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**BEFORE THE IDAHO DEPARTMENT OF WATER RESOURCES  
STATE OF IDAHO**

<b>IN THE MATTER OF DISTRIBUTION OF WATER TO RANGEN, INC.'s WATER RIGHT NOS. 36-02551 AND 36- 07694</b>	<b>DOCKET NO.:</b> _____  <b>RANGEN'S PRELIMINARY EXPERT WITNESS DISCLOSURE</b>
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Rangen, Inc., by and through its attorneys, submits the following Preliminary Expert Witness

Disclosure in support of its Petition for Delivery Call:

<b>Dennis McGrane Leonard Rice Engineers, Inc. 2000 Clay Street Suite 300 Denver, CO 80211 (303) 455-9589</b>	<b>Qualifications:</b> Mr. McGrane has a B.A. in Geology from Dartmouth College. He is an ACEC certified expert witness. Mr. McGrane has experience in ground water resources, engineering, and ground water modeling since 1985. His expertise includes: ground water modeling and water rights; aquifer supply evaluations; aquifer storage and recovery; well testing; and well and pumping system design. His project management experience ranges from technical investigations to multi-disciplinary studies in Colorado, Idaho, Nebraska, Utah, and Arizona. He is a member of the Eastern Snake Hydrologic Modeling Committee ("ESHMC"). Mr. McGrane's Curriculum Vitae is attached hereto as Exhibit 1.
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**Summary of Opinions:** Mr. McGrane's opinions are set forth in a Memorandum dated December 9, 2011 (see Exhibit 2 attached hereto). Mr. McGrane's opinions are summarized as follows: (i) the Eastern Snake Plain Aquifer Model (ESPAM) has undergone significant improvements since version 1.1; (ii) ESPAM Version 2.0 ("ESPAM2") is currently the best available science and any administrative modeling scenarios to evaluate impacts to Rangen caused by junior-priority ground water pumping should be implemented using ESPAM2 with a "difference" modeling approach; (iii) the "trim line methodology" used by IDWR with ESPAM1.1 is not a technically valid approach to evaluate delivery calls and should not be used; (iv) junior-priority ground water pumping (post July 13, 1962) has caused the Rangen spring to decline approximately 17 cfs, which constitutes material injury to Rangen's water rights; (v) if junior-priority ground water pumping were curtailed, the Rangen spring would likely recover approximately 17 cfs within 21 years; (vi) the predicted model response is likely accurate since ESPAM2 is "well calibrated" to regional observations and to the historical Rangen spring observations; (vii) Rangen's water use is reasonable; (viii) Rangen's water use is not wasteful; and (ix) Rangen has the physical capacity to put all of its water rights to beneficial use.

**Data/Information Considered to Form Opinions:** Mr. McGrane's opinions are based on the background, education, experience, and training described in his Curriculum Vitae attached hereto as Exhibit 1. His opinions are also based on: Partial Decrees for Rangen's water rights; site visits and inspections of the Rangen Research Hatchery, Martin-Curran Tunnel and other areas of the Eastern Snake Plain Aquifer; review of historical Rangen spring flow data; participation on the ESHMC; results of curtailment analysis using ESPAM2 and a "difference" modeling approach.

**Exhibits:** If Mr. McGrane is called to testify at a hearing, it is anticipated that he will utilize the following: map of the area covered by ESPAM); aerial photograph and sketch of Rangen Research Hatchery (see Exhibits 1A and 1B to Petition for Delivery Call); graphs, tables and figures in Memorandum dated December 9, 2011 (see Exhibit 2 attached hereto); Rangen's Historical Flow Summaries (see Exhibits 3A and 3B to Petition for Delivery Call).

**James H. Brannon, Jr.  
Leonard Rice  
Engineers, Inc.  
2000 Clay Street  
Suite 300  
Denver, CO 80211  
(303) 455-9589**

**Qualifications:** Mr. Brannon is an Applications Development Specialist, Project Engineer, and Information Technology Specialist with Leonard Rice Engineers. Mr. Brannon has a B.S. and an M.S. in Civil Engineering from Louisiana State University and the University of Colorado specializing in groundwater modeling. He is responsible for custom software and web development, as well as design, installation and maintenance of several Linux servers (both hardware and software systems) used as database servers, web servers, software development servers, spatial data servers, Ubuntu, Linux/Apache/MySQL/PHP, Drupal, custom Drupal module development, PostGIS, MapServer, git, javascript/HTML. Mr. Brannon is a member of the ESHMC and has participated in the development of ESPAM2. A copy of Mr. Brannon's Curriculum Vitae is attached hereto as Exhibit 4.

