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NAS PENSACOLA
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U S NAVY RESPONSES TO U S EPA REGION IV COMMENTS ON FINAL OPERABLE UNIT 2
(OU 2) REMEDIAL INVESTIGATION ADDENDUM NAS PENSACOLA FL
4/1/2005
NAVFAC SOUTHERN

**Navy Response to USEPA Comments on the Final OU2 Remedial Investigation
Report Addendum, NAS Pensacola
April 2005**

SPECIFIC COMMENTS

1. **Section 1.2, Page 2, 2nd Paragraph, 3rd Item in the List.** The reader is directed to Figure 1 to see, among other things, Wetland 5B, Wetland 6, and the Yacht Basin. None of the three preceding areas is identified on Figure 1. Please either identify these areas on Figure 1 or direct the reader to another figure.

RESPONSE:

The figure has been changed accordingly.

2. **Figures 2 through 11.** Wetland 5A is far smaller and differently shaped on Figures 2 through 11 than it is on Figure 1. Please explain.

RESPONSE:

The figure has been changed accordingly.

3. **Figures 2 and 3.** The purple dashed line signifying the closed lagoon is too close in color to the dark blue lines signifying groundwater contours. Please choose another color to represent the closed lagoon. Alternatively, please consider removing closed lagoon from the legend and simply label the closed lagoon's outline directly on the figure to identify it.

RESPONSE:

The figure has been changed accordingly.

4. **Figures 4 through 11.** Please consider removing closed lagoon from the legend and simply label the closed lagoon's outline directly on the figure to identify it.

RESPONSE:

The figure has been changed accordingly.

5. **Figure 2.** The seven-foot groundwater contour should pass to the east of shallow groundwater monitoring well 30GS18, which had a groundwater elevation of 7.09 feet in March 2003, and not to the west of it, as is shown on Figure 2. Please make this change.

RESPONSE:

The figure has been changed accordingly.

6. **Figure 2 and Table 1.** Many of the shallow groundwater monitoring well IDs shown on Figure 2 are slightly different from either the Original Well ID or the Alias shown in Table 1. For instance, the shallow groundwater monitoring well having the ID 11GS28 on Figure 2 has an Original Well ID of 11GM28 in Table 1. This is the case for too many IDs for this to simply be a case of typographical errors. Please explain why multiple IDs

exist for monitoring wells. Please also correct incorrect monitoring well IDs where they exist throughout the report.

RESPONSE:

Text has been added to the report to address the apparent discrepancies noted by the reviewer, and all the tables have been corrected. At Pensacola, "short IDs" (typically comprising six digits for groundwater and seven or eight digits for soil) have historically been used to designate **location and well IDs** for soil and groundwater samples, whereas actual soil and groundwater **sample IDs** are 10 digits in length. While this may cause some initial confusion, this difference is necessary because groundwater may be sampled several times from the same location (thus needing incorporation into the sample ID), and the depth of soil sample collection needs to be incorporated into the sample designator. To further illustrate the nomenclature system for *sample location IDs* and *hypothetical sample IDs* and avoid further confusion to the reviewer:

Location ID = 11GS06 (Site 11, shallow groundwater sample location 6; *sample ID* = 011GS00601 [for first time sampled])

Location ID = 11GI06 (Site 11, intermediate groundwater sample location 6; *sample ID* = 011GI00601 [for first time sampled])

Location ID = 011S006 (Site 11, soil sample location 6; *sample ID* = 011S000604 [sampled from 02-04])

Furthermore, many wells were drilled during the characterization and confirmation studies conducted during the mid-1980's. These were designated with "GM" in the well IDs. When the remedial investigation for OU2 was conducted, these wells were evaluated as to their usefulness to the investigation. For those that were used, the location ID was typically changed from "GM" to "GS". However, there are some for which the GM and GS have been used interchangeably, hence the use of aliases and or interchanging of the "GM" and "GS" identifiers..

