

**FEASIBILITY STUDY
FOR THE
REPLACEMENT OF THE
HORSE CREEK FLUME**

Prepared for
The Fort Lyon Canal Company
and
The Colorado Water Conservation Board

July 29, 2015



**W. W. WHEELER
& ASSOCIATES, INC.**

Water Resources Engineers

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FEASIBILITY STUDY APPROVAL

Pursuant to Colorado Revised Statutes 37-60-121 & 122, and in accordance with policies adopted by the Board, the CWCB staff has determined this Feasibility Study meets all applicable requirements for approval.

Signed

Date

Debra J. [Signature] 9/4/15

**COLORADO****Colorado Water
Conservation Board**

Department of Natural Resources

Water Project Loan Program

Application Type	
<input type="checkbox"/> Prequalification <i>(Attach 3 years of financial statements)</i> <input checked="" type="checkbox"/> Loan Approval <i>(Attach Loan Feasibility Study)</i>	
Agency/Company Information	
Company / Borrower Name: Fort Lyon Canal Company	
Authorized Agent & Title: Jerred Hoffman - Superintendent	
Address: 750 Bent Ave. Las Animas, CO 81054	
Phone: (719) 456-0720	Email: info@flcc.net
Organization Type: <input checked="" type="checkbox"/> Ditch Co, <input type="checkbox"/> District, <input type="checkbox"/> Municipality <input type="checkbox"/> other: _____	
Incorporated? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
County: Bent	Number of Shares/Taps: 93,989.41 shares
Water District: 17	Avg. Water Diverted/Yr: 221,000 acre-feet
Number of Shareholders/Customers Served: ~275	Current Assessment per Share \$22.50 (Ditch Co)
	Average monthly water bill \$ _____ (Municipality)
Contact Information	
Project Representative: Amy Van Horn	
Phone: (719-456-0720)	Email: flccinfo@flcc.net
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Attorney: John Lefferdink	
Phone: (719) 336-7411	Email: christalefflaw@centurytel.net
Project Information	
Project Name: Replacement of the Horse Creek Flume	
Brief Description of Project: The Fort Lyon Canal Company (FLCC) needs to immediately replace the Horse Creek Flume. The Horse Creek Flume was constructed in 1938. It is an elevated, 400-foot-long, 10-foot-diameter steel flume that is designed to convey 1,800 cfs in the Fort Lyon Canal over Horse Creek. The FLCC has received condition assessment opinions from three separate Professional Engineers and each engineer has recommended immediate replacement of the flume. Temporary repairs were made to the flume in March of 2015 in an attempt to keep it operational through the 2015 irrigation season. The flume is scheduled to be replaced during the winter shutdown period between November 15, 2015 and March 15, 2016. The selected alternative is to replace the flume with a new steel flume of comparable dimensions to the existing flume	
General Location: See Figure No. 1 in the CWCB Feasibility Study	
-Other Cost: Site Exploration, Feasibility Alternatives, Legal & Administrative	
Estimated Engineering Costs: \$268,000	Estimated Construction Costs: \$1,785,000
Other Costs (Describe Above): \$135,000	Estimated Total Project Costs: \$2,188,000
Requested Loan Amount: \$1,613,000 <i>(Limit 90% of Total Project Costs)</i>	Project Start Date(s) Design: 5/1/15 Construction: 11/15/15
Signature	
_____ Signature / Title	Return to: Finance Section Attn: Anna Mauss 1313 Sherman St #718 Denver, CO 80203 Ph. 303/866.3449 e-mail: anna.mauss@state.co.us
_____ Date	

EXECUTIVE SUMMARY

This feasibility report was prepared by W. W. Wheeler and Associates, Inc. (Wheeler) for the Fort Lyon Canal Company (FLCC) and the Colorado Water Conservation Board (CWCB). This report documents the feasibility and financing of replacement of the FLCC's Horse Creek Flume. The Horse Creek Flume is a 400-foot-long, 10-foot-diameter, elevated steel flume located on the Fort Lyon Canal approximately 10 miles northeast of La Junta and about 8 miles west of Las Animas, in Bent County Colorado.

The Horse Creek Flume has been in operation since 1938, and despite a diligent program to keep the flume in service it has reached the end of its service life. Three different Professional Engineers have assessed the flume and all found it to be in extremely poor condition and in need of immediate replacement. If the flume failed, it could have a devastating effect on the local and state economy, with more than \$50 million in lost crop revenue. In addition, the flume provides water to the more than 14,000 acres of wildlife habitat in the Queens and Thurston State Wildlife Areas (SWA). The Queens SWA is considered to be one of the premier hunting and fishing areas in southeastern Colorado. Consistent with CWCB guidelines, Wheeler has developed the following rehabilitation alternatives:

Alternatives	Descriptions	Opinion of Probable Cost	Constructability
No Action	No Structural Modifications	\$50,000,000+	Poor
Alternative No. 1	Slip Line Flume with HOBAS Pipe	\$2,252,000	Fair
Alternative No. 2	Slip Line Flume with Steel Pipe	\$1,936,000	Fair
Alternative No. 3	Replace Flume with a New HOBAS Pipe Flume	\$2,169,000	Good
Alternative No. 4	Replace Flume with a New Steel Pipe Flume	\$2,188,000	Good
Alternative No. 5	Replace Flume with a New Concrete Flume	\$2,015,000	Good

The FLCC has selected Alternative No. 4, replacement of the flume with a new steel flume, with an expected probable cost of \$2,188,000. This alternative was selected based on project cost, constructability during the four month winter shutdown period, long term operation and maintenance issues.

The FLCC will use a combination of funds to finance the project including more than \$75,000 of their contributions. The Arkansas Water Roundtable has approved a \$50,000 Water Supply Reserve Account (WSRA) grant from the Arkansas Basin Account and an application for a WSRA \$450,000 grant from the Statewide Account has been forwarded to the CWCB. The remaining \$1,613,000 in project costs would be covered by a Colorado Water Conservation Board (CWCB) loan.

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PROJECT TEAM

Directors of The Fort Lyon Canal Company

Josh Weimer, President

Phil Hemphill, Vice President

Mike Spady, Treasurer

Dale Mauch, Secretary

Garrett Godfrey, Director

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ACKNOWLEDGEMENTS

Acknowledgments of those who assisted in the preparation of the report:

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Colorado Water Conservation Board

Jerred Hoffman and Amy Van Horn
The Fort Lyon Canal Company

1.0 INTRODUCTION – BACKGROUND

1.1 PURPOSE

The Fort Lyon Canal Company (FLCC) has an urgent and immediate need to replace the Horse Creek Flume. The existing Horse Creek Flume was constructed in 1938. It is an elevated, 400-foot-long, 10-foot-diameter, steel flume that is designed to convey 1,800 cubic feet per second (cfs) in the Fort Lyon Canal over Horse Creek. The flume is located approximately 10 miles northeast of La Junta and about 8 miles west of Las Animas, Colorado as shown on Figure No. 1.

The flume is considered to be vital infrastructure to the agricultural economies of Bent, Otero, and Prowers Counties. A failure of the Horse Creek Flume would affect the entire State of Colorado with an estimated economic loss of \$50 million due to crop loss within the FLCC service area alone. Most of the Amity Mutual Irrigation Company service area would also be affected by a failure, as a significant portion of their water passes through the flume. In addition, water that is conveyed through the Horse Creek Flume is stored in Nee Gronde Reservoir, Nee Noshe Reservoir, Queens Reservoir and King Reservoir. These four reservoirs provide significant wildlife habitat and recreation benefits to the Queens State Wildlife Area, which encompasses nearly 14,000 acres, and is considered the premier hunting and fishing area by Colorado Parks and Wildlife in Southeast Colorado, after John Martin Reservoir State Park. The flume also provides water that is stored in Thurston Reservoir that provides additional recreation and wildlife habitat of 400 acres in the Thurston State Wildlife Area.

The Horse Creek Flume has been subject to significant erosion and corrosion of the steel pipe. The FLCC has routinely welded ¼-inch-thick steel plate along the bottom of the flume to increase the flume's service life, but the bottom of the pipe is now so corroded and deteriorated that these temporary repairs are no longer effective. The FLCC has received condition assessment opinions from three separate Professional Engineers and each engineer has recommended immediate replacement of the flume. Temporary repairs were made to the flume in March of 2015 in an attempt to keep it operational through the 2015 irrigation season. The flume is scheduled to be replaced during the winter shutdown period between November 15, 2015 and March 15, 2016.

1.2 STUDY AREA DESCRIPTION

As shown on Figure No. 1, the Fort Lyon Canal is diverted from the Arkansas River in Section 29, of Township 23 South, Range 55 West of the 6th P.M. approximately 3.5 miles northwest of the City of La Junta. Water flows in a northeasterly direction for about 16 miles through the canal to the Horse Creek Flume. The flume is located in Section 29, of Township 22 South, Range 53 West of the 6th P.M. and approximately nine miles northwest of the City of Las Animas in Bent County.

The Fort Lyon Canal is the one of largest irrigation systems in the State of Colorado. The canal is more than 113 miles long from its diversion from the Arkansas River northwest of La Junta, to its termination in the Fort Lyon Control Basin east of the City of Lamar. The Fort Lyon Canal provides irrigation water to 500 to 1,000 people in Bent, Otero, and Prowers Counties. Water that is conveyed through the Horse Creek Flume is also supplied to the Amity Mutual Irrigation Company through the Kicking Bird Canal, which diverts water from the Fort Lyon Canal approximately 11.5 miles northeast of the City of Las Animas.

Historically, the Fort Lyon Canal water was used for irrigation of alfalfa, pasture grass, corn, wheat, and sorghum in the vicinity of the canal in Otero, Bent and Prowers Counties. The water user's service area is located south of the canal and north of the Arkansas River. The general service area is shown in Figure No. 2. The acreage served by the Fort Lyon Canal water is approximately 93,000 acres, which doesn't include acreage served by other canals diverting water from the Fort Lyon Canal. Based on historic cultivation trends within in the Fort Lyon Canal area (NASS, 2014) and current crop yields and prices in Colorado (NASS, 2015), the annual production value of all crops grown within the FLCC service area is estimated at approximately \$52 million.

Based on U.S. Census Data, Otero, Bent, and Prowers Counties are some of the poorest and least populated counties in Colorado. As shown in Table No. 1, the populations of these counties range from about 5,600 to 18,000 people. Median annual incomes range from approximately \$34,000 to \$37,000 and the percentage of the population that is considered to be in poverty ranges from about 19 to 25 percent. In addition, each of these counties has decreased in population since 2010.

TABLE 1
SUMMARY OF 2014 U.S. CENSUS DATA

	Otero County	Bent County	Prowers County
2014 Population	18,488	5,630	12,034
Population Change (April 2010 to July 2014)	-1.8%	-13.4%	-4.1%
Land Area (square miles)	1,262	1,513	1,638
Population Per Square Mile	14.9	4.3	7.7
Median Household Income	\$33,848	\$37,340	\$34,391
Persons in Poverty	25.2%	19.1%	23.3%

1.3 PREVIOUS STUDIES

The Fort Lyon Canal crossing at Horse Creek has historically been a significant challenge. The first construction of the canal was a small ditch that was constructed in 1860 to provide water for the Cheyenne and Arapaho Tribes. The canal was subsequently lengthened and enlarged and the first crossing of Horse Creek reportedly occurred in 1887 (Dodson, 1997). The Horse Creek Crossing has included siphons, open channel flumes, and the current steel pipe structure that was constructed in 1938. A profile of the existing Horse Creek Flume is provided on Figure No. 3. Some of the more recent evaluations of the existing flume are summarized below.

The condition of the Horse Creek Flume and suggested means of rehabilitation were documented in a 1984 report by Tipton & Kalmbach (T&K, 1984). In 1984, Tipton & Kalmbach concluded *“The structure is presently operable, but the flume has a history of excessive wear and leakage, particularly along the invert. This is the result of high sediment concentrations in the canal water combined with high flow velocities through the flume.”* Tipton & Kalmbach recommended the installation of new ¼-inch-thick steel cover plates in the invert of the flume. These plates were estimated to extend the service life of the flume by approximately 15 years before needing to be replaced.

A November 2014 inspection report of the Horse Creek Flume by Stantec Consulting Services (Stantec, 2014) concluded that the flume was found to be in extremely poor condition. The Stantec report cited issues of deterioration, patching, leaks, holes, buckling and significant thinning of the flume's invert. The report went on to state *"The condition of the flume is such that any further repair is not feasible."* Stantec recommend immediate replacement alternatives.

A national structural engineering firm, Wiss, Janney, Elstern Associates, Inc. (WJE), evaluated the flume in February of 2015 and developed temporary repairs to the flume with the goal of keeping the flume in service through the 2015 irrigation season. WJE prepared a brief letter report that indicated that an "order of magnitude" construction cost to repair the flume would be approximately \$1.5 million (WJE, 2015). The repair included replacement of the bottom half of the flume and repair or replacement of other components of the flume. WJE's report did not include an estimate of engineering or other costs, nor did it document how long the repairs would last. After discussing some of the construction challenges associated with replacing the bottom half of the flume with the FLCC Board and representatives from Wheeler and SM&RC on April 23, 2015, WJE changed their opinion and concluded it would be more practical and cost effective to replace the flume rather than attempting to repair it.

Wheeler and SM&RC performed a condition assessment of the Horse Creek Flume on February 20, 2015. The results of Wheeler and SM&RC's inspection of the flume were that the installation of the ¼-inch-thick cover plates in the invert of the flume had enhanced the rate of corrosion of the original steel pipe by creating a void that remains moist and is constantly exposed to air. It was Wheeler and SM&RC's opinion that the original pipe along the bottom half of the circumference is damaged beyond repair as a result of corrosion. There is also significant damage to the expansion joint, ring girder support system, and inlet and outlet sections of the flume. As a result, Wheeler & SM&RC recommended immediate replacement of the flume. Wheeler's condition assessment report is provided in Appendix F (Wheeler, 2015)

2.0 PROJECT SPONSOR

2.1 CORPORATE STRUCTURE

The FLCC is a Colorado Mutual Ditch Company and a non-profit Corporation organized under the laws of the State of Colorado. The FLCC was incorporated in 1897, although the ditch has been in existence since the 1860's and most of the senior water rights were appropriated in the 1880s & 1890s. Refer to Appendix A which contains the Articles of Incorporation and By-laws of the FLCC.

2.2 BOARD OF DIRECTORS

There are five directors of the FLCC. All directors serve for three years, and are elected at the annual stockholders meeting. The officers are elected by the Board of Directors. The FLCC's bookkeeping and administrative services are performed by in-house staff, and engineering and legal services are performed by independent consultants and the Company attorney on an as-needed basis. The FLCC has 15 employees who perform the routine administration, operation, and maintenance of the Fort Lyon Canal system.

The Board of Directors has certain duties and responsibilities, which include the power to incur indebtedness, to enforce the payment of all assessments, and to pay bills. The full power and duties of the board are enumerated in Articles II and III of the Bylaws of the FLCC, attached in Appendix A.

2.3 CURRENT SHAREHOLDERS

The FLCC has approximately 275 shareholders. There are approximately 93,000 acres irrigated with 93,989.41 shares. If the Horse Creek flume should fail it would affect approximately 87,160.47 shares and the acreage associated with those shares. Failure of the flume would also affect approximately 30,857.56 shares of the total 34,682 shares under the Amity Mutual Irrigation Company. The current FLCC shareholders are listed in Appendix B.

2.4 HISTORY OF ORGANIZATION

The original work on what is now the Fort Lyon Canal was started in 1860, and the canal is now one of the largest irrigation systems in the State of Colorado (Dodson, 1997). The FLCC's senior water rights were appropriated in the 1880s & 1890s. The Fort Lyon Canal Company was created and incorporated in 1897 after legal reorganization gave control of the canal to local farmers. Since then the FLCC has operated as a non-profit mutual ditch company, maintaining the canal and providing water to irrigate approximately 93,000 acres of land in southeastern Colorado. Historically, the Fort Lyon Canal has provided water used to irrigate alfalfa, pasture grass, corn, wheat, sorghum and other crops.

2.5 FINANCIAL STATUS

The FLCC has historically derived most of its revenue from shareholder assessments. Other minor revenue sources include interest on savings accounts and other miscellaneous sources.

A summary of the FLCC's financial reports for fiscal years 2012, 2013, and 2014 is provided in Table No. 2. The complete financial reports are included in Appendix C. The FLCC has typically operated in a cash neutral mode over the years, balancing income with expenses. In any particular year, however, income may not necessarily match expenses. FLCC maintains an operating reserve to fund capital projects and meet unanticipated expenses, respectively. Excess annual operating revenues are temporarily held in reserves until the next year when they are used to reduce anticipated expenditures, and thereby, reduce operating assessments required. In years where annual operating expenses exceed revenues, operating reserves are used until the next year's operating assessments are increased to fund the prior year's shortfall.

TABLE 2
SUMMARY OF FLCC FINANCIAL REPORTS

	2012	2013	2014
Total Assets	\$5,326,932	\$5,524,704	\$5,613,914
Liabilities	\$422,203	\$424,537	\$423,661
Capital Stock	\$469,947	\$469,947	\$469,947
Total Operating Revenue	\$1,763,256	\$1,595,390	\$1,627,210
Total Operating Expenses	\$1,466,808	\$1,399,952	\$1,537,124
Net Income	\$296,448	\$195,438	\$90,086

2.6 REVENUE SOURCES

The FLCC derives most of its revenue from shareholder assessments. Additional revenue comes from an agreement with the Amity Mutual Irrigation Company to transport water through the canal, and from Colorado Parks and Wildlife for easement access to several of the FLCC reservoirs. Other minor revenue sources include interest on savings accounts and other miscellaneous sources.

2.7 PHYSICAL ASSETS

The FLCC owns a diversion dam, headgate and over 100 miles of irrigation canal and appurtenant structures. Additionally the FLCC owns Adobe Creek Dam, Horse Creek Dam, Thurston Dam and the Fort Lyon Control Basin.

3.0 WATER RIGHTS

3.1 WATER RIGHTS

The decreed water rights for the FLCC are listed below in Table No. 3.

**TABLE 3
SUMMARY OF FLCC WATER RIGHTS**

Water Right	Appropriation Date	Flow in cfs
Fort Lyon	4-15-1884	164.64
Fort Lyon	3-1-1887	597.16
Fort Lyon	8-31-1893	171.20

3.2 WATER DIVERSIONS

The FLCC water diversion records are provided in Table No. 4 for the years 1911 through 2013. Annual diversions have ranged from about 57,000 to nearly 500,000 acre-feet. On average, about 221,000 acre-feet of water is diverted through the Fort Lyon Canal to local irrigators in Otero, Bent, and Prowers Counties.

TABLE 4
FORT LYON CANAL DIVERSION RECORDS
MONTHLY DIVERSION (in acre feet)

Water Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1911	9687	8694	7882	6649	8787	7341	13448	44095	44811	12633	9695	21055
1912	11504	5229	1260	1736	2985	11372	18369	48828	42647	21354	10709	14200
1913	0	0	6843	8271	11356	9818	12111	36020	14329	9194	9253	10146
1914	0	0	11225	8874	8971	9977	57079	49254	66814	44143	9551	16289
1915	23727	7281	6684	12373	19910	47304	59364	55195	36014	30465	12091	15541
1916	15992	10009	7804	10119	11231	10102	27144	35172	27729	34954	10686	13255
1917	0	0	0	0	0	0	0	20307	32234	17481	12472	14755
1918	12887	10505	8995	11377	8652	11728	11266	49373	21737	7863	11653	10917
1919	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1920	0	0	0	0	0	0	24683	46339	37964	33882	22781	25313
1921	0	0	0	0	0	10390	24659	9503	9590	9136	6768	11034
1922	22634	15301	7629	9551	13191	11462	15087	45711	22309	17033	9150	9667
1923	9951	10035	11352	8207	10420	9384	19766	37759	55460	32973	21381	44059
1924	45068	19395	1573	2913	25567	11091	41684	49048	26641	6692	7800	10085
1925	9967	8796	13597	9941	9942	3479	11770	17387	30406	25422	9782	14316
1926	3835	13162	10588	13736	10109	30152	40447	48090	27713	11253	8466	10240
1927	9184	12019	8359	9283	9756	8509	18143	44313	43028	43714	17095	19341
1928	10675	13223	11774	12950	10873	8486	47486	62761	38580	14588	9546	10114
1929	6653	4731	10070	10248	14771	7891	17314	44353	31214	51798	40825	24824
1930	30403	15105	8826	17762	12775	9041	14867	36359	19008	42479	24263	15263
1931	8994	6049	6334	11228	18527	10690	24616	25501	7617	5299	1972	8513
1932	9278	10929	7400	7860	9132	6935	17335	38325	26270	15281	9073	8659
1933	9759	0	0	0	7571	6098	22081	50363	15642	19309	16724	8621
1934	9364	0	0	0	9645	8437	11120	7691	4371	3943	5170	3434
1935	6349	0	0	0	4760	1699	22667	49595	33987	13906	16890	10261
1936	9444	0	3085	5271	7012	5282	40394	43815	21726	37649	10200	17304
1937	21730	19312	7946	14768	9847	10083	23445	21582	12470	8022	24299	8067
1938	9419	10339	11135	8280	7766	7697	27474	52375	34295	14578	40717	10492
1939	21753	0	0	4554	14608	13879	28299	25179	7490	7849	1430	2450
1940	8029	9199	5639	10356	9560	6183	11242	13486	7494	4872	10708	7865
1941	8989	10699	13484	9679	9277	11947	51295	69325	44833	30982	14238	20105
1942	8499	20315	11437	15501	20010	41332	72307	50690	47598	29100	26164	24006
1943	27711	27969	13375	20595	8507	11962	32357	38716	21156	16338	9912	9858
1944	10991	12308	9176	11383	21196	16774	28001	43710	41380	11486	8805	10866
1945	11667	9324	12573	10443	13282	11121	25268	37000	45442	49131	13069	20882
1946	21023	11929	10993	13601	16675	8406	20505	32496	14999	19415	13266	10961
1947	8474	18861	11715	12567	15711	12534	39898	54703	46640	36617	20309	17683
1948	20484	21118	14501	11143	9677	36742	50155	37774	34939	27132	9644	10822
1949	16025	6907	0	0	6672	12393	30649	66078	53521	17590	11322	15709

TABLE 4 (Cont.)
FORT LYON CANAL DIVERSION RECORDS
MONTHLY DIVERSION (in acre feet)

Water Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1950	24818	15281	12877	11451	9035	8745	17564	43062	41043	9999	13970	9158
1951	9987	12923	11941	12845	10878	8513	23266	38147	39906	26527	8422	9910
1952	16146	11911	12974	12018	11605	13807	39900	53092	27795	17080	10040	10124
1953	12159	16638	14973	11631	9315	9729	13153	43127	27499	23800	4356	5631
1954	13551	10425	8343	10919	9981	2989	12601	9880	12310	10983	6	5843
1955	6857	9904	10699	8571	7720	1327	8249	35314	13716	32815	8632	8061
1956	11191	14000	13416	12837	11796	8148	19783	33993	11463	9366	0	1845
1957	8604	10457	9779	10626	7541	24300	47650	64624	73431	60562	27356	25113
1958	21646	18667	30881	26599	32245	16215	44385	49258	26648	13684	11360	10770
1959	17215	24193	15348	8888	15594	16572	17909	42863	13688	5724	1053	30344
1960	26857	28654	10370	4953	8700	13968	17792	42310	26904	6276	8075	11395
1961	17159	17717	17943	16886	21757	15196	17903	43609	19216	32006	27049	18792
1962	24875	23177	15965	16439	17201	31615	40943	42473	48814	14737	9699	10114
1963	17215	22338	7791	21424	17175	5695	7621	12732	5778	11584	16360	5951
1964	9880	12536	14729	14366	12058	8840	10881	29560	9636	10544	2120	2059
1965	8868	15489	15699	16751	16402	8799	16015	25014	55030	45525	44292	33942
1966	20426	21856	26986	18268	16019	9838	18302	24145	17883	31512	14743	13656
1967	13018	17859	18377	13704	9007	5397	12341	36984	44127	16919	16737	11135
1968	15507	18466	18234	23147	16086	10971	11262	44202	18183	38119	9921	10405
1969	21757	17368	16257	14942	13442	9820	35437	45712	46198	22713	19883	26753
1970	24407	32103	17364	23122	19555	30782	46069	53168	44222	20603	21156	32559
1971	32081	26472	8188	10380	15449	10108	11137	38426	39400	13170	9822	10548
1972	31349	17005	11867	14773	12256	9299	11530	41326	16907	11613	11853	9370
1973	19940	18706	17356	13089	25133	24232	50772	50551	49683	20682	11633	11429
1974	14170	10745	1902	8632	25042	10493	12458	22529	14158	7156	2836	8063
1975	12290	20136	12419	16378	12185	8977	9691	37492	47106	21586	9701	9439
1976	10574	10927	7043	14420	10917	9949	11260	22568	10903	18911	9739	10526
1977	21775	9432	3848	9287	10717	7275	8398	9080	7291	18732	3392	5486
1978	9332	12520	16177	10407	8349	3360	8739	42641	27717	21077	4257	4171
1979	9116	4021	0	0	10850	9731	18238	54251	42701	25056	9763	13623
1980	26145	4862	0	0	9203	28229	53178	51652	44706	29996	11242	11556
1981	0	0	0	0	5298	6472	8111	14521	12127	35560	12647	10029

TABLE 4 (Cont.)
FORT LYON CANAL DIVERSION RECORDS
MONTHLY DIVERSION (in acre feet)

Water Year	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1982	20107	0	0	0	10144	7698	12357	56571	35248	64099	40027	41421
1983	23290	0	0	0	5512	24518	48858	90475	78331	58632	21154	10205
1984	21424	0	0	0	23297	40556	78830	69835	60857	76871	36789	30474
1985	39812	0	0	20874	54536	47986	86681	82579	58570	47145	20451	34809
1986	25906	0	0	5150	11670	13152	16707	61217	54515	31755	21814	21213
1987	3367	0	6625	46064	22268	39707	45509	52607	40362	26322	32677	25556
1988	21562	0	0	0	14362	30285	22873	44803	39269	22141	11241	10442
1989	12340	0	0	0	13556	10387	23614	38481	35884	25156	9395	10387
1990	10472	0	0	0	5251	11885	23904	42578	36840	20455	9776	14309
1991	20223	0	0	0	8802	9426	14607	37215	37404	29414	10044	10067
1992	5916	0	0	0	12738	19107	19922	41556	25156	17382	18444	10388
1993	15240	0	0	0	10662	23686	31491	42218	44343	40962	11367	15942
1994	15911	0	0	0	6734	31534	31734	55142	29326	12382	19208	18003
1995	15956	0	0	0	7596	27104	45204	38679	78481	52106	44404	39293
1996	39473	5191	0	0	15041	22192	34249	49105	50721	43968	17670	18232
1997	10817	0	0	0	14423	21300	45646	64346	47658	50842	33630	21418
1998	10523	27199	5800	19381	21661	36622	62940	49373	46782	38252	22346	24074
1999	13851	0	3144	14682	9688	26014	49235	67961	56599	66919	37655	23369
2000	25854	20684	26965	9610	24540	45562	48723	43861	37135	33272	11620	11133
2001	11072	0	0	0	7762	20556	37643	33076	27967	19988	9616	10169
2002	12046	0	0	0	8085	12155	10770	8811	1931	129	402	2744
2003	4864	0	0	0	5697	23129	28764	39983	11022	3562	7757	5435
2004	4645	0	0	0	6645	22382	26043	26033	26735	20259	8943	10355
2005	8423	0	0	0	10896	34934	35303	40658	36497	25292	6105	9446
2006	9517	0	0	0	7629	8582	22991	30326	19804	17357	11251	17475
2007	15901	0	0	0	10282	30563	48434	48878	29236	32497	9953	15151
2008	10488	0	0	0	16223	19177	21845	49087	44472	31665	10757	15523
2009	9790	0	0	0	6677	17832	29870	46978	32601	18570	10972	17767
2010	16720	0	0	0	12215	42630	29931	46211	21215	24283	8065	9908
2011	5599	0	0	0	7239	18954	16856	43271	46421	29285	16392	10534
2012	12335	0	0	0	7004	13218	13675	7174	1402	1396	480	2975
2013	4378	0	0	0	9119	17322	19974	24107	10824	22542	18619	10401
Minimum	0	0	0	0	0	0	0	7174	1402	129	0	1845
Maximum	45068	32103	30881	46064	54536	47986	86681	90475	78481	78481	44404	44059
Average	14479	8908	7015	8282	12306	15856	27662	41272	32254	24756	14206	14347

4.0 PROJECT DESCRIPTION AND ALTERNATIVES ANALYSIS

4.1 ALTERNATIVES EVALUATION APPROACH

Based on the evaluation of three independent Professional Engineers summarized in Section 1.3, the objective of this project is to immediately replace the Horse Creek Flume. The Fort Lyon Canal shuts down between November 15 and March 15, so it is imperative that the selected replacement alternative can be constructed during the winter shutdown. As a result, key alternative evaluation criteria for this project are as follows:

- Total project cost of the alternative;
- Constructability within the four month canal shutdown period; and
- Long term operation and maintenance considerations.

