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PROPOSED TEXT REVISIONS FOR SECTION J OF CLASS 1 MODIFICATION TO RCRA PERMIT WITH TRANSMITTAL NSA CRANE IN
10/23/2006
NSA CRANE

286

DEPARTMENT OF THE NAVY
CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
300 HIGHWAY 361
CRANE INDIANA 47522-5001

IN REPLY REFER TO:
5090/S4.7
Ser PRCR4/6326
23 OCT 2006

Indiana Department Of Environmental Management
Office Of Land Quality
Hazardous Waste Permits
100 North Senate Ave.
MC 64-45 IGCN 1101
Indianapolis, IN 46204-2251

Dear Mr. Workman:

Crane Division, Naval Surface Warfare Center requests that the Indiana Department of Environmental Management (IDEM) approve a Class 1 modification to its October 18, 2001 Resource Conservation and Recovery Act Hazardous Waste Management Permit. The RCRA Facility Investigation, Corrective Measures Study, and Statement of Basis phases have been completed and approved by the U. S. EPA for the Mustard Gas Burial Grounds [solid waste management unit (SWMU) 01], Dye Burial Grounds (SWMU 02), and Rockeye (SWMU 10). The proposed and accepted remedy for the three SWMUs is ground water monitoring with land use controls.

The proposed text revisions for Section J of the permit are submitted as enclosure (1). The permit required Certification Statement is provided as enclosure (2).

If you require any further information, my point of contact is Mr. Thomas J. Brent, Code PRCR4-TB, at 812-854-6160, email thomas.brent@navy.mil.

Sincerely,

J. M. Hunsicker
J. M. HUNSICKER
Environmental Site Manager
By direction of the Commanding Officer

Enclosures: 1. Text Revisions for Section J
2. Certification Statement

Copy to:
ADMINISTRATIVE RECORD
NAVFAC MW (Howard Hickey)
USEPA (Pete Ramanauskas)
IDEM (Doug Griffin)

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.

SIGNATURE

Manager, Environmental Protection
TITLE

23 OCT 2006
DATE

Enclosure (1)
Text Revisions for Section J

Attachment (A)
Tracked Changes for Section J Revisions

Attachment (B)
Complete Section J for insertion

Attachment (A)
Tracked Changes for Section J Revisions

ATTACHMENT VIII

(SECTION J)

CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS
(Updated October 2006)

J-1. Solid Waste Management Units

SWMU 01/12 Mustard Gas Burial Grounds (MGBG)
SWMU 02/11 Dye Burial Grounds (DBG)
SWMU 03/10 Ammunition Burning Grounds/Jeep Trail Area (ABG)
SWMU 04/02 McComish Gorge (MCG)
SWMU 05/03 Old Burn Pit (OBP)
SWMU 06/09 Demolition Area (DEMO)
SWMU 07/09 Old Rifle Range (ORR)
SWMU 08/17 Load and Fill Area, B-106 Pond (B106P)
SWMU 09/05 Pesticide Control Area/R-150 Tank (PCA)
SWMU 10/15 Rockeye (RKI)
SWMU 11/00 Old Storage Building, B-225 (B225)
SWMU 12/14 Mine Fill A (MFA)
SWMU 13/14 Mine Fill B (MFB)
SWMU 14/00 Sanitary Landfill and Lithium Battery Burial (SLF&LB)
SWMU 15/06 Roads and Grounds Area (R&GA)
SWMU 16/16 Cast High Explosives Fill/B146 Incinerator (B146)
SWMU 17/04 PCB Capacitor Burial & Pole Yard (PCB-PY)
SWMU 18/13 Load and Fill Area Buildings (L&FAB)
SWMU 19/00 Pyrotechnic Test Area/Annex/Rocket Range Impact Area (PTA)
SWMU 20/00 CAAA QA/QC Test Area (CAAA)
SWMU 21/00 DRMO Storage Lot (DRMO)
SWMU 22/00 Lead Azide (PbA)
SWMU 23/00 Battery Shop (BS)
SWMU 24/00 Sludge Drying Beds A & B (SDBA&B)
SWMU 25/07D Highway 58 Dump Site A (H58A)
SWMU 26/08D Highway 58 Dump Site B (H58B)
SWMU 27/00 Illuminant Building B-126 (B126)
SWMU 28/00 Maintenance Shop, B-1820 (B1820)
SWMU 29/07 PCP Dip Tank, B-56 (B56)
SWMU 30/00 Land Farm (LF) Sludge Application Site
SWMU 31/00 Compressed Gas Cylinder Site (CGC)
SWMU 32/00 Tank Farm (TF)
SWMU 33/00 Bioremediation Facility (BRF)

