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WORK PLAN FOR DISPOSAL OF DYE BURIAL GROUNDS SYE-IMPACTED WATER SOLID
WASTE MANAGEMENT UNIT 02/11 (SWMU02/11) NSWC CRANE IN
10/1/1998
MORRISON KNUDSEN CORPORATION

24

Work Plan
For
Disposal of Dye Burial Grounds
Dye-Impacted Water

Solid Waste Management Unit #02/11

NSWC CRANE
CRANE, INDIANA



SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
Contract #N62467-93-D-1106
Delivery Order #0009
Statement of Work #007

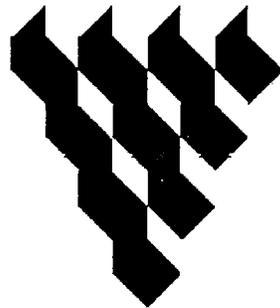
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Prepared by:

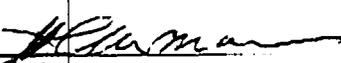
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1.0 INTRODUCTION

1.1 BACKGROUND AND SCOPE

This Work Plan describes the purpose and methodology of dye-impacted water disposal activities to be undertaken by Morrison Knudsen Corporation (MK) at Solid Waste Management Unit (SWMU) #02/11 - Dye Burial Grounds (DBG) area of the Naval Surface Warfare Center (NSWC) Crane, Crane, Indiana. This work is being performed for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), under contract number N62467-93-D-1106, Delivery Order 0007, Statement of Work 009.

The work includes: discharging approximately 150,000 gallons of dye-impacted water from the DBG area to the NSWC Crane Waste Water Treatment Plant; equipment decontamination (all equipment that has come in contact with the dye impacted water including but not limited to the frac tanks, mud boxes, poly tank that held the dye-impacted water, tank truck, pumps, and associated hoses); and site restoration (i.e., grading and seeding) all disturbed areas. The water will be processed through the NSWC Crane Waste Water Treatment Plant and discharged under NPDES permit IN0021539 by NSWC Crane.

1.2 SITE DESCRIPTION

The Naval Surface Warfare Center (NSWC) Crane is located in southwestern Indiana and occupies the northern half of Martin County and parts of Lawrence, Green and Davies counties, approximately 30 miles southwest of Bloomington (Figure 1-1). The site encompasses 62,463 acres including 800-acre Lake Greenwood.

NSWC Crane provides support for equipment, shipboard weapons systems, and ordnance. In addition, NSWC Crane supports the Crane Army Ammunition Activity (CAAA) including production and renovation of conventional ammunition, storage, shipment, and demilitarization and disposal of conventional ammunition.

The DBG is located in the eastern section of NSWC Crane, as shown in Figure 1-2, northeast of the Ammunition Burning Ground (ABG), and sits atop a northeast trending ridge. The DBG is a series of trenches that were used to dispose of dyes and dye-contaminated material. The materials, reportedly, included magnesium, dye-contaminated boxes and rags, and approximately 60 drums of dyes. The trenches were backfilled in 1972 to levels ranging from grade to one foot below adjacent grades, but were not permanently capped [MK, 1997a].

A multi-layer interim measures cap over the dye burial areas was installed and the field work was completed in September 1998. Details of this cap system is provided in the *Work Plan for Interim Measures Cleanup at SWMU #02/11* [MK, 1997a]. During the construction of the cap, runoff water was collected and stored in ten frac tanks and two mud boxes. Additionally, there is one 250-gallon poly tank that was used to handle dye-impacted water during the cap construction.

The water in frac tanks and mud boxes was analyzed by the Navy in accordance with the *Quality Assurance Project Plan (QAPP) for Release Characterization at the Dye Burial Grounds* [MK, 1997b]. The Navy has concluded that the water is non-toxic based on review of the laboratory results and toxicological information on the dyes. In July of 1998, the Navy submitted a "Dye Water Disposal Proposal" to the Indiana Department of Environmental Management (IDEM) [NSWC, 1998]. IDEM approved the proposal and noted that the NPDES permit did not require modification, however, they instructed the Navy to monitor the discharge from Outfall 001 to ensure that the discharge does not violate any water quality standards [IDEM, 1998].

