COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	Brink, Inc. Project-01892 - Modeling the Effects of Conservation Practices on Salinity Discharges from Irrigated Fields*
Name of Water Project	
Grant Request Amount	**$66,850.00**
Primary Category	$66,850.00
Agricultural Projects	
Total Applicant Match	**$37,650.00**
Applicant Cash Match	$33,650.00
Applicant In-Kind Match	$4,000.00
Total Other Sources of Funding	**$0.00**
Total Project Cost	**$104,500.00**

Applicant & Grantee Information

Name of Grantee: Brink, Inc.
Mailing Address: Box 401 Erie CO 80516
FEIN: 800,001,516

Organization Contact: Phil Brink
Position/Title: President
Phone: 720-887-9944
Email: phil@brinkinc.biz

Organization Contact - Alternate: Phil Brink
Position/Title: President
Phone: 720-887-9944
Email: phil@brinkinc.biz

Grant Management Contact: Phil Brink
Position/Title: President
Phone: 720-887-9944
Email: phil@brinkinc.biz

Grant Management Contact - Alternate: Phil Brink
Position/Title: President
Phone: 720-887-9944
Email: phil@brinkinc.biz

Engineering Contact: Phil Brink
Position/Title: President
Phone: 720-887-9944
Email: phil@brinkinc.biz

Description of Grantee/Applicant

Brink, Inc. is structured as a Colorado "S" Corporation. Brink, Inc. has subcontracted to CDPHE, CSU, Colorado Department of Agriculture, and the USDA Natural Resources Conservation Service.

Type of Eligible Entity

- ☐ Public (Government)
- ☐ Public (District)
- ☐ Public (Municipality)
- ☐ Ditch Company
- ☐ Private Incorporated
- ■ Private Individual, Partnership, or Sole Proprietor
- ☐ Non-governmental Organization
- ☐ Covered Entity
- ☐ Other

Category of Water Project

- ■ Agricultural Projects
  Developing communications materials that specifically work with and educate the agricultural community on headwater restoration, identifying the state of the science of this type of work to assist agricultural users among others.
- ☐ Conservation & Land Use Planning
  Activities and projects that implement long-term strategies for conservation, land use, and drought planning.
- ☐ Engagement & Innovation Activities
  Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website.
- ☐ Watershed Restoration & Recreation
  Projects that promote watershed health, environmental health, and recreation.
- ☐ Water Storage & Supply
  Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap.

Location of Water Project

Latitude	40.000000
Longitude	105.000000
Lat Long Flag	Other: Coordinates based on other boundaries or locations
Water Source	Irrigated fields in all major basins in the state
Basins	Arkansas; Colorado; Gunnison; Yampa/White/Green; South Platte; Southwest; Rio Grande
Counties	Adams; Washington; Arapahoe; Archuleta; Baca; Bent; Boulder; Broomfield; Cheyenne; Dolores; Chaff...
Districts	

Water Project Overview

Major Water Use Type	Agricultural
Subcategory	Planning (e.g. watershed)
Scheduled Start Date - Design	2/15/2022
Scheduled Start Date - Construction	

Description

Brink, Inc. provides compliance and conservation assistance to the agricultural industry. Within the conservation realm, we often partner with university, government and agricultural industry affiliates to address challenges and answer pressing questions that fill critical knowledge gaps which help agricultural producers improve

competitiveness and avoid problems. Brink, Inc. provides a bridge by linking scientific theories with real world applications. We explore technologies and practices that clarify the extent of potential opportunities on-the-ground. Working cooperatively with other stakeholders across disciplines and professions, we achieve outcomes that maximize private and public investments and expand agricultural knowledge and opportunity. Brink, Inc. has served as a contractor to the USDA – NRCS, the Colorado State Land Board, the Colorado Department of Health and Environment, the Colorado Department of Agriculture, Colorado State University, the Uintah Tribal Government, and many private companies – large and small.

Note * Edge of Field losses of Se, Fe and E-coli will also be modeled in the Grand Valley.

Measurable Results

	New Storage Created (acre-feet)
	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
	Existing Storage Preserved or Enhanced (acre-feet)
	New Storage Created (acre-feet)
	Length of Stream Restored or Protected (linear feet)
	Efficiency Savings (dollars/year)
	Efficiency Savings (acre-feet/year)
	Area of Restored or Preserved Habitat (acres)
	Quantity of Water Shared through Alternative Transfer Mechanisms or water sharing agreement (acre-feet)
	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning
10,000	Number of Coloradans Impacted by Engagement Activity

Water Project Justification

The Water Plan presents the importance of establishing strategies to maintain the health of Colorado's waterways. All of the Basin Implementation Plans include goals for supporting healthy rivers and/or protecting and enhancing environmental recreational attributes.

