Dover AFB when removing the USTs to ensure any long-term sampling issues can be addressed. Dover AFB is responsible for any long-term sampling requirements. As part of the project's contractual requirements the developer will assure free access of DAFB to the MFH areas for future environmental sampling.

4.2.8. Pesticides

All soil disturbed during the proposed activities associated with this alternative would be analyzed for pesticide contamination and disposed of accordingly.

4.2.9. Asbestos and Lead Based Paint

Materials containing asbestos will be abated from all of the units prior to demolition and during renovation. Asbestos containing materials will be disposed of appropriately. New construction will not utilize any materials containing asbestos. All construction debris will be analyzed to identify the presence of lead based paint and be disposed of accordingly. All current data on lead based paint and asbestos in the MFH will be made available to the developer.

4.3 Environmental Consequences of the Replacement/Renovation Alternative

4.3.1 Air Resources

The renovation of the MFH units in Eagle Meadows and any demolition and reconstruction of the MFH units currently located in Eagle Heights (although reconstruction would not be in the same area) would take place over a considerably longer period of time and not as a single comprehensive project. The upgrade of the heating systems would similarly occur with the resulting beneficial impacts to the environment, as described in section 4.2.1, occurring at a slower rate. The direct and indirect air emissions related with this alternative would be the same as for the Privatization Alternative as in 4.2.1 and would be *de minimis* and not regionally significant.

4.3.2 Biological Resources

No biological resources are known to exist in the project area. No impact is expected from the Replacement/Renovation Alternative.

4.3.3 Cultural Resources

No cultural resources are known to exist in the project area. No impact to cultural resources is expected from this alternative.

4.3.4 Noise and Safety Issues

The Eagle Meadows area is outside of the 65 dB noise zones from Dover AFB operations. Replacement of 152 housing units in Eagle Heights with new units near Eagle Meadows will reduce the number of units within the 65 dB noise zone and reduce the number of units close to the busy State Route 1 highway. The "green area" buffer zone, created by the demolition of 152 old housing units, will also reduce the noise impact of the highway upon the residents of Eagle Heights. However, the creation of this buffer zone would occur at a slower rate than that of the privatization alternative.

4.3.5 Socioeconomic Resources

The proposed project will not result in an increase in demand on socioeconomic resources. The reduction of units in the Eagle Heights area and concurrent increase in the Eagle Meadows area will shift students from the on base schools to other schools in the Caesar Rodney School District. School district administration personnel have informed Dover AFB personnel that the shift of students will not adversely affect the district and they are prepared to absorb the additional students. The proposed project will not significantly impact the socioeconomic resources of the general area.

4.3.6 Water Resources

The Replacement/Renovation Alternative would need to account for water treatment at the two wells presently providing water to Eagle Meadows. There would be no impact to water resources associated with Eagle Heights. Drinking water issues would need to be addressed after the new land is acquired and prior to constructing the replacement 152 MFH units. As with the privatization alternative, the bathrooms in the new and renovated housing will utilize low flow toilets, resulting in a decreased demand on the water resources in the area. However, the conversion with this alternative would be at a slower rate.

Sediment and Stormwater Regulations must be reviewed to determine if any permanent stormwater quantity or quality best management practices need to be implemented due to perspective replacements and / or renovations.

No interface with the groundwater is expected with this alternative, thus, no impact with the groundwater contamination would occur.

4.3.7. USTs

The USTs in Eagle Meadows and Eagle Heights would be removed at a slower rate than that planned in the Privatization Alternative. Natural gas heating would eventually replace heating oil in both the Eagle Meadows and Eagle Heights MFH areas.

4.3.8. Pesticides

All disturbed soil would be analyzed to ensure proper disposal.

4.3.9. Lead Based Paint and Asbestos

Asbestos would be removed prior to any renovations or demolition for replacement of MFH. Construction debris would be analyzed to ensure proper disposal for lead or asbestos containing materials.

4.4 Environmental Impact Comparison Matrix

Analysis of the cost benefit matrix does not result in a clear cut and compelling reason to choose one alternative over another. Looking at the environmental impacts provides another perspective on the best choice of the three alternatives. The environmental impacts are summarized in the following table. Resources that have no impact, positive or negative, are not included in the following tables.

Table 1 Environmental Impact Matrix

Resource	No-Action	Privatization	Replace/Renovate
Air	No Improvement	Emissions Reduced	Emissions Reduced
Noise	No Improvement	Noise Impact Reduced	Noise Impact Reduced
Economic Cost	None	Developer Provided	Government Provided
$ Available	Inadequate	Private $ To Be Used	Not Available
Housing	Substandard	Major Upgrade	Major Upgrade
Time	NA	Rapid Upgrade	Indefinite Upgrade Delay
Water	No Improvement	Arsenic Issue Satisfied	Arsenic Issue Satisfied, however, stormwater issues may exist
USTs	No Improvement	USTs removed	USTs removed
Pesticides	NA	Managed	Managed
LBP/Asb	Managed	Managed	Managed

Table 2 Environmental Impact summary Matrix

Resource	No-Action	Privatization	Replace/Renovate
Air	-	+	+

Noise	0	+	+
Economic Cost/$$ Available	0	+	-
Housing	-	+	+
Time	0	+	-
Water	0	+	+
USTs	-	+	+
Pesticides	0	+	+
LBP/Asb	-	+	+
Net Score	**-4**	**+9**	**+5**

4.5 Preferred Alternative

The net environmental impact for the No-Action Alternative is negative. The net environmental impact for the other two alternatives is positive, with the Privatization Alternative having the largest positive impact. Therefore the preferred alternative is Privatization. This alternative meets the requirements for acceptable housing for the military families in the most expeditious manner with the least environmental impact.

5.0 List of Drafters

Milton M Beck and Steven Seip of the Environmental Flight at Dover Air Force Base prepared the Environmental Assessment.

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Attachment 1

Public Notice and Response to Public Comments

ATTACHMENT 2

CLEAN AIR ACT (CAA)
CONFORMITY DETERMINATION ANALYSIS

CONSTRUCTION OF 152 FAMILY HOUSING UNITS
DEMOLITION OF 152 REPLACED HOUSING UNITS
DOVER AIR FORCE BASE, DELAWARE

The Clean Air Act (CAA) requires that a federal agency must make a determination that an action the agency is taking conforms to the applicable implementation plan. Dover AFB is in a severe Non-attainment area for ozone, therefore the critical emissions are volatile organic compounds (VOC) and nitrogen oxides (NOx) which are ozone precursors.

EMISSION INCREASES, Regulation 35 of 7 Delaware Code Chapter 67, Section 1
CONFORMITY OF GENERAL FEDERAL ACTIONS TO THE STATE IMPLEMENTATION PLANS

Severe Non-Attainment Area for Ozone		
de minimis emission levels		
VOC emissions increase	25	tons per year
NOx emissions increase	25	tons per year

The interpretation of the 25 tons per year of "VOC or NOx" by the Delaware Department of Natural Resources and Environmental Control is that the 25 tons per year is 25 tons per year for each of the pollutants, not the combination of the two.

CONCLUSION: The increased emissions expected under the privatization of Eagle Meadows Military Family Housing (MFH) at Dover Air Force Base, construction of a 152 unit MFH off-base housing complex and demolition of 152 units in Eagle Heights. Direct and indirect air emissions in total are below *de minimis* levels and are not regionally significant, therefore the action has been determined to not require CAA conformity determination. This decision is made in accordance with the requirements of the regulations under 176(c) of the CAA and 40 CFR part 51 subpart W.

CALCULATIONS

Construction Emissions (ref. EPA, 1992)

Construction of a 30 foot x 1.6 mile roadway in new Eagle Meadows area housing subdivision, with curb and gutter, side walks, and installation of natural gas pipeline, buried telephone and cable TV lines, water, sewer pipelines, and buried electrical lines.

Road, curb and gutter, and sidewalk construction

Dump Trucks - Number of Units 4
150 hp
0.50 load factor
450 hrs equipment usage (each)
1.44 g/hp-hr VOC emission factor
11.01 g/hp-hr NOx emission factor

VOC emissions = 428.57 pounds (lb)
NOx emissions = 3,276.79 lb

Dozer 2 units
356 hp
0.62 load factor
270 hrs equipment usage (each)
0.86 g/hp-hr VOC emission factor
9.60 g/hp-hr NOx emission factor

VOC emissions = 225.98 pounds (lb)
NOx emissions = 2,522.51 lb

Grader 2 units
172 hp
0.54 load factor
600 hrs equipment usage (each)
1.57 g/hp-hr VOC emission factor
9.60 g/hp-hr NOx emission factor

VOC emissions = 385.77 pounds (lb)
NOx emissions = 2,358.86 lb

Roller 2 units
99 hp
0.59 load factor
600 hrs equipment usage (each)
0.82 g/hp-hr VOC emission factor
9.30 g/hp-hr NOx emission factor

VOC emissions = 126.71 pounds (lb)
NOx emissions = 1,437.07 lb

Tractor mounted cable and pipe installation equipment (for telephone, cable TV, natural gas, and buried electrical lines)

4 units (one each utility installation)
Heavy duty, gasoline construct. wheeled
80 hours usage (each unit)
164 g/hr exhaust hydrocarbons
195 g/hr NOx

VOC emissions = 112.32 pounds (lb)
NOx emissions = 137.57 lb

Utility pipeline installation (water and sewer)

Trenchers

2 units
Heavy duty, gasoline powered const. (Misc)
120 hours usage (each)
254 g/hr exhaust hydrocarbons
187 g/hr NOx

VOC emissions = 130.47 pounds (lb)
NOx emissions = 98.94 lb

Backhoe for backfill of trenches (water and sewer)

2 units
Heavy duty, gasoline construct. wheeled
80 hours usage (each unit)
164 g/hr exhaust hydrocarbons
195 g/hr NOx

VOC emissions = 56.16 pounds (lb)
NOx emissions = 68.78 lb

Demolition of 152 Eagle Heights units

Track type loader

1 unit
Heavy duty, diesel powered construt.
160 hours
44.55 g/hr exhaust hydrocarbons
375.22 g/hr NOx

VOC emissions = 15.26 pounds (lb)
NOx emissions = 132.35 lb

Diesel powered truck

2 units
Off-highway truck
160 hours (each)
86.84 g/hr exhaust hydrocarbons
1889.16 g/hr NOx

VOC emissions = 59.74 pounds (lb)
NOx emissions = 1,332.74 lb

Note VOC = 0.9708 x exhaust hydrocarbons (EPA, 1992)

Units x emission factor x load factor x hp x usage x 1 lb/453.6 g = emissions (lb/yr)

Total direct emissions:

VOC = 1,540.98 lb, or 0.77 tons VOC. This is a one time emission.
NOx = 11,365.61 lb or 5.68 tons NOx. This is a one time emission.

Indirect Emissions

Indirect emissions would result from the Air Force members that live at Eagle Heights that would be displaced because of the demolition of 152 housing units in Eagle Heights that would then live and commute from the Eagle Meadows area.

152 vehicles per day to Dover AFB and return to Eagle Meadows Area
3 miles per vehicle travel to Dover AFB and 3 return over existing travel
5 days per week, 50 weeks per year = 228,000 miles
Emission factor = 3.45 g/mile for VOC
2.24 g/mile for NOx

Emissions in lb/yr = 228,000 miles x emission factor x 1 lb/453.6 g

VOC = 1,734 lb/yr or 0.87 tons per year
NOx = 1,125 lb/yr or 0.56 tons per year

Total Emissions, direct plus indirect

VOC = 1.64 tons per year (of which 0.87 tons/yr will be recurring).
NOx = 6.24 tons per year (of which 0.56 tons/yr will be recurring).

Cumulative effect

Project	VOC Emissions	NOx Emissions
MFH Privatization	1.64 tons	6.24 tons
JUA	6.56	1.07
003 Stormwater	0.02	0.12
007 Stormwater	one time emission process completed, no cumulative effect	
Total	8.22 tons	7.43

Conclusion

The air emissions from the construction of the new 152 unit family housing area and demolition of 152 units in Eagle Heights would produce 1.64 tons of VOC and 6.24 tons of NOx. Both are below the *de minimis* limit of 25 tons for both primary pollutants. The air emissions would be produced over a period of months, so no daily emissions would exceed the regionally significant level of 10% of the daily emissions for Kent County during the peak ozone season of 25.843 tons per day of VOC and 65.233 tons per day of NOx. Therefore no Clean Air Act Amendments Section 176(c) conformity determination is required. The emissions would also be 18.93 tons VOC and 7.67 tons NOx offset by reductions of air emissions reported in DAFB, 1994.