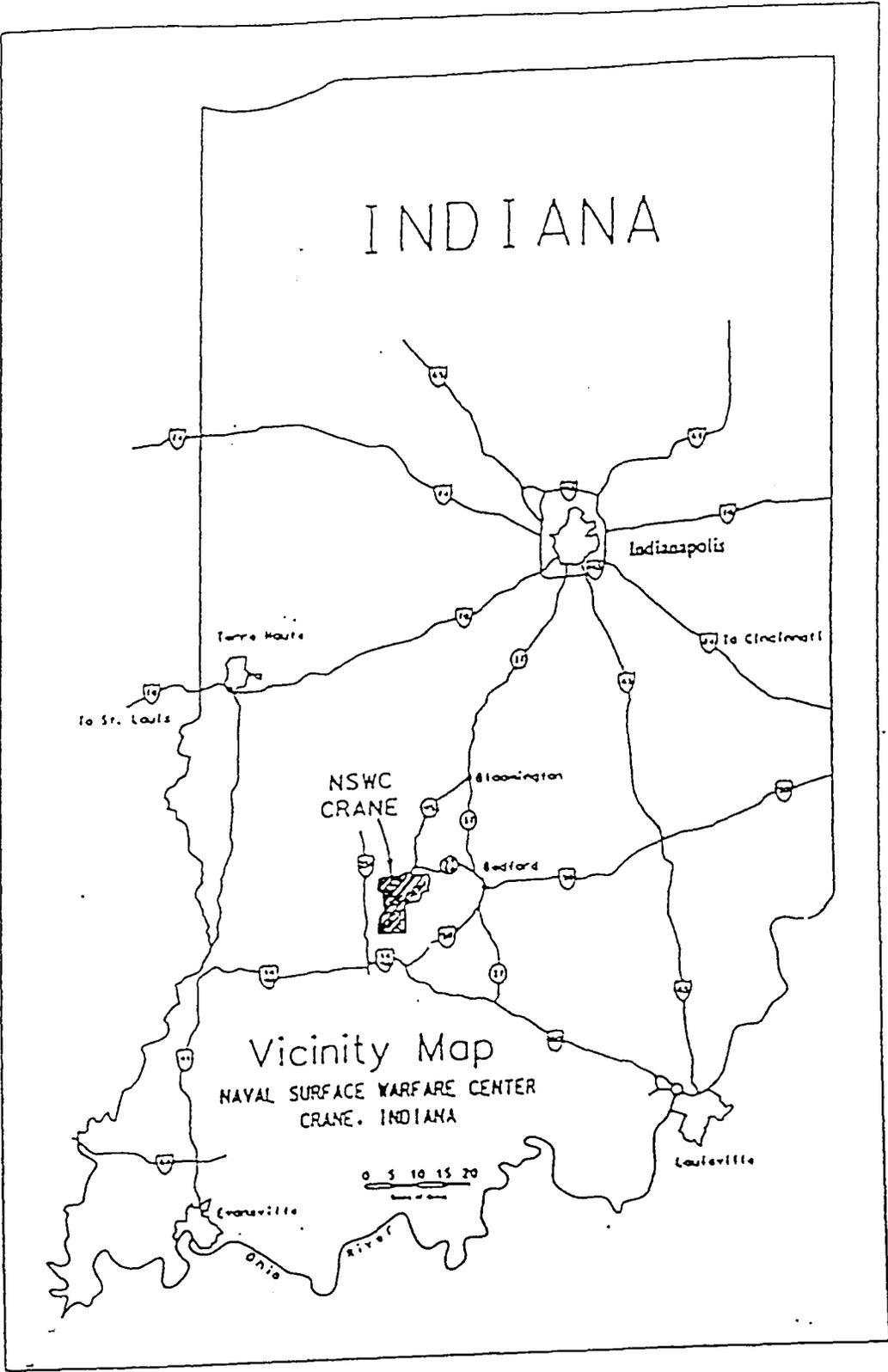


FIGURE 1-1
VICINITY MAP OF NSWC CRANE

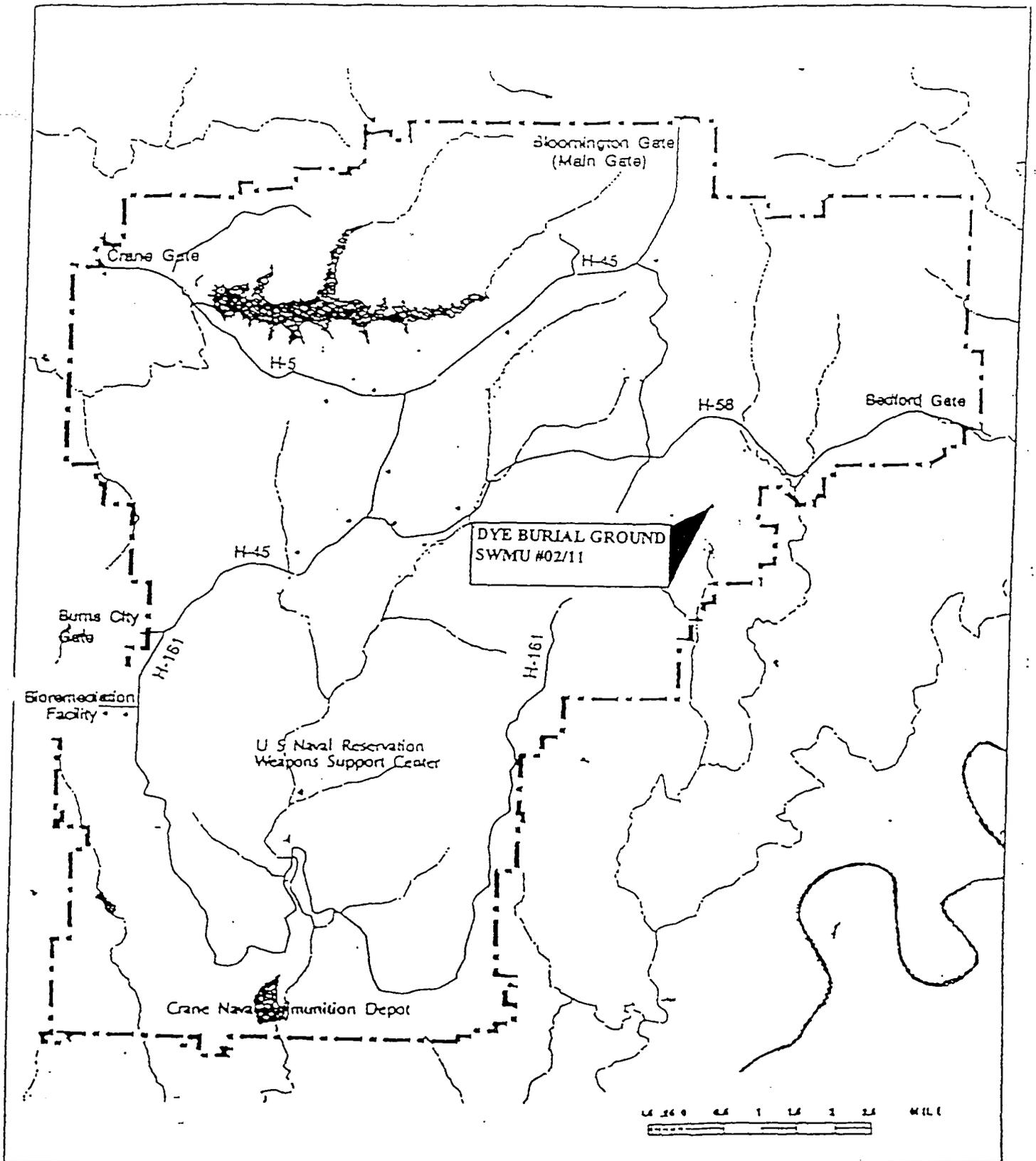


FIGURE 1-2
 LOCATION OF DBG (SWMU #02/11)

2.0 WORK APPROACH AND EXECUTION

This section describes the work approach that will be employed during disposal of dye-impacted water from SWMU #02/11, decontamination of storage vessels (frac tanks, mud boxes, and poly tanks), and site restoration.

2.1 DYE IMPACTED WATER DISPOSAL

The water in the storage vessels and the poly tank will be disposed in accordance with the "Dye Water Disposal Proposal" submitted by the Navy to IDEM [NSWC, 1998].

Water will be pumped from the storage vessels to a water transport truck. The transport truck will have a minimum capacity of 4,000 gallons. The water will be transferred to the transport truck via suction hose, transfer pump, discharge pipe, shut off valve, and a discharge hose. An operator will continuously monitor the level in the transport truck to prevent overflow.