Six alternatives were considered to meet the project objective. The alternatives are listed below.

- 1) No Action Alternative
- 2) Alternative No. 1 – Slip Line Flume with HOBAS Pipe
- 3) Alternative No. 2 – Slip Line Flume with Steel Pipe
- 4) Alternative No. 3 – Replace Flume with a New HOBAS Pipe Flume
- 5) Alternative No. 4 – Replace Flume with a New Steel Pipe Flume
- 6) Alternative No. 5 – Replace Flume with a New Concrete Flume

Section 4.2 provides a short description of each alternative, followed by a brief description and comparison of the alternatives. Alternative Nos. 1 through 5 are shown on Figure Nos. 4 through 8 and the details of the total project cost budget opinion for each alternative is documented in Appendix D.

Two additional alternatives were initially considered, but were eliminated from further consideration and project development. The first alternative was to replace the Horse Creek Flume with a buried siphon. This alternative was eliminated from further consideration because it would be difficult to excavate and bury a large siphon pipe under Horse Creek in the four month winter construction season. This alternative would require temporary diversion of Horse Creek during construction and would involve 404 permitting associated

with excavation in the creek, which would complicate and increase the cost of the project. The FLCC was also concerned that it would be difficult to drain the siphon and perform routine inspections and maintenance of a buried siphon pipe.

Another alternative that was initially considered and eliminated from consideration involved constructing a berm over Horse Creek with drainage culverts in the bottom of the berm to convey Horse Creek flows under the berm. A lined canal channel could then be constructed across Horse Creek in the top of the berm. This alternative was eliminated from further consideration because of the complications involved with constructing a berm across potential wetlands in Horse Creek, and the berm would need to be designed to overtop during large flood events in Horse Creek making this alternative cost prohibitive.

4.2 ANALYSIS OF ALTERNATIVES

No Action Alternative

Three different Professional Engineers have assessed the Horse Creek Flume and concluded that it needs to be immediately replaced. If the FLCC decides to take no further action and the flume fails during the irrigation season it would disrupt water delivery to approximately 87,160.47 of the 93,989.41 FLCC shares and the acreage associated with those shares, as well as approximately 30,857.56 shares of the total 34,682 shares under the Amity Mutual Irrigation Company. The loss in crop revenue is expected to be more than \$50 million within Bent, Otero, and Powers Counties and this economic loss would impact the entire State of Colorado. In addition, water that is conveyed through the Horse Creek Flume is stored in nearby Nee Gronde, Nee Noshe, Queens, King and Thurston reservoirs within the Queens and Thurston State Wildlife Areas (SWA), managed by Colorado Parks and Wildlife. These State Wildlife Areas provide over 14,000 acres of valuable wildlife habitat and tremendous recreational opportunities for Southeastern Colorado. The Queens SWA is considered by Colorado Parks and Wildlife to be the premier hunting and fishing area in southeastern Colorado and its recreational value is exceeded only by John Martin Reservoir State Park.

Alternative No. 1 – Slip Line Existing Steel Flume with HOBAS Pipe

This alternative consists of leaving the existing 123-inch-diameter steel flume in place, and slip lining the entire 392 foot length of the flume with 110-inch-diameter centrifugally cast,

glass-fiber-reinforced, polymer mortar (CCFRPM) HOBAS pipe. Prior to slip lining, the existing steel pipe would be cleaned, prepared and have steel cradles installed to support the HOBAS pipe. The HOBAS pipe would be installed in 20 foot sections. After installing the HOBAS pipe, the annular space between the original steel flume and the HOBAS pipe would be grouted. The HOBAS pipe is lower in strength than steel pipe, so 17 new concrete foundations and support cradles would be installed on 20 foot centers to support the added weight in the flume. After the slip lining is complete, the exterior of the existing steel flume would be cleaned and field coated. Also included in Alternative No. 1 is repair work to the intake and outlet concrete structures. A profile of Alternative No. 1 is provided on Figure No. 4.

Wheeler's opinion of the total project budget required to implement Alternative No. 1 is \$2,252,000. This alternative could be completed during the November 15th to March 15th canal shutdown period, but the HOBAS pipe would need to be pre-ordered prior to beginning on-site construction. Some of the expected advantages to this alternative are that the HOBAS pipe is expected to have lower maintenance issues than steel pipe and less demolition would be required since the existing flume would be reused. Some disadvantages to this alternative include a reduced flow capacity in the flume since the 110-inch-diameter HOBAS pipe will be smaller than the existing 123-inch-diameter steel flume pipe. Adding 17 support structures will reduce the flood flow capacity of Horse Creek below the flume, and make the flume more susceptible to damage during flooding events. Working within the existing steel flume could also be a significant construction challenge due to the poor condition of the existing flume.

Alternative No. 2 – Slip Line Existing Steel Flume with Steel Pipe

Alternative No. 2 is similar to Alternative No. 1 because it would leave the existing steel flume in place, but the existing flume would be lined with 116-inch-diameter, ½-inch-thick steel pipe. Prior to slip lining, the existing steel pipe would be cleaned and have steel cradles installed to support the new pipe. The new steel pipe would be shop coated and installed in 20 foot sections. After installing the new steel pipe liner, the annular space between the original steel flume and the new steel pipe liner would be grouted. Alternative No. 2 would require five new concrete foundations and support cradles to support the added weight in the flume. The interior of the new steel pipe would be lined in the shop and welded joints lined in the field. The exterior of the existing steel flume would also be

cleaned and field coated at the end of construction. Also included in Alternative No. 2 is repair work to the intake and outlet concrete structures to address cracking and other structural issues. A profile of Alternative No. 2 is provided on Figure No. 5.

Wheeler's opinion of the total project budget required to implement Alternative No. 2 is \$1,936,000. This alternative can be completed during the planned November 15th to March 15th canal shutdown period. Some of the advantages to this alternative are a lower construction cost, few additional supports than Alternative No. 1, and less demolition because the existing flume is being reused. Some of the disadvantages of this alternative include a reduced flow capacity since the 116-inch-diameter steel pipe will be slightly smaller than the existing 123-inch-diameter flume and the additional supports would reduce the flood flow capacity of Horse Creek below the flume, which would make it more susceptible to flooding events. Additionally, steel pipe is expected to require more painting and coating maintenance than HOBAS pipe. Similar to Alternative No. 1, working within the existing steel flume could be a significant construction challenge due to the poor condition of the existing flume.

Alternative No. 3 – Replace Existing Flume with HOBAS Pipe Flume

This alternative consists of removing the entire 392-foot-long steel flume and its supports, and replacing it with a 120-inch-diameter HOBAS pipe flume. The HOBAS pipe flume would be installed in 20 foot sections, supported by new support cradles and support foundations. Since HOBAS pipe is lower strength than steel pipe, foundations and support cradles would have to be installed on 20 foot centers to support the HOBAS pipe, requiring a total of 18 foundation and support assemblies. Once in place, Fiber-Reinforced Plastic (FRP) vents and handrails would be installed on the top of the flume. Also included in Alternative No. 3 is repair work to the intake and outlet concrete structures to address cracking and other structural issues. A profile of Alternative No. 3 is provided on Figure No. 6.

Wheeler's opinion of the total project budget required to implement for Alternative No. 3 is \$2,169,000. This alternative could be completed during the planned November 15th to March 15th canal shutdown period. Some of the advantages to this alternative are that the existing flume will be completely removed and replaced with new materials and the maintenance issues for a HOBAS pipe flume are expected to be lower than a steel pipe flume. Disadvantages to this alternative include concerns on the longevity of HOBAS pipe,

especially from potential damage caused by exposure to ultra-violet (UV) light and wildland fire. Another disadvantage to this alternative is that it requires 18 support structures which would reduce the flood flow capacity of Horse Creek below the flume, and make the flume more susceptible to damage during flooding events.

Alternative No. 4 – Replace Existing Flume with a New Steel Flume

Similar to Alternative No. 3, this alternative consists of removing the entire existing steel flume and its supports, and replacing it with a new 123-inch-diameter, ½-inch-thick steel flume and new support structures. The existing flume and its supports would be completely removed, and new concrete foundations installed or existing concrete foundations rehabilitated. The new steel pipe would be shop lined on the inside, installed in 20-foot-long sections, and supported by ring girders and four new support cradles mounted to the new foundations. Once in place, steel vents and handrails would be installed on the top of the flume, and the exterior of the pipe would be field coated. Also included in Alternative No. 4 is repair work to the intake and outlet concrete structures to address cracking and other structural issues and the installation of a new expansion joint. A profile of Alternative No. 4 is provided on Figure No. 7.

Wheeler's opinion of the total project budget required for Alternative No. 4 is \$2,188,000. This alternative could be completed during the planned November 15th to March 15th canal shutdown period. The key advantages to this alternative are no reduction in flow since the new flume would have the same diameter as the existing flume and the new flume would be constructed of new material. Additionally steel will not be affected by UV light and be less susceptible to wildland fire, and has a proven track record of use in this application. Some disadvantages to this alternative include higher demolition costs since the existing flume would be removed. The new steel flume is also expected to have higher lining and coating maintenance costs in the future.

Alternative No. 5 – Replace Existing Steel Flume with a Concrete Flume

This alternative consists of removing the entire existing steel flume and its supports, and replacing it with a 15-foot-wide by 9-foot-high enclosed concrete flume. The new concrete flume would be supported by seven new pier frames, mounted on new foundations. Also included in Alternative No. 5 is repair work to the intake and outlet concrete structures to address cracking and other structural issues.

Wheeler's opinion of the total project budget required for Alternative No. 5 is \$2,015,000. This alternative could be completed during the planned November 15th to March 15th canal shutdown, but it has the longest construction schedule and the greatest chance of delays due to weather and other factors. Some of the advantages of this alternative are that most of the concrete could be provided by local suppliers and the concrete is expected to have a lower maintenance requirement and cost after construction. Some disadvantages to this alternative are it would have the longest site construction schedule, and installing extra support structures will reduce the flood flow capacity of Horse Creek below the flume, and make the flume more susceptible to damage during flooding events.

4.3 ALTERNATIVE COMPARISON

A comparison of some of the key decision criteria associated with the primary alternatives developed for this feasibility study is provided in Table No. 5 below.

**TABLE 5
ALTERNATIVE COMPARISON SUMMARY**

Alternatives	Descriptions	Opinion of Probable Cost	Erosion Durability and Reliability	Construct-ability	Vulnerability to UV, Fire & Flooding
No Action	No Structural Modifications	\$50,000,000+	Poor	Poor	High
Alternative No. 1	Slip Line with HOBAS Pipe	\$2,252,000	Good	Fair	Moderate
Alternative No. 2	Slip Line with Steel Pipe	\$1,936,000	Fair	Fair	Moderate
Alternative No. 3	New HOBAS Pipe Flume	\$2,169,000	Good	Good	High
Alternative No. 4	New Steel Pipe Flume	\$2,188,000	Fair	Good	Low
Alternative No. 5	New Concrete Flume	\$2,015,000	Good	Good	Low

4.4 SELECTED ALTERNATIVE

During a meeting of the FLCC Board of Directors on April 23, 2015 with representatives of Wheeler, SM&RC, and WJE, the pros and cons of each alternative were discussed and the FLCC selected Alternative No. 4. The FLCC felt alternative No. 4 provided the best combination of cost, constructability, and long-term reliability. Alternative No. 4 also has the lowest vulnerability to ultra-violet light damage, wildland fire and flooding along Horse Creek. In addition, Alternative No. 4 uses thicker steel pipe than the current design and the existing steel flume has a proven track record in this application, if properly maintained.

4.5 IMPLEMENTATION SCHEDULE

The FLCC needs to complete the construction of this project during the November 15 to March 15 canal shutdown period. It is expected to take three to four months to order, fabricate, and deliver the steel pipe. At the April 23, 2015 FLCC Board of Directors meeting the FLCC Board authorized SM&RC to begin final design work on the pipe procurement and construction documents for the project. The key project milestones are summarized in Table No. 6 below.

**TABLE 6
PROJECT SCHEDULE**

Task	Completion Date
Initiate Final Design	May 1, 2015
Pipe Procurement Bid Package Available	July 14, 2015
Order Pipe	July 17, 2015
Construction Bid Package Available	September 21, 2015
Construction Bids Due	October 5, 2015
Construction Notice-to-Proceed	October 14, 2015
Begin Construction	November 15, 2015
Construction Complete	March 15, 2016

5.0 SOCIAL, ECONOMIC, AND PHYSICAL IMPACTS

The replacement of the Horse Creek Flume is not expected to have any significant adverse social, economic, or physical impacts. As described under the No Action Alternative in section 4.2, if the flume is not replaced and fails, there could be significant economic impacts to Bent, Otero, and Prowers Counties and to the economy of the entire State of Colorado. In addition, failure of the Flume could have significant impacts to wildlife habitat and recreational opportunities in the Queens and Thurston State Wildlife Areas.

During construction, there may be some minor benefits to the local economy associated with the construction work from November of 2015 through March of 2016, but no significant impacts to local housing or infrastructure is anticipated during the four month construction season. Some of the FLCC shareholders may be impacted by increased assessments to pay for their share of the project, but these increased assessments are considered to pale in comparison to the economic and social impacts associated with the loss of water deliveries associated with the failure of the flume if no action is taken to repair the structure.

There may be some minor disturbance to the ground associated with equipment impacts during construction, but these impacts can be mitigated by reseeding and site reclamation as needed after the construction work is complete.

6.0 INSTITUTIONAL FEASIBILITY

6.1 PERMITTING

The key permit required for most water resources projects is a 404 permit for impacts to wetlands or waters of the United States that is issued by the U.S. Army Corps of Engineers. In this case, the work will be completed outside of the banks of Horse Creek with no dredge or fill material within Horse Creek itself, so no 404 permitting is anticipated. Other potential project construction permits are listed below.

1. **Bent County Permits:** We are not aware of any permit requirements, including HB1041 permits, in Bent County.
2. **Fugitive Particulate Air Pollution Emission Notice/Control Plan Permit with the Colorado Department of Health and Environment:** The construction contractor will be required to obtain this permit, which is a routine permit required for most construction projects.
3. **Stormwater Discharges Associated with Construction Activity Permit with the Colorado Department of Health and Environment:** The construction contractor will be required to obtain this permit, which is a routine permit required for most construction projects.

The construction work required for this project will occur on lands owned by or the FLCC or within FLCC easements for operation and maintenance. As a result no additional construction easements or land acquisition is needed to complete the construction. The FLCC has the authority to raise assessments for special projects like this and during the annual Shareholders meeting in January of 2015 the Shareholders unanimously voted to allow the FLCC to take on debt financing to replace the Horse Creek Flume.

7.0 FINANCIAL FEASIBILITY ANALYSIS

7.1 LOAN AMOUNT AND FINANCING SOURCES

As documented in Appendix D, opinion of total cost for the preferred alternative, replacing the flume with a new steel flume, is \$2,188,000. FLCC has already invested more than \$75,000 of its own funds toward the project costs. The Arkansas Water Roundtable has approved a \$50,000 Water Supply Reserve Account (WSRA) grant from the Arkansas Basin Account and an application for a WSRA \$450,000 grant from the Statewide Account has been forwarded to the CWCB for approval during their September 2015 meeting. The remaining \$1,613,000 in project costs would be covered by a Colorado Water Conservation Board (CWCB) loan. The annual payment for this loan at an interest rate of 1.75 percent interest over a 30-year repayment period is \$70,264. On June 10, 2015, the FLCC Board of Directors adopted a resolution concerning a secured loan with the CWCB. The complete Loan Resolution is included in the Appendix G.

7.2 FINANCIAL PROJECTIONS

A financial plan has been prepared to show the projected revenues and expenses of the FLCC and demonstrate the ability of the FLCC to fund this emergency repair project and to repay the loan sought from the CWCB. The financial plan is included in Appendix E.

7.3 COLLATERAL

The FLCC intends to pledge the Horse Creek Flume as collateral to assure repayment of the CWCB loan.

7.4 CREDITWORTHINESS

The FLCC is considered to be in a strong financial condition and has no long term outstanding debt.

8.0 CONCLUSIONS AND RECOMMENDATION

Replacement of the 77-year-old Horse Creek Flume with a new steel flume is considered to be vital to the continued operation of the Fort Lyon Canal system. Without replacement of the flume, more 93,000 acres of irrigated farm land in Otero, Bent, and Prowers Counties are at risk, which could be devastating to the local economy and the entire State of Colorado. As documented in Section 7, a grant loan mix from the CWCB would help finance this project and the FLCC has the financial ability to repay the \$1,613,000 loan for this project. The FLCC has already authorized the final design and pipe procurement work for this project and it must be constructed between November 15, 2015 and March 15, 2016.

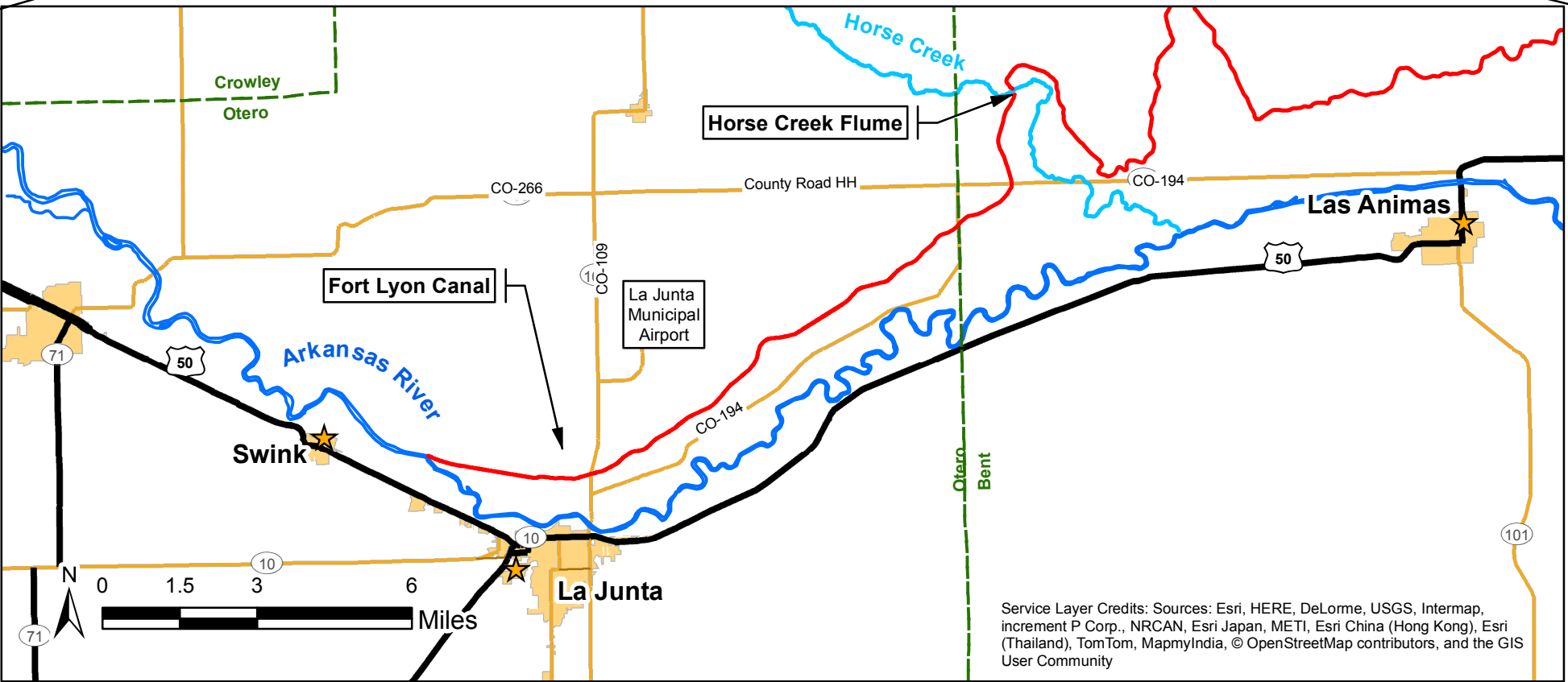
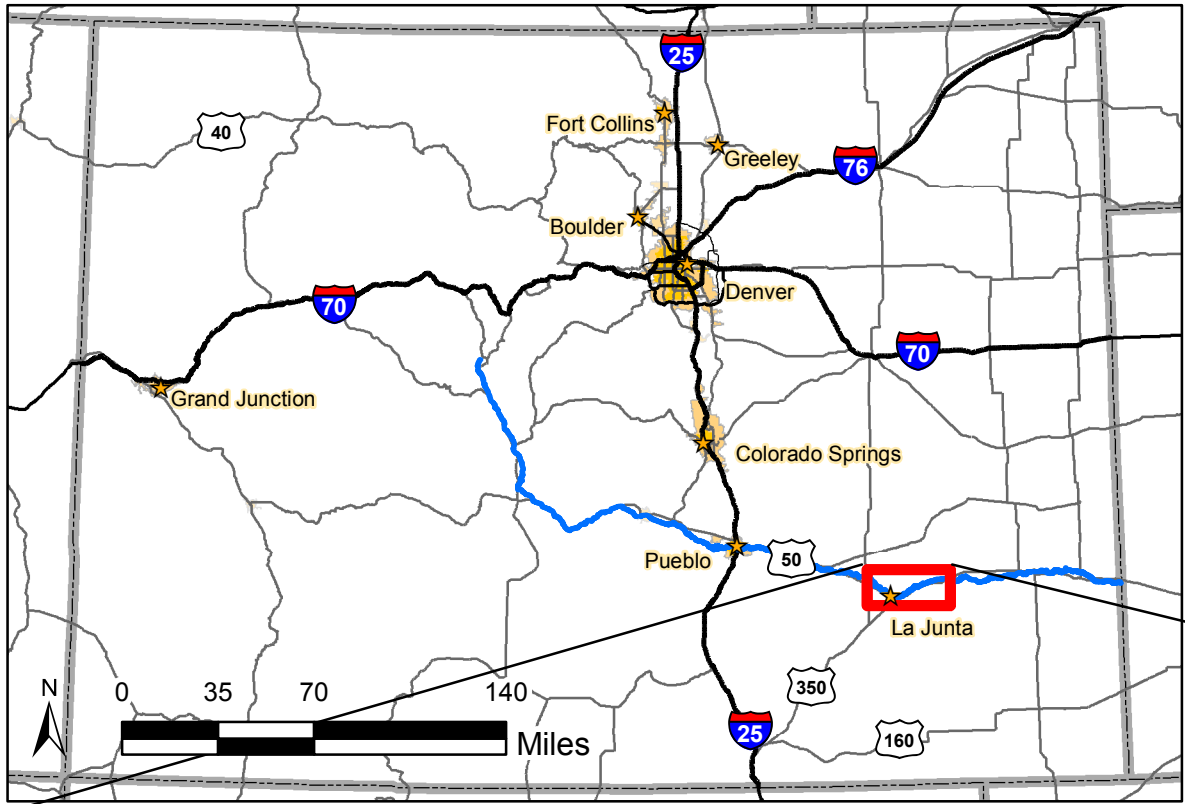
9.0 REFERENCES

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- 2 O. Ray Dodson (Dodson, 1997) *The Fort Lyon Canal, The First 100 Years, 1897 to 1997*, written by O. Ray Dodson, Ph.D., 1997.
- 3 National Agricultural Statistics Service (NASS, 2014) *Irrigated Acreage and Crops Under the Fort Lyon Canal*, 2014.
- 4 National Agricultural Statistics Service (NASS, 2015) *Colorado 2014 State Agriculture Overview*, 2015.
- 5 Stantec Consulting Services, Inc. (Stantec, 2014) *Horse Creek Flume Inspection Report*, October 17, 2014.
- 6 Tipton and Kalmbach, Inc. (T&K, 1984) *Feasibility Report For The Rehabilitation and Betterment Of The Fort Lyon Canal System*, May, 1984.
- 7 United States Census Bureau (U.S. Census, 2014) *2014 National Population Projections*, 2014.
- 8 Wiss, Janney, Elstner Associates, Inc. (WJE, 2015) *Horse Creek Flume Structure, Preliminary Report of Structural Assessment*. April 7, 2015.
- 9 W. W. Wheeler & Associates, Inc. (Wheeler, 2015) *Horse Creek Flume Condition Assessment Report*, May 22, 2015.