AOC 01/00 Grit Blast Site – B3220 (GBS)
AOC 02/00 B-2044 Drop Tower/Test Rail (B2044)

J-1a Characterize the Solid Waste Management Units and Areas of Concern

Exhibit J-1, located at the end of this Attachment, is a drawing of the facility showing the location of all the SWMUs and AOCs.

J-2. Releases

A. SWMU 01/12 MUSTARD GAS BURIAL GROUNDS (MGBG)

The site was previously used to bury mustard gas rounds, chemical agent identification sets, and small quantities of thorium nitrate used for flares. Two previous investigations have removed all materials from this site. A RCRA Facility Investigation (RFI) incorporating a baseline human health and a screening level ecological risk assessment (RA) has been completed for all media. Risk drivers are from volatile organics in ground water. The RFI was approved by the U. S. Environmental Protection Agency (EPA) on June 21, 2005. A Corrective Measures Study (CMS) was approved by the U.S. EPA on August 22, 2005. The CMS recommended alternative includes two main components: (1) Land Use Controls (LUCs) and (2) Groundwater Monitoring throughout the 12-acre MGBG. Land use controls would restrict future site development and prohibit groundwater use. Land use controls would also include regular site inspections to verify that effective controls stay in place until it is appropriate to remove them. Groundwater monitoring would consist of periodically collecting and analyzing groundwater samples from monitoring wells located at the site. The analytical data would be used to evaluate site conditions, especially the contaminant concentrations. The controls and inspections would be implemented and enforced by NSWC Crane with oversight from the U.S. EPA Region 5. NSWC Crane would be responsible to periodically report on site conditions to the EPA. The objective of this corrective action would be to monitor and assure the public that acceptable solvent contaminant concentrations are eventually achieved through natural mechanisms while at the same time protecting the public and the environment by prohibiting groundwater use. This remedy proposal was submitted for public comment as a Statement of Basis (SB) in August/September 2006. A Corrective Measures Implementation Plan (CMIP) has been submitted to the U. S. EPA and IDEM in 2006.

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B. SWMU 02/11 DYE BURIAL GROUNDS (DBG)

Approximately 50 tons of pyrotechnic dyes were buried at this site. An RFI incorporating a baseline human health and a screening level ecological RA was prepared for all media and approved March 15, 2005. A RCRA cap has been placed as an Interim Measure (IM). The CMS determined the cap can be used as a final remedy and the recommended alternative included two main components: (1) Land Use Controls (Site Monitoring, Institutional Controls, and Engineering Controls) and (2) Groundwater Monitoring. Site monitoring would be conducted through regular inspections to check the continued compliance with institutional and engineering controls and to verify the proper operation and/or continued integrity of whatever remedial system or structure might be in place. Institutional controls would consist of formulating and implementing site-specific controls that would prohibit disturbance of the existing cap, control future site development, and restrict groundwater use. Engineering controls would consist of installing and maintaining a fence to control site access and maintaining the existing cap.

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Groundwater monitoring would consist of collecting and analyzing groundwater samples from monitoring wells located upgradient and downgradient of the existing burial ground cap as well as within the capped area itself. The analytical data would be used to evaluate site conditions, especially contaminant concentrations. The controls and inspections would be implemented and enforced by NSWC Crane with oversight from the Indiana Department of Environmental Management (IDEM). NSWC Crane would be responsible for submitting regularly scheduled reports on site conditions to EPA. The objective of this corrective action would be to warn of groundwater contamination from dyes underneath the cap and to protect the public and the environment by prohibiting groundwater use and inappropriate use of the site. The CMS was approved by the U. S. EPA on May 10, 2005. This proposed remedy was submitted for public comment as a SB. A CMIP has been submitted to the U. S. EPA.