The majority of the water from the tanks will be pumped over the tank wall using a suction hose equipped with a foot valve. The storage vessel ports will only be used when the water level drops to a point where it is no longer feasible to draw the water over the tank wall and additional water could be removed from the tank using the ports on the tank. In addition, before using the tank ports, the ports will be visually inspected for integrity. The transfer pump will be capable of delivering a minimum of 50 gpm at 12 feet of discharge head. Hoses will match the pump suction and discharge sizes. Hose connections will be continuously monitored for leaks. Plastic sheeting and/or catch basins will be placed on the ground when making and removing connections to prevent spillage of dye impacted water to the ground surface.

The water transport truck will be used to transport water from the DBG to a discharge point, as directed by the NSWC Crane Environmental Protection Department (EPD), at an outlying manhole that feeds the NSWC Crane Waste Water Treatment Plant.

Water will be pumped or gravity drained from the transport truck to the discharge point via transfer hose, totalizer meter, and shut off valve. An operator will continuously monitor the discharge point to prevent water backup and spillage. The totalizer meter readings will be recorded at the beginning and end of each day for which dye-impacted water discharge occurs. The totalizer meter will be factory calibrated. Additional field calibration, if required, will be performed as recommended by the manufacturer. The maximum allowable discharge flow rate will be determined by NSWC Crane EPD to ensure compliance with 327 IAC 2-1-6, *Minimum Surface Water Quality Standards*. The water quality at Waste Water Treatment Plant Outfall 001 will be visually monitored by NSWC Crane personnel to ensure that the discharge does not create a nuisance color and violate 327 IAC 2-1-6.

2.2 DECONTAMINATION

After the water is discharged from each of the storage vessels, the vessels will be transported to the decontamination pad at the NSWC Crane Waste Water Treatment Facility. All equipment that has contacted dye impacted water, including but not limited to: storage vessels, pumps, and hoses, will be rinsed with a potable water spray a minimum of three times and drained after each rinse. After the third rinsing, a sample of the rinse water will be collected in a clear glass jar and visually inspected against a white background for the presence of dye color. The decontaminated items will be considered clean if the rinse water does not present a nuisance color as described in 327 IAC 2-1-6 (1) (C). If the color of the rinse water is determined to present a nuisance, the items will be rinsed and visually inspected until the dye does not present a nuisance color as described in 327 IAC 2-1-6 (1) (C). The total volume of water used for decontamination of each of the items will be documented. The generated rinse water will be

discharged to a discharge point, as directed by the NSWC Crane EPD, at an outlying manhole on the NSWC Crane Waste Water Treatment Plant.

Decontaminated frac tanks and mud boxes will be staged for pick up by their owner. The decontaminated poly tank, hoses, and pump will be used at the Bioremediation Facility for full-scale operations. Used PPE will be classified as a solid waste and will be disposed of at the on-site solid waste landfill.

2.3 SITE RESTORATION

After the frac tanks and mud boxes are removed from the site, the site will be rough graded to match the surrounding terrain. Gravel areas will remain as is. All other areas disturbed during construction will be seeded during favorable climatic conditions. All seeded areas will be mulched to prevent erosion and ensure seeding success.

The seed will be in compliance with Indiana Seed Law consisting of the latest season's crop. It will consist of a mixture of the following grasses: Kentucky 31 fescue, perennial rye, and Kentucky bluegrass. The mixture will consist of 50 pounds per acre Kentucky 31 fescue, 35 pounds per acre perennial rye, and 25 pounds per acre Kentucky bluegrass for a total of 110 pounds of seed per acre.

2.4 SITE SAFETY AND HEALTH

Prior to work start-up, the MK Site Safety and Health Officer (SSHO) will review the work scope and equipment selection for potential hazards and preplan means of control. Prior to performing field work, Activity Hazards Analysis (AHA) worksheets will be developed by the MK SSHO and a briefing will be provided to field personnel on safety and health items.

Fuels, hydraulic fluids, decontamination chemicals (if used), as well as any other chemicals associated with this work are all controlled substances and their release to the environment will be prevented or mitigated. Applicable sections of the Spill Prevention, Controls, and Contingency Plan included in the *Work Plan for Interim Measures Cleanup at SWMU #02/11* [MK, 1997a] will be implemented during field work.