10.0 LIMITATIONS

This feasibility study report was prepared based on our best knowledge and judgment and, in part, from information provided by others. This study was conducted in accordance with generally accepted engineering practices in the State of Colorado. The execution of the work documented in this report will be performed by others and this work and other factors that can affect the final product, budget, and schedule are outside of the control of W. W. Wheeler & Associates, Inc. As a result, there is no expressed or implied warranty or guarantee of the work described in this study. W. W. Wheeler & Associates, Inc. is also not responsible for the liability associated with the interpretation of the information presented in this report by others.


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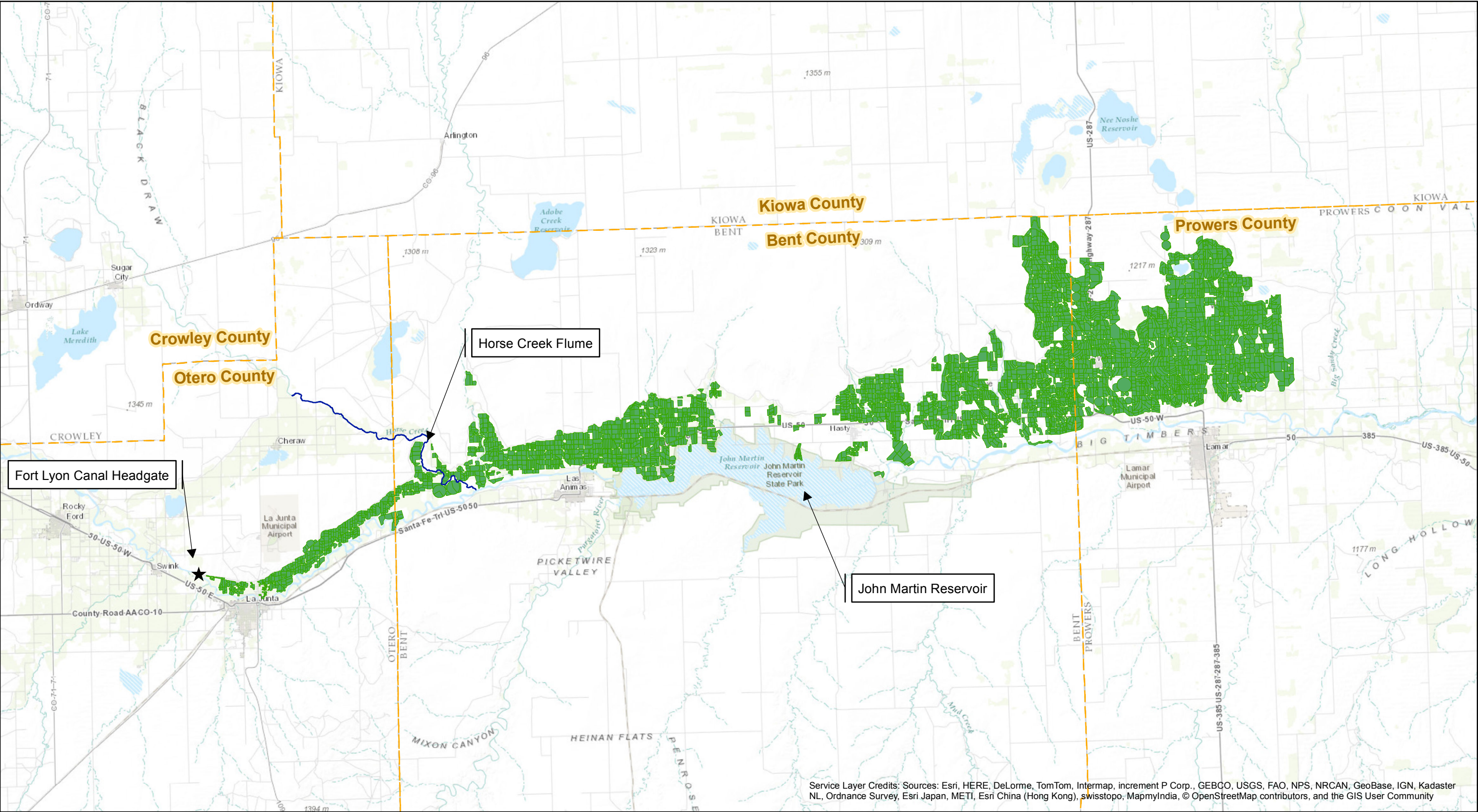
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- Legend**
- ★ City
 - Counties
 - Fort Lyon Canal
 - Arkansas River
 - Horse Creek

JULY 2015	 W. W. WHEELER & ASSOCIATES, INC. <i>Water Resources Engineers</i>	
	Fort Lyon Canal Company Feasibility Report Horse Creek Flume Rehabilitation Location and Vicinity Map	
	Job Number:1830.01	Figure 1

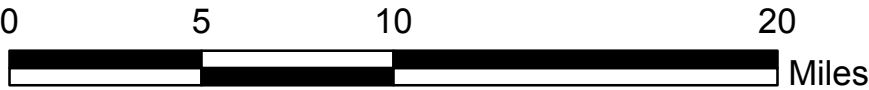
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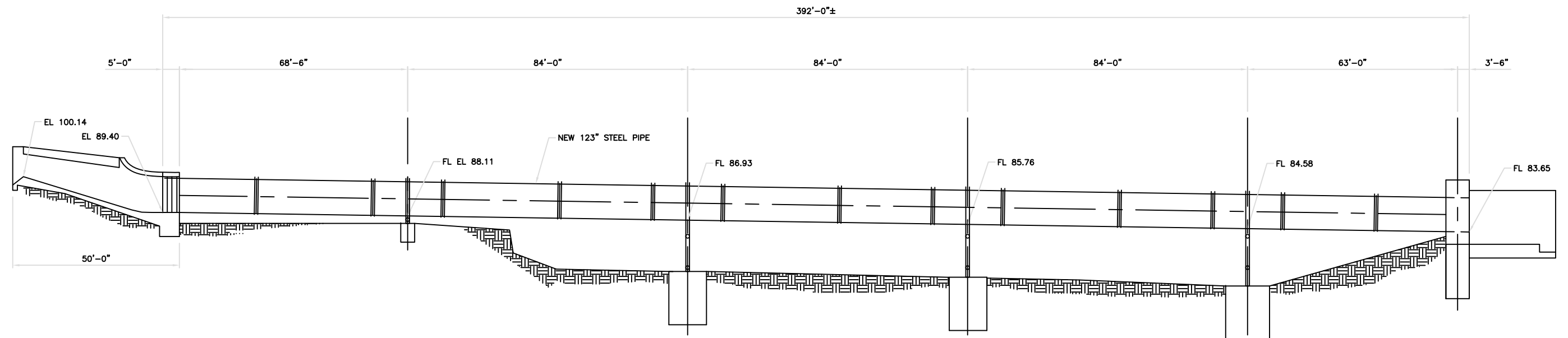
Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Legend


- ★ Fort Lyon Canal Headgate
- HorseCreek
- Counties
- Land Irrigated by Fort Lyon Canal

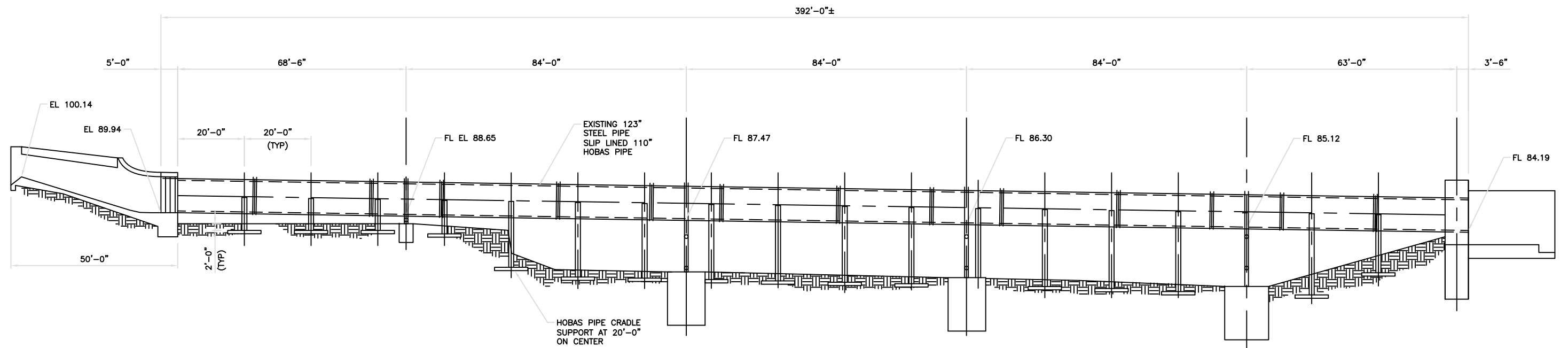


JULY 2015	 Fort Lyon Canal Company Feasibility Report Horse Creek Flume Rehabilitation Irrigated Land	
	Job Number:1830.01	Figure 2




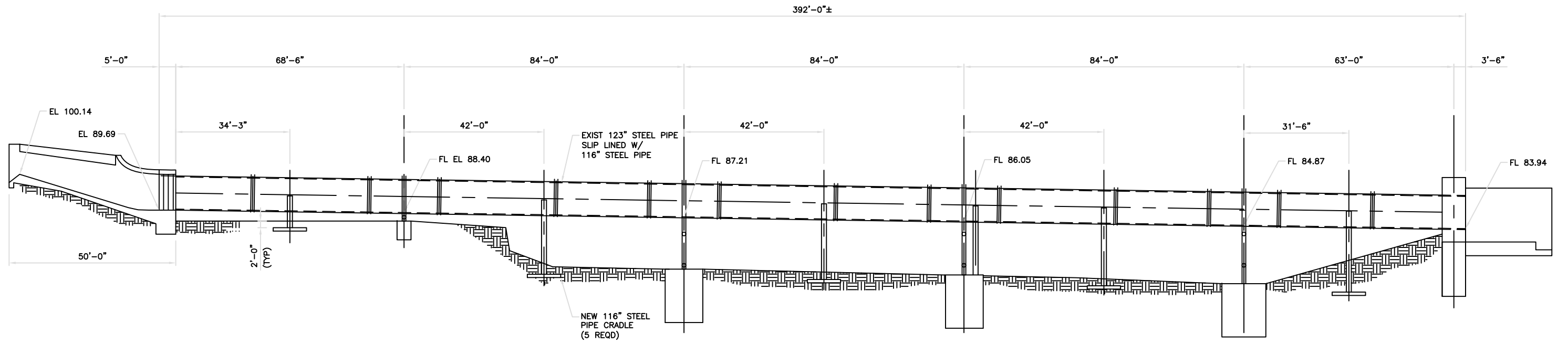
EXISTING STEEL FLUME

JULY 2015		
	<p>Fort Lyon Canal Company Horse Creek Flume Rehabilitation Existing Flume</p>	
	<p>Job Number 1830.01</p>	<p>Figure 3</p>



ALTERNATIVE NO. 1 - SLIP LINE FLUME WITH HOBAS PIPE

JULY 2015		
	<p>Fort Lyon Canal Company Horse Creek Flume Rehabilitation Alternative No. 1</p>	
	<p>Job Number 1830.01</p>	<p>Figure 4</p>



ALTERNATIVE NO. 2 - SLIP LINE FLUME WITH STEEL PIPE

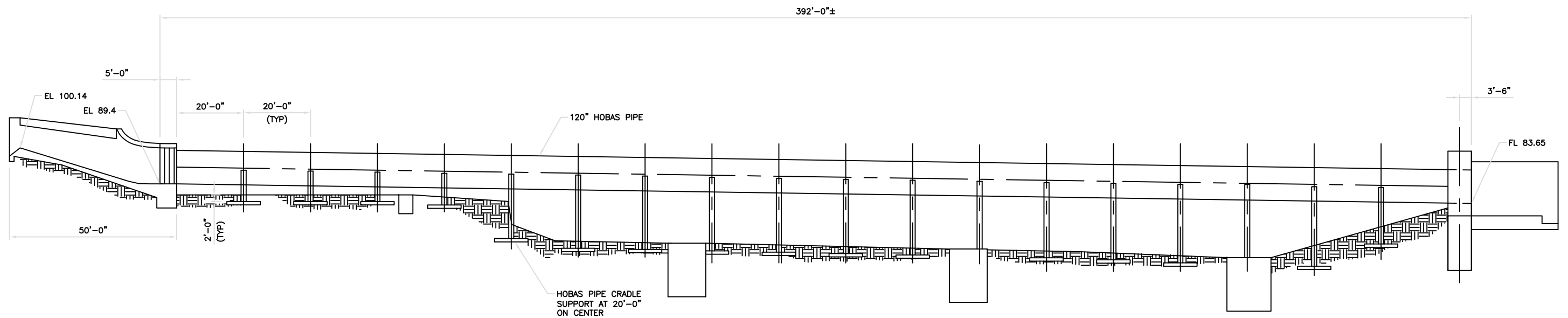


Fort Lyon Canal Company
Horse Creek Flume Rehabilitation
Alternative No. 2


Job Number
1830.01

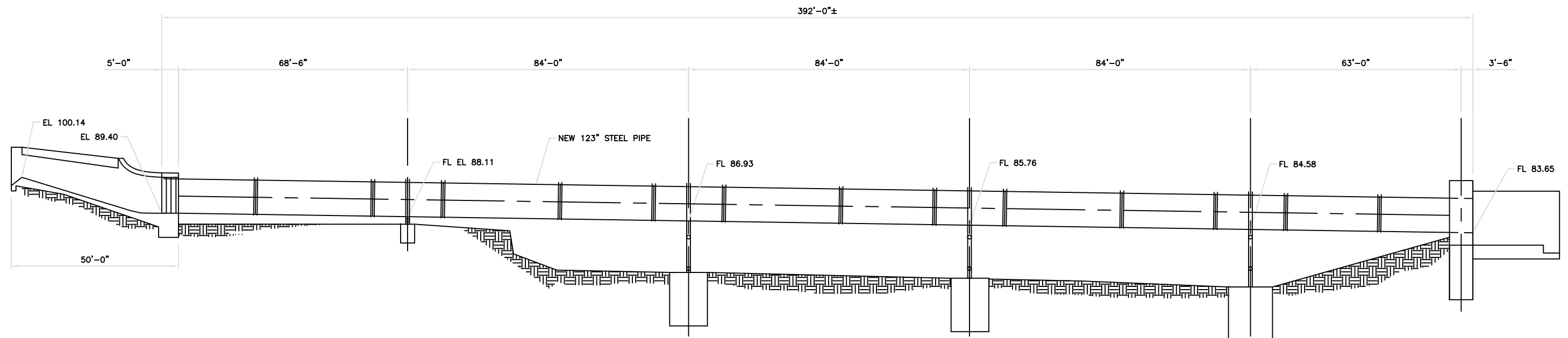
Figure 5

JULY 2015



ALTERNATIVE NO. 3 - REPLACE FLUME WITH A NEW HOBAS PIPE FLUME

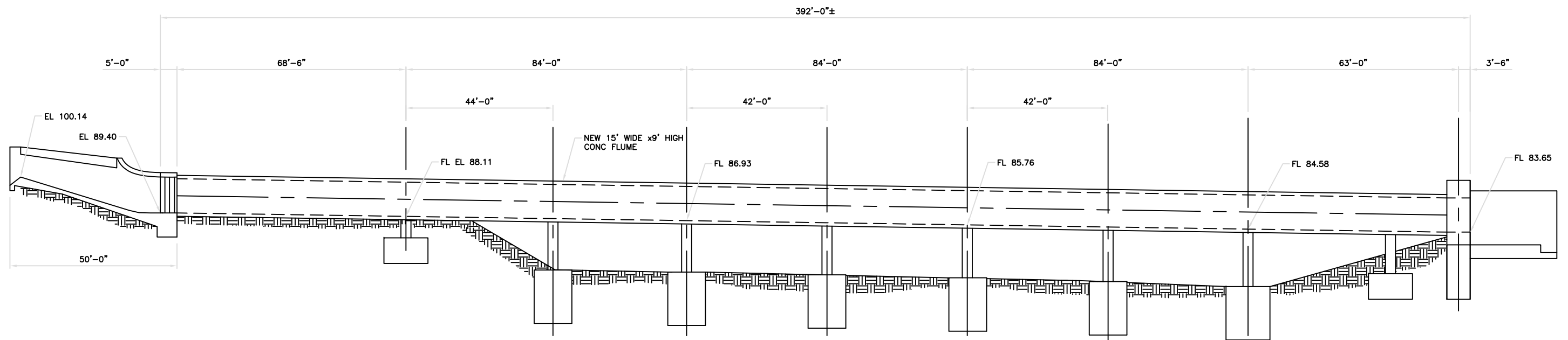
JULY 2015	 W. W. WHEELER & ASSOCIATES, INC. Water Resources Engineers	
	Fort Lyon Canal Company Horse Creek Flume Rehabilitation Alternative No. 3	
	Job Number 1830.01	Figure 6



ALTERNATIVE NO. 4 - REPLACE FLUME WITH A NEW STEEL PIPE FLUME

JULY 2015	 W. W. WHEELER & ASSOCIATES, INC. Water Resources Engineers	
	Fort Lyon Canal Company Horse Creek Flume Rehabilitation Alternative No. 4	
	Job Number 1830.01	Figure 7

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ALTERNATIVE NO. 5 - REPLACE FLUME WITH A NEW CONCRETE FLUME

JULY 2015	 W. W. WHEELER & ASSOCIATES, INC. Water Resources Engineers	
	Fort Lyon Canal Company Horse Creek Flume Rehabilitation Alternative No. 5	
	Job Number 1830.01	Figure 8

Appendix A

Articles of Incorporation and Bylaws

Articles of Incorporation of the Fort Lyon Canal Company

This is to certify that we, Benjamin E. Brown, Daniel E. Cooper, William C. Burke, Frank Kreybill and John B. O'Neil, all citizens of Colorado, have associated ourselves together to become a body corporate under and by virtue of the laws of the State of Colorado, and we do hereby make, sign and acknowledge this certificate of incorporation, and declare as follows:

First.

The corporate name of said Corporation shall be The Fort Lyon Canal Company.

Second.

Said Company is incorporated for the following purposes:

1. To receive, own, hold, control, manage and operate that certain canal system known as the La Junta and Lamar Canal, including the King and Prince Reservoirs connected therewith, in accordance with the terms of the several contracts and deeds conveying rights to water from said canal system, heretofore executed by The Arkansas River, Land, Reservoir and Canal Company and The La Junta and Lamar Canal Company, in and by which it was provided that when said above named companies should have sold and in force a number of water rights equal to the estimated capacity of said canal to furnish water, and two-thirds of such rights should have been fully paid for, the title to said canal should pass to the owners of said water rights; which said provisions the District Court of Prowers County in a certain decree entered on the first day of June, A.D. 1896, in an action therein pending, in which John Hess suing upon behalf of himself and all other owners of rights to water

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from said canal, were plaintiffs; and The La Junta and Lamar Canal Company, was defendant, adjudged and decreed had fully complied with, and by which the title to said canal system has become vested in said several water right owners. The said canal system being more particularly described as follows:

The headgate is located in the Northeast quarter of Section Thirty-two (32), Township twenty-three (23), of Range fifty-five (55) West of the Sixth Principal Meridian, or more particularly described, that the center of the headgate is at a point whence corner to Sections twenty-eight (28), twenty-nine (29), thirty-two (32) and thirty-three (33) of above Township and Range bears north 85 degrees, 7 minutes east, 25.43 chains distant, and in Otero County, State of Colorado, on the North Bank of the Arkansas River, a natural stream of said State of Colorado, from which natural stream said canal draws its supply of water; running thence in a general northeasterly direction through Townships 23 South of Range 55 West, and 23 South of Range 54 West, in Otero County, Colorado, and on in a general northeasterly direction through Townships 23 South of Range 53 West, and 22 South of Range 53 West, and 22 South of Range 52 West and 22 South of Range 51 West, and 22 South of Range 50 West, and 22 South of Range 49 West, and 22 South of Range 50 West, and 22 South of Range 49 West, and 21 South of Range 49 West, and 22 South of Range 48 West, and 21 South of Range 48 West, in Bent County, Colorado, to Big Sandy Creek; and also the reservoirs known as the King and Prince Reservoirs that are connected with the aforesaid canal system, in accordance with the plats and field notes of said canal and reservoirs, duly filed in the office of the State Engineer of the State of Colorado, in the City of Denver, at 1:30 P.M., August 12, A.D. 1889, which more specifically describes the location of said canal and above mentioned reservoirs.

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2. To carry out, keep and perform all terms, obligations, contracts and undertakings set forth, established and authorized in and by the several decrees, orders and judgments heretofore rendered in respect to said premises by the said District Court of the County of Prowers, in the proceedings hereinbefore referred to.

3. To possess, exercise, manage and control all the rights, privileges, franchises and appropriations heretofore belonging to or exercised by The Arkansas River, Land, Reservoir and Canal Company, and The La Junta and Lamar Canal Company, and to acquire all lands, rights of way, ditches, laterals and reservoirs necessary to the use and operation of said canal system, and of the rights, privileges, franchises and appropriations connected therewith, and to contract with any other canal, reservoir, storage or water company for the storage and carriage of water, or for right of way therefor, and to acquire by gift, grant, devise or otherwise all real and personal property usual and necessary in the conduct of the business for which said Company is incorporated and to do any and all things necessary and usual in the division and use of water for irrigation, domestic or other purposes.

Third.

The capital stock of said Company shall be Five Hundred and Twenty-Five Thousand Dollars, divided into one hundred and five thousand shares, of the par value of Five Dollars each, which shares shall be issued to the several owners of rights to water from said canal system, in the proportion that the number of rights of each owner shall bear to the whole number of rights sold and upon the filing of this certificate with the Secretary of State of the State of Colorado, each water right owner shall be deemed a Stockholder to the extent hereinbefore set forth and entitled to exercise all the rights and privileges incident thereto.

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Fourth.

Said Company shall exist for the term of twenty (20) years from and after the date of filing the Articles of Incorporation with the Secretary of the State of Colorado. (Amended 12/31/1935)

Fifth.

The affairs of this Company shall be managed by a Board of Directors, consisting of five (5) members and Benjamin B. Brown, of Pueblo County; Daniel E. Cooper, of Prowers County; William C. Burke, of Bent County; Frank Kreybill, of Bent County; and John B. O'Neil, of Otero County, Colorado; are hereby designated to act as such Board of Directors for the first year of the existence of said Company, and until their successors are elected or appointed and qualified, and the members of said Board shall thereafter be selected in accordance with the orders, judgments and decrees of said District Court of Prowers County, heretofore entered and hereinbefore referred to, and in accordance with the Bylaws of said Company.

Sixth.

The principal office of said Company shall be kept in the Town of Las Animas, County of Bent, and State of Colorado.

Seventh.

The principal business of said Company shall be carried on in the Counties of Otero, Bent, Prowers and Kiowa of the State of Colorado.

Eighth.

The Directors shall have power to make such prudential Bylaws as they may deem proper for the management of said Company. (Amended 12/7/1998)

IN TESTIMONY HEREBY, we have hereunto set our hand and seals in quadruplicate this eighth day of July, A.D. 1897.

Benjamin B. Brown (SEAL.)

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Daniel E. Cooper (SEAL.)
William C. Burke (SEAL.)
Frank Kreybill (SEAL.)
John B. O'Neil (SEAL.)

"NOW, THEREFORE, BE IT RESOLVED that the Fourth Article of the Articles of Incorporation of The Fort Lyon Canal Company be amended by striking the whole of said paragraph, and submitting in lieu thereof the following, to-wit:

"FOURTH: Said Company shall have perpetual existence'

"BE IT FURTHER RESOLVED, that the Officers of the said Company be and they are hereby directed to file a certified copy of said amendment together with a copy of this resolution and the pertinent minutes of this meeting, with the Secretary of State of Colorado, and with the County Clerk and Recorder of the counties, to-wit: Otero, Bent, Prowers, Kiowa and Crowley, State of Colorado." Second: That the President and Secretary of the Corporation were at said Stockholders meeting duly authorized and directed to make and file such certificate as provided by law, setting forth such amendment or amendments, to the Certificate of Incorporation as adopted by the Stockholders of said Corporation.

