



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 633D AIR BASE WING
JOINT BASE LANGLEY-EUSTIS VA

SEP 23 2019

Yvonne D. Jackson
Installation Management Flight Chief
37 Sweeney Boulevard
JBLE-Langley VA 23665-2107

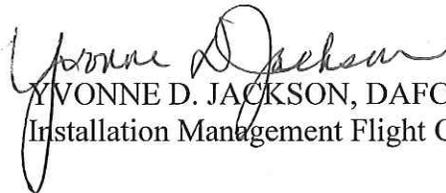
Mr. Matthew Fanghella
Virginia Department of Environmental Quality
Tidewater Regional Office
5636 Southern Boulevard
Virginia Beach VA 23462

Dear Mr. Fanghella

Attached is the Municipal Separate Storm Sewer System (MS4) annual report for JBLE-Langley's permit VAR040140 for your review.

If you have any questions concerning these documents, please contact Dawn Christian at the Installation Management Flight (757) 764-1141.

Sincerely


YVONNE D. JACKSON, DAFC
Installation Management Flight Chief

Attachment
MS4 VAR040140 Annual Report



Municipal Separate Storm Sewer System (MS4) Annual Report

JBLE–Langley Virginia

Permit Year 1

(1 July 2018 - 30 June 2019)

Permit No: VAR040140



**633 CES/CEIE
JBLE–Langley
37 Sweeney Blvd
JBLE–Langley VA 23665**



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- Attachment 6. Stormwater Management Facility Inventory Tracking Spreadsheet
- Attachment 7. Chesapeake Bay Total Maximum Daily Load Action Plan Implementation Status Memo
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List of Acronyms and Abbreviations

633 CES/CEIE	633d Civil Engineer Squadron/Environmental Element
BMP	Best Management Practice
CBAT	Chesapeake Bay Action Team
EMS	Environmental Management System
EPA	Environmental Protection Agency
FOG	Fats, Oil & Grease
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
ISO	International Organization of Standardization
JBLE–Langley	Joint Base Langley Eustis–Langley
LFH	Langley Family Housing
MCM	Minimum Control Measure
MFH	Military Family Housing
MS4	Municipal Separate Storm Sewer System
NMP	Nutrient Management Plan
O&M	Operation and Maintenance
P4	Public-Public; Public-Private
POC	Pollutants of Concern
POV	Privately Owned Vehicle
PY	Permit Year
SC	Special Condition
SCM	Stormwater Control Measure
SWCB	State Water Control Board
SWM	Stormwater Management
SWPPP	Stormwater Pollution Prevention Plan
TEACH	The Environmental Awareness Course Hub
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
UEC	Unit Environmental Coordinator
VDEQ	Virginia Department of Environmental Quality
VESCL	Virginia Erosion and Sediment Control Law
VESCP	Virginia Erosion and Sediment Control Program
WLA	Wasteload Allocation

Municipal Separate Storm Sewer System Program Plan Certification

As required by Part III.K.2. of General Permit No. VAR040140, all reports required by state permits and other information requested by the board shall be signed by a principal executive office or ranking elected official as described in Part III.K.1.c. or a duly authorized representative.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Type or Print the following information:

Name: Ms. Yvonne D. Jackson Area Code and Telephone No.: (757) 764-3906

Official Title: Installation Management Flight Chief

Signature:  Date Signed: 23 Sep 19

Permit Number: VAR040140 MS4 Name: JBLE–Langley

Section 1: Introduction

Joint Base Langley Eustis–Langley (JBLE–Langley) Virginia, holds a General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), General Permit No. VAR040140, issued by the Commonwealth of Virginia Department of Environmental Quality (VDEQ) on 1 November 2018. In accordance with provisions outlined in this permit, JBLE–Langley has developed and implemented a comprehensive stormwater management program designed to prevent or reduce the discharge of sediment and other pollutants into the installation’s stormwater conveyance system. General Permit No. VAR040140 Part I.D.2.e. requires JBLE–Langley to evaluate the MS4 Program on an annual basis to assess program compliance, the appropriateness of the identified Best Management Practices (BMPs) and progress towards achieving the identified measurable goals.

This report describes the progress and status of JBLE–Langley’s MS4 Program during Permit Year (PY) 1 from 1 July 2018 to 30 June 2019.

The remainder of this annual report is presented as follows:

- Section 2 – Provides an overview of the MS4 including its physical characteristics
- Section 3 – Presents a listing of the base’s stormwater program guidance
- Section 4 – Discusses the minimum control measures (MCM) JBLE–Langley is implementing under the permit
- Section 5 – Reviews the special conditions (SC) JBLE–Langley is implementing under this permit

These sections are supported by the following attachments:

- Attachment 1 – Illicit Discharge Detection and Elimination (IDDE) Maps
- Attachment 2 – Stormwater Management Educational Brochures
- Attachment 3 – Public Involvement/Participation Documentation
- Attachment 4 – NASA Interconnectivity Notification
- Attachment 5 – IDDE Investigation Details
- Attachment 6 – Stormwater Management (SWM) Facility Inventory Tracking Spreadsheet
- Attachment 7 – Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan Implementation Status Memo
- Attachment 8 – Bacteria TMDL Action Plan Implementation Status Memo

Section 2: Storm Sewer System Information

Permit Holder

Commander, 633d Air Base Wing
125 Mabry Ave
JBLE-Langley VA 23665

Facility Information

JBLE–Langley
Hampton VA 23665
MS4 General Permit No. VAR040140

Mailing Address

Deputy Base Civil Engineer
37 Sweeney Boulevard
JBLE-Langley VA 23665

Population Served

The total population attached to the installation is estimated at 28,385, comprised of approximately 10,002 military personnel and 15,530 dependents living on installation, as well as approximately 2,853 civilian non-residents who commute to the installation daily.

MS4 Service Area

JBLE–Langley, formerly Langley Air Force Base, is located just north of the City of Hampton Virginia which is part of the Norfolk, Hampton and Newport News metropolitan area. The installation is located on the southern end of the lower Virginia peninsula and bordered by the Back River to the north, south and east. Smaller waterbodies on or bordering the installation include Tabbs Creek, Brown’s Creek, Tide Mill Creek and Brick Kiln Creek, which are tributaries to the Back River. The installation occupies approximately 3,640 acres and houses a variety of military organizations and support activities. Most of the development is located at the southern end of the installation. A golf course and flightline are located near the center of the base.

The base does not rely on another government entity to satisfy permit obligations. In addition, no program approvals are required as specified in Part I.C.5 of the permit.

MS4 Conveyance System

JBLE–Langley’s stormwater conveyance system consists of sheet flow areas, swales, ditches and pipes. The base has mapped the stormwater system for JBLE–Langley as well as the stormwater control measures (SCM) using Geographic Information System (GIS).

There are two subwatersheds that include portions of JBLE–Langley. These include the Northwest Branch Back River and Southwest Branch Back River. River basins, streams or other bodies of water into which the stormwater from the MS4 discharges are shown in Table 1. The table lists the subwatershed and waterbody that receive stormwater runoff from the MS4 jurisdictional area.

Table 1. Subwatersheds		
Subwatershed (Hydrologic Unit Code)	Waterbody Name	Waterbody ID¹
Northwest Branch Back River (020801080102)	Northwest Branch Back River – Lower	VAT-C07E_NWB02A06
	Tabbs Creek – Northwest Branch Back River	VAT-C07E_TBC01A04
	Brick Kiln Creek (including Big Bethel Reservoir)	VAT-C07E_BRK01A06
Southwest Branch Back River (020801080103)	Southwest Branch Back River – Incl Tides Mill Creek	VAT-C07E_SWB1A08
	Southwest Branch Back River – DSS OPEN	VAT-C07E_SWB02B10
	Southwest Branch Back River – Mouth	VATC07E_SWB02A08
	Unsegmented Estuaries in Back River – DSS	VAT-C07E_ZZZ01B12

Note:

¹ The Waterbody ID is referenced from the 2016 Integrated Report GIS layers (<https://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments/2016305b303dIntegratedReport.aspx#factsheets>).

Part I.E.3.a(1) of Permit No. VAR040140 requires that JBLE–Langley maintain a stormwater drainage system map that shows the location of all MS4 outfalls as well as the name and location of all waters receiving discharges from the MS4 outfalls and the associated hydrologic unit code. A map is included as Attachment 1. As part of the recent MS4 compliance efforts, new outfalls are being identified and confirmed by 633d Civil Engineer Squadron/Environmental Element (633 CES/CEIE) staff.

Total Maximum Daily Load (TMDL) and Impaired Stream Identification

Total Maximum Daily Loads Other than the Chesapeake Bay TMDL

The U.S. Environmental Protection Agency (EPA) and/or VDEQ have the authority to establish and issue a TMDL allocation on a body of water or receiving stream. The Northwest Branch Back River and Southwest Back River subwatersheds are subject to a TMDL for fecal coliform bacteria. On 28 April 2017, the Virginia State Water Control Board (SWCB) approved the revision to the 2014 TMDL to address fecal coliform bacteria impairment in the Back River. The Northwest Branch Back River and Southwest Branch Back River impaired segments (waterbody

ID# VAT-C07E) are considered Condemned Shellfish Areas that do not conform with the Virginia Department of Health fecal coliform standards for shellfish harvesting. These waterbodies receive runoff from JBLE–Langley and the TMDL for these waterbodies include wasteload allocation (WLA) assignments to JBLE–Langley.

Chesapeake Bay TMDL

In 2010, the EPA established the Chesapeake Bay TMDL to address pollutants of concern (POC) in the Chesapeake Bay. The POCs include excess nitrogen, phosphorus and total suspended solids (TSS). The Chesapeake Bay watershed encompasses over 64,000 square miles across the District of Columbia and large sections of Delaware, Maryland, New York, Pennsylvania, West Virginia and Virginia. JBLE–Langley sits within the Chesapeake Bay Watershed.

In the Phase I and Phase II Chesapeake Bay Watershed Implementation Plan for the Chesapeake Bay TMDL, the Commonwealth of Virginia committed to a phased approach to reducing the POCs discharging from MS4s. Part II.A.11(a)-(f) of the MS4 Permit No. VAR040140 requires JBLE–Langley to prepare a Chesapeake Bay TMDL Action Plan that demonstrates future plans to meet the POC reductions.

Section 3: Water Quality Programs and Guidance

This section discusses the local and state water quality programs that are implemented by JBLE–Langley or the state, respectively, within the installation boundaries.

Local Programs and Guidance

JBLE–Langley has developed and implements local programs and guidance in order to comply with the MS4 permit. These programs and guidance documents are listed below.

- JBLE–Langley Environmental Policy Statement (24 August 2017)
- JBLE–Langley Illicit Discharge Elimination Procedure Manual (12 July 2017)
- JBLE–Langley Structural Stormwater Best Management Practices Inventory, Annual Inspection and Management Plan (25 May 2018)
- JBLE–Langley Illicit Discharge Detection and Elimination Procedure Manual (July 2017)
- JBLE–Langley MS4 Program Plan (January 2019)

State Programs

In addition to the local programs that the installation is implementing, there are state programs established by VDEQ, which are also being implemented. These programs are listed below.

- **Erosion and Sedimentation Program** – The Virginia Erosion and Sediment Control Law (VESCL) delegates the authority to administer a Virginia Erosion and Sediment Control Program (VESCP) to local municipalities. Local municipal VESCPs must be approved by the SWCB; however, this is an optional requirement for JBLE–Langley per the VESCL. JBLE–Langley has not developed a specific erosion and sediment control program for the base. The base utilizes their MS4 Program Plan to outline roles and responsibilities, as well as procedures related to erosion and sediment control.
- **Stormwater Permitting Program** – The VDEQ Water Division implements the stormwater permitting program to develop, plan and implement statewide stormwater control policies, strategies and rules designed to protect the state surface waters from the impacts of stormwater pollutants and runoff.

Section 4: Minimum Control Measures

This section discusses the MCMs that JBLE–Langley is implementing under Permit No. VAR040140. MCMs include:

- MCM 1: Public Education and Outreach
- MCM 2: Public Involvement/Participation
- MCM 3: IDDE
- MCM 4: Construction Site Stormwater Runoff Control
- MCM 5: Post-Construction Stormwater Management in New Development and Development on Prior Developed Lands
- MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations

Details regarding program requirements, achievements and planned initiatives are discussed on the following pages.

MCM 1: Public Education and Outreach

JBLE-Langley is required to develop and implement a public education and outreach program with the objective to comply with State and local requirements to educate the installation community regarding the impacts of stormwater discharges on the receiving waters as well as measures that the community can take to reduce the introduction of pollutants to the stormwater drainage system.

JBLE–Langley plans to utilize a combination of relevant messages and outreach materials to educate target audiences for each of the three high priority water quality issues, as well as other stormwater topics of interest to the public (using a minimum of two of the strategies listed on Part I.E.1.d Table 1). The table below outlines program achievements during PY1 as well as planned education and outreach activities under MCM 1, Public Education and Outreach on Stormwater Impacts, for PY2 in accordance with Part I.E.1.g.(2) of the permit. Additional details are included in the JBLE–Langley MS4 Program Plan. Examples of the stormwater management informational brochures that are intended for distribution are included in Attachment 2. Distribution of these materials will continue in PY2.

MCM 1: Public Education and Outreach		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
Use a minimum of 2 strategies from Part I.E.1.d, Table 1 – Media materials, training materials, speaking engagements and traditional written materials	Material used for training, electronic and physical information handouts 1. Traditional written materials: “Be the Solution to Stormwater Pollution” and “Preventing Pollution from Pet Waste” brochures. 2. Alternative materials: re-useable metal straws and pet waste bag clips. 3. Signage: Straw Free Campaign Educational Posters. 4. Presentations: Stormwater presentation to students at Booker Elementary.	<ul style="list-style-type: none"> Continue to use material for training and information. Develop new/revised materials if other water quality issues are identified.
Identify three high priority water quality issues	Continued to monitor previously identified and refined high priority water quality issues, which include: 1. Proper wash procedures 2. Controlling pet wastes at the JBLE-Langley Horse Stables and Residences 3. Spill and illicit discharge reduction	<ul style="list-style-type: none"> High priority water quality issues remain unchanged for PY2.

MCM 1: Public Education and Outreach		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
<p>Proper wash procedures</p> <p>Target Audience: <i>JBLE–Langley residents and employees</i></p> <p>Goal: Provide information regarding proper washing procedures</p>	<ul style="list-style-type: none"> • 633 CES/CEIE keeps a brochure titled “Outdoor Vehicle Washing” on the JBLE–Langley Environmental website. (http://www.jble.af.mil/Units/Air-Force/Langleys-Environmental/) and provided copies to the Langley Family Housing (LFH) privatization company for their residents. • Community Cleanup was held at Bethel Manor Housing on 23 Apr 2019. The target audience included base personnel as well as over 2000 base residents. Volunteers: 18 Educational flyers were provided. 	<ul style="list-style-type: none"> • Continue to encourage the LFH privatization company to provide the brochure as part of the “welcome” packet for new residents. • Advertise use of the automatic car washing facilities via social media (e.g., Facebook, Twitter, Nextdoor), the newspaper and/or marquees.
<p>Controlling pet waste</p> <p>Target Audience: LFH residents and personnel with pets</p> <p>Goal: Educate pet owners regarding proper disposal of pet waste</p>	<ul style="list-style-type: none"> • JBLE–Langley hosts horse stables that are managed by the Langley Saddle Club. Authorized personnel board their horses at this facility. Stable bedding and manure are collected and stored under cover; however, horses use pastureland as well. Manure is left on pasture-land, which is considered an agricultural land use. • Newcomer’s Orientation – New employees and spouses of JBLE–Langley attend a Newcomer’s Orientation. Between 10 and 20 people per orientation took a brochure or discussed stormwater/pet waste pollution prevention each date. “Be the Solution to Stormwater Pollution” and Preventing Pollution from Pet Waste” brochures were handed out. <ul style="list-style-type: none"> ○ 5 February 2019: 58 attendees; 19 February 2019: 60 attendees; 5 March 2019: 60 attendees; 19 March 2019: 60 attendees; 2 April 2019: 60 attendees; 7 May 2019: 65 attendees; 4 June 2019: 56 attendees; 18 June 2019: 66 attendees; 2 July 2019: 70 attendees; 16 July 2019: 55 attendees; 30 July 2019: 69 attendees. 	<ul style="list-style-type: none"> • Post educational information (e.g., pet waste brochure or poster) at the horse stables. • Continue to disseminate information regarding controlling pet wastes via social media (e.g., Facebook, Twitter, Nextdoor), the newspaper and/or marquees • Provide the brochure to the LFH privatization contractor for inclusion in the “welcome” packet for new residents. • Participate in a LFH resident meeting and Saddle Club user meeting to discuss controlling pet wastes.

MCM 1: Public Education and Outreach		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
<p>Controlling pet waste (continued)</p>	<ul style="list-style-type: none"> 633 CES/CEIE keeps a brochure titled “Preventing Pollution from Pet Waste” on the JBLE–Langley Environmental website (http://www.jble.af.mil/Units/Air-Force/Langley-Environmental/) and provided copies to the LFH privatization company for their residents. 	
<p>Spill and illicit discharge reduction.</p> <p>Target Audience: JBLE–Langley residents and employees</p> <p>Goal: Provide information regarding proper disposal of household hazardous waste</p>	<ul style="list-style-type: none"> Stormwater pollution prevention training was provided to base personnel (active duty, civilian and contractors). Training activities include online training courses available via The Environmental Awareness Course Hub (TEACH). (Part I E.1.d Table 1 - Training materials) 633 CES/CEIE keeps the Stormwater Pollution Prevention brochure on the JBLE–Langley Environmental website (http://www.jble.af.mil/Units/Air-Force/Langley-Environmental/) (Part I E.1.d Table 1 – Media Materials). JBLE–Langley advertised the Household Chemical Collection days (8 and 15 September 2018; 16 March 2019; 11 and 18 May 2019) via an all hands email to base personnel as well as provided to the LFH privatization contractor to inform residents. Hazardous waste and other training offerings (e.g., MilSuite and Unit Environmental Coordinator [UEC] training) also cover spill related training. A “Safe Drain Maintenance” event held on 22 April 2019. The target audience was base employees and four (4) volunteers helped at the event. The event provided hands on training and educational flyers were given to participants. World Water Day (19 March 2019) Article written about World Water Day for the Military News (Part I.E.2 C. Table 2 – Pollution prevention), in response to a sewer overflow. 	<ul style="list-style-type: none"> Publish articles in the newspaper related to spill reduction/prevention (e.g., privately owned vehicle [POV] car washing in undesignated areas, littering and disposal of household chemicals) on a semi-annual basis during the PY. Develop and post information to the JBLE–Langley and LFH Facebook and Nextdoor pages at least semi-annually during the PY. Send a mass email to MFH residents regarding illegal dumping at least semi-annually during the PY. Continue to conduct TEACH training Require food trucks requesting to operate on base have employees take fats, oil and grease (FOG) management training (e.g., HRFOG).

MCM 2: Public Involvement/Participation

The installation is required to cultivate a public involvement and participation program with the objective to comply with State and local public notice requirements, implementing four activities per year from a minimum of two of the categories listed in Part I.E.2 c. Table 2. JBLE–Langley has taken steps to implement the program BMPs as specified in Part I.E.2 of the permit.

MCM 2: Public Involvement/Participation		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
JBLE–Langley Environmental Website	<ul style="list-style-type: none"> • 633 CES/CEIE maintains a website that provides information to the public, including the MS4 Program Plan and the MS4 Annual Reports. The website is located here: http://www.jble.af.mil/Units/Air-Force/Langley-Environmental/ 	Continue to maintain the JBLE–Langley Environmental website and post educational and reference information for the base population.
Public Involvement/ Participation	<ul style="list-style-type: none"> • Public involvement and participation activities include: <ul style="list-style-type: none"> ○ Earth Week (22 - 26 April 2019) – The 633d Air Base Wing Public Affairs Office provided newspaper and social media notification of events, as well as photography support. They also provided electronic marquee support at the base gates to advertise Earth Week and asked for volunteers (Part I.E.2 c. Table 2 – Educational events, Restoration and Monitoring). Magnets with 633 CES/CEIE’s information were handed out at the events. <ul style="list-style-type: none"> ▪ 22 April 2019: Straw Free Campaign (1000+ reached), Safe Drain Maintenance (4 participants), Pet Waste Awareness (30+ participants) ▪ 23 April 2019: Rain Barrel Workshop with City of Hampton (5 participants), Community Cleanup at Bethel Manor (18 volunteers) ▪ 22 April 2019: Safe Drain Cleanings. Approximately 350 pounds of sediment removed from storm drains. 	<ul style="list-style-type: none"> • Continue to host events during Earth Week to engage base personnel and residents (20-24 April 2020). • Continue participating in Clean the Bay Day (6 June 2020). • Continue participating in other Earth Week events hosted by LFH and Force Support Squadron. • Look at partnering opportunities with the NASA Langley Research Center and JBLE–Eustis.

MCM 2: Public Involvement/Participation		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
<p>Public Involvement/ Participation (<i>Continued</i>)</p>	<ul style="list-style-type: none"> • Public involvement and participation activities include (continued): <ul style="list-style-type: none"> ○ Earth Day Activities (continued) <ul style="list-style-type: none"> ▪ 24 April 2019: Document Shredding Event (21 participants), Nature Trail Preservation/Cleanup, Earth Day Poster Contest at Booker Elementary School ▪ 25 April 2019: Earth Week 5k and Plastic Bag Collection (93 participants), Bench Building Project ▪ 26 April 2019: Arbor Day Tree Planting ○ Environmental Partnership – JBLE–Langley participates in the Secretary of the Air Force Program to partner with their local public and private neighbors. The Public-Public; Public-Private (P4) Partnership Program seeks to identify and develop opportunities to share resources, increase efficiency and improve effectiveness of operational, educational and recreational programs. The JBLE P4 program is currently focused on the Virginia Peninsula. As the program matures, there may be opportunities for broader partnerships. <ul style="list-style-type: none"> ▪ Collaborated with the City of Hampton Clean Water Commission as a part of the Rain Barrel Class. ▪ Collaborated with Booker Elementary – promoting cleaner water by adding new oysters to reef at JBLE–Langley (3 June 2019). • Communication with installation personnel and residents takes place on a regular basis through internal and external websites, the installation community cable channel, the Peninsula Warrior newspaper, as well as regular interactions with various community groups (e.g., the Department of Game and Inland Fisheries, the York County Extension Office and the City of Hampton). An example of this type of communication and other Public Participation documentation is provided in Attachment 3. 	<ul style="list-style-type: none"> • Continue to look for P4 partnerships to share resources and increase program effectiveness. • Develop focused educational messages to be disseminated via internal and external websites (e.g., Facebook, Twitter, Nextdoor), the Peninsula Warrior, community group emails and websites.

MCM 2: Public Involvement/Participation		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
Public Involvement/ Participation (<i>Continued</i>)	<ul style="list-style-type: none"> ○ America Recycles Day (15 November 2018) – Collected plastic and e-Waste in the BX parking lot (Part I.E.2 c. Table 2 – Pollution prevention). ○ Hosted the 30th Annual Clean the Bay Day on 21 July 2018. 	<ul style="list-style-type: none"> ● Continue to participate in America Recycles Day (15 November 2019). ● Continue to participate in World Water Day (22 March 2020).

MCM 3: Illicit Discharge Detection and Elimination

The installation is required to develop, implement and enforce a program to detect and eliminate illicit discharges into the MS4. JBLE–Langley has taken steps to implement the IDDE program BMPs as specified in Part I.E.3 of the permit.

MCM 3: IDDE		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
Develop and maintain an accurate MS4 map and information table	Submitted a GIS-compatible shapefile to VDEQ of the most current MS4 map that reflects all changes occurring prior to 30 June of PY1 as required by Part I.E.3.a.	Update the MS4 map and information table as needed by 1 October following the end of the permit reporting period.
List any written notifications of physical interconnection given by the operator to other MS4s	The NASA Langley Research Center MS4 is connected to the JBLE–Langley MS4. The email notification of interconnectivity from NASA is provided in Attachment 4.	633 CES/CEIE will continue to monitor the MS4 area to ensure there are no additional interconnections with an adjacent MS4.
Outfall screenings	<ul style="list-style-type: none"> Fifty (50) of the 95 non-industrial outfalls were inspected during PY1. Details regarding the inspection findings are included on the outfall inspection forms and in the Dry Weather Outfall Monitoring Memo. Copies of the outfall inspection forms are maintained by 633 CES/CEIE and will be made available upon request. 	<ul style="list-style-type: none"> Inspect non-industrial outfalls specified in the base IDDE Procedure Manual and document the inspection utilizing the outfall inspection forms. Finalize the Streambank Stabilization Plan and program recommended projects to address erosion at the MS4 outfalls.

MCM 3: IDDE		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
Investigations of suspected illicit discharges	<ul style="list-style-type: none"> • JBLE–Langley personnel utilized the IDDE procedures to investigate potential illicit discharges. • Detailed descriptions of each of the illicit discharge investigations are included in Attachment 5. Investigations into potential illicit discharges include: <ul style="list-style-type: none"> ○ Illicit discharge by sanitary sewer overflow (2 March 2019). 	<ul style="list-style-type: none"> • JBLE–Langley personnel will continue to utilize the IDDE procedures to investigate potential illicit discharges. • Continue to report all spills or unauthorized releases, whether it enters the MS4 or not, in accordance with AFI 32-7047, <i>Environmental Compliance Release and Reporting Inspection Reporting</i> and log the incident in the spill database maintained by the 633 CES/CEIE Spill Program Manager. • Host in-person training to review the IDDE Procedure Manual previously developed by JBLE–Langley.

MCM 4: Construction Site Stormwater Runoff Control

The installation is required to comply with the Virginia Stormwater Management Program in order to maintain compliance with the Construction Site Runoff Controls. These controls are designed to assist with the development, implementation and enforcement of an Erosion and Sediment Control Program to reduce the pollutants (e.g., total suspended solids, total phosphorus and total nitrogen) related to “land-disturbing activities including clearing, grading or excavation that results in a land disturbance equal to or greater than 10,000 square feet and less than one acre in all areas of jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830) adopted pursuant to the Chesapeake Bay Preservation Act.” The base has taken steps to implement the program BMPs as specified in Part I.E.4 of the permit.

MCM 4: Construction Site Stormwater Control		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
Track regulated land-disturbing activities	<p>Land disturbing projects that occurred during the reporting period have been conducted in accordance with the current department approved standards and specifications for erosion and sediment control.</p> <ul style="list-style-type: none"> • Continued to track all regulated land disturbing activities <ul style="list-style-type: none"> ○ Total number of inspections performed – Daily engineering inspections and bi-monthly inspections by Stormwater Program Manager ○ Total number of land disturbing activities – 7 <ul style="list-style-type: none"> ▪ Sewer Force main (TRO-19-74) ▪ Hospital Cap (VAR10M314) ▪ Clear Zone (VAR10L932) ▪ Langley AFB 30” Water line (TRO-19-33) ▪ VAR-10-13-100632 ▪ Fuel Pier/GVFF (VAR10L004) ▪ Repair Runway Lights (VAR10K492) <i>(completed in 2017; awaiting VDEQ termination inspection)</i> 	<ul style="list-style-type: none"> • Continue to track regulated land-disturbing activities, including: <ul style="list-style-type: none"> ○ Number of on-going land disturbing activities ○ Number of acres disturbed ○ Number of inspections conducted

MCM 4: Construction Site Stormwater Control		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
Track regulated land-disturbing activities (<i>Continued</i>):	<ul style="list-style-type: none"> • Continued to track all regulated land disturbing activities (<i>Continued</i>): <ul style="list-style-type: none"> ○ Total number of acres disturbed – 104.14 acres <ul style="list-style-type: none"> ▪ Sewer Force main – 0.90 acres ▪ Hospital Cap – 8.70 acres ▪ Clear Zone – 90 acres ▪ Langley AFB 30" Water line – 0.34 acres ▪ VAR-10-13-100632 – 2.01 acres ▪ Fuel Pier/GVFF – 2.19 acres ▪ Repair Runway Lights – Project complete with established grass; awaiting termination inspection by VDEQ 	
Land-disturbing activity enforcement actions	<ul style="list-style-type: none"> • 633d CES inspectors perform daily informal inspections. Deficiencies observed during these inspections are corrected while the inspector is onsite. • 633d CES/CEIE performs random formal and informal inspections of the construction sites. Deficiencies from these inspections are provided to the contractor. 633d CES/CEIE will follow-up on site to confirm that deficiencies have been corrected. • Performed construction site inspections as follows: <ul style="list-style-type: none"> ○ 21 February 2019 – Fuel Pier/GVFF ○ 23 April 2019 – Waterline ○ 14 May 2019 – Clear Zone ○ 21 May 2019 – Hospital ○ 24 July 2019 – 720 Hydroseed • Deficiencies noted during the inspections and brought to attention of contractor at the hospital on 21 May 2019 and was corrected by the contractor on 28 May 2019. 	Construction site inspections will continue in the next permit year and enforcement actions will occur as needed.

MCM 5: Post-Construction Stormwater Management in New Development and Development on Prior Developed Lands

The base is required to develop, implement and enforce a program to address stormwater runoff related to new development and redevelopment projects throughout the service area, including a combination of structural and non-structural BMPs. In addition, JBLE–Langley is required to ensure that the structural BMPs are functional through long term operation and maintenance (O&M) practices. The base has taken steps to implement the program BMPs as specified in Part I.E.5 of the permit. SWM facilities are also known as BMPs or SCMs.

MCM 5: Post-Construction Stormwater Management in New Development and Development on Prior Developed Lands		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
Maintain an updated electronic database of all known operator-owned and privately-owned SWM facilities that discharge into the MS4	JBLE–Langley utilized an excel spreadsheet to track SWM facilities. The spreadsheet is included electronically as Attachment 6.	Continue to maintain a SWM facilities inventory via an Excel spreadsheet.
Identify new SWM facilities brought online during the PY	No SWM facilities were brought online during PY1.	<ul style="list-style-type: none"> Track construction projects and planned SWM facilities and include in the inventory as they are brought online. Work closely with 633 CES planning and engineering departments to review plans and specifications associated with upcoming construction projects.
SWM facility O&M management	<ul style="list-style-type: none"> Inventoried and inspected all SWM facilities on base. Updated the <i>SWM Facility Inspection and Management Action Plan</i>. Completed an annual inspection of the SWM facilities. 	<ul style="list-style-type: none"> Complete the annual site inventory and inspection of all operational SWM facilities. Review and update the <i>SWM Facility Inspection and Management Action Plan</i>.
Maintain contact with the VDEQ BMP Warehouse	The electronically reported BMPs were submitted to the VDEQ BMP Warehouse via the Chesapeake Bay Action Team (CBAT) in accordance with Part I.E.5.g in August 2018.	Send electronically reported BMPs to VDEQ BMP Warehouse as needed.

MCM 6: Pollution Prevention / Good Housekeeping for Municipal Operations

The base is required to develop and implement a program to address pollution prevention and good housekeeping procedures, including a training program for installation personnel and the community. JBLE–Langley has taken steps to implement the program BMPs as specified in Part I.E.6 of the permit.

MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
Develop and implement daily operational procedures	<ul style="list-style-type: none"> • JBLE–Langley utilizes an environmental management system (EMS) that conforms to International Organization of Standardization (ISO) 14001:2004, to manage environmental program requirements. • JBLE–Langley has issued an <i>Environmental Policy Statement</i> and has published it on their website (https://www.jble.af.mil/About-Us/Units/Air-Force/Langley-Environmental/) • JBLE–Langley began implementing good housekeeping procedures and training materials relevant to stormwater for the following areas: <ul style="list-style-type: none"> ○ Road, Street and Parking Lot Maintenance ○ Equipment Maintenance ○ Application, Storage, Transport and Disposal of Pesticides and Fertilizers ○ IDDE Procedure Manual • Copies of the above training material are available upon request • MS4 Program Plan was updated in PY1. It was signed and published to the environmental website on 25 April 2019. 	<ul style="list-style-type: none"> • Continue to implement an EMS that conforms to ISO 14001:2004. • Develop additional P2 and good housekeeping plans as needed for newly identified municipal operation areas. • Post procedures on the JBLE–Langley Environmental website and advertise them on the JBLE–Langley Facebook pages. • Provide hands-on training for the procedures to JBLE–Langley personnel and upload training materials to TEACH.

MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
Develop and implement required Stormwater Pollution Prevention Plans (SWPPP)	<ul style="list-style-type: none"> • JBLE-Langley implements its comprehensive SWPPP, designed to satisfy VPDES requirements. • JBLE–Langley has a list of high priority non-industrial facilities and has implemented the SWPPPs for high priority MS4 facilities (Auto Hobby Shop and POV Wash Rack, AAFES Mini Mall and Car Wash, Base Exchange, Commissary, Langley Marina, Eaglewood Golf Course and LFH Maintenance Facility). 	<ul style="list-style-type: none"> • Conduct the annual site compliance evaluation of the high-priority non-industrial areas. • Continue to review and update the list of municipal/non-industrial high priority facilities and determine if they require a SWPPP. • Create additional SWPPPs based on the developed schedule.
Develop and implement turf and landscape nutrient management plans (NMP)	<ul style="list-style-type: none"> • There are three locations that have managed turf grass areas: The Eaglewood Golf Course, three athletic fields and LFH. • Total acreage where NMPs are required – 152.3 acres <ul style="list-style-type: none"> ○ Eaglewood Golf Course – 119.2 acres ○ Athletic Fields – 11.9 acres ○ LFH – 21.2 acres • NMPs for MFH and the athletic fields were approved in March 2019. • The NMP for the Eaglewood Golf Course continued implementation during PY1. • Training materials were developed and training was conducted at each of the locations with an NMP. 	<ul style="list-style-type: none"> • Continue to implement the NMPs for LFH, the Athletic Fields and the Eaglewood Golf Course. • Continue conducting training with each of the locations subject to an NMP.

MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations		
Management Practices & Techniques	Program Achievements (1 July 2018 – 30 June 2019)	Initiatives Planned for Coming Year (1 July 2019 – 30 June 2020)
Required training	<ul style="list-style-type: none"> • Stormwater pollution prevention training was provided to base personnel (active duty, civilian and contractors). Training activities include live training and online courses. <ul style="list-style-type: none"> ○ Stormwater awareness courses were provided in an online format through the TEACH website. ○ The UEC training was conducted in a classroom setting 12 times during the permit year. ○ MilSuite training was conducted in a classroom setting. • IDDE training was developed during PY1 • Additional relevant environmental courses were available to personnel on TEACH. These courses cover the following environmental topics: water; wastewater; spill response; and petroleum, oils and lubricant management. 	<ul style="list-style-type: none"> • Conduct stormwater pollution prevention training and track base personnel that have received training. • Provide live initial good housekeeping procedure training and upload course materials to TEACH

Section 5: TMDL Action Plans

SC1: TMDL Special Conditions Compliance for the Chesapeake Bay TMDL

JBLE–Langley’s Draft Phase II Chesapeake Bay TMDL Action Plan was developed and submitted with the MS4 Permit Registration Statement. The Action Plan presented a discussion of the compliance requirements for JBLE–Langley.

The Action Plan presents the JBLE–Langley estimated load contribution, required load reductions and pollutant reduction credits. The plan also reported progress made toward meeting the 40% cumulative pollutant reduction requirement for the first and second permit cycles.

The Chesapeake Bay TMDL Action Plan Implementation Status Memo summarizes the actions taken during PY1 and is included as Attachment 7. Implementation will continue in PY2.

SC2: TMDL Special Conditions Compliance other than the Chesapeake Bay TMDL

Part II.B. of the JBLE–Langley MS4 permit, Permit No. VAR040140 requires the installation to maintain an updated MS4 Program Plan that includes a specific TMDL Action Plan for pollutants allocated to the MS4 in an approved TMDL.

As part of maintaining its MS4 Program Plan, JBLE–Langley has developed the Bacteria TMDL Action Plan to address bacteria impairment in those waterbodies. The MS4 Program Plan currently has incorporated the TMDL Action Plans that identify the BMPs and other interim milestone activities. The 2017 TMDLs, which became final on 9 February 2018, include updated information on the listing status of assessment units according to the 2014 305(b)/303(d) Water Quality Assessment Integration Report and assign a WLA for bacteria to JBLE–Langley. The WLA is a portion of the TMDL and represents the allowable load a permittee may discharge to the waterbody and still meet water quality standards.

JBLE–Langley is required to implement an approved TMDL Action Plan for bacteria impairment. Implementation continued in PY1 and will continue in PY2. The Bacteria TMDL Action Plan Implementation Status Memo summarizes the actions taken during PY1 and is included as Attachment 8.

Attachment 1: IDDE Maps

JBLE-Langley

Stormwater Outfall
and Drainage Basin Map, Main Base
JBLE-Langley VA



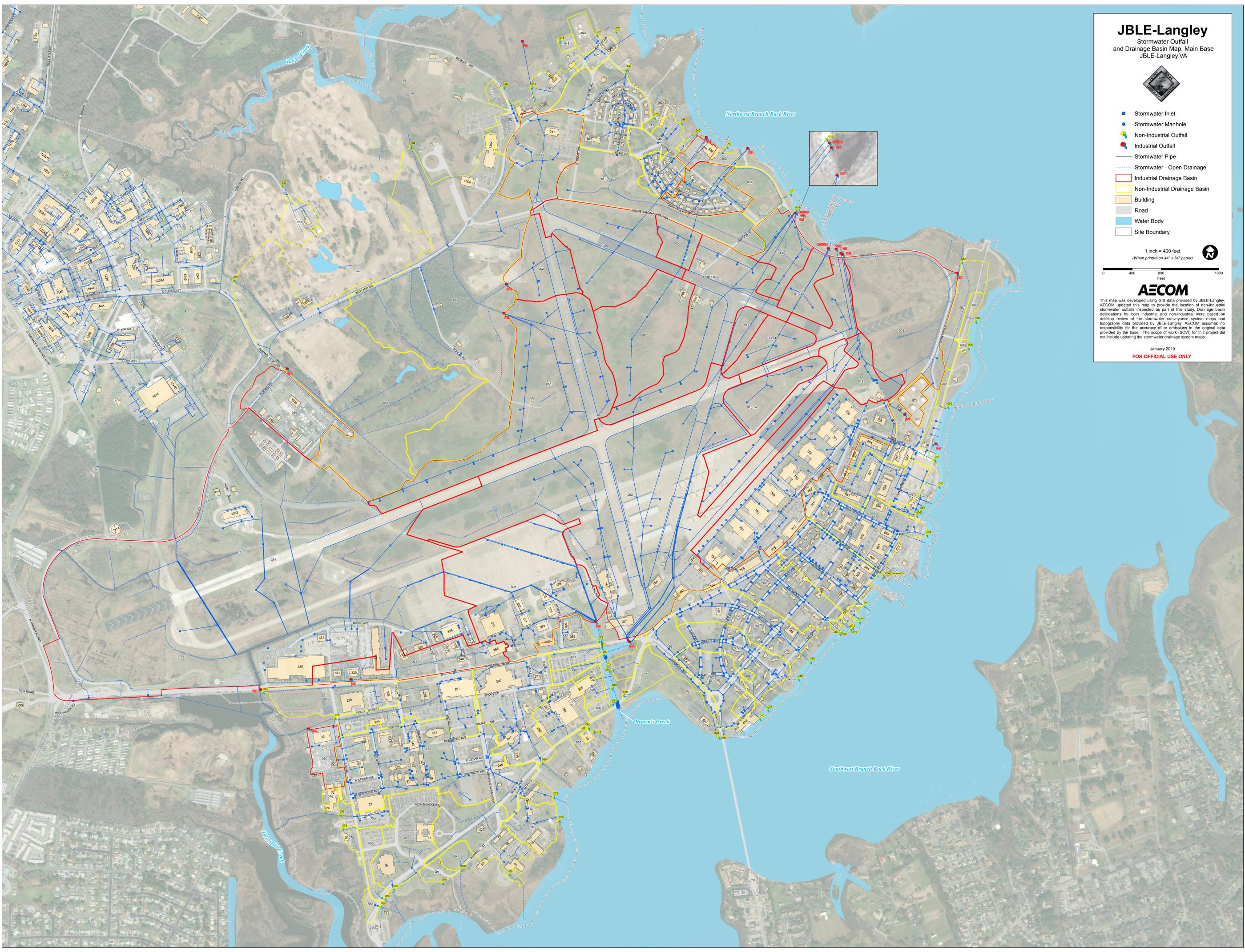
- Stormwater Inlet
- Stormwater Manhole
- Non-Industrial Outfall
- Industrial Outfall
- Stormwater Pipe
- Stormwater - Open Drainage
- Industrial Drainage Basin
- Non-Industrial Drainage Basin
- Building
- Road
- Water Body
- Site Boundary

1 inch = 400 feet
(When printed on 44" x 34" paper)

AECOM

This map was developed using GIS data provided by JBLE-Langley. AECOM updated this map to provide the location of non-industrial stormwater outfalls inspected as part of this study. Drainage basin delineations for both industrial and non-industrial were based on desktop review of the stormwater conveyance system maps and topography data provided by JBLE-Langley. AECOM assumes no responsibility for the accuracy of or omissions in the original data provided by the base. The scope of work (SOW) for this project did not include updating the stormwater drainage system maps.

January 2019
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JBLE-Langley

Stormwater Outfall and
Drainage Basin Map, Langley
Family Housing & Family
Camping

JBLE-Langley VA



- Non-Industrial Outfall
- Stormwater Pipe
- Stormwater - Open Drainage
- Drainage Basin
- Building
- Road
- Water Body
- Site Boundary



1 inch = 400 feet

(When printed on 22" x 17" paper)

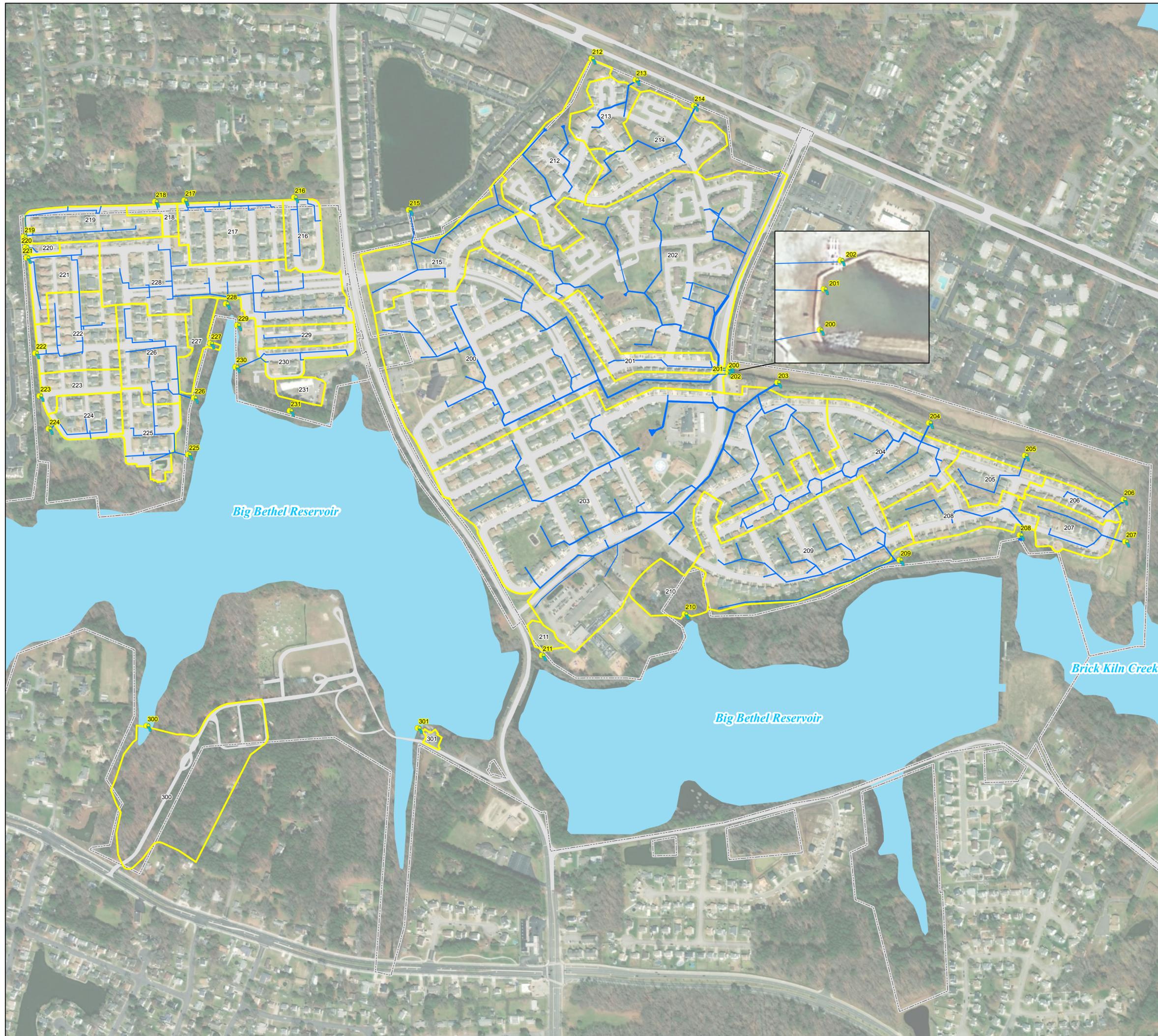
0 200 400 800 Feet

AECOM

This map was developed using GIS data provided by JBLE-Langley and system mapping provided by Hunt Companies. AECOM updated this map to provide the location of non-industrial stormwater outfalls inspected as part of this study. Drainage basin delineations are based on a desktop review of the stormwater conveyance system maps provided by JBLE-Langley and Hunt Companies. AECOM assumes no responsibility for the accuracy of or omissions in the original data. The scope of work (SOW) for this project did not include updating the stormwater drainage system maps.

January 2019

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**Attachment 2: Stormwater Management
Educational Brochures**

Material Storage

Outdoor storage of materials can also pollute stormwater runoff.

Here are some material storage Best Management Practices:

1. Store materials indoors or under cover where feasible



2. Keep outdoor materials stored away from storm drains and high traffic areas
3. Store materials on pallets to keep dry
4. Use silt fences to filter sediment



5. Install berm for secondary containment of sand and gravel or cover with a tarp.

Why Is Stormwater Pollution Prevention So Important?



**Our unique location:
The Chesapeake Bay Watershed**

Federal and State Laws

- ◆ Clean Water Act
- ◆ Virginia Pollutant Discharge Elimination System (VPDES) regulations
- ◆ Municipal Separate Storm Sewer System (MS4) regulations

For more information, call the
Stormwater Program Manager
(757) 764-1141

Joint Base Langley Eustis - Langley

633d CES/CEIE



Stormwater Pollution Prevention

*Small amounts of contaminants
from all over the base add up and
cause pollution in our water.*

*Yes, even the little things matter.
YOU will make a difference,
no matter how small.*

The Many Sources of Pollution

- Paint
- Fertilizer
- Pet Waste
- Pesticides
- Grass Clippings
- Tires
- Metal Corrosion
- Litter
- Leaves
- Auto Exhaust
- Motor Oil
- Lubricants
- Gas
- Eroded Soil
- Plastics

These materials enter storm drains every day, making stormwater a major contributor to water pollution in our area.

If the pollutants entering each drain can be reduced, so will the pollution in surrounding waterways.

Common Sources of Pollution Due to Base Operations

- De-icing Operations
- Construction Debris
- Sedimentation
- Air Pollution
- Erosion
- Spills
- Hazardous Waste

These sources of pollution reduce oxygen levels in the water, killing aquatic animals and covering aquatic plant life.

Best Management Practices

(BMPs)

Vehicle/Equipment

Overfills, leaks and spills are usually picked up by rain and snow, then carried to a storm sewer system. Here are some BMPs:

1. Do not top off fuel tanks
2. Immediately clean spills with absorbents
3. Check for leaks on all equipment
4. Use drip pans when fluid transfer occurs at any location



5. Use drip pans beneath parked vehicles
6. Use designated wash racks to clean vehicles and equipment
7. Do NOT wash where soapy water will flow into a storm drain



Pavements

Pollution sources from streets are also picked up by rain and snow. Pavement runoff is carried more quickly to a storm sewer system. Here are some pavement BMPs:

1. Sweep up debris and sediment
2. Reduce deicing materials by using the manufacturer's recommended rates
3. Use products that pollute less
4. Store materials indoors
5. Allow nature to melt snow and ice
6. Maintain your vehicle to prevent fluid leaks



**Street sweeping reduces
pollution by 80%**

Tips

Picking up pet waste is no one's favorite job.

Hopefully the tips below will make the job a little less icky.

- You can turn pet waste collection baggies inside out over your hand to use the bag as a glove when picking up the waste.
- Many pet owners prefer to double bag the collected pet waste.
- After collection, you can tie the baggies onto the leash so that you do not have to hold or put the full baggie in your pocket.
- Long handled pet waste scoopers are available at pet stores to assist with waste collection.
- Although you can purchase baggies specifically for pet waste at pet stores, you can also re-use other bags including newspaper bags, bread bags, or sandwich baggies.
- Pet waste digesters are available for purchase at pet stores.



Additional Information

For more information, contact a Joint Base Langley Eustis Water Program Manager at 757-878-5218 (Fort Eustis) or 757-764-1141 (Langley AFB).

Additional information is available at:

EPA Pet Waste Management:

<https://cfpub.epa.gov/npstbx/files/Pet%20Care%20Fact%20Sheet.pdf>

City of Hampton

<http://www.hampton.gov/DocumentCenter/View/9075>

Hampton Roads

www.hrpdcva.gov/departments/water-resources/stormwater-management

<http://askhrgreen.org/scoop-the-poop/>

Water Environment Federation

www.wef.org/AWK/pages_cs.aspx?id=6392

Pet waste is a health risk to people, other pets, and the environment. Bacteria in pet waste can make people sick. When not disposed of properly, pet waste is washed into storm drains and ends up in local waterways.

Always bag pet waste and dispose of it properly.



Preventing Pollution from Pet Waste



April 2016

The Problem

Pet waste is not only smelly and unsightly, but also is a health risk to pets, people, and our local water bodies.

You may think that pet waste left on a lawn or sidewalk fertilizes the soil. However, in most cases the waste is washed into storm drains that lead directly into nearby waterways without being treated first.

The problem is that pet waste contains harmful bacteria such as *E. coli* and fecal coliform, making the water unfit for irrigation, recreation (such as swimming, fishing, or tubing), and other uses.

Pet waste contains parasites and bacteria that can spread gastrointestinal illnesses in humans such as *Giardia* and *Salmonella*.

These pollutants are harmful to the thousands of species of plants and animals (including fish, crabs and shellfish, birds, grasses, mammals, reptiles, and amphibians). People who eat food from contaminated water can get very sick.

Furthermore, pet waste also contains nutrients that can cause excessive algae growth in water, leading to fish kills and disrupting the water's natural ecology.

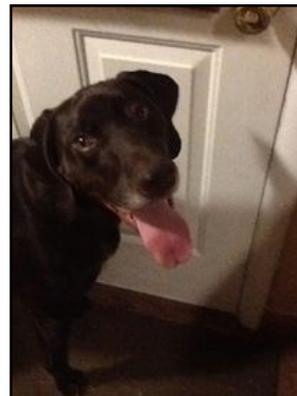
The Facts

Pet waste contains contaminants that are harmful to people, pets, wildlife, and the environment.

Some of the harmful effects of pet waste include:

- When pet waste decays, it uses up dissolved oxygen and releases compounds that are harmful to fish and other aquatic life.
- On average nationally, there are 0.58 dogs per household.
- Each dog produces approximately 0.42 pounds of fecal waste per day, or about 150 pounds per year. Just think how much waste is produced by the pets in your neighborhood!
- A single gram of pet waste contains an average of 23 million fecal coliform bacteria that can cause disease in humans.
- A single day's waste from one large dog can contain 7.8 billion fecal coliform bacteria—enough to close 15 acres of shellfish beds.
- EPA estimates that 2 to 3 days of pet waste from a population of 100 dogs would contribute enough bacteria and nutrients to temporarily close an entire bay for swimming and shellfishing..

Source: EPA 1993



The Solution

Be responsible and clean up after your pets. It is as easy as 1-2-3:

1. Bring a bag.



2. Use a bag to pick up pet the waste.



3. Dispose of the bag properly in the trash...



The Impact of Car Washing on Our Rivers and Bay...

When we wash the grime off our cars, it flows down the street and into the storm drain. This runoff carries soap, sediment, oil, and grease. Once the runoff gets into the storm drainage piping system, it directly discharges without treatment into the nearest lake, river, harbor, or bay.



...and Why It Matters

Polluted stormwater can harm fish, wildlife, and plants, and it can even contaminate drinking water. The U. S. EPA estimates that at least 50% of our nation's water pollution is caused by polluted stormwater runoff. If every vehicle (some 2.3 million) in the U.S. was washed once a month with 25 gallons of water (5 buckets), over 70.5 billion gallons of polluted water could enter the stormwater system every year. You can help. Use the tips provided in this brochure to help ensure that our waterways remain clean.

The Law

Joint Base Langley Eustis is required to obtain a stormwater permit under the Virginia Pollutant Discharge Elimination System, or VPDES. The goal of this permit is to reduce pollutants found in storm water runoff from urbanized areas to the "maximum extent practicable."

Joint Base Langley Eustis has prepared this educational brochure to meet a requirement of their VPDES permit administered by the Virginia Department of Environmental Quality.

Contact Information

For more information, contact a Joint Base Langley Eustis Water Media Manager at 757-878-5218 (Fort Eustis) or 757-764-1141 (Langley AFB).

For additional information, see the Commonwealth of Virginia's VPDES Permits, Fees and Regulations website at:

<http://www.deq.virginia.gov/Portals/0/DEQ/Water/PollutionDischargeElimination/VAG75FactSheet2012.pdf>

Environmental Protection Agency's information on vehicle washing:

https://cfpub.epa.gov/npstbx/files/KSMO_CarWashing.pdf

Florida DEP's Best Practices for Mobile Vehicle Washing:

<http://www.dep.state.fl.us/water/wastewater/iw/docs/bmps4mobile-vehicle-washing.pdf>



Outdoor Vehicle Washing



Mobile Car Washes: Legal Requirements

Discharges from mobile car washes to the storm sewer system are not allowed at Joint Base Langley Eustis. Owners of mobile vehicle washes may apply for coverage under a permit issued by the Virginia Department of Environmental Quality; however the usual mode of operation for these operations is to prevent the discharge of wash waters to surface waters or the storm sewers. Permit coverage as a mobile operator would require each discharge location to be identified on the registration statement as a separate outfall.

JBLE and DEQ urge mobile car wash owners to avoid a discharge to state waters or storm drains by applying technologies to collect wash water and dispose of it properly, recycle it, or use best management practices (evaporation, blocking storm drain entrances, use of permeable surfaces, etc.). Many ideas to avoid a discharge are covered in this brochure and available online.



Car Washing at Home and for Charity

Washing personal vehicles at home or at a volunteer/ charity event is not regulated. Thus, runoff from these activities does not need to be captured by recycling or catchment devices. Even so, there are several easy ways to help reduce stormwater pollution while you work:

- If possible, use a commercial car wash.
- Commercial car washes have recycling systems or discharge to the sanitary sewer system, which goes to a treatment plant.
- Wash your car on gravel, grass, or other permeable surfaces. These surfaces serve as a filter or a sponge, trapping pollutants from the wash water.
- Block off the storm drain inlets during charity car wash events or use an inlet insert to catch wash water.
- Divert soapy water from car washes into a sanitary sewer drain. If this is not feasible, divert car wash water onto grass or landscaping to provide filtration.
- Use hoses with nozzles that automatically turn off when left unattended.
- Use only biodegradable soaps.

Using these simple rules at home and for charity events helps keep a clean and healthy living environment. This is not only good for us and future generations, it makes for a healthy ecosystem.



The Best Option

Outdoor car washing has the potential to result in high loads of nutrients, metals and hydrocarbons during dry weather conditions in many watersheds, as the detergent-rich water used to wash the grime off our cars flows down the street and into the storm drain.

Car washing is a common routine for residents and a popular way for organizations such as scout troops, schools, and sports teams to raise funds. This activity is not limited by geographic region, but its impact on water quality will be greatest in more urban areas with higher concentrations of automobiles.

Always consider using a commercial car wash as your first alternative. A properly designed car wash is connected to a sanitary sewer that carries the dirty water to a wastewater treatment plant. Trading a few dollars for a healthy stormwater system is one deal that everyone can live with.



Furniture

Furniture issued by the government and in serviceable condition must be turned into DLA in Norfolk, VA. Damaged wooden furniture can be placed in the designated scrap wood containers.

Oil & Antifreeze

Motor oil and antifreeze must be taken to an automotive shop in order to be disposed of/recycled.

Batteries

-Lead acid-batteries should not be placed in dumpsters or containers they are recycled by turning them into facilities (i.e. auto parts store; Battery Plus) or stores that sell them.

-Alkaline batteries should be thrown in the regular trash.

-Lithium, nickel-cadmium, and mercury batteries are to be treated as *universal waste*. Separate them into different containers and place a label on them identifying that container or turn them in to Battery Plus or Battery Outlet.



Recycling Cheat Sheet

Batteries	Where does it go?
Lead-Acid	Auto-parts stores
Lithium, Nickel cadmium, mercury	Separate containers labeled Universal Waste
Alkaline	Regular Trash
Liquids	
Oil	Auto shop
Anti-freeze	Auto shop
E-Waste	
Computers	DLA: (757)445-2412
TVs	DLA: (757)445-2412
Wood	
Pallets	Recycling Center
Old Wood	Specified roll off bins
Furniture	
Damaged Wooden Furniture	Specified roll off bins POC: (757)764-1419
Old/Serviceable Furniture	DRMS/DLA in Norfolk, VA POC: (757)445-2412
Paper Products	
Office White Paper	Specified "White Paper" Bin
Colored Paper	Specified "commingles" bin
Cardboard	Specified "cardboard" container
Magazines, Newspapers, etc.	Specified "commingles" bin
Other	
Plastic	Specified "commingles" bin
Glass (green, brown, or clear)	Specified "commingles" bin

JBLE-Langley

633 CES



Recycling Program

QRP Manager: Sherry M. Johnson
DSN: 574-1130
Comm: 764-1130
sherry.johnson.4@us.af.mil

"JBLE-Langley supports a strong pollution prevention program which emphasizes the importance of source reduction, reuse, and recycling. "

Recycling Program Overview

In order to promote pollution prevention, JBLE-Langley utilizes a program that incorporates reduction, recycling, composting, energy recovery (incineration), and land filling. Recycling is a program encouraged base wide with a specific area at each facility meant as a collection area for most recyclables. Other facilities such as the scrap yard and Defense Logistics Agency-Disposition Services are available to aid in the recycling of materials that cannot be put into the collection bins.



Commingled Materials

Materials such as newspapers, colored paper, magazines, plastics, cans and glass (clear, brown, and green) can be placed into the same container. A container is located in the facility's recycling area where the contractor will collect them weekly.

White Office Paper

Containers are placed in each facility's recycling areas meant specifically for white office paper only. Shredded office paper must be put in a clear plastic bag. Contractors collect these every other week.

Ink Cartridges

Printer toner cartridges are to be placed in a clear plastic bag, tied off, and placed *next* to (not inside) the white office paper container in the facility's recycling area.

Cardboard

Cardboard has its own separate bins. These bins are beige and are usually found by dumpsters. Breakdown the boxes before placing them in the bin and do not place food cardboard (i.e. pizza boxes) in the container.

Wood

Serviceable wooden pallets can be taken to the recycling center (scrap yard) to be recycled (M, W, F 1300-1500). Unusable wood can be placed in the roll off bins located around base to be recycled.

Metal

All types of metal are acceptable for recycling on base at the Langley Recycling Center (scrap yard) by Building 330. It is open on Monday, Wednesday, and Friday from 1300-1500. Any liquids such as oils or refrigerants should be *removed* prior to dropping it off.

E-Waste

Electronics such as TVs and computer monitors should be turned into Defense Logistics Agency- Disposition Services (DLA). If the appliance is still in good working condition, it may also be donated to organizations such as Good Will or the Salvation Army. If the screens to these devices are broken, treat them as hazardous waste.

C & D Debris

These are materials resulting from construction and demolition. Materials that fall under this category include: wood, drywall, plastics, roofing, rubble, brick and glass. The contractors performing the task are responsible for the management and removal of these materials. Any material that is not recycled is disposed of at the Bethel Sanitary Landfill.

Note: Please only place 3 printer cartridges in the clear plastic bag

FREQUENTLY ASKED QUESTIONS CONT.

Sampling - When do I need to get something sampled?

Most often a waste stream will have to be sampled if it is new, the process has changed or the waste is an unknown. (40 CFR 262.11; JBLE-Langley Hazardous Waste Management Plan)

Sampling - Who do I call to get something sampled or my waste characterized?

You should call 633 CES/CEIE 764-1133.

Universal Waste -What waste streams are considered Universal Waste?

Batteries, except flashlight & lead-acid batteries; pesticides; mercury thermostats, and fluorescent lamps. Other items are under consideration, for inclusion in the Universal Waste Rule. You can call the HW program manager at 764-1133, if you have any questions. (40 CFR 273.3-4.)

Universal Waste - Can I mix my Universal Waste batteries together?

No...You must collect like batteries together in separate containers, i.e. Ni-Cad with Ni-Cad, Lithium with Lithium.

Universal Waste - How must I mark my Universal Waste container?

You must mark the universal waste to identify the type of universal waste is in the container, i.e. Universal Waste lamps, Universal Waste batteries (Lithium), (Ni-Cad) Universal Waste pesticides.

A start date must be marked on the container. The start date must indicate the date the first item went into the container. This is the date the ten month accumulation period begins.(40 CFR 273.34; JBLE-Langley Hazardous Waste Management Plan).

Universal Waste - How long can I store my universal waste?

Federal regulation allows the installation one year to accumulate Universal Waste. At Langley AFB you are only allowed 10 months to accumulate your Universal Waste at the IAP because it takes the program managers two months to process the waste for disposal off the base. (40 CFR 273.35 (a);

Universal Waste – How do I dispose of lead-acid batteries or alkaline batteries that are not considered Universal Waste?

We recommend one for one purchase of the Lead acid battery. To dispose of small amount email 633.CES.HAZ@us.af.mil We recommend you contact Battery Outlet 867-8280 in Tabb/Yorktown or Battery Plus 874-7090 in Newport news.

Who shall I contact to have my waste picked up?

Email: 633.CES.HAZ@us.af.mil

Call 225-5808.

THE HAZARDOUS WASTE GOLDEN RULE !

DO NOT GUESS!

