



HEADGATE 199 POLYUREA LINING PROJECT

Final Report

ABSTRACT

This is a summary of the Headgate 199 lining project that took place between October 2020 and March 2021. Detailed here is all the work that was completed along with the tasks and progress within the project itself.

Mike Weber



Introduction and Background

Lower Arkansas Valley Water Conservancy District (Lower Ark) was awarded \$198,000 through the Colorado Water Conservation Board (CWCB) on October 29, 2020 for lateral lining to improve water delivery and water quality from seepage through a section of ditch along the Catlin Canal in Otero County. The identified location of lining is a section of ditch that carries approximately 8% of the whole ditch and has been estimated by the Natural Resources Conservation Services (NRCS) to seep approximately 30%. Lower Ark then looked at this site as a potential water quality improvement project where lining the ditch could improve downstream receiving waterbodies for selenium, nitrogen, and phosphorus. In 2019 Lower Ark started monitoring the ditch for water quality implications and set up a project to line a portion of the ditch. Following the initial analysis on project costs it was determined that additional funds should be secured to extend the liner to a greater length, as well as cover more of the seepage issues. At this point Lower Ark was able to work with this grant to make the project larger than initially anticipated.

Lower Ark worked diligently with their initial study and this project to find the correct material, liner locations, producer agreements, resource concerns, and any potential fallback of the liner. On January 13, 2021, the liner was ordered and set to be installed. The Liner took five weeks to be installed and all the work wrapped up on March 12, 2021.

Following the liner installation Lower Ark was able to work with the irrigation improvement rules to ensure full compliance with the Colorado-Kansas Compact. Lower Ark, as a part of the initial water quality project outside of this scope, will monitor the load reduction from this liner and work on education other producers for other potential liner implementation sites across the basin. The hope is that this project opens the door for more producers to implement irrigation improvement liners to help with the delivery of water.

Task 1: Project Survey Development and Resource Concerns Analysis

Following the notice to proceed, Lower Ark began talking to producers, the canal company, liner companies, utilities, state, and local governments. The plan was to be sure that everyone was aware of the project and onboard with the work that was going to be completed while also meeting all resource concerns that might arise from the work.

The producers were all in agreement to do the project and were all curious of how a chemical liner would be different than that of a HDPE or plastic liner as well as how this would impact compact compliance. After some lengthy conversations some of the initial concerns were answered. Silverback Liners along with Asset Guard came down to the site and delivered samples of the product to show the durability, flexibility, and application of the product. The biggest difference in this material is the attachments to concrete, dirt, PVC, and other material. Typically, on HDPE or plastic liners there is a mechanical attachment where the polyurea sprays directly to the material creating a secure bond. The compact compliance was addressed through the Rule 10 obligations and simulations were run to show an estimate of about \$1,000 annually which spread out across the 900 shares was just over \$1.00 per share. The producers were happy with this and wanted to move forward.

During the installation of the product the producers asked about two other concerns. The first was the ability to burn weeds and debris inside the ditch. Silverback Liners tried this on March 10th but advised



against burning directly in the ditch as a sustained heat source above the application temperature could break the chemical bonds and breakdown the material. This also showed that unlike plastic or HDPE materials the liner would not catch on fire but simple breakdown and degrade. The recommendation given to the producers was to remove the debris from the ditch then burn it on the side of the ditch. The other concern that producers brought up was evaporation loss throughout the year. There was not proven data to show evaporation would have any changed impacts from the earthen ditch. Time will tell if this is true or not, but again the producers did not have any hesitation from the application. It was stated by one producer, “We won’t ever know if it works if we don’t try it”.

After the producers, the canal company was contacted. They had no reservation from the product and gave a go ahead to proceed. Since the application was after the diversion headgate this is the responsibility of the producers and the Catlin Canal Company was okay with the work. Lower Ark has the intention to have a tour in the summer for the Canal Board to allow them to use this to upgrade the main canal in the future.

The utility companies were contacted a couple of times about the project. First for telephone poles that lie within the ditch and needed to be moved or relocated and secondly through the 811 DIG program to help avoid any underground lines. The first conversation was not progressive, and the telephone company was requesting \$10,000.00 per pole to be moved. Lower Ark elected to not touch this part of the project and wait for more cooperation before lining this section. As shown in Appendix D there is a couple of ditch sections that were not lined, and the section in red is the part where telephone lines posed an issue. The locates were standard and did not create any problems.

The state and local governments were contacted for permitting and environmental impacts. Due to the nature of the project being on private lands and within a non-jurisdictional waterbody, the Waters of the United States were not triggered, and the Army Corps of Engineers felt that the project was exempt from a nationwide or 404 certifications. Otero County also elected to state that a no-rise certification was not required as the flows in the lateral were not being altered and the baseflows would be maintained. Since Lower Ark is using this site for water quality monitoring the Clean Water Act was also satisfied. Fishing and endangered species did not come into effect as this is a carriage vessel and not filled year-round. No hatching or fishing populations were found in the environmental impact study. Finally, Lower Ark did get a right-of-way certification for working within the county’s right-of-way and met all compliance with traffic control and other county-bound ordinances.