Increasing salinity in streams and irrigation water has a negative impact on fish and crops. Under Adaptive Innovation, the Water Plan Technical Update predicts a 13 percent reduction in gpcd (from 164 to 143 gpcd) compared to current conditions due to conservation and efficiency. While beneficial for water quantity demands, it is known that these practices along with recycling and re-use create more concentrated wastewater with a higher salinity concentration. It is not known how irrigation efficiency and other conservation practices implemented at the field level impact salinity discharges. Salinity concentrations in the South Platte River near Julesburg average about 1,200 mg/L. Salinity levels in the canal systems along the Arkansas River see an increase from 300 mg/L total dissolved solids (TDS) near Pueblo to over 4,000 ppm at the Colorado-Kansas border (IDS Group). These levels are substantially higher than average concentrations in the Colorado River Basin, which has a salinity control program. Given the likely increase in salinity concentrations that will be seen in river basins across the state, it is important to understand whether or not increased agricultural irrigation efficiency and adoption of other conservation practices will have a positive, negative, or neutral impact on salinity in receiving surface and tributary groundwater.

Modeling Selenium (Se), Recoverable Iron (Fe) and E-coli losses from the edge of fields in the Grand Valley will bring clarity regarding whether or not agricultural land is releasing a significant quantity of any these constituents from the edge of irrigated fields. CDPHE believes the levels of these constituents are elevated within the Colorado River as it runs through the Grand Valley. However, relevant water quality data is limited and out of date in important areas. Modeling represents a cost- and time-efficient method to answer the question.

The modeling study will also provide insights into how specific conservation practices – including more efficient irrigation practices and reduced tillage – individually affect edge of field discharges of Se, Fe, E-coli and Salinity. This will fill a large information gap and will help guide any proposed changes to TMDLs. The modeling results will also be utilized in the watershed management plan being developed for the Grand Valley.

Related Studies

The Impact of EQIP-funded Agricultural Conservation Practices on Water Quality in Colorado. September, 2020. http://onewatersolutions.com/wp-content/uploads/2020/09/EQIP_Report_Sept_2020_FINAL.pdf

Taxpayer Bill of Rights

Not affected by any TABOR issues

Budget and Schedule

This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

Reporting Requirements

Progress Reports: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status of the tasks identified in the statement of work, including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Report: At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that: (1) Summarizes the project and how the project was completed. (2) Describes any obstacles encountered, and how these obstacles were overcome. (3) Confirms that all matching commitments have been fulfilled. (4) Includes photographs, summaries of meetings and engineering reports/designs. The CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

Payment

Payment will be made based on actual expenditures and must include invoices for all work completed. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire Project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions. Costs incurred prior to the effective date of this contract are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of this contract must be provided to as part of the project documentation.

Performance Measures

Performance measures for this contract shall include the following: (a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget in the Budget & Schedule Exhibit B. Per Water Plan Grant Guidelines, the CWCB will pay out the last 10% of the

budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment. (b) Accountability: Per Water Plan Grant Guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per Water Plan Grant Guidelines, Progress Reports must be submitted at least once every 6 months. A Final Report must be submitted and approved before final project payment. (c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each Progress Report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary. (d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the Grant Agreement.

Last Updated: June 2021

Statement Of Work	
Date:	June 25, 2021
Name of Grantee:	Brink, Inc.
Name of Water Project:	Modeling the Effects of Conservation Practices on Salinity Discharges from Irrigated Fields*
*Note	* Edge of Field losses of Se, Fe and E-coli will also be modeled in the Grand Valley.
Funding Source:	Agricultural, Engagement & Innovation, Environment and Recreation

Water Project Overview:

This application represents two distinct modeling projects. Brink, Inc. will coordinate both. The statewide Salinity modeling project will examine how select NRCS-EQIP conservation practices affect salinity discharges from irrigated fields. Colorado State University's One Water Solutions Institute will be the contractor in charge of executing the modeling component of the project, and will co-lead with Brink, Inc. the analysis and interpretation of results, preparation of the final report and presentations of the findings. CSU's Edge-of-Field Conservation Tool will be used to quantify salinity load changes resulting from the implementation of selected EQIP-funded conservation practices. Conservation practices to be modeled include tillage reduction practices, irrigation efficiency improvements and vegetative buffers.

