

Los Angeles Sanitation & Environment (LASAN)

Class V Experimental Injection Well Permit No. R9-UIC-CA5-FY18-1R

Response to Comments

Description of Changes to the Draft Permit

In accordance with 40 C.F.R. § 124.17(a)(1), the United States Environmental Protection Agency, Region 9 (EPA), hereby specifies which provisions of the draft Permit have been changed in the final Permit decision and the reasons for the changes. The changes to the draft Permit are explained in Items 1 – 8 below.

1. EPA revised the requirement in Parts II.B.7.a and II.B.7.b for continuous bottomhole monitoring in injection and monitoring wells to allow LASAN flexibility to provide data and evidence once operational changes have been fully implemented to prove that injection pressure monitoring is sufficient.
2. EPA revised typographical errors in Parts II.B.2.c, II.D.3.a, II.D.5.c, and Page 17 of the Appendices document.
3. EPA revised the requirement in Part II.B.2.c for Monitoring Well SFI-3 to be used as a monitoring well by adding the potential for it to be used as an injection well, but solely on an alternating basis with the other injection wells so that injection is occurring in only one well at a time.
4. EPA removed the requirement in Part II.D.1.b to make a hazardous waste determination. The municipal wastewater components of the waste stream would be considered as a non-hazardous substance regardless of the analytical results per 40 CFR § 261.4 because any mixture of domestic sewage is considered excluded as a hazardous waste. The injectate will be sampled when there is a change to process or content to confirm waste characteristics.
5. EPA revised the definition of “newly identified fracture” in Part II.D.3.a to specify new fractures as occurring outside the perforated injection interval.
6. EPA revised the requirement in Part II.D.6.b that required a pressure of 100 psig on the annulus to 0 psig. LASAN must submit a written request to EPA for approval prior to shut-in activities.
7. EPA removed the requirement in Part II.E.1.a to sample for turbidity, conductivity, BOD, TDS, TSS as they do not provide the relevant technical information related to the injection activity, particularly for sludge analysis.
8. EPA revised Part II.D.5.a to reflect the updated names of the LASAN treatment plants that supply biosolids for injection at the Terminal Island facility.

Summary of Significant Public Comments and EPA Response to Comments

Pursuant to 40 C.F.R. § 124.17(a)(2), EPA hereby summarizes and responds to all significant comments on the draft Permit raised during the public comment period, which was open from March 27, 2022 through April 27, 2022. EPA received one set of comments, from the applicant. For clarity, EPA organizes the comments and responses below under topical headings.

Commenter: Hassan Rad, Division Manager of the Regulatory Affairs Division, Los Angeles Sanitation & Environment (LASAN)

Permanent Monitoring System

1. On Page 7, Part II.B.7.a: LASAN requests to include in the permit that waiving the bottomhole pressure could be reconsidered once project operational changes have been fully implemented and more data has been collected.

EPA Response: EPA revised the Permit to incorporate the option for LASAN to request a waiver of the bottomhole monitoring requirement once operational changes have been fully implemented.

Typographical Errors

2. On Page 8, Part II.B.2.c: LASAN requests to remove extra period after the word “monitored”.

EPA Response: EPA corrected the typographical error.

3. On Page 18 Part II.D.3.a LASAN requests to insert space between identified and fracture.

EPA Response: EPA corrected the typographical error.

4. LASAN requests to update Appendix F-Plugging and Abandonment Plan to Appendix “G” as Appendix F is designated for the Step Rate Test Guidelines.

EPA Response: EPA corrected the typographical error.

5. LASAN seeks clarification on the highlighted sentence: “Injection fluids shall be limited to those authorized by this permit, which are those fluids produced by the Permittee. “No fluids other fluids shall be injected.”

EPA Response: This is a typographical error. EPA revised the permit to read “No other fluids shall be injected”.

SFI-1 Injection Well and Monitoring SFI-2 Well

6. LASAN requests to keep SFI-3 as an injector well in the new permit in order to have two (2) designated injector wells available. The current permit designates both SFI-1 and SFI-3 as injectors. In SFI-3, injection was conducted between October 2014 and February 2015, and the formation showed a good response to the injection operations. Currently, SFI-3 is not used as an injector and is used as a monitoring well since 2015. However, LASAN would like to keep SFI-3 as an additional injector in the new permit with the flexibility to convert SFI-2 from monitoring status to injector status in place of one of the injection wells in the future if needed. This flexibility will enable LASAN to continue to have two designated injector wells available and, to keep the well that provides better monitoring data (pressure, microseismic, temperature, etc.) once we convert SFI-2 into an injector in place of one of the current injectors. This flexibility will allow us to avoid losing valuable monitoring data while also having a backup well should the primary injection well require workover. LASAN is fully aware that SFI-2 conversion will not occur until sufficient data, required documentation, and technical justification are fully presented to the U.S EPA.

EPA Response: LASAN requests to have SFI-1, SFI-2, and SFI-3 as potential injectors. Since the existing permit allows injection into SFI-3 and SFI-1, and the well remains adequately constructed (which will be verified by a mechanical integrity test), the potential use of SFI-3 or SFI-2 as injectors on an alternating basis with SFI-1 will be allowed. As specified in the Permit, LASAN may only use one well for injection and two wells for monitoring at any given time.

Measuring Device

7. LASAN requests to include in the permit that waiving the bottomhole pressure could be reconsidered once project operational changes have been fully implemented and more data has been collected.