REFERENCES

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Attachment 3

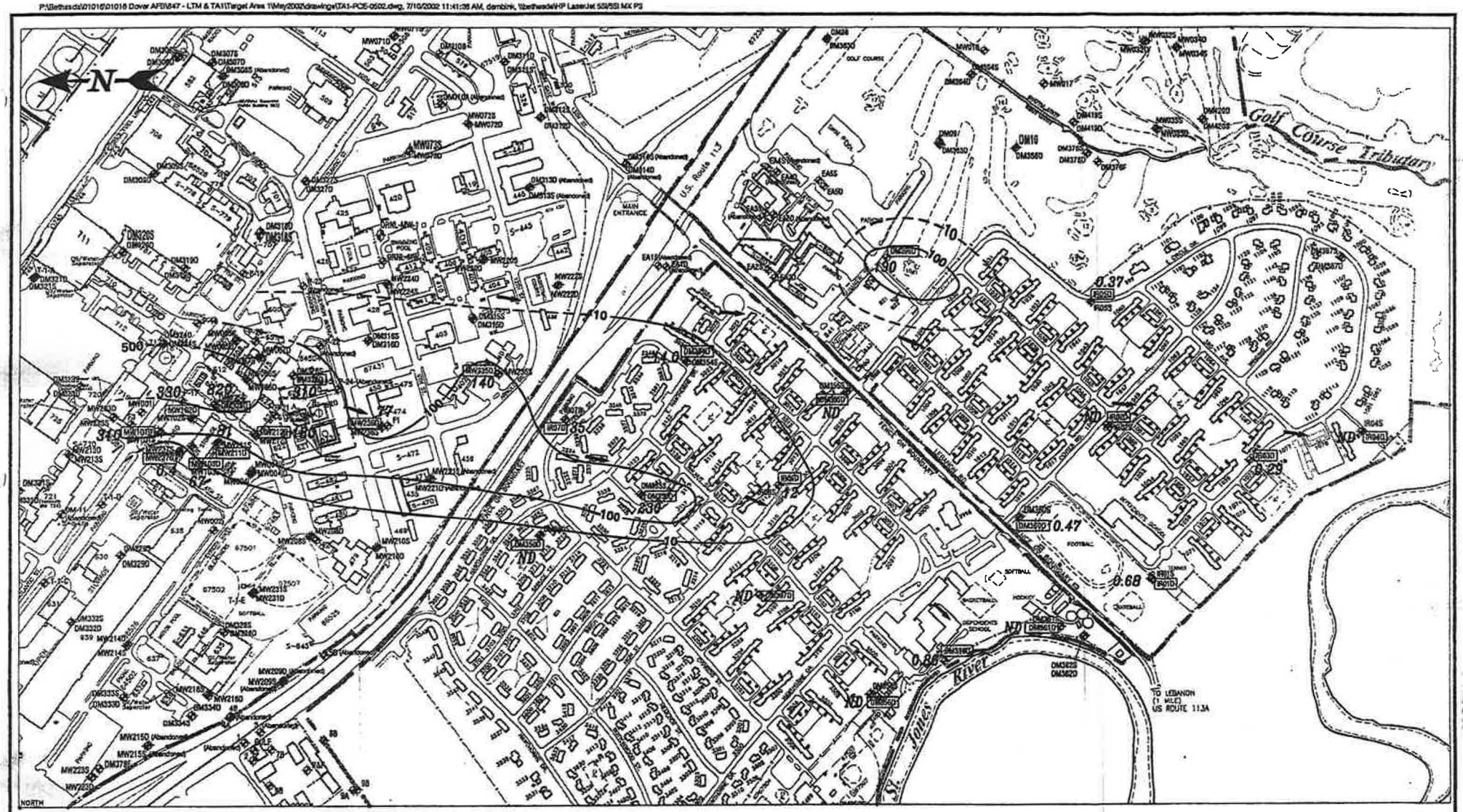

FIGURE 4-7
PCE IN DEEP WELLS
TARGET AREA 1
MAY 2002

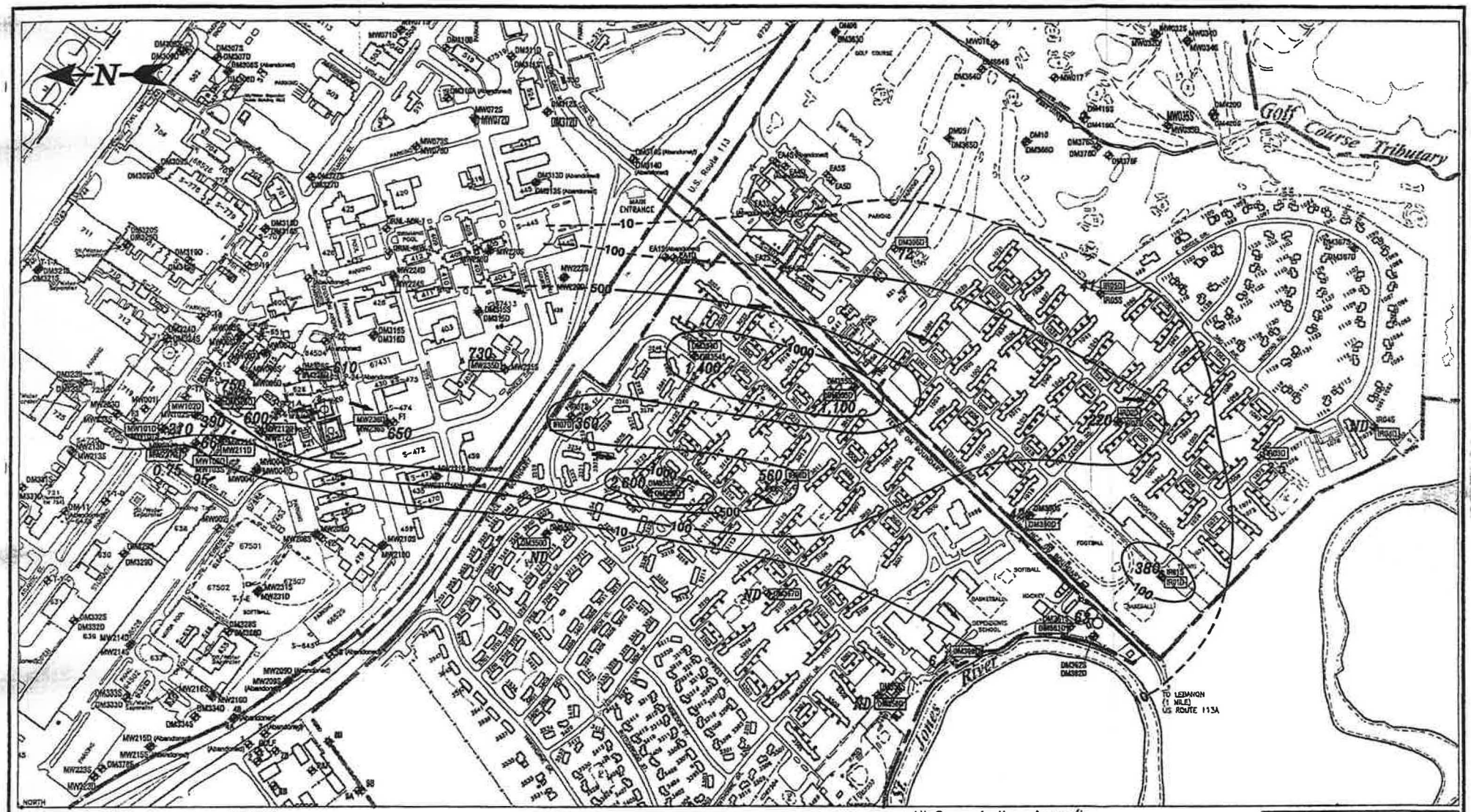

FIGURE 4-8
TCE IN DEEP WELLS
TARGET AREA 1
MAY 2002

P:\Bethesda\01016\01016 Dover AFB\647 - LTM & TA1\Target Area 1\May2002\drawings\TA1-DCE-0502.dwg, 7/10/2002 12:56:40 PM, demclark, \\bethesda\HP LaserJet 5Si/5Si MX PS

