



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

1313 Sherman Street, Room 721
Denver, CO 80203

December 5, 2015

Rio Grande Watershed Conservation & Education Initiative
Attn: Judy Lopez, Program Director
P.O. Box 1257
Center CO 81125-1257

Re: **WSRA Grant – Notice to Proceed – Increasing the Water Holdings Capacity
of Soil for Agriculture Sustainability in the San Luis Valley in the Rio
Grande River Basin**

Dear Judy,

This letter is to inform you that the purchase order request for the WSRA grant to assist in the above project in the Rio Grande River Basin was approved on December 4, 2014.

With the executed purchase order, you are now able to proceed with the project and begin invoicing the State of Colorado for costs incurred through March 1, 2018. Upon receipt of your invoice(s), the State of Colorado will provide payment no later than 45 days after signed approval by the project manager.

I wish you much success in your project.

Sincerely,

/s/

Craig Godbout
Program Manager
Colorado Water Conservation Board
Water Supply Planning Section
1313 Sherman St, Rm. 721
Denver CO 80203
(303) 866-3441, ext 3210 (office)
(303) 547-8061 (cell)
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STATE OF COLORADO
Department of Natural Resources

ORDER
Number: POGG1 PDAA 20150000000000000196
Date: 12/04/14
Description: PDAA 2500 WSRA Ag Sustainability in the SLV in the RG Basin
BUYER
Buyer:
Email:
VENDOR
RIO GRANDE WATERSHED CONSERVATION
PO BOX 1257
CENTER, CO 81125-1257
Contact: Judy Lopez
Phone: 7195805300
** IMPORTANT **
The order number and line number must appear on all invoices, packing slips, cartons and correspondence
BILL TO
COLORADO WATER BOARD CONSERVATION
1313 SHERMAN STREET, ROOM 718
DENVER, CO 80203
SHIP TO
COLORADO WATER BOARD CONSERVATION
1313 SHERMAN STREET, ROOM 718
DENVER, CO 80203
SHIPPING INSTRUCTIONS
Delivery/Install Date:
F.O.B: FOB Dest, Freight Allowed
VENDOR INSTRUCTIONS:

Table with 7 columns: Line Item, Commodity/Item Code, UOM, QTY, Unit Cost, Total Cost, MSDS Req. Row 1: 1, G1000, 0, 0, 0.00, \$98,200.00, []

Description: PDAA 2500 WSRA Ag Sustainability in the SLV in the RG Basin
Start Date: 12/04/14 End Date: 03/01/18

TERMS AND CONDITIONS
https://www.colorado.gov/osc/purchase-order-terms-conditions

DOCUMENT TOTAL = \$98,200.00

Exhibit A - Statement of Work - Increasing the Water Holding Capacity of Soil for Agriculture Sustainability in the San Luis Valley in the Rio Grande River Basin

OBJECTIVES/TASKS and DELIVERABLES

The study objectives are:

1. How long does it take to achieve soil health through the use of biologic methods, such as compost, green manure cropping and biologic nutrient management, (ultimately replacing commercially produced compounds) will increase soil water holding capacity.
2. Will these biotic system changes increase pack out rates? If so, can productive land with increased pack-out, reduce acres farmed thus preserving water?
3. How long does field rebound from conventional chemical management take and what are the overall water saving through the course of a two/three year crop rotation?

TASKS

TASK 1 – Testing

NRCS District and Area Technicians (District Conservationist and Program Specialist) - in-kind contribution is a NRCS estimate for cost and time. Soil tests will be collected by technicians and performed at Earthfort and Haynie labs.

Description of Task: Field technician will collect samples and send them to lab.

Method/Procedure: Samples will be collected post season, with initial samples fall 2014. Tests used will be the industry standard Earthfort and Haynie. Soil water holding capacity tests will be done locally.

Deliverable: Annual test data will be supplied to CWCB in the annual report; compilation and final analysis summary will be provided at project completion.

TASK 2 – Soil Preparation, planting, growing and harvest.

