STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Eastern Region Office
4601 North Monroe St., Spokane, WA 99205-1295 • 509-329-3400

November 6, 2026

Lisa Corcoran, C.M.
Spokane International Airport
9000 West Airport Drive, Suite 204
Spokane, WA 99224-9438

Marlene Feist
Public Works, City of Spokane
808 West Spokane Falls Boulevard
Spokane, WA 99201

Ben Brattebo
Public Works, Spokane County
1026 West Broadway Avenue
Spokane, WA 99260

Re: Ecology Comments on the draft Remedial Investigation and Feasibility Study Work Plan at the following Hazardous Waste Site:

- **Site Name: Spokane International Airport PFAS**
- **Site Address: 9000 W. Airport Dr., Spokane, WA 99204**
- **Cleanup Site ID: 16774**
- **Facility/Site ID: 6332493**

Dear Lisa Corcoran, Marlene Feist, and Ben Brattebo:

On July 17, 2026, the Washington Department of Ecology (Ecology) received an electronic copy of the draft Remedial Investigation and Feasibility Study Work Plan (Work Plan) for the Spokane International Airport PFAS site. The Work Plan was submitted pursuant to the requirements of Enforcement Order No. DE 22584 (EO) between Ecology and the Spokane International Airport (SIA) and Agreed Order No. DE 24355 (AO) between Ecology and the City of Spokane (City) and Spokane County (County).

Ecology has reviewed the Work Plan and requires the following revisions to the document:

General Comments

1. Much of the information included in this work plan is not relevant to the remedial investigation at SIA. This work plan should explain how you will investigate and determine

the nature and extent of contamination coming from SIA. It is not intended to outline or investigate the full distribution of PFAS in the West Plains. Figure 1 shows much of the West Plains as the "Study Area." No potential or confirmed transport pathways are discussed in the text of this Work Plan's CSM for groundwater travel from FAFB to SIA, but much of the information presented in this report appears to suggest that this is the case. See, for example, Figure 5-10, which is misleading and not supported by the data collected thus far at the Site or by the hydrogeology of the West Plains. When the data point to other sources as contributors, these outside sources can be assessed within the scope of the remedial investigation. Remove sections that are extraneous to the investigation at SIA.

2. Ecology's preliminary CSM has been explained to the PLPs on multiple occasions and can be reviewed in our November 6, 2026 letter. If the PLPs disagree with this CSM, they should use the remedial investigation to fill data gaps that could refute it. The proposed work is notably light on investigating groundwater flow paths and surface water paths along the northern property boundary and the areas between the fire houses and the Airport Paleochannel.

   Ecology has listed these data gaps to the PLPs on multiple occasions, but will repeat them here:

   a. Groundwater conditions and concentrations at property boundaries – upgradient and downgradient, deep and shallow, especially between source areas (the Current and Historical Source Areas) and the Airport Paleochannel.

   b. Groundwater adjacent to and interior to high soil concentration areas (the fire houses).

   c. Information to refine the top of basalt on property.

   d. Obtain downgradient isotope data – fate and transport.

   e. Deep groundwater concentrations.

   f. Soil and groundwater sampling at the 1994 crash site.

   g. Background surface soil.

   h. Include PFechS in 1633 analysis – from airplane hydraulic fluid – surface soil in the Land Treatment Area (LTA) and other areas as applicable.

i. Analyze soil and water in north perimeter ditch, including ditches that lead to and within the north stormwater management area.

j. Stormwater management area – surface water sampling, including at the property boundary.

k. Foundation dewatering systems – map and describe in the Work Plan and include periodic sampling.

Please include data collection that fill these data gaps in the Work Plan. In the interest of efficiency, Ecology proposes meeting to discuss where additional explorations should be added.

3. It is not clear why the work needs to be conducted in three phases. Much of the phase 2 and 3 work will be conducted regardless of the outcome of the phase 1 work. Where phase 2 and 3 work is not predicated on results of phase 1 work, the work should be conducted during phase 1. This will reduce costs and logistical issues from multiple mobilizations in the same area.

4. "Anthropogenic Background" is not a term used in the Model Toxics Control Act (MTCA). Remove the term "anthropogenic" if you wish to distinguish site-related concentrations from non-site related concentrations of hazardous substances. Non-site related hazardous substances are considered "background" concentrations (WAC 173-340-709). Any background sampling needs to conform to 173-340-709 Washington Administrative Code (WAC).

