

Table 9

Comparison of Proposed Landfill Groundwater Monitoring Results to Screening Levels – April 2013 Sampling Event (a)

Labadie Energy Center, Franklin County, MO

Ameren Missouri

Monitoring Well ID	Well Depth (feet, btor)	pH	Chloride	Fluoride	Sulfate	TDS	Aluminum	Antimony	Arsenic	Boron	Barium	Beryllium	Cadmium	Cobalt	Chromium	Copper	Iron	Manganese	Mercury	Molybdenum	Nickel	Lead	Selenium	Silver	Thallium	Zinc
		S.U.	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L
		MCL/SMCL (b)	6.5-8.5	250	4	250	500	50	6	10	NA	2000	0.004	5	NA	100	1300	300	50	2	NA	NA	15	50	100	2
RSL (c)	NA	NA	0.62	NA	NA	16000		6	0.045	3100	2900	0.016	6.9	4.7	16000	620	11000	320	4.3	78	0.3	NA	78	71	0.16	4700
MW-1	27.76	6.83	10	0.11	26	536			22.1	79.4	402			3.3			17000	1470			0.0058					
MW-2	26.35	6.85	17	0.21	31	696			29.5	121	416			2.9			28400	2960								2.5
MW-3	25.15	6.99	9	0.12	54	516			1.2	63.6	415					3.3	16200	2760								2.2
MW-4	25.54	6.94	6	0.18	25	532				72.8	274						115	1240			0.0091					
MW-5	24.68	6.86	2	0.16	16	482				52.9	293						210	458			0.0116					2.1
MW-6	23.1	6.82	3	0.14	19	566	37			62.2	227						53	106			0.0101					4.3
MW-7	21.94	7.07	15	0.2	26	568	246		66.6	72.6	480						30300	1670								2.9
MW-8	21.82	6.83	8	0.16	10	460			13.6	45.3	285						23600	896								2.7
MW-9	20.18	7.16	5	0.18	20	414			26.4	53.6	265						16700	1450								
MW-10	21.45	6.99	6	0.17	54	430	27		8.8	56.7	462						16900	1350				0.4				
MW-11	20.95	6.89	2	0.12	64	460			0.8	54.8	301			3.1			436	523			0.0068	0.5				
MW-12	20.48	6.93	2	0.1	42	448	18		1.4	52.9	253			3			419	483			0.0052					4
MW-13	20.4	6.87	2	0.12	64	498	33			53.5	295						59.2	117								5.1
MW-14	19.79	6.95	3	0.14	42	490	30		7.1	48.2	268			3.3			3590	979			0.0039					5.5
MW-15	17.91	6.84	2	0.16	27	404				58.1	206						16	18.1			0.0058					4.1
MW-16	18.5	6.85	6	0.22	30	554	31		12.5	102	102			4.4			8580	3740			0.0041					5
MW-17	19.72	6.79	2	0.13	59	580	119		5.3	64.9	275			3.4			1620	1270			0.0037	0.7				3.5
MW-18	18.24	7	1	0.18	34	476				45.8	147						22.3	89.5				0.4	38.5			4
MW-19	18.19	6.83	2	0.15	72	500				72.1	228						136	98.9			0.0057					4.2
MW-20	17.62	6.99	2	0.19	21	356				48.7	182						30.9	154			0.0074	0.5				4
MW-21	17.71	6.92	3	0.16	30	262			1	57.7	237						1080	412			0.0036					3.8
MW-22	17.92	6.88	6	0.25	30	560			45.7	156	238						19900	1900				0.5				4.1
MW-23	19.65	6.84	4	0.18	21	508	153		3.4	94	210						3600	180			0.0039					3.5
MW-24	19.99	6.94	3	0.18	36	426	154			47.1	190					3	277	4.1			0.0048	0.6	45.5			4.1
MW-25	20.84	7.18	4	0.14	17	406	38		6.5	124	511						4850	2730			0.0036	0.7				3.8
MW-26	23	7.02	4	0.16	45	504	55.5			82.7	286						630	3000			0.0043	0.7				
MW-27	25.91	6.83	11	0.18	29	576	31		3.3	98.6	268			4.1			3220	1280			0.0058	0.5				5.2
MW-28	27.06	6.78	6	0.16	31	556	16		1.5	86.7	269						2020	402			0.0082	1				4.5
TMW-1	21.58	7.01	6	0.26	128	674			29.5	100	355						12100	4690			0.0036					5.5

Notes:

Blank data cells indicate a non-detect value.

btor - below top of riser.

MCL - Maximum Contaminant Level.

mg/L - Milligrams per liter.

NA - Not available.

RSL - Regional Screening Level.

SMCL - Secondary Maximum Contaminant Level. Value used if no MCL available.

S.U. - Standard Units.

ug/L - Micrograms per liter.

TDS - Total Dissolved Solids.

USEPA - United States Environmental Protection Agency.

(a) - Numerical values were obtained from the Ameren Missouri Labadie Energy Center Utility Waste Landfill, Solid Waste Disposal Area, Franklin County, Missouri,

Groundwater Detection Monitoring Wells Installation Report prepared by Reitz & Jens, Inc., May 2013. Samples collected on 4/16/2013.