7. **Figure 3.** In the legend entry for Intermediate Groundwater Monitoring Well Locations/IDs and Groundwater Elevation, please change (In Feet About MSL) to read (In Feet Above MSL).

RESPONSE:

The figure has been changed accordingly.

8. **Figure 4.** Please correct the spelling of "Polychlorinated Biphenyls" in the Parameter Group Key. Please add the sample depths and parameter groups analyzed for 012S0008. Please add the sample depths for the "V" and "S" parameter groups for 011SLF012. Please show 32 soil samples on Figure 4, as the text on Page 4 indicated there would be, or change the number of soil samples identified in the text to match the number shown on Figure 4. Please add the soil boring ID with sample depth and parameter group for 12GS09. Please add "20-V" below 030S138. This constitutes too many mistakes for one figure.

RESPONSE:

The figure has been changed accordingly.

9. **Figure 5.** With respect to "VOCs" below "Resampling Parameters Legend", please be consistent with language as "VOAs" is how the parameters are described elsewhere in the report.

RESPONSE:

The figure has been changed accordingly.

10. **Section 5.1, Page 8, 1st Paragraph, 1st Sentence.** This sentence should refer the reader to Figure 4, not Figure 2. Also, Figure 4 currently shows only six subsurface soil samples analyzed for metals, not eight subsurface and one surface, as indicated in the sentence. 12GS08 and 12GS09 account for the other two subsurface soil samples analyzed for metals. Please indicate which surface soil sample was analyzed for metals.

RESPONSE:

The text and figure have been revised accordingly; please refer to the figure for the surface soil analyzed for metals.

11. **Figure 6.** Many inconsistencies exist between the soil samples shown on this figure and those shown on Figure 4. Please bring these two figures into agreement with one another. Also, it appears that sample IDs 011LSF1206 and 011LSF1501 should instead be 011SLF1206 and 011SLF1501. Please make these changes. Also, "LB" in the figure title should probably be defined as "Leachability-Based" somewhere on the figure (probably in the legend).

RESPONSE:

011LSF1501 was mislabeled and should actually be 011LFS5001. The figure has been revised accordingly per the comment.

12. **Section 5.1, Page 9, Groundwater, 1st Paragraph, 1st Sentence.** This sentence indicates that 35 groundwater samples were collected and analyzed for metals. Figure 5 shows that 34 groundwater samples were collected and analyzed for metals. Table 4 lists 35 groundwater samples that were collected and analyzed for metals. Please bring these numbers into agreement with one another.

RESPONSE:

Figure 5 has been changed accordingly.

13. **Figure 7.** The first note on this figure indicates that parameters in red exceed the higher of the GCTL or the NASP reference. This does not appear to be the case for the following four shallow groundwater monitoring wells and parameters: 11GS28, iron; 12GS08, iron; 27GS10, manganese; and 30GS111, iron. Please change the text color for these four parameters and concentrations.

RESPONSE:

The figure has been changed accordingly.

14. **Section 5.1, Page 10, Groundwater, Last Paragraph (of Groundwater Subsection).** This sentence says in part, "Of the 35 samples, the following exceedances of the higher of the GCTLs or the NASP reference were present (see Table 4): aluminum (14 samples); iron (28 samples); manganese (13 samples)..." Review of Figure 7 reveals that for aluminum, 15 samples exceeded the GCTL and 0 samples exceeded the NASP reference. For iron, 29 samples exceeded the GCTL and 17 samples exceeded the NASP reference. For manganese, 14 samples exceeded the GCTL and 25 samples exceeded the NASP reference. Please confirm and change the text and figure as appropriate.

RESPONSE:

The figure and text have been changed accordingly.

15. **Section 5.1, Page 10, Soil, 1st Paragraph, 1st Sentence.** The two sample IDs in this sentence appear to be slightly incorrect. Please change them to 011S001506 and 011SLF1501.