Based on Navy analysis of the dye-impacted water, it has been determined to be non-toxic. However, as a safeguard, personnel performing this work will be reminded to avoid direct contact with the liquid and wash hands prior to eating, drinking and smoking. Personnel completing pump hook-ups will wear Level D personal protective equipment (PPE) including dedicated coveralls, PVC boots, safety glasses, and nitrile gloves. Ground Fault Circuit Interrupters (GFCIs) will be installed on all portable electrical equipment and installations in accordance with U.S. Army Corps of Engineers' *Safety and Health Requirements Manual* EM 385-1-1, Section 11.C.05 [ACOE, 1996].

Prior to transportation of the tankers and the vessels, haul routes between DBG and the NSWC Crane Waste Water Treatment Plant will be reviewed with the vehicle drivers. All vessels will be properly secured and fastened to the transport vehicle prior to transport. Personnel completing decontamination activities will wear Modified Level D PPE with the addition of a face shield and rain suit, as protection from any over spray.

2.5 QUALITY CONTROL

A Program-Wide *Delivery Order Execution Quality Control Plan* (QCP) has been developed for the SOUTHNAVFACENGCOM Environmental Remedial Action Contract [MK, 1996]. The MK Quality Control Program integrates the Navy's Quality Control system using the "Three Phases of Control". The Three

Phases of Control provide internal check points to systematically inspect the planned or on-going work. The "Three Phases of Control" are described in the QCP [MK, 1996].

2.6 REGULATORY COMPLIANCE

All interim measures work actions described in this Plan will be performed in accordance with applicable federal, state and local rules, regulations and codes.

The water will be discharged in accordance with NPDES permit IN0021539 and will comply with the requirements of 327 IAC 2-1-6, *Minimum Surface Water Quality Standards*.

2.7 INTERIM MEASURES REPORT

The following items will be incorporated into the Interim Measures Report (IMR) for the cap construction at DBG SWMU #02/11 or an addendum to that IMR will be prepared and submitted to SOUTHNAVFACENGCOM and NSWC Crane EPD for subsequent submittal to the U.S. EPA.

- a detailed background description of the water including: its origin, the reason for collection, and the source of contamination
- analytical reports documenting the results of sampling of the dye impacted water
- copies of related regulatory correspondences including the IDEM approval letter [NSWC, 1998]
- a description of the water disposal method
- daily total quantity of water discharged to the waste water treatment plant
- a summary of the discharge monitoring
- a summary of decontamination activities
- photographic documentation of actions indicating conditions before, during, and after work activities
- changes to this Plan, if any
- conclusions and recommendations

3.0 SCHEDULE

The tentative milestone work schedule for the disposal of dye-impacted water from SWMU #02/11 is as follows:

NSWC Crane EPD determine discharge flow rates	October 02, 1998
Approval of Work Plan	November 20, 1998
Begin water discharge	November 23, 1998
Complete water discharge	December 15, 1998
Decontamination and transportation of vessels	December 30, 1998
Complete site restoration	Spring 1999

4.0 REFERENCES

- ACOE, 1996. *Safety and Health Requirements Manual*, EM 385-1-1. US Army Corps of Engineers, September 1996.
- IDEM, 1998. Indiana Department of Environmental Management letter to Department of Navy, Crane Division, dated September 1998. Reference to NSWC Crane letter dated July 17, 1998 concerning disposal of Dye Burial Grounds water under NPDES Permit IN0021539.
- MK, 1996. *Delivery Order Execution Quality Control Plan*, Southern Division, Naval Facilities Engineering Command. Prepared by Morrison Knudsen Corporation, Rev. 0, July 12, 1996.
- MK, 1997a. *Work Plan for Interim Measures Cleanup at Solid Waste Management Unit #02/11 at NSWC Crane, Crane, Indiana*. Prepared by Morrison Knudsen Corporation, Revision #2, August 7, 1997.
- MK, 1997b. *Quality Assurance Project Plan for Release Characterization at the Dye Burial Grounds Solid Waste Management Unit - 02/11 at NSWC Crane, Crane, Indiana*. Prepared by Morrison Knudsen Corporation, November 20, 1997.
- NSWC, 1998. NSWC Crane letter to Indiana Department of Environmental Management (IDEM). Department of Navy, Crane Division, Code 5090 Ser 095/8137 letter dated 17 July 1998.