IF YOU ARE EVER IN DOUBT PLEASE DO NOT HESITATE TO CONTACT YOUR GROUP ENVIRONMENTAL MANAGER (GEM), UNIT ENVIRONMENTAL COORDINATOR (UEC) OR THE HAZARDOUS WASTE MANAGER

KENNETH DUNN AT 764-1133 OR kenneth.dunn.6@us.af.mil

UNIVERSAL WASTE DISPOSAL CHEAT SHEET

All Universal Waste Lamps will be collected and turned into the Central Accumulation Point (CAP). No lamps are allowed to be thrown into the trash as of 1 Aug 17. This includes all green tip and green writing lamps.

Please refer to the MEMORANDUM FOR UNIVERSAL WASTE dated 01 Aug 17 for proper management and disposal.

NOTE: Universal Waste can only be stored for 10 month regardless if container is filled.

JBLE-Langley Air Force Base

633 CES/CEIE



Hazardous Waste Frequently Asked Questions and Guide

Hazardous Waste Team is responsible for ensuring the day to day compliance of Federal, State, and Air Force regulations.

HAZARDOUS WASTE PROGRAM OVERVIEW

Responsible for:

Ensuring the day-to-day compliance of federal, state, local and Air Force regulations concerning hazardous waste generation and management; “cradle to grave”.



—Hazardous Waste (HW)



—Universal Waste (UW) Management



—Non-Regulated Waste Management



—Used Oil

Container Management—



—Central & Initial Accumulation Point management



—Training

Assessment & Inspection —



—Waste Reduction Efforts

—Review & Authorize Chemical & HazMat Usage



Hazwaste Mgmt Plan Revisions—



FREQUENTLY ASKED QUESTIONS

Evaporators -Who trains on use and cleaning of the evaporators?

1 MXG operates three scrubber water evaporators. One is managed by the AGE shop 4-2888, Corrosion Control, 4-5281, and MXS, 4-3346. Contact those offices for training. Contact the CAP at 225-5808 for cleaning of the evaporators.

Initial Accumulation Point (IAP) - I have a new waste, how do I set up an IAP?

Once a new waste stream has been identified the shop environmental coordinator initiates communication with the Squadron Unit Environmental Coordinator. One of those two will generate a letter requesting authorization to accumulate the waste. The letter indicates the location of the accumulation point, the waste accumulated there and the names and contact information for the primary and alternate accumulation managers. The letter, signed by the unit or section commander, must include coordination by the Group Environmental Manager, Wing Safety, (SEG) Bio-environmental Engineers, (SGPB), Civil Engineering Fire Department (CEF) and Civil Engineering Environmental Management Element (CEIE). (*JBLE-Langley Hazardous Waste Management Plan*).

IAP - Who can do the weekly inspection of the initial accumulation point?

Air Force guidance requires a weekly inspection of all IAPs. The IAP can be inspected by anyone who is trained and proficient in hazardous waste management. In most cases this will be the primary or alternate IAP manager.

IAP - How can I get containers or other supplies for my waste?

Containers for accumulating wastes are the responsibility of the unit to obtain through supply channels or by using the GPC. CES Environmental Management can provide vendor information for research and purchase.

IAP - Where do I get labels for my containers?

Labels for your containers can be obtained from your Unit Environmental Coordinator, Group Environmental Manager, or CES Environmental Management.

IAP - Who do I call when the containers are full?

When a container becomes full, federal regulation requires that the container be picked up within 3 days of becoming full. The user is required to email or call the pick up contractor as soon as the container becomes full at 633.CES.HAZ@us.af.mil; or 225-5808. Call the HW program manager if the container is not picked up in a timely manner (before end of second day). (*40 CFR 262.34(c)(2)*; *JBLE-Langley HW Management Plan, pg. 30, section 7.5 IAP Management*)

IAP - How often do I need IAP training?

Facility personnel identified as required to obtain training must take part in an annual review of the training program. For new personnel, training must be successfully completed prior to their assignment to a position involving the handling or management of hazardous waste. Until that time, untrained personnel must not perform any task involving hazardous waste management unless trained personnel supervise them. (*40 CFR 265.16(c)*; *JBLE-Langley HW Management Plan pg. 15, section 5.1*)

IAP - Who needs IAP training?

Hazardous waste management training is required for any personnel who handle hazardous waste at facilities or more specifically: work at a 90-day hazardous waste accumulation facility, manage a hazardous waste initial accumulation points, or conduct emergency response to a hazardous waste incident. You may also be required to obtain initial accumulation point training if you carry out any of the tasks or supervise anyone performing the following tasks:

- Decide which wastes are hazardous waste
- Add hazardous waste into accumulation containers at accumulation points;
- Remove hazardous waste from accumulation tanks or containers;

FREQUENTLY ASKED QUESTIONS CONT.

IAP - Who needs IAP training (Cont.)?

All personnel whose work involves HW, and their immediate supervisors, must successfully complete HW training appropriate to their job responsibilities - (*40 CFR 265.16*; *JBLE-Langley Hazardous Waste Management Plan, pg 15*).

Collection Area (CA) - What is it?

A CA is used to collect non-regulated waste, Universal Waste (UW), recyclable materials and other materials that are not Hazardous Waste. CA's are managed similar to IAP's but are not as strict. Inspections are done every 30 days instead of 7 days. CA's help provide a area to manage non-Hazardous Waste in one area instead of multiple.

Guidance –

Most Hazardous Waste related guidance can be found on Langley's e-DASH Hazardous Waste web page:

https://cs2.eis.af.mil/sites/10623/JBLE/_layouts/15/start.aspx#/SitePages/Home.aspx

There you will find information on: Aerosol cans, Sealants, Fluorescent Lamps, Floor Scrubber Water, Absorbent Pad drums

Used Oil - Who shall I call to get used oil pumped?

You should call 633 CES/CEIE at 764-1130.

Aerosol procedures—How do I manage Aerosol cans?

Place aerosols cans (paint, oil, solvents) into a closed 5, 20, or 30 gallon container with a green label as re-issue/reuse, or recycled. The container must remain close except when adding to the container. The shops are not required to make the reuse or recycle determination; this is the responsibility of the pick-up contractor.

Hazardous Materials - What is the difference between Hazardous Materials and Hazardous Waste?

A hazardous material is one that presents a physical or health hazard and requires an SDS. HAZMAT includes all items (including medical supply items, but excluding drugs in their finished form and pharmaceuticals in individually-issued items) covered under the EPCRA tracking requirement, the OSHA HAZCOM Standard, and all Class I and Class II ODS. It does not include munitions or HW.

Hazardous Waste is defined in 40 CFR 261.3. It is a solid waste that is not excluded from regulation and meets any of the following characteristics; exhibits a characteristic of ignitability, corrosivity, reactivity, or toxicity. The waste may also be on a list found in 40 CFR 261.

Where can I get a copy of the Hazardous Waste Management Plan?

The Langley Hazardous Waste Management Plan is located on the eDASH website: https://cs2.eis.af.mil/sites/10623/JBLE/_layouts/15/start.aspx#/SitePages/Home.aspx

ACC



Providing the world's best combat Air Forces – Delivering rapid, decisive, sustainable

633d Air Base Wing

Setting the Standard

In Air Supremacy



Aerial shot of LAFB

Protection of the natural resources under its stewardship is an integral part of the Air Force mission. This brochure highlights some of the important natural resources found on JBLE-Langley in the hope that it will foster general interest in and awareness of their values.

Did you know...

In 1969, the Air Force National Resources Activity was reassigned from the Office of the Inspector General (Assistant for Natural Resources) to the Office of the Director, Civil Engineering, HQ USAF. An Assistant for Natural Resources position was established for coordinating all Air Force natural resources programs, such as forestry, fish and wildlife conservation, air and water pollution, noise, soil management, solid wastes, pesticide problems, and bird/aircraft strike hazards (BASH). The following year, the Directorate of Civil Engineering was designated the OPR for all Air Force environmental protection matters. Previously, CE shared this responsibility with the Air Force Surgeon General. To increase the effectiveness of the pollution control programs and to upgrade the importance of environmental considerations, the late General Guy H. Goddard (Director of Civil Engineering, 1968-1971) established the Environmental Protection Group in July 1970. This was the forerunner of today's Environmental Division in the Office of The Civil Engineer.

JBLE-Langley

For more information, contact the Civil Engineering, Environmental Flight, Natural Resources Section at
(757) 764-1090

JBLE—Langley

633CES/CEIE



Natural Resources

In 1916 Langley Airfield was established as a government-sponsored aviation research and development center under an agreement between the Army, Navy, and National Aeronautics and Space Administration (NASA). JBLE-Langley is now the oldest continuously active air base in the United States.

In 1948, the United States Air Force was created and Langley Airfield became Langley Air Force Base. Since that time Langley has become part of . Joint Base Langley Eustis and home to the Air Combat Command Headquarters and the 1st Fighter Wing. About 12,000 active personnel are stationed at JBLE-Langley.

Langley AFB wishes to conserve the soil, water, landscapes, wetlands, wildlife, and outdoor recreational assets as essential elements of the Natural Resources Program. There are many ways to enjoy and appreciate the abundant amount of flora and fauna, including those listed in this brochure. Take time to learn about the many available avenues for enjoying the natural resources at Langley Air Force Base.

Shellbank Area

The Shellbank Area is the southwest area of Langley that also includes the B-52 Memorial. The memorial is located by Langley's front gate and is excellent place to watch local wildlife.

The B-52 debuted in 1965 and continues to be the backbone in bombing planes for the U.S. Air Force. The Shellbank area is a prime spot to observe the wildlife and the serene environment here on the base.



Native Flora

There are over 100 different species of floral known to occur at JBLE-Langley. The Trumpet flower, shown to the right, is one of the many colorful flowers that are scattered across the base.



Native Fauna

Native wildlife includes a wide variety of game and fur-bearing species, small mammals, raptors, waterfowl, songbirds, amphibians, reptiles, and fish. The Chesapeake Bay attracts a variety of wildlife to the Langley Area. Twelve species of protected, or candidate, birds, vertebrates, invertebrates and plants have been identified to potentially occur within a 50-mile radius of the base.

Osprey (right)
Heron (below)
Birds and airplanes share the air in and around Langley Air Force Base.



A Speckled Turtle (above) relaxes on a log in the reservoir at Bethel Park.

Indigenous Wildlife

- * Eagles
- * Deer
- * Cottontail
- * Blue Crabs
- * Scallops
- * Oysters
- * Fin Fishes
- * Herons
- * Blue Jays
- * Seagulls
- * Mallards/Ducks
- * Ospreys
- * Mockingbirds
- * Red-winged Black-birds

Bethel Park

Bethel Park is a 284-acre park that provides facilities for the public to enjoy. Base



improvements over the years have included upgrading piers, adding picnic shelters, recreational trails, and the FAMCAMP. Fishing, boating, and picnic areas with

stunning views of the reservoir are all entertainment opportunities that are available to the community. At the Dickman Recreational Area, located at Bethel Park, one can take a boat out to admire the native forest and shrub species while observing the indigenous wildlife. In 2004, an estimated 40,000 people utilized the Bethel Park area.



Boardwalk



A 1680 foot boardwalk was built in 1992 through one of Langley's wetland areas. Local Boy Scouts along with other volunteers donated time and energy to create the boardwalk to be a place

where people can convene to enjoy nature. The 60,000 square foot marsh that surrounds the boardwalk was created in 1987 to replace other wetlands that had been filled at other locations on Langley. The marsh is home to many variations of wildlife including the Blue Heron and the Fiddler Crab. The tidal waters rise twice a day to fill the area.

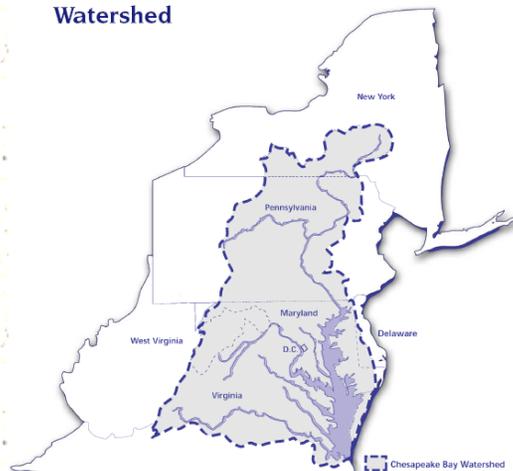


The Chesapeake Bay Estuary and Watershed

The Chesapeake Bay is the nation's premier estuary supporting a commercial seafood industry, shipping for commerce, natural habitat for wildlife, and recreational opportunities for residents and visitor's alike.

The watershed, comprising some 64,000 sq. mi.

The Chesapeake Bay Watershed



in six states, receives about half its water from the ocean and the remaining half from rainfall. Approximately 16 million people live within the Chesapeake Bay water shed.

The people living within the watershed, including personnel at JBLE-Langley, play an important role in this ecosystem and the actions we take have direct consequences on the Bay.

To Learn More About Chesapeake Bay

Chesapeake Bay Program
(800) YOUR BAY, www.chesapeakebay.net

Chesapeake Bay Gateways Network
(866) 229-9297, www.baygateways.net

Virginia Dept. Conservation & Recreation
(804) 786-1712, www.dcr.state.va.us

Natural Resources at JBLE-Langley

In 1916, Langley Airfield was established as a government-sponsored aviation research and development center under an agreement between the Army, Navy, and National Aeronautics and Space Administration (NASA). JBLE-Langley is now the oldest continuously active air base in the United States.

In 1948, the United States Air Force was created and Langley Airfield became Langley Air Force Base. The base is now home to HQ ACC and the 1st FW. About 12,000 active personnel are stationed at JBLE-Langley. NASA's Langley Research Center—the oldest NASA facility—is located next door.

Conservation of the natural resources under its stewardship is an integral part of the Air Force mission. The 1st Fighter Wing makes the maximum effort practicable, consistent with its mission, to conserve the soil, water, landscapes, wetlands, wildlife, and outdoor recreational assets as essential elements of its Natural Resources Program.

While there are many ways to access and enjoy the natural resources at JBLE-Langley, the purpose of this brochure is to highlight those resources near the newly-restored Nature Walk in the hope that it will foster general interest in and awareness of their values.

For more information concerning the natural resource assets or natural resources program at JBLE-Langley, please contact:

633d Civil Engineering Squadron (633 CES),
Environmental Management Flight (CEAN),
Natural Resources/Conservation Element
at (757) 764-3906

JBLE-Langley

633 CES/CEAN



Nature Walk & Trail Informational Brochure



The Langley Nature Walk

At 1680-ft , the Langley Nature Walk is the longest wooden structure on the base. Part of a larger nature trail system in the North Base Support Area, it provides base personnel, and the general public, an opportunity to access and enjoy a largely pristine natural area - largely undisturbed since colonization.

Originally constructed in 1992 using volunteer labor and \$30,000 of DoD Legacy Program funds to pay for the lumber, the walk is a place where people can convene to watch wildlife, enjoy nature, relax and take in the scenic views.



The Nature Walk was destroyed in 2003 - a casualty of the flooding wrought by Hurricane Isabel. In 2006, the Nature Walk was rebuilt, using contract labor, under the Wing's hurricane recovery program.

Today, the Nature Walk is back and users can enjoy scenic views, and observe the plants and wildlife in bottomland hardwoods (forest) and wetland (marsh) habitats as well as a constructed wetland.

The Langley Nature Trail



Complementing the Nature Walk is a short Nature Trail. The entrance to the Langley Nature Trail is located behind the Base Ed Center across from the entrance to the R/V

storage area. The Trail extends through bottomland hardwoods which form the transition between wetland areas and the higher elevations landward. Located at intervals along the Trail, interpretive signs illustrate the more common plants and animals who benefit from the habitat afforded by the trees.

Bottomland Hardwoods

The forested area around the Nature Walk and Trail is also called a bottomland with a distinct suite of hardwood trees such as oak, sweetgum, maple, and ash together with the minor hardwoods Black Cherry, Mulberry and Hackberry. These areas are typically found within the floodplain of rivers and creeks and flood periodically so that the soil is saturated for some part of the year.

These areas also filter pollution in storm water runoff, and prevent soil erosion. Bottomland habitat is rapidly disappearing nationwide - succumbing to the pressures of development. Protecting the remaining habitat is important.



Wildlife potentially visible from the Trail includes: Opossum, Grey Squirrel, Muskrat, Bobwhite, Raccoon, White-tailed Deer. Plant species visible along the trail include: Sassafras, Sumac and Poison Ivy.

Wetlands

Wetlands are combinations of land and water. The plants and animals living there are specially adapted to the twice daily changes of the tide. As you enter the Walk, the habitat transitions from Bottomland (forested area), to the high marsh zone (flooded by extremely high tides) to the low marsh zone (flooded by every high tide).



The dominant plant type in the low marsh zone is smooth cordgrass, whereas saltmeadow cordgrass, black needlerush, and saltgrass (marsh elder) prevail in the high marsh

zone. The high marsh is threatened by the weed *Phragmites australis*, but the Air Force has initiated a multi-year effort to control its spread.

Birds you may see from the Nature Walk include: colonial water birds (terns and herons), waterfowl (ducks), and raptors (osprey and bald eagles).

The tidal wetlands visible from the Walk also provide wintering homes for migratory birds and other wildlife, including non-migratory birds. Fish and shell fish (including the Blue Crab), use the wetlands as spawning grounds.

Besides habitat, wetlands provide other valuable services to the base including: absorbing excess water, protect uplands from storm damage of wind and waves, filter storm water and mix oxygen into the water.



Economically, wetlands provide opportunities for fishing, crabbing and hunting. Other recreational activities include hiking, bird watching, photography and wildlife study.

Constructed Wetland

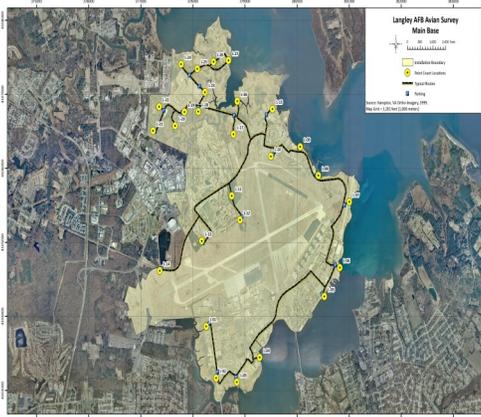
Just inside the north entrance to the Nature Walk, if you look to your left - towards NASA and the MSA, is a constructed wetland. This 60,000 sq. ft. rectangular marsh was carved out of the surrounding wooded area in 1987 to compensate for the impacts earlier construction projects had on wetlands elsewhere on the base.

This wetland is a shining example of the Air Force and 1st Fighter Wing commitment to natural resource conservation management.



AIR FORCE RESOURCE MANAGEMENT

The United States Air Force has the responsibility of managing more than nine million acres of valuable public lands. To ensure success, the Air Force has developed a network of dedicated professionals who work in coordination with local, regional and national authorities. Their challenge is to find a balance in requirements for military mission, security and environmental habitat protection. This effort requires the cooperation and support of the Air Force and its neighbors. The



primary goal is to guarantee the quality of public lands under Air Force stewardship.

Conservation programs on Air Force bases include fish and wild life conservation, forestry, agricultural land lease, habitat management and outdoor recreation. Air Force Resource Managers and nearby communities, working together, have made great strides in fostering environmental awareness through education and cooperation.

The Air force supports partnerships with many resource groups; Neotropical Migratory Bird Conservation, Ducks Unlimited, North American Waterfowl Management Plan, Wetlands Protection and Enhancement and the National Watchable Wildlife program. You are invited to visit Air Force lands. Come see how we are doing with our part of America.

Natural Resources at Langley AFB

JBLE-Langley is the oldest continuously active air base in the United States. In 1916 Langley Airfield was established as a government-sponsored aviation research and development center under an agreement between the Army, Navy, and National Aeronautics and Space Administration (NASA).

In 1948, the United States Air Force was created and Langley Airfield became Langley Air Force Base. The base is now home to HQ ACC and the 1st FW. About 12,000 active personnel are stationed at Langley AFB. NASA's Langley Research Center—the oldest NASA facility—is located next door.

Conservation of the natural resources under its stewardship is an integral part of the Air Force mission. The 633 Air Base Wing makes the maximum effort practicable, consistent with its mission, to conserve the soil, water, landscapes, wetlands, wildlife, and outdoor recreational assets as essential elements of its Natural Resources Program.

While there are many ways to access and enjoy the natural resources at JBLE-Langley, the purpose of this brochure is to highlight and document observed bird species.

For more information concerning the natural resource assets or natural resources program at Langley Air Force Base, please contact:

633d Civil Engineering Squadron (633 CES),
Environmental Management Flight (CEIE),
Natural Resources
at (757) 764-1090

JBLE-Langley Bird Count

633 CES/CEIE



JBLE-Langley Bird Count

Date: _____

Avifauna Species	# Observed	Total
Bittern, American		
Bluebird		
Bluejay		
Bobolink		
Brant		
Bufflehead		
Bunting, Snow		
Canvasback		
Catbird		
Chat		
Coot, American		
Cormorant, Double-crested		
Creepers, Brown		
Crow, American		
Crow, Fish		
Dove, Mourning		
Dove, Pigeon		
Dove, Rock		
Dowitcher, Long-billed		
Duck, Black		
Duck, Long-tailed		
Dunlin		
Eagle, Bald		
Egret, Cattle		
Egret, Great		
Egret, Snowy		
Finch, House		
Gadwall		
Gnatcatcher, Blue-gray		
Gnatcatcher, Bluegrey		
Goldeneye, Common		
Goldfinch		
Goose, Snow		

Avifauna Species	# Observed	Total
Grackle, Common		
Grebe, Horned		
Grebe, Pied-billed		
Grebe, Red-necked		
Gull, Bonaparte's		
Gull, Great Black-backed		
Gull, Herring		
Gull, Laughing		
Gull, Ring-billed		
Harrier, Northern		
Hawk, Coopers		
Hawk, Red-shouldered		
Hawk, Red-tailed		
Hawk, Sharp-shinned		
Heron, Great Blue		
Hummingbird, species		
Ibis, Glossy		
Jay, Blue		
Junco		
Kestrel		
Killdeer		
Kingbird, Eastern		
Kinglet, Golden-crowned		
Kinglet, Ruby-crowned		
Lark, Horned		
Longspur, Lapland		
Loon, Red-throated		
Mallard		
Martin, Purple		
Merganser, Common		
Merganser, Hooded		
Merganser, Red-breasted		
Merlin		
Mockingbird		
Night-heron, Black-crowned		
Nuthatch, Red Breasted		
Oriole, Northern		
Oriole, Orchard		
Osprey		

JBLE-Langley Significant Aspects 2017

ASPECT	IMPACT
Hazardous Waste	Human Health, Fines, Public Perception
Water Quality	Degradation of waterways and aquatic ecosystems
Natural Resources	Land use, Destruction or degradation of natural resources
Energy	Cost, Emissions

JBLE-Langley EMS Policy

The 633d Air Base Wing sets the standard in services and support for Team JBLE-Langley. Our ability to conduct our mission requires daily operations in the land, sea and air environments. Protecting these environments is an integral part of accomplishing this mission.

We are committed to sustaining Team Langley missions through a C.L.E.A.N. approach:

- ☛ Comply with requirements– We will comply with all environmental regulations while reducing compliance cost and liabilities
- ☛ Limit impact– We will prevent pollution and minimize waste while cleaning up past sites of environmental concern and making efforts to achieve Chesapeake Bay conservation
- ☛ Execute Plans– We will identify and attain energy, environment, safety and occupational health objectives and targets through planning that is Specific, Measurable, Achievable, Realistic and Timely (SMART)
- ☛ Achieve Improvements– We will continuously improve programs and processes through the use of effective management and planning
- ☛ Notify– We will communicate our environmental commitments and performance to all levels of our organizations and local community

It is the responsibility of all military personnel, civilian employees and support contractors to perform their duties in a manner that prevents pollution, protects the environment and conserves natural resources.

By making these commitments, we will ensure the continual improvement of our environmental systems and the overall accomplishment of our core mission

JBLE-Langley Air Force Base

633 CES/CEIE



ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

Contact: Kenneth Dunn
EMS Coordinator 764-1133,
kenneth.dunn.6@us.af.mil

EMS Manual located:

<https://cs1.eis.af.mil/sites/edash-ins1/jble/SitePages/Home.aspx>

WHAT IS EMS?

ENVIRONMENTAL

- Weaves existing environmental programs and mission management processes into a coherent system
- Enables an installation to control the environmental impact of its activities, products, and services
- Uses the Plan-Do-Check-Act methodology
- Provides a systematic framework for environmental mission sustainment

MANAGEMENT

- Ensures commitment by top leaders
- Improves mission performance
- Evaluates all aspects of environmental programs

SYSTEM

- Requires formal infrastructure
- Integrates distinct programs
- Strives for continual improvement through self assessment

What an EMS can do

- Reduce operational impact, better environmental and overall organizational performance and mission sustainability
- An EMS provides an opportunity to assess how your unit manages environmental risks and to find better and more cost effective solutions
- It unites existing environmental programs in a single framework

WHY HAVE AN EMS?

EMS is mandated at the Executive, DoD and AF levels

-2015, EO 13693, *Planning for Federal Sustainability in the Next Decade.* The main focus of this EO is to reduce greenhouse gas emissions. Utilizing an EMS to accomplish the goals of EO 13693 is supported.

- DoDI 4715.17, *Environmental Management System;* Establishes policy, assigns responsibilities, and prescribes procedures for achieving conformance with Environmental Management Systems (EMS).

-AFI 32-7001, *Environmental Quality Program;* establishes the framework for an Environmental Management System (EMS).

THE EMS CYCLE

Begins with formulation of an EMS Policy Statement that includes commitments to continual improvement, pollution prevention and environmental compliance

Based on ISO 14001, 2015 framework

PLAN

Planning

- Environmental Aspects & Impacts
- Legal & Other Requirements
- Objectives & Targets
- Environmental Management Plans

DO

Implementation & Operation

- Structure & Responsibility
- Training, Awareness & Competence
- EMS Documentation
- Operational Control
- Emergency Preparedness & Response

CHECK

Checking & Corrective Action

- Monitoring & Measurement
- Nonconformance, Corrective & Preventive Action

ACT

- Management Review

The Impact of Car Washing on Our Rivers and Bay...

When we wash the grime off our cars, the runoff flows down the street and into the storm drain. This runoff carries soap, dirt, oil, and grease. Once the runoff gets into the storm drains, it directly discharges without treatment into the nearest lake, river, harbor, or bay.



...and Why It Matters

Polluted stormwater can harm fish, wildlife, plants, and it can even contaminate drinking water.

The U. S. EPA estimates that at least 50% of our nation's water pollution is caused by polluted stormwater runoff. You can help.

Use the tips provided in this brochure to help ensure that our waterways remain clean.

The Law

Joint Base Langley Eustis (JBLE) - Langley is required to obtain a stormwater permit under the Virginia Pollutant Discharge Elimination System, or VPDES. The goal of this permit is to reduce pollutants found in storm water runoff from urbanized areas to the "maximum extent practicable."

JBLE-Langley has prepared this educational brochure to meet a requirement of their VPDES permit administered by the Virginia Department of Environmental Quality (VDEQ).

Contact Information

For more information, contact the JBLE-Langley Water Program Manager at 757-764-1141.



Outdoor Vehicle Washing



Mobile Car Washes: Legal Requirements

Discharges from mobile car washes to the storm drain system are not allowed at JBLE-Langley. There are several reasons this is discouraged.

- Excessive use of water
- Excessive use of detergents
- Flows into storm drains
- Runoff carries other pollutants into drain

VDEQ requires mobile car washers to obtain a permit to avoid a discharge to state waters. Therefore, JBLE-Langley prohibits the use of mobile car wash services.



Car Washing at Home

It is important to remember when washing personal vehicles at home, there are several easy ways to help reduce stormwater pollution while you work:

- If possible, use a commercial car wash.
- Handwashing a car uses an average of 116 gallons of water, where commercial washes use 60% less.
- Wash your car on gravel, grass, or other permeable surfaces. These surfaces serve as a filter or a sponge, trapping pollutants from the wash water.
- Use hoses with nozzles that automatically turn off when left unattended.
- Use only biodegradable soaps.

Using these simple rules at home and helps keep a clean and healthy living environment.



swim



drink



fish

The Best Option

Outdoor car washing has the potential to send high amounts of nutrients, metals and oils down the street and into the storm drain.

Always consider using a commercial car wash as your first alternative.

Commercial car washes have recycling systems or discharge to the sanitary sewer system, which goes to a treatment plant.

Trading a few dollars for a healthy stormwater system is one deal that everyone can live with.



Air Force Shop-Level Hazardous
Material Management Process Guide



HAZMAT₂

made

Easy

(as possible)

The complete simple-to-follow guide when ordering,
using, storing, and disposing of hazardous materials.

December 2016

3rd Edition

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1. Introduction

1.1 Background



The tracking of hazardous materials (hazmats) is not a new concept. Cavemen are reported to have instituted the first tracking system using crude and often barbaric methods to enforce compliance. While many believe that little has changed over the years, these first rudimentary attempts at tracking hazmats have evolved to today's more sophisticated methods of managing hazmats. The challenge to tracking hazmats throughout the ages really always boiled down to one thing—everybody buys and uses them. From the war paint used by ancient armies to the chrome paint used on nuclear missiles, great nations have struggled with managing the common hazmat and consequently many disappeared into the fog of history as a result of their failures. The AF also struggled with managing hazmats the first 40 years of its existence before a significant breakthrough was made with the realization that a systematic approach was needed to bring together installation-wide organizations who buy, use and dispose of hazmats. Under a new innovative approach, base-wide organizations were brought together under the Hazardous Materials Management Process (HMMP) and a new team was created to work hazmat issues. This revolutionary new hazmat managing system became policy in Air Force Instruction (AFI) 32-7086, *Hazardous Materials Management*, effectively taking hazmat management out of the dark ages and into the 21st century.

The purpose of this guide is not to make everyone a hazmat genius, but rather give you, our customer, a simple and easy to follow reference when it comes time to order, use, and ultimately dispose of any hazmats. We all need to do this right, as some scientists now believe that the extinction of the dinosaur is linked to the caveman's ultimate inability to manage their hazmats... and maybe that crazy asteroid theory too.

1.2 The HMMP Team

If playing on a team harkens back unpleasant childhood memories of being the last one picked when forming neighborhood football teams, don't worry—anybody willing to contribute is welcome!

Nobody is turned away and everyone adds value—the most successful HMMP teams are also the most cross-functional, including dedicated Civil Engineering Environmental Experts, Bioenvironmental Engineers, Safety Representatives, Fire Emergency Service Inspectors, Supply functionals, Unit Environmental Coordinators (UECs), and organizations using hazmats. HMMP teams can be found at the air staff and at base level across the Air Force, wherever a hazmat is used. The teams are tasked with implementing AFI 32-7086.



1.3 The Enterprise Environmental, Safety, and Occupational Health Management Information System (EESOH-MIS)

All great management system endeavors require the right supporting tools that usually involves a comprehensive IT solution. For the HMMP teams, that tool is the web-based EESOH-MIS on the AF Portal and it is the only approved Air Force hazmat and waste tracking system. The tool can track and help manage all the hazmat and subsequent waste bought, stored, used, and disposed of at an AF base. Because it is "enterprise" and the data

is all stored in one place, data from across the AF can be rolled up without having to ask each installation through a datacall. Truly an enterprise system, it can be accessed by all levels—shop users, HMMP Team members, supply points, even the highest reaches in the AF. Everybody plays a role to properly manage their hazmats, and the system replaces inefficient old paper and pencil methods. One of the basic building blocks in EESOH-MIS is the shop—it all starts with the need for a hazmat in a shop process.

Do I need access to EESOH-MIS?

If a hazmat is used in a work center, the shop supervisor will at a minimum need EESOH-MIS access to certify shop authorization requests, order material online, track use, print hazmat inventories or Safety Data Sheets (SDSs). Other shop personnel can also have access as needed.

How do I get access?

You must have a Common Access Card (CAC) and access to the Air Force Portal. You will need to complete a DD Form 2875, *System Authorization Access Request (SAAR)*, and submit it to your installation EESOH-MIS SAAR POC.

Where is Help?

1. Information about EESOH-MIS is located at www.eesoh-mis.com.
2. The EESOH-MIS Help Desk can be reached at 1 (866) 488-4069 or helpdesk.eesoh-mis@caci.com. Anyone can call the Help Desk with an EESOH-MIS question. Note: contact your SAAR POC to reactivate a user account.
3. There are Quick Reference Guides posted on the EESOH-MIS eDASH page to walk you through the things you use frequently at: <https://cs1.eis.af.mil/sites/edash/Web%20Part%20Pages%20%20Program%20Pages/Environmental/Hazardous%20Materials.aspx> and then select the appropriate topic on the right side list.



1.4 Hazmat Tracking Activities (HTAs)

All kinds of hazmats enter a base from different sources destined for numerous users—the trick is tracking all that without affecting the mission or ops tempo. To get that done, hazmat gate keepers were created—HTAs. The HTA (previously known as a Hazmart) acts as the “door” for each source of supply through which a hazmat is allowed onto an installation. There are many different sources of supply and include any method that can be used to acquire or procure hazmat, such as:

- Enterprise Solution Supply (ESS/SBSS)
- Civil Engineering Material Acquisition System (CEMAS)
- Defense Medical Logistics Standard Support (DMLSS)
- Government Purchase Card (GPC) or State Purchase Card (SPC)
- Form 9 or other contracting mediums
- Other procurement sources

Each organization (EESOH-MIS Shop) requiring hazmat is assigned an HTA to track all usage regardless of how they are purchased or obtained, even if free or shared. By tracking hazmat, the entire environmental, safety and occupational health (ESOH) team on the HMMP can help ensure shops are properly prepared and equipped to deal with its usage.

When properly maintained and updated, EESOH-MIS provides the Air Force reliable data for federal, state, local government, and foreign country regulators on hazmat usage and storage on base. The reports allow neighboring communities to know what is kept in their "backyard", and this information is used by emergency responders in the event of fire or natural disaster.



EESOH-MIS can also quantify hazmat usage in a particular process or on a particular weapon system. This information is useful to systems and depot engineers when eliminating the more hazardous materials in favor of less or even non-hazardous materials. These opportunities to reduce, replace, consolidate or share hazmat stocks also avoid expired shelf-life and hazardous waste costs. All these activities work only if the data in EESOH-MIS is reliable. The shops play a vital role with this and this guide shows shop personnel the importance of their actions in this, and other, tasks.

1.5 Resources and Policy

Establishing a complex tracking and management system involves a concerted effort by all levels of an organization. Thanks to the wonders of automation, we gathered all the important stuff and information into a "one stop shop". That spot is eDASH, a Sharepoint site maintained by the Air Force Civil Engineer Center's (AFCEC) Environmental Management Directorate. You can access the Hazmat Page of eDASH at: <https://cs1.eis.af.mil/sites/edash/Web%20Part%20Pages%20%20Program%20Pages/Environmental/Hazardous%20Materials.aspx>

On eDASH you can access documents mentioned in this guide, view a calendar of training opportunities, and use the discussion board to ask questions. If you have trouble accessing eDASH, talk to your HMMP Team for help.

Special section just
for Shop-Level
Hazmat Management!



The screenshot shows the eDASH website interface. The main content area is titled "HAZARDOUS MATERIAL PROGRAM PAGE" and "SHOP-LEVEL HAZARDOUS MATERIALS MANAGEMENT HELP". It lists several documents and training sessions, including "Hazmats Made Easy V3", "Shop-Level Hazardous Materials Management Training", and "Hazardous Materials Management Training Requirements". There is also a section for "HAZMAT Recorded Training Sessions" with a list of links to various training materials. The right sidebar contains navigation icons for "Panel", "Plans and Permits", and "EAP Library".

Figure 1 - eDash HM Page Showing Shop-Level Hazmat Section Access

There is a long list of policy documents that apply to managing hazmat and we have read them all for you and wrote this guide. But if you just have to check them out for yourself, we posted them on the eDASH hazmat page. This guide is all about you, so we made it super easy and listed the most important ones below in Table 1, Hazmat Related Policy Reference.



Level	Citation	Regulatory Title	Publication Date	Why the Shop Cares
AF	AFI 32-7086	Hazardous Material Management	4 Feb 2015	Primary policy for Hazardous Material Management
AF	AFJMAN 23-209	Storage and Handling of Hazardous Materials	13-Jan-1999	Primary policy for storage of Hazardous Materials
AF	AFJMAN 23-227	Storage and Handling of Liquefied and Gaseous Compressed Gasses and Their Full and Empty Cylinders	16 Jun 2000	Guidance on storing compressed gas cylinders
AF	AFI 90-821	Hazard Communication (HAZCOM) Program	20 Jan 2014	AF Hazard Communication Standard policy.
AF	AFI 32-7047	Environmental Compliance, Release, and Inspection Reporting	22 Jan 2015	Defines the roles of applicable organizations within the AF as they pertain to environmental compliance, release, and inspection reporting.
AF	AFI 32-7001	Environmental Management	16 Apr 2015	Establishes an Environmental Management System (EMS) as the framework for continual program and process improvement through clearly defined environmental roles and responsibilities, planning requirements, budgeting, effective implementation and operation, and management review
Federal	FED-STD 313E	Federal Standard, Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities	1 Jul 2014	This policy provides hazardous material guidance for contractors doing business with the government.
Federal	E.O. 13693	Planning for Federal Sustainability in the Next Decade	19 Mar 15	Requires all federal agencies to conserve and reduce use of material resources and be good neighbors to the citizens they serve and in the communities where they are located and operate.

Table 1- Hazmat Related Policy Reference

2. How Can I tell a Hazardous Material?

If today is the first time you are ordering or purchasing a particular item, this question should invariably cross your mind. This is perhaps the most fundamental question in the whole HMMP, and the answer determines whether you will need HMMP approval before you procure the item. It does not matter whether you are procuring the item through the supply system, GPC, or other contracting vehicle—if the item is a hazmat, it must first be approved by the HMMP. Do not buy anything you suspect may be a hazmat until you are sure. And once you decide you have a hazmat then this guide applies.

EXEMPT HAZMATS must be unanimously approved by the ESOH team and posted to EESOH-MIS

2.1 Hazmat Definition

Several agencies define hazmat for their particular purposes such as for storing, transportation, environmental, and occupational health.

For the purposes of typical hazmat management in the shop, we use AFI 32-7086 which defines hazmat as all items that are:

- Covered under EPCRA¹ or other applicable host nation, federal, state, or local tracking or reporting requirements;
- Covered under the OSHA HAZCOM Standard² (29 CFR 1910.1200) or the OSHA Occupational Exposure to Hazardous Chemicals in Laboratories Standard (29 CFR 1910.1450);
- and all Class I or Class II ODS
- any additional requirements identified in your country specific FGS
- does **not** include Munitions; pharmaceuticals managed by an installation pharmacy or formulary; radioactive materials; and Hazardous Waste.

And once you decide you have a hazmat then this guide applies

Before we go into what you should consider when determining whether something is a hazmat or not, it makes more sense to see if it can be exempted from HMMP approval in the first place.

2.2 Are There Exemptions?

Absolutely! EESOH-MIS maintains a list of exempted items. Exempted materials require NO authorization and NO tracking and since they are not tracked, EESOH-MIS does not enforce limited quantities—check with your HMMP team for more details on exemptions at your base! So if you can use an exempt material, you just eliminated all the hazmat red tape. But first a few words of caution. There are some items and products that we all use day-to-day which may contain a hazmat but require no tracking due to



¹ EPCRA is the Emergency Planning Community Right-to-Know Act

² The OSHA Hazard Communication Standard (29 CFR, 1910.1200 (c))² defines a hazmat as: “hazardous chemical means any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified”.

the nature of the chemicals and their intended use. It is also very important to know that how you use a hazmat also determines whether we must follow the HMMP process or not.

The most common reason for exempting a hazmat is under the OSHA allowed exemption for Consumer Commodities³ and when the expected use across the installation meets the exemption definition:

- 1) You must be able to buy the product as a typical consumer would (i.e., retail store or consumer container sizes)
- 2) The product must be used as the manufacturer intended a consumer to use it (i.e., following the use directions on the product), and
- 3) The duration and frequency of the use is the same as a typical consumer.



In other words, ordering bulk quantities of an exempt household cleaner to degrease parts and circumvent the process is not acceptable. If your degreasing process requires a household cleaner, then this use falls not only under the federally-mandated hazard communication program, but also requires HMMP approval prior to use. Not all consumer commodities will make it to the exempt list—the ESOH team will make a final decision based on all regulatory ESOH concerns. Keep in mind that all exemptions are local only—just because it is exempt at one base, does not mean it is exempt everywhere. Sorry, not our rules but OSHA's (you know, the men in black who protect your health and safety and purportedly Earth from aliens, and they don't take kindly to breaking the rules!)

However, when using a normal household cleaner to clean around the shop, i.e., counter tops, desks, windows, lavatories, etc, as you would in your home, the exemption may apply. Note that housekeeping staff or janitorial services are not typically covered by this exemption, as they are exposed to the product for much longer periods of time. It is the user's responsibility to make sure these exempted hazmats are not misused. If abuse of an exempted hazmat is prevalent, we'll have no choice but to require HMMP approval for each use. Let's all work together and keep this simple!

Your ESOH team reviews each item before putting it on the Exempt List and the decision to exempt an item must be unanimous. Always check the list before bypassing the hazmat process. If it is not on the list and you think it should be, ask the HMMP to review it for placement on the Exempt List. You are encouraged to use items off this list first. If you find a product listed on the Exempt List, no further action is required, and you are free to procure and use the product responsibly without HTA tracking. This does not relieve the user from applicable requirements like ensuring proper storage, labeling, and disposing of the product.

Typical items on an exempt list include things like shoe polish, car wax, hand soaps, Windex®, markers, toners, etc.

³ 29 CFR 1910.1200(b)(6)(ix) Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 *et seq.*) and Federal Hazardous Substances Act (15 U.S.C. 1261 *et seq.*) respectively, where the employer can show that it is used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended;

2.3 So it's not exempt... Nuts!

If it's not exempt, then we need to figure out if it's a hazmat that needs HMMP approval prior to use. Sometimes there is no sure-fire, easy way to figure out what's a hazmat and what's not, and there are many requirements that seem to conflict or confuse the issue of what we need to track. To simplify the hazmat determination and build in some common sense, use the following questions to help you find the answer to whether you are buying a hazmat or not:

- ☠ *Does the item have a Safety Data Sheet (SDS)⁴?*
- ☠ *Are there health warnings printed on the item or in use directions?*
- ☠ *Does the item generate hazardous waste when disposed or consumed?*
- ☠ *Does the item contain any radioactive material?*
- ☠ *Is the item packaged in an aerosol can?*
- ☠ *If it is a bulk item, do similar items packaged individually carry the above concerns?*
- ☠ *Do you have even the slightest doubt about the hazardous nature of the product?*

If you answer yes to any of the questions above, and you really need that material, then be sure to contact an HMMP team representative or begin with the authorization process (Chapter 4).

3. Ozone Depleting Substances (ODS)⁵

These items are important, and they must be managed as a hazmat. ODSs are used in many of our weapon system fire suppression systems and you cannot buy those kind of ODSs anymore. When it became clear that the worst ODSs were not going to be manufactured anymore, the AF decided to stock-pile those ODSs to meet the expected life of affected weapons systems and stored them in one really really big Defense Logistics Agency (DLA) warehouse. So, we won't bore you on all the details here but if your job involves the use of ODSs you need to read section 3.6.1.1 in AFI 32-7086. Know too that buying and using these ODSs requires a special approval process and there are also recovery and turn-in requirements for most unwanted ODSs.

4. The Authorization Process

You've made it this far in the guide, so you must need an item that may be hazardous to perform a shop process. The next step is securing an authorization from the HMMP team to order or purchase the product. There's good news and bad news here. The bad news is that you have to complete an authorization request via EESOH-MIS. The good news is that once you do this, you usually never have to do it again for that hazmat in a specific process. The initial request establishes your requirement for a hazmat to meet mission objectives. Your authorization will route in EESOH-MIS to reviewers for approval. Once approved,

⁴ "Safety Data Sheet" replaces the term "Material Safety Data Sheet" in the Hazard Communication Standard (HAZCOM), 29 CFR 1910.1200 and is defined as "...written or printed material concerning a hazardous chemical that is prepared in accordance with paragraph (g)" of the standard.

⁵ <http://www.epa.gov/ozone/strathome.html> Link to EPA's site on Ozone Layer Protection.

recurring orders of the same material for the same process will only require placing an order through your HTA or in EESOH-MIS.

Sound too good to be true? You're right - it is - there is a catch! Your authorization is only good until you change something important with your authorization. If your process changes, you will be required to *Propose a Change* to the current authorization in EESOH-MIS, which will reroute the authorization for review. If you need to use the same material in a different process, you'll need to submit a new process authorization. This is important in the Logistics arena where multiple processes may use the same hazmat. Each process requires a separate authorization.

You might have picked up on the two different authorizations involved in the final approval—hazmats are authorized by process, so both the process and the hazmat must be reviewed and authorized. The process is the driver for using a hazmat, and as such, is the heart of the hazmat approval process. Simply put, you can not have a hazmat without a valid process to use it in first.

Bottom Line: If you are using a non-exempt Hazardous Material in your shop, you MUST have an approved Authorization in EESOH-MIS - FIRST

Here is the typical flow of an authorization request:

Requestor	the requestor can be anyone in your shop with access to EESOH-MIS
Certifying Official	this person MUST be the shop supervisor. This cannot be delegated to anyone else other than an acting supervisor. The supervisor can also be the requestor.
The approvers/reviewers can be in any order set by your installation EESOH-MIS configuration	
Environmental	usually your HMMP Team lead
Occupational Health	otherwise known as the Bioenvironmental Engineers (BEEs)
Safety	typically ground safety

Table 2 – Typical Process Authorization Routing

4.1 Material Stock Numbers

Authorizations for hazmat are against a "Material Stock Number" (MSN). This is a term unique to EESOH-MIS and means the material either has a bonafide National Stock Number (NSN) or a Stewarded Local Purchase Number (SLPN). These numbers are found in EESOH-MIS and you must know the MSN for the hazmat in order to complete your process authorization. If you do not know the number, then call your servicing HTA and they can help you find a good number.

Unlike NSNs, where multiple similar products are associated to the same number, SLPNs are unique to a single product in a particular unit of issue. They are denoted by having "PHM" after the Federal Stock Class (the first four numbers). For example, 7930PHM00012968 is the number for a 5 gallon can of 1056 aircraft cleaner II from the Acuity Specialty Products Group DBA ZEP Mfg Co. Note that this same number is used at all AF bases that local purchase this material in a 5 gallon can by Acuity Specialty Products Group DBA ZEP Mfg Co.

4.2 Process Authorizations

A "Process Authorization" establishes your need to perform a task that uses hazmat(s). An approved process authorization is the focal point for obtaining "Material Authorizations" and serves as your "permission slip" to request hazmats needed to perform that process. The first step to securing a process authorization is to define the process or what you will be doing. Once defined, you can add all the materials associated to that process. Start by identifying all the process components and isolate the parts that use a hazmat. Since PPE, controls, waste, air emissions, and environmental aspects⁶ are attributes tied to the process and not to the material, it is important to ensure the process is isolated at a low enough level. If items such as PPE, hazards (abrading, heating, pressurizing), handling methods (applying paint with rollers versus HVLP⁷ guns), vary within a process, then the process **MUST** be further broken down into multiple processes. This step needs to be repeated until the process attributes target the specific materials you need.

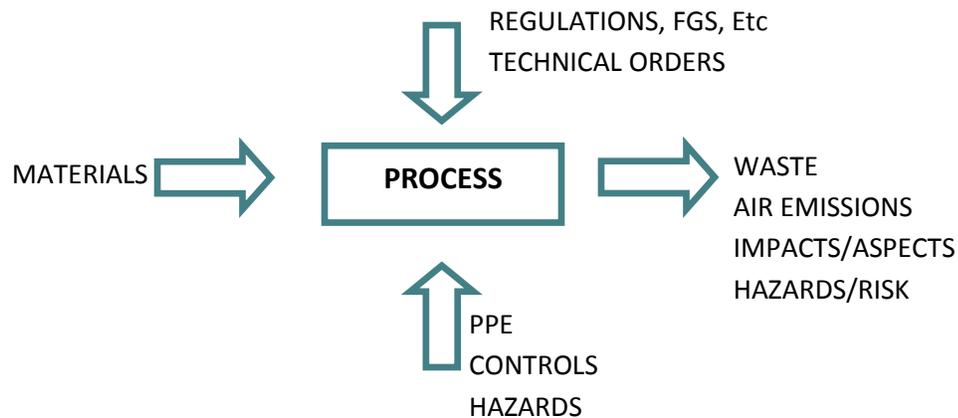


Figure 2 - Process Centric Flow Chart

Let's consider a process called "Paint the Plane." As the name implies, this process covers a lot of ground and can be broken down into many smaller processes. [Table 3](#) on the next page is just an example of how the "Paint the Plane" process can be further split into better processes. Establishing just one "Paint the Plane" type process is too high a level due to the different hazards, potential PPE needs, medical surveillance requirements, waste, air emissions, etc.



⁶ An environmental aspect is defined as an element of a facilities activities, products, or services that can or does interact with the environment. These interactions and their effects may be continuous in nature, periodic, or associated only with events, such as emergencies.

⁷ HVLP stands for High Volume Low Pressure

Process	How	Materials	PPE	Waste Generated
Plastic Bead Blasting Paint from Aircraft	Bead Blasting equipment	Plastic bead blasting material	Full-faced airline respirator, Tyvek coveralls, PVC gloves	Waste bead media Air emissions
Stripping Paint from Acft	By hand	Paint stripper	PVC gloves, Tyvek coveralls, goggles, faceshield	Waste paint stripper Air emissions
Hand cleaning acft surface for paint preparation	By hand	MEK, Alcohol	PVC gloves, Tyvek coveralls, goggles, face shield	Solvent contaminated rags
Corrosion protection coating acft surfaces	By hand Pump sprayer	Alodine	PVC gloves, Tyvek coveralls, goggles, face shield	Alodine waste (possibly to waste treatment plant)
Sanding acft surfaces for paint preparation	By hand Electric sanders		Full-faced airline respirator, Tyvek coveralls, PVC gloves	Air emissions Waste sand with heavy metal (Chromium)
Masking acft surfaces prior to Painting Ops	By hand		None	Waste tape and paper
Mixing paints for acft painting	Pouring Mixing machines	Polyurethane paint Paint thinners	PVC gloves, Tyvek coveralls, goggles, face shield	
Priming acft with HVLP gun	HVLP guns		Full-faced airline respirator, Tyvek coveralls, PVC gloves	Waste filters
Painting acft with HVLP gun	HVLP guns	Polyurethane paint	Full-faced airline respirator, Tyvek coveralls, PVC gloves	Waste filters
Cleaning paint guns	By hand Gun cleaning machines	MEK	PVC gloves, Tyvek coveralls, goggles, face shield	

Table 3 – “Paint the Plane” Sample Processes

Processes need to be scoped correctly. Take “riveting” for example, which is far too generic for a process name. “Removing and replacing B-52 rivets” is a better choice and better defines the scope of the process. On the other hand, establishing five separate processes in the Aerospace Ground Equipment (AGE) shop to describe the application of oils, greases, and lubricants would be excessive since the PPE, waste, and other items linked to the process would be very similar.

Adequately describing the process ensures that material is issued to the correct process, thus ensuring environmental impacts and worker health and safety protections are adequately covered while providing better data.

4.3 Local Process Name

The first field completed in EESOH-MIS to request a Process Authorization is the **Local Process Name**. This is the “title” of the process and should be clearly understandable to the shop workers. As a rule of thumb, local process names should include the following:

- What are you doing (the activity being performed)?
- What are you doing it to (the end item)?
- How are you doing it (how is process being performed)?
- Where are you doing it (if the shop spans more than one building)?

The most important thing with the Local Process Name is that it makes sense to the shop personnel so they will readily know which materials go to a defined process. This will also help you scope your process appropriately and ensure it is created at the right level.

Avoid using broad process names such as "Shop Maintenance" and "Equipment Maintenance". These broad processes can usually be broken down into multiple processes with different attributes. Good Process Name examples:

- Painting T-38 aircraft with HVLP Gun in Hangar 48
- Degreasing aircraft parts in cold solvent tank
- Surface paint removal with plastic bead blast media
- Cleaning aircraft surface with power washer in large wash rack
- Add/Replace fluids to AGE
- Aircraft engine truss coating and preservation using a standard gun

4.4 Mother May I?

An Authorization Request begins with the shop that will use the material. Anyone with EESOH-MIS shop access can initiate an Authorization Request, however, the **Supervisor or Acting Supervisor must certify the request before it flows to the HMMP team**. The single biggest reason for delays on processing authorization requests is that they are not filled out completely. To speed your request, provide as much information as you can on the request, particularly those blocks that require a description. Step by Step instructions on how to fill out an Authorization Request with associated hazmats in EESOH-MIS are in Attachment 2.

Once the supervisor certifies an authorization request, EESOH-MIS will route the request to the E, S, and OH reviewers (these are mandatory reviewers). Some bases may also configure EESOH-MIS to add other reviewers or send notifications to other offices.

4.5 The Review Grind



So you finished your Process Authorization in EESOH-MIS and clicked on the submit button, sending it off into the electronic abyss. Now you must wait. The system takes over and the request is routed to the approvers. Because multiple offices must coordinate the requests, the entire approval process can take several days to weeks. For this reason, it's important to identify all your hazmat requirements early to allow time to properly process the request. The ESOH team will evaluate your request to address potential environmental, safety and occupational health liabilities—is new PPE required, is a waste profile completed, are permit conditions still followed, can it be stored safely, and a host of many others to ensure you can safely use the material. When your request is ultimately approved, you must follow any **conditions of use** such as recommended PPE unless you coordinate with the HMMP team first. (Yes, the ESOH team really wants to approve your request, but they have a lot of considerations to make and it takes time.)



EESOH-MIS will promptly send a notification to the supervisor's EESOH-MIS workbasket when the request is approved or denied. Approval is your green light to buy and use the material as stated in your request and any additional information provided by the approvers. At this point you're home free to procure the hazmat—this would be an appropriate time for your happy dance! To find out more on how to procure, check out chapter 4.

4.6 Paper or Plastic?

Because EESOH-MIS is accessible by anybody in the shop with a login, there is no need to print out your authorization forms. Be aware of any Conditions of Use that were stated on your approved authorizations and just to remind you, those conditions will also print out on any Issue Receipts you get from your HTA. We recommend you occasionally print your "**Material Authorizations with Product Data**" report from EESOH-MIS. This will also satisfy your Hazard Communication requirement (section 11) to have a chemical list on hand. If you print it every few months, and especially when you get something new, you should be good to go.



4.7 Contractors



A commonly asked question is whether all this also applies to contractors. Contractor-operated shops performing a DoD mission on Air Force bases are required to have an approved EESOH-MIS process authorization to use hazmats, just like a government-operated shop. The only difference with contractors is that the occupational health and safety review of their authorizations is just that - a cursory "review" and not an "approval". The government is not allowed to perform OSHA functions for a contractor; however, their authorization requests are reviewed for any impact on government personnel or property. The environmental reviewer, however, does approve both contractor and government requests to ensure that hazmat use will not violate any base permit conditions, waste streams are established, and other similar considerations.

All contracted activities begin first as a government requirement—somebody has a need and develops a statement of work. Both embedded and transient contractor hazmat require authorization, but how they are handled is different. Notify your HMMP team if you are involved in writing a statement of work to make sure the appropriate hazmat authorization and tracking language is included. That language will ensure the right deliverables to the HMMP team and will help the contracting officer select the appropriate Federal Acquisition Regulation (FAR) clauses to address hazmat usage.

4.8 Exceptions-to-da-Rules

You have all heard the old adage that "people don't plan to fail, they just fail to plan." We're all guilty of that sooner or later—and then sometimes "stuff" just happens that no amount of planning could have prevented from happening. Let's face it, stuff just happens!

There will invariably come a time when there will be an emergency need for a hazmat without an approved authorization and a virtual walk-through will be necessary. Because

authorization requests are routed electronically, you will need to call the HMMP team and tell them of your urgency so they can look out for your request in EESOH-MIS and process it as soon as possible.

If your emergency is so dire that you needed it "yesterday", your HMMP should have locally developed emergency procedures. Those procedures may be as simple as a verbal telephone approval followed up with an email. Once you have your emergency verbal/email approval, procure your hazmat, but understand that you still have a requirement to complete an authorization request in EESOH-MIS, and once approved, the emergency hazmat quantity usage logged.

Don't make every request an emergency—these should be rare and too many will negatively impact the trust between you and the HMMP team. The ESOH team understands the mission always come first and stands ready to support your requirements. The important thing is communication of some type. When it comes to hazardous materials, NEVER "ask forgiveness, rather than permission".

5. Ordering, Purchasing and Receiving HAZMATs

At this point you've successfully navigated the authorization process and with authorization in hand, you are now free to proceed with whatever method of procurement best suits your needs through your HTA. Every shop in EESOH-MIS is assigned at least one servicing HTA. The HTA performs the hazmat receipt and issue tracking in EESOH-MIS, so it is important to know the folks at your Servicing HTA. Keep in mind that **ALL** hazmat procurements (whether bought, free issued, or even shared) must happen through an HTA. All environmental reporting requires usage data, so while the authorization process allows you to safely use the material, it's actually the transactional data collected by the HTA and the shop usage data that satisfies the base's regulatory reporting needs for that material.

Each shop must have an assigned Servicing Hazmat Tracking Activity to track hazmat.

5.1 Ordering

EESOH-MIS supports a couple of business practices when ordering through your HTA. These practices are already in place at your installation and those are the procedures you must follow. The options are discussed below.

1 - EESOH-MIS Material Requests. Shops can place their material requests directly in EESOH-MIS. The system will display your authorizations and allow you to place an order for those items. The order request is then routed to your servicing HTA to fulfill. You can also track the status of your order in EESOH-MIS, along with your order history, HTA inventory, allowable quantities, etc.

2 - EESOH-MIS Process Verbal Requests. EESOH presents other options such as requesting material by visiting, calling, or faxing, your servicing HTA. They will put the request in EESOH-MIS for you. Check with your local HMMP Team for local business practices.

If the material request is routed through EESOH-MIS, the system will show the HTA all available inventory across the base. That will include their own inventory as well as other HTAs, along with any "free issue" in stock at the installation and Global Free Issue (free

issue material across the Air Force). They will complete your order request from available stock, otherwise the material will be placed on backorder.

5.2 Understanding How Much is Too Much or “Max on Hand”

A common problem in the old days was shop hoarder mentality to stock pile hazmats only to have them expire and get thrown away and the cycle repeat itself. There had to be a better way, so EESOH-MIS introduced a new term and a new way to limit how much of a material each shop can have in their possession at any one time - “MAX-ON-HAND”. It’s not overly important how much you order or how often you order it—your mission requirements will usually dictate that, but it is **CRITICAL** that your physical inventory never exceeds your max-on-hand. Your max-on-hand quantity for each hazmat is really an art based on many factors.

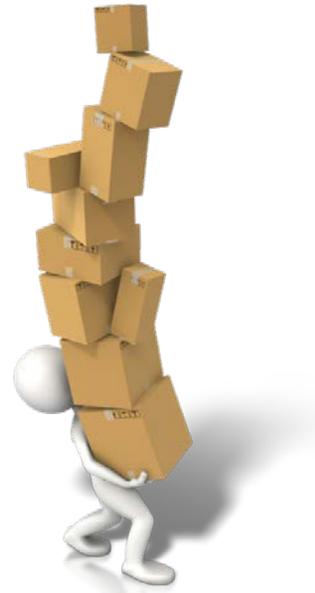
One of the AF Hazmat Program’s goals is to minimize material stock in a shop and keep most of it in the HTAs ready for when you or somebody else needs it; something like a grocery store. This business case has many advantages—less waste from expired materials, less cost rebuying that wasted material, reduced storage liabilities in the shop, and the list goes on. So we (those who get to write this manual) do not want to see a lot of material sitting in shop stock. Shops should only have on the shelves what they will use in a reasonable period of time and can safely store. We can spend a lot of time debating what “reasonable” actually means, but the most sensible amount is about a 7-10 day supply. There are always exceptions-to-da-rules, and there are some understandable reasons to store more than that—thus the challenge with a one-size-fits all rule of thumb and the “art” of the deal.

So what do we consider “reasonable”? Consider a shop that is authorized a one pint can of grease to apply on gaskets and it takes the shop several months to use up that can. In this case, it’s “reasonable” for the shop to have a new can in their cabinet for when the open can runs out or gets contaminated. The exception would be if the shelf-life of the new can would cause it to expire before the can in use was consumed - see the challenge? A sensible person might ask, what if the HTA had the extra can waiting? After all, that can might also be used by other shops and inventory management works better with multiple users, right? But the reality in the end is the good feeling you get when the materials you need (or might need) are right there in your shop. For this example a max-on-hand might be 2 or even 3 cans.

In **NO WAY** should the max-on-hand impede a mission. Remote sites with long supply chain pipelines may need larger quantities to remain mission-ready. The ESOH team gets that, and is there to support the mission and provide guidance on how to minimize risk and safely use authorized materials.

So why do we need a max-on-hand?

The first reason is regulatory reporting. Hazmats have quantity thresholds that when exceeded trigger regulatory compliance reporting. With EESOH-MIS, the HMMP team can project whether or not a threshold would be exceeded if every shop stored the max-on-hand for a given material. It also gives the first responders, safety, and occupational health functions a sense of how much material they can expect to be in a shop.



case, no need to track any further unless you're using the exempted hazmat in a manner not consistent with typical consumer use.

There are several types of credit cards used by DoD functions to include the GPC and SPCs, but for the purposes of this document we will refer to all credit cards as GPCs. GPC policy is found in AFI 64-117, *Air Force Government-Wide Purchase Card (GPC) Program*.

The trouble with GPC is that there are no "built-in" checks and balances when procuring hazmats with your card, and the proper tracking of the hazmat rests solely with the cardholder. When a hazmat is bought downtown using a GPC, the clerk at the cash register does not check for an authorization first or cares about your max-on-hand. In these cases, you as the buyer become responsible to make sure you have an authorization, and that the proper order, receipt and issue transactions to your process are completed in EESOH-MIS through your servicing HTA.

So where do you start with a GPC purchase? After checking the exempt list, make your request in EESOH-MIS just like any other HTA order. Select GPC as the method of purchase in EESOH-MIS before sending onto your servicing HTA. The HTA will approve (or disapprove if they have stock to fulfill your needs) your GPC material request. A message will return to the requestor via their EESOH-MIS workbasket with a link for a GPC Authorization Report (see Figure 4). This is your "hall-pass" to buy a hazmat with your GPC, so it's a good idea to print this!