RESPONSE:

Sample 011SLF1501 has been changed to 011LF5S001; the rest of the text has been revised accordingly.

16. **Section 5.1, Page 10, Soil, 2nd Paragraph, 1st Sentence.** Please decide what this sample ID is and update the text, Figure 6, and Table 2 accordingly.

RESPONSE:

The text has been changed accordingly.

17. **Section 5.1, Page 10, Soil, 3rd Paragraph, 1st Sentence.** Please confirm that the text should read, "adjacent to Wetland 6" and not "adjacent to Wetland 7."

RESPONSE:

The text has been changed accordingly.

18. **Section 5.1, Page 10, Groundwater, 1st Paragraph, 2nd Sentence.** Please define DRMO, as this is the first occurrence of that acronym in the text.

RESPONSE:

The text has been changed accordingly.

19. **Section 5.1, Page 11, Groundwater, 1st Paragraph, 2nd Sentence.** 11GS07, as it is mapped on Figure 8, appears to be on the immediate west side of Wetland 7, not

Wetland 6, as is indicated in the text. Please change the text or figures to make this sentence correct.

RESPONSE:

The text has been changed accordingly.

20. **Section 5.1, Page 11, Feasibility Study Questions, 1st Paragraph, 2nd Sentence.** It appears that the sample ID has an extra "1" in it. It appears that the sample ID should be 011S001506. Please confirm and change, if appropriate.

RESPONSE:

The text has been changed accordingly.

21. **Table 5.** The acronym "SCTG" in the notes section below the table should actually read SCTL. Please make this change.

RESPONSE:

The text has been changed accordingly.

22. **Figure 5.** Shallow monitoring well 12GS08 needs to have a purple square next to it to indicate that groundwater from it was collected and analyzed for pesticides and PCBs. Please make this change.

RESPONSE:

The figure has been changed accordingly.

23. **Section 5.3, Page 14, Soil SPLP, 2nd Paragraph, 1st Sentence.** This sentence says in part that, "bulk analytical results were below the applicable SCTL." According to Table 12, the bulk analytical results for 027S001706 were above the applicable SCTLs for 2,4-Dinitrotoluene and 2,6-Dinitrotoluene. Please confirm and revise the text, as appropriate.

RESPONSE:

According to Table 12, both bulk analytical results for 2,4-dinitrotoluene and 2,6-dinitrotoluene were not detected.

24. **Section 5.3, Page 14, Soil SPLP, 2nd Paragraph, 2nd Sentence.** Please correct the spelling of 1-methylnaphthalene and 2-methylnaphthalene.

RESPONSE:

The text has been changed accordingly.

25. **Figure 5.** This figure only shows 25 dark blue squares indicating Semi-VOAs groundwater sampling locations, whereas the text at the bottom of Page 14, and Table 13 indicate that there were 26 Semi-VOAs groundwater sampling locations.

Please confirm the number of locations and adjust the Figure, text, and Table, as appropriate.

RESPONSE:

The table and text are correct; the figure has been changed accordingly.

26. **Section 5.3, Page 15, Groundwater; 3rd Paragraph.** Please correct the spelling of 1-methylnaphthalene and 3 and 4 - methyl phenol. Additionally, for 3 and 4 - methyl phenol, please replace 27S018 with 27GS18, and add 30GS06. For naphthalene, please add 30GS111.

RESPONSE:

The text has been changed accordingly.

27. **Figure 9.** The heading above the names of the parameters should read, "SVOA," not "INORGANIC." The fourth note refers to "SVOCs." For the sake of consistency, these parameters should probably be referred to as "SVOAs," as that is how the parameters are described elsewhere in the report. Below the "PARAMETER KEY," 2-Methylnaphthalene should have its abbreviation of "(2-MN)" added after it. Below 30GS06 and 30GS22, 3/4-MN should be changed to 3/4-MP. Please make these changes.

RESPONSE:

The figure has been revised accordingly.