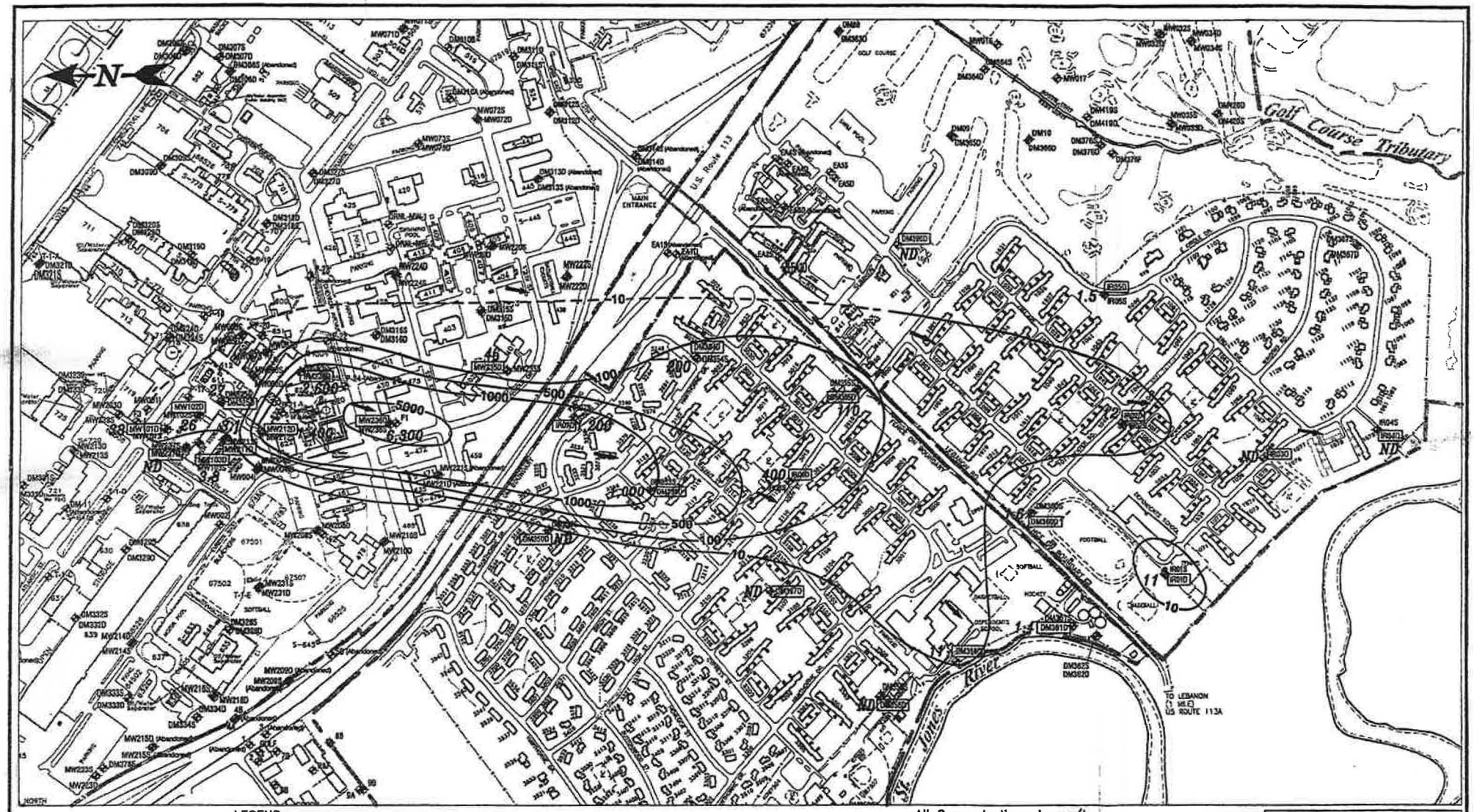

FIGURE 4-9
CIS-1,2 DCE IN DEEP WELLS
TARGET AREA 1
MAY 2002

URS

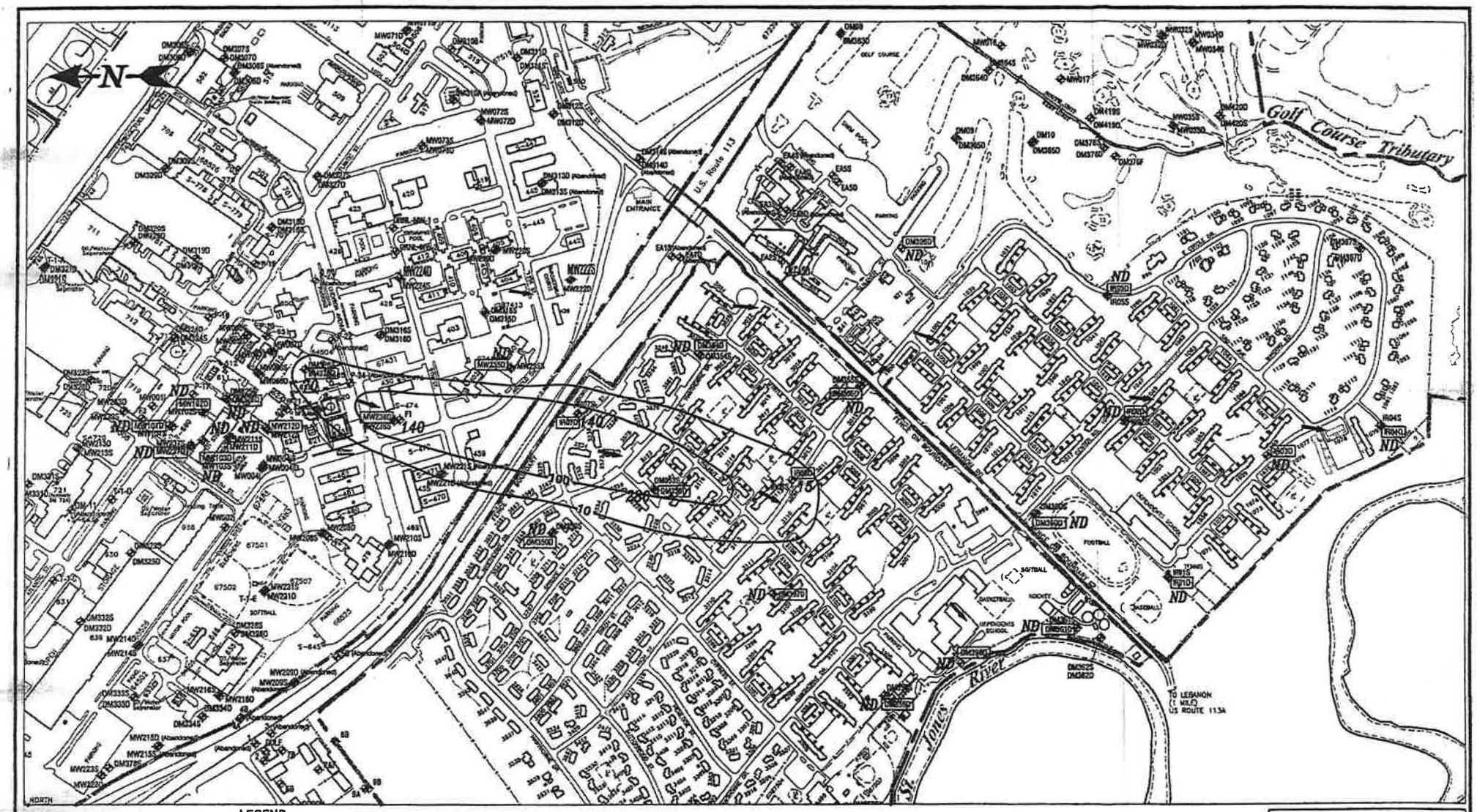

FIGURE 4-10
VINYL CHLORIDE
IN DEEP WELLS
TARGET AREA 1
MAY 2002

Attachment 4

Final

Informal Technical Information Report Documenting Lead-Based Paint Facility Inspections Performed at Dover Air Force Base

Prepared for

U.S. Air Force Air Mobility Command
Air Force Contract F33615-89-D-4002
Delivery Order No. 98

Prepared by

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The Maple Building
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July 1994

EA Project No. 11206.98

1. INTRODUCTION

The Informal Technical Information Report (ITIR) provides an overall summary of results of the lead-based paint facility visual inspection effort conducted from 9 March to 3 April 1994, at Dover Air Force Base as part of the Air Mobility Command (AMC) Lead-Based Paint Facility Inspection Program. This effort has been carried out in accordance with the Statement of Work[1] issued by U.S. Air Force Armstrong Laboratory and the associated Work Plan[2] and Inspection Strategy Report documents[3] submitted by EA Engineering, Science, and Technology. The summary of results includes:

- Narrative overview of general Base-specific observations relative to the inspection effort.
- Tabulations of inspection findings include a breakdown of the number of priority groupings, deteriorated paint observations, and sample frequency for both non-family and family housing facility groupings.
- Analytical results showing which paint samples were found to contain lead at or above the established action level of 0.5 percent by weight.
- Listing of facilities where deteriorated paint was observed (noting number of observations), information pertaining to the nature of the observations, and information regarding any paint samples collected.
- Listing of facilities and individual units not inspected, and the reason these facilities were not inspected.

Detailed documentation related to the Phase I and Phase II inspection efforts will be submitted as part of the AMC Lead-Based Paint Inspection Program "Base Record." Pertinent documentation will include floor plan mark-ups, original inspection reports, analytical laboratory reports, and chain-of-custody documents.

2. INSPECTION METHODOLOGY

The visual inspection (Phase I) consisted of interior and exterior (ground level) observations of family housing units and high priority non-family facilities. The goal was to inspect 100 percent of the family and non-family high priority facilities in an effort to document

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[1] Statement of Work attached to U.S. Air Force Order for Supplies or Services dated 24 January 1994, Contract No. F33615-89-D-4002, Delivery Order No. 0098.

[2] Work Plan for Lead-Based Paint Facility Inspections and Development of Management and Operations Plan for Air Mobility Command, dated February 1994.

[3] Air Mobility Command Lead-Based Paint Inspection Program Inspection Strategy Report for Dover Air Force Base, dated February 1994.

indications of deteriorated paint. Facilities constructed or renovated after 1980 were excluded from the project Statement of Work. The master list of facilities (high priority and family housing) to be included in the inspection effort for this Base was provided by the Base Point of Contact (POC) and is included in Appendix A. Field personnel were instructed to identify deterioration of painted surfaces consistent with the Department of Housing and Urban Development definition for painted surfaces in "poor" condition[4].

The inspection records indicate all observations where the deteriorated painted surface is greater than or equal to 1 ft^2. The 1-ft^2 cutoff was chosen to eliminate noting observations of normal wear and tear, including "nicks and dings," nail holes, and picture hanger marks. This pertains to deteriorated paint areas specific to individual building components (e.g., doors, trim, cabinets, stairs, etc.) totaling greater than or equal to 1 ft^2. In addition, all cases (regardless of estimated area) of non-adhering paint on piping, radiators, or other metal surfaces are documented. Discretionary sampling of "poor" condition deteriorated surfaces was completed in accordance with the sample collection protocol described in the Work Plan and Inspection Strategy reports. Base suggestions regarding sample locations, along with sample frequency incorporated in the Inspection Strategy Report, were implemented by field personnel. Areas of deterioration observed and sample locations are indicated on the floor plan drawings (provided separately). Inspection reports and "marked up" floor plan drawings indicating deteriorated paint observations and sample locations will be forwarded to the Base POC for inclusion in the AMC Lead-Based Paint Inspection Program "Base Record."

Phase II activities involved sample collection and associated analytical testing. In order to meet the project schedule, EA performed Phase I and Phase II activities concurrently. The project budget allowed for collecting approximately 2 samples from every 1 non-family high priority unit and 1 sample from every 16 family housing units inspected. The Base POC was notified, generally within 24 hours of analysis, of any sample result at or above the Department of Housing and Urban Development action level used to define paint containing lead.[5] The Base POC was also notified of other cases where potentially hazardous conditions existed based on inspection team observations.

The overall field effort was accomplished without significant complications. However, it was not possible to inspect 100 percent of the units and facilities originally listed for the following reasons:

- Residents were not home (in most cases, at least one rescheduled inspection was attempted)

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[4] "Non-intact; severely worn or weathered, no longer adhering (peeling, flaking, cracking, etc.) or substrate deteriorating" per Federal Register, Volume 57, No. 125, 29 June 1992. Department of Housing and Urban Development.

[5] The Department of Housing and Urban Development (HUD) action level, or "abatement threshold," is 0.5 percent by weight as defined in "Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing," HUD, September 1990, revised May 1991.

- Unit or building on list could not be located (rare)
- Access was not allowed by resident or agency responsible for building management
- Units undergoing renovation.

A listing of units not inspected is provided in Appendix B.

3. SUMMARY OF FINDINGS

The tabulations of results summarize inspection statistics, deteriorated paint observations, sample frequency, and analytical laboratory results. It should be noted that the analytical results cannot be used to support a statistical analysis of representative facility groupings since budgetary constraints did not allow comprehensive survey techniques to be followed. In selecting sample locations, every attempt was made to sample the more severe cases of paint deterioration, particularly when children under 7 years of age were likely to be present.

Since only samples of deteriorating paint were collected, most often the samples did not include all layers of paint down to the substrate. Therefore, results from a given location should not be used to determine the presence or absence of lead-based paint. The presence of lead below the Department of Housing and Urban Development action level of 0.5 percent may present a potential health hazard if a dust or fume is produced from the paint.

3.1 FAMILY HOUSING UNITS (INTERIOR)

A total of 1,438 family housing units were inspected. Approximately 79 percent of those family housing units inspected had at least one observation of deteriorated interior surface paint. The interior paint samples acquired represent approximately 1 percent of the total deteriorated paint observations documented. Of those interior samples taken, 4 percent contained lead concentrations at or above the Department of Housing and Urban Development action level of 0.5 percent by weight. A tabulation of the overall inspection results is presented in Table 1.

A detailed listing of the units or facilities where observations of deteriorated painted surfaces were noted is provided in Appendix C.

3.2 FAMILY HOUSING UNITS (EXTERIOR)

A total of 510 family housing building exteriors were inspected. Approximately 89 percent of the family housing building exteriors inspected were observed to have deteriorated painted surface areas. Samples taken comprise approximately 1 percent of the total number of exterior observations. Of those exterior samples taken, approximately 52 percent contained lead concentrations at or above the Department of Housing and Urban Development action level of 0.5 percent by weight. A tabulation of the overall inspection results is presented in Table 2.

A detailed listing of the units or facilities where observations of deteriorated painted surfaces were noted is provided in Appendix C.

3.3 HIGH PRIORITY FACILITIES

3.3.1 Interior Inspections

A total of 139 non-family housing high priority facilities were inspected. Approximately 80 percent of those facilities inspected contained at least one observation of deteriorated interior surface paint. The interior paint samples acquired comprise approximately 5 percent of the total deteriorated paint observations documented. Of those interior samples taken, 6 percent contained lead concentrations at or above the Department of Housing and Urban Development action level of 0.5 percent by weight.

3.3.2 Exterior Inspections

Approximately 79 percent of the high priority facilities inspected were observed to have deteriorated exterior painted surfaces. Samples taken comprise approximately 6 percent of the total deteriorated observations documented. Of those exterior samples taken, none contained lead concentrations at or above the Department of Housing and Urban Development action level of 0.5 percent by weight.

A tabulation of the overall interior and exterior inspection results of high priority facilities is presented in Table 3. A detailed listing of the units or facilities where observations of deteriorated painted surfaces were noted is provided in Appendix C.