Description of Task: Farm each season as follows: Initial application of compost, develop Irrigation water management plan, monitor field preparation and tillage practices. Plant rotational crops as noted below and harvest.

Method/Procedure: Initial Application of Compost provided by Compost Technologies, Center, CO. Application rate for compost will be 2 tons per acre. Develop Irrigation water management plan with technical support from NRCS and input from participating Farmer. Do field preparation and tillage. Plant rotational crops as noted: Potatoes 30 sacks of seed per acre; Green manure \$32.50 an acre; Barley (Coors) \$22.00 per acre; Alfalfa \$90.00 per acre. Harvest the crop and determine pack out rates.

Deliverable: This task will track the amendments applied to field, track water application and management, record seeding rates and quantify pack out rates.

TASK 3 – Nutrient Management

Description of Task: Application of Bio-blend nutrients.

Method/Procedure: Technicians will monitor and track nutrient application to crop.

Deliverable: Analysis of nutrient management changes and their effects on soil health, pack out rates and soil water holding capacity. Annual test data will be supplied to CWCB in the annual report; compilation and final analysis summary will be provided at project completion

TASK 4 – Monitoring

Description of Task: Crop, water and soil monitoring visits.

Method/Procedure: NRCS District and Area Technicians, CSU Grad Student, Soil Guys Technicians and Project manager will conduct bi-weekly monitoring of project sites during growing season. For the three years of project implementation. Monitoring will consist of several assessments that include documenting changes in water use, soil health, water holding capacity of soil and soil nutrient values.

Crop pack out rates the include a cost analysis to operation will also be tracked and compared.

Deliverable: Detailed analysis of progress and processes.

TASK 5 – Analysis

Description of Task: Monitor the site for two years using the RGHRP Sampling and Analysis Plan (SAP).

Method/Procedure: Analysis will be done by field personnel – NRCS – water management and practices used. Soil Guys and CSU Grad Student will ensure the timing and taking of samples is done and in line with industry standards. Testing will be done by Earthfort, Haynie and Agro Engineering.

Final analysis -NRCS, Soil Guys, CSU Grad student

Deliverable: Annual reports will compare and collect seasonal data and compile data to looking at soil nutrient value, microbial counts, water holding capacity, tilth and pest pressure. The annual data will then be used to form a timeline of outcomes.

TASK 6 – Outreach and Education

Description of Task: Conduct a public outreach and education program to raise awareness of soil health benefits.

Method/Procedure: Develop visual aids and written materials that discuss the process and ourcomes of soil health. Conduct field tours that present process and progress, while demonstrating the applied techniques. Present progress reports to Rio Grande Inter-basin Roundtable; quarterly Board Meetings of

the Rio Grande Water Conservancy District; Board Meetings of the San Luis Valley Water Conservancy District, and to specific public meetings. In addition, give interviews and status reports on local radio stations. Conduct an annual soil health conference for producers that provide the latest science in soil health. These will be held each January/February.

Deliverable: A public that is better informed and more aware of agriculture issues, especially regarding soil health and best managements practices, including site-specific methodologies used to achieve Project objectives. Outreach and education efforts will impress upon the public the importance of agriculture sustainability, awareness of farm/ranch conservation practices, and gain support and increase participation in future projects.

TASK 7 – Project Administration

Description of Task: Complete all necessary contracts, status reports, and internal and external documents. Ensure Tasks are completed within approved costs and timelines. Ensure complete analysis is prepared.

Method/Procedure: The RGWCEI will administer the Soil Health Sustainability Project. This includes completing contracts with the CWCB, NRCS, Project partners, landowners, and producers; insuring necessary environmental precautions are taken; managing budgets and reimbursement requests; and completing semi-annual and final reports. Additionally, the RGCEI will perform Project oversight making certain project implementation is timely and accurate. The RGWCEI will organize outreach and education efforts and complete site monitoring.

Deliverable: All appropriate contracts, external and internal reports, and on-site Project activities completed within planned period and anticipated costs.

