

66  
N00164.AR.001082  
NSWC CRANE  
5090.3a

5090

Ser PRCR4/7035

02 February 2007

The letter SER PRCR4/7035 was for the submittal of the change pages and response to comments for the revised draft Grit Blast Site Recommendations for Remediation Report. Change pages added to report dated 3/3/06.

20 July 2005



DEPARTMENT OF THE NAVY

CRANE DIVISION  
NAVAL SURFACE WARFARE CENTER  
300 HIGHWAY 361  
CRANE INDIANA 47522-5001

IN REPLY REFER TO:  
5090/H14.3  
Ser PRCR4/7035  
5 FEB 2007

U.S. Environmental Protection Agency, Region V  
Waste, Pesticides, & Toxics Division  
Waste Management Branch  
Corrective Action Section  
Attn: Mr. Peter Ramanauskas (DW-8J)  
77 West Jackson Blvd.  
Chicago, IL 60604

Dear Mr. Ramanauskas:

Crane Division, Naval Surface Warfare Center (NSWC Crane) submits for your review and approval the Revised Draft Grit Blast Site Recommendations for Remediation Report. One copy of the report is provided as enclosure (1). Enclosure (2) contains the replacement pages instructions and the response to comments. Also included is the required certification statement as enclosure (3).

NSWC Crane requests that this report be considered as the formal closure report. As such, once the report is approved, the closure action for the Grit Blast Site should be considered closed.

If you require any further information, my point of contact is Mrs. Christine D. Freeman, Code PRCR4-CF, at 812-854-4423, email christine.freeman@navy.mil.

Sincerely,

*J. M. Hunsicker*

J. M. HUNSICKER

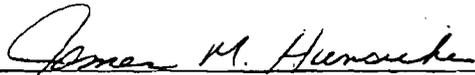
Environmental Site Mgr

By direction of the Commanding Officer

- Enclosures:
1. Revised Draft Grit Blast Recommendations for Remediation Report
  2. Replacement Pages Instructions and Response to Comments
  3. Certification Statement

Copy to:  
ADMINISTRATIVE RECORD  
IDEM (D. Griffin)  
TOLTEST  
TTNUS

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

ENVIRONMENTAL SITE MANAGER  
BY DIRECTION OF THE COMMANDING OFFICER

\_\_\_\_\_  
TITLE

2/05/07  
\_\_\_\_\_  
DATE

**Revised Draft**  
**Grit Blast Recommendations for Remediation Report**  
**Replacement Pages Instructions and Response to Comments**

Replacement Pages Instructions:

Replace all except Appendices A through C of the Draft Grit Blast Recommendations for Remediation Report dated February 2006 with the included Revised Draft Grit Blast Recommendations for Remediation Report dated January 2007.

General Comments:

1. Comment: Section 1.2, Project Objectives and Scope - This section needs to state that a screening risk assessment (i.e., ecological and human health) was conducted to allow for a risk management decision.

**Response:** A fourth objective will be added to the end of Section 1.2 as follows: "4) compare the chemical concentrations in the soil, sediment, and surface water to applicable human health and ecological screening levels, as appropriate, to aid in making a risk management decision for the site."

2. Comment: This report needs to be revised to include screening ecological risk benchmarks and analysis.

**Response:** Please see responses to Specific Comments No. 3, 4, and 5.

3. Comment: The last paragraph of Section 4.0 (page 4-2) claims that all lead and chromium exceedences from samples collected at and around B-3220 are not associated with B-3220. Frankly, that is quite a stretch. This statement is based on one upgradient surface water sample which exceeded the residential human health screening value for lead in groundwater. This type of a conclusion will require much additional information (lines of evidence) to support, particularly since the operational history of the B-3220 area is known to be associated with waste paint chips. The paragraph goes on to state that neither lead nor chromium exceed screening at the downgradient sample; however, SWS-08 and SWS-10 are not mentioned. These sediment samples both exceed IDEM RISC values (ecological screening needs to be determined). At this time, it appears that B-3220 operations have affected surface waters and sediments downgradient.

**Response:** It is not clear that the conclusion claims that all lead and chromium exceedences from samples collected at and around B-3220 are not associated with B-3220. However, based on the soil data, it appears that lead and chromium at the site are not associated with activities at B-3220. The chromium and lead results in the soil samples ranged from 8.5 mg/kg to 20.5 mg/kg and from 6.2 mg/kg to 15.4 mg/kg, respectively. These concentrations are very low and are less than the maximum concentrations in the background data set at Crane (Soil Group 3 - Alluvial, Mississippian, and Pennsylvanian Surface Soil), of 21.7 mg/kg for chromium and 21.5 mg/kg for lead. Also, the Eco SSL guidance document reported that the mean background concentrations for chromium and lead in Indiana are 46.8 mg/kg and 18 mg/kg, respectively, both of which are greater than the maximum detected concentrations in the surface soil samples at B-3220. Therefore, it does not appear that chromium and lead in the surface soil are site-related.

It is difficult to make any conclusions regarding the surface water concentrations of these metals. The surface water samples collected at the site were not filtered and most of them were described as turbid. Therefore, the elevated metals results

**Revised Draft**  
**Grit Blast Recommendations for Remediation Report**  
**Replacement Pages Instructions and Response to Comments**

are likely due to the suspended solids in the samples. This is supported by the fact that SWS-05 (described as a clear sample), which is the furthest downstream location (not including the downgradient location), had much lower concentrations of chromium and lead than the other more turbid samples. Just because the lead and chromium concentrations in the downgradient sediment sample were greater than the ecological screening levels and greater than the concentrations in the "upgradient" sample does not mean that B-3220 has affected surface water and sediment downgradient of the site. The downgradient sample is located very far downstream (several thousand feet) and there are a lot of other potential sources of contamination between the site and the sample location (i.e., runoff from roads). Also, the upgradient sample was collected from a puddle in a middle of a gravel lot; it was not a true "upgradient" sample. Finally, that fact that the chromium and lead concentrations in the soil at B-3220 are several times lower than the concentrations in the sediment indicates it is not likely that metals from the site are the source of the metals in the downgradient location.