IN WITNESS WHEREOF, we, the President and Secretary of the said Corporation have hereunto set our hands this 31st day of December, A.D. 1935, and have caused the seal of the said Corporation to be affixed hereunto.

M.M. Simpson
President

Attest:
Jessie Simmons
Secretary

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Certificate of Amendment to Certificate of Incorporation of the Fort Lyon Canal Company

KNOW ALL MEN BY THESE PRESENTS that we, M.M. Simpson, President, and Jessie Simmons, Secretary of The Fort Lyon Canal Company, a corporation duly organized and existing under and by virtue of the laws of the State of Colorado, do hereby make this certificate in accordance with the laws of the State of Colorado, and state as follows, to-wit: First: That at a general meeting of the Stockholders of The Fort Lyon Canal Company, to-wit: the annual meeting thereof, duly and regularly called as provided by the Bylaws of said Corporation, and in accordance with the statutes of the State of Colorado, and held at Las Animas, Colorado on the 9th day of December, A.D. 1935, the following resolution was presented and regularly adopted by an affirmative vote of not less than two-thirds of the outstanding capital stock of said Corporation, entitled to vote, in accordance with the statutes of the State of Colorado so made and provided, amending Article Fourth of the Articles of Incorporation, to read as follows, to-wit:

"WHEREAS, Article Fourth of the Articles of Incorporation of The Fort Lyon Canal Company as amended, now provides that the corporate life of the said Company shall exist only until the year 1937, and the said Corporation has recently incurred obligations which may not entirely be matured until December 1, 1948; and

"WHEREAS, the principal business of the said Corporation is the distribution of water, the use of which has been decreed perpetually to The Fort Lyon Canal Company.

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Election to Accept the Colorado Nonprofit Corporation Act

Pursuant to the provisions of the Colorado Nonprofit Corporation Act, the undersigned Corporation elects to adopt the provisions of the Colorado Nonprofit Corporation Act and does hereby state that:

1. The Name of the Corporation is The Fort Lyon Canal Company.
2. All required reports have been or will be filled, and all fees, taxes and penalties due to the State of Colorado accruing under any act to which the Corporation has been subject have been paid.
3. On the 13th day of September, 1972, the Directors of the Corporation, a quorum being present, voted to accept the Colorado Nonprofit Corporation Act (the acceptance is authorized, by at least 2/3 of the votes of the members, OR 2/3 of the votes of the Stockholders, OR by a majority vote of the Directors, which were present at such meeting).

4. The Corporation followed the requirements of the law under which it was organized.

5. The address of the registered office in Colorado is Las Animas, Colorado 81054 and the name of its registered agent at such address is Alferd Putnam (Bent County).

6. Following is the name and address of the Officers and Directors.

<u>Name</u>	<u>Title</u>	<u>Address</u>
Arthur F. Esgar	President	Wiley, Colo.
George Reyher	Vice-President	McClave, Colo.
Alvin Spady	Treasurer	Las Animas, Colo.
D.C. Moore	Director	La Junta, Colo.
Seth Coen	Director	Lamar, Colo.
William E. Deal	Secretary	Las Animas, Colo.

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7. The attached copy of incorporation is true and correct. Not Applicable.

8. Issued shares of stock are authorized.

NUMBER OF SHARES AUTHORIZED 105,000

NUMBER OF SHARES ISSUED AND OUTSTANDING
93,989.4166

9. All issued and outstanding shares of stock have been delivered to the Corporation to be canceled. Not applicable. Corporation organized for the acquisition and distribution of water to Stockholders.

10. The authority of the Corporation to issue shares of stock shall hereby be terminated. Not applicable. See 9.

Arthur F. Esgar
President

William E. Deal
Secretary

Bylaws Fort Lyon Canal Company

Article I Meetings

Section 1: Office

The Company shall maintain a principal office in Las Animas, Colorado where the annual meeting shall be held.

Section 2: Annual Meeting

The annual meeting of the Shareholders for the election of Directors and the transaction of other business as may properly come before it shall be held at the principal office of the Company or some other suitable building in Las Animas, Colorado on the second or third Monday as determined by the Directors in December of each year.

Section 3: Notice of Meeting

Notice of each meeting signed by the President or Secretary or both of them shall be sent by mail to all Stockholders of record to the last known post office address of such Stockholders as shown by the Company's records at least thirty (30) days prior to the day of said meeting and by publication in a newspaper of general circulation in the towns of La Junta, Las Animas, and Lamar, Colorado once a week for at least four weeks previous to the time designated for such meeting.

Section 4: Special Meetings

Special meetings of Shareholders may be called at any time

upon not less than 15 days notice by mail and publication as provided above by a majority of the Directors, and must be called by the President upon written request of 20% of the Stockholders of record and state the purpose or purposes for which it is called. No business other than that specified in the notice of meeting shall be transacted in such special meeting.

Section 5: Waiver of Notice of Meeting

Notice of Stockholders meeting, regular or special, may be waived by a signed waiver or by attendance at the meeting.

Section 6: Quorum

The presence, in person or by proxy, of the holders of the majority of the outstanding shares entitled to vote thereat shall be necessary to constitute a quorum for the transaction of business at all meetings of the Shareholders. If, however, such quorum shall not be present or represented at any meeting of the Stockholders, the Shareholders entitled to vote thereat, present in person or by proxy, shall have the power to adjourn the meeting to a future date in which the quorum shall be present or represented. At such adjourned meeting any business may be transacted which might have been transacted at the meeting as originally called.

Section 7: Voting

A Shareholder entitled to vote at a regular or special meeting may vote at such meeting in person or by proxy. Every Shareholder shall be entitled to one vote for each share standing in his name in the stock register of the Company.

Section 8: Proxies

Every proxy must be dated and signed by the Shareholder or

by his attorney-in-fact. No proxy shall be valid after the expiration of eleven months from the date of its execution. Every proxy shall be revocable at the pleasure of the Shareholder executing it upon written notice of such Shareholder to the Secretary of the Company.

Section 9: Definition of Shareholder

A Shareholder is the equity owner of the shares as reflected by the records of the stock register of the Company. A person or Corporation having a security interest in stock shall have no right to vote said stock at a Stockholders meeting of the Company except on proxy from the equity owner or mortgagor. Provided, however, that if an owner of stock appearing as record owner in the records of the Company is under contract to transfer such stock upon payment or other specific performance by a buyer, the record owner shall retain the right to vote said stock at Stockholders meeting of the Company, and such an equity owner, as distinguished from the Shareholder owning stock subject to a lien, shall have no right to vote said stock except by proxy executed by the record owner.

Section 10: Record Date

The last business day not less than ten (10) days preceding a Shareholders meeting shall be the record date for the determination of Shareholders entitled to vote at such meeting as reflected by the stock register of the Company or by stock assignments delivered to the office of the Secretary of the Company.

Article II Directors

Section 1: Management of Company

The property, business, and affairs of the Company shall be managed and controlled by its Board of Directors pursuant to these Bylaws and to operating Rules and Regulations adopted by said Board of Directors with respect to the operation of the physical facilities of the Company and its standard Rules and Regulations for the conduct of the business affairs of the Company; such Rules and Regulations shall be reduced to writing, printed and made available alike to the Directors, employees and Shareholders of the Company; provided, however, that, except for the purchase of water or water rights, or a disaster emergency, the authority of the Board of Directors to contract indebtedness in excess of anticipated available funds for the fiscal year is limited to \$50,000.00; any indebtedness in excess of this amount shall be submitted to and approved by the Shareholders.

Section 2: Board of Directors and Classification

(a) Director Qualifications: The Board of Directors shall consist of five members. No person shall be qualified to serve as a member of the Board of Directors unless said member is a Stockholder of record or the purchaser under a contract to purchase land to which Fort Lyon stock is appurtenant and holds a proxy from the record owner of such appurtenant stock. Such qualifications must exist with reference to land and water in the Director District the member is elected to represent and the member shall also be a resident of said Director District.

(b) Director Districts: One such Director shall be elected to

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represent Stockholders having water rights located for delivery in each of the following five districts:

<u>District:</u>	<u>Headgate Nos.:</u>
La Junta	No. 3 through and including No. 77 (Gholson Lane)
Las Animas	No. 78 through and including No. 138 (Bifurcation Gate)
McClave	No. 138+ through and including No. 181 (Arbor Lateral)
Wiley	No. 182 through and including No. 237 (Marburg Lateral)
Lamar	No. 238 through and including No. 259 (Wheatridge Lateral)

Section 3: Resignation

Any Director may resign his office at any time; such resignation shall be made in writing and may take effect immediately without acceptance.

Section 4: Removal of Directors

Any Director may be removed either with or without cause at any time, by vote of the Shareholders holding a majority of the shares then issued and outstanding and entitled to vote for the election of the Directors sought to be removed at any special

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meeting called for that purpose or at an annual meeting. A Director may be removed for cause by a vote of a majority of the entire Board.

Section 5: Bond

The Board of Directors shall require of the Secretary and the Treasurer to furnish bonds in the penal sum of not less than \$100,000.00 with corporate surety, the premium of which shall be paid by the Company.

Section 6: Money Management

The Board of Directors shall develop Rules and Regulations for the management of the Corporation's money which shall include:

(a) A system of purchase orders and the Company shall not be obligated for the payment of any purchases except those authorized.

(b) The issuance of numbered receipts for all monies received and the prompt deposit of such monies.

(c) Disbursement only upon the vouchers approved by the Board of Directors, vouchers to be numbered in such a manner as to permit accurate reconciliation of checks and vouchers.

(d) Monthly cash flow reports, reconciliations of receipts and deposits and reconciliations of vouchers approved and checks issued.

(e) Annual audits by a certified public accountant.

The Rules and Regulations shall be reduced to writing, printed and made available for the guidance and reference of employees and Shareholders.

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Section 7: Meetings

The Board of Directors shall meet for the appointment of Officers and for the transaction of any other business as soon as practicable after the adjournment of the annual meeting of the Shareholders. Thereafter, they shall hold regular meetings not less frequently than once a month and special meetings upon 10 hours telephoned notice called by the President or by any three Directors at any place within or without the State of Colorado as required by the business and the best interest of the Company.

Section 8: Notice of Meeting

No notice need be given of any regular meeting of the Board of Directors. Notice of special meetings may be given by telephone not less than 10 hours prior to the date for which such special meeting is called, specifying the time and place and the business to be transacted thereat. Any defects in notice may be cured by waiver or by attendance and participation; and at such meeting any business may be transacted which might have been transacted if the meeting had been duly called.

Section 9: Quorum

At any meeting of the Board of Directors, the presence of the majority of the Board shall be necessary to constitute a quorum for the transaction of business. However, should a quorum not be present the lesser number may adjourn the meeting to some future time, not more than seven days later.

Section 10: Voting

At all meetings of the Board of Directors, each Director shall have one vote irrespective of the number of shares that he may hold individually or in the area which he may represent.

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Section 11: Vacancies

Any vacancy occurring in the Board of Directors by death, resignation, or otherwise, shall be filled promptly by a majority vote of the remaining Directors at a regular or special meeting called for that purpose within thirty (30) days after the occurrence of the vacancy. The Director thus chosen shall hold office for a term ending at the next annual meeting of the Shareholders and until the election and qualification of his or her successor. If the original term of the preceding Director is unexpired, a successor Director shall be elected to hold office for the remainder of such original term so that the staggered terms of Directors shall be continued.

Section 12: Term of Office

The Directors of the Company shall be classified in respect of the time for which they shall each hold office, by dividing them into three classes, the first class consisting of one Director from the Lamar district, who shall be elected for a term to expire at the third annual meeting of the Stockholders after said member's election, the second class consisting of two Directors, one from the La Junta district and one from the McClave district, who shall be elected for a term to expire at the second annual meeting of the Stockholders after their election, and the third class consisting of two Directors, one from the Las Animas district and one from the Wiley district, who shall be elected for a term to expire at the first annual meeting of the Stockholders after their election.

At the annual meeting of the Stockholders to be held in December, 2000 in Las Animas, Colorado, five Directors who shall be eligible to serve the entire term of office shall be elected as above set forth. All of the Stockholders shall be entitled to

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vote for all of the Directors nominated for the office of Director. At each subsequent annual election, the successors to the Directors of the class whose term shall expire in that year shall be elected to hold office for a term to expire at the third annual meeting of the Stockholders after their election.

No Stockholder shall be qualified to serve continuously as Director for a period of longer than nine years and shall be disqualified to serve again for the ensuing three years. Prior years of continuous service beginning December 13, 1993 for any current Director shall be included in this term limitation.

Section 13: Indemnification

The Company shall indemnify a Director, Officer, employee, fiduciary or agent of the Company against liability or expenses of a proceeding to the extent legally permitted as set forth in the section governing indemnification, Article 129 of the Colorado Revised Nonprofit Corporation Act, as amended.

Article III Officers

Section 1: Officers and Qualifications

The Officers of the Corporation shall be a President, a Vice President, a Secretary, Treasurer and a Superintendent of Operations and such other Officers as the Board of Directors may determine. Any two offices except the office of President or Treasurer may be held by the same person. All Officers except Superintendent and Secretary shall be Shareholders of the Company as hereinabove defined.

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Section 2: Election

All Officers of the Corporation shall be elected annually by the Board of Directors at the meeting held immediately after the annual meeting of Shareholders.

Section 3: Term of Office

All Officers shall hold office until their successors have been duly elected and qualified or until a removal as hereinafter provided.

Section 4: Removal of Officers

Any Officer may be removed either with or without cause by the vote of the majority of the Board of Directors.

Section 5: Duty of Officers

The duties and powers of the Officers of the Corporation shall be as follows and as may hereafter be set by resolution of the Board of Directors:

President:

(a) He shall preside at all the meetings of the Board of Directors. He shall also preside at all meetings of the Shareholders.

(b) He shall present at each annual meeting of the Shareholders and the Directors a report of the conditions of the business of the Corporation.

(c) He shall cause to be called regular and special meetings of the Shareholders and Directors in accordance with the requirements of the statute and of these Bylaws.

(d) He shall co-sign and execute all contracts in the name of the Corporation, and all notes and security instruments in connection with borrowing money.

(e) He shall sign all certificates representing shares.

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(f) He shall cause all books, reports, statements and certificates to be properly kept and filed as required by the law and these Bylaws.

(g) He shall enforce these Bylaws and perform all the duties incident to his office which are required by law.

Vice President:

(a) During the absence or incapacity of the President, the Vice President shall perform the duties of President and, when so acting, he shall have all the powers and be subject to all the responsibilities of the office of President and shall perform such duties and functions as the Board may prescribe.

Secretary:

(a) He shall attend all meetings of the Board of Directors and of the Shareholders and keep minutes of such meetings in the appropriate books.

(b) He shall attend to the giving of notice of all meetings of the Shareholders of the Corporation.

(c) He shall be the custodian of the records and the seal of the Corporation and shall affix the seal to the certificate representing shares and other corporate papers when required.

(d) He shall keep at the principal office of the Corporation a book or record containing the names, alphabetically arranged, of all persons who are Shareholders of the Corporation, showing their places of residence, the number of shares held by them respectively, the dates they respectively became the owners of record thereof and the gates through which irrigating water to which they are entitled as a result of their stock ownership is delivered. He shall keep such book or record and the minutes of the proceeding of its Shareholders and Board of Directors open daily during the usual business hours, for inspection by any Shareholder, and such Shareholder's attorney-in-fact or attorney.

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(e) He shall sign all certificates representing shares and affix the corporate seal thereto.

(f) He shall attend to all correspondence and present to the Board of Directors at its meeting all official communications received by him.

(g) He shall perform all the duties incident to the office of the Secretary of the Corporation in accordance with the office rules and procedures adopted by the Board of Directors.

Treasurer:

(a) The Treasurer shall have the care and custody of and be responsible for all funds and securities of the Corporation, and shall deposit such funds and securities in the name of the Corporation in such banks or safe deposit box companies as the Board of Directors may designate.

(b) Prior to each regular meeting of the Stockholders, the Treasurer shall reconcile receipts, deposits, vouchers and checks and present his reconciliation together with a statement of the condition of the Company to each regular meeting of the Board of Directors.

(c) The Treasurer and the Secretary shall sign checks for payment of all vouchers approved by the Board of Directors, except that in the absence of either the Secretary or Treasurer, the President shall sign in the place and stead of the Secretary or Treasurer. Checks for payment of the payroll and payroll related items may be issued by a Director and the office manager; provided, there is no increase in wages or salaries.

(d) He shall make a full financial report at the annual meeting of the Shareholders.

(e) He shall further perform all the duties incident to the office of the Treasurer of the Company.

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Section 6: Maintenance of Inventory

The Board of Directors shall cause to be developed and maintained a property list or inventory of all the real and personal property of the Company together with an appraisal of its condition and current market value.

Section 7: Annual Report

The Officers of the Company under the supervision of the Board of Directors shall prepare an annual report detailing the Company's operation up to and including October 31 preceding the annual meeting of Shareholders; said report shall include a summary of operation and report on the state of maintenance of the Company's physical facilities, a Treasurer's report of the financial conditions of the Company and the report of the audit by the CPA and a proposed budget for the next succeeding year. Copies of the annual report and proposed budget shall be mailed to all Shareholders prior to the annual meeting of Shareholders, proposed long range plans together with proposed funding, a summary of the physical assets of the Company and its condition.

**Article IV
Shares**

Section 1: Certificates

The shares of the Corporation shall be represented by certificates prepared by the Board of Directors and signed by the President or the Vice President and by the Secretary or an assistant Secretary, or the Treasurer or an assistant Treasurer, and sealed with the seal of the Corporation or a facsimile. The certificates shall be numbered consecutively; they shall be bound in a book and shall be issued in consecutive order therefrom, and in the

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margin thereof shall be entered the name of the person to whom the shares represented by each such certificate are issued, the number of such shares and the date of issue. Each certificate shall state the registered holder's name, the number of shares represented thereby and the date of issue, deemed personal property and the shares of the Corporation shall be freely transferable upon assignment by the owner as reflected by the records of the Corporation and the Corporation itself.

Section 2: Limitations of Relocation of Water Rights Within System

Relocation of water rights up or down the canal may be made, subject to approval by the Board of Directors, which approval may include terms and conditions to prevent injury.

Section 3: Transfer of Shares

Subject to the limitations of these Bylaws, the shares of the Corporation shall be assigned and transferable only on the books and records of the Corporation by the registered owner, or by his duly authorized attorney, upon surrender of the certificate duly and properly endorsed with proper evidence of authority to transfer. Such evidence of assignment or transfer may be in a form other than by endorsement of the certificate, but must be in a form and on such conditions as required by the Board of Directors and the Company attorney. The Corporation shall issue a new certificate for the shares surrendered to the person or persons entitled thereto subject to the provision of Article VII for the enforcement of the payment of assessments.

Section 4: Returned Certificates

All certificates for shares changed or returned to the Company for transfer shall be marked by the Secretary "canceled", with the

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date of cancellation, and the transaction shall be immediately recorded in the certificate book opposite the memorandum of their issue. The returned certificate may be attached to the certificate book.

Section 5: Lost Certificates

(a) Replacement certificates may be issued for lost certificates upon satisfactory proof that the outstanding certificate is lost or destroyed and upon filing with the Board of Directors an indemnity bond in an amount to be fixed by the Directors, endorsed by a commercial surety company authorized to do business in the State of Colorado, or in the alternative:

(b) Any owner of capital stock of the Fort Lyon Canal Company entitling the owner to the use of water subject to the payment of assessments whose certificate has been lost, mislaid or destroyed may have a duplicate certificate issued without the filing of an indemnification bond if such Stockholder or his or its legal representative, successors or assigns files with the Company a demand for re-issue supported by an affidavit stating that diligent search has been made for the certificate and that it is lost, mislaid or destroyed; that possession of said stock has not been delivered to any other person in connection with its sale or transfer or pledge and requesting issuance of a duplicate certificate and if the applicant is not the owner as reflected by the records of the Corporation, establishes and documents his or its chain of title from the owner of record to the applicant to the satisfaction of the Board of the Corporation and thereafter pays all assessments levied by the Fort Lyon Canal Company upon such stock for a period of three years.

Upon the expiration of three years after filing such request and affidavit in compliance with the other provisions of the

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foregoing paragraph, if the Board is satisfied that the applicant is the legal owner of said stock, the Board of the Corporation shall cause to be published a notice, at the expense of the person making such application, which notice shall be published at least once a week for five successive weeks, the fifth publication being on the 28th day after the first publication in a newspaper of general circulation in Bent County, Colorado, where the principal office of the Corporation is located, setting forth such demand in full, that demand has been filed with the Corporation for issuance of a duplicate certificate; that said Corporation will issue, on or after a date therein stated, following the last publication of said notice by at least thirty days, a duplicate certificate to the registered owner, his or its personal representative, successors or assigns, unless a contrary claim is filed with said Corporation prior to the dates stated in the notice.

If no claim of interest of ownership other than that made by the applicant for duplicate certificate with the Secretary of the Corporation is made prior to the date stated in the notice, the Corporation will issue, on or after said date a duplicate certificate to said applicant. All rights under the original certificate shall immediately cease and terminate.

Section 6: Expense

The Company shall not incur any expense as the result of the transfer of shares of the capital stock of the Fort Lyon Canal Company.

Article V Water

Section 1: Basis for Water Pro-Ration and Delivery

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Each holder of capital stock shall be entitled to receive from the Company's canal water for domestic purposes and for irrigation of lands lying under the line of said canal owned or controlled by said Shareholder in the following amount, to-wit:

For each share of capital stock one-hundredth (1/100) of one cubic feet of water per second of time; that is to say, for each one hundred (100) shares of stock, one (1) cubic foot of water per second of time, provided, that no right to the use of water shall accrue to the holder of any stock in less than eighteen (18) share lots, unless the lands owned or controlled by the Shareholder which can be irrigated from the Company's canal shall have an area of less than ten (10) acres, in which case the Board of Directors may grant the right to appropriate water in the quantity and for the area they may see fit and proper. And provided further that no transfer of water from one tract of land to another tract of land shall be made or permitted except by and upon order and approval of the Board of Directors.

No change shall be made in standard of measurement of the amount of water per share unless at a regular annual meeting upon motion duly made to that effect and approved by a vote of two-thirds (2/3) of all capital stock of the Company.

The Board of Directors shall approve the transfer of water to a tract of land which has not been historically irrigated only if the owner agrees to continue to comply with all of the Articles of Incorporation, Bylaws, Rules and Regulations of the Company now in effect, or as may hereafter be amended, and the owner obtain a final decree from a water court approving such transfer and containing in such decree a provision incorporating this bylaw.

Each Stockholder desiring to change the type of use, place of use, time of use, point or means of diversion, storage or other change of said Stockholder's water shall make written request therefore to the Board of Directors. If in the opinion of the Board

of Directors, such change may be made without injury to the canal, the Company, and other Stockholders, such request shall be granted, with such terms and conditions as may be necessary to prevent injury. However, all other Stockholders who are entitled to delivery of water at either the place from or to which delivery is changed shall be notified in writing of such request and shall have the right to participate in any meetings scheduled by the Board of Directors to consider such request. It is the current policy of the Board of Directors not to approve any transfer into or out of a shared headgate without the written consent of the other Stockholders using the headgate. In the event that the Board of Directors, in making any such determination as provided herein, shall require legal and/or engineering services, such expense shall be paid by the Stockholder making such request and the Board of Directors may require that all or part of the estimated cost thereof be paid to the Company prior to engaging such services by the Board of Directors. In such event the Board of Directors may, without penalty or liability, defer any such determination until such condition has been met. The determination by the Board of Directors shall be final, and shall not be subject to revision unless it is proven in a court of law having jurisdiction over water matters that such determination was arbitrary or capricious.

Article VI Operations

Section 1:

The Board of Directors shall develop Rules and Regulations for the care, maintenance and operation of the Company's physical facilities which shall be reduced to writing and printed and made available for the reference of the employees and Shareholders.

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Section 2: Water Delivery

Available water shall be delivered to Stockholders through their respective headgates pro-rata for periods of two days for the equivalent of 150% head except that if water is available, the Company may as a matter of operating economy deliver 200% head and provided further that fractional heads of less than 75% shall not be counted. The Company shall repair and replace any existing headgates and measuring devices: except that in the event of any modification of either the headgate or measuring device at the Stockholder's request, then the Stockholder shall reimburse the Company for the cost of materials therefor. All headgates and measuring devices shall be installed by the Company, in close proximity to the point of delivery. The Company's responsibility ends with the departure of the water from the measuring device. Fractional heads of less than 100% shall be avoided as far as feasible.

Section 3: Repair of Construction of Distribution Facilities

Upon notice to the superintendent, Shareholders involved in repair or construction of distribution facilities at the time they are entitled to receive water on rotation shall be allowed to pass one run with the privilege of a "make-up" run at a later feasible date.

Section 4: Distribution of Water

The Company shall not be considered as guaranteeing to the holders of stock the use at all times of the full amount of water specified in their stock holdings, but each Stockholder shall be entitled to a proportionate share of the water flowing in the ditch, which share shall be the proportion such stock bears to the entire outstanding stock of the Company, and not exceeding the amount mentioned in the stock certificates. And, in order that the water

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may be equitably distributed among the Stockholders, the Directors and the persons entrusted by them with the management of the ditch, are empowered to rotate water among consumers, or to divide the ditch into districts for the distribution of water or to adopt such other methods as in their judgment may, from time to time, become necessary to secure to all Stockholders their proportionate share of water.

