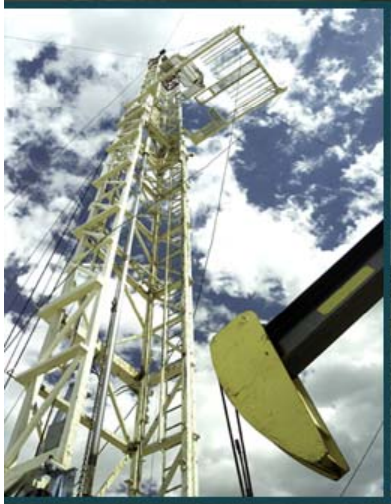
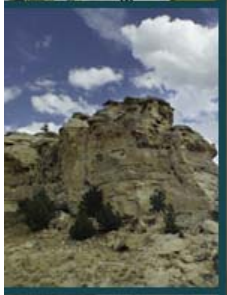


Produced Water from NPR-3 Oil & Gas Wells for Low-Temperature Geothermal Application

Lyle A. Johnson, PE, RMOTC & **Daniel N. Schochet**, Ormat Nevada, Inc.



RMOTC Location

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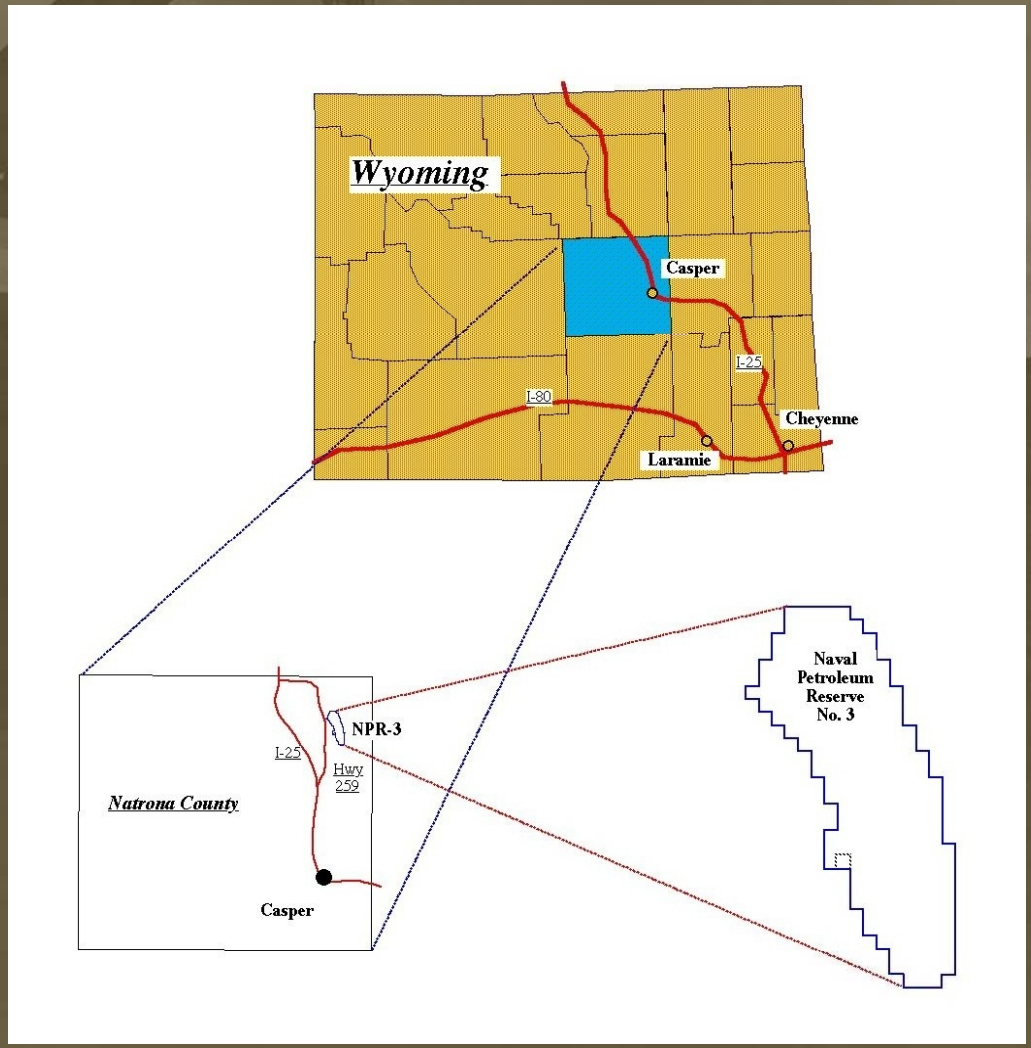
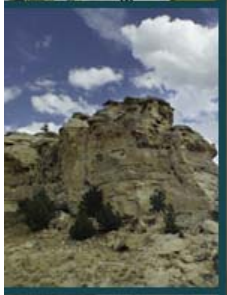
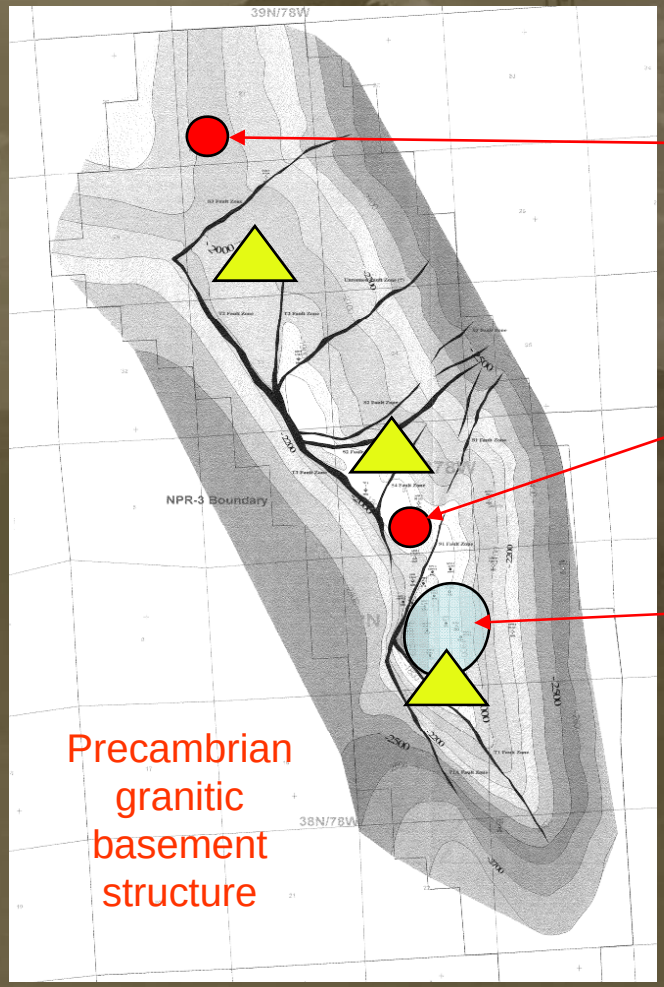


Potential Geothermal Supply Wells



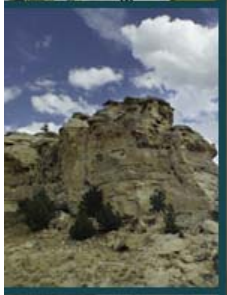


17-WX-21
Madison and Tensleep
Possibly 35 MBWPD flowing

57-WX-3
Madison and Tensleep
Possibly 10 MBWPD flowing

TENSLEEP PRODUCING AREA

OTHER POSSIBLE TENSLEEP SOURCE WELLS AND DEEPENING CANDIDATES



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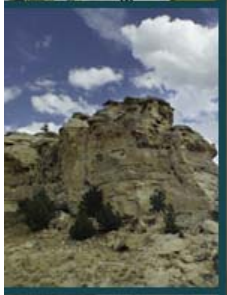
DEPARTMENT OF ENERGY · UNITED STATES OF AMERICA



