

Semi-Annual Technical Progress Report for *Adaptive Management and Planning Models for Cultural Resources in Oil & Gas Fields in New Mexico and Wyoming*,  
DE-FC26-02NT15445 - January 1, 2003 – June 30, 2003

Semi-Annual Technical Progress Report

January 1, 2003 – June 30, 2003

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(with input from compiled progress reports from sub-contractors)

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## **ABSTRACT**

This report contains a summary of activities of Gnomon, Inc. and five sub-contractors that have taken place during the first six months (January 1, 2003 – June 30, 2003) under the DOE-NETL cooperative agreement: *Adaptive Management and Planning Models for Cultural Resources in Oil & Gas Fields in New Mexico and Wyoming*, DE-FC26-02NT15445.

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## **EXPERIMENTAL**

There were no experimental methods used during the first six (6) months. This period of the project included project design and data development.

## RESULTS AND DISCUSSIONS

During the first six (6) months of this project, work has been performed by Gnomon, Inc. and five (5) sub-contractors:

SRI Foundation (SRIF), Western GeoArch Research (WGR), Red Rock Geological Enterprises (RRGE), Wyoming State Historic Preservation Office (WSHPO), and New Mexico Historic Preservation Division (NMHPD)

There have been no major problems encountered and all parties have been able to meet their deadlines on time and within budget. Below is a summary by participant of what has been accomplished and what each hopes to accomplish in the next six (6) months.

### **Gnomon, Inc.**

Hosted start-up meeting for all participants plus NM and WY Bureau of Land Management (BLM) representatives in Carson City, NV – January 8-9, 2003.

Reviewed all technical work plans.

Sent out post-meeting summary to all participants and made adjustments to contracts where necessary.

Created a GIS library and loaded pertinent digital data into it. Created passwords for all participants to have access to this data.

Created an information bulletin board for sharing technical information.

With input from the sub-contractors, created a master list of potential reviewers and sent them each a formal invitation to participate as a reviewer for the project.

Digitized geomorphology areas of Loco Hills study area created by Steve Hall (RRGE) and sent the shape file to SRIF to be used to create burial sensitivity and site likelihood models for Loco Hills, NM study area.

Created stream buffer areas to be used by Bill Eckerle (WGAR) to create burial sensitivity and site likelihood models in the Power River Basin of Wyoming.

Commented on Style Guide created by SRIF.

Commented on New Mexico report draft outline created by SRIF.

Attended New Mexico PUMP III technical meeting hosted by SRIF in Albuquerque in April 2003.

Created and delivered project tracking tool to WYSHPO.

Gave a presentation on the DOE PUMP III project at the Wyoming BLM State Historic Preservation Office Statewide annual meeting May 2003.

Provided on-going technical support to all parties and monitored progress and budgets for all parties.

### **SRI Foundation**

Attended start-up meeting in January 2003.

Requested volunteers to act as peer reviewers at the American Cultural Resources Association (ACRA) board meeting in March 2003. Handed out DOE PUMP III "Technical Brief" for their review.

Wrote report style guide.

Wrote outline for New Mexico technical report.

Approved NMHPD data formats and contents.

Hosted technical meeting in April 2003 to discuss the New Mexico component of the DOE PUMP III Project. Attendees included representatives from Gnomon, Inc., SRIF, NMSHPO, NM BLM, and Steve Hall from RRGE, Jim Bowman from Fort Bliss, and Linda Cole from the US Forest Service (USFS).

Completed background research, identified preliminary modeling parameters, and defined information and management issues for the New Mexico study areas.

Met with geomorphologists to discuss project.

### **Western GeoArch Research**

Researched available environmental data types for New Mexico and became familiar with New Mexico geology and archaeology.

Downloaded soils data for Powder River Basin.

Consulted with Steve Hall, Red Rock Geological Enterprises, on sensitivity modeling concerns.

Compiled list of available Wyoming data on WGR computer.

Reviewed Steve Hall's sensitivity classification.

Attended Wyoming Start-up meeting March 24, 2003.

Compiled soils data: SURGO and STATSGO.

Conducted fieldwork in the Powder River Basin.

Started writing report draft.

Finalized and edited available database information.

Worked on modeling stream buffers for Powder River Basin.

Gave DOE PUMP III presentation to BLM people May 2003.

### **Red Rock Geological Enterprises**

Attended start-up meeting in January 2003.