Water Supply Reserve Account – Application Form

Revised October 2013

Complete Budget By Task

Detailed Budget for the Soil Health Project - Increasing the Water Holding Capacity of Soil for Agriculture Sustainability in the San Luis Valley														
Project Tasks	Year 1*: 2014-15	Year 2**: 2015-16	Year 3***: 2016-17	Total	Sources of Funds							Total		
					Cash Contribution			In-Kind Contribution						
					WSRA	Landowners		NRCS	Soil Guys	Grad Student	RGWCEI			
Task 1: Testing														
NRCS District and Area Technicians (District Conservationist and Program Specialist) - in-kind contribution is a NRCS Estimate.	5,000	5,000	5,000	-	15,000	-	-	-	15,000	-	-	-	-	15,000
Soil tests performed by Earthfort and Haynie	2,000	4,000	4,000	-	10,000	10,000	-	-	-	-	-	-	-	10,000
Total Task 1	7,000	9,000	9,000	-	25,000	-	10,000	-	15,000	-	-	-	-	25,000
Task 2: Soil Preparation (all items based on a 120 acre circle)														
Initial Application of Compost (Compost Technologies, Center, CO) 2 tons per acre @ \$57 per ton = \$114.00 per acre	9,120	18,240	18,240	-	45,600	-	-	45,600	-	-	-	-	-	45,600
Develop Irrigation water management plan in-kind technical support and Participating Farmer. (10 hours per week at \$35 May - Sept)	14,000	28,000	28,000	-	70,000	-	-	70,000	-	-	-	-	-	70,000
Field Preparation and Tillage \$120 per acre	57,600	115,200	115,200	-	288,000	-	-	288,000	-	-	-	-	-	288,000
Planting Potatoes 30 sacks per acre \$412 an acre; Green manure \$32.50 an acre; Barley (Coors) \$22.00 per acre; Alfalfa \$90.00 per acre	197,760	58,560	58,560	-	314,880	-	-	314,880	-	-	-	-	-	314,880
Harvest \$400 pr acre potatoes; \$250 pr acre Barley and Alfalfa; \$12 pr acre green manure	192,000	182,880	241,160	-	616,040	-	-	616,040	-	-	-	-	-	616,040
Irrigation 1810.82 pr/ac potato; 452.72 pr/ac barley; 2710.85 pr/ac alfalfa; 287.70 pr/ac green manure	869,208	1,154,256	1,588,860	-	3,612,324	-	-	3,612,324	-	-	-	-	-	3,612,324
Total Task 2	1,339,688	402,880	461,160	-	4,946,844	-	-	4,946,844	-	-	-	-	-	4,946,844
Task 3: Nutrient Management														
Bio blend products	99,840	99,840	99,840	-	299,520	-	70,000	229,520	-	-	-	-	-	299,520
Total Task 3	99,840	99,840	99,840	-	299,520	-	70,000	229,520	-	-	-	-	-	299,520
Task 4: Monitoring														
NRCS District and Area Technicians (District Conservationist and Program Specialist) - in-kind contribution is a NRCS Estimate.	5,000	5,000	5,000	-	15,000	-	-	-	15,000	-	-	-	-	15,000
CSU Grad Student Crop Monitor Visits \$40 pr hour 1/2 in-kind-1/2 paid	1,200	1,200	1,200	-	3,600	-	-	-	-	-	3,600	-	-	3,600
Total Task 4	6,200	6,200	6,200	-	18,600	-	-	-	15,000	-	3,600	-	-	18,600
Task 5: Analysis														
Field Personnel - NRCS, Soil Guys, CSU Grad Student	2,500	1,500	1,500	-	5,500	-	-	-	1,200	1,500	500	2,300	-	5,500
Final analysis -NRCS, Soil Guys, CSU Grad student	-	-	1,500	-	1,500	-	-	-	-	1,000	-	500	-	1,500
Total Task 6	2,500	1,500	3,000	-	7,000	-	-	-	1,200	2,500	500	2,800	-	7,000
Task 6: Outreach and Education														
Project Outreach and Education; press, tours, production of materials, and volunteer coordination by the RGWCEI.	4,500	4,500	4,500	-	13,500	-	-	-	-	-	-	-	13,500	13,500
Total Task 7	4,500	4,500	4,500	-	13,500	-	-	-	-	-	-	-	13,500	13,500
Task 7: Administration														
Cost for the RGWCEI to administer the Project at the average rate of \$32.50.	8,900	8,900	8,900	-	26,700	-	18,200	-	-	-	-	-	8,500	26,700
Office Support In-Kind Match: Vehicle use, office space and utilities are donated by the Natural Resources Conservation Service (NRCS). The value is \$2,500 annually. Because the RGWCEI has 4 active Projects, the in-kind match for the Project is 1/4 of total office support.	2,500	2,500	2,500	-	7,500	-	-	-	-	-	-	-	7,500	7,500
Project Administration In-kind Match: The Secretary of the Rio Grande watershed Conservation and Education Initiative contributes 5 volunteer hours per week each to assist in Project Administration. The value of this time is \$75.00 per hour at 260 hours per year.	19,500	19,500	19,500	-	58,500	-	-	-	-	-	-	-	58,500	58,500
Total Task 8	30,900	30,900	30,900	-	92,700	-	18,200	-	-	-	-	-	74,500	92,700
TOTAL	\$ 1,490,628	\$ 554,820	\$ 614,600	\$ -	\$ 5,403,164	\$ -	\$ 98,200	\$ 5,176,364	\$ 31,200	\$ 2,500	\$ 4,100	\$ 90,800	\$ 5,403,164	
							0%	2%	96%	1%	0%	0%	2%	100%
<i>Percent of Project Cost</i>														
* Year 1: 4 producers with potatoes														
** Year 2: 4 producers barley; 2 producers alfalfa; 2 green manure														
*** Year 3: 4 producers potatoes; 2 producers alfalfa; 2 producers barley														