Authorization To Purchase Hazardous Material with a Government Purchase Card		
MSN: 8010PHM00023932	Noun: ENAMEL, SUN YELLOW,	CUP-QIP/SUI: 12 OZ CN - 1/CN
Request #: 999003461600	Requestor: Zachery Kilgore	Date Requested: 2013/02/20
Requesting Shop/Hazmart: BAH0001 - AGE		
Authorizing HazMart Name: BAH HAZMART	Authorizing HazMart Code: HAZ10	
GPC Approval No: GPCBAH00013051001	Authorizing User Id: zachery.b.kilgore	
Date Authorized: 2013/02/20	Authorized Quantity: 2	
Authorized Until: 2013/03/02		
You are only authorized to purchase items from the list below. If your item to purchase is not on this list, you must submit the MSDS to your HMMP/ESOH Team prior to purchase.		
Part #	Trade Name	Manufacturer
51806	51806, KRYLON INDOOR/OUTDOOR PAINT, SUN YELLOW	SHERWIN-WILLIAMS CO THE

Figure 4 - Authorization to Purchase Hazardous Material with a Government Purchase Card Report

This report will tell you exactly what you are authorized to buy and it will have a tracking number on it. Take it to the store with you so there's no accident buying the wrong stuff.

It is important to purchase the exact same item, in the exact size, from the exact vendor (this means manufacturer, not reseller) for which you have an authorization as stated on the

GPC Authorization Report, i.e., if authorized to buy Windex, you can not buy Formula 409 Cleaner instead, even if it's cheaper. While you're at the store, ask for their most current SDS for the product. According to OSHA, only retail distributors that have commercial accounts are required to provide you an SDS if you ask. Retail distributors that do not have commercial accounts are not required to provide you an SDS and you will

It is important to purchase ONLY the exact product and size you are authorized

need to get it from another source such as the manufacturer (29 CFR 1910.1200 para (g)(7)(iii)).

To make sure what you buy is received and tracked through EESOH-MIS, installations can set a time period for you to check in the GPC purchases with your HTA—typically 2-3 days. What happens after the grace period is up and the hazmat not tracked in EESOH-MIS is quite the mystery, although sightings of the Kraken are reported around the same time the GPC holder inexplicably disappears. Given that, make every effort to get your GPC-purchased hazmat tracked in EESOH-MIS, and if you can't make the deadline be sure to call your HTA for an extension.

5.5 GPC and Services

If you use your GPC to procure a service such as cleaning the wash rack or painting the flag pole, you are responsible for making sure that any hazmats used in the performance of those services are authorized and tracked. These hazmats also count against the base hazmat quantity thresholds for regulatory reporting, and you do want to make sure the flag pole doesn't end up with a fresh coat of old lead-based paint that a small business had sitting in a forgotten corner. Call your HMMP team before you buy any service that requires the use of a hazmat so that tracking can be arranged.

5.6 GPCs and Private Vehicles

According to the Defense Transportation Regulations⁸ (DTR) Part II, B. 3., the use of Privately Owned Vehicles (POVs) for transporting hazmat is prohibited. Additional training and placarding requirements may apply to the transport of hazmat. Consult your local Logistics Readiness Squadron transportation technical specialist to determine applicability based upon the type and quantity of materials to be transported.

So, make sure you pick up your locally procured hazmat in a government vehicle. At this point, you've gone downtown, bought exactly what you were authorized, and you are now driving back through the front gate. What do you do next?

5.7 Closing the deal - Go Directly to Your HTA!

You got it all covered so far—you made sure the hazmat was authorized, placed an order in EESOH-MIS, bought exactly what you were supposed to buy, and then got it safely back to base. Great job, but you're not quite done yet—there's one final action. Checking your material in through your servicing HTA and having it issued to your shop for use. The easiest way to get your issue receipt is to make your servicing HTA your first stop back on base so the hazmat can be properly processed through EESOH-MIS. This includes getting bar-codes or other markings if your base has chosen to bar-code or mark. The HTA will check to make sure that the SDS on file matches the SDS from the vendor if you got one, and verify the hazmat matches exactly what was authorized. If everything checks out, EESOH-MIS will print out a issue receipt and the procurement phase is complete. If for some reason you bought Formula 409



⁸ Defense Transportation Regulation Part II (copy and paste link into browser: http://www.ustranscom.mil/dtr/part-ii/dtr_part_ii_204.pdf) "Ensure only commercial or MOV/government vehicles are used for transporting regulated HAZMAT and Hazardous Waste (HW) as defined by 40 CFR 261, Identification and Listing of Hazardous Waste, and 40 CFR 261.3, Definition of Hazardous Waste. Use of POVs for transporting HAZMAT and HW is prohibited. See Para F.3.d for the policy on the use of rental vehicles."

instead of the Windex you were authorized, you will be condemned to a painful and humiliating public flogging before we again release the Kraken, and you will either have to return the product for the correct one, or process an authorization request for the product you did buy. This only bogs down the tracking process and negatively impacts your mission effectiveness, so get only what you're authorized!

The general rule is material must be checked in through an HTA before it can be used in the shop. But there are even exceptions here when material can not be taken to the HTA first, perhaps due to size, bulk, hazard, or the HTA is out visiting shops, fishing, or feeding the Kraken. In these cases, you must still make arrangements to check in the hazmat and get it properly issued. Also, if you are delayed and will not be able to make your purchase within the allotted time, call the HTA to cancel or reschedule your order.

Best Business Practice#1: Attach the EESOH-MIS Issue Receipt to the material's store receipt. This shows the GPC auditor (close relative of the Kracken) that your hazmat was properly tracked.

Best Business Practice#2: Write the GPC approval number onto the receipt.

Here's a synopsis of GPC hazmat/services purchasing:

- ✘ *Get an authorization for the hazmat (initial purchase/use only), see chapter 4)*
- ✘ *Request the material in EESOH-MIS or through your HTA*
- ✘ *Print out your GPC Authorization Report*
- ✘ *Go to the store and buy your material. Pick up a current SDS*
- ✘ *Return to the HTA to check in your material*
- ✘ *Take the material to shop and use*
- ✘ *Return any excess to the HTA (before it expires, please, so that it can be placed in free issue) (See chapter 10)*

5.8 Other "Sneaky" Contracting



In case it's not quite obvious yet, regardless of how you procure your hazmat—any supply system, GPC, mail order, free issue, finding, borrowing, sharing, stealing, claiming, or even making your own, all use of hazmat must be tracked in EESOH-MIS. The use of AF Form 9, *Request for Purchase*, and other contracting vehicles and methods also require the same level of tracking. Ordering and purchasing a hazmat commodity with an AF Form 9 works much the same way as with a GPC card, only the contracting office will require proof of a hazmat authorization before

soliciting any bids or entering into a contract with a vendor for the material. Require in any bid or contract that the vendor provide an SDS with each material. If the contracting action is for a service, get with your HMMP team to make sure all HMMP requirements are included in the Statement of Work.

Once the hazmat arrives on base, you still need to properly process it into EESOH-MIS. The hazmat should have arrived with an SDS, if not, contact the vendor for one. The HTA will check to make sure that the SDS on file matches the SDS from the vendor, and that the hazmat matches exactly what was authorized. If everything checks out, EESOH-MIS will print out a issue receipt, at which time the procurement phase is done and the material

can be used in the shop. It's often the case that mega-amounts of a hazmat are purchased on the Form 9. If this is the case, the HTA will need to make arrangements to ensure that large amounts are accurately tracked. This will require some coordination between the HTA and you, but don't worry, it's often just a simple procedure!

5.9 Authorization Summary

With the exception of Exempt items noted in EESOH-MIS, there should never be unauthorized hazmat in your shop. We bring it up here because there are many different avenues for procuring hazmats and there is not a 100% foolproof system to prevent some purchases from slipping by the authorization process. The tracking system does not work without your involvement, and you are responsible for what is used in your shop. Never bring hazmats from home for use in a workcenter. Always have an issue receipt for every non-exempt hazmat in your shop (an authorization is not enough). Various organizations and inspection/audit functions will make random spot inspections of workcenters around the base to determine that EESOH-MIS is indeed capturing all reportable hazmat usage. When an unauthorized hazmat is found, its method of procurement will be investigated to prevent future occurrences. This becomes particularly important with decentralized procurement methods like credit card purchases. If a hazmat is procured with a credit card without an approved authorization, depending on the circumstances, AFI 64-117 provides for various ugly things to happen, (i.e. letters to your commanders, revoking your priveleges, even legal actions). Not to mention again a possible release of the Kraken.

It is Air Force policy to track all hazmats on base, and everyone plays an important role with accomplishing this seemingly simple but somewhat complex task. We did the heavy upfront work to get the hazmat tracking process all set up and operational, all we ask is your help to take the extra moment and ensure all hazmats in your work center are tracked through EESOH-MIS.

6. Shop use of HAZMATs

You now own a container that has pictures of skulls and cross bones, bold warnings, and built in safety features that includes a cap the jaws of life can't get off. Those are all there because the contents are dangerous when improperly handled, and that can understandably make even the most fearless warrior a little uneasy.



As with most things, there is a common sense approach to using hazmat in the shop. An obvious one is following the directions on the container and heeding the warnings. Another is to read and follow any Conditions of Use identified by the ESOH approvers, such as a specific PPE requirement or special disposal instructions. Note that the conditions of use are not just a regurgitation of the warning label or the SDS—if they differ, always follow the conditions defined by the ESOH approvers. Contact your ESOH functional for clarification.

7. Proper Storage of HAZMATs

By storage, we don't just mean how or where it sits on a shelf, but how that inventory is proactively managed by the shop. This is probably where most folks have problems. In the old days, shops had 2-3 lockers just packed with half-empty bottles of hazmats that might be needed again some day, usually expiring before that time ever came. Then once in a while or just before an Environmental, Safety, and Occupational Health Compliance Assessment Management Program (ESOH CAMP) assessment, the shop would go through and throw away all those old bottles, just to turn around and repeat the whole process with a fresh new bunch of hazmats. It was no coincidence that hazardous waste quantities always spiked right before an assessment. Hazmats are handled in a very different way today, with a goal to minimize what is stored in the shop to not only make the workcenter safer, but to also save money by minimizing expired shelf-life and avoiding disposal costs.

So the first thing to avoid is storing large quantities. Store only what you would use in 7-10 working days whenever possible. This means ordering less quantity but more frequently. If you find yourself disposing of expired hazmat regularly or can never seem to finish a can before the contents become unserviceable, your max-on-hand is not correctly set or the size container authorized to your process is too big. These are easily fixed problems—save yourself and the AF a lot of time and money by getting those issues resolved with HMMP team help.

Hazmats are a lot like groceries. You don't leave the milk out on the counter or in the pantry, right? If you did, you just shortened the shelf-life, and would likely end up dumping it out. Hazmats are the same way. The environment you store a hazmat in can dramatically affect how long it stays serviceable. If it requires refrigeration, make sure you do so. If you store the container in direct sunlight and let it bake, expect a shortened shelf-life. Common sense definitely applies here, and these are discussed more in the Manage Shelf Life chapter.

Where common sense ends, rules begin. There are many rules to proper storage, like what can be stored together, what kind of locker you will need, how many lockers you can have, and the list goes on. Safe storage of hazmat is a concern as incompatible chemicals stored together can cause toxic fumes, spark fires, or let off explosive vapors. By minimizing hazmats in your work area, not only do you reduce the risk of a tragic event, but you also make it safer for emergency first responders in the case of a problem.

You should become familiar with AFJMAN 23-209, *Storage and Handling of Hazardous Materials*, and AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*. Here are some important highlights that when followed will keep you out of most problems:

7.1 Hazard Classes

There are a lot of different chemicals out in the world, and it helps to safely manage them by grouping them together by the physical hazard they present. Many of these physical hazard classes don't play well with each other, so it's important to have some understanding of what they are so you don't accidentally store incompatible materials together. You can



usually find these hazard classes of the material on the label or SDS. Examples of physical hazard classes are:

- Flammable Solids, Liquids, Aerosols & Gases
- Explosives
- Self-Reactive Substances and Mixtures
- Oxidizing Solids, Liquids, & Gases
- Organic Peroxides
- Corrosives to Metals
- Pyrophoric Solids & Liquids
- Self-Heating Substances
- Substances which, in contact with water emit flammable gases

7.2 Incompatibles

Some hazard classes can not be stored together because they are incompatible. By incompatible, we mean that when the two hazard classes are mixed an undesirable chemical reaction can occur, sometimes resulting in deadly gases, fire, or very rapid changes that can result in explosions. The smart thing is to never store the above hazard classes in the same locker or limited enclosed space. Common incompatible storage findings typically involve acids and alkalines or corrosives and oxidizers. Check your storage area to make sure these are stored in their own dedicated lockers or storage units.

The SDS, Section 10, Stability and Reactivity, can help you determine incompatible hazard classes. If you cannot determine the hazard class of a material, call your HMMP team—like the base Bioenvironmental Engineering Flight, Safety, or Fire Services. It's always better if you call for help before a real problem happens or an inspector finds the violation. All we ask is that you don't wait until just before an inspection to call us!

7.3 Hazmat Storage Lockers

There was a time when even the smallest shops had hazmat storage lockers that could easily handle a pro football team. Those were the days of yore. Today, each shop (as defined in EESOH-MIS) may have only one locker per hazard class of material. That means one locker for flammables and one locker for corrosives, etc. Use only the number of lockers and types of lockers you are approved to have in the workcenter. If you need more than one locker for a hazard class be sure and get an "all clear" from the Fire Department. Contact your local Fire Department for their specific procedures.



The best guidelines for those big yellow flammable storage lockers, (you know the ones flashing to an inspector "Come over here and look inside me") can be found in AFI 91-203, Chapter 22.

It is not policy, but it really helps if you label your lockers with your EESOH-MIS Shop Code. If you don't know your Shop Code (shame on you) then ask the HMMP team. Write it down, tattoo it on your arm, whatever it takes to remember it, as it will invariably come in handy some day.

8. The BIG Picture (Environmental Management System)

You likely impact the environment in some way when using a hazmat in your shop or process. The area of the environment you impact is called the environmental aspect—air emissions, generating waste (solid and hazardous), dumping wash water down the drain, etc. If you're now scratching your head over what we're talking about with aspects and impacts, those are really the environmental areas or programs we have been managing for years through our environmental management flights. The activities or processes you accomplish that impact the environment in some way or another draw you into your base Environmental Management System (EMS). Using a hazmat without an environmental impact is rare—you probably generate waste or an air emission with your hazmat, or you store enough where there are special precautions required—these are all examples of aspects and impacts.

So what does that mean for you? The base EMS promotes a plan-do-check-act cycle for environmental concerns. You probably had no idea, but you already did some of the planning, doing, and acting parts of this when you submitted the request for the process and any hazmat through the HMMP for approval. The HMMP Team does their part of the plan, do, acting by providing any legal or other environmental requirements and guidance needed to accomplish that process or task. That leaves the check piece hanging out there. For most folks the checking piece is covered by completing the ESOHCAMP Stage 1-



All Shops checklist quarterly in the Management Internal Control Toolset (MICT). If you use a hazmat and are not using the "All shops" checklist, contact your HMMP team or base EMS coordinator as soon as possible. The checklist has simple questions on using approved hazmats, managing hazardous waste, maintaining shop tanks and others designed to help the shop supervisor keep his work center compliant with typical environmental shop issues. In addition, depending on the process or hazmat used, the environmental function may identify additional checks you must accomplish to do your job, whether it is keeping a paint log or just keeping your shop clean and free of any leaks or spills. If you find something wrong, you need to know what to do (spill response, paint booth not working, or other), and who to contact—first responders, UEC and/or environmental management personnel.

9. Managing Shelf Life

There's a little pack-rat in all of us—we just never know when we might need that old can of WD-40, so we just hang onto it in the hopes that someday our hunch proves right. Then there was the time we ordered hazmat for something that ended up never happening, but kept the material until it expired on us. Or the time we overestimated how much hazmat was needed and ended with a bunch of extra hazmat that we decided to hang onto for the next time. Only next time never came. The common thread through these scenarios is inventory management. Unlike the by-products from your process, wastes generated by poor inventory management are easily preventable by simple advance planning. Expired shelf-life material is the number one reason unused material is disposed, costing the government millions of dollars each year. Inadequate inventory management makes no business sense; you buy a hazmat only to end up paying for disposal later when it expires, at which point you turn around and buy the hazmat again. The process then repeats itself, unless we learn from our mistakes. In short, every effort should be made to avoid this

situation, and while EESOH-MIS tracks usage and imposes a max-on-hand to help manage excess, nothing beats your careful management of hazmat usage and inventory.

So how do you avoid having expired shelf-life material?

When your HTA receives material into EESOH-MIS that is managed as a shelf-life item, the system inventories the batch or lot number and the date of expiration for each container. Then, when you request material, EESOH-MIS displays to the HTA the remaining shelf-life for each container so that the oldest get issued first (they follow good inventory management practices, too!). You will also know the remaining shelf-life as it is printed on your issue receipt. Check this date—since the HTA is trying to avoid expired material disposal just like you, sometimes the remaining time can get short. Keep the hazmat if you can use it up before the expiration date, but be wary about those containers that take months to empty and you have 3 weeks left on the expiration date. You should not accept more material than you can use before the shelf-life expires whenever possible—balance that with your mission requirements and urgency of need as that may be all they have in stock.

Think about going to the grocery store. You're probably one of those folks that reaches in the back and pulls out the gallon of milk with the longest shelf-life left on it (even though there's only a two day difference from the gallon in front!). Perhaps you need every one of those days to get through that gallon a glass at a time, or maybe you don't as you're making a gallon of ice cream—these are important considerations. Think about your hazmats in a similar way. You want to be able to consume the product before its shelf-life expires—that

Shelf-Life Trivia

The Shelf-Life for an MRE (Meals Ready to Eat) is 130 months if stored at 60°F and only 30 days if stored at 120°F

way you don't waste money by throwing it away. Here's where the milk analogy gets seriously different. When you have left-over milk, you throw it down the drain and you're out a few cents. When you have left-over hazmats, you can't just pour them down the drain and the disposal cost is usually more than the original purchase price, not to mention you need to buy more material to do your job.

Another way to avoid being in possession of expired shelf life material is to take smaller quantities or get smaller

units of issues. It happens—you take a large can of "stuff" that you invariably end up throwing out because you cannot use it up before it expires or goes bad. Go back to your HTA and ask them to help you find the material in a smaller unit of issue. Maybe you don't drink that much milk and buying a gallon results in waste—for that reason, the milk industry offers the same milk in a more convenient quart size or all the way down to a pint!

While max-on-hand is designed to avoid stockpiling large amounts of hazmat in a shop and keep shop quantities low, it can also habitually get used as a "ceiling" of sorts that folks feel they must have at all times—it becomes their right to have all that hazmat. If you always seem to be throwing out hazmats because you had too much and they just got old, then maybe your max-on-hand is set too high. The HMMP is always happy to help lower that number to better manage inventory, and will work with you to find the happy middle ground that meets your mission needs with minimal waste.

Another thing to be aware of with shelf-life is how it is stored. If you buy a gallon of cold milk with 2 weeks left on the shelf-life and leave it on the kitchen counter for a couple of days, that stated shelf-life will not be valid and the product performance will be dramatically altered—go ahead and taste a chunk of it if you don't believe us! The same is true with many of our sealants and adhesives, although tasting is not recommended to determine servicability. If they are not stored at a proper temperature, they age prematurely. The bad news is that unlike the milk, it is not always evident how much the product performance of an improperly stored material was affected and the consequences of applying a bad sealant or adhesive to an airplane can be catastrophic. If there is any doubt about the quality of the material being applied to critical end items, don't do it! Too much is at stake.

Monitor your material with shelf-life and be sure to take shelf-life extension actions BEFORE it is expired.



9.1 Shelf-Life Policy Stuff

There are a few things about shelf-life policy you need to know.

The DoD Shelf-Life program is administered by the Defense Logistics Agency and they have a nice web site located at <https://www.shelflife.dla.mil> (see figure 5).

Figure 5 - DoD Shelf-Life Program Web Site

The policy and references are easily accessible and each MAJCOM has a shelf-life POC to help with your every-day questions. We added their name and phone number on the Shelf-Life page in eDASH. Goto the Hazardous Materials page: <https://cs1.eis.af.mil/sites/edash/Web%20Part%20Pages%20%20Program%20Pages/Environmental/Hazardous%20Materials.aspx> and then select the Shelf Life topic on the right hand side list. You will also find all the shelf-life related policies at this site.

DoD assigns shelf-life material a code and type. The code is how long the material is serviceable and the type is whether or not the material shelf-life can be extended. Type I material CANNOT be extended when it expires and must be turned-in, but Type II material can be tested and updated for a period of time according to policy. If material expires while in the shop, then someone needs to understand the process for updating the material or disposing of it. As a hazmat user, look at the expiration date on the container and if it is expired, then look to see if there is a shelf-life extension label such as a DD Form 2477, *Shelf-Life Extension Notice*. In the absence of a good expiration date or label, the material must be considered expired. As users, you need to know to look at the expiration date or an extension label. If the material is expired, then it should not be used until action is taken.

Under no circumstances can you use expired shelf-life material on a weapon system or where the failure of the material will impact the end item.

9.2 Updating Shelf-Life Material

The DoD shelf-life program also sponsors the Shelf-Life Extension System (SLES) database. SLES is accessible from any .mil computer without having to register for a separate login at <https://www.shelflife.dla.mil>, just select the SLES tab along the top.

SLES maintains all the lab results from tests performed on Type II material. It is easy to go in and check to see if your material has already been updated. If it has, all you have to

do is put a DD Form 2477 on the material and you can use it until the new expiration date. Your HTA personnel can help if you need additional information.

SHELF- LIFE EXTENSION NOTICE	
<small>PER DOD 4140.27- M, CONTAINERS REQUIRE RE- MARKING WITH EXTENDED SHELF- LIFE DATA.</small>	
<small>UNITS OF ISSUE REQUIRE RE- MARKING UPON OPENING CONTAINER.</small>	
NSN:	_____
CONTRACT NUMBER:	_____
LOT/ BATCH NUMBER:	_____
DATE TESTED:	_____
NEXT INSP/ TEST DATE:	_____
AUTHORITY:	_____
	<small>(QSL, MQCSS, OTHER)</small>
INSPECTED BY:	_____
	<small>(ACTIVITY AND INSPECTOR'S NAME OR NUMBER)</small>
<small>DD FORM 2477-1 (Large), -2 (Medium), or -3 (Small) APR 1999 PREVIOUS EDITION MAY BE USED.</small>	

Figure 6 - DD Form 2477, Shelf-Life Extension Notice Label

10. Left-Overs

So, despite all your efforts to get just what you need to avoid disposal, you end up with hazmat you no longer need. Don't throw it away! The HTA can help determine if there are other uses for the material if it's not inherently waste like. Sometimes, folks just let old hazmat sit in a storage cabinet until the can rusts or leaks—you might want to avoid their fridges too or you might find something that looks like a science experiment in there, just saying! Habits usually prevail in these cases. Just think, all those refrigerator science experiments could have fed a small family of four had someone taken the initiative to do something, but instead ended up only fit for the garbage. This is exactly the same with hazmats. If you wait until it's no good, it will surely become a hazardous waste. If you're more proactive and turn unwanted serviceable hazmat back in to the HTA as soon as you know you don't need it anymore, they can help determine if there are other uses for the material. Some expired but still serviceable (still works for its intended purpose or other similar purpose) hazmats can be used for other non-technical processes, or redistributed to other users via the free-issue program. For example, lubricants that can no longer be used on aircraft could work perfectly well on fifth-wheels or golf carts. Hey if it's good enough for an F-16, imagine



W A R N I N G	
SHELF LIFE EXPIRED MATERIAL	
Per DoD 4140.27-M, 6.4 Use of Shelf-Life Expired Material Only Authorized for Non Tactical/Non Critical Applications.	
DO NOT USE WHERE FAILURE MAY HARM PERSONNEL OR PREVENT MISSION COMPLETION	
ALTERNATE USE:	<input type="text"/>
DATE EXPIRED:	<input type="text"/>
ESOH AUTHORIZATION: (name/rank/signature)	<input type="text"/>

DD FORM 2966, AUG 2013

PDF

what it can do for the carts! Keep in mind that even in these cases, the lubricant must still be authorized for that process, even on the golf cart—just in case there was some heavy metal or something in the grease specially made for the F-16. Expired shelf-life items that are still serviceable may be used for a non critical/non tactical purpose. Be sure it has a DD Form 2966, *Shelf Life Expired Material*, affixed to the container or at least clearly marked.

It's a win-win: a waste stream is avoided and a new user doesn't have to buy it again—we all save twice! So make sure to turn in any unwanted unopened containers to the HTA and check with them before you dispose of an opened, uncontaminated hazmat to find out if it can be reused anywhere.

When you return material to your HTA, EESOH-MIS won't give you your money back, but you do get a different kind of credit. EESOH-MIS tracks hazmats to your shop for environmental and occupational health reasons. When you return material, EESOH-MIS doesn't count that material used in a process for environmental regulatory reporting, and doesn't count the occupational health exposure to your shop. Not to mention that you did the right thing (and who knows, we just might send a thank-you letter to your commander).



10.1 Getting Rid of Left-overs

If you have leftovers for any reason, you have two options for getting rid of them. We explain them generally here, so check with your HMMP team for details at your base.

1 - Turn in the material to your HTA

2 - Complete a Request for Disposition through EESOH-MIS

OPTION 1 - Turn it back in

If the HTA takes your material then you are home free and the material is gone.

So why would they take the material?

1 - It is still serviceable and there are other users on the installation. There is a reasonable probability they can "free-issue" the material to another customer.

2 - It can be returned to the Source of Supply (wherever it was bought).

So why would they NOT take the material?

It's been opened and can't guarantee to the next user that it still meets specs, it might be unserviceable, or they know they simply cannot reissue the material to another user.

They aren't stupid and don't want to get left holding the bag. So, if the HTA will not take the material off your hands, you're left with Option 2.

OPTION 2 - Make a Request for Disposition

EESOH-MIS provides you the ability to submit a Request for Disposition that is basically a "Help Me - I don't know what to do with this stuff" request.

The process is simple. Fill out the easy Request for Disposition in EESOH-MIS and submit.

It then routes from the shop to the HTA, who will consider what their options are for reuse or redistribution. If the HTA has a plan to reuse or redistribute the material, they will return the Request for Disposition to you with instructions on what to do. If the HTA cannot reuse or redistribute the material, EESOH-MIS will pass the request to either an Installation Material Disposition Request Approver (MDRA) or to the installation hazardous waste manager (depending on how your base set up the workflow).

Either the MDRA or hazardous waste manager will return instructions on what to do with the material in your EESOH-MIS workbasket.

Follow them.

Told you it was simple.

10.2 Free-Issue

The only thing better than a hazmat that works well is a FREE hazmat that works well! Before you start loading up your shopping cart with all that free hazmat, you need to realize that the free issue program is not an open door, come-get-what-you-want-free-for-all. First, all free issue hazmats still require an approval by the HMMP Team in an approved process—the basics still apply including max-on-hand. Then when you order a hazmat



through your HTA, EESOH-MIS checks available inventory and always checks free-issue stock first. If free issue stock is available, the HTA will issue it to your shop free of charge. The free issue program is not a loophole through which someone can obtain a hazmat without proper authorization. (But you already knew that!)

10.3 Open Containers

The decision to take and re-issue containers that have been opened is difficult, but is a common practice at many installations and can help minimize waste disposal costs. There are many considerations to keep in mind when deciding to use someone else's open container of hazmat. Once opened, a container's expiration date can become dramatically shorter—we see this in certain paints and glues. There's no way to know if the material is contaminated or had been mixed with anything. You have no idea if the container was properly stored;, particularly important for temperature-sensitive hazmats. These are all pitfalls to be careful of with open containers, and is why you NEVER use a free-issue open container on a technical order need, critical end-item, or weapon system. So what would be a good use of a partially used open hazmat? Using that lubricant on a hangar door hinge, the leftover wall paint to touch up a spot that has been bugging you, or that leftover floor wax to polish another room. These are excellent non-critical ways to make good use of open leftovers. We recommend you just keep painting until the can is empty (they say that fourth coat really seals the color!) but your self-help store or CE HTA may have a program to take back partially used facility paints - it's not like we get to pick the colors we want. Share with others if you have other creative waste avoidance efforts out there.

10.4 Waste Streams

A good rule of thumb is that a material with an SDS or a warning or caution statement on a container will likely require special disposal in accordance with the law.

Process waste streams include hazardous and non-hazardous discarded, abandoned, or very simply waste-like or spent material. Your hazardous waste manager will determine which is hazardous and which is not. In some cases even an unused material can become a waste stream when shelf-life has expired, been damaged or is unserviceable due to quality concerns. These must either be reused, redistributed, or disposed.

Processes can generate many waste streams. As an example, spray painting usually generates different waste streams including waste paint, waste thinner, waste barrier paper, waste respirator cartridges, waste booth filters and the list goes on and on. While some of these wastes may be non-hazardous solid waste, others are in fact hazardous wastes that will require proper disposal. As if buying the material wasn't enough, we now have to pay to get rid of it when it becomes a waste.

The EESOH-MIS waste module links the waste stream to the materials that went into the process, which makes waste determination and reporting much cheaper, easier and more reliable. Especially when several base customers are using the same hazmats for the same process and generating the same wastes.

I have a waste now... who do I call?



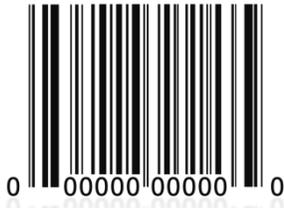
Always consider a process waste as hazardous until your hazardous waste manager tells you otherwise. This simple rule will keep you out of deep trouble, especially if it started out as a hazmat, became hazardous as a result of the process, or was at some point mixed with a hazmat. If you are not sure what your next step is now that you have a waste, call the HAZWASTE office. They can tell you how to prepare your waste for pickup, and what paper work is necessary.

10.5 Oops - Spill Management

Accidents happen. We get that. But what usually gets folks in trouble with spills is how they handle the resulting mess. The second a liquid hazmat hits the ground it becomes a waste—no five second rule here. How big your spill is plays a big difference in what actions are expected of you, and unfortunately these actions will differ from base to base. Consult your base spill plan (Spill Prevention, Control, and Countermeasure Plan, commonly known as the SPCC) or ask your HMMP team for help with finding the right procedures. If you store large quantities of liquid hazmat in your shop, like oil, fuel, and antifreeze, make sure you find out your responsibilities in case of a spill and post them for all shop workers to read BEFORE it happens! Waiting until after a spill is too late.



10.6 Bar-coding



Right off the bat, let us state that bar-coding is way cool with red lasers and all, but it is **not** a mandatory requirement to properly track hazmat. Any decision to bar-code should be carefully considered and supported by the installation HMMP team and the Environmental, Safety, and Occupational Health Council (ESOH) because bar-coding is much more resource intensive than not bar-coding. Which of the various bar-code options selected in EESOH-MIS can significantly impact how a shop manages their material. But this is one time you have to ask yourself if the technological advantage is worth the effort. The answer will be different at each base depending on their ops tempo, volume of hazmat used, and regulatory requirements. There are really just two reasons to bar-code, although there are more efficient alternatives that work just as well for most bases:

First reason: Bar-coding for Accountability

An inventory record is created in EESOH-MIS whenever a hazmat is received and logged in the system by the HTA. The system assigns a unique number to each container in the background, and is unseen to users unless a bar-code is applied. That unique container number exists whether you bar-code or not to ensure the system accounts for every single last container of hazmat. The bar-code simply allows you to see the "secret number" EESOH-MIS assigned to the container. So if you thought that bar-coding was all that was standing between you and an apocalyptic inventory chaos, worry no longer as the system has you covered. So while bar-coding may not offer much inventory tracking value, it does offer easy, visible, official-looking PROOF that the material was tracked in EESOH-MIS. This proof makes it really easy for an inspector to know that the shop material was processed in EESOH-MIS. In this case, the bar-code is really just a flag that the material was properly

authorized, HTA issued and fully tracked in EESOH-MIS. If this is the job your bar-code ended up satisfying, there are more cost effective ways to do that.



The "Albertson" Method. If your base decided to use bar-codes just because they need to put the visible proof on the container that it was tracked, then anything will do! MSgt John Albertson at the Reno Air National Guard purchased grocery guns that dispense tamper-proof dated labels. Once you get the hang of using the labler, you can tag a whole lot of hazmat in short order without expensive printers, paper, ink, not to mention all that time sticking bar-codes on material. John's idea went viral and is now used at many AF installations, and has even been seen in grocery stores! So

whether you use an EESOH-MIS generated bar-code, grocery gun label, or a hot pink smily face label, any standard visual indicator will work to indicate a properly approved and tracked hazmat. The low-tech answer may be a better solution depending on your reasons to bar-code.

Second reason: Bar-coding for Inventory

The second reason to bar-code is to facilitate tracking inventory down to the shop level. Material hazard, quantity across the installation, or a regulatory requirement such as air emission tracking may drive a heavier tracking requirement that must take into account inventories outside the HTAs.

EESOH-MIS tracks all hazmat inventory in the HTAs, but depending on the installation setting, will adjust or clear that material inventory when issued to a shop or process. However, if you are bar-coding, EESOH-MIS "moves" the inventory from the HTA to the shop when issued. Since an inventory record now exists at the shop, they have a responsibility to "clear the bar-code" or "empty the container" from EESOH-MIS. Bases do have different business practices to best accomplish this, for example some bases make the shops return the empty containers and the HTA clears the bar-codes. However it is done, the whole bar-coding process is a waste of time if the bar-code is not cleared when the containers are empty. Bases that end up "mass clearing" bar-codes from the system are basically using them for accountability purposes only. Mass clearing barcodes will also result in large spikes of hazardous material usage over short periods, which can affect regulatory reporting.

Hand-held scanners can also facilitate inventory and auditing when bar-coding. Many bases have such small inventory of material that all this technology and effort is overkill.

What if we don't bar-code?

When material is properly received and issued through EESOH-MIS, all the tracking we need to accomplish the regulatory reporting requirements is achieved. The decision to add the bar-coding burden to the warfighter community should be carefully weighed and properly administered. Bar-code for the right reasons.

11. The Hazard Communication Standard⁹

OSHA's Hazard Communication Standard (29CFR 1910.1200) otherwise known as "HAZCOM" is the law that ensures employers and employees know about work hazards and how to protect themselves. This includes knowing about the chemicals they are exposed to in the workplace. This Standard became law in 1983 and the Air Force Hazcom Program is documented in AFI 90-821. In May 2012, OSHA's HAZCOM aligned with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This update was designed to make information more consistent and better communicate the hazards.



We won't repeat what is already written in the AFI, but we will take a moment to emphasize a few things that directly apply to you. The shop supervisor is responsible for implementing AFI 90-821, but all workers need to understand the program for it to work. The components of HAZCOM are:

- Written Hazard Communication Program
- Labels
- Safety Data Sheets
- Information and training. Employers must provide employees with effective information and training on hazardous chemicals in their work area and whenever a new hazard is introduced into the work area.

The HMMP process and material authorization is the perfect tool to make sure hazards are reviewed and addressed for new materials, and EESOH-MIS tracking ensures an accurate SDS is always available to the employees.

12. Shop Pollution Prevention (P2)

There is no one more qualified to identify potential reductions in hazmat than those that work with them - you. Your ESOH team and many others are always looking for safer, less hazardous materials. While we are always concerned for your health and safety, there are also requirements mandated by law to reduce our hazmat footprint and hazardous waste generation. That drives all types of metrics that end up in pretty charts showing whether we (the Air Force) are accomplishing our reduction goals. The benefits to you are more obvious - fewer hazmats means a safer workplace. Less hazmat and waste results in less PPE, monitoring, waste disposal cost, and so on.

So you have a great P2 idea? No matter how small or large the idea, just tell your HMMP team and they will get it started and work it from there. If your idea saves a lot of money, use the AF suggestion program to cash in on the savings! Yes, you can P2!



⁹ <http://www.osha.gov/dsg/hazcom/index2.html>. This link will take you directly to OSHA's page on Hazard Communication

13. Training

The single most asked question concerning hazmat is in regards to training. There is training that is required by law such as mandated by the Hazard Communication Standard (see chapter 11) and OSHA Expanded Standards. Hazcom training is required for everyone that uses hazmat and is typically delivered by the shop supervisor. The OSHA Expanded Standard training will kick in if you have one of a particular nasty chemical in use in your shop. Don't worry you if you have one because them BEEs will be buzzing around your shop taking measurements and making sure you are safe. Job Safety Training is required for all shops and is usually provided by the shop supervisor. There may be some installation developed training. We've even developed a Shop Level Hazmat Familiarization PowerPoint presentation which can also be delivered by a shop supervisor or just read on your own - basically some of the highlights presented in this guide. But, unless you transport hazardous materials, work in a hazardous waste function, or are part of spill response team there is not a lot of required training. As a hazmat user, your primary concerns are AF policies as referenced throughout this document and the safe use, handling, and disposal of the hazmat. In addition to any base-specific training, we listed the training requirements below. OCONUS bases may have other training requirements—check with your HMMP Team.

Functional Area	Training Required	Driver	Applicability
Occupational Health	Hazard Communication	AFI 90-821, Hazard Communication	All employees that use hazmat
Safety	Job Safety Training	AFI 91-202, The US Air Force Mishap Prevention Program	Job Safety Training is required on safety, fire protection/prevention and health requirements specific to the shop
Transportation	Various courses	DoD 4500.9-R, Defense Transportation Regulations	Employees engaged in transporting hazmat
HMMP	Shop-Level Hazmat Familiarization (PowerPoint presentation)	AFI 32-7086	All employees that use hazmat

Table 4 - Shop Level Hazmat Training

14. Reports

What good is it to put data into a system if you can't get it back out in a meaningful way? EESOH-MIS produces numerous reports that will help you manage your hazmats. Attachment 1 list some reports produced in EESOH-MIS for your use. There are plenty more, but these either have a direct interest to the shop or can provide additional information.



15. To Infinity... and Beyond!

This process has come a long way from those early "caveman days", but we are on a mission (some would even call it an impossible mission) to improve the process and ensure all hazardous materials used at a base are vetted first through the HMMP. By all accounts this has been a very difficult mission, but if you decide to accept it (not that there is really a choice), there are a couple of things you can do to help us! First, by following the process, and second by helping us improve the process.

Your team starts at the installation, and is supported by your AFCEC Installation Support Team, the EESOH-MIS Help Desk, and those of us representing the HAF HMMP team. We all promise to listen. Sometimes change appears in slow motion (just like page refreshes on EESOH-MIS), but some changes can be quick. There are "great ideas" discussed today that were talked about back in the 90's, but some ideas just need the right people, place and time to make them a reality. We will make sensible changes whenever we can, and the most sensible ideas come from folks like you working the program every day. We have our government-issued secret decoder rings so all we need is your message. No formal letter needed, no permissions, no approvals - just send us an email or pick up the phone. You tell us what you're thinking and we'll do what we can. Our names and contact information are on the Hazmat eDASH page and occasionally on the back of milk cartons.

Having a sense of humor in this serious line of work does help us keep our sanity, and to that end we wrote this shop-level guidance with some levity and tongue in cheek where possible without losing the message. We all thank you for your efforts with hazardous materials management, and glad you've agreed to accept this mission!

....this message will self-destruct in five seconds...



Footnote: A special thanks to Mr. Patrick Woods, AFCEC/CZTQ, for his special brand of wit and the many folks that contributed to this document.

ATTACHMENT 1 - EESOH-MIS REPORTS

Report Title	Brief Description
User List by Installation and Role	Provides information on EESOH-MIS users and roles to track and maintain users. Report shows all the users on an installation, what roles they have and shops assigned. Report does not show users with more than 5 assigned installations such as Installation Support Teams, MAJCOM and HAF users, and EESOH-MIS Program Office personnel.
Master Shop List	Report shows all the basic information for shops identified on the installation to include locations and servicing HTAs. Reviewing this report can show that all organizations on the installation have been identified.
Hazmarts to Shop	Report shows the servicing hazmart(s) for each shop.
PHM/LPN Cross-Reference	Provides a cross-reference list between the Stewarded Local Purchase Numbers in EESOH-MIS and the installation Locally Assigned Numbers. The Material Stock Number (MSN) is the NSN or stewarded local purchase number (SLPN) used in EESOH. All authorizations are associated to a MSN. Some supply systems maintain a separate number and this report provides the cross reference.
Personnel Management	Reports personnel assigned to a shop. Dependent on base tracking personnel.
Material Authorization by Chemical	Provides authorizations by CAS/Chemical and includes authorized shops, MSNs, process, and product information. Reports only the information for SDSs associated to the installation.
**Material Authorizations with Product Data	Provides MSNs and product information authorized in a shop. Reports only the information for SDSs associated to the installation. Note: If the material has never been received through EESOH-MIS on the installation, it will not display the partnumber/tradename or manufacturer. This is a report to satisfy the HAZCOM inventory requirements.
Material Authorizations in Shop Sequence	Reports shop material authorizations in MSN sequence and associated processes. This is a quick reference for the shops of the materials to processes they are authorized by MSN.
Potential Hazard by Authorization	Reports potential hazards of authorized materials in a particular location. Allows personnel to assess the hazards of material actually in inventory in a shop, building or installation-wide. Can be used to show material is stored compatibly and also to show hazards authorized to a shop for training purposes. Report is based on authorizations and only products linked to the installation.
Process Authorization	Reports the process authorization details for a shop. Equivalent information to an AF Form 3952. Note: there is NO requirement to print an authorization. The AFI allows for these to be maintained electronically.
Material Authorizations/Usage by Justification	Identifies justifications, end items/weapon systems and documents, e.g. Technical Orders, justifying the need for hazardous materials. This report can assist when looking for chemical reduction opportunities.
Process to Material Authorizations	Provides process authorizations for a shop and associated materials (MSNs). This is a quick reference for the shops to see processes and their authorized MSNs. This is a good report to reference prior to requesting a new process or material to determine the type of action to take.
**Material Authorizations in MSN Sequence	Report shows hazmat authorizations in MSN sequence with shop, process and quantity information.

EMS Aspects	Reports EMS Aspects and scores. Can be grouped by Aspect Category and Aspect (with maximum score) or listed by individual shop process. Look at overall aspect risk and impact across installation--provides Macro view of installation aspects. Use when determining aspect significance and impact.
Process Scoring	Reports shop processes with scored EMS Aspects. Can be grouped by Process Type (with maximum score) or listed by individual shop process. Report provides a view of aspects at the process level as well as rolling up aspects risks for all similar processes. Demonstrate aspect inventory, as well as using when determining aspect significance. Use when creating targets that associated to objectives to target known processes.
Shop Aspects	Reports all processes and the associated EMS Aspects, Impacts, and scores. Can include all processes whether or not there are associated EMS data. Provides shop level view of impacts to environment and the aspects associated to their activities. Also provide views of conditions associated to their activities which may include responsibilities (Legal, operational controls, and/or targets to reduce risk associated with their activities).
Installation Activity	Reports activity at the Hazmart and Shop level per installation. This is a data mining report to show effectiveness of HMMP coverage.
Installation SDSs	Reports SDSs associated to your base.
SDS by Chemical	Reports associated MSNs and SDS by CAS/Chemical. When a particular CAS or Chemical is targeted this report will show all the products where the material is found. Reports only those products associated to the installation.
Exempt List	Reports MSNs that are exempt from management under the HMMP by installation. Shows the exempt items on a base so that shop personnel can seek exempt items first.
Kit Definition	Reports all kits and components associated to your base.
Container Inventory	Reports container inventory by employee or shop. Allows the shops to see what containers are currently in the shop. Applicable to bar-coding installations only.
Container Status/History	Reports the status/location of a container.
Inventory/Shelf Life Report	Reports inventory in a Shop or Hazmart with shelf life data, associated locations, and cost. Can show shelf-life materials that are either expired or will expire in the future.
Hazard by Inventory	Reports hazards and locations of material in inventory. Allows personnel to assess the hazards of material actually in inventory in a shop, building or installation-wide. Based on actual inventory at time of the report. Note: if your EESOH-MIS shop settings are for Consume at Receipt there will be no shop inventory.
Defense Reserve ODS MSN Report For Receipts	Reports all Defense Reserve MSN ODSs received on your base.
Defense Reserve ODS MSN Report For Usage	Reports all Defense Reserve ODSs consumed on your base by process.
Ozone Depleting Substances Status - Receipts	Reports all ODSs by chemical received on base regardless of source.
Ozone Depleting Substances Status - Usage	Reports all ODSs by chemical consumed on base by process.
Dangerous Goods Advisor	Reports all chemicals flagged as an EU dangerous goods reportable.

Tier Two Emergency and Hazardous Chemical Inventory	Reports EPCRA calculations by reporting year. This report is compiled ahead of need and provided to the base when ready.
Material Usage for Air Quality	Reports all chemicals used that are flagged with a Clean Air Act attribute.
Issues By Chemical/Regulatory Group	Reports all chemicals used that are included in a specific regulatory chemical group, e.g., EHS, REACH, chromium compounds, etc.
Container Usage	Reports material use by containers issued, used, and returned. Reports by employee or shop. Report is only good if the installation has chosen to enter employee information which is optional.
GPC Tracking	Reports GPC requests, approvals and receipts.
Material Disposition Request Status	Reports MSNs that where a disposition request was initiated and returns the current status.
Material Issues by MSN	Reports MSNs issued to a shop.
Material Request History	Reports all material requests by Hazmart.
Shop Detailed HAZMAT Usage	Reports the chemical usage by MSN against a process in a shop.
Shop Material Use by Process	Reports total containers issued to a shop by process with constituent data for a given date range.
Shop Material Requests/Hazmart Due-Ins Report	Reports all requests initiated but not yet filled by a Hazmart.
Transactions	Reports all receipt and issue transactions by Hazmart.

ATTACHMENT 2 - PROCESS AUTHORIZATION FIELD INSTRUCTIONS

The Process Authorization in EESOH-MIS is laid out in Tabs. Below is a detailed explanation of each field by Tab.

Screen Name	Definition	Shop Data Entry
PROCESS TAB		
Local Process Name	The name that describes the process being performed. Process names typically include the activity being performed, what the end item is, and how it is being performed. For example: Painting F-16 aircraft with HVLP Gun.	<p>Make your Local Process Name as descriptive of the process as possible. A good Local Process Name includes the following:</p> <ul style="list-style-type: none"> - the activity being performed - what the end item is - how the process is being performed - the location when the shop spans more than one location <p>The most important thing with the Local Process Name is that it makes sense to you so that you will readily know which materials go to the process.</p> <p>Avoid using broad process names such as "Shop Maintenance" and "Equipment Maintenance".</p> <p>Good Process Name examples:</p> <ul style="list-style-type: none"> - Painting T-38 aircraft with HVLP (High Volume Low Pressure) Gun in Hangar 48 - Degreasing aircraft parts in cold solvent tank - Surface paint removal with plastic bead blast media - Cleaning aircraft surface with power washer in large wash rack - Add/Replace fluids to AGE equipment, multiple operations - Aircraft engine truss coating and preservation using a standard gun
Process Category Process Type Process Name	The Process Category, Type, and Name refer to the 3-tier DoD Process Codes.	<p>The Process Category/Type/Name are selected from a list of values (LOV's) which filter after each selection. The complete list of Process Codes is at Attachment 2. First select the Process Category, then select the Process Type and then the Process Name. Select the most descriptive Process code. Avoid using Not Otherwise Categorized (NOC) or miscellaneous codes when a more descriptive code is available.</p> <p>When defining your cleaning process performed in the shop you can easily find an Industrial Category, then Cleaning operations for the process type – but you must carefully define the process name to accurately describe the process you are performing – try to avoid “all usages” or “NOC” as much as possible. Different methods of cleaning will lead to different PPE requirements, and exposure considerations.</p>
Process Description	Write a description of the Process	Provide a detailed explanation of the process. Try to think about how you would explain the process to someone who may have limited knowledge of what you do on a daily basis. This information can speed the ESOH review and approval process and eliminate the need for the reviewers

Screen Name	Definition	Shop Data Entry
		to ask you additional questions. For example a bad description would be "Cleaning parts" A good description would be "Vapor degreasing aircraft parts prior to NDI (Non Destructive Inspection)". If your local process name is sufficient to fully describe the process, you can repeat it here; however, this is your opportunity to provide additional information about the process. Refrain from describing how each material is used, rather, adequately describe how the process is performed.
Process ID:	Auto-generated code representing the Process Category/Type/Name and a system-generated serial number.	Display Only
Shop:	The name of the shop performing the process	Ensure the shop name is the correct shop. If the person logged in is assigned to more than one shop, select the correct EESOH-MIS shop code at the time the process is created, from the LOV that will be performing the process.
Conditions of Use	Any special conditions of use imposed by the E, S, or OH reviewers for the process being performed in the specified shop. The process authorization is valid only when these conditions of use are complied with by the shop. The conditions of use are input into the system during the ESOH approval process and will appear here as READ ONLY once the authorization is approved.	Display Only after authorization approval. It is important to follow any conditions of use placed here by the reviewing functions.
Environmental	Conditions of use specified by the Environmental Reviewer	Display Only after authorization approval.
Safety	Conditions of use specified by the Safety Reviewer	Display Only after authorization approval.
Occupational Health	Conditions of use specified by the Occupational Health Reviewer.	Display Only after authorization approval.
Air Manager Use Only		
Air Source ID	The unique identifier for an air process. This ID is created in CCS (APIMS) and passed to EESOH-MIS via the I2 interface.	Display Only. This data comes from the Air Program Information Management System (APIMS) after authorization approval.
Does the process require a manual log?	Indicates that the process has a time sensitive usage log requirement driven by an air emission regulatory requirement.	Select the correct radio button (Yes or No).
DETAILS TAB		
What is the <i>typical</i> frequency at which this process is	The typical or average frequency the process is expected to be performed.	Enter a frequency (number) in the first box to represent how many times you typically perform this process. Then select a period of time from the drop down box to represent how

Screen Name	Definition	Shop Data Entry
performed?		<p>often the process is performed. Values in the drop down box are:</p> <ul style="list-style-type: none"> • DAILY • EVERY 2 YEARS • EVERY 3 YEARS • EVERY 4 YEARS • HOURLY • MONTHLY • QUARTERLY • WEEKLY • YEARLY <p>For example 8 x month, 1 x quarterly. This number will not affect the quantity of material you receive so please be as accurate as possible. A consideration that may be made as a result of this information is whether this process is infrequent and qualifies as a non-routine task under the Hazard Communication Standard.</p>
What is the <i>maximum</i> frequency at which this process is performed?	The maximum frequency the process is expected to be performed such as during surge periods.	<p>Enter a frequency (number) in the first box to represent how many times the process could be performed during a surge period. Then select a period of time from the drop down box to represent how often the process is performed. Values are:</p> <ul style="list-style-type: none"> • DAILY • EVERY 2 YEARS • EVERY 3 YEARS • EVERY 4 YEARS • HOURLY • MONTHLY • QUARTERLY • WEEKLY • YEARLY <p>For example 8 x month, 1 x quarterly, etc. If yes, depending on the hazards, there could be changes to PPE, engineering controls or a condition of use specifying workload limitations.</p>
Do the seasons affect how often this process is performed?	An indicator that the process is performed with more or less frequency during particular seasons.	Select the correct radio button (Yes or No) to indicate if the seasons affect how often this process is performed.
<i>If seasons affect how often this process is performed, please explain</i>		
Explanation	The explanation provided if the seasons affect the process.	If the seasons affect the process, provide an explanation of how the seasons affect the frequency of the process. For example de-icing of aircraft wings is performed only during the winter months or the base swimming pool may use chlorine only during the months of June, July and August.
What is the duration of the process?	The duration of a single occurrence of the process.	<p>Enter a numeric frequency and a Time Period from the drop down box for the length of time a process occurs. Time Periods are:</p> <ul style="list-style-type: none"> • H (Hours) • MIN (Minutes)

Screen Name	Definition	Shop Data Entry
		For example 2 hours or 30 minutes. For processes that are continuous, enter 24 hours.
Enter the date the process starts	The date the process starts	Choose the start date by clicking on the calendar icon, scrolling through the calendar screens until you find the correct date, and then clicking on the date to select.
<i>If you can project an end date, please specify date:</i>		
End date	The date the process ceased to be performed in the shop.	<p>DO NOT END DATE a process without prior consultation from your HMMP team. If the process is for a specific one-time use or Time Compliance Technical Order (TCTO) you may enter the projected end date.</p> <p>An example of a process that would have an end date is smoke oil used for the Thunderbird Air Show.</p> <p>Warning: once the process is end dated, all related items to that process are also end dated (materials, PPE, Engineering Controls, etc.)</p> <p>Once you've consulted with the HMMP team, and you must end date the process, choose the end date by clicking on the calendar icon, scrolling through the calendar screens until you find the correct date, and then clicking on the date to select.</p>
End Date Reason	The reason the process was end dated.	<p>Choose the appropriate reason the process is being ended by clicking on the drop down box.</p> <p>Values in the drop down box are:</p> <ul style="list-style-type: none"> • Original Approval was Incorrect • Other • Process Reorganization • Shop no longer exists or combined with another shop • Workload No Longer Exists
For ESOH Use Only		
BEE Process Description	For BEE to further describe the process for their use	Leave Blank - For BEE use only
Next Action Date	The date an ESOH reviewer may want to review the process	Leave Blank –For ESOH use only
WEAPON SYSTEMS SUBTAB		
Add Weapon System	Add a weapon system to your process.	Enter the weapon system that is affected by this process. You may enter more than one weapon system. If the end item is not a weapon system listed in this sub-tab, describe the end item under the Justification Tab and do not load a weapon system.
Service Component	The service component that owns the weapon system.	<p>Select each tier from the Weapon System List of Values :</p> <ul style="list-style-type: none"> • AIR FORCE • ARMY • COAST GUARD • NAVY
Category	The category of weapon system.	Make this first selection and it will determine what is filtered in the next list.
Type	The type of weapon system.	Select the type of weapon system. This selection will determine what displays on the next list.

Screen Name	Definition	Shop Data Entry
System	The name of the weapon system.	Select the name of the weapon system.
LOCATION TAB		
Is this process performed in the Shop?	Identifies if the process is performed in the shop.	Select the correct radio button (Yes or No) to indicate if the process is performed in the shop, as opposed to your shop personnel travel somewhere else to perform the process.
<i>If the process is not performed in the shop, specify where it is performed:</i>		
Location	The location(s) other than the shop where a process may be performed.	If the process is performed somewhere other than the shop, enter the location(s) where the process is performed. Example: if the shop is located inside an aircraft hangar, but the work is performed on the flight line, you would first select "No" then enter the location where the work will typically be performed. Select the locations from the List of Values. The location must have been entered in the location pick list associated to the shop for it to appear in the List of Values.
Is this process performed indoors, outdoors, or both?	Indicates if the process is performed indoors, outdoors, or both.	Select the correct radio button (Indoors, Outdoors, Both) to indicate if the process is performed indoors, outdoors, or both indoors and outdoors.
Is this process performed in a small or restricted space?	Indicates if the process is performed in a small or restricted space.	Select the correct radio button (Yes, No, or Not Selected) to indicate if the process is performed in a small or restricted space, such as a small room, inside an aircraft, or mechanical room. If you don't know, contact the Wing Safety Office, and they will help you.
Is this process performed in a confined space?	Indicates if the process is performed in a confined space as defined by 29 CFR 1910.146	Select the correct radio button (Yes, No, or Not Selected) to indicate if the process is performed in a confined space. If you are unsure whether this process is performed in a confined space, contact the base Safety office. There are specific AFOSH and OSHA requirements that must be met when a process is performed in a confined space.
JUSTIFICATIONS TAB		
Add Justification	Add a justification to your process.	Justifications include the driver for your process (i.e. Technical Order, DoD Publication, etc). You may have multiple justifications for a single process. You must have at least one justification.
<i>If the end item is not a Weapon System, describe the end item</i>		
Please describe the end item	A description of the end item affected by the process.	If the end item is not a weapon system, describe the end item. If the end item is a weapon system, enter the weapon system in the weapon system sub tab found under the Details Tab. The end item is whatever item you are applying the hazardous material to, such as a piece of Aerospace Ground Equipment, a tank, a building, etc.
Justification Type	The broad category of what justifies the process and/or materials.	Select the Justification Type from the drop-down list. Values are <ul style="list-style-type: none"> • COMMERCIAL PUBLICATION – this may include the Owner's manual • CONTRACTING DOCUMENT • DEPLOYMENT • DOD PUBLICATION – any government publication

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		<p>that is not a Technical Order, TCTO or Technical Manual such as an AFI</p> <ul style="list-style-type: none"> • FACILITY MAINTENANCE – includes housekeeping functions such as stripping floors, cleaning windows, etc. • LABORATORY PROCEDURE • OFFICIAL CORRESPONDENCE • SPECIAL PROJECT • STANDARD OPERATING PROCEDURES - Use this justification when the process and material is a standard shop procedure and no critical end item or weapon system is involved. This justification is for processes that obviously have no written call-outs. A justification document is not expected to exist. An example is general purpose lubricating oil applied to tools for corrosion prevention. • TECHNICAL ORDER/TCTO/TECHNICAL MANUAL
Is the document classified?		Click on the Yes or No radio button to indicate if the justification for the process is classified.
<i>If the justification type is a Technical Order, please provide a Tech Order Number</i>		
Tech Order Number	Document identifying the repair and maintenance of a weapon system end item.	<p>If the justification that supports the process or material(s) used in the process is a Technical Order or TCTO, select it from the List of Values.</p> <p>When the justification is a TO/TCTO/TM, and a specific system/equipment TO is applicable to the process and end item, it should be referenced as the primary justification rather than a general TO. In the event of a conflict between a system/equipment TO and a general TO, the system/equipment TO always takes precedence. If a system/equipment TO references a general TO for a chemical use, the general TO will be referenced as the secondary justification. In either case specific paragraphs in both TOs must be referenced. TOs are required as the justification if one has been published for the material, end item or process requested.</p>
Request New Technical Order	Request the Helpdesk add a new Technical Order to EESOH-MIS.	If the TO or TCTO is not listed in the LOV, click on the Request New Technical Order hyperlink, and enter the Technical Order number, Title directly off the front page of the document, and Revision if applicable. You may also call the EESOH-MIS Help Desk at 1-866-488-4069 with the information and they will validate the request and load the data.
Document #	Document number and/or name justifying the process and/or hazardous materials.	If the justification document is not a Technical Order or TCTO, enter the document number that supports the process or material(s) used in the process.
Page #	The Page No in the justification document supporting the process and/or hazardous materials	Enter the Page Number of the justification document. This is not required unless the justification is a Technical Order.
Paragraph #	The Paragraph No in the justification document supporting the process and/or hazardous materials	Enter the Paragraph Number of the justification document. This is not required unless the justification is a Technical Order.