**Summary of Opinions:** Mr. Brannon was responsible for the computer programming work necessary to use ESPAM2 to conduct the curtailment analysis described in Leonard Rice Engineers' Memorandum dated December 9, 2011 (see Exhibit 2 attached hereto). Mr. Brannon's opinions are summarized as follows: (i) ESPAM has undergone significant improvements since version 1.1; (ii) ESPAM2 is currently the best available science and any administrative modeling scenarios to evaluate impacts to Rangen caused by junior-priority ground water pumping should be implemented using ESPAM2 with a "difference" modeling approach; (iii) the "trim line methodology" used by IDWR with ESPAM Version 1.1 is not a technically valid approach to evaluate delivery calls and should not be used; (iv) junior-priority ground water pumping (post July 13, 1962) has caused the Rangen spring to decline approximately 17 cfs, which constitutes material injury to Rangen's water rights; (v) if junior-priority ground water pumping were curtailed, the Rangen spring would likely recover approximately 17 cfs within 21 years; (vi) the predicted model response is likely accurate since ESPAM2 is "well calibrated" to regional observations and to the historical Rangen spring observations; (vii) Rangen's water use is reasonable; (viii) Rangen's water use is not wasteful; and (ix) Rangen has the physical capacity to put all of its water rights to beneficial use. See also "White Paper - Technical Evaluation of Trim Line" prepared by the following members of the ESHMC: John Koreny, HDR, Inc.; Willem Schreuder, Principia Mathematica; Charles Brockway, Sr., Brockway Engineering, PLLC; John Bowling, Dave Blew, Idaho Power Co.; Jim Brannon, Leonard Rice Engineers, Inc.; and Jennifer Johnson, Bureau of Reclamation (see Exhibit 3 attached hereto).

	<p><b><u>Data/Information Considered to Form Opinions:</u></b> Mr. Brannon's opinions are based on the background, education, experience, and training described in his Curriculum Vitae attached hereto as Exhibit 4. His opinions are also based on: Partial Decrees for Rangen's water rights (<u>see</u> Exhibit 2 to Petition for Delivery Call); site visits and inspections of the Rangen Research Hatchery, Martin-Curran Tunnel, and other areas of the Eastern Snake Plain Aquifer; review of historical Rangen spring flow data; participation on the ESHMC; results of curtailment analysis using ESPAM2 and a "difference" modeling approach.</p>
	<p><b><u>Exhibits:</u></b> If Mr. Brannon is called to testify at a hearing, it is anticipated that he will utilize the following: map of the area covered by ESPAM2; aerial photograph and sketch of Rangen Research Hatchery (<u>see</u> Exhibits 1A and 1B to Petition for Delivery Call); graphs, tables and figures in Memorandum dated December 8, 2011 (<u>see</u> Exhibit 2 attached hereto); Rangen's Historical Flow Summaries (<u>see</u> Exhibits 3A and 3B to Petition for Delivery Call).</p>

