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LETTER REGARDING ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
CONCURRENCE WITH THE RECORD OF DECISION FOR SITE 19 SMALL ARMS RANGE
910 AND OPERABLE UNIT 1 (OU 1) SITE 17 PETTIBONE CREEK WITH ATTACHMENT
NSTC GREAT LAKES IL
4/18/2014
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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PAT QUINN, GOVERNOR

LISA BONNETT, DIRECTOR

217-524-1655

April 18, 2014

Ms. Terese A. Vandonsel
Department of the Navy
Naval Facilities Engineering Command
NAVFAC Midwest IPT EV
Building 1A
201 Decatur Avenue
Great Lakes, Illinois 60088-2801

Re: 0971255048 – Lake County
Naval Station Great Lakes
Superfund – Technical Reports

Ms. Vandonsel:

The purpose of this letter is to transmit the formal concurrence of the Illinois Environmental Protection Agency (Illinois EPA) on the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA or Superfund) Record of Decision (ROD) for Site 19 – Small Arms Range 910 and Operable Unit 1, Site 17 – Pettibone Creek.

If you should have any questions, need any additional information, or would care to discuss this matter further, prior to May 15, 2014 please contact me directly at 217-524-1655 or via electronic mail at: clarence.smith@illinois.gov. After May 15, 2014, please contact Brian A. Conrath of my staff at 217-557-8155 or via electronic mail at: brian.a.conrath@illinois.gov.

Respectfully,

A handwritten signature in black ink, appearing to read "Clarence L. Smith".

Clarence L. Smith, Manager
Federal Site Remediation Section
Division of Remediation Management
Bureau of Land

Attachments (2)

April 18, 2014

Letter to Ms. Terese A. Vandonsel

Regarding the RODs for Site 19 – Small Arms Range and OU 1, Site 17 – Pettibone Creek

Page 2 of 2

cc: Bureau File
Brian A. Conrath

RECORD OF DECISION

Site 19 – Small Arms Range 910

Naval Station Great Lakes, Illinois

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SITE 19 – SMALL ARMS RANGE 910 NAVAL STATION GREAT LAKES, ILLINOIS



1.0 DECLARATION

This Record of Decision (ROD) presents the Selected Remedy for Site 19 – Small Arms Range 910, located at Naval Station Great Lakes, Great Lakes, Illinois (Figure 1-1). The Selected Remedy for addressing surface and subsurface soil at the site includes land use controls (LUCs). This ROD documents the final remedial action for this site and does not include or affect any of the other sites at the facility. This decision is based on and relies upon information contained in the entire Administrative Record file for the site. Information not specifically summarized in this ROD or its references but contained in the Administrative Record has been considered and is relevant to the selection of the remedy.



The Site 19 remedial action was selected by the Navy, as the lead agency, in consultation with the Illinois Environmental Protection Agency (Illinois EPA), the support agency. The selected remedy is in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, Title 42 United States Code Sections (t) 9601 et seq., and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) §300, et seq. Site 19 is part of a comprehensive environmental investigation and cleanup program currently being performed at Naval Station Great Lakes under CERCLA authority. Naval Station Great Lakes is an active facility, and environmental investigations are funded under Environmental Restoration, Navy.

Site 19 has been included in several environmental investigations, including the base-wide **Initial Assessment Study (IAS)** in 1986. Site-specific investigations were performed at Site 19 between 1998 and 2012, just before and since the Recruit Training Center Rifle Range in Building 910 at Naval Station Great Lakes was demolished. These investigations included:

- **Pre Demolition Hazardous Materials Investigation, Building 910**, (Cape Environmental Management, Inc., 1998).
- **Remedial Investigation and Risk Assessment (RI/RA) Report for Site 19 – Small Arms Range 910**, (TtNUS, 2010).
- **Focused Feasibility Study (FFS) for Small Arms Range 910**, (Tetra Tech, 2012).

There have been no cited violations under federal or state environmental law or any past or pending enforcement actions pertaining to Site 19.

The Selected Remedy is protective of human health and the environment from the potential exposure to the contaminated soil through the use of LUCs. The Selected Remedy will not adversely impact the current and anticipated future land use of the site as an open, grassy area.

