

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Michael L. Parson
Governor

Dru Buntin
Director

March 22, 2023

Lakewood Hills Homeowners Association
Ms. Judy Meixner
P.O. Box 414
Eureka, Missouri 63025

jmeixner2018@gmail.com

RE: Gem Lake Dam (MO30465) Jefferson County

Dear Ms. Meixner:

As a result of an inspection of the Gem Lake Dam on February 28, 2023, I am pleased to inform you that Registration Permit R-513 has been renewed and is enclosed for your use. The permit will be valid for a period of three years at your request and will expire on March 27, 2026. At that time the dam will be reinspected by the Dam and Reservoir Safety Program at no cost to you. The permit is being issued for three years based on your request and the downstream environmental zone classification.

Please refer to the enclosed inspection report for additional information on the inspection. If you have any questions or need further assistance, please feel free to contact Denise Rittenhouse at 573- 368-2175. Thanks for your cooperation.

Sincerely,

MISSOURI GEOLOGICAL SURVEY

Ryan P. Stack, P.E.
Chief Engineer
Dam and Reservoir Safety Program

**STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DAM AND RESERVOIR SAFETY COUNCIL
SAFETY PERMIT**

Pursuant to Chapters 236.400 through 236.500 of the Revised Statutes of Missouri and the rules established by the Dam and Reservoir Safety Council, and on the basis of an inspection by the Department of Natural Resources for the Gem Lake Dam, Jefferson County, all of which are made a part hereof by reference, **PERMISSION IS HEREBY GRANTED** to Lakewood Hills Homeowners Association, hereafter known as the permittee, whose address for the purpose of notices and other communications pertaining to this permit is P.O. Box 414; Eureka, Missouri 63025, which address is subject to change by written notice from the permittee, **TO OPERATE** said dam and reservoir located in Section 33, Township 43 North, Range 3 East, having identification number of MO30465, a dam height of 38 feet, a principal spillway elevation of 94.7 feet (site datum), a minimum crest elevation of 96.1 feet (site datum), a reservoir area of 2.5 acres at the water storage elevation and approximate UTM Coordinates of 4,255,672 meters North and 700971 meters East, Zone 15, subject to the following provisions:

GENERAL PROVISIONS:

1. No liability shall be imposed upon or incurred by the State of Missouri and/or the Dam and Reservoir Safety Council, or any of their officers, agents, employees, and members, officially or personally, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the permittee or any of its agents, employees, or contractors, or closed corporations or successors relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claim or right of action of the state against the permittee, its agents, employees or contractors for any damages or injury resulting from any such act or omission by them or for violation of or failure to comply with the provisions of the permit or applicable provisions of law.
2. The permittee shall comply with all Federal, State and local laws and regulations, and shall obtain such other permits as may be required.

3. In cases where the doing by the permittee of anything authorized by this permit shall involve the taking, using or damaging of any property rights or interest of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, it is the sole responsibility of the permittee, before proceeding therewith, to obtain the written consent of all persons, agencies, or authorities concerned, and to acquire all property, rights and interests necessary therefore, including flood easements or permissions for all properties which may be inundated by the dam on a temporary or permanent basis in the upstream impoundment area below the top of dam elevation.
4. The permittee shall notify the Dam and Reservoir Safety Council in writing upon the sale or other transfer of interest in the dam or reservoir.
5. Based on conditions existing at the time of issuing this permit, the Downstream Environment Zone is Class III. Future development in the vicinity of the dam and flood plain below the dam may result in a change in classification. This change will necessitate hydraulic and structural upgrading of the dam so the dam is in compliance with the rules and regulations of the Missouri Dam and Reservoir Safety Council. Permittee or its representatives, successors or assigns shall perform any such upgrading upon a change in classification and upon notification from the Missouri Dam and Reservoir Safety Council.
6. The permittee shall not alter, enlarge, reduce, repair or remove the dam, reservoir or appurtenances without first obtaining a construction permit from the Dam and Reservoir Safety Council.
7. The permittee shall immediately notify in writing, the Chief Engineer of any conditions relating to the structural stability of, hydraulic capacity of, or seepage through the dam discovered during the term of this permit which may differ from those conditions identified in the renewal inspection summary.
8. The terms and provisions of this permit shall extend to and bind the successors in authority of the Dam and Reservoir Safety Council and the legally assigned successors in interest of the permittee.
9. Maintenance of the dam and reservoir herein permitted shall be the responsibility of the permittee.
10. At your request, the term of this permit shall be three (3) years from the date of issue, in order to be consistent with the term of the current registration permit issued for the Crystal Lake Dam (MO30462) and will expire on March 27, 2026. The permittee shall apply for renewal not less than sixty (60) days prior to this expiration date.