<p><b>David Colvin Leonard Rice Engineers, Inc. 2000 Clay Street Suite 300 Denver, CO 80211 (303) 455-9589</b></p>	<p><b><u>Qualifications:</u></b> Mr. Colvin is a Project Manager/Hydrogeologist with Leonard Rice Engineers. He has an M.S. in Environmental Science and Engineering from the Colorado School of Mines. He has a B.S. in Geology from Syracuse University. He is responsible for conducting and supervising hydrogeologic investigations, including project management, aquifer characterization and testing, geologic and environmental systems modeling (including MODFLOW ground water modeling), evaluation of land subsidence due to fluid withdrawal, oversight of drilling and well installations, sampling, water rights analysis, evaluation of stream depletions, three dimensional subsurface visualization, geographical information systems, permitting and regulatory agency interaction. His ground water modeling work includes: automated calibration (PEST and UCODE), parallel processing, geologic conceptual modeling, and evaluation of model uncertainty.</p>
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	<p><b>Summary of Opinions:</b> Mr. Colvin assisted with the data analysis necessary to use ESPAM2 to conduct the curtailment analysis described in the Leonard Rice Engineers' Memorandum dated December 9, 2011 (see Exhibit 2 attached hereto). Mr. Colvin's opinions are summarized as follows: (i) ESPAM has undergone significant improvements since version 1.1; (ii) ESPAM2 is currently the best available science and any administrative modeling scenarios to evaluate impacts to Rangen caused by junior-priority ground water pumping should be implemented using ESPAM2 with a "difference" modeling approach; (iii) the "trim line methodology" used by IDWR with ESPAM1.1 is not a technically valid approach to evaluate delivery calls and should not be used; (iv) junior-priority ground water pumping (post July 13, 1962) has caused the Rangen spring to decline approximately 17 cfs, which constitutes material injury to Rangen's water rights; (v) if junior-priority ground water pumping were curtailed, the Rangen spring would likely recover approximately 17 cfs within 21 years; (vi) the predicted model response is likely accurate since ESPAM 2 is "well calibrated" to regional observations and to the historical Rangen spring observations; (vii) Rangen's water use is reasonable; (viii) Rangen's water use is not wasteful; and (ix) Rangen has the physical capacity to put all of its water rights to beneficial use.</p>
	<p><b>Data/Information Considered to Form Opinions:</b> Mr. Colvin's opinions are based on the background, education, experience, and training described in his Curriculum Vitae attached hereto as Exhibit 5. His opinions are also based on: Partial Decrees for Rangen's water rights (see Exhibit 2 to Petition for Delivery Call); review of historical Rangen spring flow data; the work of the ESHMC; results of curtailment analysis using ESPAM2 and a "difference" modeling approach.</p>
	<p><b>Exhibits:</b> If Mr. Colvin is called to testify at a hearing, it is anticipated that he will utilize the following: map of the area covered by ESPAM2; aerial photograph and sketch of Rangen Research Hatchery (see Exhibits 1A and 1B to Petition for Delivery Call); graphs, tables and figures in Memorandum dated December 9, 2011 (see Exhibit 2 attached hereto); Rangen's Historical Flow Summaries (see Exhibits 3A and 3B to Petition for Delivery Call).</p>

<p><b>Charles E. Brockway, P.E., Ph.D. Brockway Engineering 2016 N. Washington Suite 4 Twin Falls, ID 83303 (280) 736-8543</b></p>	<p><b>Qualifications:</b> Dr. Brockway is a Senior Member of Brockway Engineering, PLLC. He spent thirty-two years as a research professor with the University of Idaho and served as the Associate Director of the Idaho Water Resources Research Institute. Dr. Brockway is the author of over 100 technical publications in the water resources engineering field. He has been part of the development efforts of ESPAM since the model's inception. He is a member of the ESHMC. A copy of Dr. Brockway's Curriculum Vitae is attached hereto as Exhibit 6.</p>
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**Summary of Opinions:** Dr. Brockway has reviewed the curtailment analysis described in Leonard Rice Engineers' Memorandum dated December 9, 2011 which is attached hereto as Exhibit 2. Dr. Brockway agrees with the methodology used by Leonard Rice Engineers to conduct the curtailment analysis and the opinions and conclusions set forth in the December 9, 2011 Memorandum. Dr. Brockway agrees that: (i) ESPAM has undergone significant improvements since version 1.1; (ii) ESPAM 2 is currently the best available science and any administrative modeling scenarios to evaluate impacts to Rangen caused by junior-priority ground water pumping should be implemented using ESPAM2 with a "difference" modeling approach; (iii) the "trim line methodology" used by IDWR with ESPAM Version 1.1 is not a technically valid approach to evaluate delivery calls and should not be used; (iv) junior-priority ground water pumping (post July 13, 1962) has caused the Rangen spring to decline approximately 17 cfs, which constitutes material injury to Rangen's water rights; (v) if junior-priority ground water pumping were curtailed, the Rangen spring would likely recover approximately 17 cfs within 21 years; (vi) the predicted model response outlined by Leonard Rice Engineers is likely accurate since ESPAM2 is "well calibrated" to regional observations and to the historical Rangen spring observations; (vii) Rangen's water use is reasonable; (viii) Rangen's water use is not wasteful; and (ix) Rangen has the physical capacity to put all of its water rights to beneficial use. Dr. Brockway's opinions are summarized in the Memorandum attached hereto as Exhibit 7; see also "White Paper - Technical Evaluation of Trim Line" prepared by the following members of the ESHMC: John Koreny, HDR, Inc.; Willem Schreuder, Principia Mathematica; Charles Brockway, Sr., Brockway Engineering, PLLC; John Bowling, Dave Blew, Idaho Power Co.; Jim Brannon, Leonard Rice Engineers, Inc.; and Jennifer Johnson, Bureau of Reclamation (attached hereto as Exhibit 3).