Section 5: Failure of Equitable Distribution of Water

And if, in the distribution of water, any Stockholder may, at any time, fail to receive his or her proportionate share, the Company shall not be liable to such Stockholder in damages, if such failure was caused by an error in judgment on the part of those charged with the distribution of water, or by reason of circumstances beyond the control of such persons, but shall only be liable in case such failure to distribute water equally was the result of some willful discrimination against such Stockholder on the part of the Directors or of those charged by the Directors with the distribution of water.

Section 6: Numbering of Headgates

Each headgate from which water is delivered to landowners receiving water from the main canal of the Fort Lyon Canal Company shall be numbered and the said numbers shall be recorded by the Superintendent or Secretary in the office of the said Company in Las Animas, Colorado.

Article VII Assessment on Stock

The Company shall have power to make an assessment on the

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capital stock thereof, to be levied pro-rata on the shares of stock, payable in money for the purpose of keeping the property of the Company in good repair and for the payment of any indebtedness or interest thereon. No such assessment shall be made unless the question of making the assessment shall be first submitted to the Stockholders of the Corporation at an annual meeting or at a special meeting called for that purpose and a majority of the stock issued and outstanding, represented either by the owner in person or by proxy, voting thereon shall vote in favor of making such assessments; and if said Stockholders shall fail to hold any such meeting or fail to make or authorize any assessment by the 1st of March in any year, the Directors shall have the power to make such assessment at any regular meeting or special meeting called therefor for that year. The assessment resolution shall fix the date of payment of regular or special assessments which shall become delinquent in thirty (30) days after the date fixed for payment and draw interest at a rate as fixed by the Board of Directors from time to time; but which interest shall never be more than 2% greater than the rate charged by First National Bank, Las Animas, Colorado.

No Stockholder who shall fail to pay any regular or special assessment when due and shall remain delinquent for a period of thirty (30) days after the date fixed for final payment shall be entitled to receive any water for domestic or irrigation purposes.

The Corporation shall have a perpetual lien upon such shares of stock and water rights represented by the same for any and all such assessments until the same are fully paid. After termination for delivery of water the Corporation may proceed further to collect delinquent assessments by one of the two following methods:

- (a) By suit for a money judgment for the amount of delinquent assessments plus interest from the due date;
- (b) By declaring a forfeiture of the stock and sale.

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No forfeiture shall be declared until demand of not less the thirty (30) days for the amount due be made upon the owner of record or his personal representative by certified mail addressed to said person at the address as shown by the Company's records. At the option of the Board of Directors service of Notice of Forfeiture may be made by personal service of the notice on the Shareholder.

If payment not be made on or before the day specified, the President or Secretary shall then give notice by advertisement in a weekly newspaper published in each of the counties of Otero, Bent and Prowers for not less than two weeks, and then the share of such delinquent Stockholder shall be sold for cash to the highest and best bidder, at the office of the Company at Las Animas. For the purpose aforesaid, the President or Secretary shall offer said stock for sale and sell the same for the highest cash price obtainable, not less the amount of said assessment with the cost of the sale. The proceeds of the sale, over and above the amount due on said shares including cost of sale, shall be paid to the delinquent Stockholder. The Stockholder shall have sixty (60) days from date of sale in which to redeem by payment of the sale price plus interest at the legal rate. If redemption not be made in that time the certificate or certificates of such delinquent Stockholder shall be canceled on the books of the Company, and a new certificate for said shares shall be issued to the purchaser.

Article VIII Amendments

Section 1: Manner of Amending

The Bylaws may be altered or amended by a majority vote of

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all capital stock of the Company at a special meeting of the Shareholders called for that purpose, or at the annual meeting of the Shareholders provided that notice of the proposed amendment shall be included in the notice for the annual meeting.

Rules and Regulations for Water Use in The Fort Lyon Canal Company

I. Authority

The following Rules and Regulations have been prepared by the Board of Directors from the Fort Lyon Canal Company Bylaws and Resolutions passed by the Stockholders at their annual meetings and govern the distribution of water throughout the Fort Lyon Canal Company system.

II. General Descriptions Service Area

The Fort Lyon Canal Company has decreed water rights on the Arkansas River over 100 years old. These water rights permit the Company to divert water from the Arkansas River into a main canal northwest of La Junta, which said canal runs eastward along the north side of the Arkansas River, past La Junta, Las Animas, McClave, Wiley, May Valley, for some 100 miles, terminating northeast of Lamar. The irrigation water is taken from the river at a headgate north of La Junta and measured through a measuring flume, and distributed by ditchriders, who are employees of the Company, throughout its entire length, beginning on the west at the **La Junta Division** down through Gate 21D; then to the **Horse Creek Division** down to Gate 77; then on through the **Las Animas Division** down through Gate 149; then on through the **Limestone**

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Division through Gate 202D; and then to the **Lamar Division** from Gate 203 through Gate 259, including the Wheatridge Lateral.

During the winter and during flood conditions, the Company stores water in various reservoirs. This water is used to supplement the natural river flow, during the irrigation season. These reservoirs are: Adobe Creek Reservoir, also known as Blue Lake; Horse Creek Reservoir, also known as Timberlake; Thurston Reservoir, Queen Reservoir and John Martin Reservoir.

III. Stockholder Shares

Water is diverted from the main canal to a Stockholder, or a water user, based upon the number of shares that the Stockholder owns.

Each holder of capital stock shall be entitled to receive from the Company's canal, water for the irrigation of lands lying under the said canal, owned or controlled by said Shareholder, in the following amount: for each share of capital stock, .01 of a cubic foot of water per second of time; that is to say, for each 100 shares of stock, 1 cubic foot of water per second of time, provided that no right to the use of water shall accrue to the holder of any stock in less than 18 share lots; unless the lands owned or controlled by the Shareholder which can be irrigated from the Company's canal shall have an area of less than 10 acres, in which case the Board of Directors may grant the right to appropriate in the quantity and for the area as they may see fit and proper.

The Board of Directors of the Company is charged with the administration of Bylaws relating to water distribution and the Superintendent and the ditchriders administratively carry out these instructions.

a. Stock Certificates, Diversions, and Records

The Stockholder's interest in water is evidenced by a stock certificate which has been approved by the Board of Directors of the Company, showing the number of shares owned by the Stockholder, which relate to diversions at a certain gate. Throughout the diversions of water through the system, each ditchrider maintains records of the date the water was turned on, the readings on the staff gauge in the Parshall Measuring Flume, and the date and time the water was turned off. These records are compiled bimonthly and are on file in the main Fort Lyon Canal Company office.

The amount of water allocated to a specific gate based upon a Stockholder's number of shares is normally a fixed figure, and cannot be transferred or re-allocated anywhere in the system without submitting a request to the Superintendent for a relocation certificate, and for approval by the Board of Directors, which will make such transfer final.

It is the policy of the Board not to approve any transfer into or out of a shared headgate, without the written consent of the other Stockholders using the headgate. It is the responsibility of the Stockholder requesting the transfer to obtain and present such written consent on a form provided by the Board, when requesting such a transfer.

If a Stockholder opens the Stockholder's gate without permission, or out of turn, the Stockholder shall be subject to having said gate locked down by the ditchrider and shall forfeit the next run of water, in accordance with the Company Bylaws.

b. Sale of Land and/or Water

If a Shareholder desires to transfer any of the Stockholder's shares, the Stockholder must deliver the Stockholder's certificate

to the Company's office together with an assignment of the shares. A charge is made for such transfer, and approval of the Board of Directors is required before the transfer becomes final.

IV. Water Management

The Fort Lyon Canal Company Superintendent supervises and allocates the water for the Company. The Superintendent will decide when the water will be allocated to a specific ditchrider, who physically distributes the water, and who will normally have the names and telephone numbers of each person getting water out of each gate, will make a reasonable effort to contact the water user advising the Stockholder that the Stockholder will get water on a certain day, at a certain time. A normal "run" is 150% of certificate amount, for a 48 hour period, after which the water is normally rotated down the ditch to the east to the next user. This process goes on throughout the entire length of the main canal from North La Junta to Lamar. Normally, after the Lamar Division diversions are in progress, we start again on the west edge of the La Junta Division and repeat the process. Normally, Run #1, for any fiscal year, begins on March 15 of the year, or immediately thereafter, and runs are then numbered sequentially until the end of the fiscal year, which would be November 15. A run of water requires approximately 10,000 acre feet of water, depending on weather conditions and the condition of the canal.

Since the advent of the Winter Storage Program, the irrigation season has run from March 15 to November 15 with exact dates set by Board action. During the winter, water is stored in reservoirs for future use.

a. Accounting for Water

Normally, a Stockholder is considered to have received the

Stockholder's "run" of water, when water has been available to the Stockholder at the Stockholder's headgate for 48 hours. However, when the Stockholder is unable to obtain the Stockholder's full allotment due to conditions beyond the Stockholder's control, such as reduced flow in the canal, the ditchrider may extend the Stockholder's running time to allow the Stockholder's full allotment to be released. No running time shall be charged, when delivery rate is less than 75% of allotment. The extra time is computed for reduced flow as follows:

150%	no extra at 48 hours
125%	10 minutes per hour (8 hours over on 48 hours)
100%	20 minutes per hour (16 hours over on 48 hours)
75%	30 minutes per hour (48 hours over on 48 hours)

b. Broken or Partial Runs

Fluctuating water levels or other operational problems may cause broken or partial runs. Normally, an extra two hours shall be added to running time, when an interruption of delivery occurs.

c. No Guarantee

The Company shall not be considered as guaranteeing to the holder of stock, the use at all times of the full amount of water specified in their stock holdings, but each Stockholder shall be entitled to a proportionate share of the water flowing in the ditch, which share shall be the proportion such stock bears to the entire outstanding stock of the Company and not exceeding the amount mentioned in the stock certificate. Also in order that water may be equitably distributed among Stockholders, the Directors and the staff are empowered to rotate water among the Stockholders based on their best judgment from time to time, as it may become necessary to secure all Stockholders their share of water.

d. Assessments

Notice of delinquent water assessments will be mailed by the Company to all Stockholders of record who are delinquent on January 1 of each year requiring payments in full within 30 days. On failure to pay, the matter will be referred to the Company's attorney for further action as provided by the Bylaws. Said notice shall be mailed with the first installment assessment notice for the following year.

V. Exceptions and General Information

a. Loss of Entitlement

If during the course of a regular run of water, the Stockholder fails to take the Stockholder's water at the scheduled time, normally the Stockholder will lose the right to that water.

b. Deferment of Regular Diversion

If, in advance of notification of a regular run of water, the Stockholder advises the ditchrider and Superintendent that the Stockholder would like to defer or delay that particular run due to extenuating circumstances, such as: building of a lined canal; installation of a pipeline; or some similar type of situation, this on the decision of the Superintendent may be permitted. Normally, if the Stockholder passes a run for any reason, the Stockholder may request that the Stockholder receive water on the next following run to partly compensate for the previous lost water, in accordance with the Bylaws. Make-up water is limited to one run, subject to approval by the Superintendent.

c. Major Construction

In cases where major construction is involved, it is requested

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that the Stockholder, through the Superintendent, make arrangements to meet with the Board of Directors at one of the Board's regular meetings, to formally request that the Stockholder will obtain the Stockholder's full run, on a deferred basis.

d. Assessments

The Company derives its operational revenue from assessments which are normally set each year at the meeting of the Stockholders at so much per share. Usually these assessments are due in three installments. If the last installment is not paid by a specific time, the Stockholder's gate will be locked, and the Stockholder will not be entitled to receive any water until the assessment, plus interest is paid.

e. Measuring Devices

Each Stockholder will have Parshall Measuring Flume for measuring the water out of the Stockholder's headgate. The water user is responsible for the ditch downstream from the measuring flume. That part of the ditch from the gate outlet to the measuring flume will be maintained by the Company at the Company's expense.

f. Company Replacement Responsibility

The Company, as a part of regular maintenance, shall replace all steel paddles, bolts, and other material for proper operation of the headgate. The Company is also responsible for keeping the rating flume in good repair.

Company responsibility for water ends when the water passes the rating flume. It is the Stockholder's responsibility for disposing of waste water so as to avoid damage to the Company facilities, county roads, and adjacent farms.

g. New Gate Installation

In case of new gate installation, such as a transfer or relocation

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of shares of stock, the Stockholder must specifically notify the Superintendent, in writing, what the Stockholder proposes to do. Upon receipt of the request, the Superintendent will contact the Stockholder, obtaining a relocation certificate, if required, and present a Company cost estimate for the new construction to the Stockholder. After review of the cost estimate, the Stockholder may thereby sign the "Responsibility for Payment Form" which authorizes the Superintendent to complete the work and installation, after which the Stockholder will be billed by the Company for the cost thereof. These costs are due and payable immediately and if delinquent, will be charged interest at prevailing rates, and if not paid by the last date of assessments due, these costs, and interest, will be added to the assessments.

h. Pump Installations

Stockholders will be permitted to install and use pumps for laterals below weir boxes.

i. Waste of Water

Any waste of water by any Stockholder shall be sufficient cause for closing said Stockholder's headgates. Before any action is taken to close the headgate, notice of such intended action must be given by the Superintendent to the person in charge of using the water. If the Superintendent determines that the water user is wasting water, the Superintendent shall so inform said person, and close the user's headgates.

j. Locking of Headgates

Normally, headgates shall be locked by the ditchrider, when the gate is not scheduled to receive water. Gates will be unlocked just prior to the scheduled turn-on time. Stockholders are free to

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open their gates at the time specified by the ditchrider. At the end of a scheduled run, the ditchrider shall close and lock all gates.

k. Unchargeable Water

Under certain conditions, such as floods, dike failures, or similar emergencies, Stockholders may be asked to open their headgates to protect the system against damage. Water released on this basis normally shall be "free", that is not charged against the Stockholder's normal allotment or "run". Obviously, there is no guarantee that such events will be distributed evenly over the system.

l. Excess Water

Under rare circumstances, such as an unseasonably wet spring, the Company's direct flow and storage priorities may yield more water than is being demanded, so that all Stockholders desiring water are receiving their full allotment. Under such circumstances, the Superintendent may, using the Superintendent's best judgment, permit releases to headgates above and beyond their normal allotment, provided beneficial use will be made of the water.

m. Variations in Rotation Sequence

As mentioned in **Section IV. Water Management**, a "run" normally progresses eastward, sequentially along the ditch. This procedure is desirable in that it is fair, easily understandable, and helps Stockholders anticipate and plan their irrigation work with greater confidence. However, a variety of circumstances may make departure from this procedure necessary, prudent, or otherwise desirable operationally from time to time.

For example, restricted carrying capacity at certain points in the system may prevent delivery to all points east of the restriction

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simultaneously, regardless of available water. Delivery out of sequence may be unavoidable under these circumstances.

Similarly, under high flow conditions, large sections of the canal may be running simultaneously. Prudence dictates that some gates be left off, at intervals along the canal, to permit action to be taken should unexpected surges or restrictions occur.

Stockholders have objected strongly, from time to time, against inconveniences, night turn-ons, runs of irregular length, and broken runs. Obviously, to take such concerns into consideration, management must have more freedom of choice than a rigid rotation discipline permits. For all of these reasons, the Superintendent is expected to exercise mature judgment and adhere to the highest standards of fairness in the distribution of water. In return, the Superintendent should receive understanding and fair treatment from the Stockholders.

n. Complaints

Stockholder complaints should be first addressed at the ditchrider's level. Problems which cannot be resolved at that level should be brought to the attention of the Superintendent. If satisfactory resolution is not possible at that level, final authority in matters of water delivery rests with the Board of Directors. Individual Directors, acting alone, have no authority to intervene in water delivery matters.

o. Penalty for Failure to Submit Required Annual Report Forms for the U. S. Bureau of Reclamation

The headgate of a Stockholder who fails to submit all required annual report forms required by the U. S. Bureau of Reclamation by February 15, of the ensuing year shall be shut down, time being of the essence. The lock down will be lifted upon payment of the

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sum of \$100.00 per day from February 15, to the date of payment.

p. Installing Flow Meters

Requests by Stockholders to install a flow meter will be considered, subject to the following:

1. Such requests will be considered on a case by case basis by the Board.
2. The flow meter will be installed by the vendor, manufacturer or licensed engineer.
3. The flow meter will be checked by a licensed engineer at the Stockholder's expense upon the request by the Company, but no less than once each year, and a written report of this inspection will be sent to the Company.
4. The Stockholder will keep the flow meter in good repair and condition at all times at the Stockholder's sole expense.
5. The Company shall have no liability or expense for the installation, construction, repair, replacement or maintenance of the flow meter and all other labor and materials required for such diversion.

q. Conflict

In the event of any conflict of these Rules and Regulations with the Bylaws and Articles of Incorporation of the Company, the Bylaws and Articles shall control.

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Appendix B

List of Shareholders

TotalShares	Customer	Address	Address1	City, State Zip
10	Anderson, Martha D.		P. O. 85	Las Animas, CO 81054
288	Archer, Esma Ann Sue		P.O. Box 129	Wiley, CO 81092
400	Armstrong, George S. Trust #1	c/o Bank of America	8101 SW 34th	Amarillo, TX 79121-1069
100	Ary, John L. & John P.		P.O. Box 566	Canon City, CO 81212
10	Baker, Tyrone E. & Lois E.		11254 Highway 50	Las Animas, CO 81054
3.33	Bay, Lynn, Schneider	c/o Schneider	33736 Highway 194	La Junta, CO 81050
3.33	Bay, Lynn, Schneider	c/o Lynn	P.O. Box 144	Cheraw, CO 81030
3.34	Bay, Lynn, Schneider	c/o Bay	34510 Road KK	La Junta, CO 81050
20	Bent Prowers Cemetery	c/o Cherie Tempel	39093 County Road 35	Wiley, CO 81092
30	Bent's Fort Water Company		510 Main Street	La Junta, CO 81050
10	Bergman, Chester & Marty		35988 Road 33	Mc Clave, CO 81057
408	Big Bend Farms, LLLP		34643 Road TT	Wiley, CO 81092
144	Big Bend Farms, LLLP		34643 Road TT	Wiley, CO 81092
620	Bison Capital, LTD.		P.O. Box 400	Wiley, CO 81092
243	Bogner, Eunice J.		9795 Highway 194	Las Animas, CO 81054
136	Bolinger, Jan C. & Bolinger, Wesley R.	c/o Wesley Bolinger	40845 County Road 7.5	Lamar, CO 81052
34	Book, David & Georgette		33482 Highway 194	La Junta, CO 81050
807	Bourne Limited Partnership	c/o Stan Cline	33111 Highway 196	Mc Clave, CO 81057
28	Bourne, Bourne & Bourne		11950 Highway 50	Las Animas, CO 81054
512	Brase, David Wesley		9421 Road SS.5	Lamar, CO 81052
100	Brase, Leroy C.		40709 Road 8	Lamar, CO 81052
144	Brase, Virginia E., Trust		9420 Road SS.5	Lamar, CO 81052
11.4	Brumit, Milan Jr.		619 North Oak	La Junta, CO 81050
0.375	Burkley, C. R.	c/o Rhonda Karney	322 W. 22nd Street	La Junta, CO 81050
100	Burton, Gene		1500 South 12th Street	Lamar, CO 81052-4008
50	Cardenas, Cecillo & Mercedes		305 Trail Road	La Junta, CO 81050
106	Carlin, Palmer W.		2209 4th Street	Boulder, CO 80302
0.375	Cartwright, C. R.	c/o Rhonda Karney	322 W. 22nd Street	La Junta, CO 81050
86	Casebolt, Walter Lynn & Gustine, Sharon Renae		1 Gamba Drive	Glenwood Springs, CO 8160
84	Chambers, Douglas L. & Madeline E.		655 M Street	Penrose, CO 81240
72	Chatham, Oran G.	c/o Nancy Morlan	4207 Ruger Drive	Pueblo, CO 81008-1914
5	Claycomb, Lou D. & Marilyn R.		311 Fruit Avenue	La Junta, CO 81050
372	Cline Farms, LLC	Stan Cline	33111 Highway 196	Wiley, CO 81092
420	Cline, Stanley & Lora		33111 Highway 196	Wiley, CO 81092
438	Cline, Stanley & Lora		33111 Highway 196	Mc Clave, CO 81057

TotalShares	Customer	Address	Address1	City, State Zip
228	Clover Meadow Farms, LLC		303 Willow Creek Drive	Lamar, CO 81052
58	Clover Meadow Farms, LLC		303 Willow Creek Drive	Lamar, CO 81052
162	Coen, Brady		P.O. Box 181	Wiley, CO 81092
144.8	Coen, Monty & Janalyn		P.O. Box 344	Lamar, CO 81052
200	Coen, Monty L. & Janalyn D.		P.O. Box 344	Lamar, CO 81052
280	Colvin, James L. & Gibbs, Ruby J.	c/o Colvin Farms	39165 Road 3	Wiley, CO 81092
143	Colvin, Jimmie & Greg		39165 Road 3	Wiley, CO 81092
173	Coulter, Alice K. Revocable Trust		P. O. Box 1021	Hayden, CO 81639-1021
118	Cranson, Walter N. & Margaret Ann		32160 Highway 194	La Junta, CO 81050
2	Crowder, Alta H.	c/o Marian Barnes	3221 San Juan Avenue	La Junta, CO 81050
117	Crowder, James & Debra		35273 Highway 194	La Junta, CO 81050
10	Davis Family Grantor Trust		11470 Highway 50	Las Animas, CO 81054
72	Davis, Rex & Alberta		5035 Highway 196	Lamar, CO 81052
110	Davis, Rex & Alberta		5035 Highway 196	Lamar, CO 81052
26	Davis, Roger D. & Dale C./Davis, Wilbur & Elaine		511 Jackson Lane	La Junta, CO 81050
26	Davis, Roger D. & Dale C./Davis, Wilbur & Elaine	c/o Wilbur & Elaine Davis	13675 Demmler Road	Colorado Springs, CO 80928
144	Davis, Roy E.		33566 Road 14	Las Animas, CO 81054
72	Davis, Stace D. & Kendra D.		31699 Road 11	Las Animas, CO 81054
150	Davisson, Delmar L. & Iris A.		1425 Symphony Heights	Monument, CO 80132
340	Dean L & C Company, Inc.		33535 Road 13	Las Animas, CO 81054
450	Dean, Alan James		33535 Road 13	Las Animas, CO 81054
72	Dewitt, Ellnora, Trustee of Trust dated 6-5-96		8480 Road VV	Lamar, CO 81052
122	Dieterle, Mary Anna; Johnson, Patricia Ann; Dieterle, Paula Jean	Mary Ann, 1/2-Patricia, 1/4-Pa	2111 Road RR	Wiley, CO 81092
91.6	DiRezza Limited Family Partnership		4815 Highway 194	Las Animas, CO 81054
648	DiRezza Limited Family Partnership		4815 Highway 194	Las Animas, CO 81054
841.44	DiRezza Limited Family Partnership		4815 Highway 194	Las Animas, CO 81054
41	DiRezza, Daniel & Katrena		31299 Road 5.5	Las Animas, CO 81054
166	DiRezza, Daniel G. & Katrena L.		31299 Road 5.5	Las Animas, CO 81054
4	Donegan, Lee N. & Pauline P.		38707 Road 111.1	Model, CO 81059
260	Downing, Charles & Helen L.		38958 Road 9	Lamar, CO 81052
3	Downing, Helen Louise		38958 Road 9	Lamar, CO 81052
97	Downing, Johnnie L., Trustee		13126 W 78th Circle	Arvada, CO 8005-2956
517.8	Downing, Michael E. & Berta L.		38866 Road 7	Lamar, CO 81052
2	Downing, Virginia	c/o Linda Hollis	32825 Highway 194	La Junta, CO 81050
288	Dunham, Charles O.		6100 Road PP	Lamar, CO 81052

TotalShares	Customer	Address	Address1	City, State Zip
443	Dunham, Charles O. & Stephanie K.		6100 Road PP	Lamar, CO 81052
72	Dunham, Charlie D. & Lucy		6400 Road MM	Lamar, CO 81052
262	Dunham, Richard & Margaret, Trustees		4701 Island Drive	Midland, TX 79707
200	Earl Living Trust, Bonnie Earl, Trustee		711 South 10th Street	Lamar, CO 81052
126	Eck, Wesley & Connie		2544 Highway 194	La Junta, CO 81050
154	Eck, Wesley D. & Connie Ann		2544 Highway 194	La Junta, CO 81050
100	Eck, Wesley Darrin & Julie J.		35417 Highway 194	La Junta, CO 81050
3	Eckert, Douglas W. & Kimberly D.		35772 Road 10	Lamar, CO 81052
108	Ede, Connie Rae		1310 Grove	Las Animas, CO 81054
216	Elk Mountain Cattle Company		36483 Highway 194	La Junta, CO 81050
514	Ellenberger Limited Partnership, LLLP		36106 Road 11.5	Lamar, CO 81052
144	Ellenberger, Eric James		11393 Road NN	Lamar, CO 81052
159	Ellenberger, Helen		6175 Janice Way	Arvada, CO 80004-5161
108	England, Robert W.		38225 Road 6	Lamar, CO 81052
144	Esgar, David & Julia / Mauch, Dale & Kathy	c/o Dale & Kathy Mauch	36292 Road 7	Lamar, CO 81052
35.5	Eveatt, Eugene & Samuelson, Ireatha	c/o Harry Eveatt	150 Canal Road	La Junta, CO 81050
72	Falk, Jerome & Phyllis	c/o Michael Falk	2001 Meyer Avenue	Colorado Springs, CO 80909
216	FBO Wurst, Inc., a Colorado corporation	Mauch Farms	36292 County Road 7	Lamar, CO 81052
435	Findley, David D.		31936 Road 9	Las Animas, CO 81054
118.84	Findley, David D. & Dana M.		31936 Road 9	Las Animas, CO 81054
3	Fort Lyon Canal - Reynolds/Morse			
100	Fritch, Roy & Marva		601 Dixon	La Junta, CO 81050
144	Gallegos, Mary Ann		30507 Road 15	Las Animas, CO 81054
233.5	Gardner, David E.		10325 Highway 194	Las Animas, CO 81054
446	Gass Farm Properties LLC		604 S. 9th Street	Lamar, CO 81052
216	Gentz, Jack		40246 Road 8	Lamar, CO 81052
1019	Gilbert Family Limited		3730 Desert Fox Drive	Sparks, NV 89436-8710
144	Gilbert, Ray H. & Diana S.		800 South 10th	Lamar, CO 81052
308	Gilbert, Thomas G. & Mary Ann		6210 Road SS	Lamar, CO 81052
180	Gilbert, Thomas, , Akers, Karen, Gilbert, Alan		6210 Road SS	Lamar, CO 81052
86	Gill, Lynden E. & Mary Ann		34705 Road 24	Mc Clave, CO 81057
50	Gist, Harry R.		7231 Road TT	Lamar, CO 81052
328	Gist, Harry, Estate, Patricia (Gist) Judd Trustee		7231 Road TT	Lamar, CO 81052
72	Godfrey, Garrett		31849 Road 9	Las Animas, CO 81054
7	Grooms, Robert E. & Terry L.		403 Dixon Street	La Junta, CO 81050

