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DEPARTMENT OF NATURAL RESOURCES
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September 13, 2012

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RETURN RECEIPT REQUESTED

Mr. Joseph W. Haake
Environmental Scientist
Environmental and Hazardous
Materials Services
The Boeing Company
Department 107E, Building 111
Mail Code S111-2491
P.O. Box 516
St. Louis, MO 63166

RE: Focused Corrective Measures Study Report
Boeing Tract 1, Hazelwood, Missouri
EPA ID# MOD000818963

Dear Mr. Haake:

This letter is to notify you that the Missouri Department of Natural Resources (Department) and the U.S. Environmental Protection Agency Region 7 (EPA) reviewed The Boeing Company's (Boeing) Focused Corrective Measures Study (CMS) Report, dated February 16, 2012. Boeing submitted the CMS Report as required by 40 CFR 264.101, incorporated by reference in 10 CSR 25-7.264, and Corrective Action Condition VIII. of Boeing's Missouri Hazardous Waste Management Facility Part I Permit, dated March 5, 1997. We have the following comments and requests for additional information for your review and response. Please address the individual comments by submitting three copies of a revised CMS Report to the Department, and two copies to the U.S. Environmental Protection Agency, within 60 days of receiving this letter.

RCRA
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If you have any questions regarding this letter or the enclosed comments, please contact me at the Missouri Department of Natural Resources, Hazardous Waste Program, P.O. Box 176, Jefferson City, MO 65102-0176, by telephone at (314) 416-2960 Ext 256, or by e-mail at christine.kump@dnr.mo.gov. Thank you.

Sincerely,

HAZARDOUS WASTE PROGRAM

Christine Kump-Mitchell, P.E.
Environmental Engineer
Permits Section

CKM:sw

Enclosure

c: Ms. Joletta Golik, Environmental Manager, City of St. Louis Lambert International Airport
Atul M. Salhotra, Ph.D, Project Manager, The RAM Group
Ms. Amber Whisnant, Project Manager, U.S. EPA Region 7
St. Louis Regional Office, Missouri Department of Natural Resources

General Comments

1. The proposed remedy should state that interim measures previously conducted are incorporated as part of the final remedy and these measures satisfy the primary and secondary standards specified in the *RCRA Corrective Action Plan* (USEPA, 1994).

2. The Corrective Measures Study (CMS) should state the Environmental Indicators Current Human Exposures Under Control (CA725) and Migration of Contaminated Groundwater Under Control (CA750) have been met. The date of the environmental indicator determinations should also be included.

3. The CMS should state that activity and use limitations (AULs) will be in the form of an Environmental Covenant in accordance with the Missouri Environmental Covenant Act, Sections 260.1000 through 260.1039, RSMo. The approved Environmental Covenant shall be filed with the county recorder of deeds. The CMS should also state that there will be three Environmental Covenants, one for each property owner. In addition, the CMS should also briefly discuss the access agreements between GKN, the Airport, and Boeing that are currently in place.

4. The CMS discusses concentrations that exceeded available drinking water standards (DWS). To be consistent with the permit, the term groundwater protection standards (GPS) should be used. The GPS shall be selected based on the following hierarchy: Maximum Contaminant Levels, Missouri Water Quality Standards, Regional Screening Levels, Missouri Risk Based Corrective Action.

Specific Comments

1. **Section 1.2.3.1, Pre-RFI Interim Remedial Actions, Page 1-6:** This section discusses Interim Corrective Action Measures that were performed at SMWU 10, SWMU 22, SWMU 26, and SWMU 28 from October 10, 1997 to November 11, 1997. The Corrective Measures Study (CMS) should also state that these interim measures were conducted as required under Corrective Action Condition IV. A., of the Part I Missouri Hazardous Waste Management Facility Permit, dated March 5, 1997.