The last set of coordination was with liner companies to ensure that this project was not subject to any prejudice in selecting the contractors to do the work. Since the application was to apply a polyurea liner to the system to show the effects of the work as compared to other liners or even pipe costs Lower Ark targeted groups that do polyurea only and not all liner companies. In doing this Lower Ark found Asset guard partnered with Silverback Liners out of Montrose, CO and WBS Coatings out of Grand Junction, CO. WBS Coatings quoted the project at twice the cost of Silverback Liners. This allowed Lower Ark to work with Silverback Liners on the project. There was also a comparison to other materials such as pipe, HDPE, and plastic Liners just to compare costs. Table 1 outlines the results from this initial study. It can be shown that this product has the best life expectancy out of all the liners with a littler higher cost for the 2,500 liner feet.



Material	Cost of Installation (LF)	Total Cost	Life Expectancy
Polyurea 45 mil	\$61.00	\$152,500	50+ years
Cooley Liner 45 mil	\$58.00	\$145,000	20 years
HDPE Liner 45 mil	\$62.00	\$162,500	25 years
Plastic Liner 45 mil	\$34.00	\$85,00	10 years
PIP PVC Pipe 48"	\$125.00	\$312,000	50+ years
HDPE Pipe 48"	\$94.00	\$235,000	50+ years

Table 1: Product Comparisons

Once the resource concerns and project coordination between all parties, it was time to start working on the surveys and site selection for the liner. In the initial application, the project was to line 2,500 liner feet of ditch with \$100.00/liner foot and \$50.00/liner foot of earthwork. The actual length of the ditch from the headgate down to the termination point was 9,167 liner feet. This, coupled with the cost of \$61.00/liner foot, a survey of the best application sites and installation needed to be addressed. Lower Ark selected a section of 5,500 linear feet with the highest seepage rates. This can be seen in Appendix D.

Following the site identification, Lower Ark performed surveys for the contractors to identify how the liner would stay within the ditch. This included length, width, depth, side slopes, and tie-in data. A survey wheel and laser level were used to document the information and passed along to Silverback for production. No official designs were made as the liner is manufactured in different sizes and no cut/fill information was needed as alterations to the channel were not the goal of this project. Using this survey, Silverback selected 15x90 foot rolls and started production.

This effort was completed between October 29, 2020 and January 13, 2021. It was a huge undertaking and really showed the collaboration in all parties to work on getting the project in place prior to water turning on.

Task 2: Project Implementation

Using an open line of communication, Lower Ark worked with producers to clean and smooth the bottom of the ditch and attempt to dig a keyway ditch along the banks to tie in and secure the liner. Silverback liner was working on manufacturing the 15x90 foot rolls of liner in a warehouse in Texas. The liner was manufactured by overlapping a mesh fabric and spraying on 45 mils of liner in a controlled environment. The liners were then loaded on a semi-truck and shipped to the site. Once arrival of the material was made on February 8th, Silverback drove from Grand Junction to Rocky Ford to start installing the liner. The process took longer than anticipated as more earthwork was required for proper tie-ins and adequate ditch formation for a smooth placement of liner. Silverback worked for a good week on just earthwork then got into laying the liner. After 13 days of work, a snowstorm set in and halted progress. The liner can be installed in cold weather, but not with moisture. Silverback went back for a 5-day period then returned to finish up the project. All work was completed on March 12th; exactly 3 days before water turned on.

To perform installation, Silverback uses a John Deere 60G excavator to roll the liner out within the ditch, then the crew pulls the liner to the proper sites while removing wrinkles. On any corner, the liner is cut and then mended together. Any seams are cleaned with acetone and sprayed with liner in the field. Overspray can be an issue, but with their 20 years of experience, there was little to no waste. The cure time on the spray is 15 minutes. On all concrete, a small 2-inch notch is made, a primer is added, and spay



is added directly to the concrete. This creates a seamless connection between the concrete and the liner. On all pipe connections, the spray is applied directly onto the pipe creating the same seamless connection. Once installed, the system is connected through the polyurea chemical bond and is one entire system.

The properties of the material prove durable- it can be driven on, will not catch on fire, and moves with the contour in which it is laid on. This is all especially important with the changing climate of the applied site. The product also has a very long-life expectancy meaning that it will be in place well into the future.

With all the work and effort that went into the process, Silverback was a great contracting crew and all work was completed in just over 16 working days.

Tasks 3: Irrigation Efficiency Rules Monitoring.

Following the installation of the project Lower Ark modeled the liner through the ISAM model used in the Arkansas Basin Compact Compliance Rule 10 operations. A contract was drafted and sent to the producers. The signed contract was executed and is now awaiting approval from Division of Water Resources. It is now known that the project meets all compact compliance.

