

July 15, 2016

Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue Southeast
Bellevue, Washington 98008-5452

Attn: Ms. Robin Harrover

Transmitted via email to: *rharrover461@ecy.wa.gov*

**Re: Status Report No. 55, April through June 2016 Activity Period
Boeing Auburn Facility
WAD 041337130, RCRA Corrective Action Agreed Order No. 01HWTRNR-3345
Project No. 0025164.120.501**

Dear Ms. Harrover:

The Auburn Agreed Order became effective on August 14, 2002. As required under Section VI.12 of the Auburn Agreed Order, Boeing is providing Status Report No. 55, which covers the 3-month activity period of April through June 2016.

References

1. April 1, 2016. Email: Draft letter to the new Outlet Collection Mgr. From Neal Hines, Washington State Department of Ecology (Ecology), to James Bet, The Boeing Company (Boeing), and Jennifer Wynkoop, Landau Associates (LAI). (Attachment: Ecology draft letter.)
2. April 1, 2016. LAI. Report: Draft Tier II Commercial Vapor Intrusion Assessment Work Plan for Los Cabos Property, Boeing Auburn Facility, Auburn, Washington.
3. April 6, 2016. Email: Los Cabos Work Plan and cover letter submittals. From James Bet, Boeing, to Neal Hines, Ecology, and Sarah Fees, LAI. (Attachment: Boeing draft cover letter for the Los Cabos sampling work plan.)
4. April 7, 2016. Email: Los Cabos Work Plan and cover letter submittals. From Neal Hines, Ecology, to James Bet, Boeing and Sarah Fees, LAI. (Attachment: Ecology redline for the draft cover letter for the Los Cabos sampling work plan.)
5. April 7, 2016. Letter: Ecology Comments and Approval of Draft Tier II Commercial Vapor Intrusion Assessment Work Plan for Los Cabos Property, Boeing Auburn Facility, by Landau Associates Inc. for the Boeing Company, dated April 1, 2016; FS #2018; CS #5049; EPA #WAD041337130. From Neal Hines, Ecology, to James Bet, Boeing.
6. April 12, 2016. Email: Vapor Intrusion Assessment Work Plan for Los Cabos property. From James Bet, Boeing, to representatives of Los Cabos property. (Attachments: Boeing Cover Letter, Ecology approval letter, Final Work Plan).

7. April 15, 2016. Ecology Listserv (Boeing Fabrication Auburn Site): Coming to Auburn Library – April 20: Informational Display.
8. April 15, 2016. Letter: Status Report: No. 54, January Through March 2016 Activity Period, Boeing Auburn Facility, WAD 041337130, RCRA Corrective Action Agreed Order No. 01HWTRNR-3345. From Jennifer Wynkoop, LAI, to Robin Harrover, Ecology.
9. April 18, 2016. Email: Methane Monitoring Primus, Pioneer, and Western Concord. From Jennifer Wynkoop, LAI, to Nathan Malik, Primus; Vicki Cleveland, Pioneer; and Robert Stanaway, Western Concord.
10. April 21, 2016. LAI. Draft Report: Agency Review Draft 2016 Natural Attenuation Work Plan, Boeing Auburn Facility, Auburn, Washington.
11. April 21, 2016. LAI. Report: Vapor Intrusion Evaluation and Assessment Approach, Boeing Auburn Facility, Auburn, Washington.
12. April 22, 2016. Email: Groundwater sampling schedule. From Jennifer Wynkoop, LAI, to Robin Harrover and Neal Hines, Ecology.
13. April 26, 2016. Email: Los Cabos VI Sampling. From Jennifer Wynkoop, LAI, to Neal Hines, Ecology.
14. April 27, 2016. Email: RE: Groundwater sampling schedule. From Robin Harrover, Ecology, to James Bet, Boeing.
15. April 27, 2016. Ecology Listserv (Boeing Fabrication Auburn Site): One Week Only Starting April 27 – Boeing Auburn Cleanup Display at Algona-Pacific Library.
16. April 29, 2016. LAI. Draft Report: Agency Review Draft Passive Sampling Comparability Study, Boeing Auburn Facility, Auburn, Washington.
17. May 2, 2016. LAI. Report: Groundwater Modeling Report, Boeing Auburn Facility, Auburn, Washington.
18. May 2, 2016. Email: *Draft letter to the new Outlet Collection Mgr.* From James Bet, Boeing, to Neal Hines, Ecology. (Attachment: Boeing and LAI comments on Ecology's draft letter for the new GM at The Outlet Collection.)
19. May 3, 2016. Email: Los Cabos Workplan comments. From James Bet, Boeing, to Neal Hines, Ecology.
20. May 5, 2016. Email: Re: Los Cabos Workplan comments. From Neal Hines, Ecology, to James Bet, Boeing.
21. May 9, 2016. Email: FW: Policy 840 Date Submittal Requirements Updated. From Neal Hines, Ecology, to James Bet, Boeing. (Attachment: new policy regarding data submittal.)
22. May 13, 2016. Email: Request for amended Table 2: Proposed Phase VII Groundwater Monitoring Plan. From Robin Harrover, Ecology, to Sarah Fees, LAI.
23. May 13, 2016. Email: Request for amended Table 2: Proposed Phase VII Groundwater Monitoring Plan. From Sarah Fees, LAI, to Robin Harrover, Ecology. (Attachment: Revised Table 2).
24. May 19, 2016. Conference call: EIM data submittal, Ecology website, natural attenuation parameters work plan, passive diffusion bag (PDB) comparison statistical memo. Neal Hines

