

RECEIVED

FEB 09 2009

REITZ & JENS, INC.

Electronic copy  
of letterhead

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor Joseph P. Bindbeutel, Acting Director

www.dnr.mo.gov

February 2, 2009

CERTIFIED MAIL 7005 3110 0004 3988 9017  
RETURN RECEIPT REQUESTED

Mr. Paul Pike  
Ameren  
One Ameren Plaza  
1901 Chouteau Avenue  
St. Louis, MO 63166

Re: Preliminary investigation of the proposed expansion of the AmerenUE-Labadie  
Utility Waste Landfill, (Section 17 and 20, Township 44 North, Range 2 East,  
Labadie 7.5 Minute Quadrangle, Franklin County)

Dear Mr. Pike:

The Geological Survey Program (GSP) has completed the Preliminary Site Investigation (PSI) for the proposed expansion to the AmerenUE-Labadie Utility Waste Landfill. The proposed landfill is approximately 1042 acres.

The site is approved to proceed to the next phase of the permitting process. Please find enclosed the PSI report (ID# F00409) that summarizes the geologic and hydrologic evaluation of the proposed expansion area.

Also enclosed is a copy of Appendix 1, Guidelines for Planning, Conducting, and Reporting Detailed Geologic and Hydrologic Investigations at a Proposed Solid Waste Disposal Area. This document summarizes the elements and format that should be used to develop a detailed site investigation workplan. We encourage you and your consultant to meet with the GSP staff prior to finalizing a workplan for the detailed site investigation to discuss the elements to be included within the report. Please contact Mr. Larry Pierce, telephone 573-368-2191, or email [larry.pierce@dnr.mo.gov](mailto:larry.pierce@dnr.mo.gov), to schedule this workplan meeting.

Current procedures call for an applicant receiving approval at the preliminary site investigation stage to participate in public involvement activities as part of the solid



Recycled Paper

SCHEDULE CJG-S9

Mr. Paul Pike, Ameren  
February 2, 2009  
Page Two

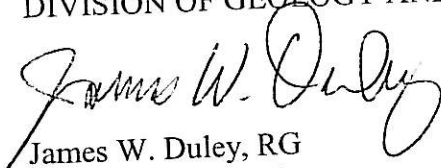
waste disposal area permit application process. Within 30 days of the approval, the applicant must notify both the governing body of the county or city, and the solid waste management district in which the proposed disposal area is to be located. This notification is to be by certified mail.

Within 90 days of the Preliminary Site Investigation approval, the department will conduct a public awareness session in the county in which the proposed disposal area is to be located. For further information concerning these public involvement requirements, please contact the Solid Waste Management Program at (573) 751-5401.

If you have any questions, please feel free to contact Larry "Boot" Pierce at P.O. Box 250, Rolla, Missouri 65402, telephone (573) 368-2191, or email at [larry.pierce@dnr.mo.gov](mailto:larry.pierce@dnr.mo.gov). Thank you for your interest.

Sincerely,

DIVISION OF GEOLOGY AND LAND SURVEY

  
James W. Duley, RG  
Deputy Division Director

cc: Charlene Fitch, Waste Management Program, w/enclosure  
Paul Reitz, P.E., Reitz & Jens, Inc., w/enclosure ✓  
Mike Carlson, R.G., Gredell Engineering Resources, Inc., w/enclosure  
Region I – East Central SWMD



Missouri Department Of Natural Resources  
Division of Geology and Land Survey  
P.O. Box 250  
Rolla, Missouri 65402-0250  
Phone - 573.368.2161 Fax - 573.368.2111  
E-mail - gspgeol@dnr.mo.gov

Project ID Number

F00409

County

Franklin

### Solid Waste Disposal Site - Geologic Evaluation

Project Name AmerenUE Labadie, Utility Waste Landfill Quadrangle LABADIE  
Location Section 17 Township 44N Range 2E  
Additional Location Information Also Section 20, includes SUR 354 and 735  
Latitude 38 Deg 34 Min 0 Sec North Longitude 90 Deg 49 Min 31 Sec West