3.4 SAMPLE RESULTS

A total of 94 samples were collected on Base. Sixteen of the 94 samples (17 percent) were above the Department of Housing and Urban Development action level of 0.5 percent by weight. Two of the 26 interior samples (8 percent) taken in family housing units with children under 7 years of age contained lead above the defined action level. Thirteen of the 33 exterior samples (39 percent) of family housing units contained lead above the action level. Twenty of the 22 family day care units had observations of interior deteriorated paint. Nine interior samples were collected of which none were above the action level. Of the 34 defined playgrounds, 31 were observed to have deteriorated paint. Five of the 91 observations were sampled. None contained lead above the action level. A complete tabulation of analytical results is provided in Appendix D. Copies of the notifications provided to the Base POC in cases of sample results at or above the action level are provided in Appendix E.

3.5 POTENTIALLY HAZARDOUS CONDITIONS

Observations of potentially hazardous conditions, such as significant cases of peeling paint in areas where children under 7 years old are clearly present, were specifically brought to the attention of the Base POC. Potential hazardous condition communication records are provided in Appendix F.

4. GENERAL OBSERVATIONS

This section provides a general overview of observations resulting Phase I and Phase II activities. Specific types of painted surface deterioration were commonly observed in certain facilities. These observations are summarized below.

4.1 SUMMARY OF INTERIOR INSPECTION OBSERVATIONS

- Drywall Kitchen Ceilings—Paint damage was evident where leaks from the upstairs plumbing caused degradation of paint adhesion on the underlying ceiling.

- Drywall Bedroom Ceilings—Paint damage, and occasionally structural damage, has occurred as a result of water damage caused by blocked condensate piping from air conditioning units in the attic. The damage is evident as blistering and cracking paint, followed by adhesion failure and chipping. The deterioration is found in either the master bedroom or the child's bedroom.

- Metal Door Frames—These door frames, usually located in the kitchen and the upstairs bedrooms, are chipped due to bumps and scrapes associated with moving heavy objects. The chipped areas are generally located on the lower half of the door frame, well within the reach of children.

- Drywall Hallway Ceilings—Cracking paint is found either widely spread or localized around the ceiling light fixture.

- Wood Train on Stairways and Ceilings—Cracking of paint occurs either as a result of painting over already chipping surfaces (ceiling) or because the stairway is pulling from the wall.

- Miscellaneous Metal Components—Painted surfaces on door latches, striker plates, hinges, ducting, rolling door tracks, etc. consistently showed signs of deterioration.

- Masonry Walls and Metal Columns (3000 Series Old Base Housing)—Duplex units in the 3000 Series have basements of which the vast majority have chipping/peeling paint. This room is used for family recreation in many of these homes.

- Metal Heating Vents (4000 Series Annex Housing)—These components are found in every room, and were peeling in most of the annex units.

- Metal Heating Duct Work (4000 Series Annex Housing)—This component is located directly above the furnace, in the furnace closet, and typically showed signs of paint deterioration.

- Metal Attic Access Cover (4000 Series Annex Housing)—This component, usually located in the smallest bedroom, was found to have chipping paint. The smallest bedroom is typically used as a child's room.

- Shower Wall (4000 Series Annex Housing)—This component was subject to peeling in annex housing.

4.2 SUMMARY OF EXTERIOR INSPECTION OBSERVATIONS

The following components were almost universally found to exhibit deteriorated surfaces:

- Oil tank vent - chalking, peeling.
- Electrical rneter boxes - chalking.
- Electrical shut off boxes - chalking.
- Roof eave fascia - chipping.
- Shed doors and trim - chipping.
- Ventilation boxes - chalking.
- Window lintels (header) - chipping.
- Overhand support posts - chipping.
- Carport walls and posts - chipping.
- Air conditioning condensers - chalking and chipping.
- Carport posts (4000 Series Annex Housing) - The 4 × 4−ft posts had consistent paint deterioraiton. The posts painted white exhibited a higher rate of paint deterioration than did those painted brown. Paint chips from these posts are well within the reach of young children.

TABLE 1 TABULATION OF THE OVERALL INSPECTION RESULTS OF FAMILY HOUSING UNITS (INTERIOR)

Identification	Number	Percent
Total family housing units listed for inspection	1,517	---
Family housing units inspected	1,438	95[a]
Family housing units with observations of deteriorated paint	1,139	79[b]
Paint samples collected	45	---
Paint samples at or above action level	2	4[c]

(a) Percent of total number of family housing units listed.
(b) Percent of family housing units inspected.
(c) Percent of samples collected.

NOTE: Dashes (---) indicate percent not applicable.

Appendix D - Lead Based Paint Sample Analytical Results

AFB: DOVER

EAGLE HEIGHTS

Bldg / Unit #	Address	Facility Type	Interior / Exterior	Child Under 7*	Results % by wt	Sample ID
1002 C	1002 FIRST AVE	FAMILY DAY CARE UNITS	INTERIOR	Y	0.0025	DO-1002-C-1
1006 B	1006 FIRST AVE	FAMILY DAY CARE UNITS	INTERIOR	Y	0.0028	DO-1006-B-2
1006 B	1006 FIRST AVE	FAMILY DAY CARE UNITS	INTERIOR	Y	0.023	DO-1006-B-1
1012 B	1012 FIRST AVE	FAMILY HOUSING UNITS	INTERIOR	Y	0.012	DO-1012-B-1
1036	1036 SECOND AVE	FAMILY HOUSING UNITS	EXTERIOR		12.4	DO-1036-B-1
1041 H	1041 SECOND AVE	FAMILY HOUSING UNITS	INTERIOR		0.025	DO-1041-H-1
1045 D	1045 SECOND AVE	FAMILY HOUSING UNITS	INTERIOR	Y	0.0008	DO-1045-D-1
1048 A	1048 SECOND AVE	FAMILY HOUSING UNITS	INTERIOR	Y	0.0055	DO-1048-A-1
1048	1048 SECOND AVE	FAMILY HOUSING UNITS	EXTERIOR		4	DO-1048-D-1
1051 A	1051 SECOND AVE	FAMILY DAY CARE UNITS	INTERIOR	Y	0.064	DO-1051-A-1
1052	1052 SECOND AVE	FAMILY HOUSING UNITS	EXTERIOR		0.0055	DO-1052-E-1
1053 G	1053 SECOND AVE	FAMILY HOUSING UNITS	INTERIOR		0.14	DO-1053-G1
1053 G	1053 SECOND AVE	FAMILY HOUSING UNITS	INTERIOR		0.11	DO-1053-G4
1053 G	1053 SECOND AVE	FAMILY HOUSING UNITS	INTERIOR		0.012	DO-1053-G3
1053	1053 SECOND AVE	FAMILY HOUSING UNITS	EXTERIOR		0.016	DO-1053-G-5
1053 G	1053 SECOND AVE	FAMILY HOUSING UNITS	INTERIOR		0.0018	DO-1053-G2
1055	1055 SECOND AVE	FAMILY HOUSING UNITS	EXTERIOR		0.4	DO-1055-H-1
1056	1056 SECOND AVE	FAMILY HOUSING UNITS	EXTERIOR		0.032	DO-1056-C-1
1058 A	1058 SECOND AVE	FAMILY HOUSING UNITS	INTERIOR	Y	0.2	DO-1058-A-1
1061 D	1061 THIRD AVE	FAMILY HOUSING UNITS	INTERIOR		0.0016	DO-1061-D-1
1062 F	1062 THIRD AVE	FAMILY HOUSING UNITS	INTERIOR	Y	0.0015	DO-1062-F-1
1062 F	1062 THIRD AVE	FAMILY HOUSING UNITS	INTERIOR	Y	0.036	DO-1062-F-2
1063 F	1063 THIRD AVE	FAMILY DAY CARE UNITS	INTERIOR	Y	0.032	DO-1063-F-1

* Children less than 7 years of age noted for interior inspections only

Appendix D - Lead Based Paint Sample Analytical Results

AFB: DOVER

Bldg / Unit #	Address	Facility Type	Interior / Exterior	Child Under 7*	Results % by wt	Sample ID
1063 F	1063 THIRD AVE	FAMILY DAY CARE UNITS	INTERIOR	Y	0.14	DO-1063-F-2
1064 A	1064 THIRD AVE	FAMILY HOUSING UNITS	INTERIOR	Y	0.033	DO-1064-A-1
1076 B	1076 E. CIRCLE DR	FAMILY DAY CARE UNITS	INTERIOR	Y	0.035	DO-1076-B-2
1076 B	1076 E. CIRCLE DR	FAMILY DAY CARE UNITS	INTERIOR	Y	0.0021	DO-1076-B-1
1091	1091 E. CIRCLE DR	FAMILY HOUSING UNITS	INTERIOR	Y	0.0064	DO-1091-0-1
1101	1101 E. CIRCLE DR	FAMILY HOUSING UNITS	INTERIOR		0.001	DO-1101-0-1
1120	1120 CENTER RD	FAMILY HOUSING UNITS	EXTERIOR		3.9	DO-1120-0-1
1142	1142 WINDING RD	FAMILY HOUSING UNITS	INTERIOR	Y	0.049	DO-1142-0-1
[redacted]						
3003	3003 MYRTLE ST	FAMILY HOUSING UNITS	EXTERIOR		3.8	DO-3003-B-1
3007 A	3007 MYRTLE ST	FAMILY HOUSING UNITS	INTERIOR	Y	0.07099	DO-3007A-2
3007 A	3007 MYRTLE ST	FAMILY HOUSING UNITS	INTERIOR	Y	0.0033	DO-3007A-3
3007 A	3007 MYRTLE ST	FAMILY HOUSING UNITS	INTERIOR	Y	0.044	DO-3007-A-4
3007 A	3007 MYRTLE ST	FAMILY HOUSING UNITS	INTERIOR	Y	0.14	DO-3007-A-5
3016	3016 MYRTLE ST	FAMILY HOUSING UNITS	EXTERIOR		4.7	DO-3016-A-1
3020 A	3020 MYRTLE ST	FAMILY HOUSING UNITS	INTERIOR	Y	0.065	DO-3020-A-1

* Children less than 7 years of age noted for interior inspections only

Appendix D - Lead Based Paint Sample Analytical Results

AFB: DOVER

Bldg / Unit #	Address	Facility Type	Interior / Exterior	Child Under 7*	Results % by wt	Sample ID
3022 D	3022 MYRTLE ST	FAMILY HOUSING UNITS	INTERIOR		0.12	DO-3022-D1
3110 H	3110 WALNUT ST	FAMILY HOUSING UNITS	INTERIOR		0.017	DO-3110-H1
3120	3120 WALNUT ST	FAMILY HOUSING UNITS	EXTERIOR		0.05	DO-3120-0-1
3204 C	3204 CYPRESS ST	FAMILY HOUSING UNITS	INTERIOR	Y	0.056	DO-3204-C-1
3210 E	3210 CYPRESS ST	FAMILY HOUSING UNITS	INTERIOR		0.018	DO-3210-E-1
3215	3215 CYPRESS ST	FAMILY HOUSING UNITS	EXTERIOR		0.015	DO-3215-01
3218 C	3218 CYPRESS ST	FAMILY HOUSING UNITS	INTERIOR	Y	0.0004	DO-3218-C-1
3224	3224 CYPRESS ST	FAMILY HOUSING UNITS	EXTERIOR		3.8	DO-3224-D1
3225	3225 CYPRESS ST	FAMILY HOUSING UNITS	EXTERIOR		3.1	DO-3225-B-1
3244 C	3244 CYPRESS ST	FAMILY HOUSING UNITS	INTERIOR	Y	0.041	DO-3244-C1
3244 B	3244 CYPRESS ST	FAMILY HOUSING UNITS	INTERIOR	Y	0.062	DO-3244-B1
3302	3302 W. HAWTHORNE	FAMILY HOUSING UNITS	EXTERIOR		3.5	DO-3302-1
3426 B	3426 BUTTONWOOD	FAMILY HOUSING UNITS	INTERIOR		0.0024	DO-3426-B-1
3504 A	3504 W. HAWTHORNE	FAMILY HOUSING UNITS	INTERIOR	Y	0.023	DO-3504-A-1
3505	3505 W. HAWTHORNE	FAMILY HOUSING UNITS	EXTERIOR		1.9	DO-3505-A-1
3511	3511 W. HAWTHORNE	FAMILY HOUSING UNITS	EXTERIOR		4	DO-3511-3
3511	3511 W. HAWTHORNE	FAMILY HOUSING UNITS	EXTERIOR		6.4	DO-3511-2
3511	3511 W. HAWTHORNE	FAMILY HOUSING UNITS	EXTERIOR		2.9	DO-3511-1
3535	3535 HAWTHORNE D	FAMILY HOUSING UNITS	EXTERIOR		6.6	DO-3535-0-1
3551	3551 E. HAWTHORNE	FAMILY HOUSING UNITS	EXTERIOR		0.084	DO-3551-A-1
3577	3577 E. HAWTHORNE	FAMILY HOUSING UNITS	EXTERIOR		0.02	DO-3577-0-1
3581 B	3581 E. HAWTHORNE	FAMILY HOUSING UNITS	INTERIOR	Y	4.1	DO-3581-B-1
4002	4002 RHODE ISLAND	FAMILY HOUSING UNITS	EXTERIOR		0.015	DO-4002-B-1