- and Robin Harrover, Ecology; Jennifer Wynkoop and Sarah Fees, LAI; and James Bet, Boeing. (Final notes from call sent on June 7 by Neal Hines).
25. May 20, 2016. Letter: Ecology Comments and Approval of Agency Review Draft 2016 Natural Attenuation Work Plan, Boeing Auburn Facility by Landau Associates Inc. for The Boeing Company, dated April 21, 2016; FS #2018; CS #5049; EPA #WAD041337130. From Neal Hines, Ecology, to James Bet, Boeing.
 26. May 24, 2016. Email: RI Outline. From Robin Harrover, Ecology, to James Bet, Boeing.
 27. May 27, 2016. Ecology Listserv (Boeing Fabrication Auburn Site): Questions about the cleanup progress? Talk to Ecology Staff, June 12, 10 – noon.
 28. May 31, 2016. Email: Source Maps. From Sean Smith, Ecology, to Jennifer Wynkoop, LAI.
 29. May 31, 2016. Ecology Listserv (Boeing Fabrication Auburn Site): Time correction! Questions about the Cleanup – Talk to Ecology Staff, Noon – 2PM, Coffee with Mayor Hill at City Hall.
 30. June 1, 2016. Letter: Boeing Auburn Fabrication Site Remedial Investigation. From Neal Hines, Ecology, to Christian Faltenberger, WP Glimcher.
 31. June 1, 2016. Letter: Ecology comment and approval regarding the: Draft Technical Memorandum: Phase VII Interim Groundwater Monitoring Program, Boeing Auburn Facility, Auburn, Washington, Landau Project No. 0025164.130.190; prepared for the Boeing Company by Landau Associates; February 10, 2016; Ecology FS #2018; CS #5049; EPA WAD041337130. From Robin Harrover, Ecology, to James Bet, Boeing.
 32. June 2, 2016. LAI. Report: 2016 Natural Attenuation Assessment Work Plan, Boeing Auburn Facility, Auburn, Washington.
 33. June 2, 2016. Email: Entering Data into the EIM. From Robin Harrover, Ecology, to Jennifer Wynkoop, LAI.
 34. June 6, 2016. Letter: Ecology Comments and Approval of Agency Review Draft Passive Sampling Comparability Study, Boeing Auburn Facility by Landau Associates Inc. for the Boeing Company, dated April 29, 2016; FS #2018; CS #5049; EPA #WAD041337130. From Neal Hines, Ecology, to James Bet, Boeing.
 35. June 7, 2016. Letter: Ecology comment and approval regarding the Agency Review Draft, 2015 Groundwater Investigation Report, Boeing Auburn Facility; prepared for the Boeing Company by Landau Associates; February 4, 2016; FS #2018; CS #5049; EPA WAD041337130. From Robin Harrover, Ecology, to James Bet, Boeing.
 36. June 10, 2016. Email: CMT Channel Selection – AGW276. From Sarah Fees, LAI, to Robin Harrover, Ecology. (Attachments: Time series plots and data for all channels of AGW276.)
 37. June 10, 2016. Letter: Ecology Comment and Approval of Draft 2015 Tier II Commercial Vapor Intrusion Assessment Report, Boeing Auburn Facility by Landau Associates Inc. for the Boeing Company, dated March 30, 2016; FS #2018; CS #5049; EPA #WAD041337130. From Neal Hines, Ecology, to James Bet, Boeing.
 38. June 15, 2016. LAI. Report: 2015 Tier II Commercial Vapor Intrusion Assessment Report, Boeing Auburn Facility, Auburn, Washington.
 39. June 16, 2016. LAI. Report: Passive Sampling Comparability Study, Boeing Auburn Facility, Auburn, Washington.