2. **Section 1.3.2 Permit Modification, Page 1-11:** This section discusses three areas within Tract 1 that Boeing is proposing for removal from the Permit. These areas include:

   - Area 1 – Runway Protection Zone.
   - Area 7 – Engineering Campus.
   - Area 8 – Office Complex North.

   The agencies agree with Boeing's rationale and justification for removing Area 7 from the Permit. However, the agencies have determined that additional groundwater monitoring is necessary in Area 1 and Area 8, prior to determining if these areas can be removed from the permit. Groundwater monitoring wells in Area 1 should continue to be monitored for plume stability and light non-aqueous phase liquid (LNAPL) thickness should continue to be gauged. Figure 5-2 shows monitoring wells MW-10S and MW-10D will continue to be monitored for groundwater plume stability. Area 8 cannot be removed from the permit if ongoing monitoring is still being conducted. These areas can be reevaluated in the future to determine removal from the permit. This section should be changed to state that Area 1 and Area 8 will be reevaluated for removal from the permit once additional groundwater monitoring has been conducted.

3. **Section 4.3, Presence of LNAPL in Certain Wells, Proposed Remedy, Page 4-4:** This section states that since remedial and regulatory objectives related to LNAPL have been met, no remedy is necessary and none is proposed to address this issue. While the agencies agree that active removal of LNAPL in not practical or necessary as part of the final remedy at this time, the agencies believe that it is premature to discontinue monitoring and/or gauging of LNAPL thickness at this time. The final remedy should include gauging/measurement of LNAPL thickness annually on wells with historical LNAPL as part of the long-term groundwater monitoring plan. Boeing can then propose to reduce frequency or discontinue measurement of LNAPL thickness as part of the five-year review. The final remedy should also include a contingency plan should persistent measurable LNAPL return.

4. **Section 5.3, Analysis of Future Groundwater Use, Page 5-2:** The section states that the HZ-A zone in not a current or future potential source of drinking water due to its poor quality and very low yields per Sections 2.5.4and 2.6.2 of the Record of Decision for the North St. Louis County Sites. Are there any calculations that can back up these

statements? Please include any calculations that were used at the St. Louis Airport Sites that can back up these statements. If such calculations are not available, aquifer yield should be calculated to demonstrate that the shallow and deep groundwater zones are not capable of producing sufficient groundwater for domestic use.

5. **Section 5.4.2 Stable or Decreasing Groundwater Concentrations, Page 5-4:** This section states that groundwater monitoring will be semiannually for two years. What is the plan for after the two years of groundwater monitoring?

6. **Section 5.4.7, Proposed Remedy, Contingency Plan, Page 5-8:** Additional remedial action may require public notice and or changes to the permit/approved final remedy. This should be stated in the CMS.

7. **Section 7.0, Proposed Remedial Actions, Page 7-0:** This section proposes monitored natural attenuation (MNA), activity and use limitations, and Health and Safety Plans (HASPs) as components of the proposed remedy. This section should also include completed and ongoing/proposed interim measures, including soil excavation activities, hydrogen release compound injection, LNAP removal, and in-situ chemical oxidation as part of the final remedy. This would include evaluating these interim measures against the primary and secondary standards in Section 8.0 as specified in the *RCRA Corrective Action Plan* (USEPA, 1994).

8. **Section 7.1.2, Remedial Actions to Address LNAPL, Page 7-1:** This section states that no remedial action is necessary to address the trace presence and sporadic occurrence of LNAPL in Area 1, and Sub-area 2A, 2B, 2C, 3C, and 6B. While the agencies agree that active removal of LNAPL in not practical or necessary as part of the final remedy at this time, the agencies believe that it is premature to discontinue monitoring and/or gauging of LNAPL thickness at this time. The final remedy should include gauging/measurement of LNAPL thickness annually as part of the long-term groundwater monitoring plan. Boeing can then propose to reduce frequency or discontinue measurement of LNAPL thickness continued gauging of LNAPL thickness persistent over certain thickness as part of the five-year review. The final remedy should also include a contingency plan should persistent measurable LNAPL return.

