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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JAN 6 1993

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VIA TELEFAX AND OVERNIGHT MAIL

REF: 4WD-SSRB

YELLOW

James C. Brown, Manager
Environmental Affairs Department
Olin Chemicals
Olin Corporation
Post Office Box 248
Charleston, Tennessee 37310

RE: Olin Corp./McIntosh Plant Superfund Site
Preliminary Site Characterization Summary Report

Dear Mr. Brown:

Please find enclosed EPA's comments on the Preliminary Site Characterization Summary Report (PSCS). This office has extensively reviewed this document and determined that a significant number of data gaps exist. In addition, review of the PSCS takes into consideration the preliminary data provided in the Remedial Technologies, Alternatives Screening Technical Memorandum. Separate comments are forthcoming on the technical memorandum and Draft Treatability Study Work Plan.

The comments are separated into two sections - General Comments and Specific Comments. The specific comments are delineated by Section, Page and Paragraph (which includes partial paragraphs).

Hopefully, Phase III sampling data and your response to comments on the Environmental Evaluation Technical Memorandum and the PSCS will eliminate the majority of the data gaps discussed in the enclosed document. However, EPA is of the opinion (based on our review of all information to date) that this site will have to be divided into three operable units. They are as follows: a) OU1-Ground Water; b) OU2-Basin and associated wetlands; and c) OU3-Source areas. Based on the information provided in the draft RI, EPA will determine if sufficient information exists for the agency to make a remedy selection decision. Please provide a line-by-line response to each comment on or before close of business on January 18, 1993.

Modifications to the current schedule for future major deliverables are as follows:

Draft Remedial Investigation Report -- January 18, 1993
Draft Feasibility Study Report -- March 15, 1993

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If there are any questions regarding the enclosed comments or any matter presented in this letter, please feel free to contact me at (404)347-2643.

Sincerely,

Cheryl W. Smith
Remedial Project Manager
South Superfund Remedial Branch

Enclosure

cc: Joe Downey, ADEM
Pete Douglass, US FWS
Waynon Johnson, NOAA
Fred Harders, DCNR

# TECHNICAL REVIEW COMMENTS
# PRELIMINARY SITE CHARACTERIZATION SUMMARY
# OLIN CORPORATION
# McINTOSH, ALABAMA

## GENERAL COMMENTS

1. The Preliminary Site Characterization Summary Report (PSCS) contains many grammatical and typographical errors. Additional editing is required.

2. The PSCS lacks information on background (control) levels for ground water, surface water and sediment. To adequately assess the levels of contamination presented in the PSCS, comparative background samples are necessary. Provide this information in the Draft Remedial Investigation Report (RI).

3. To aid the reviewer, provide consistent presentation of analytical values throughout the RI.

4. Provide a table presenting the maximum contaminant levels (MCLs), Primary Drinking Water Standards, and any additional health-based criteria used for determining potential clean up levels and comparing data.

5. Provide a brief summary describing the purpose of the off-site sampling as well as associated data performed on a surface soil sample from a residential area on August 26, 1991. The PSCS did not provide information on this sampling event.

6. Due to the detection of organic contaminants in Miocene aquifer wells, a ground water sample must be obtained from well DH-2, which is screened in the Miocene upper confining unit (Tml), to determine the confining capacity of the clay unit within the area of the former hazardous waste drum storage pad.

7. According to historical aerial photographs of the basin (EPA 1983, p. 13), the former wastewater drainage ditch which carried wastewater from the facility to the basin was not a single channel but was composed of multiple channels that deposited deltaic sediments in the southeast portion of the basin. Although additional sediment sampling of the basin area was proposed in the Revised SAP further evaluation must be considered for this area.

8. The PSCS adequately summarizes information that has been gathered during the Phase I and II RI field activities. However, it appears that several important ecological aspects of OU-2 have not been addressed or described in

sampling for these constituents is required especially in the area north of the basin as well as the associated wetland area. In addition, the BRA must include all contaminants at a site regardless of source.

15. In preparation of the endangered and threatened species survey, the United States Fish and Wildlife Service and the appropriate Alabama state agency must be contacted for historical information concerning past sightings and critical habitat requirements for this site. A list of threatened and endangered species is contained in the report and the statement is made that none of these species were sighted. Threatened and endangered species are rare by definition and may not be identified by limited field reconnaissance.