40. June 16, 2016. Email: RI Outline. From James Bet, Boeing, to Robin Harrover, Ecology. (Attachment: draft RI Report table of contents.)
41. June 16, 2016. LAI. Report: 2015 Groundwater Investigation Report, Boeing Auburn Facility, Auburn, Washington.
42. June 16, 2016. Email: RE: CMT Channel Selection – AGW276. From Robin Harrover, Ecology, to Sarah Fees, LAI.
43. June 21, 2016. LAI. Technical Memorandum: Phase VII Interim Groundwater Monitoring Program, Boeing Auburn Facility, Auburn, Washington. From Jennifer Wynkoop and Sarah Fees, LAI, to Robin Harrover and Neal Hines, Ecology, and James Bet and James Swortz, Boeing.
44. June 21, 2016. Email: Air Sampling Report”. From Jennifer Wynkoop, LAI, to Christian Faltenberger, WP Glimcher. (Attachment: Tier II Commercial Vapor Intrusion Assessment Report).
45. June 22, 2016. Email: Groundwater Investigation Report. From Jennifer Wynkoop, LAI, to Christine Garrison, DCT. (Attachment: 2015 Groundwater Investigation Report).
46. June 28, 2016. Ecology Listserv (Boeing Fabrication Auburn Site): Updates, Milestone and Algona Days.

Work Conducted

General Site-wide Corrective Action Activities

On April 15, 2016, LAI submitted Status Report No. 54 regarding first quarter 2016 activities to Ecology and other stakeholders¹ for their records (Reference #8).

Ecology project managers, Robin Harrover and Neal Hines, continued to attend regularly scheduled monthly conference calls with Boeing, LAI, and the City of Algona’s environmental consultant, ICF. The primary purpose of these calls is to discuss technical aspects of the project scope and schedule, data results, and public outreach. Boeing and Ecology communication personnel also attend these calls. Meeting notes continued to be recorded and distributed by LAI.

Remedial Investigation Report

Boeing and LAI continued work on the final remedial investigation (RI) report. The draft RI report is expected to be submitted to Ecology in the third quarter 2016. In preparation for the public comment period for the RI report, Ecology requested an updated outline or table of contents for the RI Report on May 24, 2016 (Reference #26). Boeing provided the table of contents for the draft RI Report to Ecology on June 16, 2016 (Reference #40).

¹ A list of stakeholders that receive paper copies of quarterly status reports are listed at the end of this document. Ecology also forwards quarterly status reports via email to representatives of the City of Algona, City of Auburn, City of Pacific, Seattle-King County Health Department, and Washington State Department of Health.

Tier II Commercial Vapor Intrusion Assessment

The 2015 Tier II commercial vapor intrusion assessment included indoor air and sub-slab sampling locations at Building 17-70 on Boeing property and at The Outlet Collection. Boeing submitted a draft report summarizing the 2015 Tier II commercial vapor intrusion assessment to Ecology in March 2016. Ecology provided comments on the draft report on June 10, 2016 (Reference #37). Boeing finalized the report and submitted it to Ecology on June 15, 2016 (Reference #38).

Boeing proceeded with the Tier II vapor intrusion assessment at the Los Cabos Property based on the results of an adjacent Tier I soil gas assessment. Boeing submitted a draft work plan for indoor air and sub-slab sampling at the property to Ecology on April 1, 2016 (Reference #2). Ecology provided comments on the draft work plan on April 7, 2016 (Reference #5). Boeing prepared a cover letter to the property owner and submitted it to Ecology for courtesy review on April 6, 2016 (Reference #3). Ecology provided redline comments to the cover letter on April 7, 2016 (Reference #4). Boeing submitted the final work plan with a cover letter and Ecology's comment letter to Los Cabos for review on April 12, 2016 (Reference #6)².

Sampling was delayed due to additional work plan review time needed by the property owner. Boeing notified Ecology of this delay on April 26, 2016 (Reference #13). The property owner requested a modification to the sampling plan, which Boeing communicated to Ecology (Reference #19) and Ecology provided modification approval (Reference #20). After a number of discussions between Boeing and the property owner, the property owner provided final approval of the sampling plan on May 18, 2016. Boeing completed the indoor air and sub-slab sampling at the property between June 8 and 9, 2016. Boeing plans to provide a data submittal and submit a report summarizing the results of this sampling in the third quarter 2016.