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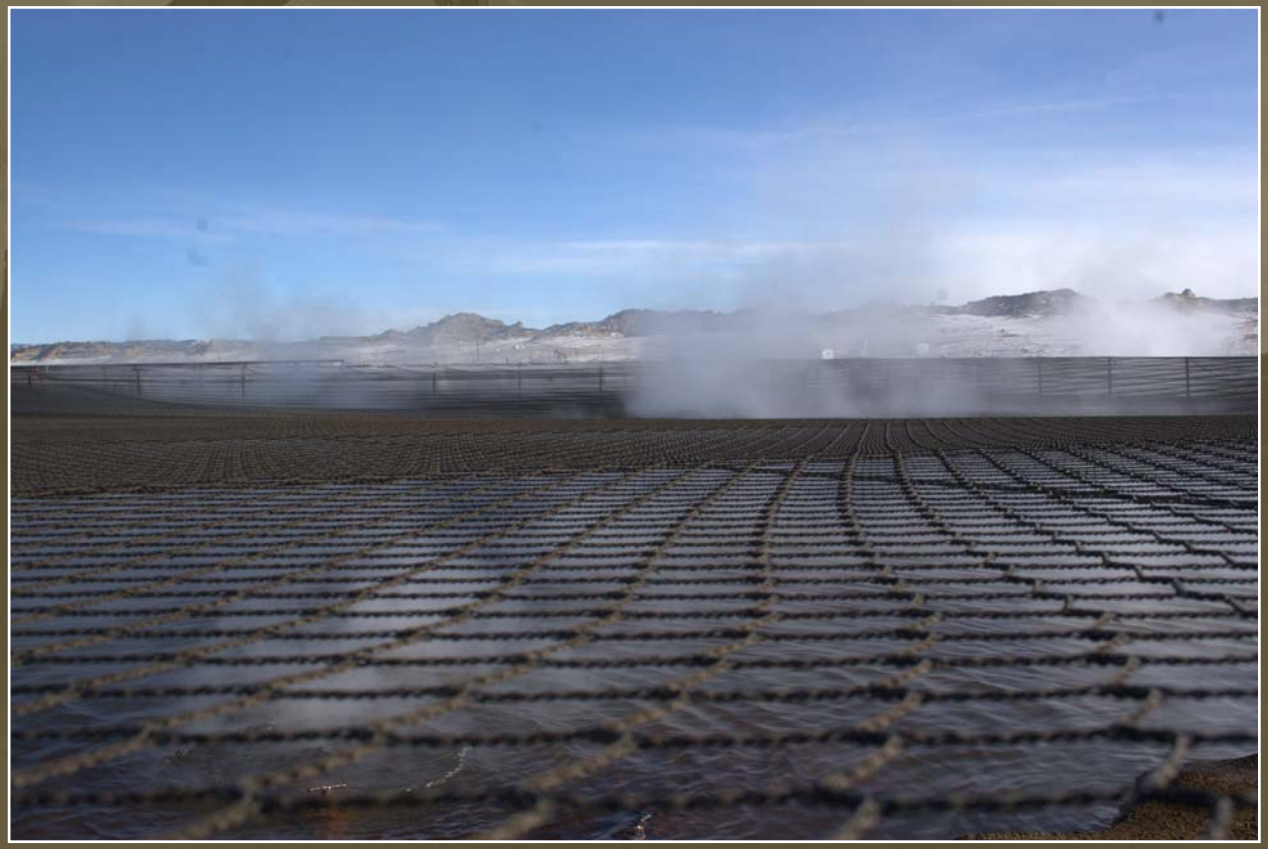
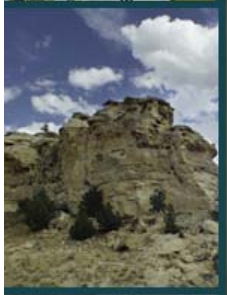
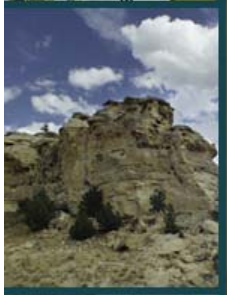