9. **Section 8.0 Evaluation of Final Corrective Measure Action, P 8-1:** This section should evaluate the interim measures against the primary and secondary standards. Each section should state that the interim measures have already been completed or are ongoing and how each of the interim measures currently meets each individual standard as specified in the *RCRA Corrective Action Plan.*

10. **Section 8.3, Control Sources of Releases, Page 8-2**: This section should also discuss the proposed interim measures at 6B and 2B to further reduce the source area soil concentrations.

11. **Section 8.5.5, Cost, Page 8-5:** .While cost is not a primary defining factor in selecting the final remedy, a relatively detailed estimate of the cost of the proposed final remedy should be included in the CMS. This cost estimate should include and be predicated on the estimated time required to meet applicable clean-up levels. This cost estimate will be used to form the preliminary basis for required corrective action financial assurance. Upon post-public participation final remedy approval by the Missouri Department of Natural Resources, further refinement of the detailed corrective action cost estimate may be needed as part of corrective measures implementation to adequately capture all long-term operation, maintenance, and monitoring costs. Additional costs that should be included in the estimate are agency oversight costs, taxes, well maintenance, and well installation or abandonment activities

12. **Section 9.1, Remedial Actions to Protect Construction Worker, Page 9-1:** This section discusses HASPs that will be used to protect future construction workers in areas that exceed risk. The CMS states that area specific HASPs will be determined on a project-by-project basis. Boeing should develop a generic HASP that would provide information for common tasks including:

    - Training requirements.
    - Medical monitoring requirements.
    - Personal protective equipment.
    - Generic emergency procedure (i.e., heat, cold, first aid).
    - Evacuation routes and routes to the nearest hospital.
    - Any other pertinent health and safety information required sitewide.

    Addendums to the generic HASPs can then be prepared on a project-by-project basis, including one for semiannual groundwater monitoring. The project specific addendums should include, but not be limited to:

    - Project specific personal protective equipment requirements.
    - Project specific medical monitoring requirements.
    - Project specific training requirements.
    - Project specific emergency procedures.

13. **Section 9.2, Remedial Actions to Address Exceedance of Drinking Water Standards, Page 9-1 and Section 9.3, Remedial Actions to Address Future Risk and Groundwater Concentration Stability, Page 9-2:** These sections should include references to the Sampling and Analysis Plan (SAP) and development/submittal of annual reports. This section should also state that the SAP will be periodically reviewed and modified as site conditions change.

14. **Section 9.2 Remedial Actions To Address Exceedance Of Drinking Water Standards, Page 9-1:** This section should state that MNA, in conjunction with completed and on-going interim measures, is recommended.

15. **Section 9.3, Remedial Actions to Address Future Risk and Groundwater Concentration Stability, Page 9-2:** This section states that if increasing trends in chemical concentrations occur in an area, then a contingency plan will be implemented and such a plan may include active remediation. The CMS should acknowledge that the contingency plan and/or active remediation may require modifications to the permit and the final remedy. Additional investigation and/or installation of monitoring wells may also be required.

16. **Section 10.0, Risk Management Plan, Page 10-1:** This section states that a Risk Management Plan will be prepared in accordance with Section 12 of the *Departmental MRBCA Guidance Document.* Instead, Boeing should develop a Corrective Measures Implementation (CMI) Work Plan in accordance with Chapter V: *Corrective Measures Implementation of the RCRA Corrective Action Plan (Final)*, EPA, OSWER Directive 9902.3-2a, May 1994. The purpose of the CMI Work Plan is to provide the detailed design, construction, operation, maintenance, and monitoring processes and procedures for the selected final remedy. Procedural documents including Health and Safety Plans, revised SAPs, revised Soil Management Plans, progress reports, cost estimate and financial assurance, and any other documents necessary for design and implementation of the final remedy shall be prepared as part of the CMI phase of the project.