Water Supply Reserve Account – Application Form
 Revised October 2013

Project Schedule

Milestone Table for the Soil Health Project-Increasing the Water Holding Capacity of Soil for Agriculture Sustainability in the San Luis Valley												
Project Tasks	Year 1 - 2014-15				Year 2 - 2015-16				Year 3 - 2016-17			
	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2
Task 1: Test												
Task 2: Soil Preparation												
Task 3: Nutrient Management												
Task 4: Monitoring												
Task 5: Analysis												
Task 6: Outreach and Education												
Task 7: Administration												

FINAL PROJECT CLOSE OUT DATE TO BE COMPLETED MARCH 1, 2018.

Detailed Budget for the – Increasing the Water Holding Capacity of Soil: A Trial for Agriculture Sustainability in the San Luis Valley													
Project Tasks	Year 1*: 2014 -15	Year 2**: 2015-16	Year 3***: 2016-17	Total	Sources of Funds						Total		
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Total Task 1	7,000	9,000	9,000	-	25,000	-	10,000	-	15,000	-	-	-	25,000
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Field Preparation and Tillage \$120 per acre	57,600	115,200	115,200	-	288,000	-	-	288,000	-	-	-	-	288,000
Planting Potatoes 30 sacks per acre \$412 an acre; Green manure \$32.50 an acre; Barley (Coors) \$22.00 per acre: Alfalfa \$90.00 per acre	197,760	58,560	58,560	-	314,880	-	-	314,880	-	-	-	-	314,880
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Total Task 2	1,339,688	402,880	461,160	-	4,946,844	-	-	4,946,844	-	-	-	-	4,946,844
Task 3: Nutrient Management													
Bio blend products	99,840	99,840	99,840	-	299,520	-	70,000	229,520	-	-	-	-	299,520
Total Task 3	99,840	99,840	99,840	-	299,520	-	70,000	229,520	-	-	-	-	299,520
Task 4: Monitoring													
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CSU Grad Student Crop Monitor Visits \$40 pr hour 1/2 in-kind-1/2 paid	1,200	1,200	1,200	-	3,600	-	-	-	-	3,600	-	-	3,600
Total Task 4	6,200	6,200	6,200	-	18,600	-	-	-	15,000	3,600	-	-	18,600
Task 5: Analysis													
Field Personnel - NRCS, Soil Guys, CSU Grad Student	2,500	1,500	1,500	-	5,500	-	-	-	1,200	1,500	500	2,300	5,500
Final analysis -NRCS, Soil Guys, CSU Grad student	-	-	1,500	-	1,500	-	-	-	-	1,000	-	500	1,500
Total Task 6	2,500	1,500	3,000	-	7,000	-	-	-	1,200	2,500	500	2,800	7,000
Task 6: Outreach and Education													
Project Outreach and Education; press, tours, production of materials, and volunteer coordination by the RGWCEI.	4,500	4,500	4,500	-	13,500	-	-	-	-	-	-	13,500	13,500
Total Task 7	4,500	4,500	4,500	-	13,500	-	-	-	-	-	-	13,500	13,500