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C. SWMU 03/10 AMMUNITION BURNING GROUNDS (ABG)

This unit consists of a permitted open burning unit (ABG), the Old Jeep Trail (OJT) area which is a former open burning area, and the Little Sulphur Creek (LSC). Burning at the ABG and OJT originally took place in trenches, pits, and on the ground resulting in metals, solvents, and explosives contamination of the soils, ground water, and LSC. A multimedia RFI incorporating a baseline human health and a screening level ecological RA/CMS has been completed for the ABG, Little Sulphur Creek (LSC), and Old Jeep Trail (OJT) area. Explosives and solvents in ground water and explosives in surface water below Spring A are the human health risk drivers. A CMS for the OJT and LSC is in preparation. Much of the CMS hinged on acceptance or rejection of the proposed alternate concentration limit (ACL) for RDX in surface water. The ACL of 86 µg/L was approved in December 2005 along with the RFI/RA for LSC and OJT. The ABG main treatment area will be addressed during closure of the unit. Ground water compliance monitoring is addressed under the Subpart X Permit.

D. SWMU 04/02 McCOMISH GORGE (McG)

Undefined amounts and types of garbage and trash were buried at this site. Burial likely included wood, paper, construction material, plaster-filled warheads, metal shavings, and industrial wastes. Previous work has partially delineated the extent of the debris. A multimedia RFI/RA report has been completed. No excess risks were identified. As the McG is not identified as a high risk site, a CMS report will not be funded until at least FY07.

E. SWMU 05/03 OLD BURN PIT (OBP)

The Old Burn Pit encompasses a narrow stream valley where material was burned in a depression or pit and the ash and metallic objects were buried in a gully to the north of the burning pit. The rubbish included wood, paper, building material, and industrial wastes. Previous work has included soil and ground water sampling and removal of some of the debris. A multimedia RFI/RA report has been completed. A CMS was submitted to the U. S. EPA to address excess human health and ecological risks from metals contamination. The OBP has two distinct physiographic areas; a gully area and a flat area. No excess risks have been identified in the flat area of the OBP and the Navy will request release of this area for unrestricted use, especially

This site consists of three relatively distinct areas: a former waste underground storage tank, known as the R-150 Tank (removed); and two former pesticide mixing and storage buildings (Buildings 2189 and 55). Multimedia RFI/RA sampling has been completed for the R-150 Tank and B2189 and some excess risks were identified in ground water for chlorinated VOCs and metals at the R-150 Tank site and B2189. A draft RFI/RA report has been submitted to EPA. A CMS is in preparation for the R-150 Tank and B2189. An RFI/RA is ongoing at the B55 site, where elevated levels of pesticides, PCBs, and fuel oil constituents have been identified. Further delineation is ongoing.

J. SWMU 10/15 ROCKEYE (RKI)

Previous work has shown both soil and groundwater contamination. IM composting treated 1,273 tons of explosives contaminated soils at the Crane Bioremediation Facility (CBF). An RFI has been completed and was approved by the U. S. EPA on September 29, 2005. The final CMS was submitted to the U. S. EPA in 2006 to address an explosives plume in ground water. The CMS recommended alternative included three major components: (1) natural attenuation, (2) land use controls (LUCs), and (3) monitoring. Natural attenuation would rely on naturally occurring processes such as biodegradation, dispersion and dilution through groundwater movement, and adsorption onto soil particles to reduce the concentrations of explosives. Processes for implementing LUCs would be included in the Corrective Measures Implementation Plan (CMIP) to restrict groundwater use. As part of the LUCs, annual site inspections would be conducted to verify and enforce the continued application of these controls. Monitoring would consist of regularly collecting groundwater and surface water samples and analyzing them for explosives to evaluate the progress of remediation and to verify that no plume expansion is occurring. Preliminary estimations indicate that the remediation timeframe would probably be somewhat greater than 100 years. The U.S. EPA approved the CMS on September 1, 2006. This proposed remedy was submitted for public comment as a SB. A CMIP has been prepared and is under review by the Navy and the U. S. EPA .

K. SWMU 11/00 OLD STORAGE, B-225 (B225)

This was the site of Building 225, which was destroyed by a fire on 13 July 1976. Stored at the building were pentachlorophenol, paints, sodium fluorescein dye, solvents, and various other items. Debris from the fire was cleaned up and the site currently remains vacant. An RFI is planned at this site for all media. The RFI is not currently scheduled.

