

**Flood Control Project Maintenance
Levee Inspections**

Maintenance Issue Types Only, Levee Inspection Report By Mile - Spring 2015

Knights Landing Ridge Drainage District

Waterway	Bank	Unit Miles	Inspection Start/End	Inspector
Unit No. 01 Knights Landing Ridge Cut	Right	6.36	04/23/2015 04/23/2015	Jai Lor

LM Start		Rating **	A	Issue No.	3
LM End		Issue Type +	Ma	Location *	N/A
Category	Earthen Levee		GPS Latitude/Longitude		
			Start	End	
Item	Operations & Maintenance Manuals			o	o
DWR ID	DWR_NA0008_01_s_2013_3				
Action/Comments					
Inspector Comments: District has levee manuals.					

No Photos

LM Start		Rating **	A	Issue No.	8
LM End		Issue Type +	Ma	Location *	N/A
Category	Earthen Levee		GPS Latitude/Longitude		
			Start	End	
Item	Emergency Supplies & Equipment			o	o
DWR ID	DWR_NA0008_01_s_2013_8				
Action/Comments					
Inspector Comments: District maintains a stockpile of flood response material.					

No Photos

LM Start		Rating **	A	Issue No.	9
LM End		Issue Type +	Ma	Location *	N/A
Category	Earthen Levee		GPS Latitude/Longitude		
			Start	End	
Item	Flood Preparedness & Training			o	o
DWR ID	DWR_NA0008_01_s_2013_9				
Action/Comments					
Inspector Comments: District has written response plan and regular flood response training.					

No Photos

* Location LS : Land Side N/A : Not Applicable WS : Water Side CR : Crown	** Rating A : Acceptable M : Minimally Acceptable U : Unacceptable	N : Not Inspected/Rated C : Corrected A/W : Acceptable but Monitor & Maintain	+ Issue Type Ma : Maintenance Deficiency Ob : Design & System Obsolescence En : Enforcement
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Unit No. 01 Knights Landing Ridge Cut	Right	6.36	04/23/2015 04/23/2015	Jai Lor

LM Start	0.00	Rating **	M	Issue No.	14
LM End	6.34	Issue Type +	Ma	Location *	LS
Category	Earthen Levee		GPS Latitude/Longitude		
			Start	End	
Item	Vegetation		38.719088 °	38.792433 °	
			-121.664146 °	-121.726610 °	
DWR ID	DWR_NA0008_01_s_2015_14				
Action/Comments					
Control annual grass and weeds on the levee slopes and easements.					

Photo 1 of 1 : SP_2015_NA0008_256_14_20150423_00013.jpg



View of the vegetation on the landward side of the levee looking upstream. Spring 2015.

LM Start	0.00	Rating **	M	Issue No.	15
LM End	6.34	Issue Type +	Ma	Location *	WS
Category	Earthen Levee		GPS Latitude/Longitude		
			Start	End	
Item	Vegetation		38.719088 °	38.792433 °	
			-121.664146 °	-121.726610 °	
DWR ID	DWR_NA0008_01_s_2015_15				
Action/Comments					
Control annual grass and weeds on the levee slopes and easements.					

No Photos

LM Start	2.58	Rating **	A/W	Issue No.	19
LM End	2.58	Issue Type +	Ma	Location *	WS
Category	Earthen Levee		GPS Latitude/Longitude		
			Start	End	
Item	Cracking		38.747218 °	38.747218 °	
			-121.694450 °	-121.694450 °	
DWR ID	DWR_NA0008_01_f_2013_19				
Action/Comments					
Monitor and have inspected by geotechnical engineer. Inspector Comments: Cracks along crown and down waterside slope.					

Photo 1 of 1 : SP_2015_NA0008_256_19_20150401_00003.jpg



Cracking along the waterside shoulder of the crown the length of 20 feet. Fall 2013

* Location LS : Land Side WS : Water Side CR : Crown	** Rating A : Acceptable M : Minimally Acceptable U : Unacceptable	N : Not Inspected/Rated C : Corrected A/W : Acceptable but Monitor & Maintain	+ Issue Type Ma : Maintenance Deficiency Ob : Design & System Obsolescence En : Enforcement
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Unit No. 01 Knights Landing Ridge Cut	Right	6.36	04/23/2015 04/23/2015	Jai Lor

LM Start	3.36	Rating **	M	Issue No.	1
LM End	3.44	Issue Type +	Ma	Location *	WS
Category	Supplemental			GPS Latitude/Longitude	
				Start	End
Item	USACE Erosion Survey			38.758432 °	38.759332 °
				-121.695158 °	-121.696063 °
DWR ID	DWR_NA0008_01_f_2014_1				
Action/Comments					
Inspector Comments: 2011 - Toe scour and bank slumping. 2013: Site is part of the extended inventory, last inspected 2011. [2013 Site ID: KLR_3-5_R]					

No Photos

LM Start	3.50	Rating **	M	Issue No.	20
LM End	3.50	Issue Type +	Ma	Location *	WS
Category	Earthen Levee			GPS Latitude/Longitude	
				Start	End
Item	Erosion / Bank Caving			38.759910 °	38.759910 °
				-121.696920 °	-121.696920 °
DWR ID	DWR_NA0008_01_f_2013_20				
Action/Comments					
Note and monitor erosion site.					