Task 4: Grant Management

The grant management of the project was easy. CWCB staff was great to work with and Lower ark took care of all management, and the producers had an easy job. All concerns were addressed and Lower Ark completed the project on time and within budget. It was good to get the project in as production of the material is now on hold due to nationwide delays.

Progress Tracking

Following the notice to proceed, Lower Ark hit the ground running trying to identify resource concerns, survey data, contractors, and getting the projected implemented before water turned on. The work was done in a diligent manner and met all timeline and deadlines. Table 2 is an outline of how the money was allocated and how it fit into the overall progress completion of the project.

Item/Task	Budgeted Cost	Actual Expenditures	Percent Complete
1: Project Survey, Development, and Resource Concern	\$ 40,000.00	\$ 29,300.00	100%
2: Project Implementation	\$ 380,000.00	\$398,294.36	100%
3: Irrigation Efficiency Rules	\$ 10,000.00	\$ 11,500.00	100%
4: Grant Management	\$ 20,000.00	\$ 26,350.00	100%
Total	\$ 450,000.00	\$465,444.36	100%

Table 2: Grant Tracking Progress

Project Adjustments and Changes

Throughout the project there were only four changes or adjustments that were made to make the project complete. The first change was the actual application of the liner and the sections of ditch that would be lined and the section that would not be lined. The total length of the ditch was 9,167 liner feet so it was impossible to line the entire ditch as the application was for 2,500 linear feet. Without the proper survey,



Lower Ark was not sure which section would be most feasible. Also, looking at the survey and cost, Lower Ark was able to determine an additional 3,000 linear feet of liner to be applied. The determination of the 5,500 liner feet came down to some simple determinations. Directly out of the headgate there were major erosion issues and tree growth. This was not built into the budget and would have added approximately \$50,000 of excavation work to the project. Lower Ark flagged this as a second phase of the project and something that could not be covered under the current funding arrangement. Next there is a section where there is concrete riprap along a tight shoulder that then leads to small implemented underground pipe. The owner was not sure how to access this section so Lower Ark skipped over this until the producer is able to work on getting this cleaned up for better access. Lastly the telephone company was not willing to work with the project and the telephones that were inside the ditch caused issues and Lower Ark skipped this. After all of that was determined 5,500 linear feet in high seepage areas were used.

The next change was after installation. One of the producer's perspective regarding the project changed. This caused a little bit of a disagreement about how the project was to move forward. Lower Ark did have a signed contract (not disclosed here due to confidentiality) with this producer. After some lengthy conversations, the producer asked that the section of ditch running through his property not be touched. Lower Ark amended the contract and moved forward as requested. This is indicated in Appendix D as the first 100 feet of the blue section. This producer also owns 100 shares out of the 900 shares in the ditch. This did not change any of the other producers' willingness, but did cause some changes and alterations as to tie-ins and cut-offs for the project. Lower Ark moved this 100 feet of liner to the end of the liner to a private section of ditch.

The third change was in the match requirements between task 1 and task 2. In the original project, it was anticipated that \$40,000 of the project would be for development, survey, and resource concerns, but after completing the work this cost was only \$29,300. The funds for the grant provided \$20,000 to this cost and the match was \$9,300. Lower Ark then transferred the match to task 2 where the requirement was \$212,000 but the actual match requirements were \$230,294.36. This was a slight change, but still balanced out in the over all match as Lower Ark was responsible for \$252,000 of the project and ended up covering \$267,444.36 of the cost. Justification for this change can be attributed to the limited amount of permitting that was required in order to process the project. It was anticipated that more permits would be required, but private land, ag exemptions, no wildlife or invertebrates on site, and monitoring of water quality all aided and the project work to be completed with limited permitting.

The last change was in the excavation work that was performed. Lower Ark had anticipated working with the producers and using equipment and personal staff. The equipment and personnel staff at Lower Ark was not able to clean and prep the ditch and this fell back on Silverback Liners causing an additional \$18,500 in excavation costs. The producers still did their part and helped, but some costs that should have been absorbed by Lower Ark fell onto the contractors instead. This is something to note moving forward to either build into the project or fix. The project still worked out to the satisfaction of Lower Ark and the producers, just at an added cost that was not anticipated.

Project Completion

Through this entire project Lower Ark was more than happy with the contractors and hope that this opens doors for more liner projects in the future. Water quality monitoring will continue, and presentations/tours



will start taking place outside of the scope of this grant to promote this work once feasible. Lower Ark also hopes to create some informational data to present to other canal companies about the process and producers. As these resources become available, they will be shared with CWCB staff. Time will now tell how effective this liner is at remediation of selenium and nitrate loading back to the Arkansas River.