1.1 SELECTED REMEDY

The response action selected in this ROD is necessary to protect public health or welfare or the environment from actual or threatened releases of pollutants or contaminants from this site which may present an imminent and substantial endangerment to public health or welfare. A CERCLA action is required because contaminants of concern (COCs) will remain at the site at concentrations greater than allowed for unlimited use and unlimited exposure. Additionally, unacceptable human health risks were identified under hypothetical future land use scenarios from exposure to COCs in media at the site. The Selected Remedy for Site 19 consists of the following:

- Incorporation of LUCs into the Base Master Plan (which already restricts groundwater and surface water use) to also restrict disturbance of surface and subsurface soil, and to prohibit residential development.
- Implementation of Five-Year Reviews to make sure that LUCs remain protective of human health.

The Selected Remedy (Alternative 2 – LUCs) will utilize LUCs to eliminate unacceptable risk associated with potential future exposure to site surface and subsurface soil and associated COCs, arsenic and manganese.

The Selected Remedy was chosen to meet the Remedial Action Objective (RAO) based on the evaluation of site conditions, site-related risks, anticipated future land use, and applicable or relevant and appropriate requirements (ARARs). The Selected Remedy is protective of human health and the environment, is cost-effective, and utilizes permanent solutions to the maximum extent practicable. It is also expected to achieve substantial long-term risk reduction and allow the property to be used for current and reasonably anticipated future land use. The site is a 0.67-acre open parcel covered with grass; it was determined that environmental impact is minimal since it is not an environmentally sensitive location or preferred habitat.

No source materials constituting **principal threat wastes**, as defined by United State Environmental Protection Agency (USEPA), are present at the site, and the lack of treatment was deemed appropriate. Because the Selected Remedy will result in impacted media remaining on site, LUCs will be instituted to make sure the RAO is achieved by limiting site use to non-residential activities and limiting excavation or disturbance of surface and subsurface soil without appropriate safety precautions. This remedy will result in hazardous substances remaining on site at levels that do not allow for unlimited use and unrestricted exposure; therefore, in accordance with Section 121(c) of CERCLA and NCP §300.430(f)(5)(iii)(c), a statutory review will be conducted within 5 years of initiation of remedial action, and every 5 years thereafter, to make sure that the remedy continues to be protective of human health and the environment.

1.2 DATA CERTIFICATION CHECKLIST

The data included in this ROD are summarized in Table 1-1. Additional information can be found in the Administrative Record file for Naval Station Great Lakes.

TABLE 1-1. ROD DATA CERTIFICATION CHECKLIST	
DATA	LOCATION IN ROD
Chemicals of Concern (COCs) and their respective concentrations	Sections 2.3 and 2.5
Baseline risk represented by the COCs	Section 2.5
Cleanup objectives established for COCs and the basis for these levels	Section 2.7
How source materials constituting principal threats are addressed	Section 2.6
Current and reasonably anticipated future land use assumptions used in the risk assessment	Section 2.4
Potential land and groundwater uses that will be available at the site as a result of the Selected Remedy	Section 2.9.3
Estimated capital and net present worth (NPW) costs; discount rate; and number of years over which the remedy costs are projected	Section 2.8.1
Key factors that led to the selection of the remedy	Section 2.9.1

If contamination posing an unacceptable risk to human health or the environment is discovered after execution of this ROD, the Navy will undertake necessary actions to continue to protect human health and the environment.