In the Grand Valley, edge-of-field losses of Selenium, Iron and E-coli will also be modeled. CDPHE believes the levels of these constituents are elevated within the Colorado River as it runs through the Grand Valley. The modeling study will aid in understanding whether irrigated agricultural land is releasing significant levels of these constituents from the field edges. It will also shed light on how common irrigation and tillage improvement BMPs influence edge of field losses of the Se, Fe, and E-coli.

Education and Outreach:
Ten (10) Outreach Actions will be accomplished. Outreach will include a combination of meetings, presentations, webinars, podcasts and publications. At least one will be pursued in each of the major river basins with additional meetings in the Colorado and the South Platte River Basin. Some of these presentations will be at annual water conferences. Events will connect with stakeholders in the agricultural, M & I, recreational, and environmental sectors. Some events will be done in conjunction with Colorado Ag Water Alliance (CAWA).

Publications will be carried in agricultural outlets and other water focused media. Various formats including written, digital and social media will be used to communicate the findings of the two studies.

Project Objectives:

- Set up and complete the salinity modeling simulations and verify and validate outputs.
- Set up and complete the selenium, total recoverable iron and e-coli modeling simulations and verify and validate outputs.
- Prepare a draft report, then edit and release a final report with an executive summary for each modeling study detailing project components, including the need, purpose, modeling features, management scenarios, narrative, tabular and graphic interpretation of findings, conclusions and any recommendations.
- Conduct outreach to convey findings of each study to all categories of water stakeholders.

Last Updated: June 2021

Tasks
Task 1 – Prepare Dataset and Management Scenarios and Set up and Test Models
Description of Task: Prepare Dataset and Management Scenarios and run sample model simulations
Acquire data representing USDA Natural Resources Conservation Service (NRCS) EQIP-funded conservation practices installed in Colorado over the last 2 years and combine with existing data. Prepare individual field management scenarios for western slope counties and crops.
Method/Procedure:
- Acquire the EQIP conservation practice data via a FOIA request. Sort the data by conservation practice, county, acres implemented, and cost and confirm interpretive accuracy with NRCS. Combine new data with previously obtained data spanning from 2008 to 2018. - Research and prepare individual field management scenarios for western slope counties and crops. Verify new management scenario assumptions with CSU and NRCS scientists in western slope counties. Prepare final dataset of management scenarios. - Establish modeling output requirements for each model (Salinity discharge quantification, Carbon sequestration, and selenium, total recoverable iron and e-coli in the Grand Valley). - Import 2019 and 2020 irrigated fields data by county for all counties in study. - Make any changes needed to Salinity routines in SWAT to accommodate all basins. - Prepare SWAT routines for Selenium, Total Recoverable Iron and E-coli for Grand Valley irrigated land modeling. - Prepare modeling programs to run test simulations.
Deliverables:
- Finalized dataset representing selected conservation practices installed between 2008 – 2020 in Colorado. - Management scenarios for each of the predominant crops grown in each county included in the studies. - Sample set of model test runs, review of outputs and adjustments as needed.

Tasks
Task 2 – Run Models, Analyze Findings and Prepare Reports

Last Updated: June 2021

Description of Task:
This task represents the modeling component of the project. The salinity routine developed for the Arkansas River Basin for the Soil and Water Assessment Tool (backbone program of the Edge of Field Conservation Tool) must be adapted to the other basin before running the salinity discharge simulations. Once the datasets and models are ready we will run the simulations, then review outputs and make changes where anomalies are identified. SWAT routines (code) must be prepared and validated for Selenium, Iron and E-coli modeling that will be done in the Grand Valley. The final model outputs will be analyzed and individual reports with findings and any recommendations will be prepared.
Method/Procedure:
- Run modeling simulations using Edge of Field Conservation Tool (EoFCT) to model salinity discharges. Run modeling simulations using EoFCT for the three additional constituents of interest in the Grand Valley. Review results. Make modifications to model and re-run as needed. - Re-run model simulations. - Compare and analyze respective output sets. This process may include meetings with NRCS, USGS, Grand Valley Water Users Association, and others to discuss findings regarding any specific challenges related to model interpretation and accuracy of findings. - Prepare report of modeling results with executive summary.
Deliverables:
- Two Reports; each detailing the findings of the respective modeling effort, with an executive summary and recommendations for each. - Media releases (one for each report) and posting of reports online at CSU and Brink, Inc. websites and social media accounts. Colorado Corn Administrative Committee, GVWUA, CAWA, and others may also post the results of the modeling studies.