Appendix A: Initial Project Photos



At the End of the Ditch Looking Upstream



At the Divide Box where NRCS calculated 30% losses



The Telephones Sitting In/Along the Ditch



Erosion and Tree Growth at the Headgate

Appendix B: Project Implementation Photos



Preinstallation Trenching for the Keyway



Setting the Liner for Spray and Sealants



Cutting and Shaping the Liner



Attaching the Liner to Concrete



Installed Liner awaiting Backfill

Appendix C: Project Completion Photos



Installed Liner awaiting Backfill



Installed Liner Carrying water on March 17th



Installed Liner Carrying Water on March 17th



Appendix E: Rule 10 Contract

RULE 10 COMPACT COMPLIANCE PLAN CONTRACT FOR MEMBERSHIP

THIS RULE 10 COMPACT COMPLIANCE PLAN CONTRACT FOR MEMBERSHIP ("AGREEMENT") is made this 16 day of Feb, 2021, between the Lower Arkansas Valley Water Conservancy District ("LOWER ARK DISTRICT"), and **Suburban Lateral c/o Diamond A Farms, Inc.**, whose address is **PO Box 551, Rocky Ford CO 81067** hereto referred to as "MEMBER".

RECITALS

1. LOWER ARK DISTRICT is a water conservancy district established pursuant to Colorado law, C.R.S. § 37-45-101 *et seq.* The boundaries of the LOWER ARK DISTRICT include Pueblo, Otero, Crowley, Bent and Prowers Counties, Colorado.
2. MEMBER owns or leases approximately 891.0 acres located in **Otero** County, Colorado.
3. In 2010, the State Engineer passed the "Compact Rules Governing Improvements to Surface Water Irrigation Systems in the Arkansas River Basin in Colorado" ("RULES"). The effective date of the RULES is January 1, 2011.
4. The purpose of the RULES is to ensure that improvements to surface water irrigation systems in the Arkansas River Basin comply with Article IV-D of the Arkansas River Compact. Specifically, the RULES require the replacement of decreased return flows attributable to the use of certain irrigation improvements.
5. On and after the effective date of the RULES, water users in the Arkansas River Basin must obtain approval from the Division Engineer before making certain improvements to a surface water irrigation system. In addition, water users with a surface water sprinkler or surface water drip system installed on or after October 1, 1999 within the H-I Model Domain must obtain approval from the Division Engineer to continue using their systems. The RULES do not apply to surface water irrigation systems that serve less than one acre.
6. The RULES allow the creation of group compact compliance plans. To facilitate compliance with the RULES, the LOWER ARK DISTRICT will prepare, apply for, and operate a group Rule 10 Compact Compliance Plan ("RULE 10 PLAN"). Water users can join (i.e., become a member of) the RULE 10 PLAN to comply with the RULES and allow the use of their irrigation improvements. The LOWER ARK DISTRICT will operate its RULE 10 PLAN program pursuant to the LOWER ARK DISTRICT's Rule 10 Compact Compliance Plan Final Policy ("POLICY").

7. MEMBER desires to participate in the RULE 10 PLAN to allow use of MEMBER's irrigation improvements.
8. **Definition of Farm Unit(s).** A FARM UNIT is the area that is irrigated by an irrigation improvement in conjunction with any additional lands not improved but irrigated with the same shares that can be delivered through the improvement. **THE FARM UNIT(S) COVERED BY THIS AGREEMENT (IF ANY) ARE SPECIFICALLY IDENTIFIED IN THE ATTACHED EXHIBIT A, FARM DATA SHEET.** FARM UNIT(s) eligible for inclusion in the LOWER ARK DISTRICT'S RULE 10 PLAN must lie within the counties comprising the LOWER ARK DISTRICT (Pueblo, Otero, Crowley, Bent and Prowers) and the H-I Model Domain.
9. **Definition of Lining Unit(s).** A LINING UNIT is the area of the canal or off-farm lateral (as defined in the RULES) with increased conveyance efficiency. The LINING UNIT is further defined as either the primary canal or off-farm lateral with a pre-defined number of shares or proportional amount of water flowing in it. **THE LINING UNIT(S) COVERED BY THIS AGREEMENT (IF ANY) ARE SPECIFICALLY IDENTIFIED IN THE ATTACHED EXHIBIT B, LINING DATA SHEET.** LINING UNIT(s) eligible for inclusion in the RULE 10 PLAN must lie within the counties comprising the LOWER ARK DISTRICT (Pueblo, Otero, Crowley, Bent and Prowers) and the H-I Model Domain.
10. **Definition of Improvement.** Improvements to a surface water irrigation system eligible for membership in the RULE 10 PLAN must meet the definition of improvement as stated in the Water Court Decree in Case No. 09CW110 and the RULES at Rule 5.A.6. Improvements include man-made changes to surface water irrigation systems in the following categories:
 - Lining of canals and off-farm laterals.
 - Installation of pipelines to replace off-farm earthen ditches or laterals.
 - Application of chemicals to reduce canal or off-farm lateral losses.
 - Installation of head stabilization ponds and tail water recovery pits, including those that facilitate reuse of surface water.
 - Installation of sprinkler systems, drip systems, or other irrigation technologies to replace flood and furrow irrigation methods.
 - Replacement of side-roll irrigation systems with center pivot systems and replacement of impact sprinklers with spray nozzles.