Rocky Mountain Oilfield Testing CENTER



Projected Geothermal Potential

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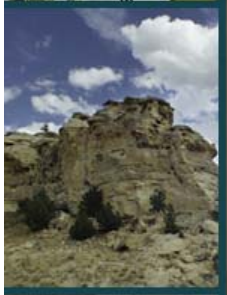
Well	Zone	Rate, MBWPD		Comments
		Low	High	
17-WX-21	Madison	20	25	Flowing
17-WX-21	Tensleep	4	10	Needs perforating
41-2-X-3	Tensleep	1	3	Flowing
41-2-X-3	Madison	6	12	Needs deeping
48-X-28	Tensleep	2	6	Flowing
61-2-X-15	Tensleep	2	6	Flowing
61-2-X-15	Madison	6	12	Needs deeping
57-WX-3	Madison	2	6	Flowing
Total all other Tensleep Production		40	60	Pumping
Total Flowing Production		43	80	Projected
Total Pumping & Production		86	160	Projected
All Potential Production		126	210	All on pump



NPR-3 Recharge System

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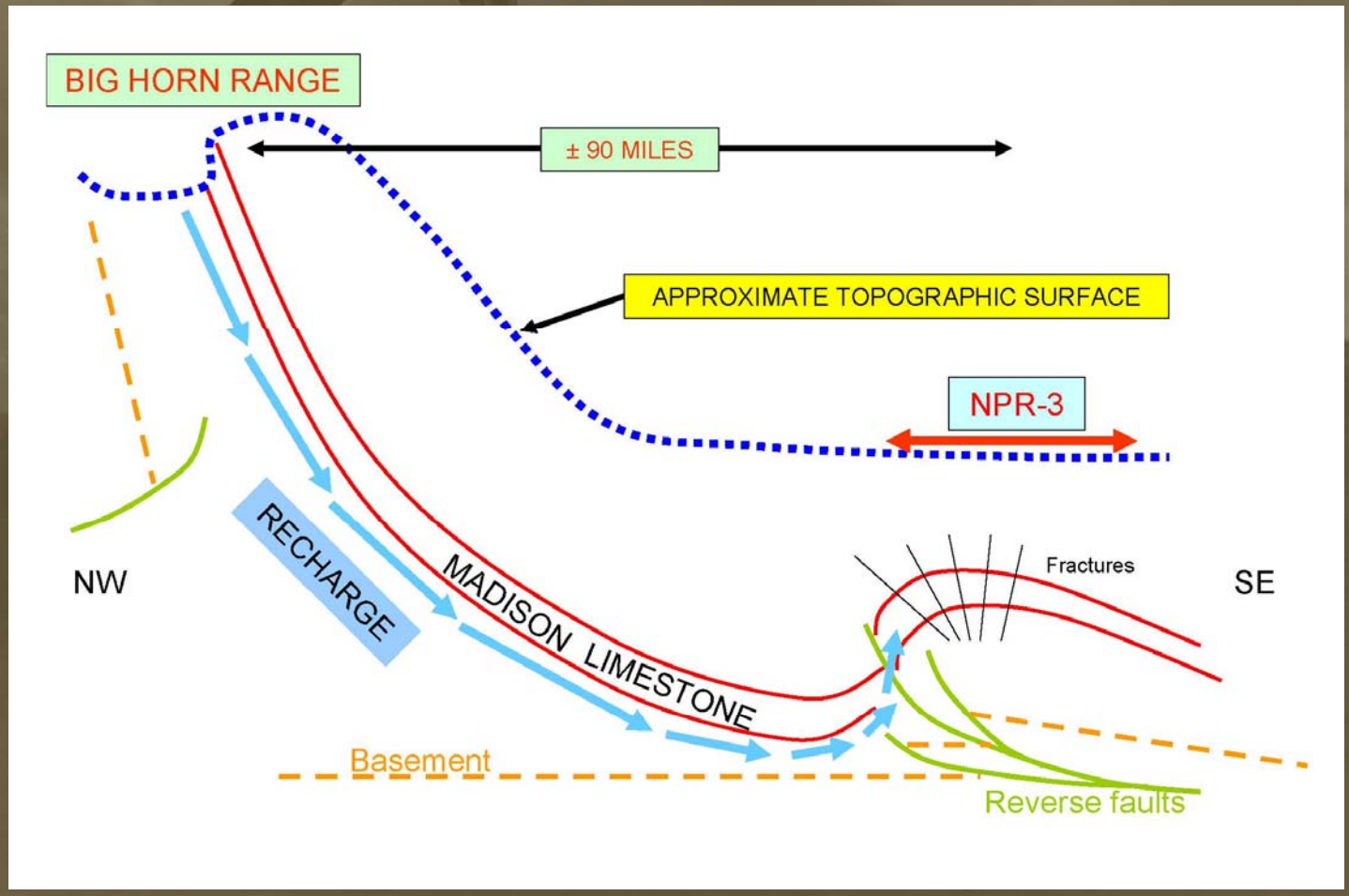