28. **Section 5.3, Page 16, Groundwater; 1st Bullet.** 11GS47 appears on the figures to be adjacent to Wetland 7, not Wetland 6 as the text indicates. Please confirm and change the text or figures, as appropriate.

RESPONSE:

The text has been changed accordingly.

29. **Section 5.3, Page 16, Groundwater; 3rd Bullet.** It seems as though 30GS111 should be mentioned here too, as it had an exceedance of naphthalene. Additionally, 30GI111 and 30GS111 appear on the figures to be immediately north of Wetland 5B, not Wetland 5A, as the text indicates. Please confirm and change the text or figures, as appropriate.

RESPONSE:

The text has been changed accordingly.

30. **Section 5.3, Page 16, Groundwater; 6th Bullet.** 27S018 should be replaced by 27GS18 in order to agree with the figures and Table 13.

RESPONSE:

The text has been changed accordingly.

31. **Table 14.** In the comments cell for 27GS19, please correctly spell 3 and 4 methylnaphthalene. Additionally, please correctly identify well 30GI111.

RESPONSE:

The text has been changed accordingly.

32. **Trend Analysis Table T-2.** It appears that the total number of exceedances in 1993/95 should be 31, not 18 as is shown at the bottom of the table. Please confirm and change the table, if necessary.

RESPONSE:

There were 18 exceedances in 1993, 13 in 1995. The table has been revised accordingly.

33. **Section 5.3, Page 17, Feasibility Study Questions, 4th Paragraph.** As noted above, it appears from Trend Analysis Table T-2 as though the total number of exceedances in 1993/95 should be 31, not 18 as is indicated in the text. Additionally, there were 18, not 19, 2003 exceedances. Please confirm and change the text, if necessary. Also, please correctly spell 1-methylnaphthalene and 2-methylnaphthalene.

RESPONSE:

There were 18 exceedances in 1993, 13 in 1995, and 18 in 2003. The text has been revised accordingly.

34. **Table 13.** Please define the "D" qualifier in the "Notes:" portion of the table.

RESPONSE:

The table has been changed accordingly.

35. **Trend Summary TS-9.** Please label the dashed red lines representing GCTL and FSWCTL & MSWCTL.

RESPONSE:

The table has been changed accordingly.

36. **Section 5.3, Page 17, Feasibility Study Questions, 6th Paragraph.** As noted above, 11GS47 appears on the figures to be adjacent to Wetland 7, not Wetland 6 as the text indicates. Please confirm and change the text or figures, as appropriate.

RESPONSE:

The table has been changed accordingly.

37. **Figure 4.** 16, not 17, VOA subsurface soil samples are currently shown on this figure. Please add the VOA subsurface soil sample collected from 20 feet below ground surface at 030S138.

RESPONSE:

The figure has been changed accordingly.

38. **Section 5.4, Page 18, *Soil*, 1st Paragraph, 1st Sentence.** The reader should be referred to Figure 4, not Figure 2 as is indicated in the text.

RESPONSE:

The table has been changed accordingly.

39. **Section 5.4, Page 18, *Soil*, 2nd Paragraph, 1st and 2nd Sentences.** The acronym, PCE, should be defined as Tetrachloroethene here where it first appears in the text.

RESPONSE:

The table has been changed accordingly.

40. **Table 15.** It appears that 17 of the 18 sample IDs have an extra "0" thrown in. Please be consistent with sample IDs between Table 15 and Figure 10, and throughout the report. There are disagreements regarding sampling depth between Figure 4, Figure 10, and Table 15 for at least the following sample IDs: 030S001220, 030S012005, and 030S015016. As noted above, the acronym, PCE, should be defined as Tetrachloroethene in the "Notes:" portion of the table.

RESPONSE:

As described previously, and added to the text, sample IDs consist of 10 digits. Table 15 has been revised accordingly to indicate that it lists sample IDs and not locations, whereas Figure 4 lists locations and Figure 10 lists sample IDs; there is no need to define the acronym PCE within this table.