EAGLE MEADOWS

* Children less than 7 years of age noted for interior inspections only

Appendix D - Lead Based Paint Sample Analytical Results

AFB: DOVER

Bldg / Unit #	Address	Facility Type	Interior / Exterior	Child Under 7*	Results % by wt	Sample ID
4005	4005 RHIDE ISLAND D	FAMILY HOUSING UNITS	EXTERIOR		0.0081	DO-4005-B-1
4029 A	4029 RHODE ISLAND	FAMILY DAY CARE UNITS	INTERIOR		0.0021	DO-4029-A-1-
4030 A	4030 RHODE ISLAND	FAMILY HOUSING UNITS	INTERIOR	Y	0.0002	DO-4030-A-1
4041	4041 RHODE ISLAND	FAMILY HOUSING UNITS	EXTERIOR		0.068	DO-4041-B-1
4042 B	4042 RHODE ISLAND	FAMILY HOUSING UNITS	INTERIOR		0.0011	DO-4042-B-1
4202 B	4202 GEORGIA LN	FAMILY HOUSING UNITS	INTERIOR		0.0003	DO-4202-B-1
[redacted]						
4302 A	4302 MASSACHUSET	FAMILY HOUSING UNITS	INTERIOR	Y	0.014	DO-4302-A-1
4310 B	4310 MASSACHUSET	FAMILY HOUSING UNITS	INTERIOR	Y	0.0003	DO-4310-B-1
4333 B	4333 MASSACHUSET	FAMILY HOUSING UNITS	INTERIOR		0.0006	DO-4333-B-1
4450	4450 VERMONT DR	FAMILY HOUSING UNITS	EXTERIOR		0.016	DO-4450-EX-1
4563 A	4563 NEW JERSEY D	FAMILY HOUSING UNITS	INTERIOR	Y	0.69	DO-4563-A-1
4606 B	4606 MAINE DR	FAMILY HOUSING UNITS	INTERIOR		0.0006	DO-4606-B-1
4619 A	4619 MAINE DR	FAMILY HOUSING UNITS	INTERIOR	Y	0.0015	DO-4619-A-1
4626 A	4626 MAINE DR	FAMILY HOUSING UNITS	INTERIOR	Y	0.0006	D0-4626-A-1
4701 A	4701 NEW YORK LN	FAMILY HOUSING UNITS	INTERIOR		0.0005	DO-4701-A-1
4706 A	4706 NEW YORK LN	FAMILY HOUSING UNITS	INTERIOR		0.001	DO-4706-A-1
4713 A	4713 NEW YORK LN	FAMILY HOUSING UNITS	INTERIOR		0.0036	DO-4713-B-1
4718 A	4718 NEW YORK LN	FAMILY HOUSING UNITS	INTERIOR		0.0028	DO-4718-A-1
[redacted]						
[redacted]						
[redacted]					0.32	
[redacted]						

* Children less than 7 years of age noted for interior inspections only

RECEIPT

DATE 12-12-02 NO. 0829

RECEIVED FROM Paul Clark

ADDRESS 436e Cons 639 Atlantic ST

Dover AFB DE 19902

DOLLARS $ 164.48

FOR Adv# 342833 Acct# 828457

ACCOUNT		HOW PAID	
AMT. OF ACCOUNT		CASH	
AMT. PAID	164.48	CHECK #	11050
BALANCE DUE		MONEY ORDER	

BY Cathy

INC.

Local Phone: 302-741-8297 Toll Free Phone: 877-223-1503
Local Fax: 302-678-3988 Toll Free Fax: 877-354-2424

FACSIMILE COVER PAGE

From To: STEVE SEIP	From: JONI COMBS TO
Fax #: 677-6837	Fax #:
Company: Dover AFB	Tel #:
Subject:	
Sent: DECEMBER 13, 2002 @ 8:27 A.M.	Pages: 2

MESSAGE: PLEASE READ. REPLY REQUESTED:

(1) The second page of this transmission is the proof of your ad(s). Please review the proof(s) promptly. Note any corrections, or if the proof is correct, sign and date it, then return it via FAX to (302) 678-3988 or 1-877-354-2424 (toll free). Preventing mistakes is paramount to us, so we do not run ads without approval. A signed proof is required. To meet our publication deadline, we must have your reply by:

Date: DECEMBER 13, 2002 Time: 10:45 A.M.

If you have any questions, then please call me at 1-877-223-1503 (toll free). Thank you for your help.

PUBLIC NOTICE
DOVER AIR FORCE BASE

Dover Air Force Base (DAFB) is providing a public comment period regarding an environmental assessment associated with a privatization initiative in Military Family Housing.

A copy of the environmental assessment is available for review at the Dover Public Library, 45 State Street, Dover, DE 19901. Comments may be submitted in writing no later than January 15, 2003 to Mr. Charles Mikula, 436 CES/CEV, 600 Chevron Avenue, Dover AFB, DE 19902-5600. All comments received prior to January 15, 2002 will be considered in the final decision.

342833-DSN 12/15,18

To be published in:

✓ Delaware State News
___ Delaware Capitol Review
___ Delaware State News/Capitol Review (combo)
___ Milford Chronicle
___ Harrington Journal
___ Sussex Post
___ Leader & State Register
___ Crisfield Times
___ Daily Banner

ENLARGED FOR PROOFING? YES / NO

INDEPENDENT NEWSPAPERS, INC. PROOF

Customer: 436 CES/SEV Contact: FAXED COPY Phone: 3026773350

Ad Number: 342833

Insert Dates: 12/15/2002 12/18/2002

Price: 164.40

Section: CL Class: 5005; PUBLIC NOTICE Size: 1 x 30.00

Printed By: D220 Date: 12/13/2002

Signature of Approval: Steven Seip Date: 13 Dec 02

Confirmation Report

Page : 001
Date & Time: Dec-13-02 10:35am
Line 1 : 13026776837
E-mail :
Machine ID : ENVIRONMENTAL AFB

Nbr.	Job	Date	Time	Duration	pgs	To	Dept.nbr	Account	Comm. code	Status
151	530	Dec-13	10:34am	01/07	002	996783988			EC 502	OK

FACSIMILE ELECTRO MAIL TRANSMITTAL

(This information collection is not subject to OMB review under PL-96, The Paperwork Reduction Act.)

WARNING!! - DO NOT TRANSMIT CLASSIFIED INFORMATION OVER UNSECURED TELECOMMUNICATIONS SYSTEMS. OFFICIAL DOD TELECOMMUNICATIONS SYSTEMS ARE SUBJECT TO MONITORING AND USE OF DOD TELECOMMUNICATIONS SYSTEMS CONSTITUTES CONSENT TO MONITORING.

SECTION I - TO BE COMPLETED BY ORIGINATOR

CLASSIFICATION	TRANSMISSION	PAGE 1 OF 2 PAGES
☐ FOR OFFICIAL USE ONLY	☒ IMMEDIATE ☐ ROUTINE	

TO *(Office Symbol, Point of Contact, and Address)*	FAX NO. DSN	FAX NO. COMMERCIAL
The Delaware State News Classified Ads Section		302-678-3988
	VOICE NO. DSN	VOICE NO. COMMERCIAL
ELECTRONIC MAIL ADDRESS *(E-Mail)*		

SUBJECT

Placement of Classified Ads for Dover Air Force Base

FROM *(Office Symbol, Point of Contact, and Address)*	FAX NO. DSN	FAX NO. COMMERCIAL
Steve Seip 436 CES/CEV 600 Chevron Avenue Dover AFB, DE 19902-5600		302-677-6837
	VOICE NO. DSN	VOICE NO. COMMERCIAL
ELECTRONIC MAIL ADDRESS *(E-Mail)*		302-677-6839

REMARKS

Dover Air Force Base would like to place the attached ad in the Public Notice Section of the Delaware State News classified ads on the following dates:

Sunday, December 15, 2002
Wednesday, December 18, 2002

Please fax me a price quote at (302) 677-6837. I will call and arrange to have a check written and delivered to your office as soon as I receive the quote. If you have any questions, please call me at 302-677-6839.

RELEASER'S SIGNATURE	DATE	TIME

SECTION II - TO BE COMPLETED BY ELECTRO MAIL OPERATOR

DATE TRANSMITTED	TIME TRANSMITTED	TRANSMITTER'S SIGNATURE
DATE ADDRESSEE CONTACTED	TIME ADDRESSEE CONTACTED	CONTACTOR'S SIGNATURE

Public Notice
Dover Air Force Base

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Confirmation Report

Page : 001
Date & Time: Dec-12-02 03:51pm
Line 1 : 13026776837
E-mail :
Machine ID : ENVIRONMENTAL AFB

Nbr.	Job	Date	Time	Duration	pgs	To	Dept.nbr	Account	Comm. code	Status
147	521	Dec-12	03:50pm	00/38	002	996783988			EC 502	OK

MEMORANDUM FOR 436 AW/PA

FROM: 436 CES/CEV

SUBJECT: Public Notice Release

1. Attached is a public notice we will be placing in the Delaware State News. The ad announces a public comment period for a draft environmental assessment associated with the Military Family Housing (MFH) Privatization Initiative.

2. Request your coordination on this public notice. CEV will be utilizing an IMPAC check to pay for placement of this ad. We plan to place the ad by Friday 13 Dec 02, so the ad will begin running in the paper by the next Sunday. Please acknowledge by indorsing below.

CHARLES C. MIKULA, P.E.
Chief, Environmental Flight

1st Ind, 436 AW/PA 11 Dec 02

MEMORANDUM FOR 436 SPTG/CEV

PA has reviewed and coordinated on the attached advertisement announcing a public comment period for the environmental assessment indicated in this correspondence.

JON K. ANDERSON, Major, USAF
Chief, Public Affairs Division

Delaware State News

Maryland State News

State of Delaware:

:ss.

County of Kent :

PUBLIC NOTICE
DOVER AIR FORCE BASE

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342833-DSN 12/15,18

Before me, a Notary Public, for the County and State aforesaid, personally appeared Tamra Brittingham, known to me to be such, who being sworn according to law deposes and says that she is Publisher of the Delaware state News, a daily newspaper publisher at Dover, County of Kent and State of Delaware, and that the notice, a copy of which is hereto attached, was published in the Delaware State News in its issue of

December 15 & 18, 2002

Tamra Brittingham

publisher

Sworn to and subscribed before me this 23rd

day of December A.D. 2002

Janet E Lemy

Notary Public

P.O. BOX 737 DOVER, DELAWARE 19903 302-674-3600

Seip Steven Civ 436CES/CEV

From: Benner Rayanne 436 CES/CEVQ
Sent: Wednesday, December 18, 2002 11:24 AM
To: Seip Steven Civ 436CES/CEV
Subject: My comments on the Eagle Meadows EA

Steve,

Here are my comments.... Some might be outside the scope of what you wanted. I used the Highlight/Red Line feature on the document and that is why the pages look at skewed.