5. This Work Plan and the Sampling and Analysis Plan (SAP) refer repeatedly to "single-completion wells." Nested wells (more than one cased well in a single borehole) are prohibited in Washington for environmental monitoring (WAC-173-160-420). Remove this term from the text for clarity, since all wells will be single completion whether installed in a cluster/nest or not.

6. Ecology's review time is greatly increased when the PLPs send locked PDFs for review. Please send unlocked PDFs and Word documents to speed up Ecology review times for these documents. Include a Word or PDF document with redlined changes to this initial draft with the next submittal.

7. Ecology will need more than 5 calendar days' notice before the start of field work. Change to 10 days throughout the document. Opportunities to expedite field work based on

schedule changes from subcontractors, etc. are acceptable, but should be articulated to the Ecology Site Manager as soon as possible.

Section-specific Comments

1. Section 2.2, paragraph 2: Clarify which city is being referred to as "the City." The City of Spokane is defined as such in the next sentence.

2. Section 2.2, paragraph 3: The acronym "LI" has not yet been defined in the text.

3. Section 3.3.3 and throughout the document as applicable: The "easternmost paleochannel" or the "northeast paleochannel" is referred to as "the Airport Paleochannel" in related published studies on the West Plains, Ecology-approved documents related to this cleanup, documents referenced in this Work Plan, and colloquially. Refer to this paleochannel by its commonly understood name throughout the document for clarity.

4. Section 3.4.1.1, Airway Heights Paleochannel subsection: "The maximum sediment thickness … averages between 100 and 300 feet across." Please clarify (likely by removing the word "across" since this sentence is referring to depth—"across" sounds as if it is describing the width of the paleochannel).

5. Section 3.4.2: Preferential flow pathways within the basalt are discussed elsewhere in the document to inform the feasibility study. Discuss the understanding of preferential flow pathways in fractures and macropores here or in the Columbia River Basalt Group section.

6. Section 3.5.4: Describe any airport buildings or underground structures with dewatering systems. Report the flow rates, frequencies, volumes, and locations of discharge, and include sampling of these discharges in the Work Plan.

7. Section 4.2: This section is longer than necessary, misleading, and details PFAS sources that cannot contribute to contamination at SIA. It ignores the role of groundwater flow direction in contaminant transport, listing locations that are either fully downgradient or across the Spokane River, implying that they are potential sources at the Site. Remove additional PFAS information unless it could be reasonably concluded to affect the investigation at SIA. If the PLPs would like to investigate potential contributions from alternative sources, they must first show whether PFAS is migrating off property in groundwater, specifically through the Airport Paleochannel, rather than assigning or

implying responsibility for this contamination to FAFB without sufficient data. All of Section 4.2 could be replaced by the text on page 35.

8. Section 4.3.1: The summary of on-site PFAS investigations does not describe any of the results from the investigations, or even when they were conducted. Describe what work was done, when, and what the results were. Specifically, since the information in this section was used to "provide the basis for data used to develop the preliminary CSM," a description of the known nature and extent of contamination is relevant. Much of the description from Section 5.0 should be in this section.

9. Section 4.3.1: Ecology's comments on the Initial PFAS Investigation (IPI) Report were explicit that the data gaps outlined in the IPI were not comprehensive. Expand these listed data gaps into a larger section that outlines all data gaps identified in the Work Plan development process, perhaps after the preliminary CSM is described.

10. Section 4.3.2: This section contains an abundance of information irrelevant to this Work Plan; see general comment 1. The bulleted text could be easily described in one paragraph. Rewrite for clarity and brevity.

11. Exhibit 4-3: Define all colors in the legend.

12. Section 4.3.4: Since these data are being used to develop a preliminary CSM, description of the data is relevant to this report. Describe the results of private well sampling. Include a map showing the extent of private well sampling and the extent of the interim action area similar to Exhibit 4-3 (or include in Exhibit 4-3).

13. Section 4.4: Numerous surface soil samples have come back as non-detect for all PFAS constituents at this Site. Remove this section in its entirety, unless you would like to state that background PFAS concentrations in soil are not a concern at this site.