Owner: Ameren

One Ameren Plaza, 1901 Chouteau Ave., St. Louis, MO 63166-1419 (314) 342-1000

Requestor: Ameren Services

Paul Pike, One Ameren Plaza, 1901 Chouteau Ave., St. Louis, MO 63166-1419 (314) 554-2388

#### Date of Field Visit

##### Slope

- ☒ < 4%  
☐ 4% to 8%  
☐ 8% to 15%  
☐ >15

##### Landscape position

- ☐ Broad uplands ☒ Floodplain  
☐ Ridgetop ☐ Alluvial plain  
☐ Hillslope ☐ Terrace  
☒ Narrow ravine ☐ Other

##### Groundwater of concern

- ☐ Perched  
☒ Local  
☐ Regional

##### Groundwater located in

- ☒ Overburden  
☐ Bedrock

#### Bedrock

The uppermost bedrock is the Ordovician-age Everton Formation or the Jefferson City-Cotter Dolomite, which both exhibit low permeability in this area. These formations are typically composed of an undulating dolomite overlying a thicker, massive sandstone, and a light-gray to light brown, medium- to finely crystalline, cherty dolomite, respectively.

#### Overburden

The surficial materials are best described as ranging from brown to tan, silty-sand alluvium with some clay (SM/SC) to brown to gray, highly plastic, inorganic clay (CH) in the upper 20-30 feet. Two soil borings (P-1 and B-7) indicate cobble and boulder-size limestone and dolomite debris below 50 feet. Bedrock is contacted at approximately 100 feet. These materials typically exhibit moderate to high permeability in this environment.

#### Site Hydrology

The Missouri River alluvial aquifer is the uppermost continuous water-bearing unit. Groundwater in the alluvial aquifer largely flows in the same direction but is variable depending on the river stage. Surface water and groundwater also flow due north from the Franklin Low Hills of the Ozark Uplands south of the site and contribute to the overall water balance at the site. Overland flow on the site tends to travel north-northeast.

Underlying the Quaternary alluvium of the proposed site, the uppermost continuous bedrock water-bearing unit is within the Ordovician dolomites. Though no confining unit separating the alluvial aquifer from the underlying Ozark Aquifer has been identified, the thickness of saturated alluvium and the groundwater direction and gradient makes it highly unlikely that this lower aquifer could become contaminated by the proposed site.

**Remarks**

The proposed AmerenUE utility-waste landfill was visited to conduct preliminary site investigations and determine the general suitability for use as a utility waste disposal area. The site is located in the east halves of Sections 17 and 20, Township 44 North, Range 2 East, in the Lower Missouri River Alluvial Plain. The elevation of the proposed site is approximately 465 msl. The area of the proposed site is an alluvial bottomland bounded by the Missouri River on the north, east and west; and the Ozark Uplands to the south. The proposed utility landfill is tentatively sited in the alluvial bottoms, approximately one-third of a mile to the east of the existing Ameren Labadie power plant.

Examination of the well logs of on-site boreholes indicates the presence of alluvial materials ranging from silts and clays to fine to coarse grained sand, to gravel, cobble and boulder-size clasts of limestone, dolomite and insoluble clasts at depth. Some organic materials, such as decaying trees were observed at depth in the logs. There is no evidence of a lower confining unit within the alluvium. However, the thickness of the alluvium (over 100 feet thick) and the shallow depth to groundwater (ranging from eight to 20 feet) and the existing groundwater gradients indicate a low probability of groundwater contamination from this facility into the lower Missouri River alluvial aquifer or the Ozark Aquifer.

During the site visit for the preliminary site investigation, fault displacement was observed in the bed cut of a railroad bordering the southern edge of the proposed utility landfill. This fault appeared to transect the Ordovician-age Everton Formation and the overlying Ordovician-age St. Peter Sandstone. Inactive bedrock faults are not uncommon, however, further exploration may be warranted during the detailed site investigation.

Results of Preliminary Investigation

☒ Approval☐ Disapproval

Further exploration not recommended due to unstable or unsuitable conditions in the following areas

☐ Hydrological☐ Collapse Potential☐ Bedrock☐ Soil

Report By Blake Smotherman

Report Date

02/03/2009

CC Charlene Fitch, Paul Reitz (Reitz & Jens, Inc.), Mike Carlson (Gredell Engineering), Region I -  
East Central SWMD