41. **Figure 10.** Please change "LEACHABILITY SCTL" to "LEACHABILITY-BASED SCTL."

RESPONSE:

The figure has been changed accordingly.

42. **Table 16.** The "Notes:" portion of the table on pages 2 and 3 of 3 got cut off on my copy of the report. Please ensure that this didn't happen on other copies of the report, and fix the problem if it did.

RESPONSE:

This is apparently a problem with the reviewer's copying process and not the report.

43. **Section 5.4, Page 18, Soil SPLP; 2nd Paragraph, 1st Sentence.** 011S000606 is misidentified as 030S00606. Please change and confirm the correct number of zeroes in the sample ID.

RESPONSE:

The text has been changed accordingly.

44. **Figure 11.** Please correct part of the figure title to read, "March 2003." Please correctly spell trans-1,2-Dichloroethene in the parameter key. Please add a period to the second note.

RESPONSE:

The figure has been changed accordingly.

45. **Section 5.4, Page 19, Groundwater; 3rd Paragraph.** According to Figure 11 and Table 17, the following locations do not represent exceedances for the following parameters: 27GI04 and 27GI06 for cis-1,2-DCE; 27GS04 for VC; and 30GI170 for Xylene. Please remove these locations from the bullet list in the text.

RESPONSE:

The text has been changed accordingly.

46. **Section 5.4, Page 20, Soil; 1st Paragraph, 2nd Sentence.** The soil sample ID, 011GS0606, presented in this sentence does not agree with the soil sample ID presented on Figure 10 and in Table 15, 011S000606. Please make these match.

RESPONSE:

These were not intended to represent soil sample IDs, but location IDs. The text has been changed accordingly.

47. **Section 5.4, Page 20, Groundwater; 1st Bullet.** According to the site boundaries shown on Figure 1, 30GS111 and 30GI111 are not located in the "southeast corner of site 30," as is stated in this bullet, but, instead, in site 36. Please explain and change the text and figures as appropriate.

RESPONSE:

Site 30 has historically been assigned to the land area from the central part of OU2 to Wetlands 5A and B and 6. Site 36 refers to the trace of the industrial waste sewer line, a portion of which ran through this area of Site 30.

48. **Section 5.4, Page 21, Groundwater; 6th Bullet.** 30GS28 is located east of Building 649, not south of Building 3450, as is stated in this bullet. Please change this text.

RESPONSE:

The text has been changed accordingly.

49. **Section 5.4, Page 23, Feasibility Study Questions:, Response to 2nd Question.** The range of trend summary figures should include TS-11 through TS-35, not TS-12 through TS-35, as given. Please make this change.

RESPONSE:

The text has been changed accordingly.

50. **Section 5.4, Page 23, Feasibility Study Questions:, Response to 4th Question.** Intermediate groundwater monitoring well 11GI14 is incorrectly identified here as 11GI114. Please correctly identify this well in the text. This change also needs to be made on Page 44.

RESPONSE:

The text has been changed accordingly.

51. **Section 5.5.3, Page 26, 2nd Paragraph, 3rd Sentence.** This sentence mentions VOC contamination. As mentioned earlier, please be consistent with language as VOA is how the parameters are described elsewhere in the report.

RESPONSE:

The text has been changed accordingly.

52. **Section 5.5.3, Page 27, Bullet Item.** There are six, not seven, MNA locations in Site 30. Please change the text.

RESPONSE:

There were seven locations in Site 30; please refer to Table 20.

53. **Section 5.5.3, Page 27, Bullet Item, 1st Paragraph.** The MNA well, 30GI132A, is incorrectly identified either here or on Figure 5 where it is labeled as 30GI32A. Please correct the misidentification.

RESPONSE:

The table has been changed accordingly.