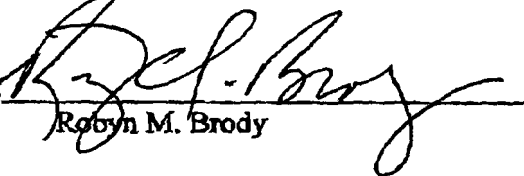
**Data/Information Considered to Form Opinions:** Dr. Brockway's opinions are based on the background, education, experience, and training described in his Curriculum Vitae attached hereto as Exhibit 6. His opinions are also based on: Partial Decrees for Rangen's water rights (see Exhibit 2 to Petition for Delivery Call); site visits and inspections of the Rangen Research Hatchery, the Martin-Curran Tunnel, and other areas of the Eastern Snake Plain Aquifer; review of historical Rangen spring flow data; the work of the ESHMC; results of the curtailment analysis using ESPAM2 and a "difference" modeling approach.

**Exhibits:** If Dr. Brockway is called to testify at a hearing, it is anticipated that he will utilize the following: map of the area covered by ESPAM2; aerial photograph and sketch of Rangen Research Hatchery (see Exhibits 1A and 1B to Petition for Delivery Call); graphs, tables and figures in Memorandum dated December 8, 2011 (see Exhibit 2 attached hereto); Rangen's Historical Flow Summaries (see Exhibits 3A and 3B to Petition for Delivery Call).

Rangen reserves the right to augment this Preliminary Expert Witness Disclosure in accordance with any scheduling orders which may be issued by the Idaho Department of Water Resources.

DATED this 13<sup>th</sup> day of December, 2011.


BRODY LAW OFFICE, PLLC

By:   
Robyn M. Brody

HAEMMERLE & HAEMMERLE, PLLC

By:   
Fritz X. Haemmerle

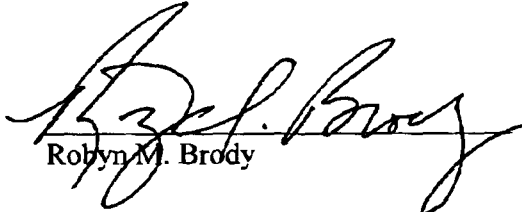
MAY, BROWNING & MAY, PLLC

By:   
J. Justin May

**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that on the 13th day of December, 2011, the above and foregoing document was served in the following manner:

<p>Gary Spackman Interim Director IDAHO DEPARTMENT OF WATER RESOURCES PO Box 83720 Boise, ID 83720</p>	<p><input type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input checked="" type="checkbox"/> Hand Delivery <input type="checkbox"/> E-mail</p>
<p>Randall C. Budge Candice M. McHugh Thomas J. Budge RACINE, OLSON, NYE, BUDGE &amp; BAILEY, CHARTERED 101 South Capitol Blvd., Suite 300 Boise, ID 83702</p>	<p><input checked="" type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input type="checkbox"/> Hand Delivery <input type="checkbox"/> E-mail</p>
<p>Michael C. Creamer GIVENS PURSLEY LLP PO Box 2720 Boise, ID 83702</p>	<p><input checked="" type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input type="checkbox"/> Hand Delivery <input type="checkbox"/> E-mail</p>

  
Robyn M. Brody



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