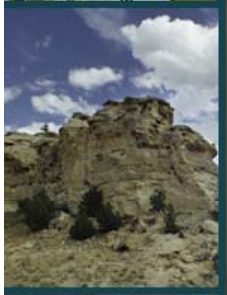

Wabuska, NV – 700 kW, 219°F

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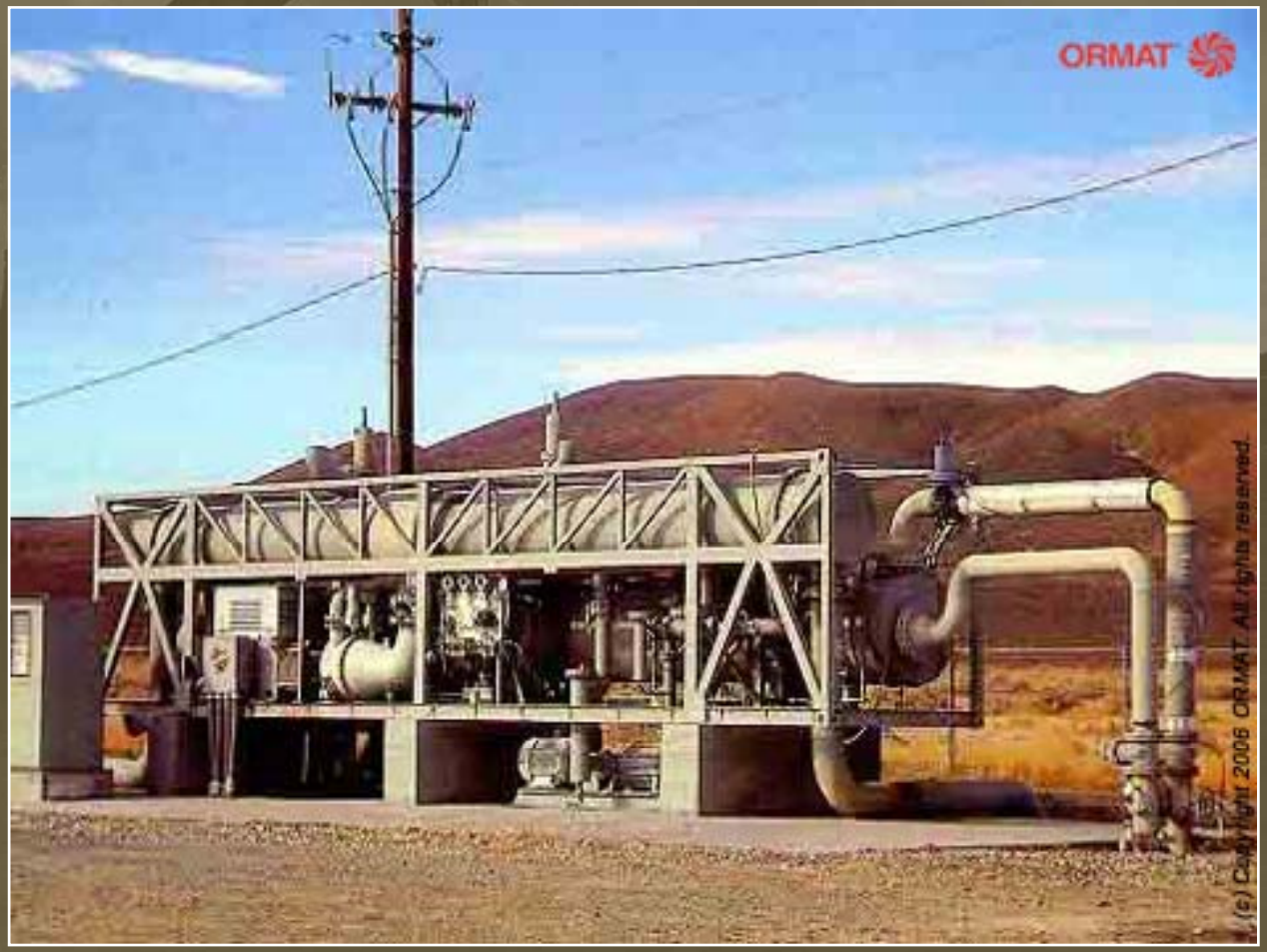

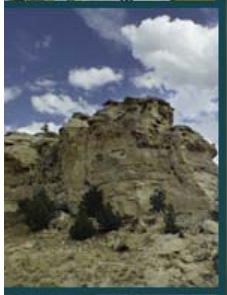

Fang, Thailand – 300 kW

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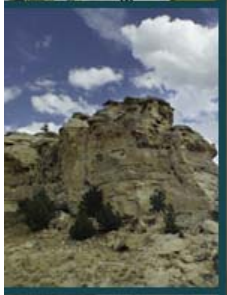

Bad Blumau, Austria – 200 kW, 212°F

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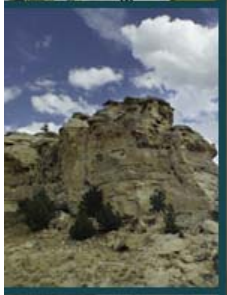