Other Reporting

Boeing completed a number of other reporting tasks in the second quarter 2016 as described below.

Site-wide Groundwater Model

Boeing finalized the site-wide groundwater model report and submitted it to Ecology on May 2, 2016 (Reference #17).

2015 Drilling

The 2015 drilling program included installation of wells on City of Auburn Right-of-Way (ROW), City of Algona ROW, and on one private property (DCTI property). Boeing submitted the draft 2015 Groundwater Investigation Report to Ecology in February 2016. Ecology provided comments on the draft report on June 7, 2016 (Reference #35). Boeing finalized the report and submitted it to Ecology on June 16, 2016 (Reference #41).

² This constituted the final work plan submittal to Ecology as Ecology was copied on this communication.

Vapor Intrusion Evaluation and Assessment

Boeing finalized the vapor intrusion evaluation and assessment report and submitted it to Ecology on April 21, 2016 (Reference #11).

Groundwater Sampling

In preparation for the annual groundwater sampling event, Boeing and Ecology discussed a number of modifications to the groundwater monitoring plan and an additional one-time groundwater analytical suite. To allow additional time for review of the documents associated with the annual groundwater sampling event, Boeing requested that groundwater sampling be completed later in June than originally planned. Due to the timing of the sampling event, Boeing also requested to submit data separate from the quarterly report (later in July) (Reference #12). Ecology approved both requests (Reference #14).

Boeing prepared a natural attenuation assessment work plan to document the proposed program and one-time analytical suite for the June groundwater sampling event. The work plan was submitted to Ecology on April 21, 2016 (Reference #10). A report summarizing the PDB to low-flow sampling comparison study was submitted to Ecology on April 29, 2016 (Reference #16). On May 19, 2016, Boeing and Ecology had a conference call to discuss the natural attenuation sampling work plan and the proposal for conversion to passive diffusion bag sampling (Reference #24). During this meeting, Boeing and Ecology discussed the PDB comparison study and agreed to implement use of PDBs across the site in accordance with the proposal and also to conduct additional comparison sampling at select locations. Ecology provided comments on the 2016 natural attenuation work plan on May 20, 2016 (Reference #25) and Boeing finalized this document on June 2, 2016 (Reference #32). Ecology provided comments on the PDB comparison report on June 6, 2016 (Reference #34) and Boeing finalized this document on June 16, 2016 (Reference #39).

In February 2016, Boeing submitted a draft Phase VII groundwater monitoring plan. Ecology requested a revised table for the monitoring plan that provided additional well location information and Boeing provided this revised table on May 13, 2016 (Reference #22 and 23). Ecology provided comments on the draft plan on June 1, 2016 (Reference #31). Boeing also provided information on CMT channel selection at AGW276 on June 10, 2016 (Reference #36) and Ecology approved the channel selection on June 16, 2016 (Reference #432). The CMT channel selection was added to the Phase VII groundwater monitoring plan and this plan was finalized on June 21, 2016 (Reference #43).

The Phase VII groundwater monitoring plan and PDB sampling were implemented during the June annual groundwater sampling event. In addition, the one-time analysis for evaluation of natural attenuation occurred during the June annual groundwater sampling event. The annual groundwater sampling data will be submitted as a separate submittal. This submittal is expected to occur in the third quarter 2016.

Algona Enhanced Natural Attenuation Pilot Test

The enhanced natural attenuation pilot test injection began on August 17, 2015 and was completed on September 4, 2015. Approximately 80,000 gallons of electron donor solution was injected into the shallow water-bearing zone. Boeing is performing quarterly post-injection sampling to monitor the effectiveness of the pilot test injection. The June 2016 sampling event was the third quarterly sampling event following injection activities. A summary of results from the pilot test monitoring wells will be submitted with the June annual groundwater sampling results in a separate submittal.

Elevated concentrations of methane were detected in groundwater at some wells in the pilot test area during the March 2016 quarterly sampling event. In addition, there were indications of increased methane concentration in the air inside some of the injection and monitoring well casings. Based on these methane detections, indoor air methane monitoring was completed throughout the Primus building as a precautionary measure. The building is occupied by Primus and two other tenants (Pioneer and Western Concord). Monitoring was completed in the Primus portion of the building on March 21, 2016, and in the Pioneer and Western Concord tenant spaces on April 14, 2016. Indoor air in the breathing zone was monitored throughout the building, in confined spaces such as closets, and in areas with potential connection to the subsurface such as floor drains and any other points of entry through the foundation. Methane was not detected at any point during the indoor air monitoring. Boeing communicated these results to the property owner and tenants on April 18, 2016 (Reference #9). Boeing is continuing to monitor methane concentrations in the pilot test area and additional indoor air monitoring will be conducted if there is a significant increase in methane concentrations.