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Cost for the RGWCEI to administer the Project at the average rate of \$32.50.	8,900	8,900	8,900	-	26,700	-	18,200	-	-	-	-	8,500	26,700
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Project Administration In-kind Match: The Secretary of the Rio Grande watershed Conservation and Education Initiative contributes 5 volunteer hours per week each to assist in Project Administration. The value of this time is \$75.00 per hour at 260 hours per year.	19,500	19,500	19,500	-	58,500	-	-	-	-	-	-	58,500	58,500
Total Task 8	30,900	30,900	30,900	-	92,700	-	18,200	-	-	-	-	74,500	92,700
TOTAL	\$ 1,490,628	\$ 554,820	\$ 614,600	\$ -	\$ 5,403,164	\$ -	\$ 98,200	\$ 5,176,364	\$ 31,200	\$ 2,500	\$ 4,100	\$ 90,800	\$ 5,403,164
					<i>Percent of Project Cost</i>	0%	2%	96%	1%	0%	0%	2%	100%

* Year 1: 4 producers with potatoes

** Year 2: 4 producers barley; 2 producers alfalfa; 2 green manure

*** Year 3: 4 producers potatoes; 2 producers alfalfa; 2 producers barley

Summary Budget for the – Increasing the Water Holding Capacity of Soil: A Trial for Agriculture Sustainability in the San Luis Valley

Project Tasks	Total	In-Kind						Total
		WSRA	Landowners	In-Kind				
				NRCS	Soil Guys	Grad Student	RGWCEI	
Task 1: Testing	25,000	10,000	-	15,000			-	25,000
Task 2: Soil Preparation	4,946,844	-	4,946,844	-			-	4,946,844
Task 3: Nutrient Management	299,520	70,000	229,520	-			-	299,520
Task 4: Monitoring	18,600	-	-	15,000		3,600	-	18,600
Task 5: Analysis	7,000	-	-	1,200	2,500	500	2,800	7,000
Task 6: Outreach and Education	13,500	-	-	-			13,500	13,500
Task 7: Administration	92,700	18,200	-	-			74,500	92,700
TOTAL	\$ 5,403,164	\$ 98,200	\$ 5,176,364	\$ 31,200			\$ 90,800	\$ 5,403,164
	<i>Percent of Project Cost</i>	2%	14%	1%			2%	100%

Milestone Table for the – Increasing the Water Holding Capacity of Soil: A Trial for Agriculture Sustainability in the San Luis Valley												
Project Tasks	Year 1 - 2014-15				Year 2 - 2015-16				Year 3 - 2016-17			
	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2
Task 1: Test		Blue			Blue				Blue			
Task 2: Soil Preparation		Green		Green	Green			Green	Green			Green
Task 3: Nutrient Management		Blue		Blue	Blue			Blue	Blue			Blue
Task 4: Monitoring		Green		Green	Green			Green	Green			Green
Task 5: Analysis		Blue				Blue				Blue		
Task 6: Outreach and Education		Teal	Teal	Teal	Teal	Teal	Teal	Teal	Teal	Teal	Teal	Teal
Task 7: Administration		Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue

Projected end date for Contract close out: March 1, 2018.