Photo 1 of 2 : SP_2015_NA0008_256_20_20150401_00004.jpg



Another view of the erosion cutting into the slope. Fall 2013

Photo 2 of 2 : SP_2015_NA0008_256_20_20150401_00005.jpg



Deep erosion at the bottom of the waterside slope 3-4 foot cut. Fall 2013

LM Start	3.50	Rating **	M	Issue No.	20 (cont)
LM End	3.50	Issue Type +	Ma	Location *	WS

* Location LS : Land Side N/A : Not Applicable WS : Water Side CR : Crown	** Rating A : Acceptable M : Minimally Acceptable U : Unacceptable	N : Not Inspected/Rated C : Corrected A/W : Acceptable but Monitor & Maintain	+ Issue Type Ma : Maintenance Deficiency Ob : Design & System Obsolescence En : Enforcement
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Waterway	Bank	Unit Miles	Inspection Start/End	Inspector
Unit No. 01 Knights Landing Ridge Cut	Right	6.36	04/23/2015 04/23/2015	Jai Lor

LM Start	3.88	Rating **	M	Issue No.	2
LM End	3.95	Issue Type +	Ma	Location *	WS
Category	Supplemental			GPS Latitude/Longitude	
				Start	End
Item	USACE Erosion Survey			38.764037 °	38.764905 °
				-121.701434 °	-121.702074 °
DWR ID	DWR_NA0008_01_f_2014_2				
Action/Comments					
Inspector Comments: 2011 - Toe erosion and erosion pockets from tree popouts. More tree popouts are expected due to the eroding toe. 2013: Site is part of the extended inventory, last inspected 2011. [2013 Site ID: KLR_3-9_R]					

No Photos

LM Start	6.10	Rating **	M	Issue No.	7
LM End	6.34	Issue Type +	Ma	Location *	LS
Category	Earthen Levee			GPS Latitude/Longitude	
				Start	End
Item	Encroachments			38.790007 °	38.792433 °
				-121.723308 °	-121.726463 °
DWR ID	DWR_NA0008_01_s_2012_7				
Action/Comments					
Equipment					

Photo 1 of 2 : SP_2015_NA0008_256_7_20150401_00001.jpg



Equipment and irrigation pipe lays on the landside levee slope. Fall 2013

Photo 2 of 2 : SP_2015_NA0008_256_7_20150401_00002.jpg



A current view of the equipment on the levee slope. Spring 2014

LM Start	6.10	Rating **	M	Issue No.	7 (cont)
LM End	6.34	Issue Type +	Ma	Location *	LS

* Location LS : Land Side N/A : Not Applicable WS : Water Side CR : Crown	** Rating A : Acceptable M : Minimally Acceptable U : Unacceptable	N : Not Inspected/Rated C : Corrected A/W : Acceptable but Monitor & Maintain	+ Issue Type Ma : Maintenance Deficiency Ob : Design & System Obsolescence En : Enforcement
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Knights Landing Ridge Drainage District

Waterway	Bank	Unit Miles	Inspection Start/End	Inspector
Unit No. 02 Knights Landing Ridge Cut	Left	6.03	04/23/2015 04/23/2015	Jai Lor

LM Start	0.00	Rating **	M	Issue No.	13
LM End	5.92	Issue Type +	Ma	Location *	LS
Category	Earthen Levee		GPS Latitude/Longitude		
			Start	End	
Item	Vegetation		38.724259 °	38.792471 °	
			-121.665230 °	-121.723844 °	
DWR ID	DWR_NA0008_02_s_2015_13				
Action/Comments					
Control annual grass and weeds on the levee slopes and easements.					

Photo 1 of 1 : SP_2015_NA0008_257_13_20150423_00015.jpg



View of the vegetation on the landward side of the levee looking downstream. Spring 2015.

LM Start	0.00	Rating **	M	Issue No.	14
LM End	5.92	Issue Type +	Ma	Location *	WS
Category	Earthen Levee		GPS Latitude/Longitude		
			Start	End	
Item	Vegetation		38.724259 °	38.792471 °	
			-121.665230 °	-121.723844 °	
DWR ID	DWR_NA0008_02_s_2015_14				
Action/Comments					
Control annual grass and weeds on the levee slopes and easements.					