14. Section 4.4: Remove the last sentence; this is not in accordance with MTCA. Site-specific data may be supplemented by regional information or a desktop study, not the other way around.

15. Section 4.5: Replace the information in this section with a description of testing of soil and groundwater that was completed as part of investigations (the IPI) prior to the remedial investigation. These data are what was relied upon to eliminate other contaminants of potential concern, not the reports from the 1990s. Refer the reader to the IPI for information on earlier studies.

16. Section 5.0: The CSM, in general, needs to discuss the current understanding of how contamination got to wherever it is located. This section reads like a list of potential sources and a list of facts about PFAS without a cohesive narrative for the fate and transport of hazardous substances. The reader should be familiar with the extent of contamination in soil and groundwater, which should have been described in the previous section. The CSM should expand on those results with a narrative about how that contamination may have come to be there. See Ecology's November 6, 2026 CSM letter for clarification.

17. Section 5.1.2, second set of bullets: These bullets appear to describe areas where the plume has migrated and imply there is no apparent source in soil. Include a general description of the full extent of the known plume, where SIA source areas are relative to that plume, how concentrations change across aquifer units over space, and where PFAS are in groundwater without an identified source.

18. Section 5.2: While FAFB is another regional contributor of PFAS, the majority of the information in this section is irrelevant and unnecessary. For example, the dilution of aqueous film-forming foam (AFFF) used at FAFB is not relevant to contaminant fate and transport at SIA, nor are PFAS-related activities that occurred downgradient or directly cross-gradient of SIA. Discussions of FAFB must be limited to areas along the edge of their defined plume where groundwater or surface water contaminant transport between FAFB and SIA could reasonably be possible, with the understanding this would then lead to data collection to fill this data gap. See Ecology's November 6, 2026 CSM letter.

19. Section 5.4: The detail included in this section does not appear to be appropriate for this Work Plan since it does not appear to have influenced either the CSM or where investigation will occur. Save this level of discussion on the chemical properties of PFAS constituents for the RI report, should it be relevant to data interpretation there.

20. Section 5.5: FAFB is not within the Study Area. Remove discussion of the areas within FAFB. Do not reference specific data not included in this report without appropriate citation.

21. Section 5.5: "PFAS Transport in the Study Area" should be a discussion of PFAS transport in the study area, not only a discussion of PFAS precursors.

22. Section 5.6: This CSM summary is not consistent with available data or our understanding of the hydrogeology at the Site. The “exceptions” referenced in the last sentence are likely primary preferential pathways for groundwater flow, which have allowed for rapid transport of PFAS contamination from the shallow aquifer unit to deeper aquifer units. Rewrite to include potential transport of PFAS from SIA sources to the Airport Paleochannel and include groundwater monitoring near the Airport Paleochannel. See Ecology’s November 6, 2026 letter about the preliminary CSM and general comments above.

23. Section 6.1.2: Remove the reference to statistical interpretations. WAC 173-340-720 statistical methods may be used for compliance monitoring, which occurs after a cleanup is completed.

24. Section 7: It is difficult to follow the results of the IPI as reported in this section without any figures. Since your methodology for prioritizing sampling locations is “low, medium, high” concentrations of PFAS, Ecology suggests making a figure that shows soil and groundwater results in each study area using yellow, orange, and red to summarize contaminant concentrations.

25. Section 7: Table 7-2 is stated throughout this section to be in the SAP. Table 7-2 is in the main report, not the SAP.

26. Section 7.1: End of second paragraph—this citation is incomplete.

27. Section 7.2: It is notable the PLPs have not identified the area along the northern property boundary between SIA and the beginning of the Airport Paleochannel as an investigation area. Ecology has been clear that our understanding of source areas at SIA (the CFH in particular) and groundwater flow indicates that contamination from SIA could reasonably be assumed to be entering the Airport Paleochannel. Addressing this transport pathway must be a central objective of the Work Plan. Include the northern perimeter stormwater management area as an investigative area and the area along the northern airport boundary.

28. Section 7.3.1: An 8-1-1 One Call must be placed at least 3 days prior to any subsurface investigations. Not all exploration locations are inside the Airport Operations Area (AOA).