L. SWMU 12/14 MINE FILL A (MFA)

This area was used primarily for melting and pouring explosives. Contamination from past operations includes soil, surface water, sediments, and groundwater. IM composting treated 20,834 tons of explosives contaminated soils at the CBF. An IM source removal has been completed for the adjacent Battery Dump Site and a report is in preparation. An RFI/RA has been completed and a Draft report is in preparation for MFA. Sampling of sumps throughout the site is anticipated in 2006.

Attachment (B)
Complete Section J for insertion

ATTACHMENT VIII

(SECTION J)

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J-1. Solid Waste Management Units

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J-1a Characterize the Solid Waste Management Units and Areas of Concern

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J-2. Releases

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The site was previously used to bury mustard gas rounds, chemical agent identification sets, and small quantities of thorium nitrate used for flares. Two previous investigations have removed all materials from this site. A RCRA Facility Investigation (RFI) incorporating a baseline human health and a screening level ecological risk assessment (RA) has been completed for all media. Risk drivers are from volatile organics in ground water. The RFI was approved by the U. S. Environmental Protection Agency (EPA) on June 21, 2005. A Corrective Measures Study (CMS) was approved by the U.S. EPA on August 22, 2005. The CMS recommended alternative includes two main components: (1) Land Use Controls (LUCs) and (2) Groundwater Monitoring throughout the 12-acre MGBG. Land use controls would restrict future site development and prohibit groundwater use. Land use controls would also include regular site inspections to verify that effective controls stay in place until it is appropriate to remove them. Groundwater monitoring would consist of periodically collecting and analyzing groundwater samples from monitoring wells located at the site. The analytical data would be used to evaluate site conditions, especially the contaminant concentrations. The controls and inspections would be implemented and enforced by NSWC Crane with oversight from the U.S. EPA Region 5. NSWC Crane would be responsible to periodically report on site conditions to the EPA. The objective of this corrective action would be to monitor and assure the public that acceptable solvent contaminant concentrations are eventually achieved through natural mechanisms while at the same time protecting the public and the environment by prohibiting groundwater use. This remedy proposal was submitted for public comment as a Statement of Basis (SB) in August/September 2006. A Corrective Measures Implementation Plan (CMIP) has been submitted to the U. S. EPA and IDEM in 2006.

B. SWMU 02/11 DYE BURIAL GROUNDS (DBG)

Approximately 50 tons of pyrotechnic dyes were buried at this site. An RFI incorporating a baseline human health and a screening level ecological RA was prepared for all media and approved March 15, 2005. A RCRA cap has been placed as an Interim Measure (IM). The CMS determined the cap can be used as a final remedy and the recommended alternative included two main components: (1) Land Use Controls (Site Monitoring, Institutional Controls, and Engineering Controls) and (2) Groundwater Monitoring. Site monitoring would be conducted through regular inspections to check the continued compliance with institutional and engineering controls and to verify the proper operation and/or continued integrity of whatever remedial system or structure might be in place. Institutional controls would consist of formulating and implementing site-specific controls that would prohibit disturbance of the existing cap, control future site development, and restrict groundwater use. Engineering controls would consist of installing and maintaining a fence to control site access and maintaining the existing cap.

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C. SWMU 03/10 AMMUNITION BURNING GROUNDS (ABG)

This unit consists of a permitted open burning unit (ABG), the Old Jeep Trail (OJT) area which is a former open burning area, and the Little Sulphur Creek (LSC). Burning at the ABG and OJT originally took place in trenches, pits, and on the ground resulting in metals, solvents, and explosives contamination of the soils, ground water, and LSC. A multimedia RFI incorporating a baseline human health and a screening level ecological RA/CMS has been completed for the ABG, Little Sulphur Creek (LSC), and Old Jeep Trail (OJT) area. Explosives and solvents in ground water and explosives in surface water below Spring A are the human health risk drivers. A CMS for the OJT and LSC is in preparation. Much of the CMS hinged on acceptance or rejection of the proposed alternate concentration limit (ACL) for RDX in surface water. The ACL of 86 µg/L was approved in December 2005 along with the RFI/RA for LSC and OJT. The ABG main treatment area will be addressed during closure of the unit. Ground water compliance monitoring is addressed under the Subpart X Permit.