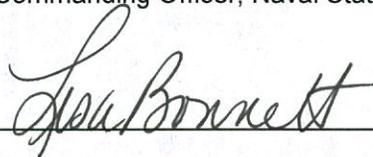
1.3 AUTHORIZING SIGNATURES



W. A. Bulis, Captain, United States Navy
Commanding Officer, Naval Station Great Lakes

6 FEB 2014

Date



Lisa Bonnett, Director, Illinois EPA

4/17/14

Date

2.0 DECISION SUMMARY

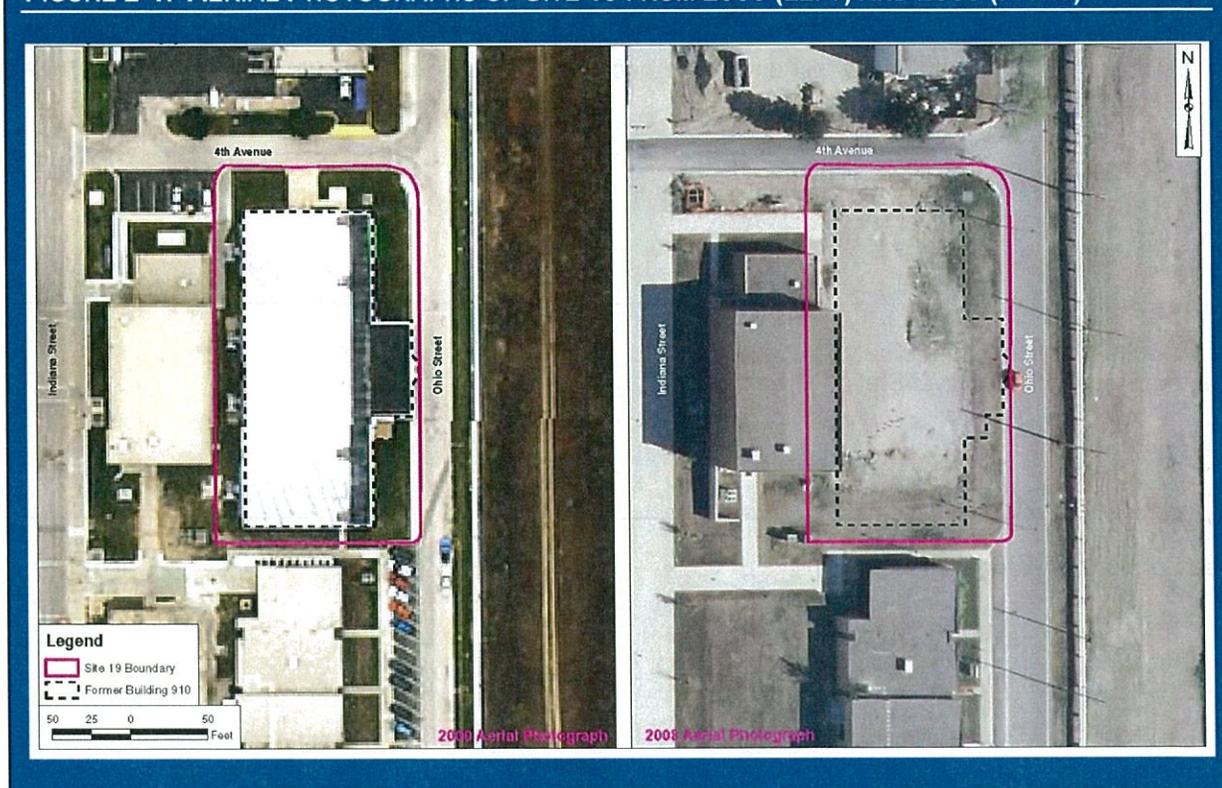
2.1 SITE DESCRIPTION AND HISTORY

Naval Station Great Lakes is located in Lake County, Great Lakes, Illinois, along the shore of Lake Michigan. The majority of Naval Station Great Lakes activities occur on a plateau atop a steep bluff that rises 70 feet above the beach along Lake Michigan. The facilities at Naval Station Great Lakes are used to support naval training and consist of the Recruit Training Command, Training Support Center, and Naval Facilities Engineering Command (NAVFAC) Midwest.

Site 19 - Small Arms Range 910 operated between 1942 and 1997 as a recruit training center indoor rifle range. It is estimated that 19 million pounds of ammunition were spent during its years of operation. Chemical solvents used at the rifle range included CLP brand cleaner and standard issue bore cleaner #6850-00-224-6663. Between the spent ammunition and cleaners, there was potential for impact from lead, volatile organic compounds (VOCs), and carcinogenic and non-carcinogenic polynuclear aromatic hydrocarbons (PAHs) in site media.

The building was demolished in 2000. The site is currently open space covered with grass, is approximately 0.67 acres in size, and is located within the Recruit Training Command Area (Figure 2-1).

FIGURE 2-1. AERIAL PHOTOGRAPHS OF SITE 19 FROM 2000 (LEFT) AND 2008 (RIGHT)



2.2 PREVIOUS INVESTIGATIONS

Table 2-1 provides brief summaries of previous investigations performed at Site 19. The nature and extent of the chemicals of potential concern (COPCs) in the various media at the site are discussed in Section 2.3. **Data collected** as part of the Site 19 2010 RI/RA and the 2012 FFS were both used to assess human health risks under various current and future end-use scenarios.