29. Section 7.3.3.1: “Triple-completed” monitoring wells are prohibited in Washington. See above general comment. Will all wells be installed with flush-mount monuments? If any wells will be constructed with stand-up monuments, outline the completion methods here.

30. Table 7-2: See below comment about screened intervals. In the shallow, unconfined aquifer, well screens must cross the water table.

31. Section 7.4.2.1: Amend the table in accordance with Ecology’s comments on well screen placement. Pneumatic testing cannot be completed on new wells set in the uppermost aquifer unit, since these screens need to be set across the water table.

32. Section 7.4.2.2: Ecology will not approve aquifer testing that does not a) identify which wells will act as observation wells or b) describe how the large volume of investigation-derived waste created by this activity will be managed and disposed of properly. Discharge from well testing may not be directed into the ground for infiltration as indicated in this section.

33. Section 7.5: Much of the detailed description of previous investigation in these areas could be moved to Section 4 or 5 so this section is more streamlined.

34. Section 7.5.1 Joint Fire Training Area (JTA): Please indicate how the laterally continuous lean clay unit is associated with this landfill. Based on previous reports for the Geiger Field Landfill, it was developed in the 1940s, when landfills were not lined.

35. Section 7.5.1 JTA: The text indicates that grab groundwater will target first-encountered groundwater “corresponding to the screened intervals of nearby shallow monitoring wells” but also notes above variable subsurface conditions affect groundwater occurrence. Grab groundwater sampling locations should target first groundwater, regardless of the elevations of the screens in nearby wells, some of which may be screened below the water table.

36. Section 7.5.2 CFH: Based on the IPI data, this area is of major concern for potential transport to groundwater and potential transport to the northeast and then to the Airport Paleochannel. Two wells in a single location at different depths will not allow for assessing groundwater flow within this area or answer a central data gap (and apparent point of disagreement between the PLPs and Ecology), which is whether contaminated groundwater from SIA, and specifically the CFH area, is migrating to the Airport

Paleochannel and then north. Expand the groundwater network in this area to assess the groundwater flow direction and extent of contamination. The extent of investigation that the PLPs have proposed and executed in the JTA would be appropriate for the CFH, which is another major source of PFAS in soil.

37. Section 7.5.2 CFH: Collect upgradient groundwater from monitoring wells or grab sample locations upgradient of the CFH to define the potential source area.

38. Section 7.5.3 Historical Fire House (HFH): Include at least two shallow groundwater monitoring wells to support overall understanding of site groundwater flow across the site, and to understand groundwater quality leaving the site.

39. Section 7.5.5 Stormwater Recovery Area: Include a permanent groundwater monitoring well or a grab groundwater sample in the area to the north of the Perimeter Ditch Outfall, across the road from SWN-MW-7, to further define the plume as it moves off property.

40. Section 7.5.6 Park Drive Waste Disposal Area: Recommend including a shallow groundwater monitoring well in this location to further refine contaminant movement from the JTA.

41. Section 7.5.11.2: Composite soil samples are not appropriate for sampling the site of the post-crash fire. Collect discrete soil samples in a grid pattern and, given uncertainty about the exact crash location, ensure the sampling area encompasses the maximum potential areal extent of the crash area.

42. Section 7.6: The text indicates there are seven surface water sampling locations; however, Figure 7-15 shows 8 locations. Please revise.

43. Section 8.12: Ecology will establish the cleanup standards (cleanup levels and points of compliance) in the Cleanup Action Plan. The PLPs may propose cleanup levels and points of compliance as part of the remedial investigation (WAC 173-340-350), but Ecology may adjust these cleanup standards in the Cleanup Action Plan.

    a. Please note that comingling of plumes is not in and of itself a justification for a conditional point of compliance (CPOC). Remove discussion of a CPOC. This can be discussed in the report if, based on the results of the investigation, the PLPs plan to propose a CPOC.

44. Section 8.3: The considerations for remedial alternative selection are explicitly outlined in WAC 173-340-360. These considerations are comprehensive. The cleanup action expectations are outlined in WAC 173-340-370. Revise the lists in section 8.3.1 and 8.3.2 so they are compatible with these sections of MTCA.