TotalShares	Customer	Address	Address1	City, State Zip
470	Guder, Joe & Shirley		34418 Road 34	Mc Clave, CO 81057
144	Haggard, John D. & Beatrice E.		8255 Road NN	Lamar, CO 81052
394	Haggard, Ronnie E. & Debra L.		7515 Highway 196	Lamar, CO 81052
216	Haggard, The Family Trust		7320 Highway 196	Lamar, CO 81052
140	Hall, Eddie & Barbara		6020 Road SS	Lamar, CO 81052
100	Hall, Eddie & Barbara		6020 Road RR	Lamar, CO 81052
9.6	Hall, Jerre L. & Marida C.		309 Dixon Street	La Junta, CO 81050
7.4	Hamilton, Robert D. & Joyce E.		410 Canal Road	La Junta, CO 81050
108	Hammons, Don P. dba Hammons Lumber & Hardware, Inc		6550 Highway 196	Lamar, CO 81052
23	Harrington, Charles W.		21 Carpenter Place	Pueblo, CO 81001
108	Harrison, Clydeen		841 Fern Street	Springfield, CO 81073
122	Harvey, Gail & Reed, John	c/o Gail Harvey	514 Willow Valley	Lamar, CO 81052
122	Harvey, Gail & Reed, John	c/o John Reed	34643 Road NN	Wiley, CO 81092
50	Harvey, Michael & Gail E.		514 Willow Valley	Lamar, CO 81052
153	Hasui, James N. & Sylvia N.		143 S. Ensenada Drive	Pueblo West, CO 81007
472	Heckman, Burt Walter White		28274 Road LL	Mc Clave, CO 81057
75.5	Heckman, Fred & Caryol & White-Heckman, Burt & Laura	c/o Burt White-Heckman	28274 Road LL	Mc Clave, CO 81057
75.5	Heckman, Fred & Caryol & White-Heckman, Burt & Laura	c/o Fredrick Heckman	28640 Highway 50	Mc Clave, CO 81050
157.5	Heckman, Laura Walter White & Heckman, Fredrick & Caryol		28274 Road LL	Mc Clave, CO 81057
52.5	Heckman, Laura Walter White & Heckman, Fredrick & Caryol	c/o Fredrick Heckman	28640 Highway 50	Mc Clave, CO 81057
144	Heinson, Ida B. Trust		5 Lake Road	Lamar, CO 81052
90	Heinson, Wade & Ida Trust		5 Lake Road	Lamar, CO 81052
144	Heinson, Wade F. Trust		5 Lake Road	Lamar, CO 81052
158	Hemphill, Philip & Doris		34526 Road 24	Mc Clave, CO 81057
5	Hemphill, Randy		10998 Highway 50	Las Animas, CO 81054
192.8	Hemphill, Ryan A. & Teale D.		1104 S. School Street	Hasty, CO 81044
80	Hensley, Frank & Judith		30933 Highway 194	La Junta, CO 81050
136	Homm, Justin & Shelby and Wertz, Steven R. & Barbara A.	c/o Steve Wertz	34244 Road LL	Mc Clave, CO 81057
51.5	Honey, Donald & Janet		34753 Highway 194	La Junta, CO 81050
56	Honey, Patty L.		814 West Canal Road	La Junta, CO 81050
468	Howe, Christine Marلمان		1731 Road GG	La Junta, CO 81050
36	Howe, Clayton D. & Kolleen R.		2190 Hwy. 194	La Junta, CO 81050
320.2	Howe, Douglas L. & Cynthia L.		2020 Fort Lyon Canal Roa	La Junta, CO 81050
568	HP107 - Magro, LLC - Wollert, R.		34501 E. Quincy Avenue	Watkins, CO 80137
138	HP11 - High Plains A & M, LLC-Bogner-A		34501 E. Quincy Avenue	Watkins, CO 80137

TotalShares	Customer	Address	Address1	City, State Zip
144	HP114 - Magro, LLC - Wollert, M.		34501 E. Quincy Avenue	Watkins, CO 80137
144	HP12 - High Plains A & M, LLC - Bogner, L		34501 E. Quincy Avenue	Watkins, CO 80137
188	HP13 - High Plains A & M, LLC - Bogner - A&L		34501 E. Quincy Avenue	Watkins, CO 80137
660	HP27 - 136th & Colorado, LLC - Ham		34501 E. Quincy Avenue	Watkins, CO 80137
120	HP32 - High Plains A & M, LLC - Jones		34501 E. Quincy Avenue	Watkins, CO 80137
144	HP37 - Magro, LLC - Quindt		34501 E. Quincy Avenue	Watkins, CO 80137
860	HP39 - Magro, LLC - Reyher Trust		34501 E. Quincy Avenue	Watkins, CO 80137
464.4	HP49 - High Plains A & M, LLC - Spady, D.		34501 E. Quincy Avenue	Watkins, CO 80137
372	HP56 - 136th & Colorado, LLC - DiRezza		34501 E. Quincy Avenue	Watkins, CO 80137
121	HP58 - Magro, LLC - Reyher, R & M		34501 E. Quincy Avenue	Watkins, CO 80137
100	HP69 - Magro, LLC - Elmore		34501 E. Quincy Avenue	Watkins, CO 80137
60	HP70 - Magro, LLC - Stephens		34501 E. Quincy Avenue	Watkins, CO 80137
254	Hudson & Persyn, LTD		39665 Road 35	Wiley, CO 81092
265	Huerfano River Management		6265 East Huerfano Roa	Avondale, CO 81022
64	Hunker, Margaret Trust		7418 Spring Village Drive	Springfield, VA 22150
1	Hyatt, Anita J.		31545 County Road 12	Las Animas, CO 81054
200	Hyatt, Herbert & Mary Alice	c/o Dale Hyatt	31545 Road 12	Las Animas, CO 81054
252	ITI 04 - ITI Properties, LLC	c/o Seemorgh Investments, Inc	P. O. Box 61339	Denver, CO 80206
112	ITI 10 - ITI Properties, LLC	c/o Seemorgh Investments, Inc	P. O. Box 61339	Denver, CO 80206
156.6	ITI 28 - ITI Properties, LLC	c/o Seemorgh Investments, Inc	P.O. Box 61339	Denver, CO 80206
557	ITI 43 - ITI Properties, LLC	c/o Seemorgh Investments, Inc	P. O. Box 61339	Denver, CO 80206
342	ITI 48 - ITI Properties, LLC	c/o Seemorgh Investments, Inc	P. O. Box 61339	Denver, CO 80206
72	ITI 50 - ITI Properties, LLC	c/o Seemorgh Investments, Inc	P. O. Box 61339	Denver, CO 80206
173	ITI 51 - ITI Properties, LLC	c/o Seemorgh Investments, Inc	P. O. Box 61339	Denver, CO 80206
445.53	ITI Properties LLC	c/o Seemorgh Investments, Inc	P. O. Box 61339	Denver, CO 80206
312	Japhet, Lyle T. Trust		527 West Bogey Drive	Pueblo West, CO 81007
492	JBS Five Rivers Cattle Feeding, LLC		2258 US Highway 50	Lamar, CO 81052
25	Johnson, Starla R. & Bradley M.		1386 Road GG	La Junta, CO 81050
24	Jones, Ruby L.		8694 Highway 194	Las Animas, CO 81054
43	Jones, Gary & Janette		34666 E. Highway 194	La Junta, CO 81050
144	Jones, Marie Rosalie		P.O. Box 272	Wiley, CO 81092
306	J-S Farms, Inc., A Colorado Corporation		P. O. Box 1216	Lamar, CO 81052
36	jsb Adobe Arms Farms, Inc.		2391 South Kirkwood Co	Denver, CO 80222
388	Karney Land & Cattle, Inc.		34808 Road 17	Las Animas, CO 81054
465	Kasza, Eugene Emery Revocable Trust	c/o Russell Kasza	21968 Meinershagen Rd.	Higginsville, MO 64037-928

TotalShares	Customer	Address	Address1	City, State Zip
303	Kasza, Joe & Kaye		27850 Road LL	Mc Clave, CO 81057
272.9	Kasza, The Maxine Trust		38092 County Road 6	Lamar, CO 81052
652	Keding, Dorothy		1875 Columbia Drive	Yuba City, CA 95991
540	King, Cecil & Patricia		1007 Daniel Avenue	La Junta, CO 81050
64	Klett, Richard C. Jr., Klett, Steven B. & Fong, Carolyn Sue	c/o Steven B. Klett	P. O. Box 313	Micanopy, FL 32667-0327
145.34	Lawrence, JB & Company		3008 Big Bear Circle	Sedalia, CO 80135
144	Lefferdink Limited		P.O. Box 110	Lamar, CO 81052
4	Leikam-Waits, Michael		615 Plum	La Junta, CO 81050
138.8	Leonard, Barbara		2419 Elite Terrace	Colorado Springs, CO 80920
3	London, Sandra & Marvin		4123 Goodnight Avenue	Pueblo, CO 81005-1123
144	Lubbers, Bradley & Lubbers, Douglas	c/o Brad Lubbers	P.O. Box 1196	Dalhart, TX 79022-1196
155	Lubbers, Clayton R. & Nicole E.		6339 Highway 196	Lamar, CO 81052
252	Lubbers, Clayton Ross & Nicole E.		6339 Highway 196	Lamar, CO 81052
280	Lubbers, Curtis R. II & Jennifer D.		36487 Road 6	Lamar, CO 81052
257	Lubbers, Curtis R. II & Jennifer D.		36487 Road 6	Lamar, CO 81052
276	Lubbers, Douglas & Katharine		34527 Road 7	Lamar, CO 81052
324	Lubbers, Douglas & Katharine		34527 Road 7	Lamar, CO 81052
1211	Lubbers, Douglas & Katharine		34527 Road 7	Lamar, CO 81052
144	Lubbers, Douglas W. & Bradley W.		34527 Road 7	Lamar, CO 81052
468	Lubbers, Marjorie		5985 Highway 196	Lamar, CO 81052
288	Lubbers, The Wayne Lubbers & Lorene P. Lubbers Family Trust Dat		34347 Road 7	Lamar, CO 81052
2	Lyons, Thomas L.		215 Old Trail Road	La Junta, CO 81050
35	Mackey, Kevin F. & Leah H.		34029 Highway 194	La Junta, CO 81050
317	MacPherson, Wallace A.; Wilner, Jean; MacPherson, Margie S; Bar	c/o Jean Willner	2926 Motor Avenue	Los Angeles, CA 90064
90	Malone, Charles & Donna		P. O. Box 82	Wiley, CO 81092
252	Manifor Ranch, Inc.	c/o Eileen Claffy	13931 E. Marina Dr. Apt	Aurora, CO 80014-5517
144	Marlman, John E.		1989 Road GG	La Junta, CO 81050
108	Marrin, John, Sr.		1202 Highway 196	Wiley, CO 81092
230	Mauch Farms, Inc.	c/o Dale Mauch	36292 Road 7	Lamar, CO 81052
155	Mauch Farms, Inc., A Colorado Corporation	c/o Dale Mauch	36292 Road 7	Lamar, CO 81052
342	Mauch, Leroy E. & Kathy D.		8725 Road NN	Lamar, CO 81052
423.2	Mauch, Mitchell R.		33965 Road 5	Lamar, CO 81052
172	Mauch, Mitchell R. & Nikki D.		33965 Road 5	Lamar, CO 81052
144	Mauch, Raymond & Toni		6224 Road LL	Lamar, CO 81052
50	Mauch, Raymond & Toni		6224 Road LL	Lamar, CO 81052

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530	Mauch, Raymond & Toni		6224 Road LL	Lamar, CO 81052
216	Mauch, Richard 1/2 interest & Gilbert, Dianna 1/2 interest		606 Willow Valley Drive	Lamar, CO 81052
122	Mauch, Roy E. Trust	c/o Leroy Mauch	8725 Road NN	Lamar, CO 81052
144	Mauch, Vernon L. Trust No. 1		947 Willow Valley Way	Lamar, CO 81052
901	May Farms		6620 Road SS	Lamar, CO 81052
310	May, T. Irene		6620 Road SS	Lamar, CO 81052
144	Mayhew, Ben Michael		34724 County Road LL	Wiley, CO 81092
18	Mc Afee, Douglas G. & Adele C.		P.O. Box 304	Las Animas, CO 81054
36	Mc Bee, D & D Farm Products		40755 County Road 9	Lamar, CO 81052
36	Mc Bee, Donald Martin & Alta Jo		40755 County Road 9	Lamar, CO 81052
440	Mc Bee, Donald Martin & Donald Marvin		40755 County Road 9	Lamar, CO 81052
36	Mc Bee, Donald Marvin		40755 County Road 9	Lamar, CO 81052
408	Mc Bee, Donald Marvin		40755 County Road 9	Lamar, CO 81052
211	Mc Bee, Kenneth, Alice & Shannon		8435 Road UU	Lamar, CO 81052
508	Mc Clave Ranch, Inc.		30891 Road LL	Mc Clave, CO 81057
116	Mc Kinnis Family Partnership, LTD		67 Brookhaven Drive	Littleton, CO 80123
72	Mc Wilson, Glenda		P.O. Box 491	Lamar, CO 81052
72	Mc Wilson, Glenda & Da Vault, Glenn		P.O. Box 491	Lamar, CO 81052
86	Miller Land & Cattle		25590 Road 28	La Junta, CO 81050
10	Miller, Donald E. & Janie L.		11410 Highway 50	Las Animas, CO 81054
150	Miller, Howard & Ethel		25590 County Road 28	La Junta, CO 81050
108	Miller, James Erle & Gail L.		16530 Road KK	Las Animas, CO 81054
122.66	Miller, John David & Paula Raye		35910 Highway 194	La Junta, CO 81050
353.5	Miller, Kent & Peg / Wyckoff, Mike & Sherri		11980 Highway 50	Las Animas, CO 81054
110	Miller, Kent & Peg 1/2, Rasmussen, Keith 1/2		11980 Highway 50	Las Animas, CO 81054
126	Miller, Kent A. & Peggy L.		11980 Highway 50	Las Animas, CO 81054
60	Mitchell, Charles Allen		34408 Highway 194	La Junta, CO 81050
108	Mitchell, Lawrence L.		14334 Road LL	Las Animas, CO 81054
144	Mitchell, Lawrence L. & Lawrence (Larry) Jr.		14334 Road LL	Las Animas, CO 81054
23	Morgan, John & Alice		34054 Highway 194	La Junta, CO 81050
424.8	Netherton, Dennis F. & Corliss J.		305 Vigil Avenue	Las Animas, CO 81054
	Nicklos, Michael		P.O. Box 581	La Junta, CO 81050
324	Nicklos, Michael L. & Mary Sue; Nicklos, David & Mary; Nicklos, Ro	Otteman, Becky & Carl & Schw	817 Belleview	La Junta, CO 81050
144	Nielsen, Judy Ann Trust		90 East 1550 S	Perry, UT 84302
50	Noll, Gregory R. & Carol A.		34955 Highway 194	La Junta, CO 81050

TotalShares	Customer	Address	Address1	City, State Zip
260	Nunnery, David H. 40% & Van Hook, Dawn K.	c/o Dawn Van Hook	314 Willow Valley	Lamar, CO 81052
144	O'Neill, Joe H. & Elizabeth S.	c/o R Triple C	36487 Road 6	Lamar, CO 81052
0.75	Osburn, Issac C.	c/o Rhonda Karney	322 W. 22 Street	La Junta, CO 81050
172	Paulsen, Linda J.		P.O. Box 280	Wiley, CO 81092
72	Pawlish, Andrew & Autumn		32835 Road 15	Las Animas, CO 81054
140	Pawlish, Andrew & Thomas		8006 Country Farms Ct.	Windsor, CO 80528
1	PC - Pure Cycle Corporation		34501 E. Quincy Avenue	Watkins, CO 80137
144	PC01 - Pure Cycle Corporation - Allard		34501 E. Quincy Avenue	Watkins, CO 80137
204	PC02 - Pure Cycle Corporation - Allard		34501 E. Quincy Avenue,	Watkins, CO 80137
147	PC05 - Pure Cycle Corporation, LLC - Beaman		34501 E. Quincy Avenue	Watkins, CO 80137
143	PC06 - Pure Cycle Corporation - Bell		34501 E. Quincy Avenue	Watkins, CO 80137
200	PC07 - Pure Cycle Corporation - Blackburn		34501 E. Quincy Avenue	Watkins, CO 80137
200	PC08 - Pure Cycle Corporation - Blackburn		34501 E. Quincy Avenue	Watkins, CO 80137
140	PC09 - Pure Cycle Corporation - Blackburn		34501 E. Quincy Avenue	Watkins, CO 80137
152	PC110 - Pure Cycle Corporation, LLC - K. Wollert		34501 E. Quincy Avenue	Watkins, CO 80137
482	PC116 - Pure Cycle Corporation, LLC - Pallaoro		34501 E. Quincy Avenue	Watkins, CO 80137
62	PC117 - Pure Cycle Corporation, LLC - Bar C Cross		34501 E. Quincy Avenue	Watkins, CO 80137
230	PC118 - Pure Cycle Corporation, LLC - Strong		34501 E. Quincy Avenue	Watkins, CO 80137
72	PC127 - Pure Cycle Corporation		34501 E. Quincy Avenue	Watkins, CO 80137
50	PC133A - Pure Cycle Corporation, LLC - Van Wyhe		34501 E. Quincy Avenue	Watkins, CO 80137
215	PC133B - Pure Cycle Corporation, LLC - Van Wyhe		34501 E. Quincy Avenue	Watkins, CO 80137
118	PC14 - Pure Cycle Corporation, LLC - Cass, D.		34501 E. Quincy Avenue	Watkins, CO 80137
108	PC140 - Pure Cycle Corporation, LLC - Fritz		34501 E. Quincy Avenue	Watkins, CO 80137
224	PC141 - Pure Cycle Corporation, LLC - Tucker		34501 E. Quincy Avenue	Watkins, CO 80137
219	PC15 - Pure Cycle Corporation, LLC - Cass, E.		34501 E. Quincy Avenue	Watkins, CO 80137
314.2	PC18 - Pure Cycle Corporation - Darnell		34501 E. Quincy Avenue	Watkins, CO 80137
288	PC19 - Pure Cycle Corporation - Denton		34501 E. Quincy Avenue	Watkins, CO 80137
1163.52	PC20 - Pure Cycle Corporation - Dodson		34501 E. Quincy Avenue	Watkins, CO 80137
196	PC21 - Pure Cycle Corporation, LLC - Edwards		34501 E. Quincy Avenue	Watkins, CO 80137
331.2	PC22 - Pure Cycle Corporation - Elder		34501 E. Quincy Avenue	Watkins, CO 80137
245	PC23 - Pure Cycle Corporaton, LLC - Elder		34501 E. Quincy Avenue	Watkins, CO 80137
210	PC24 -Pure Cycle Corporation		34501 E. Quincy Avenue	Watkins, CO 80137
322	PC25 - Pure Cycle Corporation - Fowler		34501 E. Quincy Avenue	Watkins, CO 80137
232	PC30 - Pure Cycle Corporation - Hudson & Persyn		34501 E. Quincy Avenue	Watkins, CO 80137
108	PC33 - Pure Cycle Corporation- Miller Family Trust		34501 E. Quincy Avenue	Watkins, CO 80137

TotalShares	Customer	Address	Address1	City, State Zip
414	PC34 - Pure Cycle Corporation		34501 E. Quincy Avenue	Watkins, CO 80137
376	PC35 - Pure Cycle Corporation		34501 E. Quincy Avenue	Watkins, CO 80137
212	PC36 - Pure Cycle Corporation - Pointon		34501 E. Quincy Avenue	Watkins, CO 80137
1296	PC38 - Pure Cycle Corporation		34501 E. Quincy Avenue	Watkins, CO 80137
80	PC41 - Pure Cycle Corporation, LLC - Robertson		34501 E. Quincy Avenue	Watkins, CO 80137
166	PC42 - Pure Cycle Corporation - Root		34501 E. Quincy Avenue	Watkins, CO 80137
372.08	PC44 - Pure Cycle Corporation		34501 E. Quincy Avenue	Watkins, CO 80137
216	PC45 - Pure Cycle Corporation - Wertz, I		34501 E. Quincy Avenue	Watkins, CO 80137
1233.04	PC46 - Pure Cycle Corporation, LLC - Shiba		34501 E. Quincy Avenue	Watkins, CO 80137
238	PC52 - Pure Cycle Corporation - Wagner		34501 E. Quincy Avenue	Watkins, CO 80137
224	PC54 - Pure Cycle Corporation - Wertz, I.		34501 E. Quincy Avenue	Watkins, CO 80137
83	PC57 - Pure Cycle Corporation - Likes		34501 E. Quincy Avenue	Watkins, CO 80137
133	PC60 - Pure Cycle Corporation, LLC - Dorsch Rental		34501 E. Quincy Avenue	Watkins, CO 80137
207	PC62 - Pure Cycle Corporation, LLC - Rowan		34501 E. Quincy Avenue	Watkins, CO 80137
623	PC63 - Pure Cycle Corporation		34501 E. Quincy Ave. Bld	Watkins, CO 80137
224	PC64 - Pure Cycle Corporation, LLC - Montgomery		34501 E. Quincy Avenue	Watkins, CO 80137
144	PC65 - Pure Cycle Corporation, LLC - Piatt		34501 E. Quincy Avenue	Watkins, CO 80137
60	PC66 - Pure Cycle Corporation, LLC - Telck		34501 E. Quincy Avenue	Watkins, CO 80137
144	PC67 - Pure Cycle Corporation		34501 E. Quincy Ave. Bld	Watkins, CO 80137
144	PC85 - Pure Cycle Corporatoin, LLC - Rudolph		34501 E. Quincy Avenue	Watkins, CO 80137
83	PCY03 - PCY Holdings, LLC		34501 E. Quincy Avenue	Watkins, CO 80137
200	PCY16 - PCY Holdings, LLC		34501 E. Quincy Avenue	Watkins, CO 80137
112	PCY26 - PCY Holdings, LLC		34501 E. Quincy Avenue	Watkins, CO 80137
144	PCY31 -PCY Holdings, LLC		34501 E. Quincy Avenue	Watkins, CO 80137
67	PCY40 - PCY Holdings, LLC		34501 E. Quincy Avenue	Watkins, CO 80137
144	PCY47 - PCY Holdings, LLC		34501 E. Quincy Avenue	Watkins, CO 80137
170	PCY53 - PCY Holdings, LLC, A Colorado Limited Liability Company		34501 E. Quincy Avenue	Watkins, CO 80137
144	PCY59 - PCY Holdings, LLC		34501 E. Quincy Avenue	Watkins, CO 80137
739.46	Pearson, Larry J. & Dixie J., TIC		9750 Road NN	Lamar, CO 81052
144	Perdue, Heath R. & Robyn Y.		7315 Road UU	Lamar, CO 81052
6	Petersen, Gary M. & Tammen, Betty L.		610 Oak	La Junta, CO 81052
380	Pointon, Chuck T. & Anita R.		32500 Road 6.3	Las Animas, CO 81054
15	Rader, Bruce & Geraldine		31600 Road BB.75	La Junta, CO 81050
9.9	Rafferty, Ronald & Greta		103 Gilpin	La Junta, CO 81050
144	Ratzlaff, Harvey Eugene; Ratzlaff, Larry P; Ratzlaff, Melvin R; & Mu	c/o Harvey Ratzlaff	816 Jean Ray Ct	Winnsboro, TX 75494