Tasks
Task 3 – Outreach to Convey Findings of Modeling Simulations
Description of Task:
Ten (10) Outreach Actions will be accomplished. Outreach will include a combination of meetings, presentations, webinars, podcasts and publications. Outreach actions will pursued in all of the major basins within the state with additional meetings in the Colorado and the South Platte River Basin. Some of these presentations will be at annual water conferences, conservation districts, irrigation company meetings, or other venues. Events will connect with stakeholders in the agricultural, M & I, recreational, and conservation sectors. Publications will be carried in agricultural outlets and other water focused media. Various formats including written, digital and social media will be used to communicate the findings of the two studies.
Method/Procedure:

Last Updated: June 2021

Presentations will be given at conferences, meetings and webinars. We will coordinate with CAWA and agricultural industry groups to give presentation at their gatherings, and we will solicit interest from water conservancy districts, conservation districts, Colorado Watershed Assembly, Colorado Association of Conservation Districts, NRCS and basin forums. One (1) webinar and /or (1) podcast – one for each study – will be executed, along with a publication.
Deliverable:
- Ten (10) Outreach Actions. - List of outreach events and audience size and general makeup when known - Posting of reports and power point presentations on website(s) - Posting of publications on websites - Posting of podcasts on websites

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Water Plan Grant - Exhibit B
Budget and Schedule

Prepared Date: 11/29/2021

Name of Applicant: Brink, Inc.

Name of Water Project: Modeling the Effects of Conservation Practices on Salinity Discharges from Irrigated Fields (statewide)

Project Start Date: 2/15/2022

Project End Date:2/14/2024

Task No.	Task Description	Task Start Date	Task End Date	Grant Funding Request	Match Funding	Total
1a	Salinity Discharge Modeling, Analysis & Reporting	2/15/2022	2/14/2024	$37,300	$20,000	$57,300
1b	E-Coli, Selenium, Iron Modeling, Analysis & Reporting	2/15/2022	9/14/2023	$28,550	$11,750	$40,300
2	Outreach; Modeling Project and Results	8/15/2022	2/14/2024	$0	$5,900	$5,900
3	Expenses (mileage, lodging, conferences, etc)	2/15/2022	2/14/2024	$1,000	$0	$1,000
						$0
						$0
						$0
						$0
						$0
						$0
						$0
						$0
			Total	$66,850	$37,650	$104,500

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan Grant - Detailed Budget Estimate
Fair and Reasonable Estimate

Prepared Date: 11/29/2021
Name of Applicant: Brink, Inc.
Name of Water Project: Modeling the Effects of Conservation Practices on Salinity Discharges from Irrigated Fields (statewide)

EXAMPLE A: Study or Project Coordination

Task 1 - Prepare and Run Models, Analyze Findings, Prepare Reports

Sub-task	Item	Hourly Rate	# Hours	Sub-total	Item Cost	Item Quantity	Sub-total	Total	CWCB Funds	Matching Funds
1a) Edge of Field Salinity Discharge Modeling & Reporting										
	Modeling, Analysis, Reporting			$ -	$ 57,300.00	1.00	$ 57,300.00	$ 57,300.00	$ 37,300.00	$ 20,000.00
SUB TOTAL								**$ 57,300.00**	**$ 37,300.00**	**$ 20,000.00**
1b) Grand Valley Edge of Field Loss Modeling & Reporting; Selenium (Se), Iron (Fe) & E-Coli (TMDL constituents)										
	Modeling, Analysis, Reporting				$ 40,300.00	1.00	$ 40,300.00	$ 40,300.00	$ 28,550.00	$ 11,750.00
SUB TOTAL								**$ 40,300.00**	**$ 28,550.00**	**$ 11,750.00**
Task 2 - Educational Outreach										
Outreach										
	Outreach presentations, webinars, meetings, podcasts, articles, etc				$ 5,900.00	1.00	$ 5,900.00	$ 5,900.00	$ -	$ 5,900.00
SUB TOTAL								**$ 5,900.00**	**$ -**	**$ 5,900.00**
Task 3 - Expenses										
Expenses										
	Travel, lodging, meals, copies, printouts, conference reg.				$ 1,000.00	1.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ -
SUB TOTAL								**$ 1,000.00**	**$ 1,000.00**	**$ -**
TOTAL								**$ 104,500.00**	**$ 66,850.00**	**$ 37,650.00**
OVERALL TOTAL								**$ 104,500.00**		