D. SWMU 04/02 McCOMISH GORGE (McG)

Undefined amounts and types of garbage and trash were buried at this site. Burial likely included wood, paper, construction material, plaster-filled warheads, metal shavings, and industrial wastes. Previous work has partially delineated the extent of the debris. A multimedia RFI/RA report has been completed. No excess risks were identified. As the McG is not identified as a high risk site, a CMS report will not be funded until at least FY07.

E. SWMU 05/03 OLD BURN PIT (OBP)

The Old Burn Pit encompasses a narrow stream valley where material was burned in a depression or pit and the ash and metallic objects were buried in a gully to the north of the burning pit. The rubbish included wood, paper, building material, and industrial wastes. Previous work has included soil and ground water sampling and removal of some of the debris. A multimedia RFI/RA report has been completed. A CMS was submitted to the U. S. EPA to address excess human health and ecological risks from metals contamination. The OBP has two distinct physiographic areas; a gully area and a flat area. No excess risks have been identified in the flat area of the OBP and the Navy will request release of this area for unrestricted use, especially

since the OBP is unencumbered by ESQD arcs and located near a major highway. The gully area however, appears to have excess risk from contaminants and is in an area of rugged terrain. A CMS is in preparation.

F. SWMU 06/09 DEMOLITION AREA (DEMO)

High-explosives waste munitions are disposed of by detonation at this site. Previous work has included soil and groundwater sampling. Sedimentation ponds and surface runoff ponds are in place. The U.S. EPA reviewed and approved RFI planning documents and the subsequent report. The results defined a manganese hotspot in the ground water. The U. S. EPA determined there is no need for corrective action at this unit. The manganese hotspot work will be deferred until unit closure , if required at that time. A No Further Action request has been approved. Ground water detection monitoring is ongoing under the Subpart X permit.

G. SWMU 07/09 OLD RIFLE RANGE (ORR)

This ten-acre SWMU consists of two contiguous closed firing ranges [Old Rifle Range (ORR) and Old Pistol Range (OPR)] and an open field with three burning pits within the ORR. Each pit has several burning pans in which "Yellow D" explosive and other explosive contaminated material is burned. Prior to July 1986, burning was conducted on open ground. This area was also utilized for bomb cook-off testing. The high explosive (yellow D/ammonium picrate) bulk and loaded projectiles are burned in clay lined steel pans. It was reported that black powder, red, and white phosphorous had been destroyed in this area. A multimedia RFI delineated soil contamination (predominantly metals) at the ORR and OPR. A TNT soil hot spot was removed under an IM. A pistol range (OPR) to the north of the ORR was identified and investigated. Current plans are to request funding to conduct an interim measures soil removal to address lead in soils. Former rifle and skeet ranges in the ORR will be investigated in 2006. Ground water compliance monitoring is addressed under the Subpart X Permit. A CMS is currently being prepared.

H. SWMU 08/17 LOAD AND FILL AREA, B-106 POND (B106)

Building 106 contains a cleaning process, consisting of a caustic wash, a degreaser, and an acid wash. Prior to 1972, this wastewater was discharged into a small unlined retention pond. The retention pond overflowed into surface drainage. Sometime after 1972 the pond was connected to a neutralizing system that discharged to the sanitary sewer. In 1981, cooling water from degreasers was discharged to a storm drain until the discharge was connected to the sanitary sewer in 1982. Building 107 floor drains also discharged to the pond. An RFI is currently underway to address all media. High chlorinated solvent concentrations have been found in the pond sediments. An RFI report is in preparation. An interim measures removal of the pond sediments is expected in 2006.

I. SWMU 09/05 PESTICIDE CONTROL AREA/ R-150 TANK SITE (PCA)

This site consists of three relatively distinct areas: a former waste underground storage tank, known as the R-150 Tank (removed); and two former pesticide mixing and storage buildings (Buildings 2189 and 55). Multimedia RFI/RA sampling has been completed for the R-150 Tank and B2189 and some excess risks were identified in ground water for chlorinated VOCs and metals at the R-150 Tank site and B2189. A draft RFI/RA report has been submitted to EPA. A CMS is in preparation for the R-150 Tank and B2189. An RFI/RA is ongoing at the B55 site, where elevated levels of pesticides, PCBs, and fuel oil constituents have been identified. Further delineation is ongoing.