54. **Figure 5.** Shallow groundwater monitoring well 30GS170 should be identified as an MNA well. Please make it so.

RESPONSE:

The figure has been changed accordingly.

55. **Table 20.** The MNA well, 30GI132A, is incorrectly identified either at the top of the table or below the table where it is identified as 30GI32A. Please correct the misidentification. Also, "midgradient location" is misspelled in the *Notes:* portion of the table. Please correctly spell it.

RESPONSE:

The table has been changed accordingly.

56. **Section 5.5.3, Page 28, 2nd Bullet List.** This list states that, "The number of wells for each category of NA potential was determined to be: Strong (1), Adequate (3), Limited (3), and Inadequate (6)." Table 20 indicates that the breakdown is as follows: Strong (3), Adequate (2), Limited (8), Inadequate (0). Please indicate which breakdown is correct, correct the incorrect breakdown, and explain why such a large difference exists between this text and Table 20.

RESPONSE:

The table is correct and the text has been changed accordingly.

57. **Section 5.5.3, Page 28, Paragraph Below the 2nd Bullet List, 1st Sentence.** 11GS47 is identified as possessing "adequate" potential for reductive dechlorination in the text, whereas Table 20 indicates that it has "Strong" potential. Please indicate which potential is correct, and correct the incorrect potential. Additionally, disagreement regarding a well's potential for reductive dechlorination between the text and Table 20 continues throughout this section. Please find all instances of disagreement and fix them.

RESPONSE:

The text has been changed accordingly.

58. **Table 21.** 11GS47 is identified as possessing "Adequate" potential for reductive dechlorination in the table, whereas Table 20 indicates that it has "Strong" potential. Please indicate which potential is correct, and correct the incorrect potential.

RESPONSE:

Table 20 is correct; Table 21 has been changed accordingly.

59. **Section 5.5.3, Page 29, Flowpath #1, 3rd Sentence.** Chloroethane needs to be included as one of 30GS22's GCTL exceedances. Please make it so.

RESPONSE:

The text has been changed accordingly.

60. **Section 5.5.3, Page 34, 2nd Paragraph, 3rd Sentence.** This sentence mentions intermediate groundwater monitoring well 30GI132A. Please confirm the identification of this well.

RESPONSE:

The text has been changed accordingly.

61. **Section 5.5.3, Page 36, Equation (2).** The lowercase epsilon symbolizing the first-order biodegradation rate constant didn't print out in the text following the equation. Please add it.

RESPONSE:

The text has been changed accordingly.

62. **Section 6.0, Page 42, Metals:, 2nd Paragraph, 2nd Sentence.** According to Table T-1, two, not one, locations exhibited the same number of exceedances. Please correct the text.

RESPONSE:

The text has been changed accordingly.

63. **Section 6.0, Page 42, Metals:, 2nd Paragraph, 3rd Sentence.** The 1993/95 detection limits were higher, not lower, than CTL. Please adjust the text accordingly.

RESPONSE:

The text has been changed accordingly.

64. **Section 6.0, Page 43, SVOAs:, 2nd Paragraph, 3rd Sentence.** According to a correctly-tabulated Table T-2, the total number of exceedances in 1993/95 was 31, not 18. Please change the text accordingly.

RESPONSE:

There were 18 exceedances in 1993 and 13 in 1995; the text has been changed accordingly.

65. **Section 6.0, Page 43, SVOAs:, 2nd Paragraph, 4th Sentence.** There were 18, not 19, exceedances in 2003. Please change the text accordingly.

RESPONSE:

The text has been changed accordingly.

66. **Table T-3.** In the *Notes:* portion of the table, the 1993/95 detection limits were higher, not lower, than CTLs. Please change the note accordingly.

RESPONSE:

The table has been changed accordingly.

67. **Section 6.0, Page 44, VOAs, Last Paragraph, 2nd Sentence.** Please remove the "S" from 30GSI111.

RESPONSE:

The text has been changed accordingly.