Proposed OEC Unit

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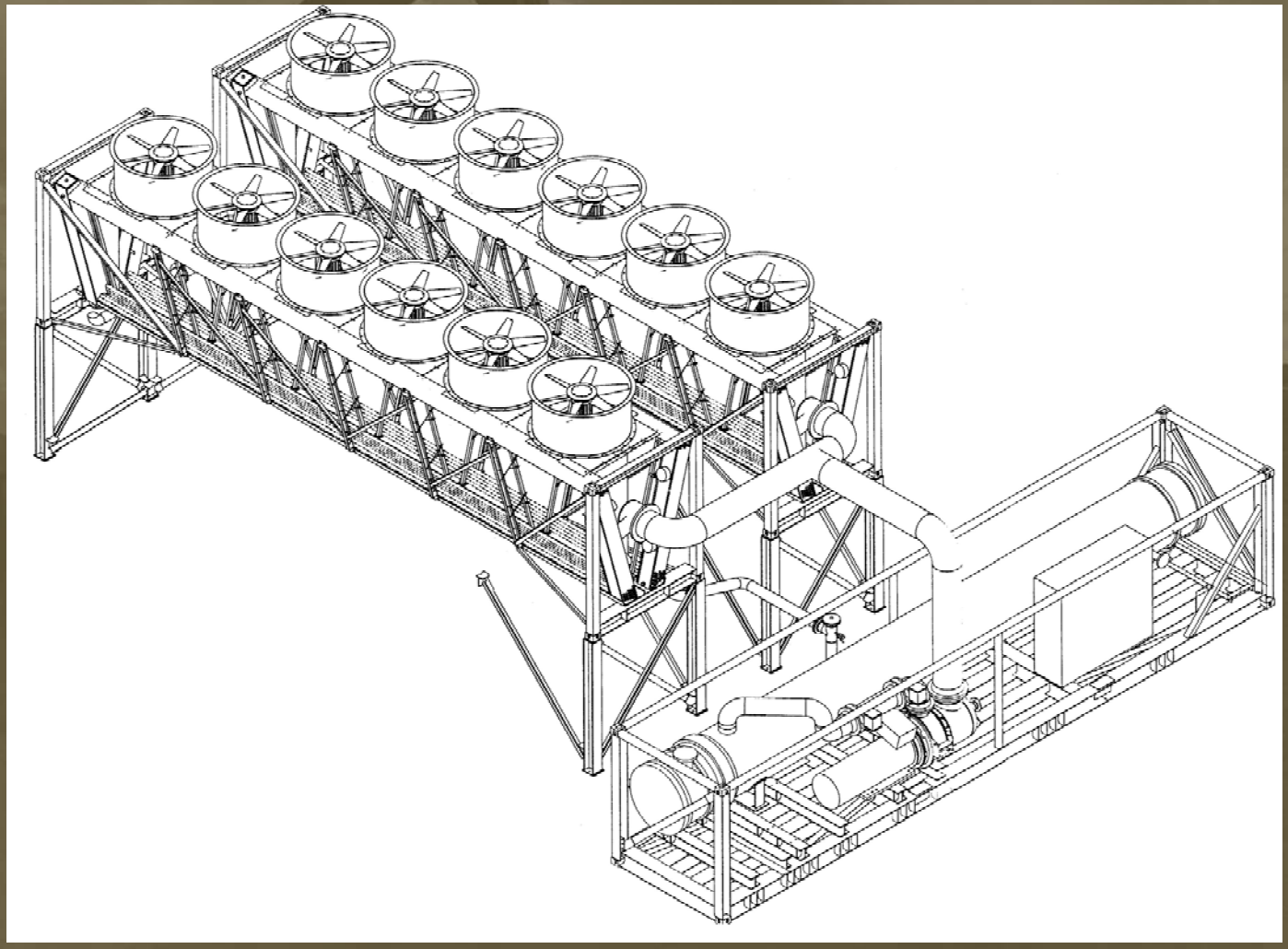

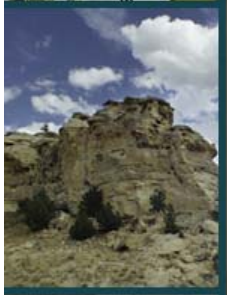

OEC Projected Performance

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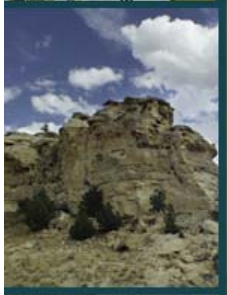
Flow Rate:	584,000 pounds per hour
Inlet Temperature:	170°F
Outlet Temperature:	152°F
Ambient Temperature:	50°F
Generator Gross Power:	180 kW
Net Power Output:	132 kW



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- Internet: www.rmotc.com