MEMORANDUM

Date: 11/30/2021

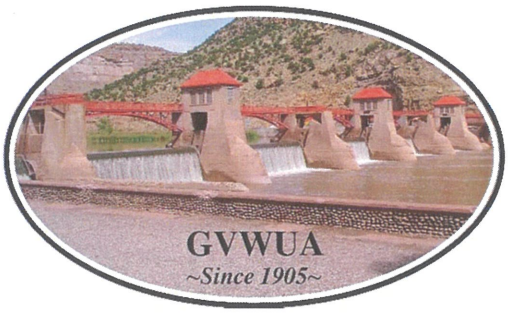
RE: letters of support

Letters of support from GVWUA and Colorado Corn Administrative Committee reference carbon modeling in addition to salinity modeling. Brink, Inc. submitted an application for the July, 2021 Water Plan grant cycle and this application included a carbon sequestration modeling component. The application was not approved for funding. Carbon sequestration is not included in the current grant proposal (11/30/2021). The salinity discharge modeling component, however, remains the same.

Please contact me with any questions,

Thank you,

Phil Brink
Brink, Inc.



Grand Valley Water Users Association
Grand Valley Project
1147 24 Road, Grand Junction, CO 81505
Phone: 970-242-5065 Fax: 970-243-4871
www.GrandValleyWaterUsers.com

July 20, 2021

Colorado Water Conservation Board
1313 Sherman Street, Room 718
Denver, Colorado 80203

RE: Brink, Inc. Proposal to Model Field Salinity Discharges

Dear Colorado Water Conservation Board members:

Grand Valley Water Users Association (GVWUA) supports the referenced project, which will involve modeling conservation practices to determine how they affect carbon sequestration and edge of field salinity discharges. This project will also model discharges of Total Maximum Daily Load (TMDL) constituents of interest in the Grand Valley. Specifically, these include Selenium, Iron, and E-coli.

Colorado State University's Edge-of-Field Conservation Tool will be used to quantify salinity and TMDL constituent releases resulting from the implementation of selected EQIP-funded conservation practices. Conservation practices to be modeled include tillage reduction practices, irrigation efficiency improvements and vegetative buffers.

The GVWUA is interested in understanding how tillage, irrigation and vegetative buffers affect Selenium (Se), Recoverable Iron (Fe) and E-coli discharges from the edge of fields in the Grand Valley. CDPHE believes the levels of these constituents are elevated within the Colorado River as it runs through the Grand Valley. The modeling study will be useful in understanding whether irrigated agricultural land is releasing significant levels of these constituents from the edge of fields. It will also provide insights into how conservation practices – including more efficient irrigation practices and reduced tillage – affect edge of field discharges of Se, Fe, E-coli and Salinity.

The GVWUA is committing to provide $10,650 in match funding for this project. We may solicit other local stakeholders to share in underwriting the committed match amount.

This project will help sustain agricultural viability by providing a clearer understanding of whether agricultural conservation practices are helping to protect water quality in streams and rivers through reduced pollutant discharges from fields. This has implications for environmental interests as well. The project will also help sustain agricultural viability by determining whether conservation practices can be used to meaningfully reduce carbon emissions from irrigated agricultural land, and offset other CO2 releases to generate sellable carbon credits that could supplement agricultural producer incomes.

Please feel free to contact me if you have any questions about our support for the proposed project.

Sincerely,

Mark Harris
General Manager
Grand Valley Water Users Association

Administrative Committee
PO Box 1286
Englewood, CO 80150
Phone: (970) 351-8201
www.coloradocorn.com

Colorado Water Conservation Board1313
Sherman St., Room 718
Denver, CO 80203

June 25, 2021

RE: Brink, Inc. Water Plan Grant Proposal to Model Salinity Discharges from Fields: Modeling the Impact of Conservation Practices on Salinity Discharges from the Field Edge

Dear Colorado Water Conservation Board members:

Colorado Corn supports the project proposed by Brink, Inc. that will involve modeling conservation practices to determine how they affect salinity discharges from fields. Colorado Corn is providing an **$18,000** cash match for the project.