RECORD OF DECISION

OU1, Site 17 – Pettibone Creek

Naval Station Great Lakes, Illinois

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SITE 17 – PETTIBONE CREEK (OPERABLE UNIT 1) NAVAL STATION GREAT LAKES, ILLINOIS



1.0 DECLARATION

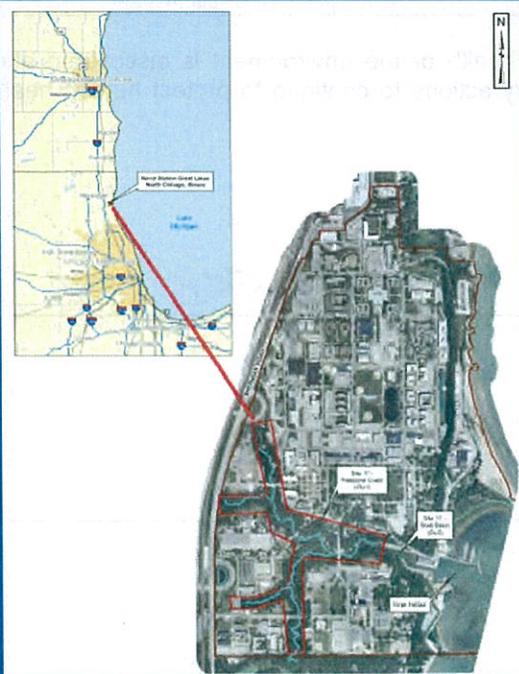
1.1 SITE NAME AND LOCATION

Naval Station Great Lakes (NSGL)
United States Environmental Protection Agency (USEPA) ID No. IL7170024577
Operable Unit (OU) 1
Site 17 – Pettibone Creek
Great Lakes, Illinois

1.2 STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the Selected Remedy for surface water and sediment at OU1, Site 17 – Pettibone Creek (Figure 1-1), which was chosen by the Department of the Navy, the lead agency, and Illinois Environmental Protection Agency (Illinois EPA), the support agency, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 United States Code (USC) §9601 et seq., as amended by the Superfund Amendments and Reauthorization Act (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) Part 300 et seq., as amended. This decision is based on information contained in the Administrative Record file for the site. NSGL is an active facility, and environmental investigations at the facility are funded under Environmental Restoration, Navy (ER,N).

FIGURE 1-1. SITE LOCATION MAP



Site 17 is composed of two interconnected geographic areas, Pettibone Creek and the NSGL Boat Basin, and has been divided into two OUs. The Pettibone Creek portion of Site 17 has been designated as Operable Unit 1 (OU1), and the Boat Basin portion of Site 17 has been designated as Operable Unit 2 (OU2). This ROD addresses only OU1 (Pettibone Creek). A separate ROD will be issued at a later date to document the Navy's selected remedial alternative for the OU2 (Boat Basin).

1.3 DESCRIPTION OF SELECTED REMEDY

No CERCLA action is necessary for OU1 surface water or sediment because chemical concentrations in these media do not present unacceptable CERCLA risks. No other media (e.g., soil or groundwater) is associated with OU1. Human health and ecological risk assessments (RAs) concluded that the low chemical concentrations detected in surface water and sediment do not pose unacceptable risks to human health or the environment based on current and future exposure pathways. In addition, a

continuing source of sediment contamination likely from a combination of point and non-point, anthropogenic sources exists upstream of Pettibone Creek, as documented in the **Sediment Characterization Report in Support of the Feasibility Study (FS) for Site 17- Pettibone Creek** (Tetra Tech, July 2012) (referred to as the Sediment Characterization Report in this ROD).

1.4 STATUTORY DETERMINATION

The Navy has concluded that no CERCLA action is necessary to ensure protection of human health or the environment at Operable Unit 1 (OU1).

1.5 DATA CERTIFICATION CHECKLIST

The data included in this ROD are summarized in Table 1-1. Additional information can be found in the Administrative Record file for Naval Station Great Lakes.

TABLE 1-1. ROD DATA CERTIFICATION CHECKLIST	
DATA	LOCATION IN ROD
Chemicals of Concern (COCs) and their respective concentrations	Not Applicable
Baseline risk represented by the COCs	Not Applicable
Cleanup objectives established for COCs and the basis for these levels	Not Applicable
How source materials constituting principal threats are addressed	Not Applicable
Current and reasonably anticipated future land use assumptions used in the risk assessment	Section 2.5.2, 2.7.1, and 2.7.2
Potential land and groundwater uses that will be available at the site as a result of the Selected Remedy	Section 2.6
Estimated capital and net present worth (NPW) costs; discount rate; and number of years over which the remedy costs are projected	Not Applicable
Key factors that led to the selection of the remedy	Not Applicable

If contamination posing an unacceptable risk to human health or the environment is discovered after execution of this ROD, the Navy will undertake necessary actions to continue to protect human health and the environment.