J. SWMU 10/15 ROCKEYE (RKI)

Previous work has shown both soil and groundwater contamination. IM composting treated 1,273 tons of explosives contaminated soils at the Crane Bioremediation Facility (CBF). An RFI has been completed and was approved by the U. S. EPA on September 29, 2005. The final CMS was submitted to the U. S. EPA in 2006 to address an explosives plume in ground water. The CMS recommended alternative included three major components: (1) natural attenuation, (2) land use controls (LUCs), and (3) monitoring. Natural attenuation would rely on naturally occurring processes such as biodegradation, dispersion and dilution through groundwater movement, and adsorption onto soil particles to reduce the concentrations of explosives. Processes for implementing LUCs would be included in the Corrective Measures Implementation Plan (CMIP) to restrict groundwater use. As part of the LUCs, annual site inspections would be conducted to verify and enforce the continued application of these controls. Monitoring would consist of regularly collecting groundwater and surface water samples and analyzing them for explosives to evaluate the progress of remediation and to verify that no plume expansion is occurring. Preliminary estimations indicate that the remediation timeframe would probably be somewhat greater than 100 years. The U.S. EPA approved the CMS on September 1, 2006. This proposed remedy was submitted for public comment as a SB. A CMIP has been prepared and is under review by the Navy and the U. S. EPA .

K. SWMU 11/00 OLD STORAGE, B-225 (B225)

This was the site of Building 225, which was destroyed by a fire on 13 July 1976. Stored at the building were pentachlorophenol, paints, sodium fluorescein dye, solvents, and various other items. Debris from the fire was cleaned up and the site currently remains vacant. An RFI is planned at this site for all media. The RFI is not currently scheduled.

L. SWMU 12/14 MINE FILL A (MFA)

This area was used primarily for melting and pouring explosives. Contamination from past operations includes soil, surface water, sediments, and groundwater. IM composting treated 20,834 tons of explosives contaminated soils at the CBF. An IM source removal has been completed for the adjacent Battery Dump Site and a report is in preparation. An RFI/RA has been completed and a Draft report is in preparation for MFA. Sampling of sumps throughout the site is anticipated in 2006.

M. SWMU 13/14 MINE FILL B (MFB)

This area was used primarily for melting and pouring explosives and differed only slightly from operations at MFA. A Therminol Boiler containing PCBs was located at MFB and removed in 1990. Contamination from past operations includes soil, sediments, and possibly groundwater. IM composting treated 22,115 tons of explosives contaminated soils at the CBF. A Draft RFI/RA report was submitted to the U. S. EPA in 2005. Sampling of sumps throughout the site is anticipated in 2006.

N. SWMU 14/00 SANITARY LANDFILL/LITHIUM BATTERY BURIAL (SL&LB)

Lithium batteries originally buried at the site that is now the Bioremediation Facility (SWMU 33) have been removed by IM. U.S.EPA has approved a request for No Further Action.

O. SWMU 15/06 ROADS AND GROUNDS AREA (R&GA)

This SWMU consists of an assortment of buildings used to store fuels, oils, and pesticides in support of the maintenance of the facilities' roads and grounds. An asphalt batch plant was also located here prior to 1972. Furthermore, an assortment of material was deposited into two ravines. The material was construction rubble and other debris including fuel oil tanks. The unknown contents of this site, along with the pesticide residues, indicate that the site could potentially have contaminants in the soil that could migrate to surface water or groundwater. A paved parking area was approved as an IM to limit leaching of contaminants to ground water. An additional IM was implemented to remove the hillside debris. An RFI/RA sampling effort recently focused on soils, surface water, and sediment. Little contamination was found. A draft report was submitted to the U. S. EPA in February 2006.

P. SWMU 16/16 CAST HIGH EXPLOSIVES FILL/B146 INCINERATOR (B146)

This complex has been used for loading, demilitarization, and renovation of a variety of munitions. An ash pile and settling basins (sumps) were present at the site. A variety of contaminants have been released to the soil, sediments, surface water, and groundwater. IM work removed large quantities of contaminated soil and sludge and treated chlorinated solvent contaminated water flowing into 2 sumps. A multimedia RFI identified significant chlorinated organic contamination in subsurface soils and ground water. A Draft RFI report was submitted to the U. S. EPA in 2005.