TotalShares	Customer	Address	Address1	City, State Zip
160	Reed, Dean G. & Chana G.		37251 Road 9	Lamar, CO 81052
259	Reed, Dean G. & Chana G.		37251 Road 9	Lamar, CO 81052
72	Reed, Harold & Nikki, 1/2 interest & BLSH, LLC, 1/2 interest		2761 Road LL	Wiley, CO 81092
48	Reed, Harold; Robert Jr & The Reed Family Trust	c/o Harold Reed	2761 Road LL	Wiley, CO 81092
48	Reed, Harold; Robert Jr & The Reed Family Trust	c/o Richard Reed	8624 Road RR	Lamar, CO 81052
48	Reed, Harold; Robert Jr and The Reed Family Trust	c/o Robert Reed Jr.	34343 Road PP	Wiley, CO 81092
252	Reed, John & Sebrina		34643 Road NN	Wiley, CO 81092
316	Reed, Robert D. Jr & Darla Rae		34343 Road PP	Wiley, CO 81092
454	Reed, The Family Trust		8624 Road RR	Lamar, CO 81052
697	Reifschneider, Robin L. & Valerie		10501 Road RR	Lamar, CO 81052
164	Retchloff, Daniel C. & Sarma G.		P.O. Box 344	Wister, OK 74966
618	Reyher Enterprises, Inc.	c/o Robert McKenzie	P.O. Box 15	Mc Clave, CO 81057
718	Reyher Enterprises, Inc.	c/o Robert McKenzie	P.O. Box 15	Mc Clave, CO 81057
561	Reyher Enterprises, Inc.	c/o Robert McKenzie	P.O. Box 15	Mc Clave, CO 81057
797	Reyher Enterprises, Inc.	c/o Robert McKenzie	P.O. Box 15	Mc Clave, CO 81057
172	Reyher, Mary Kathryn		230 S. Highway 196	Mc Clave, CO 81057
242	Reyher, Robert G.		230 S. Highway 196	Mc Clave, CO 81057
239	Reyher, Robert G. & Mary Kathryn		230 S. Highway 196	Mc Clave, CO 81057
368	Reyher, Roger L.		35504 Road 30	Mc Clave, CO 81057
122	Ricken Land & Cattle Company		32519 Highway 194	La Junta, CO 81050
331	Ricken Land & Cattle Company		32519 Highway 194	La Junta, CO 81050
288	Ricken, Bernard & Kay		31113 Road 9	Las Animas, CO 81054
10	Ricken, Rodney & Barbara		32519 Highway 194	La Junta, CO 81050
72	Rider, Jerry D.		10510 Road NN	Lamar, CO 81052
260	Robb, Thomas F. & Virgie L.		34125 Road 20	Mc Clave, CO 81057
56	Robb, Thomas F., Virgie L. & Cary J.		34125 Road 20	Mc Clave, CO 81057
234	Roesch, Johnny D. & Trudy C.		26395 Road MM	Mc Clave, CO 81057
130	Roesch, Johnny D. & Trudy C.		26395 Road MM	Mc Clave, CO 81057
260	Rogers, Frank A., Lola L. & Dale A & Orr, Dawn C.	c/o Dawn Orr	14900 County Road GG.5	Las Animas, CO 81054
318	Root, Garold E.		P.O. Box 53	Mc Clave, CO 81057
216	Rydberg Jr, Jack N. & Julie A.		33884 Road 35	Wiley, CO 81092
6	Sanchez, Joyce E. & Jose B.		1414 Santa Fe #3H	Pueblo, CO 81003
328	Schleining, Lorraine		32724 Highway 196	Wiley, CO 81092
280	Schmeiser, Kaitlyn M., Lindsey J., Alec R., Anderson, Pauline A., Ba		33034 Road 16	Las Animas, CO 81050
144	Schmeiser, Kaitlyn M., Lindsey J., Alec R., Bauguess, Norma & Stan,		33034 Road 16	Las Animas, CO 81054

TotalShares	Customer	Address	Address1	City, State Zip
30	Schneider, Raphael P.		34510 Road KK	La Junta, CO 81050
20	Schneider, William G.		33736 Highway 194	La Junta, CO 81050
388	Schwanz, Otto E. & Cora C.		35590 Highway 50	Lamar, CO 81052
200	Schwindt, Robert H.		8367 Highway 194	Las Animas, CO 81054
700	Scientific Transplants, Inc.	c/o Melba Vincent	P.O. Box 1530	Golden, CO 80402-1530
144	Seamon, Ernest R. & Joseph V.	c/o Joseph Seamon	424 Maple Avenue	Las Animas, CO 81054
50	Semmens, Gideon & Mary Lou		37347 Highway 287	Wiley, CO 81092
154	Shane, Gary W. & Sharon L.		33301 Highway 194	La Junta, CO 81050
374.2	Shane, Gary W. & Sharon L.		33301 Highway 194	La Junta, CO 81050
272	Sharp, Leo L. & Mildred E.		33979 Road 34	Mc Clave, CO 81057
630	Shinn, Wendy S.; Shinn, Theodore C.; Shinn, Carl M. Jr.		P.O. Box 390	Lamar, CO 81052
15	Shutts, Richard M. & Donna L.		31053 Highway 194	La Junta, CO 81050
598	Siefkas, Kerry L. & Debra		33535 Road 16	Las Animas, CO 81054
491.4	Siefkas, Kim A. & Donna L.		32470 Road 10	Las Animas, CO 81054
306	Smartt, Dean D. & Norma L.		34615 Road 26	Mc Clave, CO 81057
264	Smartt, Dean D. & Norma L. & Douglas		34615 Road 26	Mc Clave, CO 81057
92	Smartt, Douglas L.		34615 Road 26	Mc Clave, CO 81057
704	Smartt, John, Ranch Inc.		27311 Road MM	Mc Clave, CO 81057
72	Smartt, Norma L		34615 Road 26	Mc Clave, CO 81057
144	Smartt, Tommy Lee		P.O. Box 49	Mc Clave, CO 81057
208	Smith, Glen L., Trust dated 9-9-02 (1/2 int) & Diane K., Trust dated		37495 Road 5	Lamar, CO 81052
144	Smith, Kirk & Leslie		34456 Road 34	Mc Clave, CO 81057
100	Smith, Kirk A. & Leslie Kyle		34456 Road 34	Mc Clave, CO 81057
252	Sneller, Jay & Marilyn		40235 Road 36	Wiley, CO 81092
163	Souders, James L. & Judy K.		40830 Road 35	Wiley, CO 81092
243	Souders, James L. & Judy K.		40830 Road 35	Wiley, CO 81092
19	Souders, James Lee & Judy K.		40830 Road 35	Wiley, CO 81092
81	Spady Brothers		14265 Highway 50	Las Animas, CO 81054
288	Spady Brothers		14265 Highway 50	Las Animas, CO 81054
1194	Spady Brothers		14265 Highway 50	Las Animas, CO 81054
5	Spady, Kimberly		11102 Highway 50	Las Animas, CO 81054
144	Springer, The Gale C. and Lenora E. Joint Revocable	Trust Dated Oct. 16, 2014	9705 Road PP	Lamar, CO 81052
288	Springer, The Gale C. and Lenora E. Joint Revocable	Trust Dated Oct. 16, 2014	9705 Road PP	Lamar, CO 81052
6.93	Storey, Gregory A. & Deborah M.		603 North Oak	La Junta, CO 81050
144	Surbrugg, Richard C.		1451 East 138th Avenue	Brighton, CO 80602

TotalShares	Customer	Address	Address1	City, State Zip
30	SW - SW Lamar, LLC		812 Gravier St., Ste. 360	New Orleans, LA 70112
54	Tee Bar Farms, LLC	c/o Monty Teeter	901 N. Mc Call Street	Ulysses, KS 67880-1643
360	Tempel, Ethel M. 1/2 int & Robert R. Tempel Family Trust 1/2 int	Trust dated August 7, 1996	2022 Road RR	Wiley, CO 81092
166	Tempel, Gale R.		42134 Road 35	Wiley, CO 81092
126	Tempel, Gale R.		42134 Road 35	Wiley, CO 81092
72	Tempel, Robert A. & Kristi J.		2101 Grandview Drive Ea	Garden City, KS 67846
72	Tenney, Brenda Trust, 60% & Estrada, Rudolfo & Carol, 40%	c/o Rudy Estrada	P.O. Box 88	Las Animas, CO 81054
4.8	Terry, Ralph L.		624 Plum Avenue	La Junta, CO 81050
638	Three Bizee B's, Inc		35759 County Road 5	Lamar, CO 81052
144	Tice, Henry E. & Randa L.		6264 Highway 196	Lamar, CO 81052
9.17	Tilton, Daniel A.		140 Canal Road	La Junta, CO 81050
68	Tobias, Linnea J. & Madjar, David D.		34122 Highway 194	La Junta, CO 81050
288	Tri-State Generation & Transmission Association, Inc.		P.O. Box 33695	Denver, CO 80233
216	Tri-State Generation & Transmission Association, Inc.		P.O. Box 33695	Denver, CO 80233
111	Turner Cattle Co.		33591 Road 5.5	Las Animas, CO 81054
414	Turner, Sam		33103 Road 1	La Junta, CO 81050
47	U.S.A. Bent's Old Fort	Attn: Fran Panabaker	35110 Highway 194	La Junta, CO 81050
107	USA, Corp of Engineers	c/o Lawrence Clayton	21390 Road JJ	Mc Clave, CO 81057
69.9	Verhoeff Farms, Inc.		27354 Road JJ	Mc Clave, CO 81057
69.9	Verhoeff, Alan C.		25975 Highway 50	Mc Clave, CO 81057
144	Verhoeff, Lance O.		27354 Road JJ	McClave, CO 81057
352	Verhoeff, Lance O. & Norma		27354 Road JJ	Mc Clave, CO 81057
379.8	Vincent, Keith, Michael, Brian & Holly	c/o Melba Vincent	P.O. Box 1530	Golden, CO 80402
144	Weber, Benjamin L.		3049 County Road PP	Wiley, CO 81092
288	Weber, Michael & Karen		4278 Highway 196	Lamar, CO 81052
144	Weimer, Joan		P.O. Box 57	Wiley, CO 81092
141	Weimer, Joshua P.		37751 Road 3	Wiley, CO 81092
144	Weimer, Joshua P. & Jana		37751 Road 3	Wiley, CO 81092
346	Weimer, Joshua P. & Jana		37751 Road 3	Wiley, CO 81092
144	Weimer, Terry & Jo Ann		2871 Highway 196	Wiley, CO 81092
185.8	Wertz, Ivon & Edna		24051 Road LL	Mc Clave, CO 81057
72	Wertz, Ivon R.		24051 Road LL	Mc Clave, CO 81057
390	Wertz, Scott R.		34200 Road 34	Mc Clave, CO 81057
366	Wertz, Stanley R. & Connie L.		32419 Road 35	Lamar, CO 81052
396	Wertz, Steven & Barbara		34244 Road LL	Mc Clave, CO 81057

TotalShares	Customer	Address	Address1	City, State Zip
480	Wertz, Steven & Stanley	c/o Steve Wertz	34244 Road LL	Mc Clave, CO 81057
100	Wertz, Steven R. & Barbara A.		34244 Road LL	Mc Clave, CO 81057
144	Wertz, W. Brent		25093 Road LL	Mc Clave, CO 81057
400	White, H. Hunter		34501 E. Quincy Avenue	Watkins, CO 80137
105	Wiley Gardens, LLLP	c/o John Lefferdink	P. O. Box 110	Lamar, CO 81052
39	Wiley, Town of		P.O. Box 519	Wiley, CO 81092
7	Wiley, Town of		P.O. Box 519	Wiley, CO 81092
20	Wiley, Town of	c/o Cherie Tempel	39039 County Road 35	Wiley, CO 81092
324	Woller, Don & Gloria		8600 Road TT	Lamar, CO 81052
413	Woller, Don & Gloria		8600 Road TT	Lamar, CO 81052
190	Wollert, Hency Farm South, Inc.	c/o Dale & Ruth Hency	4527 Ridgeglen Road	Colorado Springs, CO 80918
216	Wollert, NW Farms, Inc.	c/o Larry & Juanita Reinhardt	17125 NE 37th Street	Bellevue, WA 98008
144	Wollert, Richard C. & Rhonda		40645 Road 35	Wiley, CO 81092
200	Wollert, Ronald & Donna		41969 Road 34	Wiley, CO 81092
72	Wollert, Ronald & Donna S.		41969 Road 34	Wiley, CO 81092
120	Wollert, Ronald Gene		41969 Road 34	Wiley, CO 81092
152	Wollert, Ruben & Doris J.	c/o Kelley Wollert	39225 Road 34	Wiley, CO 81092-9637
375	Wooten, William R.		P.O. Box 1258	Lamar, CO 81052
4	Workman, Eldon Leroy & Susan A.		617 North Main	La Junta, CO 81050
432	Wyckoff, Michael Lynn		32351 Highway 109	La Junta, CO 81050
353.5	Wyckoff, Mike & Sherri/Miller, Kent & Peg		32351 Highway 109	La Junta, CO 81050
50	Yergert, Clarence C. & Orpha J.		34825 Highway 194	La Junta, CO 81050
94	Young, Otto D. & Velma J.		35517 Highway 194	La Junta, CO 81050

Appendix C

Financial Reports for 2012, 2013, and 2014

The Fort Lyon Canal Company
Balance Sheet
Year Ended October 31, 2012, 2013 2014

	<u>31-Oct-2012</u>	<u>31-Oct-2013</u>	<u>31-Oct-2014</u>
ASSETS			
Current Assets			
Cash	\$ 1,059,348	\$ 1,234,379	\$ 694,543
Investments	\$ 1,242,941	\$ 1,336,263	\$ 1,093,947
Receivables			
Assessment	\$ 82,244	\$ 78,142	\$ 87,172
Amity		\$ 46,335	\$ 53,366
Royalties	\$ 784	\$ 816	\$ 1,090
Other	\$ 3,295	\$ 1,827	\$ 25,492
Inventory - supplies	\$ 85,113	\$ 80,092	\$ 71,890
Prepaid expenses	\$ 42,156	\$ 47,304	\$ 52,767
Total Current Assets	<u>\$ 2,515,881</u>	<u>\$ 2,825,158</u>	<u>\$ 2,080,267</u>
Other Assets			
Investments			
Revegetation fund restricted	\$ 150,208	\$ 150,960	\$ 151,489
Financial & performance warranty	\$ 24,700	\$ 24,700	\$ 24,700
Total Other Assets	<u>\$ 174,908</u>	<u>\$ 175,660</u>	<u>\$ 176,189</u>
Property And Equipment			
Equipment & buildings	\$ 3,387,256	\$ 3,386,481	\$ 4,157,014
Less: Accumulated depreciation	\$(2,155,963)	\$(2,267,445)	\$(2,204,406)
Canal Right-of-Way	\$ 1,358,319	\$ 1,358,319	\$ 1,358,319
Land	\$ 46,531	\$ 46,531	\$ 46,531
Net Property And Equipment	<u>\$ 2,636,143</u>	<u>\$ 2,523,886</u>	<u>\$ 3,357,458</u>
TOTAL ASSETS	<u><u>\$ 5,326,932</u></u>	<u><u>\$ 5,524,704</u></u>	<u><u>\$ 5,613,914</u></u>
LIABILITIES AND STOCKHOLDERS' EQUITY			
Current Liabilities			
Accounts payable	\$ 40,118	\$ 26,171	\$ 41,222
Accrued expenses			
Payroll	\$ 4,421	\$ 2,058	\$ 5,616
Vacation & sick leave	\$ 25,661	\$ 20,320	\$ 26,729
Other	\$ 5,467	\$ 5,461	\$ 5,591
Deferred revenue	\$ 18,755	\$ 31,374	\$ 18,901
Deposit	\$ 400	\$ 400	\$ 400
Total Current Liabilities	<u>\$ 94,822</u>	<u>\$ 85,784</u>	<u>\$ 98,459</u>
Other & Long Term Liabilities			
Deferred revenue	\$ 177,173	\$ 163,093	\$ 149,013
Revegetation fund	\$ 150,208	\$ 150,960	\$ 151,489
Land reclamation		\$ 24,700	\$ 24,700
Total Other & Long Term Liabilities	<u>\$ 327,381</u>	<u>\$ 338,753</u>	<u>\$ 325,202</u>
TOTAL LIABILITIES	<u>\$ 422,203</u>	<u>\$ 424,537</u>	<u>\$ 423,661</u>
Stockholders' Equity			
Capital stock, \$5 par value; 105,00 shares authorized; 93,989.41 shares issued and outstanding	\$ 469,947	\$ 469,947	\$ 469,947
Retained earnings	\$ 4,434,782	\$ 4,630,220	\$ 4,720,306
TOTAL STOCKHOLDERS' EQUITY	<u>\$ 4,904,729</u>	<u>\$ 5,100,167</u>	<u>\$ 5,190,253</u>
TOTAL LIABILITIES & STOCKHOLDERS' EQUITY	<u><u>\$ 5,326,932</u></u>	<u><u>\$ 5,524,704</u></u>	<u><u>\$ 5,613,914</u></u>

The Fort Lyon Canal Company
Statement of Cash Flows
Year ended October 31, 2012, 2013 2014

	<u>31-Oct-2012</u>	<u>31-Oct-2013</u>	<u>31-Oct-2014</u>
CASH FLOWS FROM OPERATING ACTIVITIES			
Revenue over expenses	\$ 296,448	\$ 195,438	\$ 90,086
Adjustments to reconcile net loss to net cash provided by operating activities;			
Depreciation	\$ 167,973	\$ 155,105	\$ 150,946
Loss in sale of asset	\$ 158		
Change in assets and liabilities:			
Receivables	\$ 54,752	\$ (40,797)	\$ (40,000)
Inventory - supplies	\$ (3,524)	\$ 5,021	\$ 8,202
Prepays	\$ (7,603)	\$ (5,148)	\$ (5,463)
Accounts payable	\$ (983)	\$ (13,947)	\$ 15,051
Accrued expenses	\$ 15,328	\$ (7,710)	\$ 10,096
Deferred revenue	\$ (9,619)	\$ (1,461)	\$ (26,553)
revegetation fund	\$ 150,208		
Other		\$ 24,700	
Net Cash Flows From Operating Activities	<u>\$ 663,138</u>	<u>\$ 311,201</u>	<u>\$ 202,365</u>
CASH FLOWS FROM INVESTING ACTIVITIES			
Property & equipment acquisitions	\$ (53,602)	\$ (42,848)	\$ (984,518)
Purchase of investments	\$ (257,429)	\$ (107,812)	\$ (20,262)
Proceeds from investment redemptions	\$ 413,820	\$ 13,738	\$ 262,579
Revegetation fund interest		\$ 752	
Net Cash Flows From Investing Activities	<u>\$ 102,789</u>	<u>\$ (136,170)</u>	<u>\$ (742,201)</u>
Net Change in Cash & Cash Equivalents	\$ 765,927	\$ 175,031	\$ (539,836)
CASH & CASH EQUIVALENTS AT BEGINNING OF PERIOD	<u>\$ 293,421</u>	<u>\$ 1,059,348</u>	<u>\$ 1,234,379</u>
CASH & CASH EQUIVALENTS AT END OF PERIOD	<u><u>\$ 1,059,348</u></u>	<u><u>\$ 1,234,379</u></u>	<u><u>\$ 694,543</u></u>

The Fort Lyon Canal Company
Profit & Loss Budget vs. Actual
Year Ended October 31, 2012, 2013 2014

	2012			2013			2014		
	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance
Salaries & Fringes									
Administration	\$ 150,000	\$ 142,786	\$ 7,214	\$ 149,000	\$ 156,337	\$ (7,337)	\$ 145,000	\$ 130,070	\$ 14,930
Equipment Operators	\$ 251,200	\$ 221,664	\$ 29,536	\$ 229,000	\$ 177,157	\$ 51,843	\$ 240,000	\$ 217,558	\$ 22,442
Ditch Riders	\$ 155,000	\$ 157,096	\$ (2,096)	\$ 164,000	\$ 162,553	\$ 1,447	\$ 170,000	\$ 165,502	\$ 4,498
Fringe Benefits	\$ 139,000	\$ 105,425	\$ 33,575	\$ 150,000	\$ 140,110	\$ 9,890	\$ 180,000	\$ 147,016	\$ 32,984
Total Salaries & Fringes	\$ 695,200	\$ 626,971	\$ 68,229	\$ 692,000	\$ 636,157	\$ 55,843	\$ 735,000	\$ 660,146	\$ 74,854
Maintenance, Delivery & Other Expenses									
Office Expense	\$ 13,000	\$ 9,166	\$ 3,834	\$ 10,500	\$ 6,290	\$ 4,210	\$ 10,000	\$ 12,104	\$ (2,104)
Materials & Supplies	\$ 50,000	\$ 30,610	\$ 19,390	\$ 50,000	\$ 44,275	\$ 5,725	\$ 50,000	\$ 35,609	\$ 14,391
Stockholder Gates & Supplies	\$ 35,000	\$ 47,751	\$ (12,751)	\$ 35,000	\$ 43,405	\$ (8,405)	\$ 35,000	\$ 22,306	\$ 12,694
Utilities	\$ 30,000	\$ 32,178	\$ (2,178)	\$ 37,000	\$ 31,668	\$ 5,332	\$ 37,000	\$ 31,144	\$ 5,856
Superintendent's Vehicle	\$ 1,000	\$ 1,613	\$ (613)	\$ 1,000	\$ 1,873	\$ (873)	\$ 1,000	\$ 706	\$ 294
Fuel & Oil	\$ 120,000	\$ 133,749	\$ (13,749)	\$ 130,000	\$ 116,769	\$ 13,231	\$ 140,000	\$ 137,747	\$ 2,253
Equipment Repairs	\$ 120,000	\$ 103,102	\$ 16,898	\$ 120,000	\$ 102,444	\$ 17,556	\$ 100,000	\$ 85,543	\$ 14,457
Building Repairs	\$ 20,000	\$ 5,730	\$ 14,270	\$ 2,000	\$ 583	\$ 1,417	\$ 5,000	\$ 9,968	\$ (4,968)
Legal, Engineering, & Accounting	\$ 100,000	\$ 108,467	\$ (8,467)	\$ 130,000	\$ 76,082	\$ 53,918	\$ 130,000	\$ 128,106	\$ 1,894
Taxes & Licenses	\$ 20,000	\$ 15,012	\$ 4,988	\$ 18,000	\$ 17,505	\$ 495	\$ 20,000	\$ 15,462	\$ 4,538
Telephone	\$ 13,000	\$ 12,713	\$ 287	\$ 13,000	\$ 11,637	\$ 1,363	\$ 13,000	\$ 12,068	\$ 932
Directors' Expense	\$ 25,000	\$ 20,772	\$ 4,228	\$ 23,000	\$ 24,360	\$ (1,360)	\$ 25,000	\$ 34,853	\$ (9,853)
Stockholder Meeting	\$ 3,000	\$ 2,748	\$ 252	\$ 3,000	\$ 2,895	\$ 105	\$ 3,000	\$ 2,826	\$ 174
Water Purchases	\$ 100,000	\$ 19,912	\$ 80,088	\$ 20,000	\$ 61,734	\$ (41,734)	\$ 20,000	\$ 110,235	\$ (90,235)
Bonds & Insurance	\$ 55,000	\$ 81,637	\$ (26,637)	\$ 52,000	\$ 51,476	\$ 524	\$ 60,000	\$ 59,755	\$ 245
Equipment Purchase	\$ 85,000	\$ 53,602	\$ 31,398	\$ 50,000	\$ 42,848	\$ 7,152	\$ 200,000	\$ 353,544	\$ (153,544)
Amity Agreement	\$ 8,000	\$ 3,903	\$ 4,097	\$ 5,000	\$ 3,826	\$ 1,174	\$ 5,000	\$ 3,709	\$ 1,291
Miscellaneous	\$ 15,000	\$ 15,739	\$ (739)	\$ 10,000	\$ 7,031	\$ 2,969	\$ 7,000	\$ 15,857	\$ (8,857)
Ditch House Repairs	\$ 15,000	\$ 20,576	\$ (5,576)	\$ 5,000	\$ 4,837	\$ 163	\$ 5,000	\$ 5,110	\$ (110)
Special Projects	\$ 50,000	\$ 1,709	\$ 48,291	\$ 10,000		\$ 10,000	\$ 110,000	\$ 26,586	\$ 83,414
Canal Upgrade Fund	\$ 46,995	\$ 4,777	\$ 42,218	\$ 46,995		\$ 46,995	\$ 46,995	\$ 48,577	\$ (1,582)
Holbrook Siphon Project							\$ 582,397	\$ 582,397	\$ -
Total Maintenance, Delivery & Other Expense	\$ 924,995	\$ 725,466	\$ 199,529	\$ 771,495	\$ 651,538	\$ 119,957	\$1,605,392	\$1,734,212	\$ (128,820)
Total Expenditures	\$1,620,195	\$1,352,437	\$ 267,758	\$1,463,495	\$1,287,695	\$ 175,800	\$2,340,392	\$2,394,358	\$ (53,966)

The Fort Lyon Canal Company
Profit Loss
Year Ended October 31, 2012, 2013 2014

	<u>31-Oct-2012</u>	<u>31-Oct-2013</u>	<u>31-Oct-2014</u>
REVENUE			
Assessments	\$ 1,597,820	\$ 1,409,841	\$ 1,503,831
Cost share - Amity	\$ 58,228	\$ 46,335	\$ 53,492
Well augmentation	\$ 3,280	\$ 10,481	\$ 1,807
DOW hunting & fishing easement earned	\$ 14,080	\$ 14,080	\$ 14,080
Royalty income	\$ 8,598	\$ 11,774	\$ 17,892
Insurance proceeds	\$ 24,704	\$ 13,712	
Interest	\$ 23,934	\$ 17,873	\$ 15,658
Other	\$ 32,612	\$ 71,294	\$ 20,450
TOTAL REVENUE	<u>\$ 1,763,256</u>	<u>\$ 1,595,390</u>	<u>\$ 1,627,210</u>
OPERATING EXPENSES			
Salaries, wages and benefits	\$ 459,376	\$ 406,026	\$ 459,247
Depreciation	\$ 167,973	\$ 155,105	\$ 150,946
Equipment repairs and maintenance	\$ 114,605	\$ 102,700	\$ 92,342
Fuel and Oil	\$ 133,749	\$ 117,718	\$ 137,747
Utilities	\$ 30,949	\$ 26,568	\$ 25,995
Material and supplies	\$ 78,361	\$ 87,680	\$ 57,916
Reimbursed costs	\$ 6,030	\$ 3,826	\$ (23,664)
Water purchases	\$ 19,912	\$ 61,734	\$ 110,235
Amity Expense			\$ 3,709
Canal Maintenance			\$ 26,586
	<u>\$ 1,010,955</u>	<u>\$ 961,357</u>	<u>\$ 1,041,059</u>
GENERAL AND ADMINISTRATION EXPENSES			
Salaries, wages and benefits	\$ 167,595	\$ 182,184	\$ 153,221
Insurance	\$ 81,637	\$ 99,425	\$ 107,434
Professional fees	\$ 108,467	\$ 76,082	\$ 128,106
Dues, fees and meetings	\$ 2,748	\$ 2,895	\$ 2,826
Office utilities	\$ 13,942	\$ 16,737	\$ 17,217
Office expense	\$ 9,166	\$ 6,290	\$ 12,104
Repairs and maintenance	\$ 21,289	\$ 5,163	\$ 8,279
Directors expense	\$ 20,772	\$ 24,360	\$ 34,853
Taxes	\$ 15,012	\$ 17,505	\$ 15,462
Miscellaneous	\$ 15,225	\$ 7,954	\$ 16,563
	<u>\$ 455,853</u>	<u>\$ 438,595</u>	<u>\$ 496,065</u>
TOTAL EXPENSES	<u>\$ 1,466,808</u>	<u>\$ 1,399,952</u>	<u>\$ 1,537,124</u>
REVENUE OVER EXPENSES	\$ 296,448	\$ 195,438	\$ 90,086
RETAINED EARNINGS BEGINNING	<u>\$ 4,138,334</u>	<u>\$ 4,434,782</u>	<u>\$ 4,630,220</u>
RETAINED EARNINGS ENDING	<u><u>\$ 4,434,782</u></u>	<u><u>\$ 4,630,220</u></u>	<u><u>\$ 4,720,306</u></u>

Appendix D

Opinions of Alternative Project Costs

Fort Lyon Canal Company - Horse Creek Flume Rehabilitation Project							
No Action Cost Summary							
Crop Value and Production Affected by a Failure of the Horse Creek Flume							
Total Irrigated Acres =	81415						
Type of Crop	Quantity (acres) ⁽¹⁾	Percent of Total	Qty Produced per Acre ⁽²⁾	Unit Measure	Price / Unit ⁽²⁾	Price Unit Measure	Total Cost
Alfalfa	48913	60%	3.4	tons/acre	\$209.00	\$/ton	\$34,760,000
Pasture & Hay	7901	10%	2.66	tons/acre	\$209.00	\$/ton	\$4,390,000
Corn Grain	9218	11%	146	BU/acre	\$4.10	\$/BU	\$5,520,000
Corn Silage	1603	2%	25	tons/acre	\$28.00	\$/ton	\$1,120,000
Spring Grains (use barley)	44	0%	124	BU/acre	\$5.60	\$/BU	\$30,000
Sorghum	4195	5%	30	BU/acre	\$3.78	\$/BU	\$480,000
Winter Wheat	9048	11%	38	BU/acre	\$6.00	\$/BU	\$2,060,000
Vegetables (use melons)	472	1%	205	CWT/acre	\$37.90	\$/CWT	\$3,670,000
Dry Beans	21	0%	19	CWT/acre	\$26.20	\$/CWT	\$10,000
No Action Cost ⁽³⁾							\$52,040,000

Note (1) - National Agricultural Statistics Service (NASS, 2014) Irrigated Acreage and Crops Under the Fort Lyon Canal, 2014.