(b) - USEPA 2012 Edition of the Drinking Water Standards and Health Advisories. Spring 2012. <http://water.epa.gov/drink/contaminants/index.cfm>; adopted as Missouri state values at 10 CSR 60-4.

(c) - USEPA Regional Screening Levels (November 2013). Values for tapwater.

http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm

greater than MCL

greater than MCL and RSL

greater than RSL

Table 10
Comparison of Proposed Landfill Groundwater Monitoring Results to Screening Levels – August 2013 Sampling Event (a)
Labadie Energy Center, Franklin County, MO
Ameren Missouri

Monitoring Well ID	Well Depth (feet, btor)	pH	Chloride	Fluoride	Sulfate	TDS	Aluminum	Antimony	Arsenic	Boron	Barium	Beryllium	Cadmium	Cobalt	Chromium	Copper	Iron	Manganese	Mercury	Molybdenum	Nickel	Lead	Selenium	Silver	Thallium	Zinc
	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	
	MCL/SMCL (b)	6.5-8.5	250	4	250	500	50	6	10	NA	2000	0.004	5	NA	100	1300	300	50	2	NA	NA	15	50	100	2	5000
RSL (c)	NA	NA	0.62	NA	NA	16000	6	0.045	3100	2900	0.016	6.9	4.7	16000	620	11000	320	4.3	78	0.3	NA	78	71	0.16	4700	
MW-1	27.76	6.76	7	0.16	27	600				82.6	298						178	539			0.0066					
MW-2	26.35	6.74	6	0.18	38	738			1	109	233			4.1			707	1300			0.005					
MW-3	25.15	6.88	5	0.18	66	606			2.4	67.2	266						3110	1580			0.0053					
MW-4	25.54	6.93	5	0.17	33	600				71.8	240		0.3				8.5	155								
MW-5	24.68	6.83	2	0.18	21	562				55	260							3.8								
MW-6	23.1	6.79	3	0.17	23	608				58.5	211															
MW-7	21.94	6.96	5	0.23	39	598			18.9	67.7	347			2.4			5900	1800			0.0036					
MW-8	21.82	6.85	3	0.21	23	514			2.1	48.5	252						3440	997			0.0039					
MW-9	20.18	7.05	4	0.26	18	370			1.2	43	196						255	534			0.0082					17.6
MW-10	21.45	6.86	3	0.21	30	516				55.6	252						768	52								2.1
MW-11	20.95	6.79	3	0.16	48	596				60.9	179						22.1	4.3								
MW-12	20.48	6.8	3	0.16	37	540				53.5	186						19	2.3				24				
MW-13	20.4	6.77	3	0.17	49	590				62.9	178						12				0.004		70.9			3.8
MW-14	19.79	6.77	2	0.2	36	528			1.9	61.4	223			4.1			347	252			0.0044					
MW-15	17.91	6.75	3	0.22	29	538				66.8	243						111	41.1			0.0044					2.8
MW-16	18.5	6.83	3	0.26	34	636			1.6	106	392			7.2			1060	3810			0.0062					2.3
MW-17	19.72	6.85	4	0.25	21	532	21			64.4	236						17	17.4								3.4
MW-18	18.24	6.96	2	0.24	37	536				86	172							219								2.2
MW-19	18.19	6.73	2	0.27	39	506				69.1	195						83.8	249			0.0043					
MW-20	17.62	6.92	3	0.27	36	466				60.2	176						9.2	8.3								
MW-21	17.71	7.03	3	0.3	22	396			2.5	81.7	169						12	60.3								2.9
MW-22	17.92	6.86	3	0.25	30	572	20		16.1	140	230						8410	1510								3.1
MW-23	19.65	6.9	5	0.24	24	624	284		8.8	146	260						5600	519			0.0034					3.1
MW-24	19.99	6.88	4	0.22	35	486				60.1	184						15	7.1			0.0036		42.7			
MW-25	20.84	7.04	3	0.18	39	506			1.4	144	464						294	1150			0.0048					
MW-26	23	7.01	5	0.21	38	556				69.8	236						37.5	141								
MW-27	25.91	6.73	20	0.2	37	690			2	86.1	264			5.4			1190	667			0.0083					3.4
MW-28	27.06	6.78	8	0.19	32	600	203		1.5	91.2	261						800	147			0.0081		44.3			2.8
TMW-1	21.58	6.93	5	0.28	83	658			8.5	91.7	348			3.9			1010	4600	0.06		0.0042					

Notes:

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(a) - Numerical values were obtained from the Ameren Missouri Labadie Energy Center Utility Waste Landfill, Solid Waste Disposal Area, Franklin County, Missouri,

Groundwater Detection Monitoring Wells Installation Report prepared by Reitz & Jens, Inc., Samples collected on 8/21/2013.

(b) - USEPA 2012 Edition of the Drinking Water Standards and Health Advisories. Spring 2012. <http://water.epa.gov/drink/contaminants/index.cfm>; adopted as Missouri state values at 10 CSR 60-4.

