

DOD PROJECTS STATUS

<u>BASE</u>	<u>GEOHERMAL POTENTIAL</u>	<u>INITIAL CONTACT</u>	<u>PRESENTATION MADE</u>	<u>PROJECT STATUS/COMMENTS</u>
The following are bases at which we have had active contact with DOD personnel.				
Ascension Island	Excellent	FY-82	FY-82	<p>A preliminary geology study, a preliminary conceptual design and an economic analysis have been completed using Air Force funding (\$80K). The Air Force has funded a second phase which includes additional geophysical work, slim hole drilling, and a reevaluation of project economics (\$65K).</p> <p>The Air Force is enthused about the project and is currently looking for funding for a deep production well (\$3.5M). The Department of Energy will manage drilling of the well for the Air Force.</p>
Lackland AFB	Excellent	FY-82	FY-82	<p>The Air Force has accepted a Department of Energy proposal to drill an exploratory deep well at Lackland AFB. The total project cost is \$620K. The project will be developed in two phases, with a USAF decision point for withdrawal following Phase I in the event that early indicators from literature searches are not encouraging. Phase I will consist of an Environmental Assessment, compilation, integration and interpretation of available geologic and hydrologic data to select the well location and design of the well. Additionally, the permitting process will be initiated. During Phase II, the permitting process will be completed, subcontractors will be solicited for well drilling and logging, the well will be drilled and logged, test</p>

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Lackland AFB (cont'd)				equipment will be procured and the well will be tested. If the well is not successful, the well will be capped according to local regulations and the site will be restored to original grade.
Sierra Army Depot	Excellent	FY-82	FY-82	The Army has requested a proposal for development of the geothermal resource thought to exist under the Sierra Army Depot for use in the base heating system. The Army has little idea how to proceed with a geothermal development and the Department of Energy has recommended a complete development program from initial resource exploration through operation of the system. We have offered to assist them through all phases of the program for a total cost of \$3M. This cost includes all exploratory work, drilling costs, system design and project management. It does not include construction costs or construction management.
Mountain Home AFB	Good	FY-82	FY-82	Under the Federal Building Program we prepared a program plan for development of a geothermal heating system in the housing area at Mountain Home AFB. They have requested a proposal from the Department of Energy for a preliminary resource evaluation and economic analysis for the housing area geothermal heating system. We have prepared a proposal and agreed to conduct the preliminary work for a total cost of \$80K.

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Minot AFB	Good	FY-82	FY-82	<p>Under the Federal Building Program we conducted a study to develop a heating system at Minot AFB. Headquarters SAC decided not to pursue the project as the economics were marginal and they thought our estimated costs for portions of the project would be higher than we predicted.</p> <p>In doing the preliminary study we did not visit the base and we could not properly address the items they questioned. Because of funding limits we have not done any additional work on this project. The design we proposed utilized heat pumps in conjunction with a very low temperature resource. We believe that with additional design work we could convince the Air Force to proceed with this project. If this project were to proceed, it would open the way for a number of other Air Force base projects and would be a real boost for geothermal utilization.</p>
Lajes AFB	Excellent	FY-82	9/22/82	<p>Lajes appears to have the best geothermal potential of all Air Force Bases. It is on an island in the Azores which has hot springs and which has had volcanic activity within the last two hundred years. There is a geothermal power plant on an adjacent Azore Island.</p>

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Lajes AFB (cont'd)				The Air Force is interested in proceeding with the project but the current agreement with Portugal has not been extended by Congress and the Air Force will most likely wait until this problem is resolved. They will then have to negotiate an agreement with Portugal on resource utilization. After these are accomplished, they have expressed an intent to request Department of Energy support in implementing a geothermal program at the base.
Vandenberg AFB	Good	FY-82	FY-82	A preliminary study was completed on the geothermal potential at Vandenberg. The economics are marginal and base personnel showed little enthusiasm for geothermal. No additional work is planned on this project.
Hawthorne Army Depot	Good	FY-82	No	The Army was proceeding on a geothermal development at Hawthorne. We reviewed a copy of their initial procurement request and felt they were proceeding unwisely. It was our opinion they were proceeding into premature drilling without appropriate economic analysis of the project. We prepared a recommended program plan and offered to assist them if they needed any additional help. To date they have not requested any additional help.
Ellsworth AFB	Good	No	No	Ellsworth AFB has a geothermal potential similar to Minot and it is in the same command. If the Minot project is initiated and if it is successful, Ellsworth will likely follow.

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Holloman AFB	Good	FY-82	No	Holloman AFB has good geothermal potential. They have sent us base heating plans but with the termination of Federal Building funding, we do not have funds to do the necessary preliminary economic assessment of the project.
Norton AFB	Good	FY-82	No	Norton AFB was evaluated as a part of the Federal Building Program. It is in the same command as Lajes and the command prefers to pursue Lajes first. If the Lajes project is successful, there is a good chance that Norton AFB personnel will also become enthusiastic for a project. We agree that Lajes is the best project and it should be pursued first.
Williams AFB	Good	FY-82	No	The Air Force had issued an RFP for a commercial development. We were on the review team and recommended against the one proposal received. Dick Steed, the Air Force project manager (and also the manager of the Lackland project) is still interested in proceeding with a geothermal development at Williams AFB. It is our opinion that if we had funding to study this project, we could develop a potentially economical geothermal concept and the Air Force would proceed with the recommended development.
Hill AFB	Low	FY-82	No	UURI drilled a well at Hill AFB which was a dry hole. It was a political situation and UURI didn't think the well should have been drilled. Bruce MacDonald (Tyndall) expressed some interest in a groundwater heat pump application at Hill. Again, if we had funding, there is a good probability we could develop an economical project at Hill AFB.

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Kelley AFB	Good	None	No	Kelley AFB is adjacent to Lackland AFB. It sits on the same geothermal resource as Lackland and has an equal probability of successfully developing the resource. Kelley has a lower energy demand than Lackland and the economics of developing the resource are somewhat poorer. Currently base personnel are waiting for results of the Lackland drilling prior to proceeding with a geothermal development. There have been some indications at the command level that there is an interest in proceeding without awaiting for Lackland results.

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The following are bases with good potential but we have not made contact with Air Force personnel because of funding limits.

Luke AFB
 Indian Springs AFB
 Nellis AFB
 Davis Monathan
 March AFB
 Keflavik
 Toole
 Sandia AFB
 Dugway Proving Grounds
 White Sands
 Fort Bliss
 Southern California

The following bases have some potential but we have not made contact with Air Force personnel because of funding limits.

Stanley Camp Storage
 William Beaumont Army
 Yakima Firing Center
 Army & A.F. Exchange - Dallas, TX
 Camp Bullis - San Antonio, TX
 Ogden Defense Depot - Ogden, UT
 Ft. Wingate - Gallup, NM
 Yuma Proving Ground - Yuma, AZ
 Ft. Douglas - SLC, UT
 Clark AFB - Phillippines
 Logistics Command - San Antonio, TX
 Kirtland AFB - Albuq., NM
 Carswell AFB - Fort Worth, TX
 Fairchild AFB - Spokane, WA
 Francis E. Warren - Cheyenne, WY
 Griffins AFB - Rome, NY