Executed at Rolla, Missouri on this 22nd day of
March 2023

DAM & RESERVOIR SAFETY COUNCIL

By _____
Chief Engineer
Dam and Reservoir Safety Program



| | | |
|------------------|----------------------|-------------------------------|
| ID #: MO30465 | GEM LAKE DAM | INSPECTION DATE: Feb 28, 2023 |
| JEFFERSON COUNTY | PERMIT NUMBER: R-513 | HAZARD CLASS: III |

DEPARTMENT OF NATURAL RESOURCES
DAM & RESERVOIR SAFETY PROGRAM
DAM INSPECTION REPORT
March 16, 2023

| | |
|-----------------|---------------------------------------|
| OWNER: | Lakewood Hills Homeowners Association |
| ADDRESS: | c/o Judy Meixner P.O. Box 414 |
| CITY/STATE/ZIP: | Eureka, MO 63025 |
| TELEPHONE: | (636) 257-0946 |
| EMAIL: | jmeixner2018@gmail.com |

| | |
|--------------|------------------|
| TYPE OF DAM: | EARTH EMBANKMENT |
| PLSS: | T43NR03ES33 |

| | | |
|-------------------|-----------|--------------------------------|
| SPILLWAY TYPE(S): | PRINCIPAL | Open channel on right abutment |
| | AUXILIARY | None |

ENGINEER CERTIFICATION

- ☒ I hereby certify that GEM LAKE DAM was inspected on February 28, 2023 in accordance with RSMO 236.400 through RSMO 236.500.
- ☒ I hereby certify that GEM LAKE DAM did not have any observed defects that required correction at the time of the inspection.
- ☒ Judgement of Slope Stability – The embankment and appurtenant structures appeared to be in good overall condition at the time of the inspection, with no indications of slope instability or excessive seepage.
- ☐ Defects were found that will have to be corrected prior to the permit being renewed.

SITE SURVEY

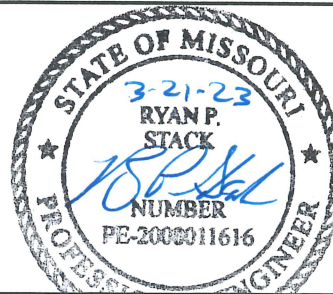
| STATION | ELEVATION (ft.) ¹ | COMMENTS |
|-----------------|------------------------------|---|
| TBM | 100.0 | Temporary Benchmark – Concrete sill on downstream side of high voltage box on left abutment |
| PS | 94.7 | Principal spillway crest |
| Dam | 96.1 | Low point on crest of dam |
| WL | 85.1 | Water level on day of inspection |
| Freeboard (ft.) | Available | Required |
| | 1.4 | 0.8 |

¹Elevations are based on an assumed, local site datum of 100.0 feet at the temporary benchmark

Equipment used ☐ GPS system ☒ Auto level and rod

Kelsey Jett

INSPECTING ENGINEER
Kelsey Jett, E.I.



INSPECTING ENGINEER
Ryan Stack, PE
Missouri Engineer, E-2008011616



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INSPECTION CHECKLIST

| Item | Condition | Issue | Comments |
|---------------------------------------|-----------|----------------|---|
| 1. Upstream face/riprap | NP | | |
| 2. Crest | NP | | |
| 3. Downstream face | OR | Erosion Likely | Monitor the downstream face for developing erosion in areas with no grass cover. Establish grass cover on the bare spots. Kentucky 31 tall fescue is recommended. |
| | MR | Varmint Holes | Varmint holes were found on the downstream face of the dam in areas that previously had been covered with tall grasses. Fully excavate and fill the burrow with compacted clay material and make efforts to discourage future rodent activity. Regular vegetation control will help deter varmint activity. |
| 4. Left groin | OR | Erosion | Monitor erosion gulley developing in the upper 1/3 of the left groin. |
| 5. Right groin | NP | | |
| 6. Toe of dam | MR | Brush/Debris | Cut and remove brush from toe of dam below road bench. |
| 7. Principal spillway | NP | | |
| 8. Principal spillway outlet channel | NP | | |
| 9. Auxiliary spillway | NA | | |
| 10. Auxiliary spillway outlet channel | NA | | |
| 11. Embankment drains | NP | | |
| 12. Lake drain gates/valves | NA | | |
| 13. Geotextile | OR | Exposed | Monitor condition of geotextile above the road. Patch any holes with pieces of similar material. Consult designer to determine acceptability of covering exposed geotextile with soil and seeding for protection from elements. |

NP = No observable problem
EC = Emergency Condition

MR = Maintenance Required
OR = Observation Required

DO = Defect Observed
NA = Not Applicable



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Downstream face



Downstream face



Upstream face



Principal spillway inlet



Principal spillway channel (looking downstream)



Erosion in left groin



| | | |
|------------------|----------------------|-------------------------------|
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Varmint holes on downstream face



Geotextile



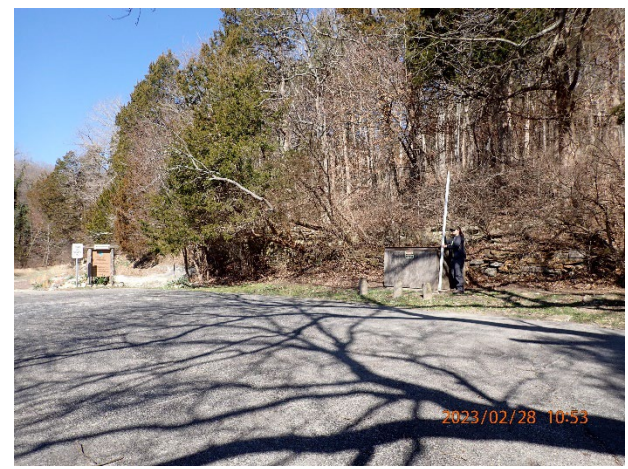
Brush at toe of dam



Brush and erosion at culvert drains near toe of dam



Bare earth on downstream face



Temporary Benchmark