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Revision #	The revision number of the Technical Order or other justification document supporting the process and/or hazardous material.	Enter the Revision Number of the justification documents. If a selection is made from the Tech Order LOV, this field should auto-populate.
Revision/Change Date	The revision or change date of the Technical Order or other justification document supporting the process and/or hazardous material	Enter the Revision or Change Date of the justification document. If a selection is made from the Tech Order LOV this field should auto-populate.
Justification Remarks	Additional information about the justification.	Enter any additional information to support the justification of the material and process. This field can be left blank if not known or not applicable.
Current File (5 MB Limit)		This will display any files previously uploaded. The maximum file size is (5MB). If the file is too large, any previous data entered on this page will not be saved.
Upload New File to Replace Current File	Browse and upload file to replace existing file.	Justification documents or pages from the document can be electronically attached to the process authorization. Click on the Browse Button to find the location of the file to upload and attach to the process. AFI 32-7086 requires that the justification for the process and/or hazardous materials is supported with the documentation. If the justification document is not electronically attached, hard copies can be provided to the approving officials.
MATERIAL HANDLING TAB		
How will the materials be mixed?	Describes how materials will be mixed in the process.	Describe how the hazardous materials will be mixed or combined with other ingredients in performing the requested process. Values in the drop down box are: <ul style="list-style-type: none"> • CLOSED CONTAINER MIXER • HAND • NOT MIXED • OPEN CONTAINER MIXER • STIRRED
How will the materials be abraded?	Describes how materials used in the process will be abraded.	Describe how the hazardous materials will be abraded, OR used to facilitate the abrasion of another material in performing the requested process. Values in the drop down box are: <ul style="list-style-type: none"> • GRINDER • NOT ABRADED • SANDER • WIRE BRUSH
How will the materials be heated?	Describes how materials will be heated in the process.	Describe how the hazardous materials will be heated in/by performing the requested process. Values in the drop down box are: <ul style="list-style-type: none"> • ELECTRIC HEATED TANK • ELECTRIC OVEN • GAS HEATED TANK • GAS OVEN • NOT HEATED

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		<ul style="list-style-type: none"> • OVEN • SOLDERING IRON • TANK • TORCH <p>If the hazardous materials will be heated, enter the estimated minimum and maximum temperatures.</p>
How will the materials be transferred?	Describes how materials will be transferred in the process.	<p>Describe how the hazardous materials will be transferred. Values in the drop down box are:</p> <ul style="list-style-type: none"> • NOT TRANSFERRED • Poured • PUMPED
<i>If materials will be heated, specify minimum and maximum temperatures:</i>		
Minimum	The minimum temperature material will be heated in the process.	Enter the minimum temperature at which material may be heated in the process.
Maximum	The maximum temperature material will be heated in the process.	Enter the maximum temperature at which material may be heated in the process.
Unit	The temperature unit of measure for a heated process	<p>Select from the drop down</p> <ul style="list-style-type: none"> • CELSIUS • FAHRENHEIT • KELVIN
What is the pressurization method?		<p>Describe how the hazardous materials will be pressurized during performing the requested process. Examples:</p> <ul style="list-style-type: none"> • AIR HOSE • HAND-PUMP • NOT PRESSURIZED
<i>If materials will be pressurized, specify minimum and maximum pressures:</i>		
Minimum	The minimum value the material will be pressurized in the process	Enter the minimum pressure at which material may be pressurized in the process.
Maximum	The maximum value the material will be pressurized in the process	Enter the maximum pressure at which material may be pressurized in the process.
Unit	The pressurization unit of measure for the process	<p>Select the unit of measurement from the drop down list. The values are:</p> <ul style="list-style-type: none"> • ATMOSPHERE • INCHES OF MERCURY • INCHES OF WATER • MILLIMETERS OF MERCURY • POUNDS PER SQUARE FOOT • POUNDS PER SQUARE INCH
MATERIALS TAB		
Add Material	Add a material used in your process.	You may add as many materials as required. It is helpful to know the MSN you need to add, any research for MSN should be conducted prior to adding the material to the process. Note: a process may be created without a hazmat.
MSN	The unique number identifying the hazardous material item. The number may be either a National	<p>Select the MSN that will be used in the process from the List of Values.</p> <p>The MSN must be verified within EESOH-MIS to proceed with</p>

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	Stock Number (NSN) or Stewarded Local Purchase Number (SLPN).	the addition of new material to this process. If the MSN is not verified, you may conduct further research in the Manage Products (MSDS) area, or contact the Installation SDS Gatekeeper for assistance. When the correct number is found, click CONTINUE. This will bring up details of the material selected and allow you to enter additional information.
Noun	The noun is a description of the material that is unique to the material without referencing a particular manufacturer.	Display Only Nouns are built with an item name from FEDLOG and contain other characteristics in the description of the material. They are generic in nature but informative and unique to the material. Example: Lubricating Oil, Engine 10W30 or Adhesive, White, Silicone Rubber.
Description of Material	This is additional information to help describe the material.	Display Only
Container Size	This is a unique numeric value for the material that helps construct the CUP – Container Unit of Measure and Package. Different CUPs will require a different MSN.	Display Only This is a numeric value that works in conjunction with the next two data fields to describe the unique size of material container and packaging.
Container UOM	The Unit Of Measure that makes up the CUP.	Display Only This value is a unit of measure that describes the means in which the container and package of the material are measured.
Container Package	The Container Package is the final component of the CUP. If this value should differ for the same material – then a new MSN is required.	Display Only This value is a text description of the package that stores the material.
Quantity in Package	This is the quantities that comprise the package or container.	Display Only This value shows the number of containers in the package.
Supply Unit of Issue	This value is directly from FEDLOG/WebFLIS	Display Only This value describes the type of container to be issued (i.e. CO-container, BX- Box, CY- Cylinder etc.)
<i>If this MSN is being added to replace an MSN already on the process, please select the existing MSN and the reason for the replacement:</i>		
MSN	List of previously approved MSNs are displayed in the dropdown	If the MSN is being added to replace an MSN already on the process, please select the existing MSN and the reason for the replacement.
Reason for MSN Replacement	Replacing an MSN in a process authorization may be required in the future to accurately describe the changes that can occur in the life of material usage for a process.	Select the appropriate reason from the following list of values: <ul style="list-style-type: none"> • Erroneously Approved • Hazardous Ingredient/Material Not Allowed on Base • Material Justification No Longer Supports • Material No Longer Available • Material No Longer Needed In Process • Material Poses Regulatory Concern • Other • Replaced with Less Hazardous/Exempt/Green Material
<i>Shop Material Preferences:</i> <i>Displayed are the shop's current preferences for this material.</i>		

Screen Name	Definition	Shop Data Entry
<p><i>If editable, the shop has no preferences for this material. To make changes to the Shop's Material Preferences, please go to Manage Shops:</i></p>		
Draw Amount	The amount a shop will typically draw when requesting the hazardous material from a HAZMART.	<p>Enter the Draw Amount, Frequency and Draw Frequency values. This will represent the quantity of material and number of times and frequency material will be drawn from your distribution point, usually a HTA.</p> <p>For example:</p> <ul style="list-style-type: none"> - 5 (units of issue) 5 X Month - 3 (units of issue) 1 X Yearly <p>The Draw Amount is used in conjunction with the Draw Frequency to reflect how much material and how often material will be withdrawn from the HTA for a typical/normal workload. Increased amounts may be required during surge periods.</p> <p>Note: Keep the CUP/QIP/SUI in mind, especially when selecting a large amount (55 GL DR) or boxes/cases (24/BX, 12/CS) of material.</p>
Draw Frequency	The typical frequency a shop will request the Draw Amount from a distribution point.	<p>The Draw Amount and Draw Frequency are numeric values – enter the number.</p> <p>Select the Draw Frequency from the drop down box.</p> <p>Values are:</p> <ul style="list-style-type: none"> • BI-WEEKLY • DAILY • GY – Greater than one Year • HOURLY • MONTHLY • ONE-TIME ONLY • QUARTERLY • WEEKLY • YEARLY
Max On Hand		Display Only. This will show as 0 until the process has been approved. EESOH-MIS will allow a max-on-hand of 3 times the draw amount. You may adjust this max on hand quantity once the material has been approved.
Will you accept the same draw amount of material in a smaller unit of issue?	Indicates a smaller unit of issue of the same material can be issued, should the original unit of issue not be available/in stock at the time of request.	<p>Click on the YES or NO radio button to indicate that you will accept the same material in a smaller unit of issue.</p> <p>Note: currently this functionality does not work</p>
Is there a sole source requirement for this material?	Indicator that the material has a sole source requirement.	<p>Click the Yes or No radio button to indicate there is a sole source requirement for this material.</p> <p>A sole source requirement is not a material preference but a documented requirement for a particular vendor's material. If this authorization indicates there is a sole source requirement, EESOH-MIS will only allow the issue of the particular material indicated as the sole source requirement.</p>
If there is a sole source requirement for this material, please complete the fields below:		

Screen Name	Definition	Shop Data Entry
Explanation	The justification for a sole source requirement.	Provide an explanation to justify the sole source requirement. Citing the document forcing you to buy a specific item, is very helpful!
Part #	The part number of the material required to satisfy a sole source requirement.	Click on the LOV to perform a search for the material part number that must be used for this process.
Trade Name	The trade name of the material required to satisfy a sole source requirement.	Enter the trade name only if you have chosen "Yes" to sole source requirement.
Manufacturer Name	The manufacturer's name of the material required to satisfy a sole source requirement	Enter the manufacturer name only if you have chosen "Yes" to sole source requirement.
<p>If the material is specifically called out by a specification, identify it here. The format displayed here is Justification Type and Document #.</p>		
Justification	The justification for a particular hazardous material in a process.	Select the justifications from the shuttle box list on the left that supports the requested hazardous material. Click the ADD button to move the justification to the right shuttle box. Only the justifications entered in the Justification Tab will appear in the left-hand shuttle box. If the particular justification for the material does not appear, save this screen and return to the Justifications Tab to enter the missing justification. Clicking on the REMOVE button will remove a selection from the right-hand shuttle box.
How is this material used in the process	Describe how the hazardous materials will be used in the requested process.	This is where you can add more detail about how the material is specifically used in this process.
ODS Approval Number	An ODS Approval number that is granted for the use of an Ozone Depleting Substance that is managed in the DoD reserve for weapon system support. The DoD ODS reserve for weapon system support consist of various class 1 refrigerants (R-11, 12, 114, 500, 502), halons (1211, 1301, 1202), solvents (1,1,1 trichloroethane, & 113), and associated containers.	Enter the ODS Approval Number as received from the ODS Management Office.
ODS Application	Indicates the ODC use category.	Select the ODS Application from the drop down list. Values are: <ul style="list-style-type: none"> • FIRE SUPPRESSANT • NOT APPLICABLE • OTHER • REFRIGERANT • SOLVENT
For ESOH Use Only		
Section 311/312	Describes the exemption under Emergency Planning Community Right to Know Act (EPCRA) Section 311 and 312 that the authorization	For Environmental Use

Screen Name	Definition	Shop Data Entry
	meets	
Section 313	Describes the exemption under EPCRA Section 313 that the authorization meets	For Environmental Use
WASTE TAB		
What happens to materials as a result of this process?	The anticipated method by which a material will be disposed of when used in the authorized process.	<p>There are many considerations with regards to where material will ultimately be or what may be generated as a result of the process. If hazardous materials are being used, consider where the material will be after the process occurs. Also, what may be generated as a result of the process? Select all that are applicable to the process.</p> <p>Select the applicable disposal method from the shuttle box list on the left. To add a disposal method, click the Add button. To remove a disposal method, click the Remove button.</p> <ul style="list-style-type: none"> • <u>Air Emission</u> – no containerized waste is generated for disposal and the process only generates air emissions • <u>Used Oil</u>- any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities • <u>Burned/Incinerated</u> – the material or process generates a waste that is sent to an incinerator for disposal. • <u>Consumed in Use (Partially)</u> – the material is partially consumed and a portion has an alternate disposal method or emission. For example: the material used in painting; a portion will remain on the painted end item, a portion will become air emissions, and a portion will become containerized waste, i.e. filters, clean up of paint guns. • <u>Consumed in Use (Completely)</u> - the material is either consumed in use, is permanently applied to an item or becomes a part of the item and no waste is generated for disposal • <u>Drained to Industrial Waste Treatment Plant (IWTP)</u>- the material or process generates any amount of waste that is discharged down a dedicated line to an industrial waste treatment plant • <u>Drained to Sanitary Sewer</u> – the material or process generates any amount of waste that is discharged down a drain that leads to the sanitary sewer • <u>Industrial Waste Treatment Plant (IWTP)</u> – when the material or process generates any amount of waste that is accumulated in any type container for disposal at the IWTP • <u>Medical Waste, Removed By Contractor</u>- the material is removed by a contractor. For example, short-term contractors that remove their own waste or a “Safety

Screen Name	Definition	Shop Data Entry
		<p>Kleen” contractor who pumps out a tank and replaces it with clean solvent.</p> <ul style="list-style-type: none"> • <u>Other</u> – A disposal method is not listed here. Explain in the remarks block. • <u>Recycled Off-Site</u> – the material is recycled off-site after use in the process • <u>Recycled On-site</u> – the material is recycled on-site after use in the process • <u>Reused</u> – the material is reused after initial use in the process. • <u>Scrap Metal, Recycled</u> – The process generates a waste that is crushed and recycled. • <u>Stormwater</u> – the process generates waste that enters the storm water system, however, only a very special installation configuration would allow this to occur. Typically, hazardous material should never enter a storm water system. • <u>Trash, Municipal Waste</u> – the material or process generates any amount of waste that is disposed in a municipal dumpster that goes to the city landfill. • <u>Hazardous Waste</u> • <u>Universal Waste</u> • <u>Non-Hazardous Waste</u> • <u>Other Regulated waste</u> • <u>PCBs</u> • <u>State Listed Waste</u> • <u>Bulk Container</u> - the material or process generates any amount of waste that is disposed of in a tank, gondola, or other bulk container larger than an 110 gallon container
<p>What will the waste generated from this process look like? (i.e., green sludge, metal chips)</p>	<p>The expected appearance of any waste generated from a process</p>	<p>If you expect waste to be generated from the process describe as completely as possible what it will look like. Examples include: -Rags contaminated with oil -Paint chips mixed with blast media</p>
<p>Is this process going to generate containerized waste?</p>	<p>Indicates the process will generate containerized waste.</p>	<p>Click the Yes or No radio button to indicate that the material or process generates any amount of waste that is disposed of in a drum or container of 5 – 110 gallon capacity. If the process will generate containerized waste complete the questions below.</p>
<p><i>If the process will generate containerized waste complete the questions below.</i></p>		
<p>Estimate Waste Container Size:</p>	<p>The size and type of waste container that will be used to collect waste</p>	<p>Estimate the size of the waste container. Examples include: 4 ft cardboard box 8 ft cardboard box 5 gallon metal bung type can 10 gallon metal bung type can 15 gallon metal bung type can 20 gallon metal bung type can 30 gallon metal bung type drum 55 gallon metal bung type drum 1 cubic yard DOT bag</p>

Screen Name	Definition	Shop Data Entry
		6 gallon cardboard drum 10 gallon cardboard drum 15 gallon cardboard drum 20 gallon cardboard drum 30 gallon cardboard drum 55 gallon cardboard drum Cardboard box 10 gallon octagon cardboard box 1 gallon capacity can 4 x 4 CW pallet Cylinder 30 yard bulk waste container 3 yard dempster dumpster Steel flask for mercury 19 yard gondola 250 gallon port tank (for IWTP) 5 gallon open-top metal drum 10 gallon open-top metal drum 12 gallon open-top metal drum 15 gallon open-top metal drum 20 gallon open-top metal drum 25 gallon open-top metal drum 30 gallon open-top metal drum 55 gallon open-top metal drum Open top over pack metal drum Open top plastic over pack 570 gallon port tank (USPCI) 1 gallon plastic container 5 gallon plastic container 10 gallon plastic container 15 gallon plastic container 20 gallon plastic container 30 gallon plastic container 35 gallon plastic container 55 gallon plastic container 300 gallon metal portable tote Dumpsters and storage tanks 300 – 350 gallon pallet size
Approximately how much waste will be generated?	Quantity and frequency of waste generated.	Estimate the quantity of waste to be generated in a given period of time. For example: 1 55 gallon drum per month
Waste Site:	The waste site number where the waste stream will be accumulated.	Enter the waste site number where the waste will be accumulated. A satellite accumulation point is assigned by the Environmental Flight representing a location where waste is accumulated under satellite accumulation rules. If the waste site number is unknown, contact the installation waste manager, typically in the Environmental Flight.
IH CONTROLS TAB		
User will click Add IH Control and list of previously entered PPE will be displayed, and entering the Start Date will associate PPE to the process. If the PPE you use is not displayed, click the Create IH Control button and follow the steps below.		

Screen Name	Definition	Shop Data Entry
Start Date	The start date the IH Control is added to the process.	Choose the start date by clicking on the calendar icon, scrolling through the calendar screens until you find the correct date, and then clicking on the date to select.
End Date	The end date the IH Control is no longer associated to the process.	Choose the end date by clicking on the calendar icon, scrolling through the calendar screens until you find the correct date, and then clicking on the date to select.
Comments	Free text field to enter additional information	
Control Category	<p>Industrial hygiene controls can be broken down into categories. These categories are listed as Administrative, PPE, and Engineering.</p> <p>Administrative controls are examples of training and certification. If you are not trained or certified – then you cannot perform the process.</p> <p>Personal Protective Equipment is another category that is available. This choice will help to specify particular type of protective equipment for an industrial hygiene control.</p> <p>The engineering category will help to identify specific types of engineering controls (i.e. ventilation systems, vacuum sanders) used in the process to protect the shop worker.</p>	<p>Drop down:</p> <ul style="list-style-type: none"> • PPE • Engineering • Administrative <p>The entire list of control categories, types, and names is at Attachment 4.</p>
Control Type	The control type is the general class of IH control. If you were to specify administrative as the category now you can specify signs, annual training, or ergonomics.	LOV – selecting a control category from above will determine a list of values unique to the control category. The entire list of control types and names is at Attachment 4.
Control Name	The control name now gets into the specific type of control. If you selected Control Type as sign now you can specify if this is a warning sign or painted lines.	LOV – selecting a control type will determine a list of values unique to the control type selecting from above. For example – if you picked the control type of Engineering – you would see lists for vibration control mat, and various other ergonomic controls.
Description	For the description you have the option of providing a further detailed description of the IH control in a free text field. “ The lines are painted in yellow and black stripes on the raised edges of the floor entering the warehouse”	This is a text box that the user must utilize to further describe the IH control utilized in the process.
Facepiece	This field becomes mandatory if the PPE selected is a Respirator (i.e. full-face, half-face, etc.).	<p>Enter the information directly from the respirator</p> <p>FF Full-Face FFPD Filtering Facepiece (FFPD)</p>

Screen Name	Definition	Shop Data Entry
		GM Industrial Gas Mask HD Hood HD/AB Hood, Abrasive Blasting HD/W Hood, Welder's HEL Helmet HEL/AB Helmet, Abrasive Blasting HEL/W Helmet, Welding HM Half-Mask HM/HD Half-Mask with Hood MP Mouthpiece MSK Disposable Mask (Surgical/Dust) QM Quarter-Mask
Mask Type	This field becomes mandatory if the PPE selected is a Respirator (i.e. air purifying, airline, SCBA, PAPR).	Enter the information directly from the respirator Air Purifying (APR) Air Purifying/Supplied Air Particulate Respirator Powered Air Purifying (PAPR) Self-Contained Breathing Apparatus (SCBA), Closed Circuit Self-Contained Breathing Apparatus (SCBA), Open Circuit Supplied Air (SAR) Supplied Air, Entry/Escape Supplied Air, Escape Only
Equipment Tab		
Name	The equipment name.	If there is equipment associated to or used in the process, select the equipment from the LOV. The LOV will display the Name, Serial # and Model # of equipment that has been added in the Manage Equipment section and associated to the shop. Enter any and all equipment associated to the process.
Model #	The model number of the equipment.	
Serial #	The serial number of the equipment	
Sequence	Shop developed numbering system to identify equipment	
Location	Where Equipment is located	Location must be created in the Manage Equipment Section and associated to the shop
Start Date	The date the equipment is added to the process.	Choose the start date by clicking on the calendar icon, scrolling through the calendar screens until you find the correct date, and then clicking on the date to select.
Aspect/Hazard Inventory Tab		
Aspect	An aspect is an element of your organization's activities, products, or services that interact with the	LOV – There are 47 Aspect categories to choose from to determine the interaction or classification of interaction with the environment. Start by selecting the first aspect if there are

Screen Name	Definition	Shop Data Entry
	<p>environment. Examples of Aspects are air emissions from painting operations, or waste water generation from wash rack operations.</p>	<p>potentially many interactions with the environment. Pick an element of your organizations activities, products, or services that interact with the environment. There is not one choice that is correct – this is up to your interpretation and there could in fact be many interactions with the environment, not just one.</p> <p>At your installation this may be a task completed in conjunction with the base EMS manager.</p> <p>The following are examples of Aspect Categories:</p> <ul style="list-style-type: none"> Carbon monoxide emission Hazardous air pollutant emission Lead emission Nitrogen oxide emission Ozone emission (8 hour) Ozone depleting substance emission Particulate matter emission (2.5 microns) Sulfur oxide emission Volatile organic compound emission Other emissions to atmosphere Interaction with surface soil / sediment Interaction with subsurface soil/rock Interaction with land, other Interaction with groundwater, point source Interaction with groundwater, non-point source Interaction with surface water, point source Interaction with surface water, non-point source Interaction with wetland, point source Interaction with wetland, non-point source Interaction with water, other Conservation of cultural resources Conservation of energy Conservation of fuel Conservation of land Conservation of materials Conservation of natural resources Conservation of water Conservation of other Consumption of cultural resources Consumption of energy Consumption of fuel Consumption of land Consumption of materials Consumption of natural resources Consumption of water Consumption of other Generation of dust Generation of heat Generation of light Generation of noise Generation of odor Generation of radiation, ionizing Generation of radiation, non-ionizing

Screen Name	Definition	Shop Data Entry
		Generation of waste, hazardous Generation of waste, non-hazardous Generation of waste, solid Generation of other waste
Request New Aspect Button		Click on this button to request an aspect to be added to the available list of aspects. This form sends a work basket message including any text entered for the Steward to review. Enter the requested Aspect Description and click the SAVE button.
Aspect Info	Provide additional information about the aspect and its interaction with the environment. This can be helpful to further define the aspect and its interaction with the environment. This is especially helpful if there are similar aspects listed for one process.	Is this an aspect that requires special notification or extra clarification? This can be helpful to further define the aspect and its interaction with the environment. This is especially helpful if there are similar aspects listed for one process.
Aspect Group	Further definition of an aspect that is either permitted or not permitted.	Drop Down <ul style="list-style-type: none"> - Not Permitted/Unintended/Unregulated - Permitted/Intended/Regulated
Regulatory Driver	Each aspect for the process may have a related environmental law that regulates or monitors its interaction with the environment.	LOV – There are 26 regulatory drivers available to associate to this aspect to help define the regulatory requirements. There may be multiple environmental laws related to particular aspects, its' okay to pick more than one. The following are examples of regulatory drivers available for selection: <ul style="list-style-type: none"> - Clean Air Act - Clean Air Act Amendments - Comprehensive Environmental Response, Compensation, and Liability Act - Clean Water Act (Federal Water Pollution Control Act) - Clean Water Act Amendments - Emergency Planning And Community Right-To-Know Act - Food, Drug, and Cosmetic Act - Federal Facility Compliance Act - Federal Insecticide, Fungicide and Rodenticide Act - Hazardous Waste Operations and Emergency Response - Hazardous Materials Transportation Act - Hazardous and Solid Waste Amendments - National Environmental Policy Act - Oil Pollution Act - Occupational Safety and Health Act - Federal Pollution Prevention Act - Resource Conservation And Recovery Act - Superfund Amendments and Reauthorization Act - Safe Drinking Water Act

Screen Name	Definition	Shop Data Entry
		<ul style="list-style-type: none"> - Asbestos Hazard Emergency Response Act - Indoor Radon Abatement Act - Lead-Based Paint Exposure Reduction Act
End Date	Select an end date for this aspect if this is an aspect that has a possible time limit.	Calendar – Select the values from the calendar to enter the date that this aspect and its impacts will end.
Save Button		Click on the SAVE button to perform the Aspect Scoring
Add Impact Button	There are 46 Impacts that can be selected from to relate to the aspect that you have chosen	<ul style="list-style-type: none"> - Click on the Add Impact LOV to access the list of possible Impacts
Impact	An Impact is the determination to the degree of which an aspect will impact the environment positively or negatively.	<p>LOV - There are 46 Impact categories that can be selected from to relate to the aspect that you have identified for this process. This does not have to be a one to one relationship. Your aspects, your interaction with the environment from your product or service can have many impacts on the environment.</p> <p>Select the Impacts from the following list that apply for the process:</p> <ul style="list-style-type: none"> - Degradation/reduction of air quality, indoor - Degradation/reduction of air quality, outdoor - Degradation/reduction of built infrastructure/facilities - Degradation/reduction of cultural resources - Degradation/reduction of land quality - Degradation/reduction of natural resources - Degradation/reduction of water quality (drinking water) - Degradation/reduction of water quality (groundwater) - Degradation/reduction of water quality (surface/storm water) - Degradation/reduction of quality of life - Degradation/reduction of other - Disposal to surface (landfill) - Disposal to subsurface - Disposal to other - Improvement/preservation of air quality, indoor - Improvement/preservation of air quality, outdoor - Improvement/preservation of built infrastructure/facilities - Improvement/preservation of cultural resources - Improvement/preservation of land quality - Improvement/preservation of natural resources - Improvement/preservation of water quality (drinking water) - Improvement/preservation of water quality (groundwater) - Improvement/preservation of water quality (surface/storm water) - Improvement/preservation of quality of life - Improvement/preservation of other

Screen Name	Definition	Shop Data Entry
		<ul style="list-style-type: none"> - Recycling of air - Recycling of land - Recycling of water - Recycling of waste, hazardous - Recycling of waste, non-hazardous - Recycling of waste, solid - Recycling of other - Reuse of air - Reuse of land - Reuse of water - Reuse of waste, hazardous - Reuse of waste, non-hazardous - Reuse of waste, solid - Treatment of air - Treatment of land - Treatment of water - Treatment of waste, hazardous - Treatment of waste, non-hazardous - Treatment of waste, solid - Treatment of other - Reuse of Other
Relative Cost	Relative cost is the cost of compliance related to the aspect. This can be measured in terms of training, manpower, and the use of materials. This is not the cost of operation or maintenance but what is spent to stay in compliance.	<p>1 point – Relative costs in the lowest 20% (0 to 20%) of the range for all individual installation impacts.</p> <p>2 points – Relative costs in the fourth 20% (21-40%) of the range for all individual installation impacts; and</p> <p>3 points – Relative costs in the third 20% (41-60%) of the range for all individual installation impacts;</p> <p>4 points – Relative costs in the second 20% (61-80%) of the range for all individual installation impacts;</p> <p>5 points – Relative costs in the top 20% (81-100%) of the range for all individual installation impacts;</p>
Risk Probability	Assess the potential risk that this aspect impact poses on the local community and the environment. This is one category to determine the frequency of which this impact could occur to the local community or environment. This category in combination with risk severity will help to identify overall environmental risk.	<p>The following entries are selections found in the EESOH-MIS drop down menu</p> <p>Frequent: Qualitative Definition – Occurs often in the life of the system. Quantitative Definition – Probability of occurrence is greater than one in ten.</p> <p>Likely: Qualitative Definition – Occurs several times in the life of the system. Quantitative Definition – Probability of occurrence is less than one in ten but greater than one in a hundred.</p> <p>Occasional: Qualitative Definition – Will occur in the life of the system. Quantitative Definition – Probability of occurrence is less than one in a hundred but greater than one in a thousand.</p> <p>Seldom: Qualitative Definition – Unlikely, but could occur in the life of the system. Quantitative Definition – Probability of occurrence is less than one in a thousand but more than one in a million.</p> <p>Unlikely: Qualitative Definition – So unlikely you can assume it will not occur in life of the system. Quantitative Definition – Probability of occurrence is less than one in a million.</p>

Screen Name	Definition	Shop Data Entry
Risk Severity	The potential risk for an aspect is the impact it has on the local community and the environment in the worst case scenario. This in combination with risk probability will help to define the environmental risk.	The following definitions are used to describe the severity of consequences likely to result from the worst-case scenario impact. Catastrophic: Irreversible or extreme damage to a natural environment or loss of a critical natural habitat, natural resource or cultural resource. Replacement costs exceeding \$100,000, death, or permanent total disability to an individual. Critical: Reversible damage to a natural environment, major degradation to a critical natural habitat, natural resource or cultural resource. Replacement cost exceeding \$50K but less than \$100K. Permanent partial disability or severe injury or occupational illness that may result in hospitalization of at least one person. Reversible environmental damage causing a violation of law or regulation. Marginal: Minor reversible damage to a natural environment, natural habitat, natural resource or cultural resource. Loss exceeding \$10K but less than \$50K, injury or minor occupational illness resulting in a lost work day, or environmental damage where restoration activities can be accomplished without violation of law or regulation. Negligible: Less than minor environmental degradation, loss exceeds \$2K but less than \$10K, injury or occupational illness not resulting in a lost work day, or minimal environmental damage not violating law or regulation.
Regulatory Implications	Each aspect that has a relationship to a compliance requirement needs to be evaluated with a regulatory score.	1 point: Unregulated Aspect 2 points: Currently below regulated thresholds – Currently below regulated thresholds; would likely become regulated if thresholds are reduced or activity increases. 3 points: Currently in compliance – Currently in compliance with no history of non-compliance. 4 points: Not in Compliance no enforcement actions– Currently in compliance, but with a documented history of occasional instances on non-compliance. 5 points: Not in compliance with NOV issued– Currently not in compliance or in compliance with a substantial history of instances of non-compliance.
Potential Mission Degradation	This score is the ability of the aspect to affect the mission capability of supporting its mission requirements. Review each aspect and score to determine its ability to affect the mission.	1 = No mission restrictions 2 = Minor mission restrictions 3 = Moderate mission restrictions 4 = Serious mission restrictions 5 = Unable to accomplish mission
Community Concern	This criterion scores the local community's perception of environmental issues at your installation. The community perception of a crisis can seriously affect the installations ability to support the mission.	1 = Community supports/ unconcerned 2 = Community could become concerned 3 = Some concern 4 = Serious concern 5 = Public outcry / lawsuits
Calculated Aspect Score	EESOH-MIS combines the scores from all the criteria in the previous sections to provide a total score for	These scores help to define which aspects are significant for an installation. Some of the criteria may have more weight that other depending on the location of the installation, its

Screen Name	Definition	Shop Data Entry
	the aspect. The score can help to define the significance of the aspect.	compliance history, and relationship with the public. Do not forget that both Environmental Risk and Frequency are combined in a matrix to give a single score for each criterion.
Override Score	There is an opportunity for an ESOH team member to review the score set by shop personnel and copy or update the shop personnel's evaluation with an override score based on the ESOH team member's evaluation.	Provide the override score in the field based on the overall score from the ESOH reviewer for this processes aspect that is reviewed.
Override Reason	Text box available for entry of an override reason if the ESOH reviewers feel that it is necessary to load new scores against an environmental aspect.	
Is this a Significant Aspect?	There is a baseline score that should be identified at the installation by the Cross Functional Team that determines when an Aspect is significant and will be studied further.	Yes no radio
Objective	Objectives are the issues that will be the focus of the energies of the installation.	Type in the specific objective that is related to the Aspect that has been scored for this process. An example would be something like "Reduce air emissions"
Targets	The Target is the goal or milestone that is established to support the objective.	Type in the specific target that is related to the Aspect that has been scored for this process. An example of a target would be something like "Provide training to all shops that operate generators on maintaining usage logs by December 2006"

ATTACHMENT 3 - PROCESS CODES

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
A	Administrative	AD	Administrative	1104	Calculator/key pad use
				1172	Clerical and office automation
				1250	Computer use, multiple operations
				1251	Computer use, NOC
				1252	Computer use/keyboard and VDT
				1263	Copying/sorting
				1456	Filing/general
				1591	Keying/typing/mousing
				1614	Lifting/pushing/pulling
				1637	Management
				1707	Monitoring visual displays
				1756	Paper shredding
				1945	Stapling
				2043	Telephone use
				2149	Writing/illustrating
				1028	Administrative, NOC
I	Industrial	AB	Adhering/Bonding/Sealing	1021	Adhering/bonding/sealing - aerosol
				1022	Adhering/bonding/sealing - all usages
				1023	Adhering/bonding/sealing - brush/dobbing
				1024	Adhering/bonding/sealing - gun
				1025	Adhering/bonding/sealing - hand tool
				1026	Adhering/bonding/sealing - hand wipe
				1027	Adhering/bonding/sealing - squeeze tube
I	Industrial	AO	Aircraft/Flightline Operations	1033	Air traffic control
				1034	Aircraft loading
				1276	Cryogenics (liquid oxygen handling)
				1320	Deicing, chemical
				1321	Deicing, mechanical- hand
				1322	Deicing, mechanical- powered
				1425	Engine Run-Ups
				1471	Flight line operations
				1472	Flight line operations, multiple operations
				1473	Flight line operations, troubleshooting
				1474	Flight Ops, all modes
				1475	Flight Ops, landings
				1476	Flight Ops, takeoffs
1477	Flight Ops, taxi				

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1603	Launch and recovery
				1697	Mk105 sled operation
				1746	Operate support equipment
				2072	Unmanned aerial vehicle ops
				1035	Aircraft/flightline operations, NOC
I	Industrial	AW	Asbestos Work	1050	Asbestos abatement, blasting
				1051	Asbestos abatement, chemical encapsulation
				1052	Asbestos abatement, glovebag/box
				1053	Asbestos abatement, physical enclosure
				1054	Asbestos abatement, scraping
				1055	Asbestos abatement, stripping
				1056	Asbestos air sampling
				1057	Asbestos air sampling, background
				1058	Asbestos brake/clutch work
				1059	Asbestos fiber counting/identification
				1060	Asbestos gasket work
				1061	Asbestos inspection
				1062	Asbestos inspection and bulk sampling
				1063	Asbestos insulation, multiple operations
				1064	Asbestos work, fabrication
				1066	Asbestos, HEPA vacuum maintenance
				1067	Asbestos, installation
				1137	Class I OSHA asbestos work, glove box
				1138	Class I OSHA asbestos work, mini-enclosure
				1139	Class I OSHA asbestos work, multiple glove bag
				1140	Class I OSHA asbestos work, negative pressure enclosure
				1141	Class I OSHA asbestos work, single glove bag
				1142	Class I OSHA asbestos work, water spray process
				1143	Class II OSHA asbestos work
				1144	Class III OSHA asbestos work, glove bag
				1145	Class III OSHA asbestos work, mini-enclosure
				1146	Class IV OSHA asbestos work, building maintenance
				1527	Handling/cleanup, asbestos
				1525	Handling, mechanical loader bagging
				1654	Mechanical loader bagging
1732	Non-containment removal				
1753	Packing material				
2063	Transite panel removal				
2092	Vinyl asbestos tile, floor care/maintenance				

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1065	Asbestos work, NOC
I	Industrial	BC	Brazing/Soldering/Welding/ Cutting	1101	Brazing
				1289	Cutting, air carbon arc
				1290	Cutting, arc
				1291	Cutting, electron beam
				1292	Cutting, laser
				1293	Cutting, multiple operations
				1295	Cutting, oxygen/oxyacetylene
				1296	Cutting, plasma
				1297	Cutting, thermal
				1294	Cutting, NOC
				1346	Desoldering
				1555	Hotwork helper/firewatch
				1934	Soldering, electrical
				1935	Soldering, gun
				1936	Soldering, heated iron
				1938	Soldering, torch
				1937	Soldering, NOC
				2049	Tinning
				2124	Welding, air carbon arc
				2125	Welding, arc
				2126	Welding, electron beam
				2127	Welding, flux core processes
				2128	Welding, gas metal arc (MIG)
				2129	Welding, gas tungsten arc welding (TIG)
				2130	Welding, laser
				2131	Welding, multiple operations
				2133	Welding, oxyfuel gas
				2134	Welding, plasma arc
				2135	Welding, resistance spot
				2136	Welding, shielded metal arc welding (smaw/stick)
				2137	Welding, solid state
				2138	Welding, spot
				2139	Welding, stud
2132	Welding, NOC				
I	Industrial	CT	Cementing and Related Tasks	1103	Brick cutting
				1119	Cement/mortar mixing
				1120	Cementing and related tasks, multiple operations

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1652	Masonry
				1121	Cementing and related tasks, NOC
I	Industrial	CD	Cleaning- Chemical, & Degreasing	1013	Acid cleaning, bright dip
				1014	Acid cleaning, descaling
				1015	Acid cleaning, etching
				1016	Acid cleaning, pickling
				1017	Acid cleaning, spray
				1018	Acid cleaning, wipe
				1036	Alkali cleaning, etching
				1134	Chemical stripping
				1150	Cleaning, chemical
				1151	Cleaning, chemical, manual wiping
				1152	Cleaning, chemical, multiple operations
				1167	Cleaning/washing, cold dip tank & cold soak
				1168	Cleaning/washing, detergent
				1169	Cleaning/washing, enclosed washer
				1170	Cleaning/washing, flush cleaning
				1171	Cleaning/washing, heated dip tank/heated soak
				1301	Degreasing, brush/dobbing
				1302	Degreasing, dip tank, cold
				1303	Degreasing, dip tank, heated
				1304	Degreasing, emulsion
				1305	Degreasing, flush cleaning
				1306	Degreasing, gun
				1307	Degreasing, manual wiping
				1308	Degreasing, multiple operations
				1309	Degreasing, NOC
				1310	Degreasing, open-top vapor
				1311	Degreasing, power wash
				1312	Degreasing, spray
				1313	Degreasing, squeeze tube
				1314	Degreasing, vapor
				1315	Degreasing, wipe cleaning
					Degreasing, aerosol
I	Industrial	CL	Cleaning- Mechanical	1084	Barrel finishing
				1541	Handsanding
				1645	Manual wirebrushing
				1661	Metal cleaning, chipping

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1662	Metal cleaning, deck crawler
				1663	Metal cleaning, grinding
				1664	Metal cleaning, multiple operations
				1665	Metal cleaning, polishing and buffing
				1666	Metal cleaning, sanding
				1667	Metal cleaning, scraping
				1668	Metal cleaning, wirebrushing
				1810	Polishing, machine assisted
				1811	Polishing, manual
				1149	Cleaning- mechanical, NOC
I	Industrial	CO	Cleaning- Other	1153	Cleaning, other - all usages
				1154	Cleaning, other - gun
				1155	Cleaning, other - hand
				1156	Cleaning, other- hand sanding
				1157	Cleaning, other - hand wipe
				1158	Cleaning, other- compressed air
				1159	Cleaning, other- manual wirebrushing
				1160	Cleaning, other- media blasting
				1161	Cleaning, other- multiple operations
				1163	Cleaning, other- powered
				1164	Cleaning, other- scraping
				1165	Cleaning, other- steam
				1166	Cleaning, other- ultrasonic cleaning
				1162	Cleaning, other- NOC
I	Industrial	CR	Coating/Paint Removal	1001	Abrading
				1002	Abrasive blast, aluminum oxide
				1003	Abrasive blast, cleanup
				1004	Abrasive blast, glass bead
				1005	Abrasive blast, glove box, NOC
				1006	Abrasive blast, hopper tending/helper
				1007	Abrasive blast, hydro
				1008	Abrasive blast, mineral grit
				1009	Abrasive blast, organics
				1010	Abrasive blast, sand
				1011	Abrasive blast, shot
				1012	Abrasive blasting, NOC
				1178	Coating/paint removal, chemical stripping, dip
				1179	Coating/paint removal, chemical stripping, pour
				1180	Coating/paint removal, chemical stripping, spraying

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1181	Coating/paint removal, chemical stripping, wipe/brush
				1183	Coating/paint removal, heat gun
				1184	Coating/paint removal, laser
				1182	Coating/paint removal, hand sanding/scraping
				1185	Coating/paint removal, machine sanding/scraping
				1186	Coating/paint removal, needlegunning
				1188	Coating/paint removal, thermal stripping
				1187	Coating/paint removal, NOC
I	Industrial	CP	Coating/Painting Operations	1192	Coating/painting, brush/roller
				1175	Coating, powder
				1176	Coating, wipe
				1177	Coating/paint mixing/pouring
				1190	Coating/painting, airbrushing
				1191	Coating/painting, airless spraying
				1192	Coating/painting, brush/roller
				1193	Coating/painting, cleaning equipment
				1194	Coating/painting, dip
				1194	Coating/painting, dip
				1195	Coating/painting, electrophoretic
				1196	Coating/painting, multiple operations
				1196	Coating/painting, multiple operations
				1197	Coating/painting, plastic flame coating
				1202	Coating/painting, spray/aerosol
				1202	Coating/painting, spray/aerosol
				1198	Coating/painting, spray - electrostatic automatic
				1199	Coating/painting, spray - electrostatic manual
				1200	Coating/painting, spray - HVLP gun
				1201	Coating/painting, spray - standard gun
1253	Conformal				
1651	Masking/Surface Prep				
1754	Painting, spray latex				
1189	Coating/painting operations, NOC				
I	Industrial	CM	Communications	1225	Communications, equipment operation
				1226	Communications, microwave and radio frequencies
				1227	Communications, multiple operations
				1229	Communications, teletype operation
				1249	Computer room operation
				1228	Communications, NOC

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
I	Industrial	CW	Composite Work	1230	Composite work, cutting
				1231	Composite work, drilling
				1232	Composite work, grinding/sanding
				1233	Composite work, handling
				1234	Composite work, layup- hand
				1235	Composite work, layup- spray
				1236	Composite work, man-made fibers
				1237	Composite work, mixing
				1238	Composite work, molding of parts
				1239	Composite work, multiple operations
				1241	Composite work, remove paint- blast
				1242	Composite work, remove paint- grind
				1243	Composite work, remove paint- needlegun
				1244	Composite work, remove paint/sand
I	Industrial	CF	Crafts	1240	Composite work, NOC
				1048	Artifact restoration/preservation
				1122	Ceramics work
				1271	Crafts, multiple operations
				1509	Glass blowing
				1510	Glass cutting
				1511	Glazing
				1592	Kilning
I	Industrial	DE	Dental	1272	Crafts, NOC
				1324	Dental equipment sterilization
				1325	Dental, acid etching teeth
				1326	Dental, anesthesia
				1327	Dental, blasting
				1328	Dental, cement application
				1329	Dental, cleaning
				1330	Dental, filling/drilling
				1331	Dental, general
				1332	Dental, grinding
				1333	Dental, housekeeping services
				1334	Dental, laboratory analysis
				1335	Dental, mixing
				1336	Dental, multiple operations
1337	Dental, NOC				
1338	Dental, prophylaxis				
1339	Dental, prosthetics casting				
1340	Dental, prosthetics grinding				
1341	Dental, prosthetics/acrylics				

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1342	Dental, tooth extraction
				1344	Dental, x-rays
				1343	Dental, x-ray processing
				1423	Endodontics
				1747	Oral surgery
				1750	Orthodontics
				1950	Sterilization
				1956	Sterilization, using EtO
				1337	Dental, NOC
I	Industrial	DP	Drywall/Plastering	1385	Drywall installation
				1589	Joint compound, mix & apply
				1796	Plastering
				1797	Plastering, multiple operations
				1386	Drywall/Plastering, NOC
I	Industrial	EE	Electrical/Electronics	1077	Avionics equipment repair
				1395	Electrical, facility maintenance
				1398	Electrical, multiple operations
				1391	Electrical parts repair
				1393	Electrical, battery charging
				1394	Electrical, battery maintenance
				1396	Electrical, installation/repair
				1397	Electrical, motor rewind
				1399	Electrical, NOC
				1401	Electronics repair, pressurizing waveguide
				1402	Electronics repair, calibration, manometric
				1403	Electronics repair, calibration, other
				1404	Electronics repair, calibration, RFR equipment
				1405	Electronics repair, installation repair
				1406	Electronics repair, multiple operations
				1408	Electronics repair, operate equipment
				1407	Electronics repair, NOC
1648	Manufacturing, circuit board				
2042	Telecommunications installation, repair, service				
I	Industrial	EL	Electroplating	1409	Electroplating, brush/dobbing
				1410	Electroplating, dip tank
				1411	Electroplating, mixing/pouring solutions
				1413	Electroplating, spray - flame
				1414	Electroplating, spray - plasma
				1415	Electroplating, vaporization

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1903	Selective plating
				1412	Electroplating, NOC
				1583	Jet engine testing, afterburner
				1584	Jet engine testing, all modes
				1585	Jet engine testing, approach
				1586	Jet engine testing, idle
				1587	Jet engine testing, intermediate
				1588	Jet engine testing, military
				1426	Engine testing, NOC
I	Industrial	ER	Environmental & Remediation	1031	Air sparging
				1032	Air stripping
				1086	Bio remediation
				1087	Bio venting
				1092	Biomass
				1518	Groundwater monitoring
				1569	Injection wells
				1597	Land farming
				1819	Prescribed/controlled burns
				1840	Pump & treat
				1864	Remediation monitoring
				1932	Soil reclamation
				1933	Soil vapor extraction
	1430	Environmental remediation, NOC			
I	Industrial	EV	Environmental Response		Biological response, contamination reduction zone (decon)
				1088	Biological response, exclusion zone
				1089	Biological response, support zone
				1091	Biological response, NOC
				1090	Chemical response, contamination reduction zone (decon)
				1130	Chemical response, exclusion zone
				1131	Chemical response, support zone
				1133	Chemical response, NOC
				1132	Oil response, booming
				1737	Oil response, decontamination
				1738	Oil response, dispersant
				1739	Oil response, insitu burning
				1740	Oil response, shoreline cleanup
				1742	Oil response, support activities
1743	Oil response, VOSS/SORS/Skimming				
1744	Oil response, NOC				
1741					

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1848	Radiological response, contamination reduction zone (decon)
				1849	Radiological response, exclusion zone
				1851	Radiological response, support zone
				1850	Radiological response, NOC
I	Industrial	EQ	Equipment Repair/Prev. Maintenance	1124	Charging/recharging, closed-loop pressurized
				1125	Charging/recharging, electric current
				1126	Charging/recharging, NOC
				1127	Charging/recharging, R22 leak check
				1424	Engine accessory testing
				1428	Environmental chamber testing
				1429	Environmental cold chambers
				1434	Equipment assembly/disassembly
				1436	Equipment installation, cable pulling
				1437	Equipment installation/removal
				1491	Fuel accessory testing
				1504	Gauge calibration
				1570	Inspecting
				1625	Lubricating, aerosol
				1626	Lubricating, brush/dobbing
				1627	Lubricating, gun
				1628	Lubricating, hand application
				1629	Lubricating, heated dip tank /heated soak
				1630	Lubricating, multiple operations
				1716	NOC, body work
				1717	NOC, brake/gearbox/clutch work
				1719	NOC, electrical/battery
				1718	NOC, crane maintenance
				1720	NOC, elevator/hoist
				1725	NOC, non-asbestos gaskets
				1721	NOC, generators
				1722	NOC, hydraulics
				1723	NOC, life support/survival equipment
				1724	NOC, multiple operations
				1726	NOC, office equipment repair
				1727	NOC, pneudralics
				1728	NOC, prop & rotor
1729	NOC, tire & wheel				
1822	Preventive maintenance				
1439	Equipment repair/prev. maint., NOC				
I	Industrial	FW	Fabric Work	1106	Canvas fabrication/repair

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1173	Cloth impregnation
				1388	Dyeing
				1613	Leather cutting
				1631	Machine sewing
				1905	Sewing and cutting
				2046	Textile/rope cloth manufacturing
				1450	Fabric work, NOC
I	Industrial	FP	Food Preparation/Handling	1080	Baking
				1257	Cooking
				1351	Dishwashing
				1482	Food preparation and handling
				1484	Food service cleanup
				1485	Food serving
				1653	Meat cutting/packing
				1710	Multiple operations
				1751	Oven cleaning
				1899	Scullery work/dishwashing
				1483	Food preparation/handling, NOC
I	Industrial	FU	Fuels	1205	Combusting fuel, AV-gas, internal
				1206	Combusting fuel, coal, external
				1207	Combusting fuel, fuel oil #2/diesel, external
				1208	Combusting fuel, fuel oil #2/diesel, internal
				1209	Combusting fuel, fuel oil #4/kerosene, external
				1210	Combusting fuel, fuel oil #6/heating oil, external
				1211	Combusting fuel, isobutane
				1212	Combusting fuel, JP-10, internal
				1213	Combusting fuel, JP-4, internal
				1214	Combusting fuel, JP-5, internal
				1215	Combusting fuel, JP-7, internal
				1216	Combusting fuel, JP-8, internal
				1217	Combusting fuel, mogas unleaded regular (MUR), internal
				1218	Combusting fuel, natural gas, external
				1219	Combusting fuel, natural gas, internal
				1220	Combusting fuel, propane (LPG), external
				1221	Combusting fuel, propane (LPG), internal
				1222	Combusting starter fluid, internal
				1223	Combusting waste oil, external
				1224	Combusting, dimethyl ether, external
				1353	Dispense/load, pour

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1354	Dispense/load, pump/nozzle
				1355	Dispense/load, rack/arm
				1492	Fuel cell repair, NOC
				1493	Fuel cell, purging/depuddling - air
				1494	Fuel cell, purging/depuddling - ambient air
				1495	Fuel cell, purging/depuddling - pump/blower/misc
				1496	Fuel/defuel aircraft
				1498	Fueling/defueling, non-aircraft
				1499	Fuels distribution
				1500	Fuels lab
				1941	Spilling/mishaps/leaking, equipment
				1501	Fuels, NOC
I	Industrial	HM	HM/HW Handling & Cleanup	1254	Container crushing/puncturing
				1255	Container opening/sampling
				1256	Contaminated materials handling
				1531	Handling/cleanup, issue/receive
				1526	Handling/cleanup, aerosol can crush/puncture
				1535	Handling/cleanup, mixed waste operations
				1538	Handling/cleanup, solvent/metal reclamation
				1539	Handling/cleanup, spill response
				1540	Handling/cleanup, tank cleaning/flushing
				1532	Handling/cleanup, lead shielding
				1534	Handling/cleanup, medical biological and infectious material
				1528	Handling/cleanup, ballast installation
				1529	Handling/cleanup, ballast removal
				1530	Handling/cleanup, filter maintenance
				1536	Handling/cleanup, multiple operations
				1537	Handling/cleanup, PCBs
				1615	Light bulb crushing
				1798	Plastic waste shredder/processor operation
				1816	Pouring
				1861	Recycling/reclaiming, closed-loop
				1862	Recycling/reclaiming, distillation
1863	Recycling/reclaiming, solvents				
1859	Recycling multiple operations				
1860	Recycling, NOC				
1553	HM/HW handling & cleanup, NOC				
I	Industrial	HJ	Housekeeping/Janitorial/Maintenance	1245	Compressed air cleaning
				1452	Facility maintenance, crawl space/attic

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1453	Facility maintenance, general
				1454	Facility maintenance, multiple operations
				1455	Facility maintenance, NOC
				1506	General housekeeping
				1582	Janitorial/custodial, multiple operations
				1821	Pressure wash
				2035	Sweeping
				2142	Wet/dry vacuum operation
				1557	Housekeeping/janitorial, NOC
I	Industrial	HV	HVAC	1030	Air conditioning/refrigeration charging
				1147	Clean ventilation system
				1558	HVAC repair & maintenance
				1559	HVAC, NOC
I	Industrial	HA	Hyperbaric Atmospheres	1710	Multiple operations
				1939	Sonar dome work
				1560	Hyperbaric atmospheres, NOC
I	Industrial	IN	Incinerating	1565	Incineration, multiple chamber
				1566	Incineration, single chamber
I	Industrial	IS	Insulation	1573	Insulation, fabrication
				1574	Insulation, installation
				1575	Insulation, multiple operations
				1577	Insulation, removal
				1635	Man made fibers, multiple operations
				1636	Man made fibers, patching
				1640	Man-made fibers, fabrication
				1641	Man-made fibers, installation
				1643	Man-made fibers, removal
				1642	Man-made fibers, NOC
				1576	Insulation, NOC
I	Industrial	LO	Laboratory Operations	1040	Analysis, biological
				1041	Analysis, chemical
				1042	Analysis, environmental or occupational
				1347	Destructive testing
				1381	Drug testing
				1710	Multiple operations
				1790	Physical testing
				1834	Propulsion laboratory
				1839	Protocol research
				1843	Radiation research
				1847	Radiological analysis
				1865	Research and development

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1866	Research and development, NOC
				1594	Laboratory operations, NOC
I	Industrial	LS	Laundry Services	1382	Dry cleaner maintenance
				1383	Dry cleaning
				1604	Laundry services, multiple operations
				1618	Linen exchange
				1619	Linen folding
				1942	Spot removal
				1948	Steam pressing/ironing
				2097	Washer/dryer/pressing operation
				1605	Laundry services, NOC
I	Industrial	LA	Lead Paint Abatement	1533	Handling/cleanup, lead-based paint
				1607	Lead abatement, all methodologies
				1608	Lead abatement, blasting
				1609	Lead abatement, encapsulating
				1610	Lead abatement, scraping
				1611	Lead abatement, stripping
I	Industrial	MD	Medical	1037	Ambulance drivers/EMT
				1043	Anatomical specimen preservation
				1045	Anesthesia
				1100	Brace fabrication
				1109	Cast cutting
				1110	Cast fabrication
				1203	Collection of body fluid/waste samples
				1269	Corrective lens edging
				1270	Corrective lens manufacturing
				1282	Cryotherapy
				1420	Embalming
				1422	Emergency room services
				1524	Handling medical waste
				1556	Housekeeping services
				1563	Immunizations
				1593	Lab analysis
				1647	Manufacture of orthotic devices
				1655	Medical maintenance/optics repair
				1656	Medical, general or operations
1657	Medical, multiple operations				
1659	Medical, radiology procedures, NOC				
1660	Medical, x-rays				
1734	Nuclear procedures/medicine				

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1735	Occupational/physical therapy
				1758	Pathology lab/morgue
				1759	Patient care
				1760	Patient handling
				1761	Patient records
				1782	Pharmaceutical mixing/dispensing
				1783	Phlebotomy
				1835	Prosthetics work
				1868	Respiratory therapy
				1940	Specimen testing
				1951	Sterilization, chemical
				1952	Sterilization, EtO
				1954	Sterilization, oven/autoclave
				1955	Sterilization, ultrasonic
				1953	Sterilization, NOC
				2034	Surgical procedures
				2050	Tissue conference
				2051	Tissue disposal
				2052	Tissue/organ grossing
				1658	Medical, NOC
I	Industrial	MF	Metal Forming	1670	Metal forming, bending
				1671	Metal forming, crimping
				1672	Metal forming, drawing
				1673	Metal forming, extrusion
				1674	Metal forming, multiple operations
				1676	Metal forming, peening
				1677	Metal forming, squeezing
				1678	Metal forming, twisting
				1675	Metal forming, NOC
I	Industrial	MO	Metal Foundry Operations	1108	Cast cleaning/finishing
				1111	Casting, arc furnace
				1112	Casting, crucible furnace
				1113	Casting, cupola
				1114	Casting, furnace melting
				1115	Casting, induction furnace
				1116	Casting, open hearth
				1148	Cleaning and finishing
				1264	Coremaking, hot box system
				1265	Coremaking, no bake
				1266	Coremaking, shell
				1267	Coremaking, sodium silicate

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1488	Foundry operations, babbiting
				1489	Foundry operations, multiple operations
				1486	Forging
				1502	Furnance operation
				1612	Lead pouring operation
				1646	Manufacture of foundry items
				1681	Metal mold shakeout
				1682	Metal molding
				1698	Molding, full mold
				1699	Molding, green sand
				1701	Molding, investment casting
				1703	Molding, shell
				1705	Molten metal pouring
				1886	Sand casting
				1906	Shakeout
				1929	Small melt/pour operations
				2061	Transfer/pouring/cooling
				1490	Foundry operations, NOC
I	Industrial	MM	Metal Machining	1288	Cutting, abrasive blast method
				1367	Drilling and boring
				1400	Electro-discharge
				1515	Grinding
				1554	Honing
				1624	Locksmith
				1632	Machining, shear
				1679	Metal maching, multiple operations
				1679	Metal maching, multiple operations
				1679	Metal maching, multiple operations
				1679	Metal maching, multiple operations
				1685	Metals/plastic engraving
				1690	Milling
				1791	Piercing or punching
				1792	Pipe threading
				1871	Riveting
				1898	Sawing
				1907	Shaping
				1907	Shaping
				1907	Shaping
1926	Slotting				
2068	Turning				
1680	Metal machining, NOC				

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
I	Industrial	MT	Metals Treatment	1543	Heat treating/hardening, annealing
				1544	Heat treating/hardening, carburizing
				1545	Heat treating/hardening, cyaniding
				1546	Heat treating/hardening, gas nitriding
				1547	Heat treating/hardening, multiple operations
				1549	Heat treating/hardening, quenching
				1548	Heat treating/hardening, NOC
				1669	Metal etching
				1684	Metals treatment, NOC
I	Industrial	MI	Miscellaneous Operations	1117	Cathodic/anodic protection
				1118	Cathodic/anodic protection, zinc anode work
				1128	Chemical milling/masking
				1129	Chemical processing, NOC
				1129	Chemical processing, NOC
				1259	Cooling, cryogenics
				1260	Cooling, evaporative tower
				1261	Cooling, heat exchanger
				1258	Cooling maintenance
				1262	Cooling, natural convection
				1274	Crushing, manual
				1275	Crushing, mechanical
				1277	Cryogenics handling/transport
				1278	Cryogenics production
				1279	Cryogenics storage
				1280	Cryogenics, multiple operations
				1281	Cryogenics, NOC
				1284	Curing/Drying/Baking, autoclave
				1285	Curing/Drying/Baking, dryer
				1286	Curing/Drying/Baking, oven
				1300	Decontamination
				1356	Disposing/recycling, bulk
				1357	Disposing/recycling, container
				1358	Disposing/recycling, labpack
				1359	Disposing/recycling, NOC
				1438	Equipment monitoring
				1521	Haircutting/cosmetology, cutting hair
1522	Haircutting/cosmetology, multiple operations				
1523	Haircutting/cosmetology, NOC				
1580	Ionizing radiation source use				

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1600	Laser operations, chemical
				1601	Laser operations, optical
				1634	Mailroom operations
				1692	Miscellaneous, multiple operations
				1712	Nail salon processes
				1730	Noise hazardous equipment use
				1731	Non permit confined space entry
				1766	Permit required confined space entry
				1807	Pneumatic tool operation
				1845	Radiofrequency radiation (RFR) use
				1854	Rap job
				1869	Retail sales
				1892	Sanitation landfill operation
				1919	Shoe repair
				2030	Suit testing
				2066	Trash compacting
				2143	Wind tunnel testing
				1567	Industrial, NOC
				1567	Industrial, NOC
				1904	Service, NOC
				1904	Service, NOC
				2044	Testing, hazardous waste
				2045	Testing, NOC
I	Industrial	NC	NOC	1715	NOC
I	Industrial	ND	Non-Destructive Inspection/Testing	1019	Acid spot testing
				1020	Acoustical emission test
				1599	Laser inspection/test
				1620	Liquid penetrant test
				1633	Magnetic particle test
				1710	Multiple operations
				1757	Patch test
				1846	Radiography
				2069	Ultrasonic test
				2093	Visual inspection
				2122	Weight test
				1733	Non-destructive inspection/testing, NOC
I	Industrial	PC	Pest Control	1767	Pest control, aerosol can spray
				1768	Pest control, baiting/trapping
				1769	Pest control, fogging
				1770	Pest control, fumigation
				1771	Pest control, indoor

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1772	Pest control, multiple operations
				1774	Pest control, powder application
				1775	Pest control, power spraying from vehicle
				1776	Pest control, sprayer, hand-pump
				1777	Pest control, sprayer, powered
				1778	Pest control, spreader
				1779	Pesticide disposal
				1780	Pesticide mixing
				1781	Pesticide storage
				1773	Pest control, NOC
I	Industrial	PH	Photography/Graphic Arts	1427	Engraving
				1459	Film developing, automatic
				1460	Film developing, manual
				1461	Film processor chemical mixing
				1299	Decal manufacture
				1513	Graphic arts equipment cleaning
				1514	Graphics development
				1562	Illustration
				1621	Lithographics/photolithography
				1785	Photoetching
				1786	Photography equipment cleaning
				1923	Silk screening
1949	Stenciling				
1787	Photography/graphic arts, NOC				
I	Industrial	PP	Plastics/Rubber Processing	1283	Curing
				1287	Cutting
				1345	Depotting
				1366	Drilling
				1449	Extruding
				1479	Foaming
				1512	Gluing
				1515	Grinding
				1542	Heat sealing
				1542	Heat sealing
				1551	Helmet pour
				1596	Laminating
				1691	Milling/machining/engraving
				1693	Mixing, machine-assisted
				1694	Mixing, manual
1700	Molding, injection				
1702	Molding, pour				

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1793	Plaque pour
				1800	Plastisol
				1809	Polishing and buffing
				1815	Potting
				1826	Processing, multiple operations
				1887	Sanding
				1799	Plastics/rubber processing, NOC
I	Industrial	PL	Plumbing	1803	Plumbing, minor facility maintenance
				1802	Plumbing installation/repair
				1802	Plumbing installation/repair
				1804	Plumbing, multiple operations
				1806	Plumbing, transite water pipe
				1805	Plumbing, NOC
I	Industrial	PR	Printing/Reproduction	1038	Ammonia reproduction machine operation
				1085	Binding
				1093	Blueprint developing, Diazo/Blueline machine
				1204	Color printing
				1361	Document preparation
				1435	Equipment cleaning
				1736	Offset printing
				1745	Operate equipment
				1784	Photocopying/reproduction
				1824	Printing, multiple operations
				1875	Rotogravature
				1825	Printing/reproduction, NOC
I	Industrial	PT	Professional/Technical	1248	Computer operations
				1431	Environmental surveys
				1481	Food inspections
				1572	Inspections
				1595	Laboratory, chemical analysis/sampling
				1638	Management, multiple operations
				1639	Management, NOC
				1686	Microscope use
				1706	Monitoring
				1711	Musical performance
				1823	Preventive medicine services
				1827	Production control
				1830	Professional and technical, multiple operations
				1831	Professional, tech and mgmt
				1833	Project/process review

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1841	QA/product control
				1867	Respirator fit testing
				1876	Safety/industrial hygiene surveys
				1877	Sampling air
				1878	Sampling asbestos
				1879	Sampling drinking water
				1880	Sampling hazardous waste
				1881	Sampling lead
				1885	Sampling, remediation
				1882	Sampling storm water
				1883	Sampling waste water
				1884	Sampling, NOC
				1924	Simulator training
				2031	Supervision
				2040	Teaching/training
				2148	Workplace monitoring/measurements
				1832	Professional/technical, NOC
				1832	Professional/technical, NOC
I	Industrial	PF	Protective Services-Fire	1457	Filling fire extinguishers
				1458	Filling SCBA tanks
				1464	Firefighting
				1465	Firefighting training
				1462	Fire training pit, JP-8
				1463	Fire training pit, propane
				1838	Protective services, fire, NOC
I	Industrial	PS	Protective Services-Security	1268	Correctional facility operations
				1362	Document shredding
				1363	Dog handling
				1421	Emergency response
				1466	Firing range cleaning
				1467	Firing range pit cleaning
				1467	Firing range pit cleaning
				1468	Firing range supervision
				1519	Guard operations
				1762	Patrolling, bicycle
				1763	Patrolling, foot
				1764	Patrolling, vehicle
				1872	Road patrols/guard duty
				1902	Security, multiple operations
				1927	Small arms cleaning
				1928	Small arms firing

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				2041	Tear gas exercises
				1837	Protective services- security, NOC
I	Industrial	RS	Recreation/Services	1099	Bowling alley operation/maintenance
				1105	Campground operation/maintenance
				1520	Gym/recreational equipment maintenance
				1789	Physical fitness training
				1856	Recreation
				1925	Ski area operation/maintenance
				2036	Swimming pool operation/maintenance
				1857	Recreation/Services, NOC
I	Industrial	RG	Roads & Grounds Maintenance	1316	Deicing runway/road, chemical
				1317	Deicing runway/road, mechanical - hand
				1318	Deicing runway/road, mechanical - powered
				1319	Deicing runway/road, salting and sanding
				1348	Digging/excavating, machine
				1350	Digging/excavating, tool-powered
				1349	Digging/excavating, tool-hand
				1349	Digging/excavating, tool-hand
				1441	Excavating/grading
				1516	Grounds maintenance, multiple operations
				1517	Grounds maintenance, NOC
				1550	Heavy equipment operation
				1581	Jackhammering
				1606	Lawn maintenance
				1709	Mower operation
				1765	Paving
				1765	Paving
				1931	Snow removal
2008	Street sweeping				
2067	Tree maintenance				
				1873	Roads and grounds maintenance, NOC
I	Industrial	SM	Semiconductor Manufacturing	1135	Chemical vapor deposition
				1384	Dry etching
				1392	Electrical testing
				1579	Ion implantation
				1650	Mask making
				1683	Metallization
				1704	Molecular beam epitaxy
				1788	Photolithography (semiconductor)
				1794	Plasma etching
				2039	Tab assembly

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				2094	Wafer cutting
				2141	Wet etching
I	Industrial	SH	Stone/Mineral Handling	1842	Quarry work
				1957	Stone, mineral handling, cutting
				1958	Stone, mineral handling, drilling
				1959	Stone, mineral handling, installation
				1960	Stone, mineral handling, multiple operations
				1962	Stone, mineral handling, removal
				1961	Stone, mineral handling, NOC
				1247	Compressed gas service
				1964	Storing, ASTs- chemical
				1965	Storing, ASTs- fuel AV gas
				1966	Storing, ASTs- fuel commingled
				1976	Storing, ASTs- fuel oil #2/diesel
				1977	Storing, ASTs- fuel oil #4/kerosene
				1978	Storing, ASTs- fuel oil #6/heating oil
				1967	Storing, ASTs- fuel isobutane
				1968	Storing, ASTs- fuel JP-10
				1969	Storing, ASTs- fuel JP-4
				1970	Storing, ASTs- fuel JP-5
				1971	Storing, ASTs- fuel JP-7
				1972	Storing, ASTs- fuel JP-8
				1973	Storing, ASTs- fuel liquid propane (LPG)
				1974	Storing, ASTs- fuel mogas unleaded regular (MUR)
				1975	Storing, ASTs- fuel natural gas
				1979	Storing, ASTs- fuel PF1
				1980	Storing, ASTs- hazardous waste
				1981	Storing, ASTs- materials
				1982	Storing, ASTs- waste oil
				1983	Storing, chemical
				1984	Storing, fuels/waste oil
				1985	Storing, hazardous waste
				1986	Storing, materials
				1987	Storing, sludge
				1988	Storing, storage piles
				1989	Storing, used oil
				1990	Storing, USTs- chemicals
				1991	Storing, USTs- fuel AV gas
				1992	Storing, USTs- fuel commingled
				2001	Storing, USTs- fuel oil #2/diesel