Note (2) - National Agricultural Statistics Service (NASS, 2015) Colorado 2014 State Agriculture Overview, 2015.

Note (3) - Losses to the Amity Mutual Irrigation Company and Queens and Thurston State Wildlife Areas have not been included in total costs.

Fort Lyon Canal Company - Horse Creek Flume Rehabilitation Project

Alternative 1 - Slip Line Flume with HOBAS Pipe

Opinion of Probable Project Cost

Description	Quantity	Unit Measure	Unit Mtrl Cost	Unit Installation Cost	Source For Cost	Total Cost
<i>Division 2</i>						
Pipe Support Foundation Excavations	340	CY	\$0	\$50	Means Cost Data	\$17,000
Pipe Support Foundation Backfill	340	CY	\$0	\$12	Means Cost Data	\$4,000
Site work reseeding	2	ACRES	\$0	\$3,500	Contractor	\$7,000
Dewatering	1	EA	\$0	\$25,000	Engineer	\$25,000
Erosion and Sediment Control	1	EA	\$0	\$5,000	Engineer	\$5,000
1" Diameter Rock Bolts	64	EA	\$1,000	\$1,000	Engineer	\$128,000
<i>Division 3</i>						
17 - Concrete Pipe Support Cradles	170	CY	\$125	\$875	Contractor	\$170,000
Repair to Existing Intake Structure	1	EA	\$15,000	\$15,000	Engineer	\$30,000
Repair to Existing Outlet Structure	1	EA	\$10,000	\$10,000	Engineer	\$20,000
Backfill Grout 110 Inch HOBAS Pipe	1	EA	\$50,000	\$50,000	Vendor	\$100,000
<i>Division 5</i>						
Clean Existing 123 inch Pipeline (Assume No Lead Paint)	1	EA	\$50,000	\$0	Engineer	\$50,000
Cradle Steel	17	EA	\$2,500	\$2,500	Engineer	\$85,000
<i>Division 15</i>						
110" Diameter HOBAS Lining Pipe (20 Foot Sections)	400	LF	\$946	\$250	Vendor	\$478,000
Field Coat Existing Pipe Exterior Surface	400	LF	\$75	\$75	Engineer	\$60,000
BASE CONSTRUCTION SUBTOTAL						\$1,179,000
Unlisted Items (10%)						\$118,000
Contractor Mobilization/Demobilization (10%)						\$118,000
Contractor Overhead and Profit (10%)						\$118,000
DIRECT CONSTRUCTION SUBTOTAL						\$1,533,000
Change Order Contingency (20%)						\$307,000
Site Exploration						\$30,000
Feasibility Evaluation & Financing Assistance						\$75,000
Final Design Engineering (8%)						\$123,000
Construction Administration and Engineering (10%)						\$153,000
Legal and Administrative Costs (2%)						\$31,000
TOTAL PROJECT COST *						\$2,252,000

Fort Lyon Canal Company - Horse Creek Flume Rehabilitation Project

Alternative 2 - Slip Line Flume with Steel Pipe

Opinion of Probable Project Cost

Description	Quantity	Unit Measure	Unit Mtrl Cost	Unit Installation Cost	Source For Cost	Total Cost
<i>Division 2</i>						
New Pipe Support Foundation Excavations	50	CY	\$0	\$50	Means Cost Data	\$3,000
Pipe Support Foundation Backfill	50	CY	\$0	\$12	Means Cost Data	\$1,000
Site work reseeding	2	ACRES	\$0	\$3,500	Engineer	\$7,000
Dewatering	1	EA	\$0	\$25,000	Engineer	\$25,000
Erosion and Sediment Control	1	EA	\$0	\$5,000	Engineer	\$5,000
1" Diameter Rock Bolts	20	EA	\$1,000	\$1,000	Engineer	\$40,000
<i>Division 3</i>						
5 - New Pipe Support Foundations	75	CY	\$125	\$875	Engineer	\$75,000
Repair to Existing Intake Structure	1	EA	\$15,000	\$15,000	Engineer	\$30,000
Repair to Existing Outlet Structure	1	EA	\$10,000	\$10,000	Engineer	\$20,000
Backfill Grout 116 Inch Steel Lining Pipe	400	LF	\$125	\$125	Vendor	\$100,000
<i>Division 5</i>						
Clean Existing 123 inch Pipeline (Assume No Lead Paint)	1	EA	\$50,000	\$0	Vendor	\$50,000
Modify Inside of Existing Pipe With Steel Cradles	9	EA	\$5,000	\$5,000	Engineer	\$90,000
Install 5 New Sway Girder Supports	5	EA	\$15,000	\$10,000	Engineer	\$125,000
<i>Division 15</i>						
116" ODx0.500" wall steel pipe (20 foot length)	400	LF	\$665	\$150	Vendor	\$326,000
Shop Coat 116 Lining Pipe ID	400	LF	\$63	\$63	Vendor	\$50,000
Field Coat Existing Pipe Exterior Surface	400	LF	\$75	\$75	Engineer	\$60,000
BASE CONSTRUCTION SUBTOTAL						\$1,007,000
Unlisted Items (10%)						\$100,000
Contractor Mobilization/Demobilization (10%)						\$100,000
Contractor Overhead and Profit (10%)						\$100,000
DIRECT CONSTRUCTION SUBTOTAL						\$1,307,000
Change Order Contingency (20%)						\$261,000
Site Exploration						\$30,000
Feasibility Evaluation & Financing Assistance						\$75,000
Final Design Engineering (8%)						\$105,000
Construction Administration and Engineering (10%)						\$131,000
Legal and Administrative Costs (2%)						\$27,000
TOTAL PROJECT COST *						\$1,936,000

Fort Lyon Canal Company - Horse Creek Flume Rehabilitation Project

Alternative 3 - Replace Flume with a New HOBAS Pipe Flume

Opinion of Probable Project Cost

Description	Quantity	Unit Measure	Unit Mtrl Cost	Unit Installation Cost	Source For Cost	Total Cost
<i>Division 2</i>						
Pipe Support Foundation Excavations	300	CY	\$0	\$50	Means Cost Data	\$15,000
Pipe Support Foundation Backfill	300	CY	\$0	\$12	Means Cost Data	\$4,000
Site work reseeding	2	ACRES	\$0	\$3,500	Engineer	\$7,000
Dewatering	1	EA	\$0	\$25,000	Engineer	\$25,000
Erosion and Sediment Control	1	EA	\$0	\$5,000	Engineer	\$5,000
Demo Existing Pipe	1	EA	\$0	\$50,000	Engineer	\$50,000
1" Diameter Rock Bolts	68	EA	\$1,000	\$1,000	Engineer	\$136,000
<i>Division 3</i>						
18 - Pipe Support Foundations	250	CY	\$125	\$875	Engineer	\$250,000
Repair to Existing Intake Structure	1	EA	\$15,000	\$15,000	Engineer	\$30,000
Repair to Existing Outlet Structure	1	EA	\$10,000	\$10,000	Engineer	\$20,000
<i>Division 5</i>						
FRP Handrail	800	FT	\$25	\$25	Vendor	\$40,000
<i>Division 15</i>						
120" HOBAS Pipe (20 foot length)	400	LF	\$1,090	\$250	Vendor	\$536,000
FRP Vents	8	EA	\$1,000	\$1,000	Engineer	\$16,000
BASE CONSTRUCTION SUBTOTAL						\$1,134,000
Unlisted Items (10%)						\$113,000
Contractor Mobilization/Demobilization (10%)						\$113,000
Contractor Overhead and Profit (10%)						\$113,000
DIRECT CONSTRUCTION SUBTOTAL						\$1,473,000
Change Order Contingency (20%)						\$295,000
Site Exploration						\$30,000
Feasibility Evaluation & Financing Assistance						\$75,000
Final Design Engineering (8%)						\$118,000
Construction Administration and Engineering (10%)						\$148,000
Legal and Administrative Costs (2%)						\$30,000
TOTAL PROJECT COST *						\$2,169,000

Fort Lyon Canal Company - Horse Creek Flume Rehabilitation Project

Alternative 4 - Replace Flume with a New Steel Pipe Flume

Opinion of Probable Project Cost

Description	Quantity	Unit Measure	Unit Mtrl Cost	Unit Installation Cost	Source For Cost	Total Cost
<i>Division 2</i>						
Pipe Support Foundation Excavations	60	CY	\$0	\$50	Means Cost Data	\$3,000
Pipe Support Foundation Backfill	60	CY	\$0	\$12	Means Cost Data	\$1,000
Site work reseeding	2	ACRES	\$0	\$3,500	Engineer	\$7,000
Dewatering	1	EA	\$0	\$25,000	Engineer	\$25,000
Erosion and Sediment Control	1	EA	\$0	\$5,000	Engineer	\$5,000
Demo Existing Pipe	1	EA	\$0	\$50,000	Engineer	\$50,000
<i>Division 3</i>						
Pipe Support Foundations	60	CY	\$125	\$875	Engineer	\$60,000
Repair to Existing Intake Structure	1	EA	\$15,000	\$15,000	Engineer	\$30,000
Repair to Existing Outlet Structure	1	EA	\$15,000	\$15,000	Engineer	\$30,000
<i>Division 5</i>						
Handrail	800	FT	\$25	\$25	Vendor	\$40,000
Vent Pipe	8	EA	\$300	\$300	Engineer	\$5,000
<i>Division 15</i>						
123" ODx0.500" wall steel pipe (20 foot length)	400	LF	\$750	\$150	Vendor	\$360,000
Shop Coat Pipe ID	400	LF	\$63	\$63	Vendor	\$50,000
Shop Primer Coat Pipe Exterior	400	LF	\$55	\$55	Vendor	\$44,000
Field Coat Pipe Exterior	400	LF	\$75	\$75	Engineer	\$60,000
Ring Girder Installation	4	EA	\$63,000	\$5,000	Vendor	\$272,000
Field Expansion Joint	1	EA	\$97,585	\$5,000	Vendor	\$103,000
BASE CONSTRUCTION SUBTOTAL						\$1,145,000
Unlisted Items (10%)						\$114,000
Contractor Mobilization/Demobilization (10%)						\$114,000
Contractor Overhead and Profit (10%)						\$114,000
DIRECT CONSTRUCTION SUBTOTAL						\$1,487,000
Change Order Contingency (20%)						\$298,000
Site Exploration						\$30,000
Feasibility Evaluation & Financing Assistance						\$75,000
Final Design Engineering (8%)						\$119,000
Construction Administration and Engineering (10%)						\$149,000
Legal and Administrative Costs (2%)						\$30,000
TOTAL PROJECT COST *						\$2,188,000

Fort Lyon Canal Company - Horse Creek Flume Rehabilitation Project

Alternative 5 - Replace Flume with a New Concrete Flume

Opinion of Probable Project Cost

Description	Quantity	Unit Measure	Unit Mtrl Cost	Unit Installation Cost	Source For Cost	Total Cost
<i>Division 2</i>						
Flume Support Foundation Excavations	100	CY	\$0	\$50	Means Cost Data	\$5,000
Flume Support Foundation Backfill	100	CY	\$0	\$12	Means Cost Data	\$1,000
Site work reseeding	2	ACRES	\$0	\$3,500	Contractor	\$7,000
Dewatering	1	EA	\$0	\$25,000	Engineer	\$25,000
Erosion and Sediment Control	1	EA	\$0	\$5,000	Engineer	\$5,000
Demo Exsitng Pipe	1	EA	\$0	\$50,000	Engineer	\$50,000
<i>Division 3</i>						
7 - Concrete Flume Support Pier Frames	140	CY	\$125	\$875	Contractor	\$140,000
Repair to Existing Intake Structure	1	EA	\$15,000	\$15,000	Engineer	\$30,000
Repair to Existing Outlet Structure	1	EA	\$5,000	\$5,000	Engineer	\$10,000
Flume Concrete (15 Foot Wide By 9 Foot High)	728	CY	\$125	\$875	Contractor	\$728,000
<i>Division 5</i>						
Handrail	800	LF	\$25	\$25	Engineer	\$40,000
Vent Pipe	8	EA	\$500	\$500	Engineer	\$8,000
BASE CONSTRUCTION SUBTOTAL						\$1,049,000
Unlisted Items (10%)						\$105,000
Contractor Mobilization/Demobilization (10%)						\$105,000
Contractor Overhead and Profit (10%)						\$105,000
DIRECT CONSTRUCTION SUBTOTAL						\$1,364,000
Change Order Contingency (20%)						\$273,000
Site Exploration						\$30,000
Feasibility Evaluation & Financing Assistance						\$75,000
Final Design Engineering (8%)						\$109,000
Construction Administration and Engineering (10%)						\$137,000
Legal and Administrative Costs (2%)						\$27,000
TOTAL PROJECT COST *						\$2,015,000

Appendix E

Financial Plan

**Fort Lyon Canal Company
Financial Repayment Schedule**

Assumes no special assessments

<u>Financing</u>							Cost Opinion of Chosen Alternative: \$2,188,000			<u>Project Cost Sharing</u>			<u>Miscellaneous Information</u>		
							<u>Source</u>	<u>Amount</u>	<u>% Total</u>						
<u>Source</u>							<u>FLCC Match</u>	\$75,000	3.4%						
<u>Project Total</u>							<u>Basin Grant</u>	\$50,000	2.3%						
<u>Loan Share</u>							<u>Statewide Grant</u>	\$450,000	20.6%						
<u>Principal</u>							<u>Remaining Project Cost</u>	\$1,613,000	73.7%						
<u>Interest</u>							<u>1% CWCB Service Fee</u>	\$16,130							
<u>Years</u>							<u>Total CWCB Loan</u>	\$1,629,130							
<u>Annual Payment</u>															
CWCB Loan	\$2,204,130	73.9%	\$1,629,130	1.75%	30	\$70,264									

Appendix F

Condition Assessment Report



May 22, 2015

Jerred Hoffman, Superintendent
Fort Lyon Canal Company
750 Bent Avenue
Las Animas, CO 81054

RE: WSRA Grant Exhibit C: Horse Creek Flume Condition Assessment Summary Report

Dear Jerred:

This condition assessment summary report was prepared to provide supplemental information about the Horse Creek Flume for the WSRA Grant application. This report was based on inspection observations of the flume by W. W. Wheeler & Associates, Inc. (Wheeler) and SM&RC Structural Engineers, Inc. (SM&RC) on February 20, 2015.

Background

The Horse Creek Flume is located on the Fort Lyon Canal, near the town of Las Animas Colorado, and used to transport canal water over Horse Creek. The flume is comprised of a 392-foot-long, 123-inch-diameter steel pipe, with metal stiffeners, ring girders and an expansion joint. The elevated flume is supported by concrete foundations and upstream and downstream concrete headwalls. The flume was constructed in 1938, and has been subject to significant erosion and corrosion of the steel pipe. The Horse Creek Flume is designed to convey canal flows of up to 1,800 cfs, but typically conveys high velocity flows of 165 to 1,200 cubic feet per second (cfs). The Horse Creek Flume was inspected and evaluated by Stantec in October of 2014 and by Wiss, Janney, Elstner Associates, Inc. in February of 2015. Both of these engineering firms concluded that the Horse Creek Flume needs to be replaced. Wiss, Janney, Elstner Associates, Inc recommended temporary repairs that were intended to keep the flume in service through the 2015 irrigation season. After inspecting the flume on February 20, 2015, Wheeler concurs that the Horse Creek Flume is in need of immediate replacement. A photo of the flume is provided on Photo Nos 1 and 2 below. Other photos of the Horse Creek Flume are provided in Appendix A.



Photo No. 1 – Horse Creek Flume over Horse Creek



Photo No. 2 – Typical condition, leakage, and ring girder support

Inspection Findings

The average interior vertical diameter of the flume was measured at 122.6 inches and the average horizontal diameter measured at the spring line width was measured at 122.1 inches. The measurements were taken every ten feet and were within +/- 1-inch of the averages. The interior of the flume has ¼-inch-thick steel repair plates welded to the bottom. The repair plates covers about a 15-foot width along the bottom 160 degree circumference of the pipe. The repair plates are located along the entire length of the flume. There was evidence at numerous locations where water was captured between the original steel pipe and the repair plates resulting in significant corrosion damage

The steel wall thickness of the flume was measured at 60 locations with an ultra-sonic thickness gauge. The top, left and right sides of the flume had a fairly consistent thickness, pf about 0.344 inches, which is close to the original 3/8-inch (0.375") pipe thickness. However, the bottom of the pipe has been subject to significant corrosion and abrasion damage over the years. The average measured wall thickness along the bottom of the flume was 0.210 inches, but many locations in the bottom of the flume were less than 0.200 inches, with the thinnest measurement of only 0.079 inches. These measurements suggest that the bottom half of the original flume has lost almost 50% of its original material thickness, and in some places the loss is 75% or more.

The visual inspection of the flume revealed numerous holes in the original pipe and repair plates as well as areas of apparent buckling and significant corrosion. On the exterior, many of the holes had been patched, but water marks and rust were visible, suggesting that many of these patches and holes leak when the flume is full of water. Corrosion was visible over much of the flume, and was concentrated along weld lines where reinforcing plate and patches had been installed on the pipe. Many of these spots had completely corroded through, leaving gaps in the original flume material. It is obvious that during welding the exterior coating of the pipe was compromised and more than likely the inside of the pipe coating was compromised as well. Typical conditions and holes in the bottom of the flume are documented in Phot Nos. 1 through 4 in Appendix A.

Each of the concrete support foundations had significant spalling and cracking. The foundation supporting Girder No. 5 was completely broken in half. At Girder No. 4, the foundation top zone, base plate, lower pin zone and lower bracing were buried by about three feet of soil, which restricts movement at this support girder during thermal expansion and contraction of the steel pipe. The reinforced concrete inlet and outlet sections also had significant spalling and cracking, and exposed rebar and I-beams were observed in numerous location. It was also observed that the flume's expansion joint is not working properly, and is being pulled from the outlet headwall. Typical conditions of the support girders; inlet and outlet sections of the flume; and expansion joint are shown on Photo Nos. 5 through 10 in Appendix A. Areas of apparent buckling were also observed on the bottom of the flume, near the inlet and outlet headwalls. The buckled areas are near a ring girder that rests on a foundation that has settled, and the pipe wall thickness in this area is very thin.

Conclusions

It is our opinion that the installation of the ¼-inch cover plates has enhanced the rate of corrosion of the original pipe steel, by creating a void that remains moist and is constantly exposed to air. It is Wheeler and SM&RC's opinion that the original pipe along the bottom half of the circumference is damaged beyond repair as a result of corrosion. There is also significant damage to the expansion joint, ring girder support system, and inlet and outlet sections of the flume. As a result, we recommend immediate replacement of the flume.

Sincerely,

W. W. Wheeler & Associates, Inc.



Stephen L. Jamieson, P.E.

Principal

**FORT LYON CANAL – HORSE CREEK FLUME
FEBRUARY 20th, 2015 SITE INSPECTION
APPENDIX A: INSPECTION PHOTOS**



Photo 1: Corrosion and Holes on Flume Exterior – 2/20/15



Photo 2: Flume Exterior with Patch and Significant Corrosion Along Weld Line – 2/20/15

**FORT LYON CANAL – HORSE CREEK FLUME
FEBRUARY 20th, 2015 SITE INSPECTION
APPENDIX A: INSPECTION PHOTOS**



Photo 3: Hole in Cover Plate, Flume Interior – 2/20/15



Photo 4: Hole in Cover Plates with Water Present – 2/20/15

**FORT LYON CANAL – HORSE CREEK FLUME
FEBRUARY 20th, 2015 SITE INSPECTION
APPENDIX A: INSPECTION PHOTOS**



Photo 5: Cracked Foundation Supporting Ring Girder #3 – 2/20/15



Photo 6: Foundation Broken in Half, Supporting Ring Girder #5 – 2/20/15

**FORT LYON CANAL – HORSE CREEK FLUME
FEBRUARY 20th, 2015 SITE INSPECTION
APPENDIX A: INSPECTION PHOTOS**



Photo 7: Ring Girder #2 and Foundation Below Grade – 2/20/15



Photo 8: Damage on Outlet Structure, Below Walkway – 2/20/15

**FORT LYON CANAL – HORSE CREEK FLUME
FEBRUARY 20th, 2015 SITE INSPECTION
APPENDIX A: INSPECTION PHOTOS**



Photo 9: Expansion Joint Being Pulled from Downstream Headwall – 2/20/15



Photo 10: Heavy Abrasion on Concrete Flume Inlet – 2/20/15

Appendix G

Loan Resolution

RESOLUTION

The Board of Directors of the Fort Lyon Canal Company ("Company"), at a meeting held June 10, 2015, at Las Animas, Colorado, adopted the following resolution concerning a secured loan from the State of Colorado Water Conservation Board ("CWCB"), for the purpose of construction of a flume over Horse Creek in the amount of \$1,600,000.00 (One Million Six Hundred Thousand Dollars) or such actual amount, more or less, as may be needed by the Company and available from the CWCB, including the CWCB loan origination fee of 1% of the loan amount.

At said meeting, the Board charged that these resolutions are irrevocable during the term of the loan and, pursuant to the Company's bylaws, authorized the President and Corporate Secretary, RESOLVED as follows:

1. to enter into and comply with the terms of a Contract with the Colorado Water Conservation Board for a loan in the amount of \$1,600,000.00 (One Million Six Hundred Thousand Dollars), or such actual amount, more or less, as needed to finance the project costs, including the CWCB loan origination fee of 1%, and
2. to levy and collect assessments from the shareholders in an amount sufficient to pay the annual amounts due under the Loan Contract, and to pledge assessment revenues and the Company's right to receive said revenues for repayment of the loan, and
3. to place said pledged revenues in a special account separate and apart from other Company revenues, and
4. to make the annual payments required by the Promissory Note and to make annual deposits to a debt service reserve fund, and
5. to pledge such Collateral as required by CWCB for the loan and execute all documents, including a Financing Statement and Deed of Trust, as may be necessary to convey a security interest in said Collateral to CWCB, and
6. to execute all documents as required by the Loan Contract, including, but not limited to, a Security Agreement and a Promissory Note, and
7. To take such other actions and to execute such other documents as may be necessary to consummate and implement the loan.

CERTIFICATION

The undersigned, the President and the Corporate Secretary, hereby certify that the foregoing are true and correct copies of Resolutions duly adopted at a meeting of the Company's Board of Directors duly called and held as above recited, pursuant to the Company's Bylaws, and that said Resolutions have not been amended or rescinded.

Given under our hand and the seal of the Company the 10th day of June, 2015.

THE FORT LYON CANAL COMPANY

By Josh Weimer
Josh Weimer, President

ATTEST:

By Dale I Mauch
Dale Mauch, Secretary