16. The PSCS lacks valuable data needed to discern the effectiveness of the current Corrective Action Program (CAP) operating in OU-1. Although the document contained historical data on the system from 1991 to the present, data exists since initiation of the system in 1987. At a minimum, provide a summary of this data in the Draft RI (i.e., a graph of all available data). In addition, include a discussion on how site characteristics (i.e., hydrogeology, physical barriers, etc.) may have affected the monitoring data from this system and subsequent evaluation of the system's effectiveness. This document also lacks any data supporting the effectiveness on the system in confining the plume southwest of the plant area (i.e., wells PL-5M, PL-5D, PL-5S). One goal of this remedial investigation is to determine the effectiveness of any current remediation plan and determine any modifications necessary to reach any anticipated remediation goals. Additional data from all the perimeter wells is required to adequately evaluate the effectiveness of this system.

17. This document lacks any representation of the Salt Wells and associated monitoring wells. This information is required to adequately determine plume movement both laterally and vertically. Please make appropriate adjustments to the figures that are included in this document as well as any affected text.

    In addition, the document failed to include a diagram representing ground water flow in the Miocene aquifer. Since site contaminants were identified in on-site process water wells screened in this aquifer this information is crucial.

8. Section 2.1.2, Page 27, Paragraph 2. List the eight wells for which water elevations were not obtained. In addition, provide the total depth and screen interval thickness and elevation for these wells. Also, include in the list the wells that had altered or obstructed surface casing and the wells that were not located in the heavily forested area.

9. Section 2.1.2, Page 29, Bullet 1. In future sampling efforts assure that a leader of Teflon coated stainless steel wire is used between the bailer and bailer cord to prevent possible contamination of the sample from teflon materials.

10. Section 2.1.4, Page 33. Based on information in the EPA oversight contractor's logbook, domestic well DW-24 was not sampled because the well was not used for drinking water at the time of sampling. The text does not include this well on the list of wells not sampled.

    Last Paragraph. There appears to be text missing in the last sentence between "all the" and "that". Please correct.

11. Section 2.1.4, Page 34, Paragraph 4. The text states "no hoses, filters, or connective devices were used" in the collection of domestic well samples; however, the oversight contractor's logbook indicates that because an electrical outlet was located beneath the well spigot, well DW-32 was sampled using a common garden hose.

12. Section 2.1.4, Page 34, Paragraph 2. Define the acronym ESBSOP.

13. Section 2.2.3, Page 40, Paragraph 4. Include a reference to Figure 8, "OU-2 Sample Location Map" in this section since this figure provides the sampling locations referenced in this section.

14. Section 2.2.4, Page 47. Include a reference to Figure 8.

15. Section 2.2.5, Page 48, Paragraph 3. Provide a brief description of the Releve method that was used for the vegetative stress study.

16. Section 2.2.5, Page 50, Paragraph 4. Include a definition of the Importance Percentage (IP) and its statistical significance.

17. Section 2.2.5. Page 52, Item g. Revise the text to reflect that manmade alterations can include fires, such as slash and burn or controlled fires.

23. Section 3.6, Page 69, Paragraph 4. The data used to calculate the average hydraulic conductivity (K), average transmissivity, and specific yield should be listed in a table or appendix. Thoroughly describe the method used to obtain the values for each well. Also, determining these values from the loss of drilling fluid during monitoring well installation is not accurate. These values should have been determined from slug tests and aquifer tests performed after well completion.

24. Section 3.6, Page 70, Paragraph 2. As a means of comparing the October 1987 potentiometric surface data referenced in the report with more recent potentiometric surface data include the 1987 data in the Draft RI.

    In addition, a "hydraulic high" is not the correct term; the correct term is ground water divide or hydraulic mound. Make the necessary corrections.

25. Section 3.6, Page 71, Paragraph 3. The ground water divide discussed in the text is not depicted in Figure 17. The figure shows that ground water flow on the eastern section of the facility appears to be primarily to the east towards the Tombigbee River, except within the capture zone of CA-4. Figure 17 does not show CA-4 inducing flow from the river as stated in the text. However, Figure 19 does show wells CA-3 and CA-4 inducing flow from the Tombigbee River. Revise the text or Figure 17 accordingly.

26. Section 3.6, Page 71, Paragraph 3. The statement made in the last sentence that the corrective action wells are effective at recovering ground water migrating from any known past or current source is not completely correct, based on the data presented in Figure 17. Due to the lack of monitoring wells on the eastern portion of the facility and the fact that potentiometric contours have been inferred in this area, it is difficult to determine the ground water flow from the sanitary landfills. Ground water flow near the sanitary landfills located on the northern section of the facility is primarily to the southeast, based on the ground water elevations shown for wells in the area (SL-4 and SL-3). Therefore, ground water contamination from this area could possibly be flowing to the basin and the Tombigbee River and not towards corrective action well CA-3 as stated in the text. Revise the text to include this information or provide additional data that supports this statement.