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				2002	Storing, USTs- fuel oil #4/kerosene
				2003	Storing, USTs- fuel oil#6/heating oil
				1993	Storing, USTs- fuel JP-10
				1994	Storing, USTs- fuel JP-4
				1995	Storing, USTs- fuel JP-5
				1996	Storing, USTs- fuel JP-7
				1997	Storing, USTs- fuel JP-8
				1998	Storing, USTs- fuel liquid propane (LPG)
				1999	Storing, USTs- fuel mogas unleaded regular (MUR)
				2000	Storing, USTs- fuel natural gas
				2004	Storing, USTs- fuel PF1
				2005	Storing, USTs- fuel waste oil
				2006	Storing, USTs- hazardous waste
				2007	Storing, USTs- materials
				2070	Underground storage tank testing
				I	Industrial
2009	Structure demolition, ceiling tile removal				
2010	Structure demolition, floor tile removal				
2011	Structure demolition, machine assisted				
2012	Structure demolition, manual				
2013	Structure demolition, mastic removal				
2014	Structure demolition, multiple operations				
2016	Structure demolition, roof removal				
2017	Structure demolition, siding removal				
2018	Structure demolition, thermal system insulation removal				
2015	Structure demolition, NOC				
I	Industrial	SF	Structure Fabrication/Renovation	2015	Structure demolition, NOC
				1713	Nailing
				1898	Sawing
				1505	General construction
				1505	General construction
				2019	Structure fabrication/renovation, ceiling installation
				2020	Structure fabrication/renovation, ceiling repair
				2021	Structure fabrication/renovation, floor
				2022	Structure fabrication/renovation, multiple operations
				2025	Structure fabrication/renovation, roofing repair
				2027	Structure fabrication/renovation, thermal system insulation removal/repair
				2028	Structure fabrication/renovation, transite

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
					panel removal
				2029	Structure fabrication/renovation, wharf building
				2024	Structure fabrication/renovation, powder actuated tool
				2026	Structure fabrication/renovation, structure lock/door
				2023	Structure fabrication/renovation, NOC
I	Industrial	SP	Supplies/Materials Handling	1068	Assemble/disassemble, bolting/screwing
				1070	Assemble/disassemble, prying
				1071	Assemble/disassemble, tool - manual
				1072	Assemble/disassemble, tool - powered
				1073	Assemble/disassemble, turning
				1074	Assemble/disassemble, wrenching
				1069	Assemble/disassemble, NOC
				1078	Bagging
				1082	Banding/unbanding
				1083	Bar code scanning
				1273	Crane operation
				1480	Foam-in-place packaging
				1622	Loading/unloading
				1644	Manual lifting
				1487	Forklift operation
				1752	Packaging
				1755	Palletizing
				1870	Rigging
				1918	Shipping
				2032	Supply and materials handling, multiple operations
2053	Tool and parts issue				
2095	Warehousing, manual				
2096	Warehousing, mechanical				
2033	Supply and materials handling, NOC				
I	Industrial	TS	Thermal Spraying	1389	Electric arc spraying
				1470	Flame spraying
				1552	High velocity oxyfuel (HVOF) spraying
				1795	Plasma spraying
				2047	Thermal spraying, multiple operations
				2048	Thermal spraying, NOC
I	Industrial	TR	Transportation	1352	Dispatching
				1374	Driving, paved roads
				1375	Driving, taxi/bus
				1376	Driving, tractor trailer

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1377	Driving, truck
				1378	Driving, unpaved roads
				1852	Railroad track maintenance
				1853	Railroad yard operations
				1930	Small watercraft operation
				2060	Train operation
				2064	Transportation, multiple operations
				2065	Transportation, NOC
I	Industrial	UT	Utility Production/Distribution	1079	Baghouse maintenance/overhaul
				1094	Boiler ash removal
				1095	Boiler cleaning
				1096	Boiler plant operation
				1097	Boiler repair
				1098	Boiler water treatment
				1136	Chiller plant operation
				1174	Coal conveyor maintenance
				1246	Compressed air/breathing air distribution
				1390	Electrical distribution
				1438	Equipment monitoring
				1440	ESP maintenance/cleaning
				1503	Gas distribution
				1507	Generator and heating plant operation
				1508	Generator testing/operation
				1828	Production/dist. of utilities, multiple operations
				1909	Ship/shore connection
				1943	Stack cleaning
				1946	Steam line repair
				1947	Steam pit maintenance
2062	Transformer repair/maintenance				
1829	Production/distribution of utilities, NOC				
I	Industrial	VM	Vehicle Maintenance	2078	Vehicle repair, multiple operations
				2078	Vehicle repair, multiple operations
				2076	Vehicle repair, brake work
				2077	Vehicle repair, clutch work
				2073	Vehicle body repair, NOC
				2079	Vehicle testing/tuning
				2080	Vehicle tire repair
				2075	Vehicle radiator repair, NOC
2074	Vehicle maintenance, NOC				
I	Industrial	VS	Veterinary Services/Animal Care	1046	Animal care, multiple operations

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1047	Animal care, NOC
				1045	Anesthesia
				2091	Veterinary surgical procedures
				2090	Veterinary services, NOC
I	Industrial	WW	Water/Wastewater Plant Operations	1371	Drinking water system, operation and maintenance
				1372	Drinking water treating, chemical
				1373	Drinking water treating, mechanical
				2037	Swimming pool water treating, chemical
				2038	Swimming pool water treating, mechanical
				2098	Wastewater pre-treatment, chemical
				2099	Wastewater pre-treatment, mechanical
				2104	Wastewater/sanitary sewer operation and maintenance
				2100	Wastewater treatment, chemical
				2101	Wastewater treatment, mechanical
				2102	Wastewater treatment, multiple operations
				2103	Wastewater treatment, NOC
				2106	Water treatment, chlorination/bromination/other
				2107	Water treatment, multiple operations
				2108	Water treatment, NOC
				2109	Water/wastewater plant monitoring
2110	Water/wastewater plant operations, NOC				
I	Industrial	WP	Weapons & Ordnance	1039	Ammunition handling
				1049	Artillery repair
				1102	Breeching
				1123	Charging of chemical and riot dispersal cannisters
				1323	Demilitarization
				1433	EOD, explosives detonating
				1432	EOD operations, NOC
				1442	Explosive production, cleaning mixing equipment
				1443	Explosive production, detonation
				1444	Explosive production, mixing and pouring
				1445	Explosive production, multiple operations
				1447	Explosive production, premix operations
				1448	Explosive production, testing
				1446	Explosive production, NOC
1564	Incendiary manufacturing				
1568	Inert ammunition loading				

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				1571	Inspection of ammunition
				1689	Military specific operations
				1695	Mixing/bagging/handling explosives
				1696	Mixing/bagging/handling smokes and/or chemicals
				1748	Ordnance assembly/disassembly
				1749	Ordnance testing
				1855	Recoil mechanism testing
				1874	Rocket motor detonation
				1908	Shell loading
				2054	Torpedo assembly/disassembly
				2055	Torpedo disassembly
				2056	Torpedo fueling/defueling
				2057	Torpedo fueling/refueling
				2058	Torpedo priming
				2113	Weapons cleaning/preventive maintenance
				2114	Weapons/small arms firing, indoor range
				2116	Weapons/small arms firing, outdoor range
				2115	Weapons/small arms firing, NOC
				2117	Weapons/small arms handling, multiple operations
				2119	Weapons/small arms, backstop/pit cleanup
				2120	Weapons/small arms, range cleaning
				2121	Weapons/small arms, range supervision
				2118	Weapons/small arms repair
				2112	Weapons & Ordnance, NOC
I	Industrial	WD	Woodworking	1366	Drilling
				1387	Dust collector cleaning
				1512	Gluing
				1590	Jointing
				1602	Lathes
				1708	Mortising/routing
				1714	Nailing, automatic
				1820	Preservative application
				1888	Sanding, belt
				1889	Sanding, disk
				1890	Sanding, drum
				1891	Sanding, hand
				1898	Sawing
				1901	Sealing
				1944	Staining
				2144	Woodworking hobbies

Category Code	Process Category	Type Code	Process Type	Name Code	Process Name
				2145	Woodworking, multiple operations
				2146	Woodworking, NOC
I	Industrial	XR	X-Ray Processing	2150	X-ray developer chemicals, add/mix
				2151	X-ray developer chemicals, change-out
				2152	X-ray developing
				1818	Precious metal recovery

ATTACHMENT 4 - EESOH-MIS IH Controls List of Values

Control Category/Type/Name			
PPE			
BODY/CLOTHING			
ANTI-SAW CHAPS	BIB-OVERALLS, FABRIC	COAT/JACKET, ALUMINIZED LEATHER JACKET (SHORT)	COVERALLS, CHLORINATED POLYETHYLENE
APRON, BUTYL RUBBER	BIB-OVERALLS, HEAT RESISTANT	COAT/JACKET, ALUMINIZED RAYON JACKET (SHORT)	COVERALLS, CHROME LEATHER
APRON, CHLORINATED POLYETHYLENE	BIB-OVERALLS, LEATHER	COAT/JACKET, BUTYL RUBBER	COVERALLS, COTTON
APRON, CHROME LEATHER	BIB-OVERALLS, NATURAL RUBBER	COAT/JACKET, CHLORINATED POLYETHYLENE	COVERALLS, FABRIC
APRON, DENIM	BIB-OVERALLS, NEOPRENE	COAT/JACKET, CHROME LEATHER	COVERALLS, FLAME RETARDANT
APRON, FABRIC	BIB-OVERALLS, NITRILE RUBBER	COAT/JACKET, FABRIC	COVERALLS, HEAT RESISTANT
APRON, HEAT RESISTANT	BIB-OVERALLS, NITRILE/POLYVINYL CHLORIDE	COAT/JACKET, HEAT RESISTANT	COVERALLS, INDURA
APRON, LEAD	BIB-OVERALLS, NITRILE-BUTADIENE RUBBER	COAT/JACKET, LEATHER COAT (LONG)	COVERALLS, INSULATED, COTTON/POLY-COTTON
APRON, LEATHER	BIB-OVERALLS, OTHER	COAT/JACKET, LEATHER JACKET (SHORT)	COVERALLS, KERMEL
APRON, NATURAL RUBBER	BIB-OVERALLS, POLYETHYLENE	COAT/JACKET, LEATHER RUBBER	COVERALLS, LEATHER
APRON, NEOPRENE	BIB-OVERALLS, POLYURETHANE	COAT/JACKET, NATURAL RUBBER	COVERALLS, NATURAL RUBBER
APRON, NITRILE RUBBER	BIB-OVERALLS, POLYVINYL ALCOHOL	COAT/JACKET, NEOPRENE	COVERALLS, NEOPRENE
APRON, NITRILE/POLYVINYL CHLORIDE	BIB-OVERALLS, POLYVINYL CHLORIDE	COAT/JACKET, NITRILE RUBBER	COVERALLS, NITRILE RUBBER
APRON, NITRILE-BUTADIENE RUBBER	BIB-OVERALLS, SAFEGUARD CPF	COAT/JACKET, NITRILE/POLYVINYL CHLORIDE	COVERALLS, NITRILE/POLYVINYL CHLORIDE
APRON, OTHER	BIB-OVERALLS, SARANEX	COAT/JACKET, NITRILE-BUTADIENE RUBBER	COVERALLS, NITRILE-BUTADIENE RUBBER
APRON, PLASTIC	BIB-OVERALLS, SONTARA	COAT/JACKET, OTHER	COVERALLS, NOMEX
APRON, POLYETHYLENE	BIB-OVERALLS, STYRENE-BUTADIENE RUBBER	COAT/JACKET, POLYETHYLENE	COVERALLS, OTHER
APRON, POLYURETHANE	BIB-OVERALLS, TYVEK	COAT/JACKET, POLYURETHANE	COVERALLS, PBI
APRON, POLYVINYL ALCOHOL	BIB-OVERALLS, VINYL	COAT/JACKET, POLYVINYL ALCOHOL	COVERALLS, POLY-COTTON
APRON, POLYVINYL CHLORIDE	BIB-OVERALLS, VITON	COAT/JACKET, POLYVINYL CHLORIDE	COVERALLS, POLYETHYLENE
APRON, SAFEGUARD CPF	BULLET PROTECTIVE VEST	COAT/JACKET, SAFEGUARD CPF	COVERALLS, POLYURETHANE
APRON, SARANEX	BUNKER GEAR, NOMEX	COAT/JACKET, SARANEX	COVERALLS, POLYVINYL ALCOHOL
APRON, SONTARA	BUNKER GEAR, PBI	COAT/JACKET, SONTARA	COVERALLS, POLYVINYL CHLORIDE
APRON, STAINLESS STEEL MESH	CAPE AND SLEEVES, WELDING	COAT/JACKET, STYRENE-BUTADIENE RUBBER	COVERALLS, RFR PROTECTION
APRON, STYRENE-BUTADIENE RUBBER	CHEMICAL SPLASH, BARRICADE COATED	COAT/JACKET, TYVEK	COVERALLS, SAFEGUARD CPF
APRON, TYVEK	CHEMICAL SPLASH, POLYETHYLENE	COAT/JACKET, VINYL	COVERALLS, SARANEX
APRON, VINYL	CHEMICAL SPLASH, SARANEX COATED	COAT/JACKET, VITON	COVERALLS, SONTARA
APRON, VITON	CHEMICAL SPLASH, TYVEK/SARANEX	COAT/JACKET, WELDING	COVERALLS, STYRENE-BUTADIENE RUBBER
BATTLE DRESS UNIFORM (BDU'S)	CHEST ARMOR	COLD, INSULATED JACKET WITH HOOD	COVERALLS, TRI-LAYER
BIB-OVERALLS, BUTYL RUBBER	COAT/JACKET, ALUMINIZED CARBON KEVLAR COAT (LONG)	COLD, PARKA	COVERALLS, TYVEK
BIB-OVERALLS, CHLORINATED POLYETHYLENE	COAT/JACKET, ALUMINIZED CARBON KEVLAR JACKET (SHORT)	COLD, REFRIGWEAR INSULATED SUITS	COVERALLS, VINEX
BIB-OVERALLS, CHROME LEATHER	COAT/JACKET, ALUMINIZED LEATHER COAT (LONG)	COVERALLS, ALUMINIZED CARBON KEVLAR	COVERALLS, VITON
		COVERALLS, BUTYL RUBBER	HARNES, FALL PROTECTION
			KNEE PADS
			LAB COAT

LAB SMOCK	PANTS, LEATHER	TOTAL ENCAPSULATING, OTHER	GOGGLES, CUSHIONED FITTING, RIGID BODY
LEGGINGS/CHAPS, ALUMINIZED CARBON KEVLAR	PANTS, NATURAL RUBBER	TOTAL ENCAPSULATING, POLYETHYLENE	GOGGLES, DUST
LEGGINGS/CHAPS, ALUMINIZED LEATHER	PANTS, NEOPRENE	TOTAL ENCAPSULATING, POLYURETHANE	GOGGLES, FLEXIBLE, HOODED VENTILATION
LEGGINGS/CHAPS, BUTYL RUBBER	PANTS, NITRILE RUBBER	TOTAL ENCAPSULATING, POLYVINYL ALCOHOL	GOGGLES, FLEXIBLE, REGULAR VENTED
LEGGINGS/CHAPS, CHLORINATED POLYETHYLENE	PANTS, NITRILE/POLYVINYL CHLORIDE	TOTAL ENCAPSULATING, POLYVINYL CHLORIDE	GOGGLES, FREE FALL
LEGGINGS/CHAPS, CHROME LEATHER	PANTS, NITRILE-BUTADIENE RUBBER	TOTAL ENCAPSULATING, REFLECTOR	GOGGLES, IMPACT/SAFETY
LEGGINGS/CHAPS, FABRIC	PANTS, OTHER	TOTAL ENCAPSULATING, RESPONDER	GOGGLES, LASER
LEGGINGS/CHAPS, HEAT RESISTANT	PANTS, POLYETHYLENE	TOTAL ENCAPSULATING, RESPONDER PLUS	GOGGLES, WELDING
LEGGINGS/CHAPS, LEATHER	PANTS, POLYURETHANE	TOTAL ENCAPSULATING, SAFEGUARD CPF	GOGGLES, WELDING, COVERSPEC TYPE
LEGGINGS/CHAPS, NATURAL RUBBER	PANTS, POLYVINYL ALCOHOL	TOTAL ENCAPSULATING, SONTARA	GOGGLES, WELDING, EYECUP TYPE
LEGGINGS/CHAPS, NEOPRENE	PANTS, POLYVINYL CHLORIDE	TOTAL ENCAPSULATING, STYRENE-BUTADIENE RUBBER	OTHER
LEGGINGS/CHAPS, NITRILE RUBBER	PANTS, SAFEGUARD CPF	TOTAL ENCAPSULATING, TEFLON	SAFETY GLASSES
LEGGINGS/CHAPS, NITRILE/POLYVINYL CHLORIDE	PANTS, SARANEX	TOTAL ENCAPSULATING, TRELLECHEM HPS	SAFETY GLASSES, COBALT BLUE LENS
LEGGINGS/CHAPS, NITRILE-BUTADIENE RUBBER	PANTS, SONTARA	TOTAL ENCAPSULATING, TYCHEM 10,000	SAFETY GLASSES, EYECUP TYPE SIDESHIELD
LEGGINGS/CHAPS, OTHER	PANTS, TYVEK	TOTAL ENCAPSULATING, TYCHEM 9400	SAFETY GLASSES, LASER EYEWEAR
LEGGINGS/CHAPS, POLYETHYLENE	PANTS, VITON	TOTAL ENCAPSULATING, TYVEK QC	SAFETY GLASSES, SEMI/FLAT FOLD SIDESHIELDS
LEGGINGS/CHAPS, POLYURETHANE	RAIN GEAR	TOTAL ENCAPSULATING, TYVEK/SARANEX	SAFETY GLASSES, TINTED
LEGGINGS/CHAPS, POLYVINYL ALCOHOL	SAFETY BELT	TOTAL ENCAPSULATING, VITON	SAFETY GLASSES, WITHOUT SIDESHIELDS
LEGGINGS/CHAPS, POLYVINYL CHLORIDE	SAFETY LANYARD	EYES	SUNGLASSES
LEGGINGS/CHAPS, SAFEGUARD CPF	SCRUBS, HOSPITAL TYPE	#10 SHADE LENS MINIMUM	FACE
LEGGINGS/CHAPS, SARANEX	SLEEVES, POLYVINYL CHLORIDE	#11 SHADE LENS MINIMUM	FULL FACE SHIELD
LEGGINGS/CHAPS, SONTARA	SLEEVES, PROTECTIVE, KEVLAR	#12 SHADE LENS MINIMUM	FULL FACE SHIELD, CLEAR
LEGGINGS/CHAPS, STYRENE-BUTADIENE RUBBER	SLEEVES, PROTECTIVE, LEATHER	#13 SHADE LENS MINIMUM	FULL FACE SHIELD, GOLD FILM
LEGGINGS/CHAPS, TYVEK	SLEEVES, PROTECTIVE, SILVERSHIELD	#14 SHADE LENS MINIMUM	FULL FACE SHIELD, LASER PROTECTION
LEGGINGS/CHAPS, VITON	SLEEVES, PROTECTIVE, TYVEK	#2 SHADE LENS MINIMUM	FULL FACE SHIELD, LEADED
NBC PROTECTIVE WEAR	SURGICAL GOWNS	#3 SHADE LENS MINIMUM	FULL FACE SHIELD, PLASTIC
OTHER	TOTAL ENCAPSULATING, BUTYL RUBBER	#4 SHADE LENS MINIMUM	FULL FACE SHIELD, PLASTIC WITH EYECUP TYPE SIDESHIELD SPECTACLES
PANTS, ALUMINIZED CARBON KEVLAR	TOTAL ENCAPSULATING, CHLORINATED POLYETHYLENE	#5 SHADE LENS MINIMUM	FULL FACE SHIELD, PLASTIC WITH SEMI/FLAT FOLD SIDESHIELD SPECTACLES
PANTS, ALUMINIZED LEATHER LEGGINGS	TOTAL ENCAPSULATING, CPF	#6 SHADE LENS MINIMUM	FULL FACE SHIELD, PLASTIC WITH SPECTACLES WITHOUT SIDESHIELDS
PANTS, BUTYL RUBBER	TOTAL ENCAPSULATING, FABRIC	#7 SHADE LENS MINIMUM	FULL FACE SHIELD, TINTED
PANTS, CHLORINATED POLYETHYLENE	TOTAL ENCAPSULATING, HEAT RESISTANT	#8 SHADE LENS MINIMUM	FULL FACE SHIELD, UV LIGHT
PANTS, CHROME LEATHER	TOTAL ENCAPSULATING, NATURAL RUBBER	#9 SHADE LENS MINIMUM	FULL FACE SHIELD, WELDING
PANTS, FABRIC	TOTAL ENCAPSULATING, NEOPRENE	GOGGLES, CHEMICAL SPLASH	FULL FACE SHIELD, WIRE MESH
PANTS, HEAT RESISTANT	TOTAL ENCAPSULATING, NITRILE RUBBER	GOGGLES, CHIPPING, COVERSPEC TYPE	
	TOTAL ENCAPSULATING, NITRILE RUBBER/POLYVINYL CHLORIDE	GOGGLES, CHIPPING, EYECUP TYPE	

FULL FACE SHIELD, WIRE MESH WITH EYECUP TYPE SIDESHIELD SPECTACLES
FULL FACE SHIELD, WIRE MESH WITH LASER SPECTACLES AND SIDESHIELD
FULL FACE SHIELD, WIRE MESH WITH SEMI/FLAT FOLD SIDESHIELD SPECTACLES
FULL FACE SHIELD, WIRE MESH WITH SPECTACLES WITHOUT SIDESHIELDS
OTHER
WELDER'S HOOD
FEET
BOOTS, BUTYL RUBBER
BOOTS, CHEMICAL RESISTANT
BOOTS, COLD WEATHER
BOOTS, CONDUCTIVE
BOOTS, FIREFIGHTER/BUNKER
BOOTS, FOUNDRY
BOOTS, MOLDER
BOOTS, NATURAL RUBBER
BOOTS, NEOPRENE
BOOTS, POLYVINYL CHLORIDE
BOOTS, PUNCTURE RESISTANT
BOOTS, STEEL TOE
BOOTS, STEEL TOE WITH METATARSAL GUARDS
BOOTS, STEEL TOE, POLYVINYL CHLORIDE
BOOTS, STEEL TOE, RUBBER
BOOTS, STEEL TOE, RUBBER, DIELECTRIC
BOOTS, STEEL TOE, STEEL SHANK
BOOTS, TYVEK DISPOSABLE
GUARDS, METATARSAL
GUARDS, STEEL TOE
INSERTS, SHOCK-ABSORBING
LEATHER SPATS
OTHER
OVERBOOTS
OVERSHOES
SHOE COVERS, DISPOSABLE
SHOES, CLOSED-TOE

SHOES, CLOSED-TOE LEATHER
SHOES, CONDUCTIVE
SHOES, METATARSAL GUARD
SHOES, PUNCTURE RESISTANT
SHOES, SAFETY TOE, ESD
SHOES, SAFETY/NON-CONDUCTIVE
SHOES, STEEL TOE
SHOES, STEEL TOE, METATARSAL GUARD
SHOES, TRACTION
GLOVES
ALUMINIZED
ANTI-VIBRATION
BUTYL RUBBER
CARBON FIBER
CHLORINATED POLYETHYLENE
CHROME LEATHER
COATED FABRIC
COLD SURFACES
COTTON
COTTON TUSETS
CUT RESISTANT/METAL MESH
CUTTING
DISPOSABLE
DOUBLE
DOUBLE SURGICAL
ELBOW LENGTH BUTYL RUBBER
ELECTRICAL PROTECTION
FABRIC
FUEL HANDLER, LEATHER
FUEL HANDLER, SYNTHETIC
HEAT RESISTANT
HOT MILL
HOT SURFACES, COTTON
IMPERVIOUS
KEVLAR
LATEX, MEDICAL EXAM
LEAD
LEATHER
LEATHER GAUNTLETS
LEATHER WELDING

METAL MESH
NATURAL RUBBER
NBC AGENTS
N-DEX
NEOPRENE
NITRILE RUBBER
NITRILE RUBBER SOLES
NITRILE/BUTYL RUBBER
NITRILE/POLYVINYL CHLORIDE
NITRILE-BUTADIENE RUBBER
OTHER
PE/EVAL (4H OR SILVER SHIELD)
POLYETHYLENE
POLYURETHANE
POLYVINYL ALCOHOL
POLYVINYL CHLORIDE
RUBBER, ELECTRICIAN
SAFEGUARD CPF
SARANEX
SONTARA
STAINLESS STEEL MESH
STYRENE-BUTADIENE RUBBER
TEFLON
TERRY CLOTH
TYVEK
VINYL
VITON
WELDING, HEAT RESISTANT
HAND
BARRIER CREAM
FINGER COTS
OTHER
WRIST GUARDS
HEAD
AIRMAN'S LINE CAP
BRIMMED HAT
BUMP CAP
CHEMICAL HOOD
COLD WEATHER HAT
CRANIALS
DISPOSABLE HEAD COVERING

FIREFIGHTER HELMET
FLAME RESISTANT HOOD
GRINDING HOOD
HAIR NET/CAP
HARD HAT
HELMET
KEVLAR BATTLE HELMET
OTHER
SURGICAL CAP
WELDING HELMET
HEARING
COMBINATION, MUFF/EARPLUG
COMBINATION, MUFF/EARPLUG WITH TIME LIMIT
COMMUNICATION HEADSET
DOUBLE PROTECTION, NOC
EAR/CIRCUMAURAL MUFF
EAR/CIRCUMAURAL MUFF, HIGH PERFORMANCE
EAR/CIRCUMAURAL MUFF, TYPE I/II
EARPLUG
EARPLUG, DISPOSABLE, FOAM PLASTIC
EARPLUG, DISPOSABLE, NON-HARDENING SILICONE
EARPLUG, SIZED, SINGLE FLANGE
EARPLUG, SIZED, TRIPLE FLANGE
HEARING BANDS/EAR CAPS/CANAL CAPS
HELMET, AVIATION
HELMET, NOISE ATTENUATION
OTHER
SINGLE PROTECTION, NOC
MISCELLANEOUS
OTHER
RESPIRATOR
RESPIRATORY PROTECTION
ENGINEERING
EMERGENCY WASH
DELUGE SHOWER/EYE WASH
FIXED EYEWASH
PORTABLE EYEWASH

ERGONOMICS	ANGLE TELEPHONE BASE SLIGHTLY	HEAT METAL/MATERIAL TO MAKE MORE PLIABLE	LOWER THE CHAIR
ANTI-FATIGUE MAT/INSOLES	ANGLE THE WORKSURFACE TO BRING THE WORK CLOSER TO THE BODY AND THE EYE	IMPROVE CHARACTER SIZE AND STYLE ON DOCUMENT AND MONITOR	LOWER THE HANDLE
ANTI-VIBRATION MAT	ANGLE WORK SURFACE TO BRING WORK CLOSER TO THE BODY AND THE EYES	IMPROVE CLEAT DESIGN	LOWER THE MONITOR/SCREEN
ANTI-VIBRATION SEATING	AVOID HIGH FORCE TASKS WHILE SEATED	IMPROVE FLOOR CONDITION	LOWER THE PERSON
ANTI-VIBRATION WRAP/BARRIER	CALL FOR ASSISTANCE	IMPROVE VISUAL ACCESS TO WORK	LOWER THE WORK PIECE/WORK SURFACE
CHAIR/SEATING (INCLUDING ADD-ONS)	CENTER NUMERIC PAD OR CALCULATOR IN FRONT OF BODY / MONITOR	IMPROVE WHEEL CONDITION	MAINTAIN BOLTS AND SCREWS
DOCUMENT HOLDER	CHANGE A PINCH GRIP TO A POWER GRIP	INCORPORATE HEALTH COMFORT STRATEGIES: ALTERNATE TASKS, STRETCH, TAKE REST PAUSES	MAINTAIN HAND TOOL/POWER TOOLS
DOLLY/HAND TRUCK	CHANGE LIFTING/CARRYING TASK INTO A ROLLING OR SLIDING TASK	INCORPORATE REST PAUSES	MAINTAIN TRACKS, ROLLERS, AND MOVEMENT MECHANISMS
EQUIPMENT LOCATION/POSITION	CHANGE POSTURE FREQUENTLY	INCREASE HANDLE LENGTH TO IMPROVE LEVERAGE	MINIMIZE CLUTTER ON DESK/WORKSURFACE
FOOTREST	CLEAN SCREEN REGULARLY	INCREASE LIGHT LEVELS	MINIMIZE MATERIAL WHICH MUST BE REMOVED MANUALLY
GLARE CONTROL (ANTI-GLARE SCREEN, PARABOLIC LOUVERS, HOODS, SHADES)	CLOSE BLINDS OR CURTAINS	INCREASE ROOM TEMPERATURE	MODIFY FACILITIES TO DECREASE HANDLING
KEYBOARD TRAY (INCLUDES ADD-ONS FOR MOUSE)	CLOSE DOORS WHEN POSSIBLE TO REDUCE NOISE	INCREASE TASK VARIETY	MODIFY FOOT PEDAL
KEYBOARD/SPLIT KEYBOARD	COVER OR TURN OFF UNDER CABINET LIGHTING	INCREASE WEIGHT OF WORK PIECE	MOVE CHAIR CLOSER TO SURFACE EDGE
LIFT ASSIST DEVICES (LIFT TABLE, HOIST)	DECREASE LIGHT LEVELS	INSTALL ALTERNATIVE MOUSE / CALCULATOR / KEYBOARD	MOVE CLOSER TO THE WORK LOCATION
LUMBAR SUPPORT, EXCLUDING BACK BRACES	DIRECT COLD AIR AWAY FROM THE HANDS	INSTALL ANTI-GLARE SCREEN	MOVE KEYBOARD / MOUSE / MICROSCOPE FORWARD SO FOREARMS REST EVENLY ON SURFACE
OTHER	DISTRIBUTE INTENSIVE ACTIVITIES THROUGHOUT THE PROCESS	INSTALL PALM SUPPORT ENTIRE LENGTH OF DRAFTING TABLE	MOVE MONITOR / SCREEN CLOSER TO BODY
PATIENT-HANDLING EQUIPMENT	ELIMINATE EXPOSURE TO HARD EDGES	INSTALL PARABOLIC LOUVERS TO DIRECT LIGHT DOWN ON THE SURFACE	MOVE MONITOR / SCREEN FURTHER AWAY FROM BODY
SPECIALIZED EQUIPMENT	ELIMINATE NEED TO CONSTANTLY HOLD TRIGGER	INSTALL PRINTER COVERS TO ISOLATE NOISE	MOVE MONITOR FROM UNDERNEATH SHELF/CABINET LIGHTING
SPECIALIZED FIXTURE	ELIMINATE UNNECESSARY TASKS	INSTALL PUSH BUTTON PHONE	MOVE STAPLER CLOSER TO WORK SURFACE EDGE
SPECIALIZED TOOL	ELIMINATE/REDUCE LOUD RADIOS, PA ANNOUNCEMENTS, AND PHONE SIGNALS (RINGERS)	INSTALL SEPARATE AIR CONDITIONING UNITS WHEN POSSIBLE	MOVE WORK PIECE CLOSER TO BODY
TOOL COUNTERBALANCE	ENCOURAGE APPROPRIATE SEASONAL CLOTHING	INSTALL WALL / ACOUSTICAL PANELS	OBTAIN PATIENT'S ASSISTANCE
TOOL DESIGN	ENCOURAGE ERGONOMIC WORK TECHNIQUES	KNEEL TO ACCESS LOW LEVEL SHELVES	OPEN DOORS/WINDOWS WHEN POSSIBLE
TOOL LOCATION/POSITION	ENCOURAGE PERSON TO HAVE VISUAL DISORDERS CORRECTED	KNEEL TO ACCESS LOWER LEVEL OF PHOTOCOPIER	ORIENT PAPER BY TURNING IT SO WORK AREA IS CLOSE TO THE BODY
TOOL, EQUIPMENT MAINTENANCE (IMPROVE PERFORMANCE, REDUCE VIBRATION)	GROUP FREQUENTLY USED ITEMS TOGETHER FOR CONVENIENT RETRIEVAL	LOCATE FREQUENTLY RETRIEVED ITEMS BETWEEN SHOULDER AND WAIST LEVEL	OTHER
WORK REACH ADJUSTMENT (ALL DIRECTIONS INCLUDING FORWARD & OVERHEAD)		LOCATE HEAVY ITEMS BETWEEN KNEE AND WAIST LEVEL	PERIODICALLY LOOK AWAY FROM MICROSCOPE / SCREEN TO CHANGE THE TASK DEMAND ON THE EYE, AND FOCUS ON AN OBJECT OF VARYING DISTANCE.
WORKING HEIGHT/WORKING SURFACE ADJUSTMENT		LOCATE SORTING PILES NEAR WORK SURFACE EDGE	PLACE HAND ON WORK SURFACE OR LAP WHEN NOT DIALING.
WORKSTATION MODIFICATION		LOWER KEYBOARD TRAY / WORK PIECE / WORK SURFACE	
WRIST REST/MOUSE REST			
ERGONOMICS, CORRECTIVE ACTIONS			
ALTERNATE BETWEEN SITTING AND STANDING TASKS			
ALTERNATE GRIPS FOR PEN TO HELP REDUCE GRIPPING FORCE			

PLACE KEYBOARD / CALCULATOR /MONITOR ONTO LARGER SURFACE	PROVIDE A FLAT / LEVEL KEYBOARD	PROVIDE A TOOL WHICH MINIMIZES EXPOSURE TO VIBRATION/IMPACT/ TORQUE	PROVIDE AUTOMATIC OR SEMI-AUTOMATIC FEED FOR FASTENERS
PLACE MONITOR ON ALTERNATIVE WORK SURFACE	PROVIDE A FOOT PEDAL WHICH REQUIRES THE CORRECT AMOUNT OF FORCE TO USE	PROVIDE A TOOL WHICH REQUIRES MINIMAL FORCE TO USE	PROVIDE BOLT AND SCREW HEAD DESIGNS THAT ARE DURABLE
PLACE MONITOR PERPENDICULAR TO WINDOW	PROVIDE A FOOT PUMP	PROVIDE A TOOL WITH AN APPROPRIATE HANDLE ANGLE	PROVIDE CONTROLS WHICH DO NOT REQUIRE EXCESSIVE FORCES
PLACE THE TRIGGER/SWITCH TO ALLOW A COMFORTABLE HAND/ARM POSITION	PROVIDE A FOOTRAIL OR FOOTREST	PROVIDE A WHEEL BARROW	PROVIDE DISPLAYS WHICH ARE READABLE AND EASY TO UNDERSTAND
POSITION DOCUMENT AT A COMFORTABLE VIEWING DISTANCE FOR LARGER BLUE PRINTS BY FOLDING OR LOOSELY ROLLING DOCUMENT	PROVIDE A FULL-SIZED INPUT DEVICE	PROVIDE A WORK SURFACE THAT IS HEIGHT ADJUSTABLE	PROVIDE EXTENSIONS FOR TOOLS
POSITION DOCUMENT AT SAME HEIGHT AND ANGLE AS MONITOR, ON SIDE OF DOMINANT EYE. IF DOCUMENT IS HANDLED, FLIPPED, OR WRITTEN ON, SLIGHTLY INCLINE.	PROVIDE A HIGH FRICTION GRIPPING SURFACE	PROVIDE ADDITIONAL STAFF	PROVIDE HANDLES WITH INSULATING MATERIAL
POSITION MONITOR 18 - 30 INCHES (45.7-76.2 CM.) FROM EYES	PROVIDE A HOOK-TYPE TOOL TO PULL ITEMS	PROVIDE ADEQUATE LEG CLEARANCE	PROVIDE PORTABLE FAN(S)
POSITION MONITOR APPROPRIATELY. FOR BIFOCAL USER, SO THAT THE NECK IS UPRIGHT, NOT TILTED, PLACE ON MONITOR BLOCKS, STAND, OR OTHER ELEVATED SURFACE.	PROVIDE A KEYBOARD THAT DOES NOT REQUIRE EXCESSIVE FORCES	PROVIDE ADEQUATE STORAGE	PROVIDE PORTABLE HEATER(S)
POSITION MONITOR APPROPRIATELY. FOR DRAWING WORK, SO THAT EYE LEVEL IS AT MID-SCREEN.	PROVIDE A KEYBOARD WHICH DOES NOT REQUIRE EXCESSIVE KEYING FORCES	PROVIDE ADEQUATE TOE CLEARANCE	PROVIDE POWERED ASSISTANCE FOR A MANUAL ACTIVITY
POSITION MONITOR APPROPRIATELY. FOR NON-DRAWING TASKS, THE PRIMARY WORK AREA ON THE SCREEN SHOULD BE JUST BELOW EYE LEVEL.	PROVIDE A LARGER WORKSURFACE	PROVIDE ADEQUATE WORK SPACE	PROVIDE POWERED OR MECHANICAL ASSISTANCE FOR DOOR
POSITION MONITOR SO EYES ARE MID LEVEL ON SCREEN	PROVIDE A LIGHTER WEIGHT DOOR	PROVIDE ALTERNATIVE WORK SURFACE LAYOUT	PROVIDE PROTECTION FROM GLARE FROM NATURAL LIGHT
POSITION MONITOR/SCREEN IN FRONT OF THE BODY	PROVIDE A MACHINE/AUTOMATE SYSTEM	PROVIDE AN ADJUSTABLE HEIGHT LIFT TABLE	PROVIDE PROTECTION FROM GLARE FROM OVERHEAD LIGHTS / TASK LIGHTS
POSITION MOUSE/ INPUT DEVICE NEXT TO KEYBOARD	PROVIDE A MAGNIFYING GLASS	PROVIDE AN ADJUSTABLE MIRROR	PROVIDE SCREEN HOOD/VISOR
POSITION THE MONITOR/SCREEN IN FRONT OF THE BODY	PROVIDE A MECHANICAL LIFT DEVICE	PROVIDE AN ALTERNATE CONTAINER	PROVIDE SHIELDS OR BARRIERS FROM WIND
PROGRAM MACRO KEYS TO REDUCE KEYING	PROVIDE A MULTI-FINGER TRIGGER	PROVIDE AN ALTERNATIVE KEYBOARD/MOUSE	PROVIDE STANDING WORKSTATION
PROVIDE A BALL-BEARING ROTATION TABLE	PROVIDE A PADDED, COMPRESSIBLE SURFACE TO LAY ON	PROVIDE AN APPROPRIATE ANTI-FATIGUE MAT	PROVIDE STAPLER WITH LONGER LEVER ARM
PROVIDE A CART	PROVIDE A PADDED, COMPRESSIBLE SURFACE TO SIT ON	PROVIDE AN APPROPRIATE CHAIR / STOOL	PROVIDE SUPPORT FOR REFERENCE DOCUMENTS
PROVIDE A CONTAINER FOR CARRYING TOOLS/SUPPLIES	PROVIDE A PALM REST	PROVIDE AN APPROPRIATE HANDLE DIAMETER	PROVIDE SUPPORT FOR THE ARMS
	PROVIDE A POWER TOOL	PROVIDE AN APPROPRIATE HANDLE GRIP SPAN ON PLIERS-TYPE TOOLS	PROVIDE SUPPORT FOR THE CABLE OR HOSE
	PROVIDE A POWERED CART	PROVIDE AN AUXILIARY TABLE	PROVIDE SUPPORT FOR THE HEAD
	PROVIDE A SHORTER HANDLE TO REDUCE ARM MOVEMENT	PROVIDE ANTI-VIBRATION MATERIALS	PROVIDE SUPPORT FOR THE LOWER BACK
	PROVIDE A SMALLER CONTAINER	PROVIDE APPROPRIATE ABRASIVE MATERIAL	PROVIDE SUPPORT FOR THE TOOL
	PROVIDE A SPRING RELEASE MECHANISM ON PLIERS-TYPE TOOLS	PROVIDE APPROPRIATE ANTI-FATIGUE MAT	PROVIDE SUPPORT FOR THE UPPER BODY
	PROVIDE A STORAGE BAG WHICH IS EASY TO PACK/UNPACK	PROVIDE APPROPRIATE CART	PROVIDE SUPPORT FOR THE WORK PIECES
	PROVIDE A SWIVEL CONNECTION FOR AIR HOSE	PROVIDE APPROPRIATE EQUIPMENT	PROVIDE TASK LIGHT
	PROVIDE A TELEPHONE HEAD SET	PROVIDE APPROPRIATE GLOVES	PROVIDE TELEPHONE HEAD SET
	PROVIDE A TOOL THAT CAN BE USED WITH BOTH HANDS	PROVIDE APPROPRIATE HANDLES	PROVIDE WHEELS
		PROVIDE APPROPRIATE KNEE PROTECTION	RAISE ARM REST(S)
		PROVIDE APPROPRIATE SHOE INSERTS	RAISE KEYBOARD / WORK SURFACE / WORK PIECE
		PROVIDE APPROPRIATE SOLVENT SOLUTION	RAISE THE CHAIR

RAISE THE HANDLE	TILT MONITOR DOWN SO IT IS PARALLEL TO THE FLOOR	AIR LOCKS	ENCLOSED BEAM PATH
RAISE THE MONITOR/SCREEN	TRAIN PROPER BODY MECHANICS/POSTURE	AUDIBLE ALARMS/SIGNALS	ENCLOSED CLASS 3B/4, INTERLOCKS ON PROTECTIVE HOUSING
RAISE THE PERSON	TRAIN PROPER CHAIR ADJUSTMENT	BARRIERS/SHIELDING	ENCLOSED CLASS 3B/4, SERVICE ACCESS PANELS
RAISE THE WORK PIECE/WORK SURFACE	TRAIN PROPER FOOTREST USE	CONTROLLED AREA	LASER IN NAVIGABLE AIRSPACE
REARRANGE DESK/WORKSURFACE	TRAIN PROPER KEYING STYLE	EMERGENCY SHUTOFF	OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
REARRANGE WORK AREA TO AVOID FACE-TO-FACE WORK STATIONS	TRAIN PROPER MICROSCOPE TECHNIQUE	FENCES	OTHER
RECESS CONTAINER INTO WORK SURFACE	TRAIN PROPER TYPING/MOUSING STYLE	GLOVE BOXES	PROTECTIVE HOUSING
RE-DESIGN JOB	USE A DESK-BASED TAPE DISPENSER INSTEAD OF A HAND-HELD DISPENSER	HANDLING MATERIALS (TONGS, REMOTE UNITS, MECHANICAL DEVICES)	TEMPORARY LASER CONTROLLED AREA
RE-DESIGN THE WORK SPACE	USE A FLAT STAPLE REMOVER WITH A POWER GRIP RATHER THAN A PINCH GRIP	INTERLOCKS	VIEWING PORTALS/WINDOWS
REDIRECT AIR CONDITIONING UNITS AND/OR FANS	USE AIR CONDITIONING WHEN PROVIDED	KILL SWITCH	LASER - ANSI CLASS 3B
REDUCE CARRY DISTANCE	USE ALTERNATIVE FASTENERS	OTHER	ACTIVATION WARNING SYSTEMS
REDUCE DEPTH OF STORAGE CONTAINER	USE AUTOMATIC STAPLER	ROPE OR CHAIN BARRIER	BEAM STOP OR ATTENUATOR
REDUCE FORCE REQUIRED TO INSTALL OR REMOVE THE COMPONENT	USE AVAILABLE ALTERNATIVE WORK SURFACE	WARNING LIGHTS	COORDINATE USE IN NAVIGABLE AIRSPACE WITH FAA
REDUCE NUMBER OF FASTENERS USED	USE AVAILABLE CHAIR WITH ADJUSTABLE ARMREST(S) FOR FOREARM SUPPORT	LASER - ANSI CLASS 1	EMISSION INDICATOR
REDUCE THE ANGLE A PERSON HAS TO TURN TO TRANSFER AN ITEM	USE CART TO MOVE BOXES AND FILES	ACTIVATION WARNING SYSTEM, WALK-IN PROTECTIVE HOUSING	ENCLOSED BEAM PATH
REDUCE THE WEIGHT OF THE LOAD ON THE CART	USE HEAVY EXCAVATION EQUIPMENT (E.G., BACKHOE)	ENCLOSED BEAM PATH	GUARDED SWITCH
REDUCE WEIGHT OF WORK PIECE	USE HEIGHT ADJUSTABLE ARMRESTS TO SUPPORT THE FOREARM	ENCLOSED CLASS 3B/4, INTERLOCKS ON PROTECTIVE HOUSING	INDOOR LASER CONTROLLED AREA
RELOCATE THE WORK	USE LARGER STAPLER WITH LONGER LEVER ARMS	ENCLOSED CLASS 3B/4, SERVICE ACCESS PANELS	INTERLOCK AT ENTRANCE TO LASER CONTROLLED AREA
REMOVE OBSTRUCTIONS	USE STEP STOOL TO ACCESS HIGH LEVEL SHELVES	OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)	INTERLOCKS ON PROTECTIVE HOUSING
REMOVE OR LOWER ARMRESTS	USE TWO OR MORE PERSONS TO PERFORM THE LIFT/TRANSFER	OTHER	KEY CONTROL/MASTER SWITCH
REPLACE ABRASIVE OR CUTTING MATERIAL FREQUENTLY	USE WELL-FITTING "GRIPPER" GLOVES TO PULL FILES	PROTECTIVE HOUSING	LASER OUTDOOR CONTROLS
REPLACE STANDING FOOT PEDALS WITH ALTERNATIVE CONTROLS	VENT PORTABLE AIR CONDITIONERS AND OTHER HEAT PRODUCING EQUIPMENT TO OUTDOORS WHEN POSSIBLE	TEMPORARY LASER CONTROLLED AREA	LASER TREATMENT CONTROLLED AREA
REPOSITION FOOT PEDAL	WEAR APPROPRIATE SHOES	LASER - ANSI CLASS 2	LIMITED OPEN BEAM PATH, HAZARD ANALYSIS/ESTABLISH CONTROLLED AREA
ROTATE THE WORK PIECE	INTERLOCK	EMISSION INDICATOR	OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
SHARPEN BLADES FREQUENTLY	INTERLOCK	ENCLOSED BEAM PATH	OTHER
STAND TO PERFORM TASK	IONIZING RADIATION	ENCLOSED CLASS 3B/4, INTERLOCKS ON PROTECTIVE HOUSING	PROTECTIVE BARRIERS AND CURTAINS
STAND UP AND REACH FOR ITEMS POSITIONED ABOVE DESK OR IN REFERENCE ZONE		ENCLOSED CLASS 3B/4, SERVICE ACCESS PANELS	PROTECTIVE HOUSING
STORE MATERIALS IN THE SAME ORIENTATION IN WHICH THEY ARE USED		OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)	REMOTE INTERLOCK CONNECTOR
SUGGEST COMPUTER GLASSES		OTHER	SERVICE ACCESS PANELS (INTERLOCKED, KEYED, OR WARNING LABEL)
		PROTECTIVE HOUSING	TOTALLY OPEN BEAM PATH, HAZARD ANALYSIS/ESTABLISH CONTROLLED AREA
		TEMPORARY LASER CONTROLLED AREA	
		VIEWING PORTALS/WINDOWS	
		LASER - ANSI CLASS 3A	
		EMISSION INDICATOR	

VIEWING PORTALS/WINDOWS
LASER - ANSI CLASS 4
ACTIVATION WARNING SYSTEMS
BEAM STOP OR ATTENUATOR
COORDINATE USE IN NAVIGABLE AIRSPACE WITH FAA
EMERGENCY SHUTOFF
EMISSION DELAY
EMISSION INDICATOR
ENCLOSED BEAM PATH
GUARDED SWITCH
INDOOR LASER CONTROLLED AREA
INTERLOCK AT ENTRANCE TO LASER CONTROLLED AREA
INTERLOCKS ON PROTECTIVE HOUSING
KEY CONTROL/MASTER SWITCH
LASER OUTDOOR CONTROLS
LASER TREATMENT CONTROLLED AREA
LIMITED OPEN BEAM PATH, HAZARD ANALYSIS/ESTABLISH CONTROLLED AREA
OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
OTHER
PROTECTIVE BARRIERS AND CURTAINS
PROTECTIVE HOUSING
REMOTE FIRING AND MONITORING
REMOTE INTERLOCK CONNECTOR
SERVICE ACCESS PANELS (INTERLOCKED, KEYED, OR WARNING LABEL)
TOTALLY OPEN BEAM PATH, HAZARD ANALYSIS/ESTABLISH CONTROLLED AREA
VIEWING PORTALS/WINDOWS
LASER - OFCS
AUTOMATIC POWER REDUCTION
CONTAINMENT OF BEAM
DE-ENERGIZE THE OFCS
OTHER
SERVICE CONNECTORS
TOOL-SECURED ACCESS

VIEWING WITH A FILTERED OPTICAL INSTRUMENT
VIEWING WITH INDIRECT IMAGE CONVERTER
LASER-ANSI CLASS 1M
ACTIVATION WARNING SYSTEM, WALK-IN PROTECTIVE HOUSING
ENCLOSED BEAM PATH
ENCLOSED CLASS 3B/4, INTERLOCKS ON PROTECTIVE HOUSING
ENCLOSED CLASS 3B/4, SERVICE ACCESS PANELS
OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
OTHER
PROTECTIVE HOUSING
TEMPORARY LASER CONTROLLED AREA
LASER-ANSI CLASS 2M
EMISSION INDICATOR
ENCLOSED BEAM PATH
ENCLOSED CLASS 3B/4, INTERLOCKS ON PROTECTIVE HOUSING
ENCLOSED CLASS 3B/4, SERVICE ACCESS PANELS
OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
OTHER
PROTECTIVE HOUSING
TEMPORARY LASER CONTROLLED AREA
VIEWING PORTALS/WINDOWS
LASER-ANSI CLASS 3R
EMISSION INDICATOR
ENCLOSED BEAM PATH
ENCLOSED CLASS 3B/4, INTERLOCKS ON PROTECTIVE HOUSING
ENCLOSED CLASS 3B/4, SERVICE ACCESS PANELS
LASER IN NAVIGABLE AIRSPACE
OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
OTHER
PROTECTIVE HOUSING

TEMPORARY LASER CONTROLLED AREA
VIEWING PORTALS/WINDOWS
LASER-FDA CLASS I
ACTIVATION WARNING SYSTEM, WALK-IN PROTECTIVE HOUSING
ENCLOSED BEAM PATH
ENCLOSED CLASS 3B/4, INTERLOCKS ON PROTECTIVE HOUSING
ENCLOSED CLASS 3B/4, SERVICE ACCESS PANELS
OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
OTHER
PROTECTIVE HOUSING
TEMPORARY LASER CONTROLLED AREA
LASER-FDA CLASS II
EMISSION INDICATOR
ENCLOSED BEAM PATH
ENCLOSED CLASS 3B/4, INTERLOCKS ON PROTECTIVE HOUSING
ENCLOSED CLASS 3B/4, SERVICE ACCESS PANELS
OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
OTHER
PROTECTIVE HOUSING
TEMPORARY LASER CONTROLLED AREA
VIEWING PORTALS/WINDOWS
LASER-FDA CLASS IIA
ACTIVATION WARNING SYSTEM, WALK-IN PROTECTIVE HOUSING
ENCLOSED BEAM PATH
ENCLOSED CLASS 3B/4, INTERLOCKS ON PROTECTIVE HOUSING
ENCLOSED CLASS 3B/4, SERVICE ACCESS PANELS
OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
OTHER
PROTECTIVE HOUSING
TEMPORARY LASER CONTROLLED AREA
LASER-FDA CLASS IIIA

EMISSION INDICATOR
ENCLOSED BEAM PATH
ENCLOSED CLASS 3B/4, INTERLOCKS ON PROTECTIVE HOUSING
ENCLOSED CLASS 3B/4, SERVICE ACCESS PANELS
LASER IN NAVIGABLE AIRSPACE
OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
OTHER
PROTECTIVE HOUSING
TEMPORARY LASER CONTROLLED AREA
VIEWING PORTALS/WINDOWS
LASER-FDA CLASS IIIB
ACTIVATION WARNING SYSTEMS
BEAM STOP OR ATTENUATOR
COORDINATE USE IN NAVIGABLE AIRSPACE WITH FAA
EMISSION INDICATOR
ENCLOSED BEAM PATH
GUARDED SWITCH
INDOOR LASER CONTROLLED AREA
INTERLOCK AT ENTRANCE TO LASER CONTROLLED AREA
INTERLOCKS ON PROTECTIVE HOUSING
KEY CONTROL/MASTER SWITCH
LASER OUTDOOR CONTROLS
LASER TREATMENT CONTROLLED AREA
LIMITED OPEN BEAM PATH, HAZARD ANALYSIS/ESTABLISH CONTROLLED AREA
OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
OTHER
PROTECTIVE BARRIERS AND CURTAINS
PROTECTIVE HOUSING
REMOTE INTERLOCK CONNECTOR
SERVICE ACCESS PANELS (INTERLOCKED, KEYED, OR WARNING LABEL)

TOTALLY OPEN BEAM PATH, HAZARD ANALYSIS/ESTABLISH CONTROLLED AREA
VIEWING PORTALS/WINDOWS
LASER-FDA CLASS IV
ACTIVATION WARNING SYSTEMS
BEAM STOP OR ATTENUATOR
COORDINATE USE IN NAVIGABLE AIRSPACE WITH FAA
EMERGENCY SHUTOFF
EMISSION DELAY
EMISSION INDICATOR
ENCLOSED BEAM PATH
GUARDED SWITCH
INDOOR LASER CONTROLLED AREA
INTERLOCK AT ENTRANCE TO LASER CONTROLLED AREA
INTERLOCKS ON PROTECTIVE HOUSING
KEY CONTROL/MASTER SWITCH
LASER OUTDOOR CONTROLS
LASER TREATMENT CONTROLLED AREA
LIMITED OPEN BEAM PATH, HAZARD ANALYSIS/ESTABLISH CONTROLLED AREA
OPTICAL AIDS/COLLECTING OPTICS (ATTENUATED, FILTERED)
OTHER
PROTECTIVE BARRIERS AND CURTAINS
PROTECTIVE HOUSING
REMOTE FIRING AND MONITORING
REMOTE INTERLOCK CONNECTOR
SERVICE ACCESS PANELS (INTERLOCKED, KEYED, OR WARNING LABEL)
TOTALLY OPEN BEAM PATH, HAZARD ANALYSIS/ESTABLISH CONTROLLED AREA
VIEWING PORTALS/WINDOWS
MISCELLANEOUS
ADDITIONAL LIGHTING
DEAD MAN SWITCH
MATERIAL SUBSTITUTION

MECHANICAL/MOTORIZED ASSISTANCE
OTHER
PROCESS CHANGE
PROCESS ENCLOSURE
ROPE BARRIERS
WORKER ENCLOSURE
PROCESS ISOLATION
BARRIERS/SHIELDING
DISTANCE
GLOVE BAGS
GLOVE BOXES
MACHINE GUARDING
MINI-ENCLOSURES
OTHER
PROCESS ISOLATION
TIME
RFR
ABSORBERS
AZIMUTH BLANKING
BARRIERS/SHIELDING
CONTROLLED AREA
DEAD MAN SWITCH
DUMMY LOAD
FENCES
FLASHING LIGHTS/AUDIBLE SIGNALS
INTERLOCKING RFR HATS
INTERLOCKS
KILL SWITCH/PANIC BUTTON
OTHER
REMOTE OPERATION
ROPE OR CHAIN BARRIER
SHIELDED ROOM
VENTILATION - CLEAN ROOMS
DUCTED MODULE
PRESSURIZED PLENUM
RETURN AIR ARRANGEMENTS
VENTILATION - COMMON HOODS
BELL MOUTH
BOOTH WITH STRAIGHT TAKEOFF
BOOTH WITH TAPERED TAKEOFF

DUCT END (ROUND)
DUCT END (SQUARE)
FLANGED DUCT END (ROUND)
FLANGED DUCT END (SQUARE)
FLANGED MULTIPLE SLOT OPENING, 2 OR MORE SLOTS
FREE-STANDING SLOT HOOD, END FLANGES INSTALLED
GENERAL DIP TANK
LAB FUME
OPEN SURFACE TANK, CANOPY
OTHER
PLAIN MULTIPLE SLOT OPENING, 2 OR MORE SLOTS
PLAIN OPENING
PLAIN SLOT
SLOTTED WITH SIDES AND BACK
TAPERED
VENTILATION - CONFINED SPACES
BLOWER
EXHAUST
VENTILATION - DILUTION
MECHANICAL DILUTION
NATURAL DILUTION
VENTILATION - FILLING OPERATIONS
BAG FILLING
BAG TUBE PACKER
BARREL FILLING
SAMPLING BOX
SHAFT SEAL ENCLOSURE
TOXIC MATERIAL BAG OPENING
WEIGH HOOD ASSEMBLY - DRY MATERIAL
WEIGH HOOD DETAILS - DRY MATERIAL
VENTILATION - FOUNDRY OPERATIONS
CORE MAKING MACHINE-SMALL ROLLOVER TYPE
FOUNDRY SHAKEOUT
FOUNDRY SHAKEOUT-ENCLOSING
FOUNDRY SHAKEOUT-SIDE DRAFT
SHELL CORE MAKING

VENTILATION - GAS TREATMENT
ETHYLENE OXIDE STERILIZERS
FUMIGATION BOOTH
VENTILATION - KITCHEN EQUIPMENT
CHARCOAL BROILER & BARBEQUE PIT VENTILATION
DISHWASHER VENTILATION
KITCHEN RANGE HOOD
KITCHEN RANGE HOODS
VENTILATION - LABORATORY
BIOLOGICAL SAFETY CABINET-CLASS I
BIOLOGICAL SAFETY CABINET-CLASS II, TYPE A
BIOLOGICAL SAFETY CABINET-CLASS II, TYPE B
BIOLOGICAL SAFETY CABINET-CLASS III
DRY BOX OR GLOVE HOOD FOR HIGH TOXICITY & RADIOACTIVE MATERIALS
HORIZONTAL LAMINAR FLOW CLEAN BENCH (PRODUCT PROTECTION ONLY)
OVEN EXHAUST
PERCHLORIC ACID HOOD
SPECIALIZED LABORATORY HOOD DESIGNS
TYPICAL LABORATORY HOOD
VERTICAL LAMINAR FLOW CLEAN BENCH (PRODUCT PROTECTION ONLY)
VENTILATION - LOW VOLUME - HIGH VELOCITY EXHAUST SYSTEMS
EXTRACTOR HEAD FOR SMALL RADIAL GRINDERS
EXTRACTOR HOOD FOR DISC SANDER
EXTRACTOR TOOL FOR VIBRATORY SANDER
HOOD FOR CUP TYPE SURFACE GRINDER AND WIRE BRUSHES
PNEUMATIC CHISEL SLEEVE
TYPICAL SYSTEM, LOW VOLUME-HIGH VELOCITY
VENTILATION - MACHINING
COLD HEADING MACHINE VENTILATION

HIGH TOXICITY MATERIALS MILLING MACHINE HOOD
LATHE HOOD
METAL CUTTING BANDSAW
METAL SHEARS HIGH TOXICITY MATERIALS
OTHER
VENTILATION - MATERIAL TRANSPORT
BIN & HOPPER VENTILATION
BUCKET ELEVATOR VENTILATION
CONVEYOR BELT VENTILATION
RAIL LOADING
TOXIC MATERIAL BELT CONVEYING HEAD PULLEY
TOXIC MATERIAL CONVEYOR BELT LOADING
TRUCK LOADING
VENTILATION - MECHANICAL SURFACE CLEANING AND FINISHING
ABRASIVE BLASTING CABINET
ABRASIVE BLASTING ROOM
ABRASIVE CUT-OFF SAW
BACKSTAND IDLER POLISHING MACHINE
BUFFING LATHE
CIRCULAR AUTOMATIC BUFFING
CORE GRINDER
GRINDING WHEEL HOOD - SURFACE SPEEDS ABOVE 6500 SFPM
GRINDING WHEEL HOOD - SURFACE SPEEDS BELOW 6500 SFPM
HAND GRINDING BENCH
HORIZONTAL DOUBLE-SPINDLE DISC GRINDER
MANUAL BUFFING AND POLISHING
METAL POLISHING BELT
OTHER
PORTABLE CHIPPING AND GRINDING TABLE
STRAIGHT LINE AUTOMATIC BUFFING
SURFACE GRINDER
SWING GRINDER
TUMBLING MILLS
VERTICAL SPINDLE DISC GRINDER

VENTILATION - METAL MELTING FURNACES
CRUCIBLE MELTING FURNACE - HIGH TOXICITY MATERIAL
FIXED POSITION DIE CASTING HOOD
INDUCTION MELTING FURNACE - TILTING
MELTING FURNACE - ELECTRIC, ROCKING
MELTING FURNACE - ELECTRIC, TOP ELECTRODE
MELTING FURNACE CRUCIBLE, NON-TILT
MELTING FURNACE, TILTING
MELTING POT & FURNACE
MOBILE HOOD, DIE CASTING
POURING STATION
VENTILATION - MISCELLANEOUS OPERATIONS
BACK DRAFT/SIDE DRAFT SLOT
CANOPY HOOD
DOWNDRAFT TABLE
FLUIDIZED BEDS
FURNITURE STRIPPING TANK
HANDGUN AND SMALL BORE RIFLE RANGE
MORTUARY TABLE EXHAUST HOOD
NEGATIVE PRESSURE ENCLOSURES
OTHER
OUTBOARD MOTOR TEST
SCREENS
SPRAY ROOM, HANGAR
TABLE SLOT
VENTILATION - MIXING
AIR-COOLED MIXER AND MULLER
BANBURY MIXER
MIXER AND MULLER HOOD
ROLLER MILL VENTILATION
RUBBER CALENDAR ROLLS
VENTILATION - MOVEABLE EXHAUST HOODS
GRANITE CUTTING AND FINISHING
HAWLEY TRAV-L-VENT PERSPECTIVE LAYOUT
MOVABLE EXHAUST HOODS