A. In addition, a FARM UNIT that adds surface water as a source of supply to a sprinkler or drip system that only applied ground water prior to the effective date

of the RULES will be eligible, so that any such future new uses of surface water through sprinklers can be covered in the Plan.

B. The "lining of canals and off-farm laterals" improvements require a different analysis of replacement obligations than for the other categories of improvements. Therefore, the RULE 10 PLAN members must provide and verify the information requested in LOWER ARK DISTRICT'S Lining Data Sheet, rather than the Farm Data Sheet information.

AGREEMENT

11. MEMBER and LOWER ARK DISTRICT hereby agree that MEMBER's FARM UNIT(s) and/or LINING UNIT(s), as described in Exhibits A and B, shall be included in the RULE 10 PLAN.
12. MEMBER hereby designates the LOWER ARK DISTRICT as the designated agent of MEMBER pursuant to the RULES. The RULES define a designated agent as a person or entity who is authorized by the owner or user of a surface water irrigation system to file an application or otherwise comply with the RULES.
13. MEMBER has provided verified information to the LOWER ARK DISTRICT, attached hereto as Exhibits A and/or B, the accuracy and authenticity of which MEMBER warrants. MEMBER acknowledges that the LOWER ARK DISTRICT will submit this verified information as part of the RULE 10 PLAN application to the Division Engineer, who will approve or deny the RULE 10 PLAN. An approved RULE 10 PLAN will determine MEMBER'S water replacement obligations for the coming irrigation season using the ISAM Model. MEMBER agrees to not take any actions that may interfere with or otherwise compromise the LOWER ARK DISTRICT'S operation of the approved RULE 10 PLAN and its associated terms and conditions. MEMBER further agrees to cooperate with reasonable requests made by the LOWER ARK DISTRICT in its efforts to obtain approval for its RULE 10 PLAN application and in its subsequent operation of the approved RULE 10 PLAN.
14. Pursuant to the RULES, the RULE 10 PLAN shall compute MEMBER'S FARM UNIT(s) and/or LINING UNIT(s) gross and net replacement obligation. MEMBER's gross replacement obligation will be computed using the Irrigation System Analysis Model (ISAM Model) or the MEMBER'S LINING UNIT(s) replacement obligation using the lining loss component(s) of the ISAM Model. Each MEMBER's net replacement obligation shall be computed by subtracting any shares of the subject water right, such MEMBER's share of reusable Fry-Ark return flows purchased by an irrigation

entity(ies), and any other imported water or fully consumable water (pursuant to the decree controlling the use of such water) such MEMBER dedicates to the RULE 10 PLAN to offset his replacement obligation. MEMBER shall provide the LOWER ARK DISTRICT with information necessary to make such calculations.

15. EXCEPT AS OTHERWISE PROVIDED FOR HEREIN, THIS AGREEMENT WILL AUTOMATICALLY RENEW EACH YEAR. This Agreement shall immediately terminate upon the occurrence of any one of the following events of termination:

A. The LOWER ARK DISTRICT'S Board of Directors ("BOARD") providing written notice to Member on or before March 1st for the upcoming RULE 10 PLAN year.

B. MEMBER's addition, removal, or modification to any portion of the FARM UNIT(s) or LINING UNIT(s) covered by this AGREEMENT. Such addition, removal, or modification shall require MEMBER's application for a new contract or a mutually agreed upon written amendment to this AGREEMENT. **MEMBER ACKNOWLEDGES HIS OR HER DUTY TO PROMPTLY UPDATE SUCH INFORMATION WHENEVER CHANGES OCCUR.**

C. MEMBER's Discretionary Withdrawal or Automatic Withdrawal from the RULE 10 PLAN.

- i) **Discretionary Withdrawal.** MEMBER must submit written notification of withdrawal from the Rule 10 Plan to the LOWER ARK DISTRICT by March 1st for the upcoming RULE 10 PLAN year. Discretionary Withdrawal and termination of this Agreement shall be effective upon receipt of such written notice. This notification of withdrawal shall include any acreage previously included in the RULE 10 PLAN that is not going to be irrigated or any acreage that will be irrigated without an improvement, to avoid paying assessments and fees for that year. Upon withdrawal, LOWER ARK DISTRICT will notify the Division Engineer of the change in membership in the RULE 10 PLAN, as necessary. The District will not refund any Annual Assessments that have been paid for the upcoming plan year by MEMBER if withdrawal occurs after March 1st.
- ii) **Automatic Withdrawal:** If MEMBER files an objection to the RULE 10 PLAN or Application or otherwise objects to or interferes with the implementation of the LOWER ARK DISTRICT'S RULE 10 PLAN, or who is a member of an organization of that files an objection to the RULE 10