No Photos

LM Start	2.72	Rating **	M	Issue No.	2
LM End	2.93	Issue Type +	Ma	Location *	WS
Category	Supplemental		GPS Latitude/Longitude		
			Start	End	
Item	USACE Erosion Survey		38.754899 °	38.757925 °	
			-121.692653 °	-121.693048 °	
DWR ID	DWR_NA0008_02_f_2014_2				
Action/Comments					
Inspector Comments: 2006 - The whole levee toe area is slowly slumping into the channel (creep) due to dewatering and poor slope soils. Occasional piping in the levee slope evident as well. Pistol-butted trees at the levee toe indicate slow retreat. 2011 - Multiple scallops throughout the site and slumping of the toe. 2013: Site is part of the extended inventory, last inspected 2011. [2013 Site ID: KLR_3-0_L]					

No Photos

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Waterway	Bank	Unit Miles	Inspection Start/End	Inspector
Unit No. 02 Knights Landing Ridge Cut	Left	6.03	04/23/2015 04/23/2015	Jai Lor

LM Start	2.98	Rating **	M	Issue No.	3
LM End	3.11	Issue Type +	Ma	Location *	WS
Category	Supplemental			GPS Latitude/Longitude	
				Start	End
Item	USACE Erosion Survey			38.758587 °	38.760053 °
				-121.693359 °	-121.694686 °
DWR ID	DWR_NA0008_02_s_2015_3				
Action/Comments					
Inspector Comments: 2006 - The whole levee toe area is slowly slumping into the channel (creep) due to dewatering and poor slope soils. Occasional piping in the levee slope evident as well. Pistol-butted trees at the levee toe indicate slow retreat. 2011 - Slumping of the levee toe. 2013: Site is part of the extended inventory, last inspected 2011. [2013 Site ID: KLR_3-1_L]					

No Photos

LM Start	3.02	Rating **	U	Issue No.	230
LM End	3.02	Issue Type +	Ma	Location *	WS
Category	Earthen Levee			GPS Latitude/Longitude	
				Start	End
Item	Erosion / Bank Caving			38.759112 °	38.759112 °
				-121.693638 °	-121.693638 °
DWR ID	DWR_NA0008_02_f_2013_230				
Action/Comments					
Note and monitor erosion site.					

Photo 1 of 1 : SP_2015_NA0008_257_230_20150401_00010.jpg



Erosion at the bottom of the slope. It appears that a fallen tree has caused a sink hole. Fall 2013

LM Start	3.06	Rating **	U	Issue No.	229
LM End	3.06	Issue Type +	Ma	Location *	WS
Category	Earthen Levee			GPS Latitude/Longitude	
				Start	End
Item	Erosion / Bank Caving			38.759542 °	38.759542 °
				-121.694007 °	-121.694007 °
DWR ID	DWR_NA0008_02_f_2013_229				
Action/Comments					
Note and monitor erosion site. Inspector Comments: Erosion is undermining large oak tree and is growing.					

Photo 1 of 2 : SP_2015_NA0008_257_229_20150401_00008.jpg



Another view of the vertical cut at the bottom of the slope. Fall 2013

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Unit No. 02 Knights Landing Ridge Cut	Left	6.03	04/23/2015 04/23/2015	Jai Lor

LM Start	3.06	Rating **	U	Issue No.	229 (cont)
LM End	3.06	Issue Type +	Ma	Location *	WS
Category	Earthen Levee			GPS Latitude/Longitude	
				Start	End
Item	Erosion / Bank Caving			38.759542 °	38.759542 °
				-121.694007 °	-121.694007 °
DWR ID	DWR_NA0008_02_f_2013_229				
Action/Comments					
Note and monitor erosion site. Inspector Comments: Erosion is undermining large oak tree and is growing.					