27. Section 3.6, Page 72, Paragraph 2. Seasonal potentiometric maps for the upper zone of the Alluvial aquifer are presented in Figures 17 and 19. However, only September 1991 well data for the lower zone of the Alluvial aquifer is

36. Section 4.1.1, Page 80, Paragraph 3. The text discusses time versus concentration curves for ground water data. Include the time versus concentrations curves in the document.

37. Section 4.1.1, Page 80, Paragraph 4. The text indicates that elevated organic concentrations detected in well WP-6 are believed to be the result of a contaminant "slug" that originated from the early operations of the CPC Plant. This conclusion might not be accurate for the following reasons: 1) the direction of ground water flow before installation of the corrective action wells near the CPC Plant was south-southeast. Therefore, contaminant slugs would not have migrated to the west towards the WP-6 well; 2) the present ground water divide that runs north-south through the center of the Olin facility would inhibit the flow of contaminated ground water originating from the east and flowing towards the west.

    In addition, the organic contamination detected in well WP-6 indicates that the capture zone induced by corrective action wells CA-1 and CA-2 is not controlling the migration of organic contaminants. To confirm the effectiveness of the CAP in this area, sampling of additional monitoring wells located near the lime ponds may be required to determine other potential sources of organic contamination.

38. Section 4.1.2, Page 81, Paragraph 1. The last sentence discusses the low concentrations of contamination detected in the Miocene aquifer. Identify the location of the wells sampled, the contaminant type detected and concentration levels along with a discussion of these results.

39. Section 4.1.2.1, Entire Section. This section does not contain results from control/background sampling. This information is crucial to evaluate the data collected during the investigation.

40. Section 4.1.2.1, Page 83, Paragraph 4. Monitor well PE-3D is listed as an upgradient well; however, the well is downgradient of the sanitary landfills. Please clarify.

41. Section 4.1.2.1, Page 83, Paragraph 5. The text states that the source of organics detected in monitoring wells BR7, BR7D, BR8, and MP13 is the westward migration of constituents from the Old Plant (CPC) Landfill. However, according to Figures 17, 18 and 19, present ground water flow on the east side of the facility near the landfill is east towards corrective action well CA-5. The above-mentioned monitoring wells are all located west and northwest of the Old Plant (CPC) Landfill, upgradient of the ground water flow direction. Either the ground water flow

50. Section 4.1.2.3, Page 101, Last Paragraph. The text should include the Primary Drinking Water Standards for compounds identified in domestic wells above detection limits for comparison with detected contaminant levels. For completeness, present in a table the Primary Drinking Water Standards for all compounds.

The McIntosh City water well is located within the three-mile perimeter surrounding the site. Sampling of this well will provide valuable information on movement of site contaminants, especially in the lower aquifer since detects of chloroform were found in domestic wells north, west and southwest of the site.

51. Section 4.1.2.4, Page 105, Paragraph 1. For the purpose of determining the horizontal extent of contamination to the east provide additional data on well BA1.

Also, the mercury concentration detected in well PL10S during RI sampling activities presented in Table 9 was 2.2 $\mu$g/L, not 1.8 $\mu$g/L as the text indicates. The 1.8 $\mu$g/L mercury concentration was detected during second quarter 1991 RCRA sampling. Correct this value in the text.

52. Section 4.1.2.4, Page 106, Paragraph 2. The text states that mercury was detected in offsite domestic well DW-40 at a concentration of 0.37 $\mu$g/L. However, the previous paragraph states that the southern extent of the mercury plume appears to be controlled by corrective action well CA-5, based on well E-1 sampling results, which showed a mercury concentration of 0.23 $\mu$g/L. The mercury concentration in domestic well DW-40 is higher than the E-1 concentration, indicating that the mercury plume might extend south beyond the mercury contours shown in Figure 23. Further investigations are needed to determine the effectiveness of the CAP in this area.

In addition, the domestic well concentrations for mercury and organics should be included in Figures 23 and 24, to indicate the ground water contamination levels detected beyond the boundaries of the Olin facility.

53. Section 4.1.2.4, Page 107, Paragraph 2. Correct the fourth sentence to read "Farther to the east . . ."

54. Section 4.2.1.4, Page 107, Last Paragraph. Since the survey completed by the domestic well owners did not state whether or not the wells with chloroform detects actually utilized chlorine, contact those owners to confirm usage and amounts.