GENERAL OVERALL COMMENTS

1. Should include Figures and Tables in the Table of Contents
2. Need to be consistent between DAFB and Dover AFB
3. Need to be consistent with format and fonts on headings
4. Might want to explain who "Service Secretaries" are or rephrase 1st paragraph under 1.1
5. Should spell out MilCon in the 1st paragraph under 1.1
6. Need to change the dates in the last paragraph under 1.3.1
7. In the first paragraph under 1.3.3, might want to define "navigable waters" for the general public
8. Should spell out DNREC in the 4th paragraph under 1.3.3
9. Should spell out VOC in the last paragraph under 2.1
10. Should move the entire paragraph under 3.0 to 3.2 to be consistent with other sections
11. Should spell out USGS under 3.2.3

SPECIFIC COMMENTS

1. The last paragraph under 2.1, brings up the subject of VOCs, but VOCs were never mentioned under the Air Quality section and they are not listed as a criteria pollutant
2. Under 2.3, does the demolished land become a "green space" and buffer area similar to the discussion in 2.2?
3. Under 3.2.6.2, what are the EPA standards for the groundwater contaminants? Even though it was discussed that the contaminated groundwater does not represent a threat to human health, I believe that the standards should be quoted
4. Under 3.2.7.1, with only 28 units using natural gas, how is it the primary heating source?
5. Under 3.2.7.1, without knowing that some units share USTs, the numbers do not mesh.... Short 6 units....
6. Under 4.2.6, why is only some of the population being shifted? Isn't all the Eagle Heights units being D&D
7. Under 4.2.8, who pays for analyzing the soil?
8. Under 4.2.9, since the developer will demolish the Eagle Heights units, does that mean that the developer is responsible for the asbestos abatement?
9. Under 4.3.4, need to address that all the reduction of issues will happen just like 4.2.4, but at a much slower pace.
10. Under 4.3.6, won't the replacement and renovated houses utilize low flow toilets like in 4.2.6? Again, it needs to be emphasized that it will happen at a slower pace.
11. Under 4.3.6, doesn't the Sediment and Stormwater Regulation apply to the Privatization Alternative too? It wasn't discussed under that alternative.
12. What is the cost savings to the federal government from Privatization Alternative over the No Action Alternative? Meaning the cost of rent of the units vs the cost of constant repair. Isn't this part of the socioeconomic section?

MFH Privatization
3rd Draft 17...

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Dover AFB Preliminary Pro Forma PDT Workshop
19-21 November 2002
Action Items

Item #	Issue	Required Action	Responsible PDT Member	Comments/Status
1	Age of appliances is Eagle Meadows	Determine and document the age of the appliances in Eagle Meadows. This information is needed for the developers to determine the remaining life of the appliances. It is not necessary to go unit by unit unless that information is already automated	Laraine Harris	Provide on or about 15 Dec. Laraine has, will kelay sending because of the constantly changing nature of the list.
2	Force Protection requirements	Force Protection requirements need to be included in the RFP. It appears these requirements may be limited. This should include actions to be taken in the case of elevated threat conditions.	Pete Montgomery	Provide to E&Y on or about 5 Jan
3	Condition Assessment Survey for Eagle Meadows	A new CAS is to be requested by AMC to reevaluate EM for possible replacement instead of renovation.	Maj Pewterbaugh	If possible, contract for early January start
4	UST's and AST's	Validate the number of UST/AST's the developer needs to remove. Information should include how many units in EH have been converted to gas. Investigate the possibility of leaking tanks.	Steve Seip	Provide #'s still in place and gas conversions by 15 Dec. Try to complete leak investigation by 15 Jan 03.
5	UST's and AST's	Need to validate language in 2.2.3.6 Number 2 Fuel Oil, in the old RFP. This language will move into the generic RFP	Capt Konoval	Provide O/A 15 Dec
6	UST's and AST's	EBS need to be completed and staffed; limit the background information in the RFP appendix.	Steve Seip	Provide O/A 15 Jan 03

Item #	Issue	Required Action	Responsible PDT Member	Comments/Status
7	UST's	Need date placed in ground	Steve Seip	Need O/A 15 Dec
8	Lead Based Paint	Validate the language in the generic RFP, 3.5.2 Lead Based Paint to make sure it meets Dover requirements.	Capt Konoval, Steve Seip	Though really a PCS action, our JA should ensure OK. Provide comment O/A 15 Jan 03
9	Pesticides	Check language in generic RFP to ensure it's what we want.	Capt Konoval, Steve Seip	O/A 15 Jan 03
10	UST's	Need to program for the removal of the UST's in Eagle Heights; probably for FY 07	Steve Seip/George Gregor	May be too early to program for now
11	Certificate of Occupancy/Code Compliance inspections	Need to include language that address these two separate issues. Title II through AFCEE, base or county inspectors. Developer owned landed will probably be the county code for compliance.	Bill Johnson/Pete Montgomery	O/A 15 Jan 03
12	UST's	Program for the removal of UST in Eagle heights. FY07 program	Bill Johnson/George Gregor	Program now for FY07 so we do not forget.
13	Grade Mix	Estimate the rent stream by averaging last 5 years worth of grades	Laraine Harris	O/A 15 Dec
14	Demolition Costs	Check with COE to find actual demolition costs for PH1/2 housing	Bill Johnson	Need O/A 27 Nov

INVESTIGATION REPORT
(IR)

For:

Dover Air Force Base
Investigation of Soils for Chlordane
Dover, Delaware

Prepared for:

United States Army Corps of Engineers
Philadelphia District
100 Penn Square East, Philadelphia, PA 19103
Contract No. DACA61-99-D-0002
Task Order Number 07

Prepared By:

BLACK & VEATCH

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October 15, 2001

CONTENTS

1. INTRODUCTION

This investigation report summarizes the methods that were used for the collection and analysis of surface soil samples obtained from the court housing complexes on Dover Air Force Base (DAFB) in Dover, DE. The sampling was performed to locate, identify, and quantify all soils containing chlordane and other pesticides in the area of future construction on DAFB. The current court complexes are set to be demolished in February 2002 to clear the area for the construction of new housing. This pesticide survey was completed to warn the design-build contractor of the presence of pesticides, including alpha and gamma chlordane (a technical mixture of chlordane) in the surrounding soils of the present housing. Alpha and gamma chlordane was used until 1988 to help control termites in homes. The pesticide was applied around the foundation homes, including those at the court complexes at DAFB.

Black & Veatch Special Projects Corporation (BVSPC) was contracted by the U.S. Army Corps of Engineers (USACE) to perform this pesticide survey, which included the collection of soil samples for analysis by a National Environmental Laboratory Accreditation Conference (NELAC) and USACE certified laboratory. BVSPC prepared and submitted a field-sampling plan (FSP) to the USACE in September 2001 prior to the beginning of this investigation.

1.1 Objectives of the Investigation

The surface soil investigation was performed to evaluate the extent of pesticide contamination, including alpha and gamma chlordane, in the twelve court housing areas at DAFB. The data collected during this investigation will be used to estimate the horizontal and vertical levels of pesticide contamination in the upper soils surrounding the foundations of the twelve court complexes. This was done in order to facilitate the preparation of chlordane abatement plans in preparation for the demolition of the buildings.

1.2 Overview of Investigation

A total of 27 soil samples (including 3 laboratory duplicates) were collected on October 3, 2001 from areas around the twelve court complexes planned for demolition in February of 2002. These samples were collected from 0" to 12" below the ground surface using a hand auger. All samples were collected within twenty-five feet of the court buildings, which allowed for a greater possibility of detection. Pictures of the court complexes can be seen in Photos 1 and 2 (Appendix C).

The 27 soil samples, as well as a rinsate blank, were delivered to Lionville Laboratories

of Lionville, Pennsylvania on October 4, 2001 for analysis.

2. SOIL INVESTIGATION AND ANALYSIS

2.1 General Approach

The surface soil investigation occurred at the residential court complexes located between West Hawthorne Drive and High Street on the DAFB housing area in Dover, Delaware. The sampling area consists of twelve, three building court areas. The twelve court complexes chosen were done so do to there planned demolition in February of 2002 to make way for new housing faculties on the base. Each of the twelve court complexes had two discrete samples; the locations of which were chosen by Black and Veatch; taken from an interval depth of 0" to 12" adjacent to each building. All samples were taken from with twenty-five feet of each building foundation. At each sample location, a 4-inch diameter stainless steel soil auger was turned into the ground by hand to a depth of 12 inches.

The 24 surface soil samples were delivered to Lionville Laboratory in Lionville, Pennsylvania and analyzed for pesticides with a turn around time of five days. Along with the 24 samples, three duplicate samples from pre-determined locations and one aqueous rinsate blank were sent to the lab quality assurance. Analytical results of samples collected were compared with the US Environmental Protection Agency (USEPA) Region III Risk-Based Concentration criteria for residential soil.

2.2 Soil Sampling Techniques

Soil samples were collected using a 4-inch diameter soil auger that was turned into the ground by hand to a depth of 12 inches. The samples were collected as follows:

1. Surface vegetation was cleared from area being sampled,
2. Auger was advanced into the ground to a depth of 12 inches.
3. The auger was carefully removed from the ground (so as not to lose the sample),
4. The soil was placed in a steel mixing bowl,
5. A steel spoon was used to blend the sample and remove all large stones (greater than ½- inch diameter), sticks, and other non-soil debris,

6. Samples were transferred from mixing bowl to sample containers,

7. Auger hole was backfilled remaining soil,

8. After each sampling location, the sampling equipment was decontaminated per the procedure indicated in Section 5.

2.3 Sampling Locations and Sample Identification

The sample locations for this investigation are shown in Figure 1 (Appendix B). Soil samples were collected from these 24 locations in the housing court areas of DAFB. Each location was relatively adjacent to the housing quarters and not near the center of the court areas, but along the fronts and sides of all buildings around the foundations since most pesticide application took place closer to the buildings.

Each sample was identified and labeled per media being sampled (surface soils, SS), the building number of the central building in each court, and the sample number within each court to allow the two samples from each court complex can be differentiated. For example, the following was be a typical sample identification for a court complex:

Sample SS-3501-1 and Sample SS-3501-2

Along with the sample identification, the collection time, collection date, and sampling interval were included on the labels for all samples.

One discrepancy was discovered between the sample location map and the actual court complex numbers. The location labeled 3301 on the sample location map was actually court number 3504. We later identified the address that corresponded with number 3301. It was not part of the court complex and was instead a single housing unit. The samples labeled as SS-3301-1, SS-3301-2, and SS-3901-1 (the lab duplicate) were actually sampled from court 3504 due to its location on the sampling map and its proximity to the other court areas that had been previously sampled. .

2.4 Quality Assurance

Laboratory duplicate samples were collected at a rate of twelve percent (12%) of the number of laboratory samples for use as quality control samples. To ensure quality, these duplicate samples were not obviously labeled. Three duplicate samples were collected from the following locations and labeled as follows:

Sample SS-3902-2 (duplicate of SS-3202-2)

Sample SS-3908-1 (duplicate of SS-3008-1)

Sample SS-3901-1 (duplicate of SS-3301-1)

Also, a sampling equipment aqueous rinsate blank was collected during the sampling activities and sent to the laboratory for analysis. Only one rinsate blank was collected (instead of the two originally called for in the Field Sampling Plan) due to completion of sampling within a one-day period.

2.5 Laboratory Analysis

Soil samples and QA/QC analysis were sent to Lionville Laboratories of Lionville, PA (a NELAC accredited and USACE certified laboratory) for the analysis of pesticides. Samples delivered to Lionville were analyzed using EPA SW-846 Method 8081A. Table 1 (Appendix A) presents the laboratory soil analytical results.

An aqueous sample generated from the collection of a rinsate equipment blank was also delivered to the laboratory for pesticide analysis by the same method. Lionville reported analytical results for the blank as being non-detect or below instrument detection limits for pesticides.

Samples were delivered to the laboratory via Black and Veatch personnel. Each sample that was delivered was placed in a suitable glass jar provided by the laboratory. Each glass jar was labeled with the following information: sample location, sample interval, and collection date and time. Samples were delivered in a cooler with ice and appropriate chain-of-custody documents.

3. PERMITS AND ACCESS

Access to DAFB's residential properties was obtained solely by the USACE from DAFB. All BVSPC personnel were escorted by an assigned USACE official at all times while on DAFB property. Also, temporary passes were issued by DAFB by the DAFB Visitor's Center personnel. BVSPC were not required to notify residents of the court complexes before or after sampling was performed.

4. FIELD DOCUMENTATION

A bound field notebook was maintained by BVSPC field team members to provide a record of significant events, observations, and measurements during the investigation sampling. Each page is numbered and dated. These notebooks will be kept as permanent records. The notebook was kept as specified in the FSP.