VENTILATION - OPEN SURFACE TANKS
OPEN SURFACE TANKS, VS-70-01
OPEN SURFACE TANKS, VS-70-02
PUSH-PULL HOOD
SOLVENT DEGREASING TANKS
SOLVENT VAPOR DEGREASING
VENTILATION - OTHER
TEMPORARY SERVICES
VENTILATION - PAINTING OPERATIONS
DIP TANK
DRYING OVEN VENTILATION
LARGE DRIVE-THROUGH SPRAY PAINT BOOTH
LARGE PAINT BOOTH
PAINT BOOTH VEHICLE SPRAY
PAINT MIX STORAGE ROOM
SMALL PAINT BOOTH
TRAILER INTERIOR SPRAY PAINTING
VENTILATION - VEHICLE
DIESEL ENGINES UNDER LOAD
OTHER
SERVICE GARAGE VENTILATION - OVERHEAD
SERVICE GARAGE VENTILATION - UNDER FLOOR
VENTILATED BOOTH FOR RADIATOR REPAIR SOLDERING
WATER WASH DOWNDRAFT PAINT BOOTH
VENTILATION - WELDING AND CUTTING
FUME EXTRACTION GUN
METAL SPRAYING
PRODUCTION LINE WELDING BOOTH
ROBOTIC APPLICATION
TORCH CUTTING VENTILATION
WELDING VENTILATION - MOVABLE EXHAUST HOOD
WELDING VENTILATION BENCH HOOD
VENTILATION - WOODWORKING

AUXILIARY EXHAUST RETROFIT FOR AIR POWERED ORBITAL HAND SANDER
BAND SAW
DISC SANDERS
EXHAUST PLENUM RETROFIT FOR ORBITAL HAND SANDER
FLOOR TABLE SAW
HORIZONTAL BELT SANDER, STRIPPER SYSTEM
HORIZONTAL BELT SANDERS
JET STRIPPER FOR DISC SANDER
JOINTERS
MULTIPLE DRUM SANDER
RADIAL ARM SAW
SINGLE DRUM SANDER
SWING SAW
TABLE SAW GUARD EXHAUST
WOOD LATHE
ADMINISTRATIVE
COMPLIANCE PLANS
1,2-DIBROMO-3-CHLOROPROPANE
1,3-BUTADIENE
2-ACETYLAMINOFLUORENE
3,3'-DICHLOROBENZIDINE
4-AMINODIPHENYL
4-DIMETHYLAMINOAZOBENZENE
ACRYLONITRILE
ALPHA-NAPHTHYLAMINE
ASBESTOS
BENZENE
BENZIDINE
BETA-NAPHTHYLAMINE
BETA-PROPIOLACTONE
BIS-CHLOROMETHYL ETHER
CADMIUM
ETHYLENE OXIDE
ETHYLENEIMINE
FORMALDEHYDE
INORGANIC ARSENIC
LEAD

METHYL CHLOROMETHYL ETHER
METHYLENE CHLORIDE
METHYLENEDIANILINE
N-NITROSODIMETHYLAMINE
OTHER
VINYL CHLORIDE
ERGONOMICS
BROADENING/VARYING JOB CONTENT
EXERCISE/STRETCHING
JOB ROTATION
OTHER
RECOVERY PAUSES
REDUCE SHIFT LENGTH
REST BREAKS
WORK/REST CYCLE
WORKER PLACEMENT
WORKER ROTATION
ERGONOMICS, CORRECTIVE ACTIONS
ALTERNATE BETWEEN SITTING AND STANDING TASKS
ALTERNATE GRIPS FOR PEN TO HELP REDUCE GRIPPING FORCE
ANGLE TELEPHONE BASE SLIGHTLY
ANGLE THE WORKSURFACE TO BRING THE WORK CLOSER TO THE BODY AND THE EYE
ANGLE WORK SURFACE TO BRING WORK CLOSER TO THE BODY AND THE EYES
AVOID HIGH FORCE TASKS WHILE SEATED
CALL FOR ASSISTANCE
CENTER NUMERIC PAD OR CALCULATOR IN FRONT OF BODY / MONITOR
CHANGE A PINCH GRIP TO A POWER GRIP
CHANGE LIFTING/CARRYING TASK INTO A ROLLING OR SLIDING TASK
CHANGE POSTURE FREQUENTLY
CLEAN SCREEN REGULARLY
CLOSE BLINDS OR CURTAINS

CLOSE DOORS WHEN POSSIBLE TO REDUCE NOISE
COVER OR TURN OFF UNDER CABINET LIGHTING
DECREASE LIGHT LEVELS
DIRECT COLD AIR AWAY FROM THE HANDS
DISTRIBUTE INTENSIVE ACTIVITIES THROUGHOUT THE PROCESS
ELIMINATE EXPOSURE TO HARD EDGES
ELIMINATE NEED TO CONSTANTLY HOLD TRIGGER
ELIMINATE UNNECESSARY TASKS
ELIMINATE/REDUCE LOUD RADIOS, PA ANNOUNCEMENTS, AND PHONE SIGNALS (RINGERS)
ENCOURAGE APPROPRIATE SEASONAL CLOTHING
ENCOURAGE ERGONOMIC WORK TECHNIQUES
ENCOURAGE PERSON TO HAVE VISUAL DISORDERS CORRECTED
GROUP FREQUENTLY USED ITEMS TOGETHER FOR CONVENIENT RETRIEVAL
HEAT METAL/MATERIAL TO MAKE MORE PLIABLE
IMPROVE CHARACTER SIZE AND STYLE ON DOCUMENT AND MONITOR
IMPROVE CLEAT DESIGN
IMPROVE FLOOR CONDITION
IMPROVE VISUAL ACCESS TO WORK
IMPROVE WHEEL CONDITION
INCORPORATE HEALTH COMFORT STRATEGIES: ALTERNATE TASKS, STRETCH, TAKE REST PAUSES
INCORPORATE REST PAUSES
INCREASE HANDLE LENGTH TO IMPROVE LEVERAGE
INCREASE LIGHT LEVELS
INCREASE ROOM TEMPERATURE
INCREASE TASK VARIETY
INCREASE WEIGHT OF WORK PIECE

INSTALL ALTERNATIVE MOUSE / CALCULATOR / KEYBOARD
INSTALL ANTI-GLARE SCREEN
INSTALL PALM SUPPORT ENTIRE LENGTH OF DRAFTING TABLE
INSTALL PARABOLIC LOUVERS TO DIRECT LIGHT DOWN ON THE SURFACE
INSTALL PRINTER COVERS TO ISOLATE NOISE
INSTALL PUSH BUTTON PHONE
INSTALL SEPARATE AIR CONDITIONING UNITS WHEN POSSIBLE
INSTALL WALL / ACOUSTICAL PANELS
KNEEL TO ACCESS LOW LEVEL SHELVES
KNEEL TO ACCESS LOWER LEVEL OF PHOTOCOPIER
LOCATE FREQUENTLY RETRIEVED ITEMS BETWEEN SHOULDER AND WAIST LEVEL
LOCATE HEAVY ITEMS BETWEEN KNEE AND WAIST LEVEL
LOCATE SORTING PILES NEAR WORK SURFACE EDGE
LOWER KEYBOARD TRAY / WORK PIECE / WORK SURFACE
LOWER THE CHAIR
LOWER THE HANDLE
LOWER THE MONITOR/SCREEN
LOWER THE PERSON
LOWER THE WORK PIECE/WORK SURFACE
MAINTAIN BOLTS AND SCREWS
MAINTAIN HAND TOOL/POWER TOOLS
MAINTAIN TRACKS, ROLLERS, AND MOVEMENT MECHANISMS
MINIMIZE CLUTTER ON DESK/WORKSURFACE
MINIMIZE MATERIAL WHICH MUST BE REMOVED MANUALLY
MODIFY FACILITIES TO DECREASE HANDLING
MODIFY FOOT PEDAL
MOVE CHAIR CLOSER TO SURFACE EDGE
MOVE CLOSER TO THE WORK LOCATION

MOVE KEYBOARD / MOUSE / MICROSCOPE FORWARD SO FOREARMS REST EVENLY ON SURFACE
MOVE MONITOR / SCREEN CLOSER TO BODY
MOVE MONITOR / SCREEN FURTHER AWAY FROM BODY
MOVE MONITOR FROM UNDERNEATH SHELF/CABINET LIGHTING
MOVE STAPLER CLOSER TO WORK SURFACE EDGE
MOVE WORK PIECE CLOSER TO BODY
OBTAIN PATIENT'S ASSISTANCE
OPEN DOORS/WINDOWS WHEN POSSIBLE
ORIENT PAPER BY TURNING IT SO WORK AREA IS CLOSE TO THE BODY
OTHER
PERIODICALLY LOOK AWAY FROM MICROSCOPE / SCREEN TO CHANGE THE TASK DEMAND ON THE EYE, AND FOCUS ON AN OBJECT OF VARYING DISTANCE.
PLACE HAND ON WORK SURFACE OR LAP WHEN NOT DIALING.
PLACE KEYBOARD / CALCULATOR /MONITOR ONTO LARGER SURFACE
PLACE MONITOR ON ALTERNATIVE WORK SURFACE
PLACE MONITOR PERPENDICULAR TO WINDOW
PLACE THE TRIGGER/SWITCH TO ALLOW A COMFORTABLE HAND/ARM POSITION
POSITION DOCUMENT AT A COMFORTABLE VIEWING DISTANCE FOR LARGER BLUE PRINTS BY FOLDING OR LOOSELY ROLLING DOCUMENT
POSITION DOCUMENT AT SAME HEIGHT AND ANGLE AS MONITOR, ON SIDE OF DOMINANT EYE. IF DOCUMENT IS HANDLED, FLIPPED, OR WRITTEN ON, SLIGHTLY INCLINE.
POSITION MONITOR 18 - 30 INCHES (45.7-76.2 CM.) FROM EYES

POSITION MONITOR APPROPRIATELY. FOR BIFOCAL USER, SO THAT THE NECK IS UPRIGHT, NOT TILTED, PLACE ON MONITOR BLOCKS, STAND, OR OTHER ELEVATED SURFACE.	PROVIDE A MACHINE/AUTOMATE SYSTEM	PROVIDE AN ALTERNATE CONTAINER	PROVIDE PROTECTION FROM GLARE FROM OVERHEAD LIGHTS / TASK LIGHTS
POSITION MONITOR APPROPRIATELY. FOR DRAWING WORK, SO THAT EYE LEVEL IS AT MID-SCREEN.	PROVIDE A MAGNIFYING GLASS	PROVIDE AN ALTERNATIVE KEYBOARD/MOUSE	PROVIDE SCREEN HOOD/VISOR
POSITION MONITOR APPROPRIATELY. FOR NON-DRAWING TASKS, THE PRIMARY WORK AREA ON THE SCREEN SHOULD BE JUST BELOW EYE LEVEL.	PROVIDE A MECHANICAL LIFT DEVICE	PROVIDE AN APPROPRIATE ANTI-FATIGUE MAT	PROVIDE SHIELDS OR BARRIERS FROM WIND
POSITION MONITOR SO EYES ARE MID LEVEL ON SCREEN	PROVIDE A MULTI-FINGER TRIGGER	PROVIDE AN APPROPRIATE CHAIR / STOOL	PROVIDE STANDING WORKSTATION
POSITION MONITOR/SCREEN IN FRONT OF THE BODY	PROVIDE A PADDED, COMPRESSIBLE SURFACE TO LAY ON	PROVIDE AN APPROPRIATE HANDLE DIAMETER	PROVIDE STAPLER WITH LONGER LEVER ARM
POSITION MOUSE/ INPUT DEVICE NEXT TO KEYBOARD	PROVIDE A PADDED, COMPRESSIBLE SURFACE TO SIT ON	PROVIDE AN APPROPRIATE HANDLE GRIP SPAN ON PLIERS-TYPE TOOLS	PROVIDE SUPPORT FOR REFERENCE DOCUMENTS
POSITION THE MONITOR/SCREEN IN FRONT OF THE BODY	PROVIDE A PALM REST	PROVIDE AN AUXILIARY TABLE	PROVIDE SUPPORT FOR THE ARMS
PROGRAM MACRO KEYS TO REDUCE KEYING	PROVIDE A POWER TOOL	PROVIDE ANTI-VIBRATION MATERIALS	PROVIDE SUPPORT FOR THE CABLE OR HOSE
PROVIDE A BALL-BEARING ROTATION TABLE	PROVIDE A POWERED CART	PROVIDE APPROPRIATE ABRASIVE MATERIAL	PROVIDE SUPPORT FOR THE HEAD
PROVIDE A CART	PROVIDE A SHORTER HANDLE TO REDUCE ARM MOVEMENT	PROVIDE APPROPRIATE ANTI-FATIGUE MAT	PROVIDE SUPPORT FOR THE LOWER BACK
PROVIDE A CONTAINER FOR CARRYING TOOLS/SUPPLIES	PROVIDE A SMALLER CONTAINER	PROVIDE APPROPRIATE CART	PROVIDE SUPPORT FOR THE TOOL
PROVIDE A FLAT / LEVEL KEYBOARD	PROVIDE A SPRING RELEASE MECHANISM ON PLIERS-TYPE TOOLS	PROVIDE APPROPRIATE EQUIPMENT	PROVIDE SUPPORT FOR THE UPPER BODY
PROVIDE A FOOT PEDAL WHICH REQUIRES THE CORRECT AMOUNT OF FORCE TO USE	PROVIDE A STORAGE BAG WHICH IS EASY TO PACK/UNPACK	PROVIDE APPROPRIATE GLOVES	PROVIDE SUPPORT FOR THE WORK PIECES
PROVIDE A FOOT PUMP	PROVIDE A SWIVEL CONNECTION FOR AIR HOSE	PROVIDE APPROPRIATE HANDLES	PROVIDE TASK LIGHT
PROVIDE A FOOTREST OR FOOTREST	PROVIDE A TELEPHONE HEAD SET	PROVIDE APPROPRIATE KNEE PROTECTION	PROVIDE TELEPHONE HEAD SET
PROVIDE A FULL-SIZED INPUT DEVICE	PROVIDE A TOOL THAT CAN BE USED WITH BOTH HANDS	PROVIDE APPROPRIATE SHOE INSERTS	PROVIDE WHEELS
PROVIDE A HIGH FRICTION GRIPPING SURFACE	PROVIDE A TOOL WHICH MINIMIZES EXPOSURE TO VIBRATION/IMPACT/TORQUE	PROVIDE APPROPRIATE SOLVENT SOLUTION	RAISE ARM REST(S)
PROVIDE A HOOK-TYPE TOOL TO PULL ITEMS	PROVIDE A TOOL WHICH REQUIRES MINIMAL FORCE TO USE	PROVIDE AUTOMATIC OR SEMI-AUTOMATIC FEED FOR FASTENERS	RAISE KEYBOARD / WORK SURFACE / WORK PIECE
PROVIDE A KEYBOARD THAT DOES NOT REQUIRE EXCESSIVE FORCES	PROVIDE A TOOL WITH AN APPROPRIATE HANDLE ANGLE	PROVIDE BOLT AND SCREW HEAD DESIGNS THAT ARE DURABLE	RAISE THE CHAIR
PROVIDE A KEYBOARD WHICH DOES NOT REQUIRE EXCESSIVE KEYING FORCES	PROVIDE A WHEEL BARROW	PROVIDE CONTROLS WHICH DO NOT REQUIRE EXCESSIVE FORCES	RAISE THE HANDLE
PROVIDE A LARGER WORKSURFACE	PROVIDE A WORK SURFACE THAT IS HEIGHT ADJUSTABLE	PROVIDE DISPLAYS WHICH ARE READABLE AND EASY TO UNDERSTAND	RAISE THE MONITOR/SCREEN
PROVIDE A LIGHTER WEIGHT DOOR	PROVIDE ADDITIONAL STAFF	PROVIDE EXTENSIONS FOR TOOLS	RAISE THE PERSON
	PROVIDE ADEQUATE LEG CLEARANCE	PROVIDE HANDLES WITH INSULATING MATERIAL	RAISE THE WORK PIECE/WORK SURFACE
	PROVIDE ADEQUATE STORAGE	PROVIDE PORTABLE FAN(S)	REARRANGE DESK/WORKSURFACE
	PROVIDE ADEQUATE TOE CLEARANCE	PROVIDE PORTABLE HEATER(S)	REARRANGE WORK AREA TO AVOID FACE-TO-FACE WORK STATIONS
	PROVIDE ADEQUATE WORK SPACE	PROVIDE POWERED ASSISTANCE FOR A MANUAL ACTIVITY	RECESS CONTAINER INTO WORK SURFACE
	PROVIDE ALTERNATIVE WORK SURFACE LAYOUT	PROVIDE POWERED OR MECHANICAL ASSISTANCE FOR DOOR	RE-DESIGN JOB
	PROVIDE AN ADJUSTABLE HEIGHT LIFT TABLE	PROVIDE PROTECTION FROM GLARE FROM NATURAL LIGHT	RE-DESIGN THE WORK SPACE
	PROVIDE AN ADJUSTABLE MIRROR		REDIRECT AIR CONDITIONING UNITS AND/OR FANS
			REDUCE CARRY DISTANCE
			REDUCE DEPTH OF STORAGE CONTAINER
			REDUCE FORCE REQUIRED TO INSTALL OR REMOVE THE COMPONENT

REDUCE NUMBER OF FASTENERS USED
REDUCE THE ANGLE A PERSON HAS TO TURN TO TRANSFER AN ITEM
REDUCE THE WEIGHT OF THE LOAD ON THE CART
REDUCE WEIGHT OF WORK PIECE
RELOCATE THE WORK
REMOVE OBSTRUCTIONS
REMOVE OR LOWER ARMRESTS
REPLACE ABRASIVE OR CUTTING MATERIAL FREQUENTLY
REPLACE STANDING FOOT PEDALS WITH ALTERNATIVE CONTROLS
REPOSITION FOOT PEDAL
ROTATE THE WORK PIECE
SHARPEN BLADES FREQUENTLY
STAND TO PERFORM TASK
STAND UP AND REACH FOR ITEMS POSITIONED ABOVE DESK OR IN REFERENCE ZONE
STORE MATERIALS IN THE SAME ORIENTATION IN WHICH THEY ARE USED
SUGGEST COMPUTER GLASSES
TILT MONITOR DOWN SO IT IS PARALLEL TO THE FLOOR
TRAIN PROPER BODY MECHANICS/POSTURE
TRAIN PROPER CHAIR ADJUSTMENT
TRAIN PROPER FOOTREST USE
TRAIN PROPER KEYING STYLE
TRAIN PROPER MICROSCOPE TECHNIQUE
TRAIN PROPER TYPING/MOUSING STYLE
USE A DESK-BASED TAPE DISPENSER INSTEAD OF A HAND-HELD DISPENSER
USE A FLAT STAPLE REMOVER WITH A POWER GRIP RATHER THAN A PINCH GRIP
USE AIR CONDITIONING WHEN PROVIDED
USE ALTERNATIVE FASTENERS
USE AUTOMATIC STAPLER

USE AVAILABLE ALTERNATIVE WORK SURFACE
USE AVAILABLE CHAIR WITH ADJUSTABLE ARMREST(S) FOR FOREARM SUPPORT
USE CART TO MOVE BOXES AND FILES
USE HEAVY EXCAVATION EQUIPMENT (E.G., BACKHOE)
USE HEIGHT ADJUSTABLE ARMRESTS TO SUPPORT THE FOREARM
USE LARGER STAPLER WITH LONGER LEVER ARMS
USE STEP STOOL TO ACCESS HIGH LEVEL SHELVES
USE TWO OR MORE PERSONS TO PERFORM THE LIFT/TRANSFER
USE WELL-FITTING "GRIPPER" GLOVES TO PULL FILES
VENT PORTABLE AIR CONDITIONERS AND OTHER HEAT PRODUCING EQUIPMENT TO OUTDOORS WHEN POSSIBLE
WEAR APPROPRIATE SHOES
IONIZING RADIATION
ACCESS LIMITED TO AUTHORIZED PERSONNEL
ACTIVATION KEY CONTROLLED
DISTANCE
DOSIMETERS WORN PROPERLY
OTHER
REMOVAL OF PERSONNEL, DOSE LIMITATION
STANDARD OPERATING PROCEDURES
TIME
WARNING LABELS
WARNING SIGN ALERTING FEMALES TO NOTIFY TECHNICIAN IF PREGNANT
WARNING SIGN IDENTIFYING EMERGENCY KILL SWITCHES
WARNING SIGN ON ENTRANCE TO KNOCK BEFORE ENTERING ROOM
WARNING SIGNS

LASER - ANSI CLASS 1
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
WARNING AREA SIGN POSTED (OPERATED WITHOUT PROTECTIVE HOUSING, MPE EXCEEDED)
WARNING/IDENTIFICATION/APERTURE LABELS
LASER - ANSI CLASS 2
ALIGNMENT PROCEDURES
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
WARNING AREA SIGN POSTED (OPERATED WITHOUT PROTECTIVE HOUSING, MPE EXCEEDED)
WARNING SIGNS
WARNING/IDENTIFICATION/APERTURE LABELS
LASER - ANSI CLASS 3A
ALIGNMENT PROCEDURES
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
OUTPUT EMISSION LIMITATIONS
WARNING SIGNS
WARNING/IDENTIFICATION/APERTURE LABELS
LASER - ANSI CLASS 3B
ACCESS LIMITED TO AUTHORIZED PERSONNEL
ALIGNMENT PROCEDURES
LIMITATIONS ON SPECTATORS
MAINTENANCE AND SERVICE ONLY BY TRAINED PERSONNEL
MANUFACTURER'S OPERATING, MAINTENANCE AND SERVICING PROCEDURES
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER

OUTPUT EMISSION LIMITATIONS
STANDARD OPERATING PROCEDURES
WARNING SIGNS
WARNING/IDENTIFICATION/APERTURE LABELS
LASER - ANSI CLASS 4
ACCESS LIMITED TO AUTHORIZED PERSONNEL
ALIGNMENT PROCEDURES
LIMITATIONS ON SPECTATORS
MAINTENANCE AND SERVICE ONLY BY TRAINED PERSONNEL
MANUFACTURER'S OPERATING, MAINTENANCE AND SERVICING PROCEDURES
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
OUTPUT EMISSION LIMITATIONS
STANDARD OPERATING PROCEDURES
WARNING SIGNS
WARNING/IDENTIFICATION/APERTURE LABELS
LASER - OFCS
CONTROLLED AREA DURING SERVICE AND INSTALLATION
INSTALLATION AND SERVICE ONLY BY AUTHORIZED PERSONNEL
OTHER
UNAUTHORIZED PERSONNEL EXCLUDED FROM THE NHZ OF SG3B OR SG4 OFCS DURING INSTALLATION/SERVICE
WARNING LABELS
WARNING SIGNS
LASER-ANSI CLASS 1M
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
WARNING AREA SIGN POSTED (OPERATED WITHOUT PROTECTIVE HOUSING, MPE EXCEEDED)
WARNING/IDENTIFICATION/APERTURE LABELS

LASER-ANSI CLASS 2M
ALIGNMENT PROCEDURES
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
WARNING AREA SIGN POSTED (OPERATED WITHOUT PROTECTIVE HOUSING, MPE EXCEEDED)
WARNING SIGNS
WARNING/IDENTIFICATION/APERTURE LABELS
LASER-ANSI CLASS 3R
ALIGNMENT PROCEDURES
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
OUTPUT EMISSION LIMITATIONS
WARNING SIGNS
WARNING/IDENTIFICATION/APERTURE LABELS
LASER-FDA CLASS I
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
WARNING AREA SIGN POSTED (OPERATED WITHOUT PROTECTIVE HOUSING, MPE EXCEEDED)
WARNING/IDENTIFICATION/APERTURE LABELS
LASER-FDA CLASS II
ALIGNMENT PROCEDURES
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
WARNING AREA SIGN POSTED (OPERATED WITHOUT PROTECTIVE HOUSING, MPE EXCEEDED)
WARNING SIGNS
WARNING/IDENTIFICATION/APERTURE LABELS
LASER-FDA CLASS IIA
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL

OTHER
WARNING AREA SIGN POSTED (OPERATED WITHOUT PROTECTIVE HOUSING, MPE EXCEEDED)
WARNING/IDENTIFICATION/APERTURE LABELS
LASER-FDA CLASS IIIA
ALIGNMENT PROCEDURES
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
OUTPUT EMISSION LIMITATIONS
WARNING SIGNS
WARNING/IDENTIFICATION/APERTURE LABELS
LASER-FDA CLASS IIIB
ACCESS LIMITED TO AUTHORIZED PERSONNEL
ALIGNMENT PROCEDURES
LIMITATIONS ON SPECTATORS
MAINTENANCE AND SERVICE ONLY BY TRAINED PERSONNEL
MANUFACTURERS OPERATING, MAINTENANCE AND SERVICING PROCEDURES
OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
OUTPUT EMISSION LIMITATIONS
STANDARD OPERATING PROCEDURES
WARNING SIGNS
WARNING/IDENTIFICATION/APERTURE LABELS
LASER-FDA CLASS IV
ACCESS LIMITED TO AUTHORIZED PERSONNEL
ALIGNMENT PROCEDURES
LIMITATIONS ON SPECTATORS
MAINTENANCE AND SERVICE ONLY BY TRAINED PERSONNEL
MANUFACTURERS OPERATING, MAINTENANCE AND SERVICING PROCEDURES

OPERATED BY QUALIFIED AND AUTHORIZED PERSONNEL
OTHER
OUTPUT EMISSION LIMITATIONS
STANDARD OPERATING PROCEDURES
WARNING SIGNS
WARNING/IDENTIFICATION/APERTURE LABELS
MEDICAL REMOVAL
BENZENE
CADMIUM
LEAD
OTHER
PREGNANCY
MISCELLANEOUS
ADJUST WORK SCHEDULE
CHANGE WORK CLOTHES
CHEMICAL HYGIENE PLAN
HOUSEKEEPING AND MAINTENANCE
JOB ROTATION
OTHER
PERSONAL HYGIENE
PROPER HYDRATION
REGULATED AREA
REST BREAKS
SMOKING, DRINKING, EATING NOT ALLOWED
STANDARD OPERATING PROCEDURES
TIME LIMITS
UNIVERSAL PRECAUTIONS
WORK/REST CYCLES
WORKER ISOLATION
WORKER ROTATION
PERSONAL MONITORING DEVICE
ELECTROGONIOMETER
OTHER
PERSONAL GAS MONITOR
PERSONAL RF MONITOR
POCKET DOSIMETER
THERMOLUMINESCENT DOSIMETER
PROCESS BASED
WET METHOD

RFR
CONES
CONSTANT OBSERVATION
OTHER
PRIOR COORDINATION
STANDARD OPERATING PROCEDURES
WARNING SIGNS
SIGNS/DISTANCE
AUDIBLE ALARMS
OTHER
PAINTED LINES
WARNING FLASHERS
WARNING SIGNS
TRAINING
1,2-DIBROMO-3-CHLOROPROPANE
1,3-BUTADIENE
2-ACETYLAMINOFLUORENE
3,3'-DICHLOROBENZIDINE (AND ITS SALTS)
4,4'-METHYLENEDIANILINE
4-AMINODIPHENYL
4-DIMETHYLAMINOAZOBENZENE
4-NITROBIPHENYL
ACRYLONITRILE (VINYL CYANIDE)
ALPHA-NAPHTHYLAMINE
ARC WELDING AND CUTTING
ASBESTOS, AWARENESS
ASBESTOS, WORKER
AUDIOMETRIC TESTING
BENZENE
BENZIDINE
BERYLLIUM AND BERYLLIUM COMPOUNDS
BETA-NAPHTHYLAMINE
BETA-PROPIOLACTONE
BIS-CHLOROMETHYL ETHER
BLASTER QUALIFICATIONS (29 CFR 1926 SUBPART U - BLASTING AND USE OF EXPLOSIVES)
BLOODBORNE PATHOGENS

BULK DELIVERY AND MIXING VEHICLES (29 CFR 1910 SUBPART H - HAZARDOUS MATERIALS)	EMPLOYEE EMERGENCY PLANS AND FIRE PLANS (29 CFR 1910 SUBPART E - MEANS OF EGRESS)	GENERAL PROVISIONS (29 CFR 1926 SUBPART U - BLASTING AND USE OF EXPLOSIVES)	LAUNDRY MACHINERY AND OPERATING RULES (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)
CABLE FAULT LOCATING (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)	ENTRY INTO BINS, SILOS, AND TANKS (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)	GENERAL REQUIREMENTS (29 CFR 1910 SUBPART Q - WELDING, CUTTING AND BRAZING)	LEAD (29 CFR 1910 SUBPART Z - TOXIC AND HAZARDOUS SUBSTANCES)
CADMIUM	ERGONOMICS, GENERAL AWARENESS	GENERAL REQUIREMENTS (29 CFR 1926 SUBPART V - POWER TRANSMISSION AND DISTRIBUTION)	LEAD IN CONSTRUCTION (29 CFR 1926 SUBPART D - OCC. HEALTH AND ENVIRONMENTAL CONTROLS)
CARE AND USE OF PERSONAL FALL ARREST SYSTEMS (29 CFR 1910.66, APPENDIX C, SECTION 1)	ERGONOMICS, LIFTING/BACK	GENERAL SAFETY AND HEALTH PROVISIONS (29 CFR 1926 SUBPART C - GENERAL SAFETY AND HEALTH PROVISIONS)	LOCKOUT OR TAGOUT DEVICES REMOVED
CHROMIUM AND CHROMATES	ERGONOMICS, MANUAL MATERIAL HANDLING	GRAIN HANDLING FACILITIES (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)	LOGGING (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)
CHUTES (29 CFR 1926 SUBPART T - DEMOLITION)	ERGONOMICS, UPPER EXTREMITY/REPETITION	GROUND-FAULT PROTECTION (29 CFR 1926 SUBPART K - ELECTRICAL)	MATERIAL HANDLING EQUIPMENT (29 CFR 1926 SUBPART O - MOTOR VEHICLES, MECHANIZED EQUIPMENT, AND MARINE OPERATIONS)
COKE OVEN EMISSIONS	ERGONOMICS, VDT	GUARDING MANHOLES (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)	MATERIAL HOISTS, PERSONNEL HOISTS, AND ELEVATORS (29 CFR 1926 SUBPART N - CRANES, DERRICKS, HOISTS, ELEVATORS, AND CONVEYORS)
COMPRESSED AIR	ETHYLENE OXIDE	GUARDING OF LOW-PITCHED ROOF PERIMETERS DURING THE PERFORMANCE OF BUILT-UP ROOFING WORK (29 CFR 1926 SUBPART L - SCAFFOLDING)	MECHANICAL DEMOLITION (29 CFR 1926 SUBPART T - DEMOLITION)
CONCRETE AND MASONRY CONSTRUCTION	ETHYLENEIMINE	HAZARD COMMUNICATION	MECHANICAL INTEGRITY (29 CFR 1910 SUBPART H - HAZARDOUS MATERIALS)
CONFINED SPACES	EXPLOSIVES AND BLASTING AGENTS	HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE	MECHANICAL POWER PRESSES (29 CFR 1910 SUBPART O - MACHINERY AND MACHINE GUARDING)
CONSTRUCTION IN ENERGIZED SUBSTATIONS (29 CFR 1926 SUBPART V - POWER TRANSMISSION AND DISTRIBUTION)	FALL PROTECTION (29 CFR 1926 SUBPART L - SCAFFOLDING)	HEARING CONSERVATION PROGRAM	MECHANICAL POWERS PRESSES INSTRUCTION TO OPERATORS (29 CFR 1910 SUBPART O - MACHINERY AND MACHINE GUARDING)
CONTENT OF TRAINING (29 CFR 1910 SUBPART S - ELECTRICAL SAFETY-RELATED WORK PRACTICES)	FIRE BRIGADES (29 CFR 1910 SUBPART L - FIRE PROTECTION)	HEARING PROTECTION PROGRAM	MEDICAL SERVICES AND FIRST AID
CONTRACT EMPLOYER RESPONSIBILITIES (29 CFR 1910 SUBPART H - HAZARDOUS MATERIALS)	FIRE DETECTION SYSTEMS (29 CFR 1910 SUBPART L - FIRE PROTECTION)	HEAT/COLD STRESS	MERCURY AND MERCURY COMPOUNDS
CONTRACTORS (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)	FIRE PREVENTION (29 CFR 1926 SUBPART J - WELDING AND CUTTING)	HYDRAZINE	METHYL CHLOROMETHYL ETHER
CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)	FIRE PROTECTION	INORGANIC ARSENIC	METHYLENE CHLORIDE
COTTON DUST	FIRING THE BLAST (29 CFR 1926 SUBPART U - BLASTING AND USE OF EXPLOSIVES)	INSPECTION, MAINTENANCE, AND INSTALLATION (VENTILATION)	MOVING THE LOAD (29 CFR 1910 SUBPART N - MATERIALS HANDLING AND STORAGE)
CRANES AND DERRICKS	FIXED EXTINGUISHING SYSTEMS (29 CFR 1910 SUBPART L - FIRE PROTECTION)	IONIZING RADIATION	NEW TECHNOLOGY PROGRAMS (29 CFR 1910 SUBPART H - HAZARDOUS MATERIALS)
CRAWLER LOCOMOTIVE AND TRUCK CRANES (29 CFR 1910 SUBPART N - MATERIALS HANDLING AND STORAGE)	FLAMMABLE AND COMBUSTIBLE LIQUIDS	ISOCYANATES	N-NITROSODIMETHYLAMINE
DERRICK TRUCKS (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)	FOOD SAFETY	JET FUELS/POLS	NON-IONIZING RADIATION
ELECTRIC POWER GENERATION, TRANSMISSION, AND DISTRIBUTION (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)	FORGING MACHINES (29 CFR 1910 SUBPART O - MACHINERY AND MACHINE GUARDING)	JOINT POWER AND TELECOMMUNICATION MANHOLES (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)	
EMPLOYEE ALARM SYSTEMS (29 CFR 1910 SUBPART N - MATERIALS HANDLING AND STORAGE)	FORMALDEHYDE	LADDERS (29 CFR 1926 SUBPART V - POWER TRANSMISSION AND DISTRIBUTION)	
	GAS WELDING AND CUTTING (29 CFR 1926 SUBPART J - WELDING AND CUTTING)		
	GASES, VAPORS, FUMES, DUSTS AND MISTS (29 CFR 1926 SUBPART D - OCC. HEALTH & ENVIRONMENTAL CONTROLS)		
	GENERAL PROTECTION REQUIREMENTS (29 CFR 1926 SUBPART P - EXCAVATIONS)		

OCCUPATIONAL EXPOSURE TO HAZARDOUS CHEMICALS IN LABORATORIES	POWERED INDUSTRIAL TRUCKS (29 CFR 1910 SUBPART N - MATERIALS HANDLING AND STORAGE)	SCAFFOLDING (29 CFR 1926 SUBPART L - SCAFFOLDING)	TRAINING OF MAINTENANCE PERSONNEL (29 CFR 1910 SUBPART O - MACHINERY AND MACHINE GUARDING)
OPERATIONS-TRAINING (29 CFR 1910 SUBPART F - POWERED PLATFORMS, MANLIFTS, VEHICLE-MOUNTED WORK PLATFORMS)	POWER-OPERATED HAND TOOLS (29 CFR 1926 SUBPART I - TOOLS-HAND AND POWER)	SERVICING OF MULTI-PIECE AND SINGLE-PIECE RIM WHEELS (29 CFR 1910 SUBPART N - MATERIALS HANDLING AND STORAGE)	TRAINING PROGRAM (NOISE EXPOSURE, 29 CFR 1910 SUBPART G - OCC. HEALTH AND ENVIRONMENTAL CONTROL)
OPERATOR TRAINING (29 CFR 1910 SUBPART O - MACHINERY AND MACHINE GUARDING)	PREPARATORY OPERATIONS (29 CFR 1926 SUBPART T - DEMOLITION)	SIGNALING (29 CFR 1926 SUBPART G - SIGNS, SIGNALS, AND BARRICADES)	TREE TRIMMING-ELECTRICAL HAZARDS (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)
OTHER	PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS (29 CFR 1926 SUBPART D, 29 CFR 1910 SUBPART H)	SITE CLEARING (29 CFR 1926 SUBPART O - MOTOR VEHICLES, MECHANIZED EQUIPMENT, AND MARINE OPERATIONS)	UNDERGROUND CONSTRUCTION
OUTSIDE PERSONNEL (29 CFR 1910 SUBPART J - GENERAL ENVIRONMENTAL CONTROLS)	PULP, PAPER, AND PAPERBOARD MILLS (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)	SOLVENTS	UNDERGROUND LINES (29 CFR 1926 SUBPART V - POWER TRANSMISSION AND DISTRIBUTION)
OVERHEAD LINES (29 CFR 1926 SUBPART V - POWER TRANSMISSION AND DISTRIBUTION)	PULPWOOD LOGGING (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)	SPECIFICATIONS FOR ACCIDENT PREVENTION SIGNS AND TAGS (29 CFR 1910 SUBPART J - GENERAL ENVIRONMENTAL CONTROLS)	VINYL CHLORIDE
OXYGEN-FUEL GAS WELDING AND CUTTING (29 CFR 1910 SUBPART Q - WELDING, CUTTING, AND BRAZING)	QUALIFICATIONS OF DIVE TEAM (29 CFR 1910 SUBPART T - COMMERCIAL DIVING OPERATIONS)	STORAGE AND HANDLING OF LIQUEFIED PETROLEUM GASES	WELDING, CUTTING AND HEATING IN WAY OF PRESERVATIVE COATINGS (29 CFR 1926 SUBPART J - WELDING AND CUTTING)
PERSONAL PROTECTION (FOR BLASTING OPERATIONS) (29 CFR 1910 SUBPART G - OCC. HEALTH AND ENVIRONMENTAL CONTROL)	RESISTANCE WELDING (29 CFR 1910 SUBPART Q - WELDING, CUTTING, AND BRAZING)	SURFACE TRANSPORTATION OF EXPLOSIVES (29 CFR 1926 SUBPART U - BLASTING AND USE OF EXPLOSIVES)	WOODWORKING TOOLS (29 CFR 1926 SUBPART I - TOOLS-HAND AND POWER)
PERSONAL PROTECTIVE EQUIPMENT	RESPIRATORY PROTECTION	TELECOMMUNICATIONS (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)	
PESTICIDES, HERBICIDES AND INSECTICIDES	SAFETY TRAINING AND EDUCATION (29 CFR 1926 SUBPART C - GENERAL SAFETY AND HEALTH PROVISIONS)	TEMPORARY LABOR CAMPS (29 CFR 1910 SUBPART J - GENERAL ENVIRONMENTAL CONTROLS)	
PORTABLE FIRE EXTINGUISHERS (29 CFR 1910 SUBPART L - FIRE PROTECTION)	SAWMILLS (29 CFR 1910 SUBPART R - SPECIAL INDUSTRIES)		

Attachment 3: Public Involvement/Participation Documentation

Subject: RE: JBLE Courtesy Post

From: Teresita Akers <teresita.akers@huntcompanies.com>
Sent: Thursday, May 2, 2019 2:30 PM
To: CHRISTIAN, DAWN S GS-12 USAF ACC 633 CES/CEIE <dawn.christian@us.af.mil>
Subject: [Non-DoD Source] FW: JBLE Courtesy Post

The following was emailed to our residents on your behalf.

Teresita Marti Akers | Community Manager | Langley Family Housing
Phone: 757.690.2247 | Fax: 757.865.1722
1798 First Street | Langley Air Force Base, Va | 23665
Hunt Military Communities | teresita.akers@huntcompanies.com
www.langleyfamilyhousing.com
www.huntsafetyzone.com

ONE MISSION. ONE COMMUNITY



From: Teresita Akers [<mailto:mail@notify.onecallnow.com>]
Sent: Thursday, May 02, 2019 2:28 PM
To: Teresita Akers <teresita.akers@huntcompanies.com>
Subject: JBLE Courtesy Post

**** EXTERNAL EMAIL ****

Notification from: **Langley Family Housing (Hunt)**

Please see the information below from Dawn Christian, Water Program Manager for JBLE.

JBLE-Langley's Municipal Separate Storm Sewer System (MS4) permit program plan is posted for public review located at the link below. Please call 757-764-3906 or email 633CES.CEI.Flight@us.af.mil if you have comments or concerns.

<https://www.jble.af.mil/About-Us/Units/Air-Force/Langley-Environmental/>

To ensure that you continue to receive these emails, please add mail@notify.onecallnow.com to your Email Address Book.

To unsubscribe to notifications from **Langley Family Housing (Hunt)**, please [click here](#).

Message delivered to you by One Call Now. If you have any questions or are interested in the notification services provided by One Call Now for schools, employers, property managers, religious groups, sports teams, and businesses, please visit our web site www.onecallnow.com or contact our friendly [Client Services Folks](#) at 1-877-698-3262.

View our [privacy policy](#).

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Subject: FW: *HTML* Upcoming JBLE Events, April 19, 2019
Attachments: STAR Rally 2019.pdf; Chief Mik Golf Tourney.pptx; AFRC Ribbon Cutting Ceremony.jpg; Volunteer Recognition Flyer 2019.jpg; Something In The Water.pdf; 2019 AF Ball Committee application.docx; 2019 AF BALL Committee Roster.xlsx; 2019 Intramural Soccer LOI.DOCX; 2019 Intramural Soccer Flyer.pptx; Blank Soccer roster.xlsx; Club Connect 2019.pdf; CLEAR Challenge Flyer 2019.pdf; 2019 Earth Week Events.pdf; JBLE Lent Holy Week Services 2019.pdf; Langley Lifeguard Announcement.pdf; Langley Summer Hire Program 2019.pdf; JBLE Prayer Breakfast Flyer 18 Apr 2019.pdf

From: 633 ABW/PA Org <633abw.paedit@us.af.mil>
Sent: Friday, April 19, 2019 12:22 PM
Subject: *HTML* Upcoming JBLE Events, April 19, 2019

Happy Friday Team JBLE,

*******WEEKLY EVENTS EMAIL REQUEST INSTRUCTIONS*******

The weekly events email is compiled and sent once a week on Friday -- or the last regular duty day of the week. All submissions are due to the Public Affairs Organizational box (633abw.paedit@us.af.mil) no later than one calendar day before the email is sent. The corresponding community events printed in the base newspaper are compiled and submitted to the editor on Tuesday. Therefore, submissions to be included in the print version of the weekly events must be submitted to our organizational box by Monday. Submissions will be published two weeks prior to the scheduled event.

*******WEEKLY EVENTS EMAIL REQUEST INSTRUCTIONS*******

Please see the below list and attachments of upcoming events. As always, be sure to check the JBLEvents calendar at <https://www.jble.af.mil/News/JBLEvents/>, the JBLE Mobile App, available on Android and Apple markets, or visit the JBLE Facebook page at <http://www.facebook.com/jointbaselangleyeustis>.

Memorial Golf Tournament

The Denise E. Mikolajczyk Chief Mik Memorial Golf Tournament is scheduled for 7 a.m., May 3 at the Eaglewood Golf Course. This event is 50 dollars per person and deadline to sign-up and pay is April 26. Registration and check-in starts at 7 a.m. and tee time will begin at 8 a.m. There will be mulligan packages available, prizes for the top three teams, longest drive, closest to the pin and more. For more information, please contact Kaci Duhart at (757) 251-8931

King Street gate and bridge closure

The 633rd Civil Engineer Squadron will execute a project to repair a King Street water main and install a new gate from April 1-30. The King Street gate and bridge will be closed for the duration of the project. Traffic will be rerouted through the Armistead (West) and LaSalle gates. For more information, call (757) 660-4403.

Thrilled To Be Home

The Airman & Family Readiness Center will be hosting a ribbon cutting ceremony at 9 a.m., April 19 at 45 Nealy Ave, Building 15, B Wing, Suite 100. Refreshments, raffles and much more will be offered at the event.

Something in the Water Festival Volunteers

The 1 MXS Booster club is seeking volunteers for the Something In The Water music festival April 26, 27, and 28.

Positions at VA Beach oceanfront:

Friday 26th: 8a.m.-12 a.m., 1 p.m.-12 a.m.

Saturday 27th: 8 a.m.-12 a.m., 11 a.m.-12 a.m.

Sunday 28th: 8 p.m. - 12 a.m., 10 a.m.-12 a.m.

For more information, contact TSgt Fred Sawyer at fred.sawyer@us.af.mil or Red32321@gmail.com.

Summary Court Disposition

1st Lt Elizabeth M. Hill, 633d Medical Support Squadron, Langley AFB, is detailed as the Summary Courts Officer to secure and make proper disposition of the personal effects of Senior Airman Devaughn D. Weston. Anyone having knowledge of money or property due to the deceased or has claims against the deceased, contact 1st Lt Elizabeth hill at 757-764-9591 or elizabeth.m.hill54.mil@mail.mil

Days of Remembrance Observance

Please join the JBLE Community in commemorating the roughly six million Jewish victims of the Holocaust during this year's Days of Remembrance Observance. The event will take place April 29 at 1030 a.m., at the Jacobs Conference Center. This year, we are privileged and honored to host Holocaust Survivor Ms. Nicole Yancey, who is a distinguished French-American citizen from the local community dedicated to spreading awareness of the Holocaust to anyone willing to listen.

Army Holistic Health and Fitness (H2F) Industry Day and Exposition

An Army Holistic Health and Fitness (H2F) Industry Day and Exposition will take place April 30-May 1 at the Fort Eustis Club, 2123 Pershing Ave. The two-day event features an Industry Day with subject matter experts from U.S. Army Center for Initial Military Training (USACIMT) and U.S. Army Training and Doctrine Command (TRADOC) followed by an Exposition of related technologies fulfilled by industry partners. The intent of the Army's H2F system is to optimize Soldier readiness. H2F is a comprehensive, integrated, and immersive health and fitness system that generates lethal Soldiers who are physically, mentally and spiritually ready to engage with and overmatch the enemy in multi-domain operations. The goal for TRADOC's H2F Industry Day and Exposition is for companies to showcase products and services that can provide the Army with effective solutions within the H2F system. The event is open to all military, government employees and contractors. To register, visit www.ncsi.com/event/h2f/registration. Note: The registration deadline is April 29.

Protestant Women of the Chapel Free Market

The Fort Eustis Protestant Women of the Chapel will host a Free Market from 9 am to 2 pm Saturday, 27 April, at the Regimental Memorial Chapel , 923 Lee Boulevard, Fort Eustis. The Free Market is like a yard sale except everything is free. Come shop and find some treasures, you can't beat the price. Entry is via the RMC Assembly Room entrance on Donnellson Place. For more information call 757-878-4316.

Honor Those Who Sacrificed All

The Hampton National Cemetery is looking for volunteers to help honor those who served in the military. Volunteers will be placing Flags on graves for Memorial Day Friday, May 24 beginning at 8 a.m. and removing the Flags Tuesday, May 28 beginning at 8 a.m., Cemetery Road at Marshall Avenue, Hampton Va. For more information, call 757-723-7104.

Days of Remembrance Observance

Please join the JBLE Community in commemorating the roughly six million Jewish victims of the Holocaust during this year's Days of Remembrance Observance at 1030 a.m., April 29, at the Jacob's Conference Center. This year, we are privileged and honored to host Holocaust Survivor Ms. Nicole Yancey, who is a distinguished French-American citizen from the local community dedicated to spreading awareness of the Holocaust to anyone willing to listen.

Air Force Ball

JBLE is looking for passionate Airmen to help organize and execute this year's Air Force Ball. Attached is a roster of subcommittees with descriptions. If interested in a position, please fill out attached application and return to Lt. Marina E. Lopez (marina.lopez@us.af.mil) and SMSgt Jason Foster (jason.foster.5@us.af.mil) by April 22. The roster will be finalized and a kickoff meeting will be scheduled for May 1.

Panel Discussion

There will be a panel discussion on the Enlisted Force Distribution Panel to make sure everyone understands the process and provide feedback on evals 10 a.m., April 19, at the 633 FSS Auditorium, Bldg. 15 2nd flr.

Volunteers Leading the Way

The Airmen & Family Readiness Center will be hosting a Langley volunteer recognition ceremony between 2-4 p.m., April 19 at the Bayview Commonwealth Center. Form more information, call 764-3990.

Sexual Assault Awareness And Prevention Month

Joint Base Langley-Eustis will host various events during the month of April in support of Sexual Assault Awareness and Prevention month.

Clear Challenge (Resiliency Obstacle Course) at 9 a.m., April 26, at Memorial Park, Langley Air Force Base. Pre-registration is required. To register call SAPR at 764-3359. Deadline is April 12. For more information, see attachment.

Standing Together Against Rape Motorcycle Rally at 8:30 a.m., April 26, at Memorial Park, Langley Air Force Base. Pre-registration is required. To register call SAPR at 764-3359. Deadline is April 12, 2019. For more information, see attachment

Langley Chapel Easter Jubilee

The Langley Protestant Chapel will host its first Easter Jubilee from 10 a.m. to noon, April 13, at Bethel Manor Chapel. The event will include Easter games, bounce houses, food, treats and a magician. Come join us for

family fun! For more information contact, Elizabeth Hedger at (757) 764-7246 or elizabeth.hedger.ctr@us.af.mil.

JBLE Earth Week events

The 2019 Earth Week celebration at JBLE-Langley will begin with Earth Day on 22 April. There are numerous events across the base that will focus on pollution prevention, preservation, and environmental awareness. Volunteer events include: safe drain maintenance, a community clean-up, nature trail preservation, and a bench building project. Participation is also encouraged for the pet waste awareness event, rain barrel class, free shred event, and the Earth Week 5K Fun Run.

To volunteer or for more information, contact Sherry M. Johnson at (757) 764-1130 or sherry.johnson.4@us.af.mil with your name, organization, phone number and the event(s) you would like to participate in.

Applied Suicide Intervention Skills Training

The Joint Base Langley-Eustis Chaplain Corps will host two Applied Suicide Intervention Skills Training (ASIST) classes on April 22-23. For more information, call Senior Master Sgt. Devine at (757) 764-7847. To sign-up for April 15-16, visit <https://einvitations.afit.edu/inv/anim.cfm?i=443640&k=0665410F7F57>. To sign up for April 22-23, visit <https://einvitations.afit.edu/inv/anim.cfm?i=443871&k=066541017C56>.

Free super hero 5k run

The 633rd Force Support Squadron will host a free 5k run at 3 p.m., April 19, at the ACC Fitness Trail. This is a superhero themed run and participants are encouraged to dress as their favorite superhero. Prizes will be awarded to the first female and male runners to finish the run. For more information, call (757) 764-5791.

MWD K9 Max N553 retirement ceremony

The 633rd Security Forces Squadron will host a retirement ceremony for military working dog Max N553 at 1 p.m., April 23, at the Langley Air Force Base Memorial Park Pavilion (Building 475). All Joint Base Langley-Eustis members are invited to honor Max N553's ten-year career and bear witness as he transitions from service member to family pet. In case of inclement weather, the ceremony will be held at the Community Commons gym (Building 61). For more information, call (757) 764-3466.

Army Holistic Health and Fitness Industry Day and Exposition

An Army Holistic Health and Fitness (H2F) Industry Day and Exposition will take place April 30-May 1 at the Fort Eustis Club. The two-day event features an Industry Day with subject matter experts from U.S. Army Center for Initial Military Training (USACIMT) and U.S. Army Training and Doctrine Command (TRADOC) followed by an Exposition of related technologies fulfilled by industry partners. The event is open to all military, government employees and contractors. To register, visit www.ncsi.com/event/h2f/registration. The deadline to register is April 29.

JBLE Prayer Breakfast

JBLE will host a prayer breakfast at 7:30 a.m., May 2, at the Bayview Commons. The breakfast for this event is free so come out and support. To attend, all participants must RSVP at <https://einvitations.afit.edu/inv/anim.cfm?i=438981&k=06624A007356>

Booster Club Meeting

There will be a booster club meeting at 3 p.m. April 25 to discuss upcoming events and future volunteer opportunities.

U.S. Army OCS Reunion

The U.S. Army OCS Reunion will be from April 28 to May 1, 2019. The event is open to all branch classes from 1941 to 2019. The reunion will feature the opening of Phase 1 of the OCS Heritage Center, the induction of the 2019 Hall of Fame class, Nett Award presentations, Patterson Award presentations and the dedication of bricks, pavers, and class memorials. Mini class reunions are invited to celebrate with the national reunion. To register for the event, visit <https://www.ocsalumni.org/>. For more information, contact Nancy Ionoff at ocsalumniereunion@gmail.com or (813) 917-4309.

Alpha Warrior fitness class

The 633rd Force Support Squadron gym staff will host a free “at your own pace” Alpha Warrior class every Tuesday and Thursday, from 11:30 to 12:30 p.m., at the ACC gym Alpha Warrior rig. The purpose of this class is to exercise the entire body in full body circuit training by hitting every component of fitness for all levels of athletes and to also teach and encourage fitness. For more information, contact Staff Sgt. Earl White at earl.white.3@us.af.mil or Tony Arroyo at victor.arroyo@us.af.mil

Recruiting Family Child Care providers

The JBLE FCC Programs are recruiting individuals to provide licensed child care in their homes for infants, children with special needs and children up to 12 years of age. Interested applicants must be available during regular business hours, swing shifts, night shifts and weekends. Requirements include, background checks, orientation training, home inspections and family interviews. For more information, call (757) 764-3585 or (757) 878-5584.

New community health clinic in Williamsburg

The McDonald Army Health Clinic is scheduled to open a community-based medical clinic in Spring of 2019, in Williamsburg, Virginia. The clinic will provide family practice, laboratory, pediatrics, physical therapy and pharmacy services to TRICARE beneficiaries that reside in Williamsburg and the surrounding communities. For more information or to be placed on the enrollment waiting list, call (757) 314-7777 or (757) 314-7748.

JBLE Retiree Council

The JBLE Retiree council will meet every at 8:30 - 9:30 a.m. third Wednesday each month in the Army Community Service conference room, building 650, on Fort Eustis. Retirees and those who are approaching retirement from all military branches are invited to attend the free meetings. Members can stay connected with their community and local events, as well as learn more about investments, benefits and other military-related information. For more information or to join, contact (757) 878-5884, (757) 218-7118, or torrence0512@gmail.com.

Marquee requests

The 633rd Air Base Wing Public Affairs Office marquees located at the Armistead Gate and the Lasalle Gate are under repair. New requests for advertisements will not be accepted at this time due to the nature of the repairs. An update will be posted when the marquee services are resumed.

Meals on Wheels volunteers

The Peninsula Agency on Aging is in need of Meals on Wheels volunteers. The program provides hot, nutritious meals to homebound senior citizens in Newport News and Hampton. The meals are ready for pick-up at 11 a.m., Monday through Friday, and take one hour or less to deliver. Individual or team volunteers can work on a weekly or bi-weekly schedule. Volunteers are given a short orientation and are provided driving directions. For more information, contact Lisha Mullen at (757) 246-1905 or nutrition2@paainc.org.

Old Point Comfort Toastmasters Club

Do you want to improve your public speaking and communication skills? The Old Point Comfort Toastmasters Club meets at 11:40 a.m., the first and third Wednesday of each month, at 650 Monroe Ave. Visitors are always welcome. For more information, visit <https://oldpointcomfort.toastmastersclubs.org> or call (757) 878-2204 or (757) 878-2977.

Free Guitar Lessons

United States Air Force Heritage of America Band guitarist Tech. Sgt. Daniel Santos is conducting free beginner guitar lessons. Lessons are open to military members, civilian personnel, veterans and retirees. Members must bring their own guitar and smartphone. Space is limited. To sign up, go to <https://www.milsuite.mil/book/people/daniel.b.santos2/blog/2018/08/13/free-guitar-lesson>. For more information, call (757) 759-6405.

Electronics Recycling Drive

The 192nd Medical Group is hosting an electronics recycling drive to help raise funds for morale events. Items such as empty inkjet cartridges, cell phones and accessories, GPS devices, calculators, e-book readers, iPods/MP3 players, digital and video cameras, PDAs, iPads/tablets and video game consoles can be dropped at 159 Sweeney Blvd, Bldg. 764, room 109. The following items cannot be accepted: printers, computers, laptops, laserjet cartridges, keyboards, monitors and cords or cables without their respective devices. For more information, call (757) 764-0127.

633 ABW/EO Intakes and Closure

The Fort Eustis and Langley Equal Opportunity Offices will operate under normal customer service hours from 8 a.m. to 3:30 p.m. The offices will close daily from 11 a.m. to noon. For more information, call (757) 764-5877/5878 or (757) 878-4797/0022.

710th Combat Operations Squadron vacancies

The 710th Combat Operations Squadron at JBLE and 710 COS Det 1, Shaw AFB are recruiting for the following officer Air Force Specialty Codes: 11F, 11B, 11M, 12F, 12B, 13B and 14N. These AFSCs will fill positions within Air Operations Center Master Air Attack Plan teams and other AOC planning cells. Enlisted vacancies include Intel, Air Traffic Control Command and Control Battle Management. These AFSCs are eligible to receive up to \$500 travel stipends for monthly Unit Training Assembly weekends. For inquiries email 710cos.workflow@us.af.mil or call 757-225-1955.

Social Media policies

All JBLE associated social media pages must be approved and coordinated through the 633rd Air Base Wing Public Affairs Office. Pages not set up with this office will be reported as false and may face termination. Closed groups/pages must also coordinate with the PA office.

If you currently manage a JBLE page that was not approved by the Public Affairs office, please gain compliance by coordinating with your unit commander and contacting the PA office at 764-5701.

Per AFI 35-107, once approved, unit commanders are ultimately responsible for maintaining their social media presence(s), as well as all content posted to their site(s). Social media sites will be checked at least once every 24 hours to ensure operational security (OPSEC) and security, accuracy, policy, and propriety (SAPP) are not violated.

633rd Air Base Wing Public Affairs passport hours

The 633rd Air Base Wing Public Affairs' Passport walk-in hours have changed. Walk-in hours are Monday through Wednesday, 9 a.m. to 3 p.m., and Thursday through Friday, 9 a.m. to 12 p.m. A collared shirt must be worn to the appointment. White shirts are not allowed and shirts will not be provided. For more information, call the Public Affairs Office at 764-5701/5702.

DISCLAIMER

The appearance of hyperlinks does not constitute endorsement by Joint Base Langley-Eustis, the United States Air Force or the Department of Defense, of the external website, or the information, products or services contained therein. Although Joint Base Langley-Eustis may or may not use these sites as additional distribution channels for information, it does not exercise editorial control over the information you may find at these locations or the privacy and user policies of these locations. Such links are provided consistent with the stated purpose of the website. References to non-federal entities do not constitute or imply Department of Defense or Air Force endorsement of any company or organization.

Respectfully,

//SIGNED//

633rd Air Base Wing Public Affairs

Joint Base Langley-Eustis, Va.

COMM: (757) 764-5701 | DSN: 574-5701

JBLE celebrates Earth Week

By Senior Airman Delaney Gonzales, 633rd Air Base Wing Public Affairs / Published May 1, 2019



Brian Kelly, Air Combat Command, deputy director of staff, examines a spout on a rain barrel at Joint Base Langley-Eustis, Virginia, April 23, 2019. Kelly attended the course to make a rain barrel for his home. (U.S. Air Force photo by Airman 1st Class Sarah Dowe)



Sherry Johnson (left), 633rd Civil Engineer Squadron pollution prevention program manager, assists Gary Nault (right), 633rd CES environmental engineer, with drilling a hole into a barrel while Ronnie Best (middle), 633rd CES environmental engineer, looks on at Joint Base Langley-Eustis, Virginia, April 23, 2019. Besides teaching how to make a rain barrel, the class taught water conservation and preventing pollution. (U.S. Air Force photo by Airman 1st Class Sarah Dowe)



U.S. Army Col. Jennifer S. Walkawicz, 733rd Mission Support Group commander, participates in a box turtle survey at Joint Base Langley-Eustis, Virginia, April 25, 2019. Volunteers searched Fort Eustis' woodland and successfully documented eight box turtles for the survey.



A box turtle is measured during a survey at Joint Base Langley-Eustis, Virginia, April 25, 2019. Volunteers searched Fort Eustis' woodland and successfully documented eight box turtles for the survey. (U.S. Air Force photo by Senior Airman Delaney Gonzales)



Members of Joint Base Langley-Eustis participate in a wildlife boat tour commemorating Earth Week at JBLE, Virginia, April 24, 2019. JBLE celebrated the occasion from April 22 to April 26 with nature trail maintenance projects, recycling programs, box turtle surveys and more. (U.S. Air Force photo by Senior Airman Delaney Gonzales)



Volunteers participate in a nature trail improvement project during Earth Week at Joint Base Langley-Eustis, Virginia, April 24, 2019. The week-long observance encouraged community support for participation in activities such as nature trail maintenance projects, recycling programs, box turtle surveys, and more. (U.S. Air Force photo by Airman 1st Class Marcus Bullock)

Earth Day is an international holiday celebrated around the world April 22nd to demonstrate support for environmental protection and the significance of preserving natural resources. JBLE recognized the occasion by sponsoring numerous conservation themed events on the installations from April 22 to April 26.

The week-long observance encouraged community support for participation in activities such as nature trail maintenance projects, recycling programs, Box Turtle surveys, and more.

“It’s a refresher course--everyone needs to be reminded about the importance and ways of protecting our planet,” said Joanna Bateman, 733rd Civil Engineer Division pollution prevention branch chief.

The week kicked off with a dry retention pond clean-up, preventing harmful substances from reaching the base’s streams, lakes, rivers and ponds.

“Waste collects in dry retention ponds and the ground filters it before it seeps into underground waterways or into bodies of water such as the James or Warwick River,” added Donna Haynes, 733rd CED environmental protection specialist.

With the help of volunteers, nature trails were spruced up to present a spotless appearance, thus eliminating waste products that propose a potential threat to the base’s wildlife.

Not only did the activity serve to protect the ecosystems on base, but also promoted awareness of the installation’s hidden gems.

“A lot of people are not aware that we have a nature trail,” noted Haynes. These environmental conservation activities help to get the information out to the public about the resources available on base.”

The alluring landscape of the base’s precious ecosystems can help bring a personal touch to the significance of its preservation.

“On Wednesday we offered a boat tour to community members to showcase the installation’s nature and the wildlife that inhabits it, specifically the Ospreys and Bald Eagles,” Haynes stated. “We have close to 11 active Bald Eagle’s nests on Fort Eustis. They mate for life and come back to the same nest every year.”

Box Turtles are another organism residing within our gates. They are closely monitored, specifically through data collection detailing their proliferation as a species.

Volunteers searched forested training areas on the base and successfully documented eight Box Turtles for the survey.

“It is important to know that the population is growing in a normal fashion,” said Haynes. “They are marked to see how well they are growing and thriving in the area.”