Photo 2 of 2 : SP_2015_NA0008_257_229_20150401_00009.jpg



Waterside eroison vertical cut at bottom of slope. Fall 2013

LM Start	3.60	Rating **	M	Issue No.	4
LM End	3.73	Issue Type +	Ma	Location *	WS
Category	Supplemental			GPS Latitude/Longitude	
				Start	End
Item	USACE Erosion Survey			38.765522 °	38.767336 °
				-121.700608 °	-121.701023 °
DWR ID	DWR_NA0008_02_f_2014_4				
Action/Comments					
Inspector Comments: 2011 - The toe has eroded away and there are a few scallops from bank slumping. 2013: Site is part of the extended inventory, last inspected 2011. [2013 Site ID: KLR_3-7_L]					

No Photos

LM Start	4.30	Rating **	M	Issue No.	5
LM End	4.55	Issue Type +	Ma	Location *	WS
Category	Supplemental			GPS Latitude/Longitude	
				Start	End
Item	USACE Erosion Survey			38.775271 °	38.778115 °
				-121.703685 °	-121.706195 °
DWR ID	DWR_NA0008_02_f_2014_5				
Action/Comments					
Inspector Comments: 2011 - This site is the downstream section of the old KLR 5.3L site. Levee toe is slowly retreating. Cracking on top of the levee may indicate potential mass movement. 2013: Site is part of the extended inventory, last inspected 2011. [2013 Site ID: KLR_4-7_L]					

No Photos

* Location LS : Land Side WS : Water Side CR : Crown	** Rating A : Acceptable M : Minimally Acceptable U : Unacceptable	+ Issue Type Ma : Maintenance Deficiency Ob : Design & System Obsolescence En : Enforcement
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Unit No. 02 Knights Landing Ridge Cut	Left	6.03	04/23/2015 04/23/2015	Jai Lor

LM Start	4.56	Rating **	U	Issue No.	15
LM End	4.56	Issue Type +	Ma	Location *	WS
Category	Earthen Levee		GPS Latitude/Longitude		
			Start	End	
Item	Vegetation		38.778402 °	38.778402 °	
			-121.706022 °	-121.706022 °	
DWR ID	DWR_NA0008_02_s_2014_15				
Action/Comments					
Trees / Woody Vegetation					

Photo 1 of 1 : SP_2015_NA0008_257_15_20150401_00004.jpg



A cottonwood tree may have been struck by lightning. The tree is split into three parts. Spring 2014

LM Start	4.72	Rating **	A/W	Issue No.	228
LM End	4.72	Issue Type +	Ma	Location *	LS
Category	Earthen Levee		GPS Latitude/Longitude		
			Start	End	
Item	Cracking		38.780080 °	38.780080 °	
			-121.708137 °	-121.708137 °	
DWR ID	DWR_NA0008_02_f_2013_228				
Action/Comments					
Monitor and have inspected by geotechnical engineer.					

No Photos

LM Start	4.79	Rating **	A/W	Issue No.	226
LM End	4.82	Issue Type +	Ma	Location *	LS
Category	Earthen Levee		GPS Latitude/Longitude		
			Start	End	
Item	Cracking		38.780858 °	38.781102 °	
			-121.709093 °	-121.709385 °	
DWR ID	DWR_NA0008_02_f_2013_226				
Action/Comments					
Monitor and have inspected by geotechnical engineer.					

Photo 1 of 1 : SP_2015_NA0008_257_226_20150401_00005.jpg



Cracking on the landside is 3-4 inches wide and 12 inches deep. Fall 2013

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Waterway	Bank	Unit Miles	Inspection Start/End	Inspector
Unit No. 02 Knights Landing Ridge Cut	Left	6.03	04/23/2015 04/23/2015	Jai Lor

LM Start	4.79	Rating **	A/W	Issue No.	227
LM End	4.79	Issue Type +	Ma	Location *	WS
Category	Earthen Levee			GPS Latitude/Longitude	
				Start	End
Item	Cracking			38.780858 °	38.780858 °
				-121.709095 °	-121.709095 °
DWR ID	DWR_NA0008_02_f_2013_227				
Action/Comments					
Monitor and have inspected by geotechnical engineer.					

Photo 1 of 2 : SP_2015_NA0008_257_227_20150401_00006.jpg



Another view of the cracking on the levee slope. Fall 2013

LM Start	4.79	Rating **	A/W	Issue No.	227 (cont)
LM End	4.79	Issue Type +	Ma	Location *	WS

Photo 2 of 2 : SP_2015_NA0008_257_227_20150401_00007.jpg



Cracking on levee slope 1-2 inches wide and 6 inches deep. Fall 2013

LM Start	5.36	Rating **	M	Issue No.	6
LM End	5.93	Issue Type +	Ma	Location *	WS
Category	Supplemental			GPS Latitude/Longitude	
				Start	End
Item	USACE Erosion Survey			38.786566 °	38.792395 °
				-121.716724 °	-121.724091 °
DWR ID	DWR_NA0008_02_f_2014_6				
Action/Comments					
Inspector Comments: 2011 - This site is the upstream section of the old KLR 5.3L site. Levee toe is slowly retreating. Cracking on top of the levee may indicate potential mass movement. 2013: Site is part of the extended inventory, last inspected 2011. [2013 Site ID: KLR_5-8_L]					

No Photos

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