5. SITE MANAGEMENT

All field sampling and health and safety practices strictly adhered to those outlined in the FSP and Site Health and Safety Program (HASP), which were submitted to the USACE for approval prior to performing the investigation. During the investigation, there was no equipment that required calibration or maintenance. All sampling equipment; which included the auger, stainless steel mixing bowl, and stainless steel spoon; were thoroughly decontaminated prior to use in each sample collected to avoid cross contamination among samples. All equipment used for the collection of pesticide soil samples was decontaminated using the following procedures:

1. Non-phosphate detergent and tap water was.
2. Tap water rinse
3. Tri-sodium Phosphate detergent wash.
4. Hexane rinse.
5. Distilled/deionized water rinse
6. Air dry

The amount of investigation-derived waste generated during this investigation was minimal. Excess soil from the borings was used to back fill the boring holes in accordance with state and contractual requirements. Personal protective equipment (nitrile gloves) and decontamination solutions were placed in appropriate receptacles, removed from the site by the BVSPC field sampling team, and disposed of in accordance with local, state, and federal regulation requirements.

6. SOIL ANALYSIS

The results of the laboratory analysis of all samples are shown in Table 1 (Appendix A). It should be noted that at this time, these results are preliminary, due to the laboratories need to rerun the test with the proper dilutions. This being said, it is not believed data will experience any significant change from their current values.

Of the 27 surface soil samples collected, only two (SS-3008-1 and SS-3908-1) exhibited a pesticide concentration sample level above the EPA Region III Risk-Based Concentration criteria for residential soil. The samples SS-3008-1 and SS-3908-1, which were duplicates of each other as mentioned in Section 2.4, had concentrations of heptachlor epoxide at 200ug/kg and 240 ug/kg, respectively. Both concentrations are above the Region III Risk-Based Concentration criteria of 70 ug/kg.

As for alpha and gamma chlordane, which were the main focuses of this investigation, the highest detected concentration of each were 290 ug/kg and 570ug/kg, respectively. Both of these concentrations are well below the Region III Risk-Based Concentration criteria of 1,800 ug/kg for both alpha and gamma chlordane.

APPENDIX A – Tables

Table 1:
Laboratory Results for Pesticides
Dover Air Force Base
Dover, Delaware

Constituents	EPA Region III Risk-Based Concentration Criteria for Residential Soils (ug/kg)	SS-3108-1		SS-3108-2		SS-3103-1		SS-3103-2		SS-3109-1		SS-3109-2		SS-3208-1		SS-3208-2	
alpha-BHC	100	1.9	U	1.9	U	1.8	U	2.0	U	9.9	U	2.0	U	1.8	U	2.0	U
beta-BHC	350	1.9	U	1.9	U	1.8	U	2.0	U	9.9	U	2.0	U	1.8	U	2.0	U
delta-BHC	350	1.9	U	1.9	U	1.8	U	2.0	U	9.9	U	2.0	U	1.8	U	2.0	U
gamma-BHC	490	1.9	U	1.9	U	1.8	U	2.0	U	9.9	U	2.0	U	1.8	U	2.0	U
Heptachlor	140	1.9	U	1.9	U	1.8	U	2.0	U	9.9	U	2.0	U	1.8	U	2.0	U
Aldrin	38	1.9	U	1.9	U	1.8	U	2.0	U	9.9	U	2.0	U	1.8	U	2.0	U
Heptachlor epoxide	70	1.9	U	1.9	U	1.8	U	2.0	U	9.9	U	2.0	U	1.8	U	2.0	U
Endosulfan I	47	1.9	U	1.9	U	1.8	U	2.0	U	9.9	U	2.0	U	1.8	U	2.0	U
Dieldrin	40	5.2		3.8	U	3.7	U	3.9	U	20	U	4.1	U	3.6	U	11	
4,4'-DDE	1900	66		56		5.9		60		77		51		35		21	
Endrin	230	3.7	U	3.8	U	3.7	U	3.9	U	20	U	4.1	U	3.6	U	3.9	U
Endosulfan II	47	3.7	U	3.8	U	3.7	U	3.9	U	20	U	4.1	U	3.6	U	3.9	U
4,4'-DDD	2700	3.7	U	3.8	U	3.7	U	5.9		20	U	4.1	U	3.6	U	3.9	U
Endosulfan sulfate	47	3.7	U	3.8	U	3.7	U	3.9	U	20	U	4.1	U	3.6	U	3.9	U
4,4'-DDT	1900	23		17		3.7	U	73		39		15		15		8.2	
Methoxychlor	390000	19	U	19	U	18	U	20	U	99	U	20	U	18	U	20	U
Endrin ketone	230	3.7	U	3.8	U	3.7	U	3.9	U	20	U	4.1	U	3.6	U	3.9	U
Endrin aldehyde	230	3.7	U	3.8	U	3.7	U	3.9	U	20	U	4.1	U	3.6	U	3.9	U
alpha-Chlordane	1800	1.9	U	1.9	U	1.8	U	2.0	U	9.9	U	2.0	U	1.8	U	3.1	
gamma-Chlordane	1800	1.9	U	1.9	U	1.8	U	2.0	U	9.9	U	2.0	U	1.8	U	2.7	
Toxaphene	580	190	U	190	U	180	U	200	U	990	U	200	U	180	U	200	

U - Not detected / Below Detection Limit
I - Interference caused during analysis
All lab concentations are in ug/kg unless otherwise noted

Table 1:
Laboratory Results for Pesticides
Dover Air Force Base
Dover, Delaware

Constituents	EPA Region III Risk-Based Concentration Criteria for Residential Soils (ug/kg)	SS-3202-1		SS-3202-2		SS-3202-2		SS-3002-1		SS-3002-2		SS-3008-1		SS-3908-1 (dup of SS-3008-1)		SS-3008-2	
alpha-BHC	100	1.9	U	9.8	U	2.0	U	1.8	U	1.9	U	2.0	U	19	U	1.9	U
beta-BHC	350	1.9	U	9.8	U	2.0	U	1.8	U	1.9	U	2.0	U	19	U	1.9	U
delta-BHC	350	1.9	U	9.8	U	2.0	U	1.8	U	1.9	U	2.0	U	19	U	1.9	U
gamma-BHC	490	1.9	U	9.8	U	2.0	U	1.8	U	1.9	U	2.0	U	19	U	1.9	U
Heptachlor	140	1.9	U	9.8	U	2.0	U	1.8	U	1.9	U	65		62		1.9	U
Aldrin	38	1.9	U	9.8	U	2.0	U	1.8	U	1.9	U	2.7		19	U	1.9	U
Heptachlor epoxide	70	1.9	U	9.8	U	2.0	U	1.8	U	1.9	U	200		240		1.9	U
Endosulfan I	47	1.9	U	9.8	U	2.0	U	1.8	U	1.9	U	2	U	19	U	1.9	U
Dieldrin	40	10		20	U	12		3.6	U	3.8	U	3.9	U	38	U	3.7	U
4,4'-DDE	1900	31		70		40		83		6.8		77		76		79	
Endrin	230	3.7	U	20	U	4.0	U	3.6	U	3.8	U	3.9	U	38	U	3.7	U
Endosulfan II	47	3.7	U	20	U	4.0	U	3.6	U	3.8	U	3.9	U	38	U	3.7	U
4,4'-DDD	2700	3.7	U	20	U	4.0	U	3.6	U	3.8	U	33		38	U	3.7	U
Endosulfan sulfate	47	3.7	U	20	U	4.0	U	3.6	U	3.8	U	3.9	U	38	U	3.7	U
4,4'-DDT	1900	13		26		9.9		21		3.8	U	28		38	U	22	
Methoxychlor	390000	19	U	98	U	20	U	18	U	19	U	20	U	190	U	19	U
Endrin ketone	230	3.7	U	20	U	4.0	U	3.6	U	3.8	U	3.9	U	38	U	3.7	U
Endrin aldehyde	230	3.7	U	20	U	4.0	U	3.6	U	3.8	U	4.7	I	38	U	3.7	U
alpha-Chlordane	1800	4.1		9.8	U	2.8		6.1		1.9	U	200		290		1.9	U
gamma-Chlordane	1800	3		9.8	U	2.8		6.8		1.9	U	300		570		1.9	U
Toxaphene	580	190	U	980	U	200	U	180	U	190	U	200	U	1900	U	190	U

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All lab concentations are in ug/kg unless otherwise note

Table 1:
Laboratory Results for Pesticides
Dover Air Force Base
Dover, Delaware

Constituents	EPA Region III Risk-Based Concentration Criteria for Residential Soils (ug/kg)	SS-3009-1		SS-3009-2		SS-3003-1		SS-3003-2		SS-3102-1		SS-3102-2		SS-3501-1		SS-3501-2	
alpha-BHC	100	1.8	U	1.8	U	2.0	U	1.8	U	1.8	U	1.8	U	1.9	U	1.9	U
beta-BHC	350	1.8	U	1.8	U	2.0	U	1.8	U	1.8	U	1.8	U	1.9	U	1.9	U
delta-BHC	350	1.8	U	1.8	U	2.0	U	1.8	U	1.8	U	1.8	U	1.9	U	1.9	U
gamma-BHC	490	1.8	U	1.8	U	2.0	U	1.8	U	1.8	U	1.8	U	1.9	U	1.9	U
Heptachlor	140	1.8	U	1.8	U	2.0	U	1.8	U	1.8	U	1.8	U	1.9	U	1.9	U
Aldrin	38	1.8	U	1.8	U	2.0	U	1.8	U	1.8	U	1.8	U	1.9	U	1.9	U
Heptachlor epoxide	70	1.8	U	1.8	U	2.0	U	1.8	U	1.8	U	1.8	U	1.9	U	1.9	U
Endosulfan I	47	1.8	U	1.8	U	2.0	U	1.8	U	1.8	U	1.8	U	1.9	U	1.9	U
Dieldrin	40	3.7	U	3.5	U	6.3		3.6	U	3.6	U	3.7	U	3.8	U	3.7	U
4,4'-DDE	1900	100		87		75		44		110		81		40		78	
Endrin	230	3.7	U	3.5	U	3.9	U	3.6	U	3.6	U	3.7	U	3.8	U	3.7	U
Endosulfan II	47	3.7	U	3.5	U	3.9	U	3.6	U	3.6	U	3.7	U	3.8	U	3.7	U
4,4'-DDD	2700	3.7	U	3.5	U	3.9	U	3.6	U	3.6	U	3.7	U	3.8	U	3.7	U
Endosulfan sulfate	47	3.7	U	3.5	U	3.9	U	3.6	U	3.6	U	3.7	U	3.8	U	3.7	U
4,4'-DDT	1900	36		17		21		13		32		23		18		23	
Methoxychlor	390000	18	U	18	U	20	U	18	U	18	U	18	U	19	U	19	U
Endrin ketone	230	3.7	U	3.5	U	3.9	U	3.6	U	3.6	U	3.7	U	3.8	U	3.7	U
Endrin aldehyde	230	3.7	U	3.5		3.9	U	3.6	U	3.6	U	3.7	U	3.8	U	3.7	U
alpha-Chlordane	1800	1.8	U	2.1	I	2.0	U	1.8	U	1.8	U	1.8	U	1.9	U	1.9	U
gamma-Chlordane	1800	1.8	U	1.8	U	2.0	U	1.8	U	1.8	U	1.8	U	1.9	U	1.9	U
Toxaphene	580	180	U	180	U	200	U	180	U	180	U	180	U	190	U	190	U