PLAN or Application or otherwise objects to or interferes with the implementation of the LOWER ARK DISTRICT'S RULE 10 PLAN, shall be deemed to have withdrawn from the RULE 10 PLAN and this Agreement will immediately terminate. Upon withdrawal, LOWER ARK DISTRICT will notify the Division Engineer of the change in membership in the RULE 10 PLAN. LOWER ARK DISTRICT shall not refund any assessments that have been paid by MEMBER, and may impose a special assessment on MEMBER to defray LOWER ARK DISTRICT'S costs of responding to an objection. MEMBER agrees to pay, within thirty (30) days, any special assessment imposed on MEMBER by LOWER ARK DISTRICT as a result of MEMBER's Automatic Withdrawal.

D. MEMBER'S failure to pay any special assessments imposed by LOWER ARK DISTRICT within the time provided for in any special assessment notice (to be sent via registered mail), which termination may occur at any time during the year. The BOARD may, in its sole discretion, make alternate arrangements with MEMBER for the timing of MEMBER's special assessment to avoid termination of this AGREEMENT.

E. In addition, MEMBER'S failure to comply with the terms of this AGREEMENT may result in termination of the AGREEMENT, as determined in the sole discretion of the BOARD.

16. **Assessments.** MEMBER shall timely pay all assessments and fees imposed upon MEMBER by the LOWER ARK DISTRICT, more particularly described below. Current assessments and fees are set forth in the Assessment Schedule attached hereto as Exhibit C. LOWER ARK DISTRICT shall make assessments and impose fees in a manner consistent with the POLICY, which is attached as Exhibit D and incorporated herein by this reference. Annual Assessments for membership in the LOWER ARK DISTRICT'S RULE 10 PLAN will be set at the LOWER ARK DISTRICT'S Board of Directors Meetings no later than the regular December Board Meeting to generally cover the LOWER ARK DISTRICT'S average costs of operating the RULE 10 PLAN. Once established, assessments will remain in effect until changed by the BOARD.

Annual Assessments will be based on a FARM UNIT or LINING UNIT. The LOWER ARK DISTRICT will set Assessments on an annual basis and the Assessments will generally include as follows: (1) Administrative Fee: The Administrative Fee will cover the LOWER ARK DISTRICT'S costs of preparing its RULE 10 PLAN, including but not limited to engineering, legal, office expenses, labor, materials, and travel. (2)

Water Fee: The Water Fee will cover the LOWER ARK DISTRICT'S costs of providing replacement water under its RULE 10 PLAN. LOWER ARK DISTRICT will set the Water Fee each year on a per acre-foot basis. The LOWER ARK DISTRICT will determine the Water Fee for each FARM UNIT or LINING UNIT by multiplying the LOWER ARK DISTRICT'S per acre-foot Water Fee by the replacement obligation for the FARM UNIT or LINING UNIT computed by the ISAM Model, pursuant to the RULES.

The LOWER ARK DISTRICT shall charge a Late Fee for any Assessments MEMBER has not paid in full by **March 1st**, which Late Fee shall be included in a Late Assessment Notice sent to MEMBER via registered mail, as set forth in the POLICY.

In addition, LOWER ARK DISTRICT may impose the following special assessments and/or fees on MEMBER:

- i. Tributary Water Assessment: The LOWER ARK DISTRICT may require an additional water assessment if the State Engineer requires delivery of replacement flows to any location other than the main stem of the Arkansas River. In this situation, the LOWER ARK DISTRICT BOARD may impose a special Tributary Water Assessment on the FARM UNIT or LINING UNIT to cover the added costs associated with the non-main stem replacement delivery. The amount of this assessment may be set by BOARD at any time during the year and may be imposed to one or more or all Plan Members at the discretion of the BOARD.
- ii. "Out-of-Season" Fee: The LOWER ARK DISTRICT will charge an out of season fee to any application received after May 1st. This Out-of-Season fee will include the actual engineering and legal fees incurred by the LOWER ARK DISTRICT to modify the RULE 10 PLAN.
- iii. Reinstatement Fee: The LOWER ARK DISTRICT will charge a Reinstatement Fee on any application to include all or part of a FARM UNIT or LINING UNIT that was previously included in a RULE 10 PLAN, but was subsequently removed due to an automatic withdrawal, discretionary withdrawal, or termination by LOWER ARK DISTRICT. The LOWER ARK DISTRICT will impose this fee in addition to the fees and assessments imposed on a new contract.
- iv. Special Assessment: The LOWER ARK DISTRICT BOARD may set a Special Assessment at any time during the RULE 10 PLAN year for unexpected costs that arise to ensure its RULE 10 PLAN allows Plan Members to use their irrigation improvements. Special Assessments may be applied to one or more or all Plan Members at the discretion of the BOARD.

