

# STATE OF COLORADO

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## Colorado Water Conservation Board

### Department of Natural Resources

1580 Logan Street, Suite 600  
Denver, Colorado 80203  
Phone: (303) 866-3441  
Fax: (303) 894-2578  
[www.cwcb.state.co.us](http://www.cwcb.state.co.us)



December 30, 2013

City of Grand Junction  
Attn: Mr. Terry Franklin, Utility Manger  
333 West Avenue Bldg. A  
Grand Junction, CO 81501

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John W. Hickenlooper  
Governor

Mike King  
DNR Executive Director

James Eklund  
CWCB Director

**RE: WSRA Grant Energy Development Water Needs Assessment Update in the Colorado River Basin**

Dear Terry:

This letter is to inform you that the purchase order for your request to assist in the Energy Development Water Needs Assessment Update project was signed on December 23, 2013. The original signed purchase order will be mailed to you.

With the executed purchase order, you are now able to proceed with the project and continue invoicing the State of Colorado for costs incurred through June 30, 2014. Upon receipt of your invoice(s), the State of Colorado will provide payment no later than 45 days. I wish you much success in your project.

If you have any additional questions or concerns, please contact Mr. Brent Newman, Project Manager at (303) 866-3441 x3222.

Sincerely,

/s/

*Dori Vigil*  
*Colorado Water Conservation Board*  
*Water Supply Planning Section*  
1580 Logan Street, Suite 200  
Denver CO 80203  
[\(303\) 866-3441 x3250](tel:(303)866-3441x3250)  
[dori.vigil@state.co.us](mailto:dori.vigil@state.co.us)

WATER CONSERVATION BOARD  
1313 SHERMAN STREET, ROOM 721  
DENVER, CO 80203

DATE: 12-23-13



**PURCHASE  
ORDER**  
STATE OF COLORADO

Buyer: MAGGIE VAN CLEEF  
Phone Number: 303-866-3292  
Agency Contact: DORI VIGIL  
Phone Number: 303 866 3441

**IMPORTANT**  
The PO# and Line # must  
appear on all invoices,  
packing slips, cartons  
and correspondence

P.O. # OE PDA 14IBC000024 Page# 01

ACC: 12-20-13

State Award #

FEIN 846000592 E Phone: - -  
Vendor Contact: TERRY FRANKLIN  
Purchase Requisition #:

BID #

V  
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CITY OF GRAND JUNCTION  
UTILITY & STREET SYSTEMS  
333 WEST AVE BLDG A  
GRAND JUNCTION CO 81501

**Invoice in Triplicate**

To: DIVISION OF WATER CONSERVATION  
1313 SHERMAN STREET, ROOM 721  
DENVER, CO 80203

**Payment will be made by this agency**

Ship  
To: DIVISION OF WATER CONSERVATION  
1313 SHERMAN STREET, ROOM 721  
DENVER, CO 80203

**INSTRUCTIONS TO VENDOR:**

1. If for any reason, delivery of this order is delayed beyond the delivery/installation date shown, please notify the agency contact named at the top left. (Right of cancellation is reserved in instances in which timely delivery is not made.)
2. All chemicals, equipment and materials must conform to the standards required by OSHA.
3. NOTE: Additional terms and conditions on reverse side.

**Delivery/Installation Date:** 06-30-14

**F.O.B. DESTINATION STATE PAYS NO FREIGHT**

**SPECIAL INSTRUCTIONS:**

LINE ITEM	COMMODITY/ITEM CODE	UNIT OF MEASUREMENT	QUANTITY	UNIT COST	TOTAL ITEM COST
001	91843000000 CMS#64100 - ENERGY DEELOPMENT WATER NEEDS ASSESSMENT STUDY UPDATE				\$50,000.00

DOCUMENT TOTAL = \$50,000.00

THIS PO IS ISSUED IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS  
This PO is effective on the date signed by the authorized individual.

FOR THE STATE OF COLORADO

EPSPO PAA

*[Signature]*  
Authorized Signature

12/23/13  
Date

**Exhibit A - Scope of Work, Schedule and Budget  
Energy Development Water Needs Assessment Update**

**Colorado River/Yampa-White River Basin Roundtables  
December 13, 2013**

**BACKGROUND**

In 2007 as part of the mandate for basin's to assess their water needs pursuant to HB 05-1177, the Colorado River Basin Roundtable and the Yampa-White River Basin Roundtable undertook a joint study to estimate water needs arising from energy development in their respective basins. The Phase I study, which was completed in September, 2008, developed water use estimates for the various sectors including coal, natural gas, oil shale, water use for power generation related to oil shale development, and domestic requirements for water stemming from population growth brought about by energy development.

In 2009 work on Phase II of the study commenced. The focus of Phase II was assessing how the demands from Phase I could be met. Subsequent to Phase I, industry representatives were critical of the Phase I estimates for oil shale, so Phase II also re-examined oil shale water needs. The Phase II study was finalized in January, 2012.

Subsequent to their completion, circumstances have arisen that call into question certain conclusions reached for water needs identified in the reports:

- Anecdotal information suggests actual water needs for natural gas development may be significantly higher - perhaps by an order of magnitude - than those stated in the studies. On the other hand, because of the price of natural gas, drilling activity is less than anticipated;
- In September, 2013, Shell announced they were discontinuing oil shale research activities in the Piceance Basin.

In light of the fact that basins will be developing their Basin Implementation Plans and these will re-state water needs for the basin, there is a need to re-examine the previous estimates and use the most up to date information for the Basin Implementation Plans.

**TASKS**

**Task 1: Critical Assessment of Phase I and II Water Needs**

- Assess previous water demand estimates for validity under current conditions, including:
  - Natural gas drilling and development water needs for each well drilled (unit water demands);
  - Natural gas levels of drilling activity given current market conditions;

- Assess implications for potential oil shale development given current conditions, including Shell's pull-out and other activities such as Enefit's activity to develop oil shale in Utah.
- Assess needs estimated in other energy sectors
- Prepare report with conclusions and recommendations for sectors for which an update is advisable.

Task 2: Complete Updated Assessment for Energy Sectors Identified in Task 1

Task 3: Prepare Updated Energy Development Water Needs Assessment Report

#### BUDGET

Task 1	\$10,000
Task 2	35,000
Task 3	5,000
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TOTAL	\$50,000

#### SCHEDULE

It is anticipated that both phases will be completed by June, 2014, assuming a January 1, 2014 start.

Note that the schedule, budget and scope of work are preliminary pending consultant preparation of detailed and final budget and scope of work, which will occur when the grant contract is completed and the consultant is under contract.