Q. SWMU 17/04 PCB CAPACITOR BURIAL/POLE YARD (PCB-PY)

Poles and transformers are stored in this area. Reportedly, PCB capacitors were also buried here. Two separate attempts have been unsuccessful in locating the buried capacitors. IM sampling identified PCB contamination in soils. Subsequently, an IM was conducted to remove up to 24 inches of PCB contaminated soils. Over 3,000 tons of soil were excavated and disposed off-site in 2003. Additional RFI sampling is expected in 2006.

R. SWMU 18/13 LOAD AND FILL AREA BUILDINGS (L&FAB)

This was the site of explosives load and fill operations, and is currently used for renovation, rework, and loading of munitions items. Explosives and metals contamination exist in the soil, sediments, surface water, and possibly groundwater. This SWMU also includes test pads on the hill behind B-198 which is a cleared area seen in historical aerial photos dating to 1952. Reportedly, sand pads were used from 1983 through 1985 for development and testing safe disposal methods for various types of dyes. An RFI is planned to address all media. This RFI is not currently scheduled.

S. SWMU 19/00 PYROTECHNIC TEST AREA/ANNEX/ROCKET RANGE IMPACT AREA (PTA)

This site is also known as the Ordnance Test Area and consists of three physically separate areas that perform related functions. Each area consists of a large open field and a concrete building used for quality assurance test burning of pyrotechnic lots. Boggs Creek flows through the center of or nearby each area. Contamination from pyrotechnic testing includes chlorates, dyes, oxidizers, fuels, and other by-products of flares and smoke. An RFI Workplan has been prepared for the site, but field work is not yet scheduled. In 2004, the site was declared ineligible for ER,N funding.

T. SWMU 20/00 CAAA QA/QC TEST AREA (CAAA)

QA/QC testing of pyrotechnics devices is conducted at Building 2167. Lead chromate contamination has been identified on the surface of the ground from testing MARK1-3 flares. There is an indication of stressed vegetation from past operations. An RFI for all media is not yet scheduled. In 2004, the site was declared ineligible for ER,N funding.

U. SWMU 21/00 DRMO STORAGE LOT (DRMO)

This SWMU is a level gravel pad which is approximately a 20 acre area. It is used as a scrap metal salvage area. Metal shavings containing cutting oil are placed on a pad, which collects the oil for recycling. Prior to the late 1960's the oil in metal shavings drained onto the ground in the area. An RFI for all media will be needed for this site. The RFI has not yet been scheduled.

V. SWMU 22/00 LEAD AZIDE (PbA)

This SWMU is an unlined pond that received wastewater containing lead salts. The pond was closed in 1981, and contaminated effluent and soil were removed. An RFI is planned to address all media. This RFI is not currently scheduled.

W. SWMU 23/00 BATTERY SHOP (BS)

Spent battery acid and waste oil from forklift servicing was disposed of by allowing it to flow down the hill onto a bank behind the Battery Shop, Building 36. Surface drainage from the bank

flowed into a storm drain, which drains into Lake Greenwood. As an Interim Measure, superficial debris was removed and land filled as trash. An RFI Workplan is planned to address all media.

X. SWMU 24/00 SLUDGE DRYING BEDS A & B (SDBA&B)

This SWMU consisted of cells that were used for sewage sludge drying prior to land application of the sludge. The sludge applied was apparently produced prior to the treatment system that is currently in place, and may have contained certain hazardous constituents from industrial effluent. As an Interim Measure, the sludge/soils of sludge beds A and B were characterized. Sludge bed A was considered not contaminated. A section of sludge bed B was contaminated with a slight amount of DDT. The entire sludge bed B area was excavated and removed including the chain link fence and concrete retaining walls. A request for a No Further Action determination has been approved by the U. S. EPA.

Y. SWMU 25/07D HIGHWAY 58 DUMP SITE A (H58A)

Debris at this site consists of paper; cardboard containers; empty containers of paints, thinners, lubrication and hydraulic fluids; scrap metal; concrete block; and transite. This site has undergone a partial debris removal. The debris was contaminated with asbestos, so was disposed as a special waste at an offsite permitted landfill. Debris removal was not completed due to concerns of undermining Highway 58. Site renovation included backfilling, seeding, and mulching to prevent soil erosion. An RFI will be conducted at this site to determine if further remedial action is needed. The RFI is not yet scheduled.