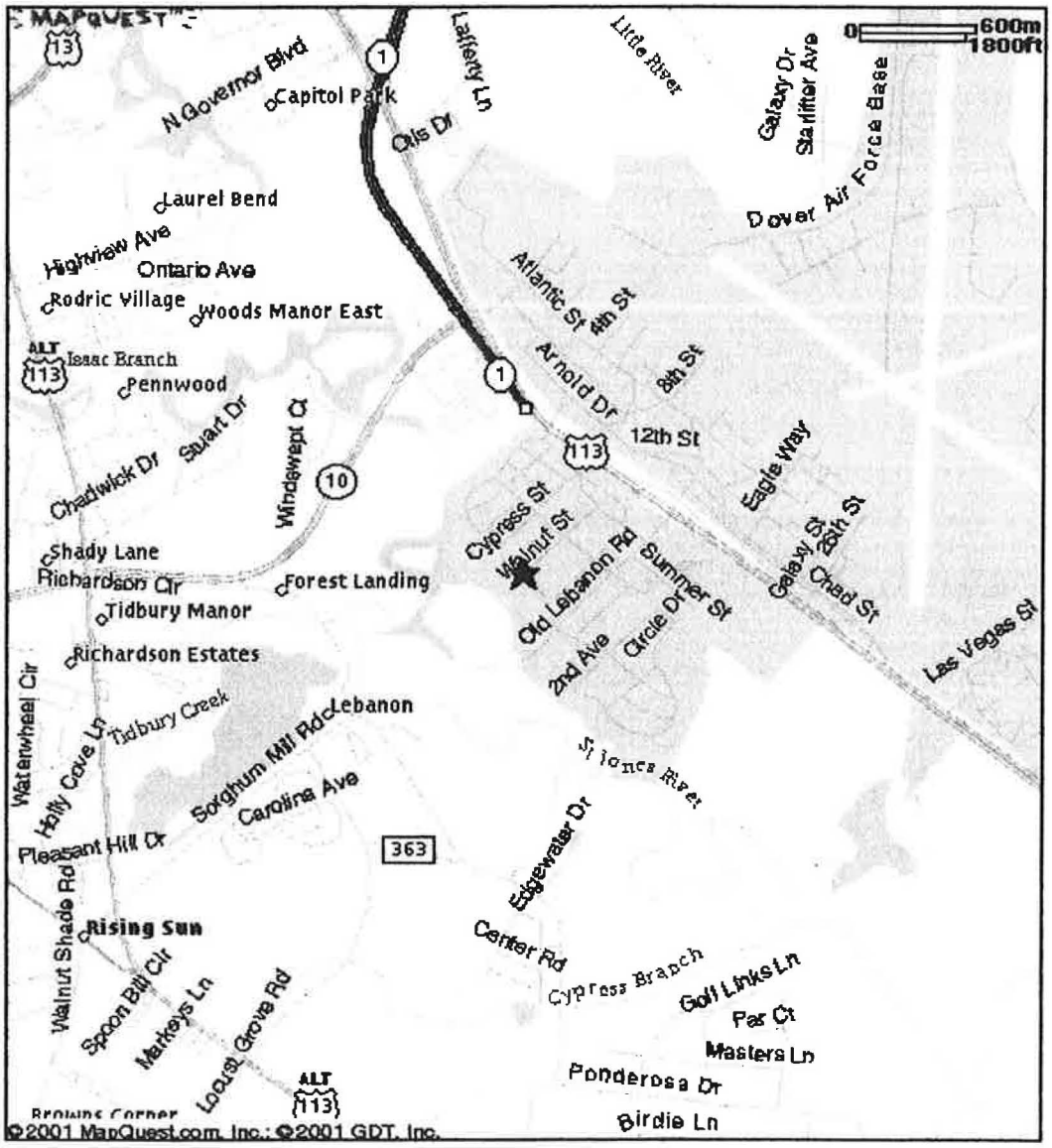
U - Not detected / Below Detection Limit
I - Interference caused during analysis
All lab concentations are in ug/kg unless otherwise not

Table 1:
Laboratory Results for Pesticides
Dover Air Force Base
Dover, Delaware

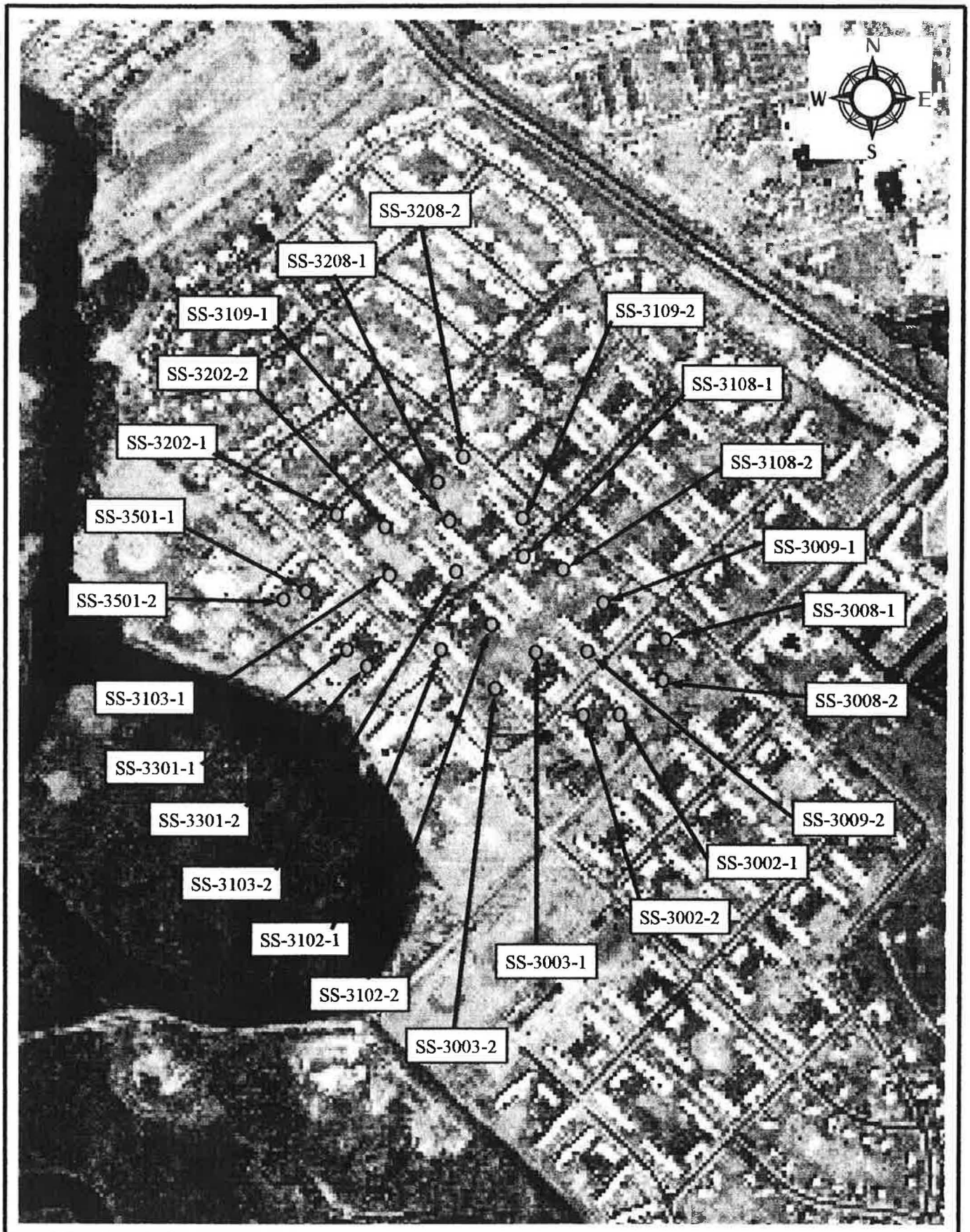
Constituents	EPA Region III Risk-Based Concentration Criteria for Residential Soils (ug/kg)	SS-3301-1		SS-3901-1 (dup of SS-3301-1)		SS-3301-2		RB-10/03/2001-1 (ug/L)	
alpha-BHC	100	1.9	U	1.9	U	1.8	U	0.068	U
beta-BHC	350	1.9	U	1.9	U	1.8	U	0.068	U
delta-BHC	350	1.9	U	1.9	U	1.8	U	0.068	U
gamma-BHC	490	1.9	U	1.9	U	1.8	U	0.068	U
Heptachlor	140	1.9	U	1.9	U	1.8	U	0.068	U
Aldrin	38	1.9	U	1.9	U	1.8	U	0.068	U
Heptachlor epoxide	70	1.9	U	1.9	U	1.8	U	0.068	U
Endosulfan I	47	1.9	U	1.9	U	1.8	U	0.068	U
Dieldrin	40	3.8	U	3.8	U	3.7	U	0.14	U
4,4'-DDE	1900	52		77		22		0.14	U
Endrin	230	3.8	U	3.8	U	3.7	U	0.14	U
Endosulfan II	47	3.8	U	3.8	U	3.7	U	0.14	U
4,4'-DDD	2700	3.8	U	3.8	U	3.7	U	0.14	U
Endosulfan sulfate	47	3.8	U	3.8	U	3.7	U	0.14	U
4,4'-DDT	1900	11		15		6.6		0.14	U
Methoxychlor	390000	19	U	19	U	18	U	0.68	U
Endrin ketone	230	3.8	U	3.8	U	3.7	U	0.14	U
Endrin aldehyde	230	3.8	U	3.8	U	3.7	U	0.14	U
alpha-Chlordane	1800	1.9	U	1.9	U	11		0.068	U
gamma-Chlordane	1800	1.9	U	1.9	U	8.1		0.068	U
Toxaphene	580	190	U	190	U	180	U	6.8	U

U - Not detected / Below Detection Limit
I - Interference caused during analysis
All lab concentations are in ug/kg unless otherwise note

APPENDIX B – Figures



Dover AFB Field Sampling Plan for Chlordane Dover AFB, Kent County, Delaware	Figure 1 Site Location Map	BLACK & VEATCH



Dover AFB Field Sampling Plan for Chlordane Dover AFB, Kent County, Delaware	Figure 2 Site Location Map	BLACK & VEATCH

APPENDIX C - Photos

Photo 1

Photo 2

Delaware State News

Maryland State News

State of Delaware:

:ss.

County of Kent :

Before me, a Notary Public, for the County and State aforesaid, personally appeared Tamra Brittingham, known to me to be such, who being sworn according to law deposes and says that she is Publisher of the Delaware state News, a daily newspaper publisher at Dover, County of Kent and State of Delaware, and that the notice, a copy of which is hereto attached, was published in the Delaware State News in its issue of

December 15 & 18, 2002

Tamra Brittingham

publisher

Sworn to and subscribed before me this 23rd

day of December A.D. 2002

Janet E Lemmy

Notary Public

P.O. BOX 737 DOVER, DELAWARE 19903 302-674-3600

PUBLIC NOTICE
DOVER AIR FORCE BASE

Dover Air Force Base (DAFB) is providing a public comment period regarding an environmental assessment associated with a privatization initiative in Military Family Housing.

A copy of the environmental assessment is available for review at the Dover Public Library, 45 State Street, Dover, DE 19901. Comments may be submitted in writing no later than January 15, 2003 to Mr. Charles Mikula, 436 CES/CEV, 600 Chevron Avenue, Dover AFB, DE 19902-5600. All comments received prior to January 15, 2003 will be considered in the final decision.

342833-DSN 12/15,18

STAFF SUMMARY SHEET

	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	AW/JA	Coord	Wood, Lt Col 4 Mar 03	6	CES/CEV	ACTION	
2	MSG/ CCA	Coord	Ridley 5 Mar 03	7			
3	MSG/ CCE	Coord	Sink 5 Mar 03	8			
4	MSG/CD	Coord	TDY	9			
5	MSG/CC	Sign	Smiley Col (10)	10			

SURNAME OF ACTION OFFICER AND GRADE	SYMBOL	PHONE	TYPIST'S INITIALS	SUSPENSE DATE
Mikula, GS-13	CEV	6839	sms	

SUBJECT: Finding of No Significant Impact (FONSI) for Military Family Housing (MFH) Privatization Initiative

DATE: 11 Feb 03

SUMMARY

1. A FONSI with an environmental assessment (EA) for the MFH Privatization Initiative is enclosed at Tab 1. The MFH privatization initiative includes privatizing the housing units in the Eagle Meadows MFH area and 152 units in the Eagle Heights MFH area. As indicated in the EA, there are no significant environmental impacts from the proposed action.

2. RECOMMENDATION: MSG/CC sign the enclosed FONSI at Tab 1.

MICHAEL A. PERZA
Deputy Base Civil Engineer

2 Tabs
1. FONSI with EA for MFH Privatization
2. Public Notice for Subject EA

CEV 11 FEB 03