55. Section 4.1.2.5, Page 108, Paragraph 3. Provide data that demonstrates whether or not contaminants are present in the

60. Section 4.2.5, Page 129. The text addresses field investigations performed in OU-2 but does not include the terrestrial vertebrate study performed by Dr. David H. Nelson. A subsection should be included discussing such topics as trophic relationships (food chain, food web) and biocommunity structure. Habitat requirements should be identified for threatened and endangered species that might live within the facility property boundary. Prepare a table similar to Table 20 that lists all threatened and endangered fauna residing within the facility boundary.

61. Section 4.2.5.1, Page 130, Paragraph 2. EPA guidance documents should be used, where applicable, for ecosystem classifications. The current wetland guidance document accepted by EPA is the 1989 Federal Manual for Identifying and Delineating Wetlands (Federal Interagency Committee for Wetland Delineation, 1989). Include in the text the wetland indicators, including hydrophytic vegetation, hydric soils, and wetland hydrology, identified in OU-2. The wetland areas of OU-2 should be adequately addressed in the ecological assessment portion of the draft RI report.

62. Section 4.2.5.1, Page 135, Paragraph 4. The location of the active brine discharge canal should be indicated in a figure and referenced.

63. Section 4.2.5.1, Page 136, Paragraph 1. The text references a vegetation stress survey performed in OU-1, however, this information was not provided in the document. Provide this information in the Draft RI.

64. Section 4.2.5.2, Page 139, Table 4. Identify the fish species using the scientific name in addition to the common name, as in the vegetation and invertebrate sections.

65. Section 4.3, Page 142, Bullet 2. Provide additional information of the horizontal and vertical extent of contamination in the southwestern portion of the site. This area has not received adequate evaluation and inclusion in this document.

66. Section 4.3, Page 143, Paragraph 3. The extent of ground water contamination in OU-2 has not been adequately defined. The quality of the surficial ground water discharging to the basin and Tombigbee River must be determined. This can be accomplished by sampling additional monitoring wells located on the eastern portion of the Olin property, such as wells PE-5 and PE-8.

67. Section 5.0, Pages 145-148. Several of the reference citations do not include publication information, such as

were used to construct Figure 14, therefore this information presumably exists. Please provide the borehole data to complete the appendix.

79. Appendix E. A symbol should not be used to mean more than one thing in one appendix. The * is used in this appendix to mean both "Species predicted by Dr. David H. Nelson of the University of South Alabama likely to be common" and "Species observed during July and/or November sampling activities." Please modify text to eliminate confusion.

80. Appendix F. The summary tables containing sediment data should include sampling depth intervals for the core sample data reported.

81. Volume II, Section 1. The third group of sediment samples, SDG 9151 Case WCC collected November 13 and 15, 1991, were not analyzed for pesticide/PCB compounds. Analysis of previously collected samples showed the presence of high amounts of several pesticide compounds in sediment samples collected at the site. One of the samples in this SDG contained sufficient p,pl-DDD to be identified as a TIC in the semivolatile fraction analysis. Provide an explanation for this omission.

82. Volume II, All Sections. The following comments concern validation issues that pertain to the analytical data.

    a. Many of the samples had successful pesticide compound GC/MS confirmations performed. Functional Guidelines require that the "C" data qualifier be assigned to the pesticide results in these cases. This qualifier was not assigned to any of the pesticide results. Future representation of this document must provide this information.
    b. The qualification of all 2-butanone values as undetected with the qualifier "U" or as estimated concentrations with the qualifier "J" based solely on the assumption that this compound is a common solvent and a known contaminant of methanol is not always appropriate. If this was the case, this compound would be present in the associated blanks. The presence of this compound in the associated blanks was reported in only one group of sediment samples that were analyzed in November of 1991. If there are concerns about the presence of this contaminant in samples where the associated blank showed no contamination, then another conclusion is likely and resampling during future sampling events must be considered. In any light, this data remains suspect. Great care must be taken in assigning these qualifiers if this compound is not present in the associated blanks.

# MESSAGE CONFIRMATION

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# EPA Region IV

345 Courtland Street, N.E.
Atlanta, Georgia 30365

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Fax Message to: James C. Brown

Address: Olin Corp., Charleston, TN

Telephone No: 615/336-4308 Fax No: 615/336-4505

Message from: CHERYL SMITH Telephone No: 404/347-2643

Special Instructions: Please give me a call at your convenience. Thanks CWS.

*IF THE FOLLOWING MESSAGE IS RECEIVED POORLY OR INCOMPLETE, PLEASE*

*NOTIFY:* CHERYL SMITH *AT OFFICE NUMBER:* 404/347-2643

*THANKS AND HAVE A NICE DAY*