17. **Credits.** MEMBER'S FARM UNIT(s) or LINING UNIT(s) may sometimes produce increased return flows to the river resulting in a water credit. The credit may, at the discretion of the BOARD, either be kept in the MEMBER'S account and applied against the MEMBER'S next year's fees or may be reimbursed to MEMBER at a time determined by the BOARD.
18. **Administrative Schedule.** The administrative schedule set by the BOARD is included in the POLICY attached as Exhibit D. The administrative schedule is set annually by LOWER ARK DISTRICT and seeks to permit the LOWER ARK DISTRICT'S RULE 10 PLAN to cover the use of irrigation improvements beginning May 1st. **THE LOWER ARK DISTRICT BOARD RESERVES THE RIGHT TO ADJUST THE ADMINISTRATIVE SCHEDULE AS NEEDED AND AT ITS SOLE DISCRETION.**
19. **Hold Harmless.** MEMBER affirms that MEMBER's participation in LOWER ARK DISTRICT'S RULE 10 PLAN is voluntary. MEMBER further acknowledges that LOWER ARK DISTRICT'S operation of a RULE 10 PLAN program is voluntary and may be discontinued if LOWER ARK DISTRICT determines it is appropriate or necessary to do so, in its sole discretion. MEMBER further acknowledges that LOWER ARK DISTRICT cannot control decisions made by the Division Engineer or the State Engineer concerning the approval of, denial of, or terms and conditions imposed upon, the RULE 10 PLAN and cannot guarantee that MEMBER's irrigation system improvements will be approved for use as a part of the RULE 10 PLAN. MEMBER agrees not to assert against LOWER ARK DISTRICT, its Board, employees, or agents, any claim, demand, or suit resulting directly or indirectly from the LOWER ARK DISTRICT'S application for, operation of, or discontinuance of, a RULE 10 PLAN program and further agrees to indemnify and hold harmless LOWER ARK DISTRICT, or any agent acting on its behalf, and any of its officers or employees from any damages, costs or expenses, resulting therefrom.
20. **Notice.** All notices, demands, and requests which may be required or permitted to be given by either party shall be in writing and shall be sent to the following addresses:

TO LOWER ARK DISTRICT: 801 Swink Ave., Rocky Ford, CO 81067

TO MEMBER: PO Box 551, Rocky Ford CO 81067
21. **Entire Agreement.** This AGREEMENT, together with the Recitals and all Exhibits hereto, constitutes the entire agreement between the LOWER ARK DISTRICT and MEMBER regarding the subject matter hereof and replaces all prior written or oral

agreements and understandings. It may be altered, amended, or repealed only by a duly executed written instrument agreed to by the parties.

22. **Governing Law.** This AGREEMENT shall be interpreted in accordance with, and be governed by, the law of the State of Colorado.
23. **Severability.** If any provision of this AGREEMENT shall be held invalid or unenforceable, the remainder of this AGREEMENT shall not be affected thereby, and there shall be deemed substituted for the affected provision, a valid and enforceable provision as similar as possible to the affected provision.
24. **Termination.** LOWER ARK DISTRICT may terminate this AGREEMENT in its sole discretion prior to March 1st of any year by providing written notice to MEMBER. The LOWER ARK DISTRICT may not terminate this Agreement after May 1st, except as otherwise provided for herein.

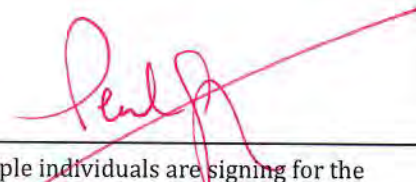
**LOWER ARKANSAS VALLEY WATER
CONSERVANCY DISTRICT**

MEMBER

By: _____



By: _____



[if multiple individuals are signing for the
representative MEMBER use the following
additional signature lines]

By: _____

By: _____

By: _____

By: _____

STATE OF COLORADO)
)
COUNTY OF Otero)

The foregoing instrument was acknowledged before me this 16 day of Feb 2021, by
Jack Goble of the Lower Arkansas Valley Water Conservancy District.

Witness my hand and official seal.

My Commission expires: 2/28/2022



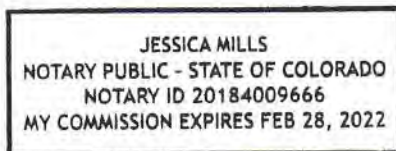
Jessica Mills
Notary Public

STATE OF COLORADO)
)
COUNTY OF Otero)

The foregoing instrument was acknowledged before me this 16 day of Feb 2021, by
Phillip Chavez

Witness my hand and official seal.

My Commission expires: 2/28/2022



Jessica Mills
Notary Public

EXHIBIT A
FARM DATA SHEET

Owner Name: Suburban Lateral c/o Diamond A Farms, Inc.