Colorado State University's Edge-of-Field Conservation Tool will be used to quantify salinity load changes resulting from the implementation of selected EQIP-funded conservation practices. Conservation practices to be modeled include tillage reduction practices, irrigation efficiency improvements and vegetative buffers.

The 2019 technical update of the water plan indicates in all scenarios of growth and climate change that agricultural producers will face water shortages through the state. Population growth scenarios result in higher TDS in streams due to increased reuse, recycling and the elimination of flushing flows once planned reservoirs are completed. These realities indicate greater challenges ahead for growers and aquatic life.

This project will help sustain agricultural viability by providing a clearer understanding of whether irrigated agricultural land management practices can play a role in limiting salinity increases in streams and rivers through reduced salinity discharges from fields. This has implications for environmental interests as well.

Please feel free to contact me if you have any questions about our support for the proposed project.

Sincerely,

Nicholas J. Colglazier
Colorado Corn Administrative Committee
Executive Director
(970) 580-0922 (c)|(970) 351-8201 (o)
ncolglazier@coloradocorn.com

CIVIL AND ENVIRONMENTAL ENGINEERING
A203 Engineering
1372 Campus Delivery
Fort Collins, Colorado 80523-1372
www.engr.colostate.edu/ce

Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

June 29, 2021

RE: Brink, Inc. Water Plan Grant Proposal to Model Salinity Discharges from Fields: Modeling the Impact of Conservation Practices on Salinity Discharges from the Field Edge

Dear Colorado Water Conservation Board members:

Colorado State University's One Water Solutions Institute (OWSI) supports the project proposed by Brink, Inc. that will involve modeling conservation practices to determine how they affect salinity discharges from fields.

Colorado State University's One Water Solutions Institute will lead the modeling component of the project, and will co-lead with Brink, Inc. the interpretation of results, preparation of the final report and presentations of the findings. CSU's Edge-of-Field Conservation Tool will be used to quantify salinity load changes resulting from the implementation of selected EQIP-funded conservation practices. Conservation practices to be modeled include tillage reduction practices, irrigation efficiency improvements and vegetative buffers.

The 2019 technical update of the water plan indicates in all scenarios of growth and climate change that agricultural producers will face water shortages through the state. Population growth scenarios result in higher TDS in streams due to increased reuse, recycling and the elimination of flushing flows once planned reservoirs are completed. These realities indicate greater challenges ahead for growers and aquatic life.

This project will help sustain agricultural viability by providing a clearer understanding of whether irrigated agricultural land management practices can play a role in limiting salinity increases in streams and rivers through reduced salinity discharges from fields. This has implications for environmental interests as well.

Please feel free to contact me if you have any questions about our support for the proposed project.

Sincerely,

M.Arabi

Mazdak Arabi

Professor and Borland Chair of Water Resources
Director, One Water Solutions Institute
Civil and Environmental Engineering
Colorado State University
Voice: (970) 491-4639
Web: www.erams.com/marabi

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Connecting world-class research to real-world water challenges

Colorado Ag Water Alliance

Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

11/30/2021

RE: Brink, Inc. Proposal to Model the Effects of Conservation Practices on Field Salinity Discharges

Dear Colorado Water Conservation Board members:

Colorado Ag Water Alliance supports Brink, Inc.'s project which will involve modeling conservation practices to determine how they affect carbon sequestration and edge of field salinity discharges.

Colorado State University's Edge-of-Field Conservation Tool will be used to quantify salinity load changes resulting from the implementation of selected EQIP-funded conservation practices. Conservation practices to be modeled include tillage reduction practices, irrigation efficiency improvements and vegetative buffers.

The 2019 technical update of the water plan indicates in all scenarios of growth and climate change that agricultural producers will face water shortages through the state. Population growth scenarios result in higher total dissolved solids (TDS) in streams due to increased reuse, recycling and the elimination of flushing flows once planned reservoirs are completed. These realities indicate greater challenges ahead for growers, livestock producers and aquatic life.

This project will help sustain agricultural viability by providing a clearer understanding of whether irrigated agricultural land management practices can help limit salinity increases in streams and rivers through reduced salinity discharges from fields. This has implications for environmental interests as well. The project will also help sustain agricultural viability though determining whether conservation practices can be used to meaningfully reduce carbon emissions from agriculture and offset other CO2 releases to generate sellable carbon credits that could supplement agricultural producer incomes.

Please feel free to contact me if you have any questions about our support for the proposed project.

Sincerely,

Greg Peterson, Executive Director
Colorado Ag Water Alliance