These additional lines of evidence will be added to the conclusions section to support the decision that a remedial action is not recommended for the site.

Specific

3. Comment: Section 2.1 Soil Sampling, 11th paragraph (bottom of page 2-2) and Table 2 - Will need to reference the ecological soil screening level (Eco-SSL) benchmarks into the text and include the actual values into the table. The Eco-SSL's for chromium and lead are available at the following website: <http://www.epa.gov/ecotox/ecossil/>

**Response:** As discussed in Section 2.1 of the Grit Blast Report, soil samples were obtained by removing the top layer of gravel at each sample location with the aid of a backhoe. The gravel was typically between one to one and one-half feet thick. The first photograph in the revised Appendix D shows that the site is covered with gravel. Therefore, there is not a complete exposure pathway for ecological receptors so it is not appropriate to evaluate potential risks to these receptors. For that reason, risks to terrestrial receptors will not be evaluated in the Grit Blast Report and the Eco-SSLs will not be referenced.

4. Comment: Tables 3, 4, and 5 -

a) The USEPA, Region 5, RCRA, ecological screening levels (ESL's) for water need to be inserted into these three tables. The Region 5, RCRA ESL's are available at the following website <http://www.epa.gov/reg5rcra/ca/edql.htm>

b. The ESL's need to be corrected for site specific water hardness

c. Corresponding text for these tables will need to be revised to include the comparison of sampling data to the ESL's

**Response:** a) Table 3 presents the results of the water samples collected from the boreholes during soil sampling. These samples do not represent true surface water so it is not appropriate to compare the sample results to aquatic life surface water screening levels.

**Revised Draft**  
**Grit Blast Recommendations for Remediation Report**  
**Replacement Pages Instructions and Response to Comments**

As indicated in section 2.3, samples SWS-01, -02, -03, and -06 were collected during a rain event from small streams of water, just prior to the streams entering grates. In most cases, a depression in the ground had to be dug to facilitate filling the sample container and/or a funnel was used to capture the water and transfer it to the sample container. Sample SWS-05 was filled directly with the water flowing from a 12-inch pipe where the water in the pipe flowed to daylight outside the investigation area. Most of the surface water samples listed in Table 4 were collected from areas where there is no aquatic habitat and only have flowing water during or immediately after a rain event. Appendix D of the report contains photographs of locations SWS-01, -02, -03, and -05, and well as the upgradient location. A photograph of location of SWS-06 is not shown in Appendix D but it was collected in a gravel area near the railroad track. Based on the photographs, it is obvious that there is no aquatic habitat for ecological receptors at locations SWS-01, -02, -03, or -06 or the upgradient location. It is possible that there is very limited habitat downstream of SWS-05. The Region 5 ESLs will be added to Table 4 and a comparison to the ESLs will be discussed in the text. The discussion will describe the lack of aquatic habitat at locations SWS-01, -02, -03, and -06 and will focus on the results from location SWS-05, because it is the furthest downstream location closest to the site and the only location where aquatic habitat may exist immediately downgradient of its location. The evaluation will focus on acute versus chronic criteria (although both will be presented). This is because the exposure is short-term (i.e., acute) given the water is only flowing during a rain event. Also note that most of the samples contained suspended solids which likely were responsible for the elevated levels of total metals in those samples. Because dissolved metals are the more bioavailable and toxic portion of metals, there is additional uncertainty in comparing total concentrations of metals to aquatic live surface water screening levels. This uncertainty will be presented in the report.

Table 5 presents the results of the upgradient and downgradient surface water samples. The upgradient sample is only upgradient in elevation; it was collected from a small puddle in the gravel north of the site; there is no aquatic habitat at this location (see attached Figure 1). The downgradient samples were obtained from the first permanent pool of water encountered downstream of sample location SWS-05. The downgradient samples were located greater than 1,000 feet downstream of the site (see Figure A1-2 and Appendix D Photo 7). The Region 5 ESLs will be added to Table 5 and a comparison to the ESLs will be discussed in the text.

b) Most of the surface water samples were not analyzed for hardness or for calcium and magnesium (which could be used to calculate hardness). The upgradient and downgradient samples were analyzed for hardness, so the minimum hardness value of 140 mg/L CaCO<sub>3</sub> will be used as the hardness for all of the surface water samples except at SWS-11. A hardness of 400 mg/L CaCO<sub>3</sub> will be used for that sample because that is the maximum hardness that can be used for calculating ESLs.

c) Text will be added to present the comparison of the surface water data to the ESLs as discussed above.

**Revised Draft**  
**Grit Blast Recommendations for Remediation Report**  
**Replacement Pages Instructions and Response to Comments**

5. Comment: Table 6

a. The USEPA, Region 5, RCRA, ecological screening levels (ESL's) for sediment need to be inserted into this table. The Region 5, RCRA ESL's are available at the following website <http://www.epa.gov/reg5rcra/ca/edql.htm>

b. Corresponding text for this table will need to be revised to include the comparison of sampling data to the ESL's

**Response:** a) The Region 5 ESLs will be added to Table 6.

b) Text will be added to present the comparison of the sediment data to the ESLs. As discussed in response to general comment No. 3, the metals in the downgradient location are not likely to be related to site activities, though.

6. Comment: Section 4.0 Conclusions

This section will need to be revised to include the evaluation of ecological benchmarks.

**Response:** The section will be revised based on the evaluation of the ecological benchmarks.