Address: PO Box 551, Rocky Ford CO 81067

Phone Number(s): 831-601-4555

Farm Location: E1/2 of 2 & NW1/4 of 12-24S-56W, SE1/4 of 35 & 36-23S-55W, NW1/4 of 31-23S-55W

Improvement: Lateral Improvement

Canal: Catlin

Shares: 892.2

Lateral Seepage % Reduction: 5,100 L.F./17,951 L.F. = 0.2841

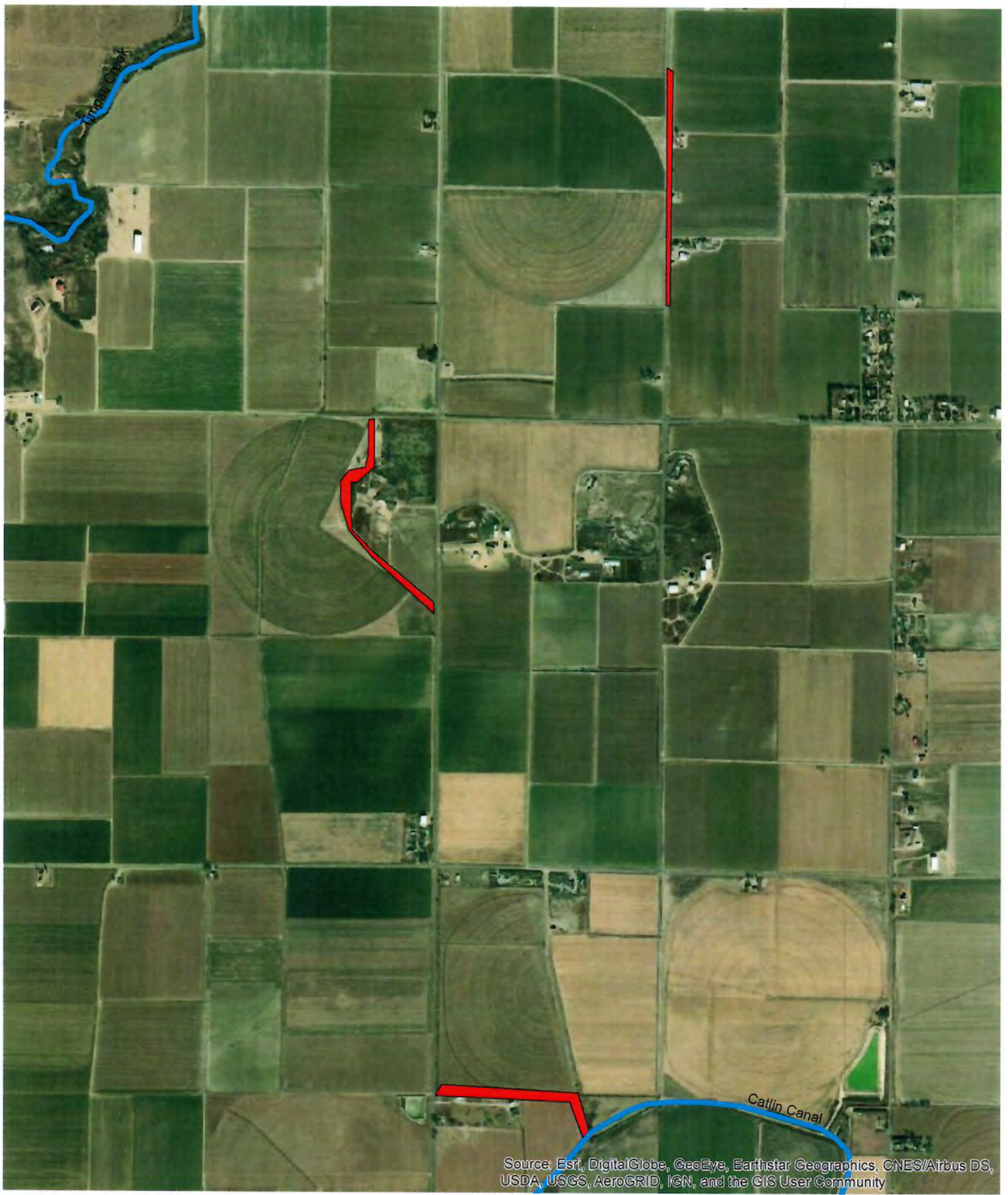
Acreages:

	Pre-Improvement	Post Improvement
Flood:	891.0 acres	891.0 acres
Sprinkler:	0.0 acres	0.0 acres
Drip:	0.0 acres	0.0 acres
Total Irrigated:	891.0 acres	

This data represents 1 Farm Unit.

I, Phillip Chavez, acknowledge that I have read the foregoing farm information and verify its content to the best of my knowledge, information and belief.


[MEMBER SIGNATURE]




Headgate 199 Lining

0 0.15 0.3 0.6 Miles



Legend

 Headgate_199