Data Management

Ecology sent a policy update to Boeing regarding submittal of data to Ecology's Environmental Information Management (EIM) database (Reference #21). The new policy clarifies data submittal requirements for all sites and Ecology project managers indicated that data from the Auburn site will need to be uploaded to the EIM database. Boeing and Ecology had a conference call to discuss the data submittal requirements on May 19, 2016 (Reference #25). Ecology provided an update on submittal requirements on June 2, 2016 (Reference #33). Boeing is preparing data for the EIM submittal and intends to complete the historical EIM data submittal in the third quarter 2016.

Communications

The outreach group sent regular updates on activities occurring at the Boeing Auburn site. Ecology posted several update notifications on their website. Notifications included updates about informational displays available at the Auburn and Algona-Pacific libraries (Reference #7 and #15). In addition, Ecology was present at the coffee time with Mayor Hill (City of Algona) on June 12, 2016 and provided notifications that they were available for questions at this time (Reference #27 and #29). Ecology also posted updates about the status of the annual groundwater sampling event and provided notification that they would be present at Algona Days (Reference #46).

Ecology and Boeing are working together to ensure that all stakeholders are aware of the progress of investigation and cleanup activities at the Boeing Auburn site. In December 2015, Boeing met with the new manager at The Outlet Collection and provided information about the investigation and results to date. To ensure that the new manager also had an agency contact, Ecology provided a letter with details of the project progress. Ecology provided a draft of the letter to Boeing for courtesy review on April 1, 2016 (Reference #1) and Boeing provided comments on May 2, 2016 (Reference #18). Ecology sent the final letter to the new manager at The Outlet Collection on June 1, 2016 (Reference #30).

Boeing has also sent final reports to stakeholders as the reports are completed. The Tier II Commercial Vapor Intrusion Report, which documents air investigations at The Outlet Collection, was sent to the manager at The Outlet Collection on June 21, 2016 (Reference #44). The 2015 Groundwater Investigation Report, which documents the installation of monitoring well AGW276 at DCT Industrial property, was sent to DCT Industrial on June 22, 2016 (Reference #45).

City of Algona Communications

The City of Algona continues to be notified of all fieldwork occurring in Algona. The City of Algona's consultant, ICF, continues to participate in project conference calls with Boeing and Ecology and continues to review Algona-related deliverables (e.g., work plans and reports). Ecology also has communications conference calls with Mayor Hill (City of Algona). Ecology shares information from these meetings with Boeing by distributing meeting notes and via discussions during project conference calls.

City of Auburn Communications

Conference calls with the City of Auburn continue to occur quarterly. Regular attendees include representatives from Boeing, LAI, the City of Auburn, and Ecology. Meeting notes continue to be recorded and distributed by LAI.

17-06 Ongoing Monitoring

Boeing is continuing to monitor petroleum hydrocarbons in well AGW128 in Building 17-06. Measureable product was identified in April and a product sample was collected on April 23, 2016 for inclusion in a forensic evaluation. Measureable product of 0.02 feet was identified in the well in June 2016 during the annual groundwater sampling event. The well continues to be checked regularly for product thickness. Boeing is continuing to explore options for additional investigation to determine if there is an ongoing source and to help determine how cleanup may be best achieved near AGW128.

Occurrence of Problems

None noted.

Projected Work for Next Reporting Period July through September 2016

Activities projected for the next reporting period pertain to the Algona pilot test, reporting, and ongoing monitoring of groundwater and surface water. Tasks during third quarter 2016 are expected to include:

- Submitting the draft RI report for Ecology review
- Submitting a report about the Los Cabos Tier II vapor intrusion investigation
- Submitting a technical memorandum about the 2015 surface water sampling activities
- Finalizing the 2014 Auburn groundwater investigation report
- Continuing 17-06 light nonaqueous phase liquid investigation
- Conduct work on preparation of a feasibility study work plan
- Conducting the quarterly groundwater sampling event in September 2016
- Conducting the annual surface water sampling event in September 2016.

Other Significant Findings, Changes, and Contacts

None noted.

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If you have any questions regarding this status report, or need any other information, please do not hesitate to contact Jim Bet (206) 679-0433 or me (253) 284-4879.

LANDAU ASSOCIATES, INC.



Jennifer W. Wynkoop
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