45. Exhibit 8.2: Understanding preferential flow paths would be necessary for both groundwater extraction and interceptor trench remedies. Subsurface utility conflicts for trenching/drilling would be necessary for an interceptor trench. Amend table.

46. Section 8.7: "The purpose of the FS [feasibility study] is to determine whether remedial action is warranted with specific AOPCs [areas of potential concern]." This statement is not accurate; remove. The purpose of the FS is to develop and evaluate cleanup action alternatives to enable selection of a cleanup action that meets the requirements of WAC 173-340-360 and the cleanup action expectations of WAC 173-340-370. Revise this section to be in accordance with MTCA.

47. Section 8.7.1: The presence or absence of evidence of historical use of AFFF in an area is irrelevant to whether it's assessed. PFAS concentrations in soil above proposed cleanup levels will require you to evaluate these areas in the remedial investigation and feasibility study. Remove the last sentence of this section.

48. Section 8.7.2: In accordance with MTCA, a groundwater remedy will be required in all areas where the plume exceeds proposed groundwater cleanup concentrations, even if this remedy does not include subsurface remedial action.

49. Section 9.0 and Exhibit 9.1: Add periodic surface water sampling and airport/foundation dewatering sampling to the schedule, and initiate the sampling within six months of Work Plan approval. Revise the schedule to reduce the time necessary to complete investigation work as much as possible. Where phase 2 and 3 work is not predicated on results of phase 1 work, the work should be conducted during phase 1.

Tables

1. Table 7-1: The soil sample at the water table needs to be collected in the capillary fringe just above the water table, as determined by field staff at the time of drilling. Clarify the table by adding a "WT" sample in the list of proposed sampling depths.

2. Table 7-2: Amend following area-specific comment 30 above. Clarify the sampling locations.

Figures

1. As applicable, amend figures based on Ecology comments about the "Study Area."

2. Include the location of the Airport Paleochannel in figures that show SIA's well network.

3. Include a figure showing the foundation dewatering infrastructure at SIA.

4. Include potentiometric maps for SIA showing individual well locations. Figures 3-4 and 3-5 do not allow the reader to see groundwater flow across source areas and other areas of potential interest. Add the proposed locations for new groundwater monitoring wells to show what the network will look like after the Work Plan is executed.

5. Figure 3-3: Call out the Airport Paleochannel in cross sections.

6. Figure 3-4: Figure is not readable. If the general groundwater trend is consistent across FAFB reports, indicate that without specific wells called out. Ecology is also concerned about using groundwater elevations measured 14 years apart and in unknown seasons. Justify the use of this data, perhaps with time-series charts indicating regional groundwater levels have not changed over 14 years and identify the months that samples were collected.

7. Figure 3-4: Groundwater contours beyond the SIA property, across the Airport Paleochannel, and between the Airport Paleochannel and the Airway Heights Paleochannel do not appear to be based on any data. Clearly indicate these contours are inferred.

8. Figure 3-4: The water level elevation in well 617922/APC141 is used in the potentiometric maps for both the unconsolidated sediments/shallow Wanapum and the Grande Ronde. Ecology's understanding is this well is over 300 feet deep. Remove from Figure 3-4.

9. Figure 3-5: Many groundwater contours, notably at 2,100 and 2,050 feet, "V" downgradient as they cross the Airway Heights Paleochannel. This would imply the paleochannel is "losing" to the surrounding basalt. This is not consistent with what we know about flow in the paleochannels. See, for example, the contours in the Deep Creek Paleochannel on this same figure, where the contours "V" upgradient. Adjust the contours shown in the Airway Heights Paleochannel to be consistent also with the location where the Grande Ronde becomes incised by this paleochannel. In this same

vein, groundwater contours do not appear to change in the Grande Ronde as it crosses the Airport Paleochannel. The Airport Paleochannel is known to incise down to the Grande Ronde, and it is reasonable to assume that flow will be affected as it reaches the paleochannel.

10. Figure 3-6: Identify the locations of Unnamed Ditches 1–3 on this figure.

11. Figure 5-2. This figure is irrelevant unless the PLPs propose to investigate near these areas. Remove this figure.

12. Figures 5-6 through 5-8: Soil concentrations at FAFB are not relevant to this investigation. Delete these figures.

13. Figures 5-3 through 5-5: Include the paleochannels on these figures and differentiate by aquifer unit.

14. Figure 5-10: This figure is misleading and is not consistent with information collected at the Site to date. There is no acknowledgement of the large source area in the CFH or likely groundwater flow from SIA to the Airport Paleochannel. Remove this figure.