Education about recycling programs was also featured during the Earth Week festivities.

“We educated the installation staff about recycling to divert waste from the landfill,” Bateman said. “We have a lot of construction that takes place on the installation. Building supplies that are used by our contractors are often shrink wrapped with plastic. Those plastics would have been disposed of in the trash, but are now being set aside to be recycled, thus preventing them from going into a landfill.”

“During our six-month long America’s Recycle Day Initiative, we collected 1,470 pounds of plastic,” Haynes added.

Through partnership, shared ideas can create innovative ways to carry out a common goal.

“In events like The BBC Community Fun Fair, you get the opportunity to partner with other people and to see what initiative steps they have taken so good ideas can be implemented at other locations on the installation,” Bateman said. “So it’s good to get that interaction and partnership.”

Each year, Earth Week helps to generate new tactics to protect the planet. The growing numbers of volunteers help spread awareness of the installations’ ever changing ecosystems, which in turn promotes environmental health beyond our local community to the world at large.

2019 EARTH WEEK EVENT VOLUNTEER SIGN UP SHEET

	Safe Drain Maintenance		Rain Barrel Class		Community Clean-Up		Nature Trail Preservation
1	Dr. Emily Durham	1	Brian Kelly	1	A1C Justin Lorenz	1	A1C Clayton Bueller
2	Grayce Christian	2	Matthew Johnson	2	Douglas Herb	2	SSgt Petra Reger
3	Jeff	3	William Butler	3	Tim Crume	3	A1C Candace Clark
4	Dawn	4	Gary Nault	4	Rob Asbury	4	Margaret Patterson
5	Cleaned -- drains	5	Ron Holcomb	5	Jerry Sullivan	5	MSgt Daniel Wowk
6		6		6	A1C Elizabeth Audelo	6	A1C Bashir Auld
7		7	7 rain barrels in community	7	Margaret Patterson	7	Candance Clark
8		8		8	TSgt Michael Hall	8	
9		9		9	Matthew Gossett	9	
10		10		10	AB Karina Mondragon	10	
11				11	Alicia	11	
12				12	Jeff	12	
13				13	Ron	13	
14				14	Ronnie	14	
15				15	Mike	15	
16				16	Sherry		
17				17			
18				18			
19				19	21 bags = 470 lbs of litter		
20				20			
							Bench Building Project
						1	
						2	
						3	
						4	
					Pet Waste Awareness	5	
	Earth Week 5K				Handed out +30 pet waste clips	6	
	93 runners					7	
	over 1000 shopping bags					8	
	donated to Booker Elem. For recycling program		Shred Event			9	
			21 people			10	
			Total weight=2,100 lbs				
			Donations: 12 food items				

Subject: FW: INFO//Earth Week 2019 Events - 22-26 April 2019
Attachments: Earth Week 2019 Events.pdf

From: COOK, BRENDA W GS-14 USAF ACC 633 CES/CD <brenda.cook@us.af.mil>
Sent: Monday, April 1, 2019 10:05 AM
To: 633 CES ALL Civilians <633cescivilians@us.af.mil>; 633 CES All Military <633CES.All.Military@us.af.mil>
Subject: INFO//Earth Week 2019 Events - 22-26 April 2019

MEMORANDUM FOR ALL PERSONNEL

FROM: 633 CES/CD

SUBJECT: Earth Week 2019 Events

1. In honor of the beautiful environment that surrounds us, JBLE has designated 22-26 Apr 19 as Earth Week, marking the 49th anniversary of the first Earth Day back in 1970. Many events are scheduled at JBLE-Langley this Earth Week to show our continued support of environmental sustainability and to educate about the importance of year-long environmental protection. Throughout the year, we work diligently to educate the workforce and community on environmental awareness, sustainability and the importance of following environmental policies. This week helps the JBLE family come together and create a more eco-friendly place to work and live.
2. Events throughout the week include a pet waste awareness event, rain barrel class, a recycling “shred” event, 5K Fun Run, Earth Day poster contest at Booker Elementary, and an Arbor Day tree planting event at the Child Development Center. If severe weather postpones the 5K Fun Run, the event will be rescheduled at a later date. Volunteer opportunities include Safe Drain maintenance, a community clean-up in Langley Family Housing, nature trail preservation and a bench building project. JBLE-Langley will also celebrate Earth Day with the introduction of a straw free campaign, “Hear the Call, Say No to the Straw” to help decrease the amount of pollution in the surrounding waterways. Details are provided on the attachment. Commanders and Directors are encouraged to allow their personnel to participate.
3. To volunteer for Earth Week events, or if you have any additional questions, please send an email to Sherry M. Johnson at sherry.johnson.4@us.af.mil with your name, organization, phone number and the event(s) you will like to participate in. You can also contact Ms. Johnson at 764-1130. Please sign up early to save your spot.

//SIGNED, bwc, 1 Apr 19//
BRENDA W. COOK
Deputy Base Civil Engineer

Attachment
Earth Week 2019 Events



2019 Earth Week Events



Date	Time	Event	Location
Monday, 22 April	-----	Straw Free Campaign	Dining Facilities
	0900-1100	Safe Drain Maintenance	633 CES Environmental (Bldg. 328)
	1030-1230	Pet Waste Awareness	Inside Base Exchange (Bldg. 290)
Tuesday, 23 April	1000-1200	Rain Barrel Class	Bayview Commonwealth Center (Bldg. 926)
	1300-1500	Community Clean-Up	Langley Family Housing-Bethel Fire Station
Wednesday, 24 April	1000-1200	Shred Event	Base Exchange Parking Lot (Bldg. 290)
	1000-1400	Nature Trail Preservation	Nature Trail at Worley Road
	1100-1300	Poster Contest	Booker Elementary
Thursday, 25 April	0700-0900	Earth Week 5K Fun Run	ACC Fitness Trail
	0900-1300	Bench Building Project	Child Development Center (Bldg 70)
Friday, 26 April	1000-1100	Arbor Day Ceremony	Child Development Center (Bldg. 70)

Earth Week Coordinator: Sherry M. Johnson: Ph: 764-1130; sherry.johnson.4@us.af.mil



Hear the call, say **NO** to the **STRAW!**



Look for this poster at
JBLE-Langley Dining Facilities!

JBLE-Langley will kick off a straw free campaign on Earth Day, 22 April 2019 in an effort to prevent pollution on JBLE, the neighboring communities and the waters of the Chesapeake Bay.

Plastic straws are too lightweight and too small to be recycled and often end up in our waterways causing harm to birds and wildlife. They also litter our beautiful beaches.

Show your support by refusing to use plastic straws on and off base.

Paper straws will be available at the request of the customer. Please ask the Dining Facility staff for more details.

For more information, please contact Sherry Johnson at 764-1130 or at sherry.johnson.4@us.af.mil.

Safe Drain Maintenance

Safe Drain™ replaces traditional storm water drainage and helps prevent contamination from spilling into waterways allowing for safer drinking water and cleaner oceans.

Safe Drain™ also collects dirt and sediment that have to be manually removed as a part of routine maintenance. JBLE-Langley currently has 8 Safe Drain™ filtration systems and needs your help in providing this routine maintenance on Monday, 22 April 2019 from 9:00 AM to 11:00 AM. Volunteers will meet at the 633 CES, BLDG 328 at the Environmental Flight. Gloves will be provided and it is recommended volunteers wear appropriate clothing (i.e. long pants and sturdy footwear).

REGISTER NOW:

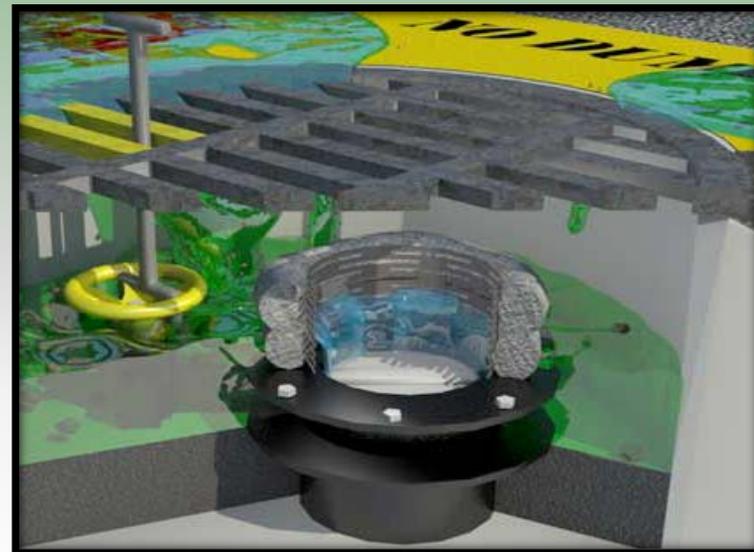
Email: jeffrey.saunders@us.af.mil

Registration Limit: 20 participants

Date: 22 April 2019

Time: 9:00 AM – 11:00 AM

Location: 633 CES, BLDG 328,
Environmental Flight

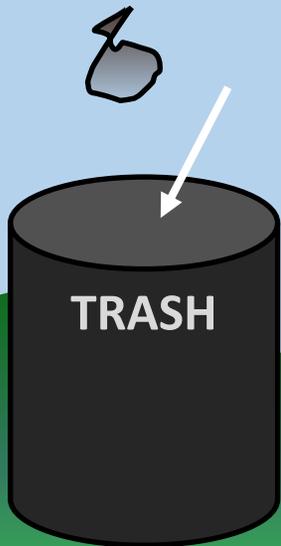


Help your pet celebrate Earth Day!

The 633d Civil Engineer Squadron will be commemorating 3 new pet waste stations by handing out FREE pet waste bag dispensers at the Base Exchange on Earth Day, 22 April 2019 from 10:30 AM-1230 PM

Limited to 1 per person.

The new pet stations are located at the Veterinarian's Office, Eagle Park and the Bethel FamCamp. Other locations include family housing and the Langley Marina.



Remember to clean up after your pet to prevent contamination in our waterways.

For more information, contact Sherry Johnson at 764-1130 or Dawn Christian at 764-1141.



JBLE EARTH WEEK 2019 EVENT

Rain Barrel Workshop



The 633d Civil Engineer Squadron is presenting a rain barrel workshop with the support of the Hampton City Clean Commission and the Hampton Master Gardeners on **Tuesday, 23 April from 10:00 AM to 12:00 NOON** at the JBLE-Langley **Bayview Commonwealth Center, BLDG 926**. This workshop will provide the supplies, training, and expertise on how to build and maintain a rain barrel. Registration is limited to 10 participants and the initial cost is \$50. Payment (cash or credit) can be refunded by mail after installation is verified. Please make checks out to Hampton Master Gardeners.

Register early to save your spot!



Benefits of Rain Barrels:

- Reduces water bill
- Conserves water by using harvested rain water from roof for plants, shrubs, & trees
- Protects our rivers, lakes, and streams by reducing sediment storm water runoff pollution
- Controls moisture levels around foundation of home or business by redirecting rain water



For more details about the refund, check out the Virginia Lakes and Watersheds Association website at <https://vlwa.org/Programs.aspx>

REGISTER NOW:

Email: sherry.johnson.4@us.af.mil
Registration Limit: 10 participants!!
Date: Tuesday, 23 April 2019
Time: 10:00 AM – 12:00 NOON
Location: Bayview Commonwealth Center, BLDG 926, Burrell Loop Rd

Community Clean-Up at Langley Family Housing

The 633d Civil Engineer Squadron is seeking volunteers to help remove debris and litter in off-base Langley Family Housing on Tuesday, 23 April 2019 from 1:00 PM to 3:00 PM. Volunteers will meet at the Bethel Fire Station located across from the Express Shoppette. Volunteers are encouraged to bring work gloves and wear sturdy footwear. There is a limit of 40 volunteers needed. Register early to save your spot!



REGISTER NOW:

Email: ronald.holcomb.1@us.af.mil

Date: 23 April 2019

Time: 1:00 PM – 3:00 PM

Location: Off-base Langley Family Housing, Bethel Fire Station.

Please park at the Express Shoppette.



“Shred-it Free Shred Day”

Wednesday, 24 April 2019

1000 - 1300

- Stop by the Shred-it truck to help keep paper out of landfills and personal documents safe from identity theft!
- The truck will be located in the Commissary/BX parking lot.
- Each person can bring up to 4 boxes or bags of material for shredding in the Shred-it truck.
- Paperclips and staples do not have to be removed.
- This event is free of charge, but the 633 CES Environmental Element will be collecting non-perishable food items for donation to resupply our local food banks.
- This is for *PERSONAL* items only. Work items and *classified materials* are *NOT* authorized to be shredded at this event.



If you have any questions about this event please contact Sherry M. Johnson at 764-1130, or email sherry.johnson.4@us.af.mil



JBLE VOLUNTEER EVENT

Nature Trail Preservation



The 633d Civil Engineer Squadron is seeking volunteers to carry out annual maintenance on the JBLE-Langley nature trail on **Wednesday, 24 April 2019 from 10:00 AM until 2:00 PM**. Volunteers will help clean up debris, rake trails, install new signs and remove invasive weeds. Volunteers are encouraged to bring a rake, shovel, work gloves, water and wear clothing appropriate for working outdoors (i.e. long pants and old running shoes, hiking boots, or rubber boots). Extra tools, work gloves, snacks, and water will be available. There is a limit of 15 volunteers needed.

Please RSVP early.

This is a great opportunity to get involved in the JBLE-Langley community and appreciate our natural resources.



REGISTER NOW:

Email: alicia.garcia.4@us.af.mil or sherry.johnson.4@us.af.mil

Date: 24 April 2019

Time: 10:00 AM – 2:00 PM

Location: Worley Rd

The Air Force is committed to acting as a responsible steward of its natural resources because it is the right thing to do for our Airmen and their families today and for future generations tomorrow.

Earth Week 5K Fun Run



Celebrate Earth Week at JBLE-Langley by participating in the
1st Annual Earth Week 5K.
The top 10 male and female finishers will be awarded prizes.

We encourage all participants to bring
plastic shopping bags
to be collected for recycling at the ACC Fitness Center
and near the start/finish line.

For more information, contact Sherry M. Johnson at
764-1130 or sherry.johnson.4@us.af.mil.

ACC Fitness Trail
25 April 2019 @ 0700

Tree Bench Building Event

The 633d Civil Engineer Squadron is sponsoring a tree bench building event on Thursday, 25 April 2019 from 9:00 AM to 3:00 PM, at the Child Development Center, BLDG 70 to protect children from the tripping hazards of tree roots, thereby allowing the beautiful trees to remain and provide needed shade for summer. Only experienced volunteers are requested to help during the building process. Tools, equipment and PPE will be provided. Volunteers are encouraged to wear long pants, safety boots and bring personal safety gear or tools.



REGISTER NOW:

Email: ronald.best.1@us.af.mil

Registration Limit: 10

Date: 25 April 2019

Time: 9:00 AM – 3:00 PM

Location: CDC, BLDG 70



JBLE EARTH WEEK 2019 EVENT

Arbor Day



The **633d Civil Engineer Squadron**, is hosting a tree planting ceremony on Friday, 26 April from 10:00 AM to 11:00 AM behind the JBLE-Langley **Child Development Center, BLDG 70**. The ceremony will celebrate JBLE-Langley's 19th year as a Tree City USA and 20th annual Arbor Day Celebration.

RSVP to **Alicia M. Garcia** at
757-764-1090
alicia.garcia.4@us.af.mil



Subject: FW: INFO\\ VOTE NEEDED for Earth Week Poster Contest\\ NLT Thu, 25 Apr 19

-----Original Message-----

From: SPRIGGS, PAMELA A GS-06 USAF ACC 633 CES/CCS <pamela.spriggs@us.af.mil>

Sent: Friday, April 12, 2019 3:23 PM

To: 633 CES ALL Civilians <633cescivilians@us.af.mil>; 633 CES All Military <633CES.All.Military@us.af.mil>

Subject: INFO\\ VOTE NEEDED for Earth Week Poster Contest\\ NLT Thu, 25 Apr 19

CE Team,

Earth Week is approaching and one of the activities is a poster contest submitted from Booker Elementary School. When you have a free moment, take a look at the posters along the wall near CEIE and vote for the best one NLT Thu, 25 Apr 19. The winner will get a pizza party for their class on Fri, 26 Apr 19.

v/r,

Dawn Christian
Water Program Manager
JBLE-Langley
D: (757) 764-1141
C: (757) 846-3700

Subject: FW: WINNER Re: Earth Week Poster contest
Attachments: Resized_20190425_084713_3919.jpeg

From: CHRISTIAN, DAWN S GS-12 USAF ACC 633 CES/CEIE <dawn.christian@us.af.mil>
Sent: Thursday, April 25, 2019 9:19 AM
To: Karen Brace <kbrace@hampton.k12.va.us>
Cc: 8296@teamcobbs.com; CHRISTIAN, DAWN S GS-12 USAF ACC 633 CES/CEIE <dawn.christian@us.af.mil>; PATTON, CARMICHAEL T GS-12 USAF ACC 633 CES/CEIE <carmichael.patton.1@us.af.mil>
Subject: WINNER Re: Earth Week Poster contest

Ms. Brace,

On behalf of JBLE-Langley, we would like to congratulate [Serenity Howard](#) from Ms. Brown's class as the winner of the Earth week poster contest. Domino's has graciously donated pizza for the class. We would like to deliver the pizza's tomorrow, please let us know what time.

We would like to thank everyone who participated, they all did a great job!

v/r,

Dawn Christian
Water Program Manager
JBLE-Langley
D: (757) 764-1141
C: (757) 846-3700

From: Karen Brace <kbrace@hampton.k12.va.us>
Sent: Thursday, April 11, 2019 3:40 PM
To: CHRISTIAN, DAWN S GS-12 USAF ACC 633 CES/CEIE <dawn.christian@us.af.mil>
Subject: [Non-DoD Source] Re: Earth Week Poster contest

Hi Dawn,

I hope all is well. I know this is a busy time of year for you with Earth Day around the corner.

I wanted to let you know the Earth Day posters are in the office. If you need me to drop them off to you, let me know. I can bring them by tomorrow, after school, around 3:00.

Thank you again for this opportunity!

Karen

On Thu, Mar 14, 2019 at 2:22 PM Karen Brace <kbrace@hampton.k12.va.us> wrote:

Yes, ma'am! We would love to participate. I will prepare and send out the flyers for student participation next week.

Thank you!

Karen

On Thu, Mar 14, 2019 at 1:45 PM CHRISTIAN, DAWN S GS-12 USAF ACC 633 CES/CEIE <dawn.christian@us.af.mil> wrote:

Good afternoon Ms. Brace,

I hope you are doing well this year. We are gearing up for Earth Week again and want to reach out to see if Booker Elementary would like to participate in the Earth week poster contest? If so, we are requesting the top four posters for us to vote on. The winning class will receive pizza from Dominos delivered by JBLE-Langley on Fri, 26 Apr 19.

Theme: "Be the Solution to Stormwater Pollution"

We would like to pick up the posters NLT 12 Apr 19.

If you accept this poster challenge, please reply to this email.

v/r,

Dawn Christian

Water Program Manager

Joint Base Langley Eustis - Langley

37 Sweeney Blvd

JBLE-Langley, VA 23665

D: (757) 764-1141

C: (757) 846-3700

E: dawn.christian@us.af.mil

--

Karen A. Brace

5th Grade Teacher

Booker Elementary School

(757) 850-5096

--

Karen A. Brace

5th Grade Teacher

Booker Elementary School

(757) 850-5096

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--

Karen A. Brace
5th Grade Teacher
Booker Elementary School
(757) 850-5096

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Be The SOLUTION to

3 forms water POLLUTION



Vote if you love this poster Above!

||||| ||

Subject: FW: [Non-DoD Source] Earth Day poster winner

From: Tameka Brown <tbrown5@hampton.k12.va.us>

Sent: Friday, April 26, 2019 1:52 PM

To: CHRISTIAN, DAWN S GS-12 USAF ACC 633 CES/CEIE <dawn.christian@us.af.mil>

Subject: [Non-DoD Source] Earth Day poster winner



Tameka Brown
2nd Grade Teacher

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federal statutes, the Virginia Freedom of Information Act or any applicable laws.

Subject: FW: INFO//1 Thing You Can Recycle - CARDBOARD (March 2019)
Attachments: Tab 1 - 1 Thing You Can Recycle - CARDBOARD (March 2019).pdf; Tab 2 - JBLE-Langley Recycling Program Brochure.pdf

From: 633 CES/CC Commander <633ces.cc@us.af.mil>

Sent: Monday, March 18, 2019 10:10 AM

To: 633 CES All Military <633CES.All.Military@us.af.mil>; 633 CES ALL Civilians <633cescivilians@us.af.mil>

Subject: INFO//1 Thing You Can Recycle - CARDBOARD (March 2019)

In an effort to bring more attention to the recycling program at JBLE-Langley, we are publicizing a monthly flyer, *1 Thing You Can Recycle*. The flyer will showcase one item each month that can be recycled at JBLE-Langley. This information intended to be disseminated to all Airmen to educate and encourage support of this program that helps JBLE-Langley be a responsible community partner. Your Facility Managers are responsible for implementing this program for your respective facilities. For a full list of recyclable items, please consult the Recycling Program Brochure. For more information about the JBLE-Langley Qualified Recycling Program, contact your Facility Manager. If you need further assistance, contact Ms. Sherry Johnson at 764-1130 or by email at sherry.johnson.4@us.af.mil.

2 Tabs

1. 1 Thing You Can Recycle
2. Recycling Program Brochure

https://www.militarynews.com/peninsula-warrior/community/jble-participates-in-america-recycles-day/article_c015d7e6-ec35-11e8-af79-f77146692b8e.html

FEATURED

JBLE participates in America Recycles Day

By Senior Airman Derek Seifert 633rd Air Base Wing Public Affairs Nov 21, 2018



U.S. Air Force Staff Sgt. Matthew Baxter, Air Combat Command Communication Support Squadron global command and control systems administrator, places personal computers in a recycle bin during America Recycles Day at Joint Base Langley-Eustis, Virginia, Nov. 15, 2018. Electronic recycling limits the amount of solid waste in landfills, as well as limiting toxic waste, which electronics represents 70 percent of.

U.S. Air Force photo by Senior Airman Derek Seifert

JOINT BASE LANGLEY-EUSTIS, Va.

U.S. Air Force Airmen and U.S. Army Soldiers assigned to Joint Base Langley-Eustis, Virginia participated in America Recycles Day, Nov. 15, 2018, starting with a collection day at the JBLE-Langley Base Exchange and continuing through Earth Week in April 2019.

The 733rd Civil Engineer Division Environmental Element began preparing for the event on Nov. 1. The Fort Eustis community will have six months to drop off plastic grocery bags, pallet wrap and stretch film, bread bags, newspaper sleeves and other recyclable products that are harmful to the environment.

“The nationwide program was developed to educate the public on buying reused items to keep things out of the landfills,” said Donna Haynes, 733rd Civil Engineer Division Environmental Element environmental protection specialist. “This year for JBLE-Eustis, we are doing a six-month program to collect plastics because plastics are one of the bigger items you can’t recycle [due to jamming the recycle machine with shards of plastic].”

The 733rd CED’s six-month program will end during Earth Week in April 2019 and upon its completion, if the goal of 500 pounds of recyclable plastic is achieved, Fort Eustis will receive a repurposed bench to place on the installation, according to Haynes.



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The 633rd Civil Engineer Squadron will hold an event for America Recycles Day on Nov. 15, at the JBLE-Langley Base Exchange from 11 a.m. to 3 p.m.

“Plastic shopping bags will be donated to Booker Elementary in cooperation with its recycling projects,” said Sherry Johnson, 633rd CES pollution prevention program manager and qualified recycling program manager. “Plastic bags can be repurposed into benches and sleeping mats for the homeless. Clothing will be donated to the Airmen’s Attic to educate the base populous of this reuse option and any surplus items will be donated to the Salvation Army.”

Canned goods will also be accepted and donated to the Peninsula Food Bank. Informational flyers for the 733rd CED program can be found at the CED building and around the installation. The informational pamphlets for the 633rd CES covering the recycling program on JBLE-Langley and

how personnel can practice recycling every day can be picked up at the event table at the Base Exchange.

For more information, contact the 733rd CED at 878-4123 or the 633rd CES at 764-1130.

Subject: FW: NFO//America Recycles Day - 15 Nov 18
Attachments: America Recycles Day.pptx

-----Original Message-----

From: SPRIGGS, PAMELA A GS-06 USAF ACC 633 CES/CCS <pamela.spriggs@us.af.mil>
Sent: Thursday, November 1, 2018 11:18 AM
To: 633 CES All Military <633CES.All.Military@us.af.mil>; 633 CES ALL Civilians <633cescivilians@us.af.mil>
Subject: NFO//America Recycles Day - 15 Nov 18

All,

America Recycles Day, a Keep America Beautiful national initiative, is an annual event dedicated to promoting and encouraging people to create a better natural environment and to raise awareness about the benefits of recycling.

The 633 CES Environmental Element will be supporting America Recycles Day by running a recycling drive for plastic shopping bags, electronic waste, and clothing in the Base Exchange parking lot on Thursday, 15 Nov 18 from 1100-1500. JBLE Personnel are asked to bring plastic shopping bags for recycling, any personal electronics from home and unwanted clean clothing including shoes for recycling and/or reuse. Workplace electronics will not be accepted.

Reusable items will be donated to the Airmen's Attic and Salvation Army.
Electronic waste will be recycled. We will also accept canned goods that will be donated to the local food banks.

Details are provided in the attachment. You are invited to participate in this event and are encouraged to disseminate the information to others for their participation.

Our POC is Ms. Sherry M. Johnson at 764-1130.

Tab
America Recycles Day Flyer

America Recycles Day

JBLE-Langley

- *Average American throws away 70lbs of clothing each year*
- *Plastic bags contribute 9% of the debris along the US coast*
- *Only 13% of eWaste is disposed and recycled properly*

633d Civil Engineer Squadron Environmental is collecting plastic shopping bags, personal electronics from home, and clothing for recycling.

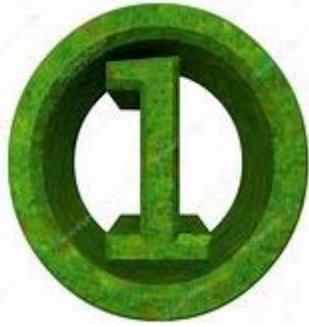
Work center electronics **will not** be accepted.
We will also be collecting canned goods to donate to the local food banks.

Date: 15 November 2018 **Time:** 1100-1500

Location: BX parking lot (indoors if inclement weather)

POC: Ms. Sherry M. Johnson 764-1130,
sherry.johnson.4@us.af.mil





thing you can



CARDBOARD:

1. Breakdown and flatten



2. Disposal options

A. Place in **“Cardboard Only”** labeled dumpsters or a blue **comingled** recycling bin at your facility

B. Take to Scrap Yard on M/W/F from 1300-1500; located behind building 331 inside fence



*For more information, contact Ms. Sherry M. Johnson at 764-1130 or by email at sherry.johnson.4@us.af.mil

Furniture

Furniture issued by the government and in serviceable condition must be turned into DLA in Norfolk, VA. Damaged wooden furniture can be placed in the designated scrap wood containers. **DO NOT place in dumpster!**

Oil & Antifreeze

Motor oil and antifreeze must be taken to an automotive shop in order to be disposed of/recycled.

Batteries

-Lead acid-batteries should not be placed in dumpsters or containers. They can be recycled at facilities or stores that sell them (i.e. auto parts store; Battery Plus at 3412 W. Mercury in Hampton).

-Alkaline batteries should be thrown in the regular trash.

-Lithium, nickel-cadmium, and mercury batteries are to be treated as *universal waste*. Separate them into different containers and place a Universal Waste label on the container (obtained through the 633 CES). These can also be recycled at Battery Plus.



Recycling Cheat Sheet

Batteries	Where does it go?
Lead-Acid	Auto-parts stores
Lithium, Nickel cadmium, mercury	Separate containers labeled Universal Waste
Alkaline	Regular Trash
Liquids	
Oil and Antifreeze	Auto shop
E-Waste	
Computers & TVs	633 CS: (757)764-7936
	DLA: (757)445-2412 or 2398
Wood	
Pallets	Scrap Yard
Old Wood	Specified roll off bins
Furniture	
Damaged Wooden Furniture	Specified roll off bins; Contract Services (757)764-1419
Old/Serviceable Furniture	DLA in Norfolk, VA POC: (757)445-2412 or 2398
Paper Products	
Office White Paper	Specified "White Paper" Bin
Colored Paper	Specified "commingles" bin
Cardboard	Specified "cardboard" container
Magazines, Newspapers, etc.	Specified "commingles" bin
Other	
Bulbs	Collect as Universal Waste (757)764-1130 for info or HazWaste (757)225-5808
#1 and #2 Plastics only	Specified "commingles" bin
Plastic shopping bags	Inside Commissary or other off-base grocery stores
Glass (green, brown, or clear)	Specified "commingles" bin

JBLE-Langley

633 CES



Recycling Program

QRP Manager: Sherry M. Johnson
Comm: 574-1130
DSN: 574-1130
sherry.johnson.4@us.af.mil

"JBLE-Langley supports a strong pollution prevention program which emphasizes the importance of source reduction, reuse, and recycling. "

Recycling Program Overview

In order to promote pollution prevention, JBLE-Langley utilizes a program that incorporates reduction, recycling, composting, energy recovery (incineration), and land filling. Recycling is a program encouraged base wide with a specific area at each facility meant as a collection area for most recyclables. Other facilities such as the scrap yard and Defense Logistics Agency-Disposition Services (DLA) are available to aid in the recycling of materials that cannot be put into the collection bins.



Commingled Materials

Materials such as **newspapers, colored paper, magazines, #1 and #2 plastics, cans and glass (clear, brown, and green)** should be placed into the same container. A bin for these mixed items is located in the facility's recycling area.

White Office Paper

Containers are placed in each facility's recycling areas meant **specifically for white office paper only**. Shredded office paper must be put in a clear plastic bag. Contractors collect these every other week.

Cardboard

Cardboard has its own separate bins. These bins are beige and are usually found by dumpsters. Breakdown the boxes before placing them in the bin and **do not place cardboard contaminated with food** (i.e. pizza boxes) in the container.

Ink Cartridges

1-3 toner cartridges are to be placed in a **clear plastic bag**, tied off, and placed next to (not inside) the white office paper bin in the facility's recycling area. **More than 3** should be taken to the scrap yard.

Plastic Shopping Bags

DO NOT place in commingled bin. Recycling bins are located inside the Commissary at the entrance and exit.

Metal

All types of metal are acceptable for recycling on base at the scrap yard by Building 330 (M, W, F 1300-1500). Any liquids such as oils or refrigerants must be removed prior to dropping items off.

Wood

Serviceable wooden pallets should be taken to the scrap yard to be recycled (M, W, F 1300-1500). Unusable wood can be placed in the roll off bins located around base to be recycled.

E-Waste

Contact 633 CS Asset Management to verify items are clear for disposal. Then, contact DLA to dispose of all governmental electronics. **DO NOT place any electronics in solid waste dumpsters or recycling bins.** If the screens to these devices are broken, contact your Facility Manager for proper procedures to dispose of hazardous waste. Non-governmental appliances in good working condition may be donated to organizations such as Goodwill or the Salvation Army.

C & D Debris

These are materials resulting from construction and demolition including: wood, drywall, plastics, roofing, rubble, brick and glass. The contractors are responsible for the management and removal of these materials. Any material that is not recycled is disposed of at the Bethel Sanitary Landfill.

Terry Pugh

Subject: FW: INFO//30th Annual Clean the Bay Day - Sat 21 Jul 18, 0900-1200 (Rescheduled Volunteer Opportunity)
Attachments: Tab 1 - Clean the Bay Day 2018 Zone Map.pdf; Tab 2 - Clean the Bay Day Group Signup 2018.xls; Tab 3 - Clean the Bay Day FAQs 2018.doc; Tab 4 - 2018 Clean the Bay Day Flyer-Reschedule.pdf

-----Original Message-----

From: 633 CES/CC Commander <633ces.cc@us.af.mil>

Sent: Wednesday, July 18, 2018 11:36 AM

To: 633 CES All Military <633CES.All.Military@us.af.mil>; 633 CES ALL Civilians <633cescivilians@us.af.mil>

Subject: INFO//30th Annual Clean the Bay Day - Sat 21 Jul 18, 0900-1200 (Rescheduled Volunteer Opportunity)

SUBJECT: 30th Annual Clean the Bay Day - Sat 21 Jul 18, 0900-1200
(Volunteer Opportunity)

1. JBLE-Langley is a host site for the 30th Annual Clean the Bay Day but due to expected inclement weather, the event was postponed and is now rescheduled for Sat, 21 Jul 18 from 0900-1200. This is a great opportunity for the JBLE team to work together to keep our shores and waterways clean and safe. Last year, over 100 volunteers removed 2,380 pounds of debris along 5 miles of JBLE-Langley's shoreline. Our goal is to make this year's event an even bigger success with the support of more volunteers.

2. Details are provided in the attachments. You are cordially invited to participate in this event and are encouraged to disseminate the information to others for their participation. Volunteers will meet at 0830, 21 Jul 18, at Eagle Park (across from Langley Lanes) to receive assignments and supplies prior to the 0900 start time.

3. To volunteer for the Clean the Bay event, please contact Sherry M. Johnson. Groups can fill out the spreadsheet at Tab 2 and individuals may send an email with your name, organization, phone, and preferred zone assignment to her at sherry.johnson.4@us.af.mil . You can also contact her at 764-1130 for any additional questions.

4 Tabs

1. Clean the Bay Day Zone Map
2. Clean the Bay Day Group Signup
3. Clean the Bay Day FAQs 2018
4. Clean the Bay Day Flyer 2018



U.S. Coast Guard
 U.S. Navy
 U.S. Air Force

Date: 07/2014
 Scale: 1:5,000

Legend

- ZONE 5
- ZONE 4
- ZONE 3
- ZONE 2
- ZONE 1

Eagle Park Meeting Location

Clean The Bay Day

LANGLEY AIR FORCE BASE

500 250 0

500 Meters

2,000 1,000 0

2,000 Feet

All rights reserved. This map is provided for informational purposes only. It is not intended to be used for navigation or other purposes. The user assumes all responsibility for any use of this map.

National Waterway Inventory
 U.S. Coast Guard

This map is for informational purposes only. It is not intended to be used for navigation or other purposes. The user assumes all responsibility for any use of this map.

Custom

FAQs - CLEAN THE BAY DAY 2018

- Q1. Where are we cleaning?
A1. We will clean five zones along the shoreline and one team will clean base waterways (see CTBD Map):
Zone one: Tidemill Creek to Eagle Park
Zone two: Eagle Park to King Street Bridge
Zone three: Langley Marina to ACC Trail Footbridge
Zone four: ACC Trail Footbridge to the Bayview Towers
Zone five: Base waterways
Zone six: Bethel Park
- Q2. Which group will I be in?
A2. Volunteers have the opportunity to select a zone to work in. We may ask some people to move to other groups to ensure every area is covered.
- Q3. What should I bring?
A3. **Please bring sunscreen, insect repellent, comfortable work clothes, and work gloves if you have them.** We will provide, in limited supply, the previously stated supplies for those that do not bring any, as well as trash bags and water.
- Q4. What time do I need to show up?
A4. All personnel need to show up at Eagle Park by 0830 so we can get everyone signed in and ready to go by 0900.
- Q5. Can I bring my children?
A5. Yes, **BUT** we will be working near the shoreline, possibly in some areas with uneven ground and we don't want anyone to get injured. Parents will be responsible for their children.
- Q6. Can I bring pets?
A6. No. Pets will not be allowed during the clean-up.
- Q7. What time will we be finished?
A7. The event will end around 1200. If you need to leave early, please let your zone leader know at the event.
- Q8. Do I have to pre-register?
A8. For planning purposes, we recommend that everyone preregisters. Sign-ups on the day of the event will be welcomed. To register, email Sherry M. Johnson at sherry.johnson.4@us.af.mil.
- Q9. Can off-base personnel participate?
A9. Off-base personnel can participate with a military sponsor. You will have to escort them on base or meet them at the La Salle Gate Visitor Center to sign them

onto the base. Please ensure you personally know the person, as he/she is your full responsibility.

Q10. Where is Eagle Park and how do I get there?

A10. Eagle Park is on Nealy Ave across from the Bowling Center (See CTBD Map).

Q11. How do we get to the zone we are working on?

A11. All volunteers are to meet at Eagle Park by 0830 to sign-in and choose the zone of your choice. Buses will transport volunteers to and from each zone. Bethel Park (Zone 6) volunteers have the option to drive themselves. Directions will be provided on the day of the event.

Q12. Can I wear sandals?

Q12. No. Wear sturdy, comfortable work shoes. No open toed shoes allowed.

CELEBRATING 30 YEARS

Clean the Bay Day

A "Pearl" of an Anniversary



CHESAPEAKE BAY
FOUNDATION

Saving a National Treasure

VOLUNTEERS NEEDED!

PLEASE REGISTER

Contact: *Sherry Johnson* at
sherry.johnson.4@us.af.mil or **764-1130**

https://www.militarynews.com/peninsula-warrior/community/volunteers-clean-up-the-bay/article_95311cd8-87bd-11e9-926f-1f9614e47efc.html

FEATURED

Volunteers clean up the bay

By Senior Airman Delaney Gonzales 633d Air Base Wing Public Affairs Jun 6, 2019



Trash tossed along roadways collects into a storm drain at Joint Base Langley-Eustis, Virginia, June 1, 2019. A total of 31 volunteers came out to support the Clean the Bay Day to collect recyclable and non-recyclable materials.

U.S. Air Force photo by Senior Airman Delaney Gonzales

JOINT BASE LANGLEY-EUSTIS, Va.

More than 30 volunteers came together to support the Clean the Bay Day event at Joint Base Langley-Eustis, Virginia, June 1.

The event was a community outreach initiative designed to aid in the preservation of the base's environment by removing harmful materials from JBLE's bodies of water and shorelines.

“The immediate impact of cleanup is making a safer habitat for animals and ensuring that the debris collected will not reach the Chesapeake Bay,” said Joanna Bateman, 733d Civil Engineer Division Environmental Element pollution prevention and planning branch chief. “Shoreline litter can be harmful to wildlife and a source of water pollution.”

“Often times, items like plastic bags are mistaken for food by marine animals and can be deadly if ingested or can cause entanglement of wildlife,” added Bateman. “Litter can clog wetlands and reduce their effectiveness as buffers for natural runoff and as shelter for wildlife.”

The team of volunteers were able to successfully collect more than 231 pounds of waste and recyclables from JBLE local waterways to include the James River, a tributary of the Chesapeake Bay and Eustis Lake.



1. **Click** Start Now
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3. **Get** Your Templates



“Recyclable materials were separated from trash and turned into the JBLE Solid Waste Recycling Center for recycling,” Bateman said.

Some volunteers canoed through Eustis Lake to collect trash that couldn't be reached from the shoreline.

“There were twelve volunteers gathering trash via canoes in Eustis Lake,” Bateman added. “The primary volunteers for cleanup around Eustis Lake included members of the Fort Eustis Boy Scout Troop 45. This troop has supported cleanup efforts for numerous years.”

The volunteer effort covered an estimated four miles of shoreline and lake boundary helping to preserve the environment for future generations.

“[Fort Eustis] and surrounding cities and towns have a profound impact on the health of the Chesapeake Bay,” Bateman concluded. “Clean the Bay Day is an annual opportunity to come together as a community with one common goal aimed at achieving clean water in the tributaries, streams and rivers running into the Chesapeake Bay.”

For more information regarding upcoming volunteer opportunities with the 733d CED Environmental Element, contact (757) 878-4123.

JBLE ceremony recognizes volunteers

By Senior Airman Delaney Gonzales, 633d Air Base Wing Public Affairs / Published April 24, 2019







Service members, families, civilians, retirees and youths were recognized for their commitment to service in a Volunteer Recognition and Award Ceremony April 12 at JBLE-Eustis and April 19 at JBLE-Langley.

Volunteerism is a tool for Airmen and Soldiers to bridge the gap between the local community and the installation it supports.

“It’s an honor to celebrate our incredible volunteers,” said Shannon George, Fort Eustis Volunteer Recognition and Award Ceremony guest speaker. “Time is a precious gift, it is the best gift you can give.”

Volunteers identify a problem, evaluate the circumstance at hand and work toward a solution, said Xavi Slocum, Langley Volunteer Recognition and Award Ceremony guest speaker. When an individual decides to help those in need, they are choosing to give up their time to benefit the community.

Volunteerism is key for the betterment of installations and their surrounding communities.

“All you have to do is be available, willing and have a heart to serve,” George noted. “Little things make a difference because they build on each other.”

The combined total volunteer hours performed by members of JBLE equated to approximately \$2,917,482.50.

“I look into the crowd and see the large amount of volunteers here and the money saved is amazing,” George said with a smile.

Ceremonies such as these are used to showcase the impact volunteering contributes to the mission.

“You don’t have to be superhero to make a difference, you don’t have to have accolades to make a difference, you don’t have to be perfect to serve people,” George concluded. “You have to be yourself and have a heart and a passion to serve.”

Below is a list of the award winners.

Award winners for JBLE-Langley:

Commander’s Gold Award for Community Service: Air Combat Command, Inspector General, Logistics Readiness Section

Youth Volunteer of the Year: Madison Bennett

Family Member Volunteer of the Year: Taryn Huse

Single Airman Volunteer of the Year: Airman 1st Class Shayekh Rana

Service Member Volunteer of the Year: Staff Sgt. Patrick Sims

Civilian Volunteer of the Year: Terence Spann

Retiree Volunteer of the Year: Rodney Venables

Volunteer Family of the Year: The Rehak Family

Volunteer Excellence Award: Donna Craft, Christopher Watkins, Lynne Mills

Award winners for JBLE-Eustis:

Commander’s Gold Award for Community Service: Noncommissioned Officer’s Academy (NCOA)

Youth Volunteer of the Year: Brooke Mastel

Family Member Volunteer of the Year: Mary Ward

Single Soldier Volunteer of the Year: Spc. Tommy Ngo

Service Member Volunteer of the Year: Sgt. 1st Class Roberto Flores

Civilian Volunteer of the Year: Daniel Mendez

Retiree Volunteer of the Year: Chief Master Sgt. (Ret) Gary Robie

Volunteer Family of the Year: The Burney Family

Baylon Community Link Volunteer of the Year: Capt. Kiara Reed

David E. Minor Volunteer of the Year: Danielle Wyatt

Langley AFB goes straw-free



Photo By [Aliza Reisberg](#) | Members of the 633rd Civil Engineer Squadron will celebrate Earth Day, April 22, 2019, [...read more](#)

LANGLEY AIR FORCE BASE, VA, UNITED STATES

04.17.2019

Story by Senior Airman Kaylee Dubois

633rd Air Base Wing Public Affairs

Establishments around the country have jumped on the straw-free bandwagon in an effort to prevent pollution and decrease harm to wildlife.

With Earth Day right around the corner, Joint Base Langley-Eustis will celebrate by kicking off their straw-free campaign on April 22, 2019.

“Plastic straws are among the top ten items found in beach or shoreline litter,” said Sherry Johnson, 633rd Civil Engineer Squadron pollution prevention program manager. “The location of Langley Air Force Base gives us an opportunity to support a global environmental movement and to make a positive direct impact on our community, on land and water.”

Dining Facilities on Langley Air Force Base will no longer provide straws unless the customer requests them.

According to strawfree.org, Americans use more than 500 million straws every day, which is enough straws to wrap around the Earth twice.

Unlike other plastics, plastic straws, which are small and lightweight, cannot be recycled. Instead of being biodegradable, straws photodegrade or break up into smaller pieces, ultimately lasting longer in the environment than typical plastics.

“Plastic straws are easily transported to waterways after the wind carries them away from landfills or they wash down a storm drain,” Johnson said. “Seabirds and marine animals suffer the greatest impact...[they] confuse the plastic straws as food and often ingest the material.”

Johnson noted the recent discovery of a young beached whale found to have over 80 pounds of plastic in its stomach.

“We would ask military members and their families to make an attempt to say, ‘No straw, please,’ as a daily habit,” Johnson said. “We recommend using a reusable metal or biodegradable straw as an alternative if a straw is needed. We hope the support we receive on base can translate to increased support off base.”

In keeping with the environmental initiative, the 633rd CES will host Earth Week events such as safe drain maintenance, community clean-up, Nature Trail Preservation, Bench Building and an Arbor Day ceremony.

For more information about JBLE Earth Week events or to volunteer, contact Sherry Johnson at 757-764-1130.

Subject: FW: INFO// Pet Waste Educational Brochure

-----Original Message-----

From: Teresita Akers <teresita.akers@huntcompanies.com>

Sent: Friday, June 22, 2018 2:36 PM

To: CARDEN, TRACY A GS-12 USAF ACC 633 CES/CEIA <tracy.carden@us.af.mil>; Kevin Cline

<kevin.cline@huntcompanies.com>; Brenna Poffenbarger <Brenna.Poffenbarger@huntcompanies.com>

Cc: CHRISTIAN, DAWN S GS-12 USAF ACC 633 CES/CEIE <dawn.christian@us.af.mil>; PATTON, CARMICHAEL T GS-12

USAF ACC 633 CES/CEIE <carmichael.patton.1@us.af.mil>; BROWN, DEBORAH A GS-05 USAF ACC 633 CES/CEI

<deborah.brown.15@us.af.mil>; JACKSON, YVONNE D GS-13 USAF ACC 633 CES/CEI <yvonne.jackson.1@us.af.mil>;

ANTUNES, INOK L GS-12 USAF ACC 633 CES/CEIH <inok.antunes.2@us.af.mil>; ROSETTE, DELORES J GS-11 USAF ACC 633 CES/CEIH <delores.rosette@us.af.mil>

Subject: [Non-DoD Source] RE: INFO// Pet Waste Educational Brochure

ALCON,

Our newly implemented EBLAST system does not allow for a BCC. We are now able to select neighborhoods and the email will go to every resident in that neighborhood. We are also able to select the time the email will go out.

This email will go out at 2:45pm today with the brochure as a JPEG. I will also post to our Facebook page.

Thanks.

Teresita Marti Akers | Community Manager | Langley Family Housing

Phone: 757.690.2247 | Fax: 757.865.1722

1798 First Street | Langley Air Force Base, Va | 23665 Hunt Military Communities | teresita.akers@huntcompanies.com

[https://urldefense.proofpoint.com/v2/url?u=http-3A__www.langleyfamilyhousing.com&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=c_X_kvYAoyf-22yeUq9lolCZGxZFwOeenHTWh6AwPO8&s=aZM8BygD2gwRNqlhzASq7lG0ntD53_2lByeOvZDIMrY&e=](https://urldefense.proofpoint.com/v2/url?u=http-3A__www.langleyfamilyhousing.com&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=c_X_kvYAoyf-22yeUq9lolCZGxZFwOeenHTWh6AwPO8&s=aZM8BygD2gwRNqlhzASq7lG0ntD53_2lByeOvZDIMrY&e=https://urldefense.proofpoint.com/v2/url?u=http-3A__www.huntsafetyzone.com&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=c_X_kvYAoyf-22yeUq9lolCZGxZFwOeenHTWh6AwPO8&s=xIO8OXp-R72_wq4KQ16s2Pq1j-FXAIf1sSl7DaLCjI&e=)

https://urldefense.proofpoint.com/v2/url?u=http-3A__www.huntsafetyzone.com&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=c_X_kvYAoyf-22yeUq9lolCZGxZFwOeenHTWh6AwPO8&s=xIO8OXp-R72_wq4KQ16s2Pq1j-FXAIf1sSl7DaLCjI&e=

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https://urldefense.proofpoint.com/v2/url?u=http-3A__www.huntsafetyzone.com&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=c_X_kvYAoyf-22yeUq9lolCZGxZFwOeenHTWh6AwPO8&s=xIO8OXp-R72_wq4KQ16s2Pq1j-FXAIf1sSl7DaLCjI&e=

https://urldefense.proofpoint.com/v2/url?u=http-3A__www.huntsafetyzone.com&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=c_X_kvYAoyf-22yeUq9lolCZGxZFwOeenHTWh6AwPO8&s=xIO8OXp-R72_wq4KQ16s2Pq1j-FXAIf1sSl7DaLCjI&e=

ONE MISSION. ONE COMMUNITY

-----Original Message-----

From: CARDEN, TRACY A GS-12 USAF ACC 633 CES/CEIA [mailto:tracy.carden@us.af.mil]

Sent: Friday, June 22, 2018 12:48 PM

To: Kevin Cline <kevin.cline@huntcompanies.com>; Brenna Poffenbarger <Brenna.Poffenbarger@huntcompanies.com>;

Teresita Akers <teresita.akers@huntcompanies.com>

Cc: CHRISTIAN, DAWN S GS-12 USAF ACC 633 CES/CEIE <dawn.christian@us.af.mil>; PATTON, CARMICHAEL T GS-12 USAF ACC 633 CES/CEIE <carmichael.patton.1@us.af.mil>; BROWN, DEBORAH A GS-05 USAF ACC 633 CES/CEI <deborah.brown.15@us.af.mil>; JACKSON, YVONNE D GS-13 USAF ACC 633 CES/CEI <yvonne.jackson.1@us.af.mil>; ANTUNES, INOK L GS-12 USAF ACC 633 CES/CEIH <inok.antunes.2@us.af.mil>; CARDEN, TRACY A GS-12 USAF ACC 633 CES/CEIA <tracy.carden@us.af.mil>; ROSETTE, DELORES J GS-11 USAF ACC 633 CES/CEIH <delores.rosette@us.af.mil>
Subject: INFO// Pet Waste Educational Brochure

**** EXTERNAL EMAIL ****

Kevin, Brenna and Teresita,

Our Municipal Separate Storm Sewer System (MS4) stormwater permit minimum control measure 1 requires public outreach for top high priority water quality issues on Base and in Bethel housing. One of our top priorities for water quality is pet waste. To fulfill our compliance requirement, please send the attached brochure to all residents and send a copy of the email to Dawn.Christian@us.af.mil, so that we can show the required target audience was met.

Please call me if you have any questions. We appreciate your assistance.
Thanks!

v/r,

Tracy

TRACY A. CARDEN
Chief, Asset Accountability
JBLE-Langley AFB, VA 23665
DSN 574-1095 Comm 757-764-1095

P : Please consider the environment before printing this e-mail

This e-mail, including all information contained therein and any attachments, is intended solely for the person or entity to which it is addressed and may contain confidential and/or privileged material. If you are not an intended recipient, or an agent responsible for delivering it to an intended recipient, you have received this email in error. In such event, please immediately (i) notify the sender by reply email, (ii) do not review, copy, save, forward or print this email or any of its attachments, and (iii) delete and/or destroy this email and its attachments and all copies thereof. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, any e-mail sent in error, including all information contained therein and any attachments, by persons or entities other than the intended recipient is prohibited. Please visit our website at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.huntcompanies.com&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=c_X_kVYAoyf-22yeUq9lolCZGxZFwOeenHTWh6AwPO8&s=000qJCGaFP9VamOwsVuslhpDibnWNNtiXxUIF51OgK0&e= for important information about our privacy policies. For your protection, please do not transmit account information or instructions by e-mail or include account numbers, Social Security numbers, credit card numbers, passwords or other personal information.

Subject: FW: INFO//Household Chemical Collection and Computer Recycling Days - 16 Mar 19

-----Original Message-----

From: SPRIGGS, PAMELA A GS-06 USAF ACC 633 CES/CCS <pamela.spriggs@us.af.mil>

Sent: Monday, March 11, 2019 9:23 AM

To: 633 CES All Military <633CES.All.Military@us.af.mil>; 633 CES ALL Civilians <633cescivilians@us.af.mil>

Subject: FW: INFO//Household Chemical Collection and Computer Recycling Days - 16 Mar 19

York County and Hampton are hosting Household Chemical Collection and Computer Recycling events in March. This is the perfect opportunity for personnel living in base housing and anybody off base living in Williamsburg/James City County, York County, Hampton, or Poquoson to turn in any chemicals and computer related items without charge. This does not apply to personnel that live in Newport News or on Ft Eustis.

NOTE: The drop-off location in Hampton for this particular event is at the parking lot of the Coliseum on Coliseum Drive.

If you have any questions, you can call the Virginia Peninsula Public Service Authority at (757) 259-9850 or visit their website at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.vppsa.org_hhc.htm&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=LAVg4H0xgXwWXwcooTfTjtRKxiGk5HiJD3VGIqYYFvi&s=T9hL3_Dq3PMud-aa7GRR5oSn8b2jE0DvqyLmbxemkd8&e= . Full details are below.

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Household Chemical Collection and Computer Recycling Day

On Sat, 16 Mar 19, Hampton will have its Household Chemical Collection Day and Computer Recycling Day from 0800-1200. The drop-off location will be in the parking lot of the Coliseum on Coliseum Drive.

NOTE: If you live in base housing on JBLE-Langley or in Bethel Manor, you can use these locations to drop off your items at no cost. Whether you live in Poquoson, York County, Hampton, or Williamsburg/James City County, you can use either of these locations to drop off your items. This does not apply to personnel that live in Newport News or on Ft Eustis.

Ensure you take some type of identification such as a driver's license, military ID, or an ID with a photo and a utility bill with your address that shows where you live or you may be charged to drop off your items.

The following are some examples of chemicals that are accepted: oil paints, latex paints, stains, wood sealers, thinners, solvents, adhesive, glue, gasoline and other fuels, batteries, waxes, brake fluid, engine cleaner, oil and gasoline mixtures, insecticides, weed killers, pesticides, fertilizers, swimming pool chemicals, oven cleaners, toilet cleaners, bleach, degreasers, drain cleaners, floor waxes, metal polishes or jewelry cleaners, fluorescent light bulbs (including CFL's), rechargeable batteries, photo-finishing supplies, charcoal fluids, chemistry sets, and kerosene. Motor oil and antifreeze are NOT accepted at all events. Please go to their website for more information.

You CANNOT drop off TVs, alkaline batteries, medications, business or medical waste, compressed gas cylinders, shock sensitive materials, radioactive products, large quantities of unknown materials, ammunition, gun powder, asbestos containing materials, explosives, flares, propane cylinders, or household trash. This collection program is for HOUSEHOLDS ONLY and not business offices, shops or retail services on Langley.

The following are examples of electronics they will accept: cell phones, desktop and laptop computers, servers, LCD and CRT monitors, computer wiring, desktop printers including multi-function printers or "all in ones", fax machines, desktop

photocopiers and scanners. Note that VPPSA no longer take several items that they once took. For all other items to include old household type phones, check to see if Best Buy will accept them.

No TVs are accepted at these drop off sites. If you visit VPPSA's website at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.vppsa.org&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=LAVg4H0xgXwWXwcooTfTjtRKxiGk5HiJD3VG1qYYFvl&s=diXl7mo_GjuFa9oaI10fg892lgTpPfDUBTAAq21ufVE&e= , click on the "Helpful Links" tab on the left side of the screen. You will see a link to Best Buy recycling program. They take many electronic items. Visit the site or contact the local Best Buy for specific questions.

To get more information on the Household Chemical Collection and Computer Recycling events, visit VPPSA's website at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.vppsa.org&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=LAVg4H0xgXwWXwcooTfTjtRKxiGk5HiJD3VG1qYYFvl&s=diXl7mo_GjuFa9oaI10fg892lgTpPfDUBTAAq21ufVE&e= , click on "Services" and click on "Household Chemical Collection" or "Computer Recycling".

If you have any questions, you can call the Virginia Peninsula Public Service Authority at (757) 259-9850 or visit their website at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.vppsa.org&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=LAVg4H0xgXwWXwcooTfTjtRKxiGk5HiJD3VG1qYYFvl&s=diXl7mo_GjuFa9oaI10fg892lgTpPfDUBTAAq21ufVE&e= .

Sherry M. Johnson
Pollution Prevention Program Manager
Qualified Recycling Program Manager
633 Civil Engineer Squadron
Joint Base Langley-Eustis
Comm: 757-764-1130
DSN: 574-1130

Subject: FW: INFO//Household Chemical Collection and Computer Recycling Days - 11 and 18 May 19

-----Original Message-----

From: SPRIGGS, PAMELA A GS-06 USAF ACC 633 CES/CCS <pamela.spriggs@us.af.mil>

Sent: Monday, May 6, 2019 8:47 AM

To: 633 CES ALL Civilians <633cescivilians@us.af.mil>; 633 CES All Military <633CES.All.Military@us.af.mil>

Subject: INFO//Household Chemical Collection and Computer Recycling Days - 11 and 18 May 19

York County and Hampton are hosting Household Chemical Collection and Computer Recycling events in May. This is the perfect opportunity for personnel living in base housing and anybody off base living in Williamsburg/James City County, York County, Hampton, or Poquoson to turn in any chemicals and computer related items without charge. This does not apply to personnel that live in Newport News or on Ft Eustis.

NOTE: The drop-off location in Hampton for this particular event is at the parking lot of the Coliseum on Coliseum Drive.

If you have any questions, you can call the Virginia Peninsula Public Service Authority at (757) 259-9850 or visit their website at https://urldefense.proofpoint.com/v2/url?u=https-3A__usg01.safelinks.protection.office365.us_-3Furl-3Dwww.vppsa.org-252Fhhc.htm-26amp-3Bdata-3D02-257C01-257Cdawn.christian-2540us.af.mil-257C1aa9594833cf486db50a08d6d220fb97-257C8331b18d2d8748efa35fac8818ebf9b4-257C1-257C0-257C636927436476543257-26amp-3Bsdata-3D2uG4CPaJy6pbgC1ghyB-252F1k9UiAECzfgF40gVHarmr3c-253D-26amp-3Breserved-3D0&d=DwIFAg&c=TQzoP61-bYDBLzNdOXmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=Yk-cwkwTGZb7vklLbgd0Je6McxefSa-yK6f7qioNNZs&s=5svzIYn327Eo-Nknld_D4NJumgPvl3nYpsonU91HvCA&e= . Full details are below.

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Household Chemical Collection and Computer Recycling Day

On Sat, 11 May 19, York County will have its Household Chemical Collection Day and Computer Recycling Day from 0800-1200. The drop-off location is on County Drive in Yorktown off of Goodwin Neck Road. If going north on Hwy 17, turn right onto Goodwin Neck Rd and go about 3/4 mile and it will be on your left. Direction signs are normally posted along the road on turn-in day.

On Sat, 18 May 19, Hampton will have its Household Chemical Collection Day and Computer Recycling Day from 0800-1200. The drop-off location will be in the parking lot of the Coliseum on Coliseum Drive.

NOTE: If you live in base housing on JBLE-Langley or in Bethel Manor, you can use these locations to drop off your items at no cost. Whether you live in Poquoson, York County, Hampton, or Williamsburg/James City County, you can use either of these locations to drop off your items. This does not apply to personnel that live in Newport News or on Ft Eustis.

Ensure you take some type of identification such as a driver's license, military ID, or an ID with a photo and a utility bill with your address that shows where you live or you may be charged to drop off your items.

The following are some examples of chemicals that are accepted: oil paints, latex paints, stains, wood sealers, thinners, solvents, adhesive, glue, gasoline and other fuels, batteries, waxes, brake fluid, engine cleaner, oil and gasoline mixtures,

insecticides, weed killers, pesticides, fertilizers, swimming pool chemicals, oven cleaners, toilet cleaners, bleach, degreasers, drain cleaners, floor waxes, metal polishes or jewelry cleaners, fluorescent light bulbs (including CFL's), rechargeable batteries, photo-finishing supplies, charcoal fluids, chemistry sets, and kerosene. Motor oil and antifreeze are NOT accepted at all events. Please go to their website for more information.

You CANNOT drop off TVs, alkaline batteries, medications, business or medical waste, compressed gas cylinders, shock sensitive materials, radioactive products, large quantities of unknown materials, ammunition, gun powder, asbestos containing materials, explosives, flares, propane cylinders, or household trash. This collection program is for HOUSEHOLDS ONLY and not business offices, shops or retail services on Langley.

The following are examples of electronics they will accept: cell phones, desktop and laptop computers, servers, LCD and CRT monitors, computer wiring, desktop printers including multi-function printers or "all in ones", fax machines, desktop photocopiers and scanners. Note that VPPSA no longer take several items that they once took. For all other items to include old household type phones, check to see if Best Buy will accept them.

No TVs are accepted at these drop off sites. If you visit VPPSA's website at https://urldefense.proofpoint.com/v2/url?u=https-3A__usg01.safelinks.protection.office365.us_-3Furl-3Dwww.vppsa.org-26amp-3Bdata-3D02-257C01-257Cdawn.christian-2540us.af.mil-257C1aa9594833cf486db50a08d6d220fb97-257C8331b18d2d8748efa35fac8818ebf9b4-257C1-257C0-257C636927436476553270-26amp-3Bsdata-3Do6cizBuYvWies8C2bgjeM59z641OYythEmhnqYVBpYs-253D-26amp-3Breserved-3D0&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=Yk-cwkwTGZb7vklLbgd0Je6McxefSa-yK6f7qioNNZs&s=XfDLDEbkt969J24mvR2XeG_eNoHn51rTtX9U9fR2MPQ&e= , click on the "Helpful Links" tab on the left side of the screen. You will see a link to Best Buy recycling program. They take many electronic items. Visit the site or contact the local Best Buy for specific questions.

To get more information on the Household Chemical Collection and Computer Recycling events, visit VPPSA's website at https://urldefense.proofpoint.com/v2/url?u=https-3A__usg01.safelinks.protection.office365.us_-3Furl-3Dwww.vppsa.org-26amp-3Bdata-3D02-257C01-257Cdawn.christian-2540us.af.mil-257C1aa9594833cf486db50a08d6d220fb97-257C8331b18d2d8748efa35fac8818ebf9b4-257C1-257C0-257C636927436476553270-26amp-3Bsdata-3Do6cizBuYvWies8C2bgjeM59z641OYythEmhnqYVBpYs-253D-26amp-3Breserved-3D0&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=Yk-cwkwTGZb7vklLbgd0Je6McxefSa-yK6f7qioNNZs&s=XfDLDEbkt969J24mvR2XeG_eNoHn51rTtX9U9fR2MPQ&e= , click on "Services" and click on "Household Chemical Collection" or "Computer Recycling".

If you have any questions, you can call the Virginia Peninsula Public Service Authority at (757) 259-9850 or visit their website at https://urldefense.proofpoint.com/v2/url?u=https-3A__usg01.safelinks.protection.office365.us_-3Furl-3Dwww.vppsa.org-26amp-3Bdata-3D02-257C01-257Cdawn.christian-2540us.af.mil-257C1aa9594833cf486db50a08d6d220fb97-257C8331b18d2d8748efa35fac8818ebf9b4-257C1-257C0-257C636927436476553270-26amp-3Bsdata-3Do6cizBuYvWies8C2bgjeM59z641OYythEmhnqYVBpYs-253D-26amp-3Breserved-3D0&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=Yk-cwkwTGZb7vklLbgd0Je6McxefSa-yK6f7qioNNZs&s=XfDLDEbkt969J24mvR2XeG_eNoHn51rTtX9U9fR2MPQ&e= .