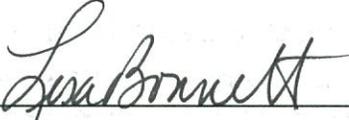
1.6 AUTHORIZING SIGNATURES



W. A. Bulis, Captain, United States Navy
Commanding Officer, Naval Station Great Lakes

6 FEB 2014

Date



Lisa Bonnett, Director, Illinois EPA

4/17/14

Date

2.0 DECISION SUMMARY

2.1 SITE NAME, LOCATION, AND BRIEF DESCRIPTION

NSGL, USEPA ID number IL7170024577, covers 1,202 acres of Lake County, which is located in northeastern Illinois north of the City of Chicago, and encompasses 1.5 miles of Lake Michigan shoreline. NSGL lies within both the North Branch Chicago River Drainage Basin and Lake Michigan North Drainage Basin. Precipitation runoff that does not infiltrate into the ground flows into the Skokie River or Pettibone Creek. Portions of NSGL drain into Lake Michigan through Pettibone Creek.

NSGL administers base operations and provides facilities and related support to training activities (e.g., Recruit Training Command at NSGL is the Navy's only boot camp) as well as a variety of other military commands located on base. Approximately 38,000 Naval recruits are trained each year at the NSGL campus.

A variety of land uses currently surround NSGL. Along the northern boundary of NSGL are the most highly urbanized and industrial areas. Much of the land beyond the northwestern site boundary comprises unincorporated vacant lands of North Chicago, except for scattered retail and residential properties. Adjacent to the western boundary are primarily industrial properties, and along the southern boundary is a mixture of public open space and residential land.

Site 17 is composed of two interconnected geographic areas, Pettibone Creek and the NSGL Boat Basin (see Figure 2-1). The two areas were evaluated as a single entity in the **Remedial Investigation** (RI) for Site 17. However, due to differences in the type and extent of potential contamination and degree of human health and ecological risk, Site 17 was divided into two OUs, OU1, including Pettibone Creek, and OU2, including the NSGL Boat Basin.

Pettibone Creek originates in North Chicago and enters the base at the northwestern corner of NSGL, meandering through the Mainside of NSGL and terminating in Lake Michigan. Pettibone Creek flows through a ravine (named Pettibone Creek Ravine) that ranges from approximately 50 to 100 feet in height with 30- to 70-degree slopes. The Pettibone Creek system consists of northern and southern branches that merge and flow eastward into Lake Michigan via the NSGL harbor system (inner and outer harbor). The North Branch of Pettibone Creek begins outside the base in an urbanized area zoned for light industry and is the discharge point for storm sewers from the City of North Chicago and NSGL. The North Branch of Pettibone Creek has a tributary which enters from the west about 900 to 1,000 feet south from where the North Branch enters NSGL. The South Branch originates in a residential area southwest of NSGL and flows east and then north through a private golf course before entering NSGL.

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

Investigations of Pettibone Creek were initiated in the 1970s and began as part of studies of abandoned industrial facilities in the City of North Chicago located upstream of NSGL (Figure 2-1). Several of the facilities [Fansteel, North Chicago Refiners and Smelters (NCRS), EMCO, and the Vacant Lot] were turn-of-the-century manufacturing facilities that produced tantalum mill products, non-ferrous metals, and zinc oxide. USEPA Region 5, Illinois EPA, and the Navy investigated these facilities to determine if contaminants such as volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and metals were present at those sites. These industries contributed to elevated levels of contaminants in Pettibone Creek sediment according to Illinois EPA and USEPA Region 5 (USEPA, April 2002a and 2002b and May 2002).

The following paragraphs describe activities at the industrial facilities and NSGL that may have impacted Pettibone Creek.

NCRS/R. Lavin & Sons - In 1941, R. Lavin & Sons (a division of NCRS) began operations including smelting and refining non-ferrous scrap metals and manufacture of brass and bronze ingots. The NCRS/R. Lavin & Sons facility occupied approximately 18 acres in North Chicago, northwest of NSGL.

FIGURE 2-1. SITE FACILITY MAP