15. Figure 7-15: Include foundation dewatering sampling locations in this figure.

Appendix A

1. Table A-1: Add well installation dates.

Appendix D

2. Table D-1: Indicate whether the measurement point is an approximate ground surface elevation or a surveyed measurement point elevation.

3. Table D-1: Include the data of each measurement.

4. Table D-1: It is not clear how many of these data were collected. Cite sources or eliminate data that cannot be cited. For example, it is difficult to understand how a groundwater elevation could be determined to within one hundredth of an inch without knowing the top-of-casing elevation or the depth to water (MW-444).

5. Table D-2: Correct the well number for well number “0”.

6. Table D-2: Indicate whether the measurement point is an approximate ground surface elevation or a surveyed measurement point elevation.

7. Table D-2: It is not clear how many of these data were collected. Cite sources or eliminate data that cannot be cited.

Sampling and Analysis Plan/Quality Assurance Project Plan

1. Please indicate whether the laboratory will be reporting PFAS results to the reporting level (RL) or to the method detection limit (MDL). Recent groundwater laboratory reports have been reporting to the MDL, not the RL.

2. The SAP does not address whether the anticipated well-screen intervals will be shifted based on field-identified water table elevations. As acknowledged in this Work Plan, PFAS is known to accumulate at interfaces; include the air-water interface. All shallow well completions must be screened so the screen crosses the water table and allows for seasonal fluctuations. Screens must be no longer than 10 feet in length unless required to capture seasonal fluctuations.

3. Presuming that assessing a connection between infiltration and PFAS constituent transport to groundwater is a data quality objective for lysimeters, the proposed sampling frequency (quarterly) is unlikely to produce "representative" results. Sampling should be timed to coincide with storm or runoff events.

    a. See the attached guidance, which will guide Ecology's understanding of lysimeter results at this site.

4. Section 3.2: Ecology will prepare the CAP, not the PLPs.

5. Section 3.3: Add 8-1-1 One Call notification to the field tasks. Ecology recognizes that 8-1-1 cannot respond to exploration locations within the AOA.

6. Section 4.4: Indicate that, if weather conditions restrict scheduled sampling events, Ecology will be notified and the sampling event will be rescheduled. This does not apply to wells or surface water locations that have been shown to run dry seasonally.

7. Section 6.1.6: See above comment about "triple-completed wells."

8. Section 6.1.6: Indicate a minimum distance between clustered wells.

9. Section 6.1.6: Indicate what type of pump will be used for low-flow sampling. See Ecology's comment on well sampling pumps from the IPI work plan.

10. Exhibit 6.1: Standard bottleware for metals in groundwater using EPA 200.8 is HCl-preserved HDPE or PP. Unpreserved glass has been shown to significantly reduce metals results, especially lead, which is one of two target metals for this analysis.

11. Section 6.5: Including dating in soil sample names is unnecessary and leads to increased field staff time, increased likelihood of mistakes, and does not impart necessary information. Remove dates from soil sample names. Same for adding depths to groundwater or lysimeter sampling names at permanent well or lysimeter installations. Simplify this naming convention.

12. Section 11.2: As Ecology has commented previously, it is not appropriate to average non-detect values in this way. In the event that a location with a field duplicate has one result above the reporting limit and one below, the higher value will be used, not averaged. If both results are non-detect, the higher non-detect value will be used, not averaged.

Pursuant to the schedules in the EO and AO, SIA, the City, and the County are required to modify the Work Plan according to the comments above and submit the revised document within 30 days. In observance of state and federal holidays during the next 30 days, Ecology will extend the due date to December 11, 2026.

If you have any questions regarding this letter, please contact me at 509-514-6806 or at kristin.beck@ecy.wa.gov.

Sincerely,

Kristin Beck, LHG
Site Manager
Toxics Cleanup Program

cc via email: Nicholas Acklam, Ecology
Ivy Anderson, Assistant Attorney General
Erika Beresovoy, Ecology
Bri Brinkman, Ecology
Ecology Site File