Subject: FW: INFO//Household Chemical Collection and Computer Recycling Days - 8 and 15 Sep 18

-----Original Message-----

From: COOK, BRENDA W GS-14 USAF ACC 633 CES/CD <brenda.cook@us.af.mil>

Sent: Tuesday, September 4, 2018 10:44 AM

To: 633 CES ALL Civilians <633cescivilians@us.af.mil>; 633 CES All Military <633CES.All.Military@us.af.mil>

Subject: INFO//Household Chemical Collection and Computer Recycling Days - 8 and 15 Sep 18

Engineers,

York County and Hampton are hosting Household Chemical Collection and Computer Recycling events in September. This is the perfect opportunity for personnel living in base housing and anybody off base living in Williamsburg/James City County, York County, Hampton, or Poquoson to turn in any chemicals and computer related items without charge. This does not apply to personnel that live in Newport News or on Ft Eustis.

NOTE: The drop-off location in Hampton for this particular event is at the parking lot of the Coliseum on Coliseum Drive.

If you have any questions, you can call the Virginia Peninsula Public Service Authority at (757) 259-9850 or visit their website at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.vppsa.org_hhc.htm&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=RrCEpscxxVlpGRd7WaVD-RtG9L52_0SwZXjmLZLXFPg&s=R_tr7YNFFc08GSJLels6D52U4-FVwoW7HCjxFIC2sSA&e . Full details are below.

v/r,
Brenda

BRENDA W. COOK
Deputy Base Civil Engineer

=====

Household Chemical Collection and Computer Recycling Day

On Sat, 8 Sep 18, York County will have its Household Chemical Collection Day and Computer Recycling Day from 0800-1200. The drop-off location is on County Drive in Yorktown off of Goodwin Neck Road. If going north on Hwy 17, turn right onto Goodwin Neck Rd and go about 3/4 mile and it will be on your left. Direction signs are normally posted along the road on turn-in day.

On Sat, 15 Sep 18, Hampton will have its Household Chemical Collection Day and Computer Recycling Day from 0800-1200. The drop-off location will be in the parking lot of the Coliseum on Coliseum Drive.

NOTE: If you live in base housing on JBLE-Langley or in Bethel Manor, you can use these locations to drop off your items at no cost. Whether you live in Poquoson, York County, Hampton, or Williamsburg/James City County, you can use either of these locations to drop off your items. This does not apply to personnel that live in Newport News or on Ft Eustis.

Ensure you take some type of identification such as a driver's license, military ID, or an ID with a photo and a utility bill with your address that shows where you live or you may be charged to drop off your items.

The following are some examples of chemicals that are accepted: oil paints, latex paints, stains, wood sealers, thinners, solvents, adhesive, glue, gasoline and other fuels, batteries, waxes, brake fluid, engine cleaner, oil and gasoline mixtures, insecticides, weed killers, pesticides, fertilizers, swimming pool chemicals, oven cleaners, toilet cleaners, bleach, degreasers, drain cleaners, floor waxes, metal polishes or jewelry cleaners, fluorescent light bulbs (including CFL's), rechargeable batteries, photo-finishing supplies, charcoal fluids, chemistry sets, and kerosene. Motor oil and antifreeze are NOT accepted at all events. Please go to their website for more information.

You CANNOT drop off TVs, alkaline batteries, medications, business or medical waste, compressed gas cylinders, shock sensitive materials, radioactive products, large quantities of unknown materials, ammunition, gun powder, asbestos containing materials, explosives, flares, propane cylinders, or household trash. This collection program is for HOUSEHOLDS ONLY and not business offices, shops or retail services on Langley.

The following are examples of electronics they will accept: cell phones, desktop and laptop computers, servers, LCD and CRT monitors, computer wiring, desktop printers including multi-function printers or "all in ones", fax machines, desktop photocopiers and scanners. Note that VPPSA no longer take several items that they once took. For all other items to include old household type phones, check to see if Best Buy will accept them.

No TVs are accepted at these drop off sites. If you visit VPPSA's website at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.vppsa.org&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=RrCEpscxxVIpGRd7WaVD-RtG9L52_0SwZXjmLZLXFPg&s=m2jHc82JtmrBgo7IpiGav2Kx3ooW2QSZycjWrZZwQtk&e= , click on the "Helpful Links" tab on the left side of the screen. You will see a link to Best Buy recycling program. They take many electronic items. Visit the site or contact the local Best Buy for specific questions.

To get more information on the Household Chemical Collection and Computer Recycling events, visit VPPSA's website at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.vppsa.org&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=RrCEpscxxVIpGRd7WaVD-RtG9L52_0SwZXjmLZLXFPg&s=m2jHc82JtmrBgo7IpiGav2Kx3ooW2QSZycjWrZZwQtk&e= , click on "Services" and click on "Household Chemical Collection" or "Computer Recycling".

If you have any questions, you can call the Virginia Peninsula Public Service Authority at (757) 259-9850 or visit their website at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.vppsa.org&d=DwIFAg&c=TQzoP61-bYDBLzNd0XmHrw&r=S4z1ysAOI_pCOOVM3tKrDysu0sZ6ZXFmSUIWf6fteSs&m=RrCEpscxxVIpGRd7WaVD-RtG9L52_0SwZXjmLZLXFPg&s=m2jHc82JtmrBgo7IpiGav2Kx3ooW2QSZycjWrZZwQtk&e= .

Students receive pearls of wisdom planting oysters

By Senior Airman Anthony Nin Leclerc, 633rd Air Base Wing Public Affairs /
Published June 5, 2019



New oysters are added to the reef at Joint Base Langley-Eustis, Virginia, June 3, 2019. A single adult oyster can filter up to 50 gallons of water per day. (U.S. Air Force photo by Senior Airman Anthony Nin Leclerc)



Karen Brace, Booker Elementary School science teacher, pulls a cage of oysters out of the water at Joint Base Langley-Eustis, Virginia, June 3, 2019. The cage is picked up and taken to the school every month to monitor the oysters' growth. (U.S. Air Force photo by Senior Airman Anthony Nin Leclerc)



Karen Brace, Booker Elementary School science teacher, separates oysters into groups at Joint Base Langley-Eustis, Virginia, June 3, 2019. The students involved get to learn the role of the oysters in the ecosystem as well as the impact and importance of water quality. (U.S. Air Force photo by Senior Airman Anthony Nin Leclerc)



Booker Elementary School students separate oysters into groups at Joint Base Langley-Eustis, Virginia, June 3, 2019. To help clean the Chesapeake Bay, the school partnered with JBLE to build an oyster reef on base in June 2017, and have been adding new oysters every year. (U.S. Air Force photo by Senior Airman Anthony Nin Leclerc)



Booker Elementary School students measure oysters and calculate how much they've grown at Joint Base Langley-Eustis, Virginia, June 3, 2019. The baby oysters, also known as spats, brought to JBLE in October 2018 have grown from an average of seven millimeters to an average of 35 millimeters. (U.S. Air Force photo by Senior Airman Anthony Nin Leclerc)



Booker Elementary School teachers add new oysters to the reef at Joint Base Langley-Eustis, Virginia, June 3, 2019. By keeping the water clean, oysters promote the growth of underwater grasses which serve as habitats for other species. (U.S. Air Force photo by Senior Airman Anthony Nin Leclerc)

Students from Booker Elementary School arrived at Joint Base Langley-Eustis, Virginia to plant oysters June 3, 2019.

In a continuing initiative to help clean the Chesapeake Bay, the school partnered with JBLE to build an oyster reef on base in June 2017, and have been adding new oysters every year.

“We are planting them for oyster restoration,” said Karen Brace, Booker Elementary School science teacher. “The point is to hopefully increase the oyster population in the Chesapeake Bay and restore it to where it once was.”

One adult oyster can filter up to 50 gallons of water per day. In their former glory, the oysters in the bay could filter the entire bay, about 19 trillion gallons of water, in one week. Now, it would take the remaining oysters more than a year.

The Chesapeake Bay Foundation guided the school through much of the reef-building process and provides baby oysters, also known as spats, for them.

The students involved learn the role of the oysters in the ecosystem as well as the impact and importance of water quality.

“JBLE provides us a place to grow the oysters and bring the students to gain this experience,” Brace said. “It’s also very close to our school so the kids can connect [the experience] to where we live.”

Through this endeavor, the student monitor the oysters’ growth. Brace picks the cage up every month and brings it back to the school where the students measure the oysters and document the progression on charts.

“Our partnership with Booker Elementary School supports students in developing scientific reasoning and empowering them to use their skills and abilities to improve the environment around them,” said Dawn Christian, 633rd Civil Engineer Squadron water program manager. “We see the environment impacted all the time by human activity. Understanding their interactions with the environment will shape the way students think about their environment, ultimately, making it better.”

Stories should only end with quotes if they’re super impactful. Something that packs a bunch or something you’ve never heard before that leaves you with a lasting information. This quote is good, but it’s just informational so not strong enough to close the story out.

Individuals who wish to participate in future oyster growing at JBLE can sign up for a training opportunity scheduled for June 27 at Ft. Monroe. Details are provided here: <http://chesapeake.cbf.org/site/Calendar?id=102034&view=Detail>

Waterway management keeps pollutants at a minimum

By Airman 1st Class Alexandra Singer, 633rd Air Base Wing Public Affairs / Published Oct. 4, 2018



Jamaal Gatlin, 633rd Civil Engineer Squadron Heavy Equipment Operator throws a boom over the water Aug. 14, 2017, on Joint Base Langley-Eustis, Va. Langley uses booms to contain any storm water pollutant that could be a potential threat to the bay. (U.S. Air Force photo by Airman 1st Class Alexandra Singer)



Joint Base Langley Eustis-Langley collects samples of the stormwater leaving the base and performs water quality testing to ensure the water is in safe parameters twice a year. The 633rd Civil Engineer Squadron personnel perform visual checks for signs of pollution quarterly. (U.S. Air Force photo by Airman 1st Class Alexandra Singer)



Jamaal Gatlin, 633rd Civil Engineer Squadron heavy equipment operator, ties down a boom that had been washed off its hook, Aug. 14, 2017. The booms are maintained often, usually every week, and are completely replaced every three months. (U.S. Air Force photo by Airman 1st Class Alexandra Singer)

The waterways and wetlands surrounding Langley Air Force Base, such as the Back River, a tributary of the Chesapeake Bay, are among the environmental priorities for the base.

“We do an excellent job of protecting the surrounding bay,” said Dawn Christian, 633rd Civil Engineer Squadron Water Program manager. “Best management practice is to keep any contaminants from stormwater out of the Back River.”

For example, Langley AFB uses stormwater biofiltration systems, which look like a stormwater inlet with a tree growing out of them. These biofiltration systems trap and decompose pollutants typically found in stormwater that has flowed over roads.

“State-of-the-art pretreatment solutions like these are in place around the base and help to protect water quality in the Back River,” Christian said. “The local community uses the natural resources provided by the water for boating, hunting and fishing, and we are committed to protecting those resources.”

JBLE-Langley collect samples of the stormwater leaving the base and performs water quality testing to ensure the water is in safe parameters twice a year, and personnel perform visual checks for signs of pollution quarterly, Christian said.

According to Alicia Garcia, 633rd CES Natural Resources program manager, base members can help stop pollutants from entering the water system that cause harm to wildlife a few different ways:

- Avoid using single use plastics, especially water bottles. The base has an active recycling program, so members should always dispose of their recyclables properly.
- Don't use herbicide to kill off plants growing in vegetated storm water ditches. Although a common practice, doing so leaves the ground bare, allowing dirt and other sediment to wash into the waterways and can drown aquatic life.
- Use disposal areas when using recreational facilities. For example, Big Bethel Reservoir has trash cans and recycling stations for fishing line, should a member want to go fishing.

Leaving recreational areas clear of pollutants can save wildlife from potentially dangerous situations.

“(Fishing line) gets caught up in brush and trees from a cast and people leave it in place.” Garcia said. “Eventually it comes loose where it can entangle animals or wind up in the water, either of which is often fatal for wildlife.”

Langley AFB also has stringent practices in place to prevent oil or fuel spills from occurring. According to Christian, leaks from privately-owned vehicles are harder to control. Another step members can take at any time of the year is to ensure their vehicle is in proper running order and not leaking any fluids which will run off of roads and enter into stormwater systems.

To prevent oil from any source from entering into the water, absorbent booms are in place around the installation. These booms collect any petroleum product that could potentially threaten the Back River, which in turn threatens larger bodies of water such as the Chesapeake Bay.

While the booms are efficient in keeping oil out of the water, wind and rain also carry trash onto Langley AFB and into storm drains. Fortunately, some storm drains on Langley AFB are equipped with water pollution prevention systems called “Safe Drains” which capture oils, trash and sediment, and prevent it from entering into the environment.

According to Garcia, anything on the land has the potential to reach the water. If members see loose trash and can pick it up, they should, even if it isn't theirs. If a big storm is coming, members should search their yard, porch and vehicles for anything that has the potential to get picked up by wind and make its way into the water.

“The culture and history of the Hampton Roads area is deeply tied to the water,” Garcia said. “We all have to be stewards of our environment even through simple acts like this if we want future generations to have an opportunity to live in a clean and healthful environment.”

https://www.militarynews.com/peninsula-warrior/news/air_force_news/world-water-day/article_dbada836-4b34-11e9-9d14-538ae08ca07e.html

World Water Day

By Dawn Christian JBLE-Langley Water Program Manager 633d CES/CEI Mar 22, 2019



This is a sewer overflow caused by flushed wipes. Raw sewage is flowing into the storm drain. If you see this, report it to the Fire Department at 764-4222.

Courtesy photo

JOINT BASE LANGLEY-EUSTIS, Va., March 19, 2019 —

World Water Day was declared in 1992 by the United Nations General Assembly to provide education on water conservation and other pressing water issues around the world.

Every year on March 22, attention is brought to the importance of water. This year's World Water Day's focus is wastewater, or what's flushed down the toilet.

Did you know, what you flush down the toilet can affect stormwater flowing into the rivers and could end up in your drinking water. It's true!

Flushing wipes, drugs, oils, grease, feminine products, food scraps, cotton swabs, facial tissues, family planning products, or even cat litter down the toilet is harmful to the environment.



Flushing items other than toilet paper, water and human waste causes serious problems for sewer pipes. When clogs or breaks happen, they can send untreated sewage back into your home, into the street and storm drain, which end up floating around in our waterways. Larger items such as wipes and feminine products have jammed pumps and clogged pipes, resulting in costly maintenance and repairs.

When sewage overflows into the streets and into the storm drains, it causes a sudden rise in harmful nitrogen and bacteria in the waterways. The high levels cause a decline in marine life, beach closures and health warnings on consuming local seafood.

Do your part in protecting our precious resources by only flushing toilet paper, water and human waste down the toilet.

For more information contact Dawn Christian, JBLE-Langley Water Program Manager at 757-764-1141 or email Dawn.Christian@us.af.mil

Attachment 4: NASA Interconnectivity Notification

From: Van Dyke, Peter R. (LARC-D406) <peter.vandyke@nasa.gov>
Sent: Friday, February 15, 2019 10:10 AM
To: CHRISTIAN, DAWN S GS-12 USAF ACC 633 CES/CEIE <dawn.christian@us.af.mil>
Cc: Salcedo-Bauza, Alexandra (LARC-D406)[Herndon Solutions Group] <alexandra.salcedo-bauza@nasa.gov>
Subject: [Non-DoD Source] JBLE MS4 Interconnection Notice

Hello Dawn,

I hope all is well. NASA's MS4 permit requires that we provide notification to any downstream MS4 of known physical interconnection. This email serves as a notification that NASA Langley has known interconnections to JBLE's MS4. The primary connection points are the ditch by the Durand gate and the ditch running parallel to our taxiway onto JBLE. I know this is not new news to you, but this is a procedural requirement for us. If you have any questions please let me know.

Also, Ande Remington has moved on to another position. I want to introduce you to Alexandra Salcedo-Bauza (CC'd) who is now supporting the water program.

Thanks,
Peter Van Dyke
National Aeronautics and Space Administration, Langley Research Center
Standard Practice and Environmental Engineering Branch
B1195, Room 2030
office: (757) 864-7517
cell: (757) 751-4308
email: peter.vandyke@nasa.gov

Customer satisfaction survey: <https://codnet.ndc.nasa.gov/TinyUrl.cfm?ID=8>
Directorate Website: <http://cod.larc.nasa.gov/>

Attachment 5: Illicit Discharge Investigation Details



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 633D AIR BASE WING
JOINT BASE LANGLEY-EUSTIS VA

Ms. Brenda W. Cook
Deputy Base Civil Engineer
37 Sweeney Boulevard
JBLE-Langley VA 23665-2107

MAR 05 2019

Mr. Kevin Cline
Community Director
Langley Family Housing
11 Burrell Street
JBLE-Langley VA 23665

Dear Mr. Cline

This letter is to notify you of an illicit discharge discovered at Langley Family Housing (LFH). On 2 Mar 19, at approximately 1245, the Bethel Fire Department noticed the sewer manhole on Saber Drive was overflowing and notified LFH maintenance staff. Mr. Gerard Kelly, Maintenance Manager promptly notified CE Environmental of the situation and advised that a plumber was in route.

It was determined that the sewer line was clogged with wet wipes and took the plumber 4.5 hours to clear. It was estimated that over 11,000 gallons of raw sewage (without solids) discharged into the nearby storm drain. The storm drain flows to Outfall 203, pours into the stream behind the Fire Station and empties into Brick Kiln Creek.

Outfall 203 is a permitted outfall from JBLE-Langley's Municipal Separate Storm Sewer System (MS4) Stormwater Permit issued by the Virginia Department of Environmental Quality (VDEQ). Any illicit discharges into the permitted outfalls are required to be reported to VDEQ and corrective actions taken to prevent discharges of this nature from occurring.

As a Mission Partner, it is your responsibility to advise residents within Langley Family Housing on proper disposal of waste. We appreciate the prompt notification to CE Environmental. We recommend sending educational information to the residents on sanitary sewer overflows, the causes and impacts to the public and environment. To assist you, we will develop and deliver focused educational information to you for distribution to the residents and staff to ensure a clear understanding of requirements for full compliance with State and Federal law and JBLE-specific permits.

JBLE is committed to excellent environmental stewardship and full compliance with all regulatory permits and we appreciate your partnership to ensure we maintain this standard. If you have any questions, please contact Ms. Dawn Christian at the Installation Management Flight at (757) 764-1141.

Sincerely

A handwritten signature in black ink, appearing to read "Brenda W. Cook". The signature is written in a cursive style with a large initial "B" and a stylized "C".

BRENDA W. COOK, DAFC
Deputy Base Civil Engineer



- Only toilet paper, water and waste created by the human body can be safely flushed down the toilet.
- Product labeling is often misleading. Items marketed as “flushable” are regularly found in clogged pipes and broken pumps throughout the sanitary sewer system.
- **NEVER flush** facial tissues, paper towels, baby wipes, cleaning wipes, hygiene products, cat litter, fats, oils, greases, food scraps, cotton swabs, disposable diaper liners and family planning products.
- When a clog or break down occurs, untreated sewage can back up into your home, your neighborhood or our waterways.
- When sewage backs up into streets it can enter the storm drains and waterways. Untreated sewage is a dangerous pollutant because it causes sudden increases in nitrogen and bacteria.
- High levels of nitrogen and bacteria result in declines to local aquatic life, beach closures and health warnings on local seafood consumption.

Attachment 6: Stormwater Management Facility Inventory Tracking Spreadsheet

Stormwater Management Facility Inventory, JBLE-Langley

Year_Installed	Practice_Name	Practice_Description	Total_Acres	IMP_Acres	Runoff_Treated	Measurement_Unit	Report_Applied_Amount	Latitude	Longitude	HUC12	Facility_Name	Inspect_Date	Maint_Date	Contact_Name	Agency_Name	Year_Funded	SCM_Cost
2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 1	7.92	2.08	0.166	Systems	1	37.098044	-76.355630	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87
2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 2	0.38	0.36	0.029	Systems	1	37.095267	-76.358796	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87
2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 3	0.26	0.25	0.020	Systems	1	37.095243	-76.358593	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87
2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 4	0.26	0.24	0.019	Systems	1	37.095218	-76.358388	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87
2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 5	0.26	0.23	0.018	Systems	1	37.095197	-76.358187	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87
2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 6	0.23	0.21	0.017	Systems	1	37.095174	-76.357982	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87
2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 7	0.23	0.20	0.016	Systems	1	37.095154	-76.357777	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87
2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 8	0.19	0.11	0.009	Systems	1	37.095134	-76.357578	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87

Stormwater Management Facility Inventory, JBLE-Langley

Year_Installed	Practice_Name	Practice_Description	Total_Acres	IMP_Acres	Runoff_Treated	Measurement_Unit	Report_Applied_Amount	Latitude	Longitude	HUC12	Facility_Name	Inspect_Date	Maint_Date	Contact_Name	Agency_Name	Year_Funded	SCM_Cost
2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 9	3.48	0.64	0.051	Systems	1	37.095992	-76.359729	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 10	0.45	0.27	0.022	Systems	1	37.094149	-76.361885	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 11	0.41	0.22	0.018	Systems	1	37.094116	-76.361686	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 12	0.17	0.14	0.011	Systems	1	37.093990	-76.361925	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 13	0.15	0.14	0.011	Systems	1	37.093955	-76.361728	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 14	0.23	0.16	0.013	Systems	1	37.093831	-76.361970	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 15	0.16	0.10	0.008	Systems	1	37.093797	-76.361769	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 16	0.21	0.18	0.015	Systems	1	37.096668	-76.361608	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87

Stormwater Management Facility Inventory, JBLE-Langley

Year_Installed	Practice_Name	Practice_Description	Total_Acres	IMP_Acres	Runoff_Treated	Measurement_Unit	Report_Applied_Amount	Latitude	Longitude	HUC12	Facility_Name	Inspect_Date	Maint_Date	Contact_Name	Agency_Name	Year_Funded	SCM_Cost
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 17	0.19	0.17	0.014	Systems	1	37.096578	-76.361971	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 18	0.30	0.27	0.022	Systems	1	37.096465	-76.362363	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 19	0.24	0.23	0.018	Systems	1	37.096342	-76.362799	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 20	0.99	0.72	0.058	Systems	1	37.096375	-76.361974	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 21	0.45	0.36	0.029	Systems	1	37.096008	-76.362506	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 22	0.60	0.49	0.039	Systems	1	37.096216	-76.361782	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$337.87
2008	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal. SCM ID: 23	2.51	1.39	0.111	Systems	1	37.095545	-76.362447	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$364.45
2008	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal. SCM ID: 24	4.38	1.78	0.142	Systems	1	37.094784	-76.362808	020801080102	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2008	\$364.45
2008	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 25	1.57	0.70	0.056	Systems	1	37.100139	-76.378244	020801080102	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2008	\$502.48

Stormwater Management Facility Inventory, JBLE-Langley

Year_Installed	Practice_Name	Practice_Description	Total_Acres	IMP_Acres	Runoff_Treated	Measurement_Unit	Report_Applied_Amount	Latitude	Longitude	HUC12	Facility_Name	Inspect_Date	Maint_Date	Contact_Name	Agency_Name	Year_Funded	SCM_Cost
1977	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal. SCM ID: 26	9.27	0.13	0.010	Systems	1	37.094030	-76.367133	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	1977	\$45.55
1977	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal. SCM ID: 27	17.65	0.90	0.072	Systems	1	37.093374	-76.368813	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	1977	\$318.89
1977	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal. SCM ID: 28	14.31	0.87	0.070	Systems	1	37.090823	-76.369517	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	1977	\$318.89
1977	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal. SCM ID: 29	13.11	1.40	0.112	Systems	1	37.088444	-76.368606	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	1977	\$510.23
1977	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal. SCM ID: 30	8.26	0.10	0.008	Systems	1	37.086498	-76.365593	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	1977	\$45.55
1977	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal. SCM ID: 31	7.24	0.05	0.004	Systems	1	37.086428	-76.363477	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	1977	\$18.22
2016	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 32	2.42	0.20	0.016	Systems	1	37.075067	-76.381627	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2016	\$502.48
2016	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 33	5.95	0.62	0.049	Systems	1	37.074495	-76.380903	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2016	\$848.00
2016	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 34	1.24	0.44	0.035	Systems	1	37.075376	-76.381025	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2016	\$502.48
2016	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 35	0.64	0.19	0.016	Systems	1	37.074460	-76.378894	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2016	\$502.48
2016	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 36	5.16	0.22	0.017	Systems	1	37.075170	-76.380560	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2016	\$502.48

Stormwater Management Facility Inventory, JBLE-Langley

Year_Installed	Practice_Name	Practice_Description	Total_Acres	IMP_Acres	Runoff_Treated	Measurement_Unit	Report_Applied_Amount	Latitude	Longitude	HUC12	Facility_Name	Inspect_Date	Maint_Date	Contact_Name	Agency_Name	Year_Funded	SCM_Cost
2016	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 37	3.54	0.73	0.059	Systems	1	37.077942	-76.382171	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2016	\$502.48
2000	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 38	3.14	1.05	0.084	Systems	1	37.082615	-76.374694	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2000	\$565.29
2012	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 39	2.71	2.16	0.173	Systems	1	37.074474	-76.366869	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2012	\$848.00
2005	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 40	1.12	0.68	0.054	Systems	1	37.068056	-76.360048	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2005	\$337.87
2005	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 41	0.37	0.11	0.009	Systems	1	37.067781	-76.359545	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2005	\$502.48
2005	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 42	0.19	0.06	0.005	Systems	1	37.067830	-76.360984	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2005	\$848.00
2005	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 43	1.13	0.44	0.035	Systems	1	37.067149	-76.359943	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2005	\$502.48
2011	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 44	31.51	22.40	1.792	Systems	1	37.071135	-76.358055	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2011	\$502.18
2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 45	2.16	1.45	0.116	Systems	1	37.070600	-76.360535	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87
2013	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 46	3.70	1.54	0.123	Systems	1	37.066793	-76.366190	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2013	\$337.87
2013	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 47	3.30	1.40	0.112	Systems	1	37.067739	-76.365255	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2013	\$464.57
2013	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 48	3.48	1.14	0.091	Systems	1	37.068257	-76.364621	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2013	\$848.00

Stormwater Management Facility Inventory, JBLE-Langley

Year_Installed	Practice_Name	Practice_Description	Total_Acres	IMP_Acres	Runoff_Treated	Measurement_Unit	Report_Applied_Amount	Latitude	Longitude	HUC12	Facility_Name	Inspect_Date	Maint_Date	Contact_Name	Agency_Name	Year_Funded	SCM_Cost
2000	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 49	1.26	0.72	0.058	Systems	1	37.072550	-76.363403	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2000	\$337.87
2000	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 50	1.35	0.68	0.054	Systems	1	37.072432	-76.364202	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2000	\$337.87
2015	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 51	1.56	0.07	0.006	Systems	1	37.074457	-76.375603	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2015	\$62.81
2009	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal. SCM ID: 52	0.95	0.09	0.008	Systems	1	37.099548	-76.355627	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2009	\$45.55
2010	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 53	0.67	0.27	0.022	Systems	1	37.097720	-76.356485	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2010	\$848.00
2010	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 54	1.36	0.88	0.070	Systems	1	37.075222	-76.358549	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2010	\$502.48
2013	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 55	1.92	1.43	0.114	Systems	1	37.075794	-76.357982	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2013	\$690.91
2013	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 56	0.51	0.23	0.018	Systems	1	37.065987	-76.366677	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2013	\$212.00
2006	WetlandRestore	A water impoundment structure that intercepts stormwater runoff then releases it to an open water system at a specified flow rate. These structures retain a permanent pool and usually have retention times sufficient to allow settlement of some portion of the intercepted sediments and attached nutrients/toxics. Until recently, these practices were designed specifically to meet water quantity, not water quality objectives. There is little or no vegetation living within the pooled area nor are outfalls directed through vegetated areas prior to open water release. Nitrogen reduction is minimal. SCM ID: 57	1.76	1.16	0.093	Systems	1	37.094402	-76.424570	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2006	\$410.00
2010	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 58	8.64	4.35	0.348	Systems	1	37.097141	-76.422678	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2010	\$3,710.00
2010	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 59	7.51	2.67	0.213	Systems	1	37.099519	-76.423363	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2010	\$2,226.00
2009	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 60	2.00	0.07	0.006	Systems	1	37.073553	-76.384703	020801080103	JBLE-Langley	2/5/2019	-	Dawn Christian	Dept of Defense	2007	\$800.00
2010	FilteringDevice	Filtering devices are pre-manufactured devices that provide treatment through detention and infiltration of stormwater through engineered media. SCM ID: 61	0.25	0.11	0.008	Systems	1	37.065989	-76.366401	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2013	\$500.00
2010	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 62	0.17	0.02	0.002	Systems	1	37.065807	-76.366288	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2013	\$500.00

Stormwater Management Facility Inventory, JBLE-Langley

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2010	FilteringDevice	Filtering devices are pre-manufactured devices that provide treatment through detention and infiltration of stormwater through engineered media. SCM ID: 63	0.36	0.13	0.010	Systems	1	37.065539	-76.366573	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2013	\$500.00
2010	FilteringDevice	Filtering devices are pre-manufactured devices that provide treatment through detention and infiltration of stormwater through engineered media. SCM ID: 64	0.36	0.10	0.008	Systems	1	37.065280	-76.366189	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2013	\$500.00
2010	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 65	0.18	0.14	0.011	Systems	1	37.065169	-76.366164	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2013	\$600.00
2010	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 66	0.18	0.14	0.011	Systems	1	37.064939	-76.366112	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2013	\$600.00
2010	FilteringDevice	Filtering devices are pre-manufactured devices that provide treatment through detention and infiltration of stormwater through engineered media. SCM ID: 67	0.32	0.09	0.007	Systems	1	37.064781	-76.366055	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2013	\$500.00
2010	FilteringDevice	Filtering devices are pre-manufactured devices that provide treatment through detention and infiltration of stormwater through engineered media. SCM ID: 68	0.30	0.07	0.005	Systems	1	37.064861	-76.366419	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2013	\$500.00
2010	FilteringDevice	Filtering devices are pre-manufactured devices that provide treatment through detention and infiltration of stormwater through engineered media. SCM ID: 69	0.16	0.002	0.000	Systems	1	37.064842	-76.366405	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2013	\$400.00
2010	FilteringDevice	Filtering devices are pre-manufactured devices that provide treatment through detention and infiltration of stormwater through engineered media. SCM ID: 70	0.15	0.004	0.000	Systems	1	37.064530	-76.366520	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2013	\$300.00
2010	FilteringDevice	Filtering devices are pre-manufactured devices that provide treatment through detention and infiltration of stormwater through engineered media. SCM ID: 71	0.06	0.01	0.000	Systems	1	37.064504	-76.366493	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2013	\$200.00
2010	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 72	0.56	0.16	0.013	Systems	1	37.064860	-76.366344	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2013	\$800.00
2010	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 73	0.36	0.10	0.008	Systems	1	37.065333	-76.366227	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2013	\$600.00
2010	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 74	0.32	0.09	0.007	Systems	1	37.064723	-76.366030	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2013	\$650.00
2009	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 75	2.30	0.61	0.049	Systems	1	37.076005	-76.356640	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2007	\$500.00
2005	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 76	1.09	0.57	0.046	Systems	1	37.068155	-76.361436	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2007	\$800.00
2004	HydroDynStruc	Hydrodynamic Structures are devices designed to improve quality of stormwater using features such as swirl concentrators, grit chambers, oil barriers, baffles, micropools and absorbent pads that are designed to remove sediments, nutrients, metals, organic chemicals, or oil and grease from urban runoff. SCM ID: 77	0.19	0.15	0.012	Systems	1	37.074325	-76.367334	020801080103	JBLE-Langley	2/7/2019	-	Dawn Christian	Dept of Defense	2001	\$400.00
2007	ExtDryPonds	Dry extended detention (ED) basins are depressions created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. Dry ED basins are designed to dry out between storm events, in contrast with wet ponds, which contain standing water permanently. As such, they are similar in construction and function to dry detention basins, except that the duration of detention of stormwater is designed to be longer, theoretically improving treatment effectiveness. SCM ID: 78	2.79	1.81	0.145	Systems	1	37.094874	-76.358337	020801080102	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87
2010	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 79	1.84	0.68	0.054	Systems	1	37.074284	-76.377328	020801080103	JBLE-Langley	2/6/2019	-	Dawn Christian	Dept of Defense	2007	\$337.87

Stormwater Management Facility Inventory, JBLE-Langley

Year_Installed	Practice_Name	Practice_Description	Total Acres	IMP_Acres	Runoff_Treated	Measurement_Unit	Report_Applied_Amount	Latitude	Longitude	HUC12	Facility_Name	Inspect_Date	Maint_Date	Contact_Name	Agency_Name	Year_Funded	SCM_Cost
2002	VegOpChanNoUDCD	Open channels are practices that convey stormwater runoff and provide treatment as the water is conveyed, includes bioswales. Runoff passes through either vegetation in the channel, subsoil matrix and/or is infiltrated into the underlying soils. This SCM has no underdrain and is in C or D soil. SCM ID: 80	2.31	0.72	0.058	Systems	1	37.070457	-76.367073	020801080103	JBLE-Langley	6/6/2019	-	Dawn Christian	Dept of Defense	2002	\$500.00
2009	DryPonds	Dry Detention Ponds are depressions or basins created by excavation or berm construction that temporarily store runoff and release it slowly via surface flow or groundwater infiltration following storms. SCM ID: 81	0.08	0.01	0.001	Systems	1	37.073480	-76.383011	020801080103	JBLE-Langley	6/7/2019	-	Dawn Christian	Dept of Defense	2007	\$400.00
2017	Reduction of Impervious Surface	Land Use Change Reducing impervious surfaces to promote infiltration and percolation of runoff storm water.	0.24	0.24	0.019	Acre	0.24	-	-	020801080103	JBLE-Langley	1/23/2018	-	Dawn Christian	Dept of Defense	2012	\$300,948.00
2017	Reduction of Impervious Surface	Land Use Change Reducing impervious surfaces to promote infiltration and percolation of runoff storm water.	2.01	2.01	0.161	Acre	2.01	-	-	020801080102	JBLE-Langley	-	-	Dawn Christian	Dept of Defense	2012	\$83,756.00
2017	Urban Nutrient Management Plan	An urban nutrient management plan is a site-specific plan that provides agronomic and environmentally sound recommendations for applying nutrients to turfgrass to reduce nutrient loss from the turf to the environment. Plan for Eaglewood Golf Course	119.16	119.16	9.533	Acre	119.16	37.092461	-76.370235	020801080102	JBLE-Langley	-	-	Dawn Christian	Dept of Defense	2017	\$500.00

Attachment 7: Chesapeake Bay TMDL Action Plan Implementation Status Memo

Date: 4 September 2019

To: Dawn Christian, JBLE–Langley

From: CTI-URS Environmental Services, LLC (CUES)
Shannon Clunn, PE, Project Manager
Brian Jacobson, PH, CFM, Task Leader

Subject: **Chesapeake Bay Action Plan Implementation Progress for JBLE–Langley
Provide NPDES Reports in Support of the Chesapeake Bay Restoration Initiative at
Joint Base Langley Eustis VA
Contract FA8903-16-D-0053, Task Order No. FA890-18-F-0266**

1.0 INTRODUCTION

In 2010 the United States Environmental Protection Agency (EPA) established the Chesapeake Bay Total Maximum Daily Load (TMDL) to address excess nitrogen, phosphorus and total suspended solids (pollutants of concern or POCs) in the bay (EPA, 2010). A TMDL is the maximum amount of a pollutant that a waterbody can assimilate and still support its designated use. The Chesapeake Bay watershed encompasses over 64,000 square miles across the District of Columbia and large sections of Delaware, Maryland, New York, Pennsylvania, West Virginia and Virginia.

In the Phase I and Phase II Chesapeake Bay Watershed Implementation Plan (WIP) for the Chesapeake Bay TMDL, the Commonwealth of Virginia committed to a phased approach to reducing nutrients and suspended solids discharging from Municipal Separate Storm Sewer Systems (MS4). Section I.C of the Joint Base Langley Eustis–Langley (JBLE–Langley) MS4 permit (VAR040140, effective 1 November 2018) requires the base to prepare a Chesapeake Bay TMDL Action Plan that demonstrates future plans to meet the required nutrient and suspended solids reductions for each permit cycle as specified in the 2010 Phase I WIP (VDEQ, 2010).

JBLE–Langley contracted CTI-URS Environmental Services, LLC (CUES) to develop a Chesapeake Bay TMDL Action Plan for the installation’s MS4 area (CUES, 2019). The Action Plan is an annual report on the progress made by the base in meeting the Chesapeake Bay TMDL pollutant reduction requirements, specifically the Level 2 (L2) scoping run as specified in the 2010 Phase I WIP (VDEQ, 2010). The L2 reductions are to be met in phases corresponding to the permit cycles, as outlined in Table 1-1.

Table 1-1. Pollutant Percent Reduction Requirements by Permit Cycle

Permit Cycle	Timeframe	Cycle Percent Reduction	Cumulative Percent Reduction
1	2013-2018	5%	5%
2	2018-2023	35%	40%
3	2023-2028	60%	100%

The purpose of this memorandum is to document progress toward implementing the Chesapeake Bay TMDL Action Plan. The objectives of this memorandum are to present the required pollutant reduction requirements for the second permit cycle and discuss strategies that have been implemented or will be implemented by the Air Force Civil Engineer Center (AFCEC) and JBLE–Langley to reduce nutrient and sediment loads. This progress report was completed as part of the *Provide NPDES Reports in Support of the Chesapeake Bay Restoration Initiative at Joint Base Langley Eustis, VA* project at JBLE–Langley, under Contract FA8903-16-D-0053, Task Order No. FA8903-18-F-0266.

This memorandum is organized into the following sections:

- Section 1.0 presents the background, purpose and objectives
- Section 2.0 describes the pollutant load reduction requirements
- Section 3.0 describes the pollutant credits achieved by the base
- Section 4.0 describes future best management practices (BMP)
- Section 5.0 presents the progress summary
- Section 6.0 contains a list of references associated with this memorandum

2.0 POLLUTANT LOAD REDUCTION REQUIREMENTS

The methodology used to calculate the pollutant loads and credits is based on the VDEQ Guidance Memo No. 15-2005 (Guidance Document) (VDEQ, 2015). The base’s pollutant loads for existing sources (contributed by the base as of 30 June 2009) and new sources (contributed by the base between 1 July 2009 and 30 June 2019) were calculated using impervious and pervious land cover area and loading rates for the York River Basin as specified in the Guidance Document (VDEQ, 2015). Estimated loads for 2009 and 2019 are presented in Table 2-1.

Table 2-1. Existing and New Loads and Total Load Change at JBLE–Langley

Land Cover (Subsource)	Pollutant	Estimated Total Load as of 30 June 2019 (lbs/yr)	Estimated Total Load as of 30 June 2009 (lbs/yr)	Total Load Change (lbs/yr)	
Regulated Urban Impervious	Nitrogen	3,135.5	2,926.1	209.4	20.7
Regulated Urban Pervious		6,751.8	6,940.4	-188.6	
Regulated Urban Impervious	Phosphorus	647.7	604.4	43.2	30.7
Regulated Urban Pervious		450.1	462.7	-12.6	
Regulated Urban Impervious	Total Suspended Solids	195,883.6	182,803.5	13,080.1	11,285.6
Regulated Urban Pervious		64,234.9	66,029.3	-1,794.5	

Note and Acronym:

Minor calculation discrepancies are accounted for in rounding.
 lbs/yr – Pounds per year

The *Total Load Change* is adjusted by any credits earned from BMPs implemented during the 2009–2018 timeframe to arrive at the *Net Load Change*. BMPs installed after 1 July 2009 were included in this analysis when they were implemented under conditions of redevelopment. The base is required to offset 40% of the *Net Load Change* by the end of the second permit cycle, as shown in Table 2-2.

Table 2-2. Net Load Changes from New Sources and Additional Reductions Required

Pollutant	Total Load Change (lbs/yr)	Reductions from BMPs Installed between 1 July 2009 and 30 June 2018 (lbs/yr)	Net Load Change (lbs/yr)	Required Reduction by End of Second Permit Cycle	Additional Reductions Required between 1 July 2018 and 30 June 2023 (lbs/yr)
Nitrogen	20.7	41.5	-20.7	40%	-8.3
Phosphorus	30.7	7.7	22.9	40%	9.2
Total Suspended Solids	11,285.6	7,122.8	4,162.7	40%	1,665.1

Note and Acronym:

Minor calculation discrepancies are accounted for in rounding.
 lbs/yr – Pounds per year

3.0 LOAD REDUCTION CREDITS ACHIEVED

This section describes load reduction credits achieved by JBLE–Langley from post-construction BMPs, street sweeping, land use change and shoreline management.

3.1 Existing Post-Construction BMPs (Post-2006)

A geographic information system (GIS) inventory of existing post-construction BMPs present at JBLE–Langley and their drainage areas was used to help calculate existing credits for the Action Plan. BMPs installed between 1 January 2006 and 30 June 2009 were included in this analysis. BMPs installed prior to 1 January 2006 are not eligible for credit and were thus excluded from consideration for this Action Plan. BMPs installed after 30 June 2009 were tracked separately to facilitate the calculation of new source loads. For BMPs installed after 30 June 2009, only those implemented under conditions of redevelopment were eligible for credits, as described in the Guidance Document (VDEQ, 2015). Summaries of existing BMP types and credits are provided in Table 3-1 and 3-2 respectively.

Table 3-1. Summary of Existing BMP Types

BMP Type	Timeframe Implemented		
	1 Jan 2006 to 30 June 2009	1 July 2009 to 30 June 2018	Total
Dry Detention Pond	0	11	11
Dry Extended Detention Pond	3	1	4
Swale	3	11	14
Wet Pond or Wetland	1	0	1
Filterra Bioretention Systems	0	8	8
Total	7	31	38

Table 3-2. Summary of Credits from Existing Post-Construction BMPs

BMP Timeframe	Number of BMPs	Credits (lbs/yr)		
		Nitrogen	Phosphorus	Total Suspended Solids
2006–2009	7	6.3	1.0	1,092.6
2009–2018	31	41.5	7.7	7,122.8

Acronym:

lbs/yr – Pounds per year

3.2 Street Sweeping

The base performs vacuum powered street sweeping on primary roads, secondary roads and parking lots on a regular basis. Street sweeping credits are calculated based on the methodology described in *Recommendations of the Expert Panel to Define Removal Rates for Street and Storm Drain Cleaning Practices* (Donner et al., 2016). Data on frequency and linear miles of sweeping was provided by the base and is used to calculate load reduction credits. A summary of street sweeping credits is presented in Table 3-3.

Table 3-3. Summary of Annual Street Sweeping Credits

Lane-Miles Swept	Acres Swept	Credits (lbs/yr)		
		Nitrogen	Phosphorus	Total Suspended Solids
1,534.0	1,859.4	572.7	185.9	265,893.3

Acronym:

lbs/yr – Pounds per year

3.3 Land Use Change

No land use change credit opportunities were identified on the base at this time.

3.4 Shoreline Management

Pollutant load reductions from the 8,550 linear feet of shoreline restoration activities on the base are presented in Table 3-4.

Table 3-4. Summary of Shoreline Management Reductions

Pollutant	Shoreline Restoration (linear feet)	Loading Rate (lbs/ft/yr) ¹	Credit (lbs/yr)
Nitrogen	8,550	0.01218	104.1
Phosphorus	8,550	0.00861	73.6
Total Suspended Solids	8,550	42.0	359,100.0

Acronyms:

lbs/ft/yr – Pounds per foot per year
 lbs/yr – Pounds per year

4.0 FUTURE BMPs

One additional shoreline management project was implemented at the end of 2018 and another is planned for 2021, totaling 2,075 linear feet. Two stream restoration projects are funded for implementation in 2019 and 2021 totaling 2,285 linear feet. An infiltration basin, three bioswales, three dry swales and three bioswales are also funded for implementation in 2019, treating a total of 2.55 acres. Because all of these projects were or will be implemented after 30 June 2018 no credit is being claimed.

The base will continue to investigate the applicability and feasibility of additional BMPs and BMP types in order to meet the pollutant load reduction requirements of the Chesapeake Bay TMDL. Opportunities for effective retrofit options will be explored and prioritized to make the best use of available resources.

5.0 PROGRESS SUMMARY

A summary of the required load reductions is presented in Table 5-1 and the second permit cycle pollutant credits are presented in Table 5-2.

Table 5-1. Summary of Permit Cycles 1, 2 and 3 Reduction Requirements

Pollutant	Required Load Reduction by 2018 (lbs/yr)	Required Load Reduction by 2023 (lbs/yr)	Required Load Reduction by 2028 (lbs/yr)
Nitrogen	33.0	263.6	659.1
Phosphorus	7.7	61.3	153.2
Total Suspended Solids	2,325.1	18,600.4	46,501.0

Acronym:

lbs/yr – Pounds per year

Table 5-2. Summary of Second Permit Cycle Reduction Requirements and Credits

Pollutant	Second Permit Cycle Cumulative Percent Reduction Requirement	Required Load Reduction by 2023 (lbs/yr)	Credits from Existing BMPs (lbs/yr)¹	Second Permit Cycle Target Met?
Nitrogen	40%	263.6	683.1	Yes
Phosphorus	40%	61.3	260.6	Yes
Total Suspended Solids	40%	18,600.4	626,086.0	Yes

Note and Acronym:

¹ Does not include credits related to New Sources that were previously accounted for in Table 2-2.
 lbs/yr – Pounds per year

If the BMPs considered in this analysis are maintained and fully functional to provide the design performance, it is the conclusion of this analysis that the base currently meets its second permit cycle reduction requirement goals for all the POCs. The base will continue to investigate the applicability and feasibility of additional BMPs and BMP types in order to meet the future milestone pollutant load reduction requirements of the Chesapeake Bay TMDL.

6.0 REFERENCES

- CUES. 2019. *Draft Chesapeake Bay Phase II Total Maximum Daily Load Action Plan for Joint Base Langley Eustis–Langley*. May 2019.
- Donner, S., Frost, B., Goulet, N., Hurd, M., Law, N., Maguire, T., Selbig, B., Shafer, J., Stewart, S. and Tribo, J. 2016. *Recommendations of the Expert Panel to Define Removal Rates for Street and Storm Drain Cleaning Practices*. Chesapeake Bay Program Office. Accessed at https://www.chesapeakebay.net/channel_files/23064/final_street_cleaning_expert_panel_report.pdf.
- EPA. 2010. *Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment*. 29 December 2010.
- Forand N., Dubois K., Halka J., Hardaway S., Janek, G., Karrh, G., Koch, E., Linker, L., Mason, P., Morgereth, E., Proctor, D., Smith, K., Stack, B., Stewart, S. and Wolinski, B. 2017. *Recommendations of the Expert Panel to Define Removal Rates for Shoreline Management Projects*. Chesapeake Bay Program Office. Accessed at https://www.chesapeakebay.net/documents/LONG_SHORELINE_MGMT_EPR_05152018.pdf.
- Virginia Department of Environmental Quality (VDEQ). 2010. *Chesapeake Bay TMDL Phase I Watershed Implementation Plan*. 29 November 2010.
- VDEQ. 2018. *General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems, General Permit No. VAR040140*, Joint Base Langley Eustis–Langley. Effective Date 1 November 2018.
- VDEQ. 2015. *Guidance Memo No. 15-2005*. 18 May 2015.

7.0 ACRONYMS

AFCEC	Air Force Civil Engineer Center
BMP	Best Management Practice
CUES	CTI-URS Environmental Services, LLC
EPA	Environmental Protection Agency
GIS	Geographic Information System
JBLE–Langley	Joint Base Langley Eustis – Langley
lbs/yr	Pounds per year
MS4	Municipal Separate Storm Sewer System
POC	Pollutants of Concern
TMDL	Total Maximum Daily Load
VDEQ	Virginia Department of Environmental Quality
WIP	Watershed Implementation Plan

Statement of Limitations

This memorandum report was prepared in accordance with the customary thoroughness and competence of environmental science and engineering consulting professionals and in accordance with the standard for professional services for a consulting firm at the time these services were provided. The analysis, conclusions and recommendations expressed in this report were developed based upon a limited scope of services and the information made available to CUES at the time this work was conducted.

Attachment 8: Bacteria TMDL Action Plan Implementation Status Memo

Date: 4 September 2019

To: Dawn Christian, JBLE–Langley

From: CTI-URS Environmental Services, LLC
Shannon Clunn, PE, Project Manager
Brian Jacobson, PH, CFM, Task Leader

Subject: **Back River Bacteria TMDL Action Plan Implementation Progress for JBLE–Langley Provide NPDES Reports in Support of the Chesapeake Bay Restoration Initiative at Joint Base Langley Eustis VA Contract FA8903-16-D-0053, Task Order No. FA890-18-F-0266**

1.0 INTRODUCTION

In 2017, the Virginia Department of Environmental Quality (VDEQ) developed Total Maximum Daily Loads (TMDL) to address fecal coliform bacteria impairment in the Back River Virginia (VDEQ, 2017). The TMDLs, which were approved by the United States Environmental Protection Agency (EPA) on 9 February 2018, assign wasteload allocations for bacteria to Joint Base Langley Eustis–Langley (JBLE–Langley). The wasteload allocation is a portion of the TMDL load and represents the allowable load a permittee may discharge to the waterbody and still meet water quality standards.

JBLE–Langley is authorized to discharge stormwater from the installation in accordance with an industrial stormwater permit (VAR052285) and a Municipal Separate Storm Sewer System (MS4) permit (VAR040140) (VDEQ 2018), both issued by the VDEQ. The MS4 permit identifies minimum control measures and special condition requirements, measurable goals and best management practices selected for implementation at JBLE–Langley. Special Condition 1 found in Section II.B.1 of the JBLE–Langley MS4 permit requires the installation to maintain a specific TMDL Action Plan for pollutants allocated to the MS4 in an approved TMDL.

JBLE–Langley contracted CTI-URS Environmental Services (CUES) to update their Bacteria TMDL Action Plan for the installation’s MS4 area. The TMDL Action Plan describes the TMDL waterbodies, JBLE–Langley installation, existing and proposed bacteria control measures and an implementation schedule for addressing bacteria sources in the Back River watershed (JBLE–Langley, 2019).

The purpose of this memorandum is to document progress toward implementing the Back River Bacteria TMDL Action Plan (JBLE–Langley, 2019). The objectives of this memorandum are to present the results of the bacteria source assessment at JBLE–Langley and discuss strategies that have been implemented or will be implemented by the Air Force Civil Engineer Center (AFCEC) and JBLE–Langley to reduce bacteria sources. This progress report was completed as part of the *Provide NPDES Reports in Support of the Chesapeake Bay Restoration Initiative at Joint Base Langley Eustis VA* project at JBLE–Langley under Contract FA8903-16-D-0053, Task Order No. FA8903-18-F-0266.

This memorandum is organized into the following sections:

- Section 1.0 presents the background, purpose and objectives
- Section 2.0 describes the schedule and actions for addressing bacteria sources
- Section 3.0 describes the bacteria source assessment
- Section 4.0 describes the bacteria action plan implementation progress
- Section 5.0 describes bacteria-reducing actions in progress
- Section 6.0 presents the summary and next steps
- Section 7.0 contains a list of references associated with this memorandum

2.0 ACTION PLAN FOR ADDRESSING BACTERIA IN THE BACK RIVER

JBLE–Langley developed an implementation schedule for addressing bacteria impairments in the Back River as part of the Back River Bacteria Total Maximum Daily Load Action Plan for JBLE–Langley (JBLE–Langley, 2019b). During the first MS4 permit cycle (2017 – 2018), the Action Plan lists the following JBLE–Langley implementation actions:

- Identify and maintain a list of existing source controls and management practices that are applicable to reducing fecal coliform bacteria.
- Identify opportunities for enhancing public education and outreach programs to address bacteria impairment.
- Assess significant sources of bacteria using desktop evaluations, field investigations and collaboration with key base staff.
- Determine if additional source controls are needed. If additional controls are needed, prepare a summary of potential controls and identify programs and activities to support their implementation.
- Evaluate new bacteria-related datasets for the Back River watershed collected by other agencies (e.g., VDEQ) as available.
- Update the Bacteria TMDL Action Plan to reflect activities performed during the reporting year. Adjust the implementation schedule as needed to reflect the findings from the field and desktop assessments and report on progress annually.

As described in the Back River Bacteria TMDL Action Plan, bacteria-reducing activities to be performed during the second MS4 permit cycle (2018 – 2023) include:

- As funding permits, implement activities identified in the implementation schedule (from previous years) as appropriate.
- Evaluate new bacteria-related datasets for the Back River watershed collected by other agencies as available.
- Identify any current or additional activities to be performed during the subsequent permit cycle.
- Submit an estimated end date for achieving the bacteria wasteload allocation.

- Update the Bacteria TMDL Action Plan to reflect activities performed during the following year and report on progress annually. Adjust the implementation schedule as needed to reflect findings from field and desktop assessments. Report on progress annually.

3.0 BACTERIA SOURCE ASSESSMENT

The Back River TMDL report identifies both natural and anthropogenic sources of bacteria in the watershed (Table 3-1).

**Table 3-1. Fecal Bacteria Source Allocations (%) in the Back River Watershed
 (Source: VDEQ 2017, Table 3.7 and Table 3.8)**

Source Category	Source	Percent
Wildlife	Deer	4.3
	Ducks/Birds	43.2
	Muskrats	0.6
	Nutria	1.3
	Racoons	0.3
Pets	Dog	34.6
Livestock	Livestock	9.0
Human	Human-Sanitary Sewer Overflow	6.1
	Human-Septic	0.0
	Marina (slips)	0.4

The percentages presented in Table 3-1 are averages across the entire Back River watershed. The 2017 TMDL does not identify any specific sources of bacteria within the JBLE–Langley MS4 area. To build on this information, JBLE–Langley initiated source assessments on base in 2017. The sources identified, and strategies taken to address these sources are described in Sections 4 and 5.

In March 2019, CUES conducted a bacteria source investigation field visit at JBLE–Langley. CUES staff completed a windshield survey at the JBLE–Langley installation to locate bacteria sources described in Table 3-1 and to identify other potential sources that might be present. In addition, CUES staff met with multiple JBLE–Langley personnel involved with activities that may be affecting fecal bacteria loading from the base and discussed actions that JBLE–Langley was currently taking to reduce or remove bacteria sources.

4.0 BACTERIA ACTION PLAN IMPLEMENTATION PROGRESS

This section describes programs and activities that are being implemented at JBLE–Langley to address bacteria sources and accomplish the goals set forth in the JBLE–Langley Bacteria Action Plan.

in the population of resident bird species can provide a substantial reduction in bacteria loading to the Back River. In managing the base's clear recovery zone, JBLE–Langley works with the United States Department of Agriculture, Natural Resource Conservation Service to relocate deer, coyotes, large birds, cats and other animals. The base also manages lands surrounding the airfields to deter wildlife and reduce bird/wildlife aircraft strike hazard (BASH) safety concerns.

4.2 Pets

Pet waste is the second largest contributor of bacteria within the Back River watershed. Unlike wildlife, pet waste can be effectively controlled using a variety of management approaches. JBLE–Langley residents are permitted to have pets and it is reasonable to assume that residents walk their dogs around nearby neighborhoods. Pet waste disposal stations have been installed and are maintained by Hunt Communities, the private real estate company that manages JBLE–Langley housing. As described in the base's MS4 Program Plan, residents with pets are briefed on the importance of proper pet waste disposal and the impact on stormwater and water quality (JBLE–Langley, 2019a).

JBLE–Langley maintains a military/police dog training center and associated dog kennels. Dog training areas are covered with artificial turf and are surrounded by vegetated buffers that provides filtration of pollutants prior to entering surface waters. Potential sources of bacteria in runoff from the dog training center are addressed through stormwater treatment practices and training as described in the MS4 Program Plan (JBLE–Langley 2019a).

JBLE–Langley has developed and distributed a pet waste brochure that contains educational information and contact information for the Stormwater Program Manager.

4.3 Livestock

The JBLE–Langley horse stable is the only location housing livestock on the installation. The JBLE–Langley horse stable is privatized through the Saddle Club and encompasses approximately 15 acres including a horse stable, boarding facility and pasture. Stable bedding and manure associated with the stable are contained under cover and horse owners are informed of the importance of minimizing exposure to stormwater. Potential sources of bacteria in runoff from both the dog training center and horse stable are addressed through stormwater treatment practices and training as described here and in the MS4 Program Plan (JBLE–Langley, 2019a).

4.4 Human

The entire JBLE–Langley installation is currently connected to a sanitary sewer network, and there are no septic systems currently located on the installation. In 2017, JBLE–Langley replaced piping and spent approximately 1.3 million dollars on sanitary sewer repairs to reduce infiltration and inflow. In addition, the primary force main that services most of the base has been redesigned and is planned for construction. These efforts assist in reducing the occurrence of sanitary sewer overflows. Illicit discharge detection and elimination (IDDE) inspections of outfalls were conducted during 2018-2019 to help detect and identify illicit discharges into the stormwater network. Additional initiatives planned for 2018-2019 include continued inspections of non-industrial outfalls, finalizing the Streambank Stabilization Plan to address

These efforts assist in reducing the occurrence of sanitary sewer overflows. Illicit discharge detection and elimination (IDDE) inspections of outfalls were conducted during 2018-2019 to help detect and identify illicit discharges into the stormwater network. Additional initiatives planned for 2018-2019 include continued inspections of non-industrial outfalls, finalizing the Streambank Stabilization Plan to address erosion at the MS4 outfalls as well as investigation and reporting of potential illicit discharges (JBLE–Langley, 2019a).

The JBLE–Langley marina offers both dry and wet slips available for boat storage. The marina installed a new \$18,000 marine pump out station on 15 September 2017 that is available for users at a cost of \$5.00. During normal operating hours, marina staff will assist visitors with pump out needs.

4.5 All Source Categories

JBLE–Langley has implemented a number of additional control measures to address sources of fecal coliform on the base. Over the past six years, JBLE–Langley has completed 9,295 linear feet of shoreline stabilization along the eastern and southeastern shorelines of the Back River and Southwest Branch Back River. JBLE–Langley is planning to construct an additional 1,350 linear feet of stabilization in 2020 along portions of the Southwest Branch Back River near the marina. These areas of stabilization increase resilience to major storm events and flooding, provide habit for native animals and plants and reduces erosion and suspension of sediment and associated bacteria in the Back River and Chesapeake Bay.

In June 2017, JBLE–Langley partnered with the Chesapeake Bay Foundation and Booker Elementary School to implement an oyster reef restoration project in the Back River. Oyster reefs form a complex ecosystem for filter feeders that filter bacteria and other pollutants from the water column. Through this project, 75 bushels of oyster shells and 2,000 young oysters spat were used to begin building the reef habitat. This project also helped to educate children on the role oysters play in filtering pollutants, improving water quality and providing habitat within the Back River and Chesapeake Bay. In August 2018, the base hosted an oyster gardening class to the public to continue the reef restoration project at the base marina. The class was led by instructors from the Chesapeake Bay Program.

5.0 BACTERIA-REDUCING ACTIVITIES IN PROGRESS (2019-2020)

JBLE–Langley has initiated 2019-2020 actions that are identified in Section 2.0 of this memorandum. In addition, JBLE–Langley is in the process of exploring additional opportunities for public education and outreach to aid in the reduction of bacteria sources. These opportunities are aimed at pet owners, individuals involved with the dog training center, individuals involved with the Langley Saddle Club and base personnel who could potentially identify illicit discharges from the base’s sanitary sewer network.

6.0 SUMMARY

In summary, JBLE–Langley has taken several actions to reduce bacteria and address various sources on the installation. Completed or ongoing actions taken by JBLE–Langley include the following:

- Prepared a Bacteria Action Plan, including preliminary source investigations and schedule for addressing bacteria sources

- Relocated deer, coyotes, large birds, cats and other animals away from the base and deterred these wildlife from areas surrounding airfields to avoid BASH safety concerns
- Installed pet waste disposal stations at housing areas and in areas frequented by pets
- Developed and distributed a pet waste educational brochure
- Performed sanitary sewer repairs to reduce infiltration and inflow and redesigned the primary force main that services most of the base
- Installed a new sewage boat pump out station
- Completed 9,295 linear feet of shoreline stabilization along the eastern and southeastern shorelines of the Back River and Southwest Branch Back River. Planning on constructing an additional 1,350 linear feet of stabilization in 2020 along portions of the Southwest Branch Back River near the marina.
- Constructed an oyster reef restoration project in the Back River in partnership with the Chesapeake Bay Foundation and Booker Elementary school in 2017
- Currently exploring additional opportunities for public education and outreach to aid in the reduction of bacteria sources

7.0 REFERENCES

- JBLE–Langley. 2019a. *Joint Base Langley Eustis – Langley (JBLE–Langley) Municipal Separate Storm Sewer System (MS4) Program Plan*. January 2019.
- JBLE–Langley. 2019b. *Back River Bacteria Total Maximum Daily Load Action Plan for Joint Base Langley Eustis – Langley*. Prepared by AECOM Technical Services, Inc. May 2018.
- VDEQ. 2017. *Total Maximum Daily Loads of Bacteria for Back River in York County and the Cities of Hampton, Poquoson, and Newport News, Virginia*. Prepared by Virginia Institute of Marine Science. 21 June 2017. Approved by the U.S. EPA on 9 February 2018.
- VDEQ. 2018. *Authorization to discharge under the Virginia Stormwater Management Program and the Virginia Stormwater Management Act. VPDES Permit Number VAR040140*. Permit effective November 1, 2018.

8.0 ACRONYMS

AFCEC	Air Force Civil Engineer Center
BASH	Bird/Wildlife Aircraft Strike Hazard
CUES	CTI-URS Environmental Services, LLC
EPA	Environmental Protection Agency
IDDE	Illicit Discharge Detection and Elimination
JBLE–Langley	Joint Base Langley Eustis – Langley
MS4	Municipal Separate Storm Sewer System
TMDL	Total Maximum Daily Load
VDEQ	Virginia Department of Environmental Quality

Statement of Limitations

This memorandum report was prepared in accordance with the customary thoroughness and competence of environmental science and engineering consulting professionals and in accordance with the standard for professional services for a consulting firm at the time these services were provided. The analysis, conclusions and recommendations expressed in this report were developed based upon a limited scope of services and the information made available to CUES at the time this work was conducted.