Z. SWMU 26/08D HIGHWAY 58 DUMP SITE B (H58B)

This is a dump site at the base of a massive sandstone outcrop (probable former quarry). The debris consisted of paper; cardboard containers; empty containers of paints, thinners, lubrication and hydraulic fluids; scrap metal containers and drums; corrugated pipe, and transite siding. Fifteen crushed and rusted drums (contents unknown) were seen at the site. All of the waste has been removed to bedrock, and a request for a determination of No Further Action required for the soils has been approved by U.S.EPA. An RFI will investigate impacts to the ground water and the need for further remedial action. The RFI has not yet been scheduled.

AA. SWMU 27/00 ILLUMINANT BUILDING B-126 (B126)

Contamination at this site includes red phosphorous, chlorates, dyes, oxidizers, and fuels for flares and smoke munitions. The building used sump pits which were pumped out by trucks and taken to the burning grounds. All sump overflows drained into the Boggs Creek watershed. A metal plating shop utilizing metals, caustics, acids, and cyanides is also present nearby. Significant heavy metal contamination (zinc and cadmium) has been experienced from wastewater being discharged into open ditches. There are also burn areas; one behind Building 126 and one across Highway 5. An RFI will investigate impacts to all media and the need for remedial action. This RFI is not yet scheduled.

BB. SWMU 28/00 MAINTENANCE SHOP, B-1820 (B1820)

This is an automotive repair shop. Adjacent to the building was a large metal drip pan on wooden posts, which drained into an underground waste oil storage tank. Waste oil from various drip pans and gallon jugs were emptied and washed in the metal drip pan. The ground beneath the unit was covered with oil stains. An RFI will investigate impacts to all media and the need for remedial action. This RFI is not yet scheduled.

CC. SWMU 29/00 PCP DIP TANK, B-56 (B56)

The PCP Dip Tank was used for dipping untreated wood into pentachlorophenol. The building also contains some solvent storage tanks. An RFI will investigate impacts to all media and the need for remedial action. This RFI is not yet scheduled.

DD. SWMU 30/00 LAND FARM (LF)

This SWMU consists of 18 miles of roadside where liquid sludge from the sewage treatment plant was land applied. The sludges were potentially contaminated with plating wastes. Sludge that accumulated was spread along 18 miles of roadside by a vacuum truck. Subsequently, NSWC Crane began land applying sludge on a permitted 2.5 acre site. Land application ceased in the late 1990s. An RFI to address the potential impact on the ground water was conducted. The field work was in the 2.5 acre Land Farm area. The results of this work would be used to determine the need for activity along the 18 miles of roadside. Ground water and soil/sludge samples were collected leading to the conclusion that no excess risk existed from the previous application of sludges. A request for a No Further Action determination has been approved by the U. S. EPA.

EE. SWMU 31/00 COMPRESSED GAS CYLINDER SITE (CGC)

This was an abandoned compressed gas cylinder disposal area adjacent to Building 64. An interim removal measure remediated the site in 1990. Based on the currently available information no further corrective measures are required at this site.

FF. SWMU 32/00 TANK FARM

This site has had at least one release. The tanks were removed in the mid 1990s and an RFI to investigate all media is planned but not yet scheduled.

GG. SWMU 33/00 BIOREMEDIATION FACILITY (BRF)

This SWMU is an inactive treatment facility. Potential corrective measures will be determined when the site closes.

HH. AOC 01/00 GRIT BLAST SITE - B3220 (GBS)

The unenclosed building, 3220, was used for grit blast removal of old paint off of railroad cars. Waste material was allowed to fall on the ground contaminating the area. The waste material that was generated from the grit blasting consisted of residual grit blast material and paint chips that contained regulated Chromium levels, and probably lead. A considerable amount of the waste material was placed together creating a non-permitted hazardous waste pile containing a DO07 waste. The waste pile has since been removed and a closure plan for the remaining area has been implemented. A report is currently under Navy review.

II. AOC 02/00 B-2044 Drop Tower/Test Rail (B2044)

Used from 1951 through 1973 for the drop testing of 20-mm cartridges as well as functional testing of cartridge actuated devices (CADs) and propellant actuated devices (PADs) used in ejection seats. The site consists of a drop tower approximately 100 feet tall and a test rail approximately 97 feet in length. The 20-mm cartridges were dropped from the tower onto a concrete pad. The CADs and PADs were tested on the test rail. An RFI will investigate impacts to all media and the need for remedial action. This RFI is not yet scheduled.