(c) - USEPA Regional Screening Levels (November 2013). Values for tapwater.

http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm

greater than MCL

greater than MCL and RSL

greater than RSL

Table 11
Comparison of Proposed Landfill Groundwater Monitoring Results to Screening Levels – November 2013 Sampling Event (a)
Labadie Energy Center, Franklin County, MO
Ameren Missouri

Monitoring Well ID	Well Depth (feet, btor)	pH	Chloride	Fluoride	Sulfate	TDS	Aluminum	Antimony	Arsenic	Boron	Barium	Beryllium	Cadmium	Cobalt	Chromium	Copper	Iron	Manganese	Mercury	Molybdenum	Nickel	Lead	Selenium	Silver	Thallium	Zinc
		S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	
	MCL/SMCL (b)	6.5-8.5	250	4	250	500	50	6	10	NA	2000	0.004	5	NA	100	1300	300	50	2	NA	NA	15	50	100	2	5000
RSL (c)	NA	NA	0.62	NA	NA	16000	6	0.045	3100	2900	0.016	6.9	4.7	16000	620	11000	320	4.3	78	0.3	NA	78	71	0.16	4700	
MW-1	27.76	6.63	6	0.2	24	602				103.0	349			2.8			192	425			0.0076		62.5			
MW-2	26.35	6.66	5	0.17	44	616			1.8	116.0	196						1090	32			0.0042		35.1			
MW-3	25.15	6.77	5	0.14	75	558			1.0	81.3	313			3.1			1020	1840			0.0071					3.2
MW-4	25.54	6.87	6	0.15	25	506			0.9	83.5	213						21.1	33.1			0.0039		36			4.5
MW-5	24.68	6.82	3	0.18	18	476			0.8	65.4	240						8.6	6.7					27			
MW-6	23.1	6.78	3	0.16	20	536			0.8	69.1	221						7.1	1.6			0.0047					
MW-7	21.94	6.83	3	0.17	40	568			2.2	60.6	296			3.9			855	1060			0.0046		76.9			
MW-8	21.82	6.76	3	0.24	22	434			1.1	53.7	276						389	556			0.0055		33.8			
MW-9	20.18	7.00	3	0.22	21	382			1.5	49.9	225						447	712					50.4			
MW-10	21.45	6.82	3	0.16	33	502			0.9	63.6	255						640						53.1			
MW-11	20.95	6.76	3	0.14	51	542				69.0	191						18	35.7			0.0062		39.1			
MW-12	20.48	6.79	3	0.14	43	516			1.3	63.4	194						20.4	8.1			0.0042		44.6			
MW-13	20.4	6.79	3	0.15	61	538			1.2	76.8	173						9	1.6			0.0064		92.5			2.5
MW-14	19.79	6.74	3	0.17	41	496			3.1	64.2	202			3.2			460	156			0.0070		66.5			
MW-15	17.91	6.74	3	0.17	23	464			1.0	59.2	229							26.7			0.0050					2.2
MW-16	18.5	6.69	3	0.16	49	580			1.0	88.0	270						103	772			0.0122		32.5			
MW-17	19.72	6.77	3	0.19	33	502			0.8	68.2	218						17	4.9			0.0036					
MW-18	18.24	6.87	3	0.25	32	470			1.3	142.0	210						99.8	1110			0.0033					
MW-19	18.19	6.82	3	0.2	55	470			1.3	76.6	230						407	806			0.0063					
MW-20	17.62	6.87	3	0.25	36	404			1.1	61.2	174						7.1	3.3			0.0039		33.8			
MW-21	17.71	6.96	4	0.29	25	330			4.4	86.0	155		0.7				1930	536		3.4	0.0033					8.3
MW-22	17.92	6.89	4	0.25	37	528			49.9	169.0	315						23500	1720				0.5				
MW-23	19.65	6.82	6	0.23	9	620	62.4		26.2	209.0	274						18300	467								
MW-24	19.99	6.87	4	0.2	36	438				58.7	193						21.1	4.6			0.0034		40.4			3
MW-25	20.84	6.97	4	0.14	32	464				148.0	481						174	762			0.0043					
MW-26	23	6.93	4	0.18	30	446				59.7	212						15	131								
MW-27	25.91	6.65	16	0.18	43	606				104.0	242						129	149			0.0092	0.4	37.6			2.2
MW-28	27.06	6.64	9	0.18	24	542				92.1	249						29.9	12.7			0.0069		41.9			4.8
TMW-1	21.58	6.89	5	0.25	85	576			6.1	99.5	283			3.2			784	3620			0.0043					

Notes:

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Groundwater Detection Monitoring Wells Installation Report prepared by Reitz & Jens, Inc., Samples collected on 11/19/2013.

(b) - USEPA 2012 Edition of the Drinking Water Standards and Health Advisories. Spring 2012. <http://water.epa.gov/drink/contaminants/index.cfm>; adopted as Missouri state values at 10 CSR 60-4.

(c) - USEPA Regional Screening Levels (November 2013). Values for tapwater.

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greater than MCL

greater than MCL and RSL

greater than RSL