EPA Response: Under revised Parts II.B.7.a and II.B.7.b., LASAN must implement the operational changes required by Part II.D.4 and submit a written request with the relevant data and evidence to EPA for approval. EPA will review LASAN's request and determine whether LASAN may discontinue bottomhole monitoring.

Hazardous Waste Determination

8. LASAN seeks confirmation of the Hazardous Waste Determination as per 40 CFR Part 261- Identification and Listing of Hazardous Waste and Subpart 261.4 Municipal wastewater sludge which includes primary sludge, waste activated sludge, thickened primary sludge, thickened waste activated sludge, and digested sludge (Aerobic and Non-Aerobic) are all considered as "Non-Hazardous Substances".

EPA Response: EPA removed the requirement for LASAN to complete a hazardous waste determination. The State Water Resources Control Board requires LASAN, per their National Pollutant Discharge Elimination System permits, to test biosolids at their treatment plants annually or more frequently, if necessary, to determine hazardousness in accordance with California law. No hazardous waste is authorized to be injected as stated in Part II.D.5.b.

Injection Pressure and Fracture Limitation

9. LASAN seeks clarification and additional guidance on what constitutes a “new fracture”. On 3/25/22, EPA added more context on the definition of fracture. However, the definition is still unclear as to what constitutes a fracture. LASAN suggests clarifying whether new fractures are fractures initiated in a zone other than the defined injection zone. LASAN suggests changing the definition of fracture to: “A newly identified fracture is defined in this permit as a fracture that is created in a zone other than the perforated interval as a result of pressure changes due to fluid injection that causes vertical fracture propagation either in the upward or downward direction during the injection operations.”

EPA Response: LASAN requests to edit the definition of “a newly identified fracture” to specify that it would refer to a fracture in a zone other than the perforated interval. However, LASAN leaves out the part of the definition regarding identification of pre-existing fractures. Identifying where biosolids are being stored and if there are any known fractures in the injection zones is crucial information for the project. Therefore, EPA modified the definition as follows:

“A newly identified fracture is defined in this permit as a fracture that is created in a zone other than the perforated interval as a result of pressure changes due to fluid injection that causes vertical fracture that is not currently being used as a location for injection fluid containment or a pre-existing fracture that is identified during the injection operations.”

Injection Fluid Limitation

10. LASAN seeks clarification on the highlighted sentence: “Injection fluids shall be limited to those authorized by this permit, which are those fluids produced by the Permittee. “No fluids other fluids shall be injected.”

EPA Response: This is a typographical error. EPA revised the permit to read “No other fluids shall be injected”.

Tubing/Casing Annulus Requirements

11. LASAN requests to maintain the annulus pressure during the shut-in period at 0 psig to avoid high annulus pressure build-up during injection of hot digester sludge.

EPA Response: Although not originally specified in the City’s permit, based on prior well operational data, the statement made by LASAN that hot digester sludge may lead to high annulus pressure build-up is accurate. Reducing high annulus pressure provides an additional safety factor during shut-in activities. Under revised Part II.D.6.b of the Permit, LASAN’s request to maintain less than 100 psig on the tubing/casing annulus will require submission and approval by EPA prior to shut-in activities.

Injection Fluid Monitoring Program

12. LASAN seeks additional guidance on injection fluids physical, chemical, and other relevant characteristics. LASAN uses EPA Method 300.0, Part A to perform Chloride, Fluoride, Nitrate, Nitrite, and Sulfate analyses. However, EPA Method 300.1 is used for Bromide analysis and Standard Method 4500-PE for Ortho-Phosphate-P analysis. LASAN recommends removing Turbidity, Conductivity, and BOD from the General and Physical Parameters. Turbidity analysis will not be relevant for a diluted sludge as it will absorb light and has too many particles. In addition, Conductivity analysis will not be feasible due to the viscous injectable fluid and will damage the conductivity probe resulting in inaccuracy of measurements. Biological Oxygen Demand (BOD) analysis will require serial dilutions and this decreases the accuracy of the test. LASAN is certified by the Environment Laboratory Accreditation Program (ELAP) for the EPA Method 8260B for VOCs analysis. LASAN is certified by the ELAP for the EPA Method 8270C for SVOCs analysis.

EPA Response: EPA revised the permit to remove the select parameters (turbidity, conductivity, BOD, TDS, TSS) from the analysis as we agree with LASAN that they do not provide relevant technical information related to the injection activity, particularly for sludge analysis. Regarding the differences in series designation for VOCs and SVOCs, there are changes (some of which are significant) between the 8260D and 8270E series as specified by EPA, and the 8260B and 8270C series that the LASAN’s recommended laboratory is certified to perform. Method series 8260B and 8270C are over 26 years old and are being phased out in California. As required by Part II.E.1.a, LASAN must use updated methods 8260D and 8270E for VOCs and SVOCs, respectively. LASAN should solicit a laboratory that carries certification for the updated method series analyses for VOCs and SVOCs.

Biosolids Sources

13. LASAN requests to include updated names of treatment plants as sources of injection fluids. 1. Hyperion Water Reclamation Plant 2. Terminal Island Water Reclamation Plant 3. Please update Orange County Treatment Plant to “Reclamation Plant No. 1: Fountain Valley, Orange County” 4. Please update Orange County Treatment Plant to “Treatment Plant No. 2: Huntington Beach, Orange County” 5. Please update Carson Treatment Plant

to “Los Angeles County Sanitation District Joint Water Pollution Control Plant (JWPCP)”.

EPA Response: The permit has been revised to reflect the updated names of the treatment plants where LASAN may source its injection fluids.