Assembled aerial photos of Loco Hills and USGS topological maps for all NM project areas.

Started preliminary interpretation and mapping of images.

Interpreted aerial photos and transferred geomorphic information to topographic maps for the Loco Hills project area.

Conducted fieldwork in the Loco Hills area of NM.

Completed Loco Hills geomorphic maps and submitted them to Gnomon for digitization.

Started Azotea Mesa geomorphic mapping.

Attended NM meeting held by SRIF in March 2003.

### **New Mexico Historic Preservation Division**

Attended start-up meeting in January 2003.

Processed 7513 survey reports from Loco Hills study area and added the features to the NM Cultural Resources Information System (NMCRIIS).

Digitized 2370 boundaries for 1739 sites for three study NM study areas and added these to the DOE PUMP III database.

Prepared two test datasets for SRIF personnel.

Started work on Azotea Mesa study area.

Attended NM meeting held by SRIF in April 2003.

### **Wyoming State Historic Preservation Office**

Attended start-up meeting in January 2003.

Held a DOE PUMP III WY start-up meeting in March 2003. Attendees included representatives from WYSHPO, BLM state and field offices, US Forest Service, and Bill Eckerle.

Hired new people to work on the DOE PUMP III project and set up computers for them.

Trained new staff on data entry for the project.

Rolled up GIS data from BLM and WYSHPO into the master dataset.

Processed all backlog of reports in 8 county area readying them for digitizing.

Visited Gnomon, Inc. in Carson City to finalize new site data entry forms.

Posted project tracking prototype on SHPO web site.

Started using new data entry application.

Digitized 4513 sites, 4670 surveys and 14,673 survey spatial entities in the Powder River Basin study area.

### **TO BE ACCOMPLISHED JULY 1, 2003 – DECEMBER 31, 2003**

#### **Gnomon, Inc.**

Automate outcome of geomorphological studies (GIS/DB) in NM study areas.

Participate in review of analytical outcomes and process for Loco Hills study area.

Integrate geomorphology, burial sensitivity, and site likelihood analytical data from NM and WY study areas into the project library.

Review report draft of report created by Steve Hall on geomorphology studies in the NM study areas, including a field manual for geomorphic assessment of archaeological potential.

Review analytical data and results from geomorphological studies in Loco Hills study area developed by SRIF.

Participate in teleconference among task team and peer reviewers on the recommendations from SRIF on how inventory configurations might be modified in the Azotea Mesa study area as a result of the analysis of the Loco Hills data.

Review draft Cultural Resource Management (CRM) recommendations created by SRIF for the Azotea Mesa and Otero Mesa study areas.

Review report draft of report created by Bill Eckerle on geomorphology studies in the WY study area.

Visit the WYSHPO office to see how the tracking tool and data entry tool are working and check on how digitization is progressing.

Plan project meeting for all participants in Albuquerque in October.

Continually coordinate the activities of the participants, interested parties, and peer reviewers.

Provide ongoing technical support.

### **SRI Foundation**

Review and comment on geomorphology, burial sensitivity and site likelihood models created by Hall and Eckerle and report on these findings.

Organize peer review of the results and recommendations that come out of the Loco Hills geomorphology studies.

Host a teleconference among task team and peer reviewers for the Loco Hills data.

Create Cultural Resource Management (CRM) recommendations for the Azotea Mesa and Otero Mesa study areas and submit for peer review.

Attend project meeting in Albuquerque in October.

### **Western GeoArch Research (William Eckerle)**

Conduct fieldwork in Powder River Basin.

Complete data compilation, up to six detailed risk models, GIS and other datasets, and draft of final report for geomorphology studies in the Powder River Basin of Wyoming.

Attend project meeting in Albuquerque in October.

### **Red Rock Geological Enterprises (Stephen Hall)**

Conduct fieldwork in Azotea Mesa and Otera Mesa.

Complete data compilation, up to six detailed risk models, GIS and other datasets, and draft of final report for geomorphology studies in the NM study area.

Attend project meeting in Albuquerque in October.

### **New Mexico Historic Preservation Division**

Continue to enter data and digitize inventories and site records for the three NM study areas: Loco Hills, Azotea Mesa and Otero Mesa.

Gather US Forest Service and US Department of Defense data for the three study areas.

Deliver extracts for all three areas.

Attend project meeting in Albuquerque in October.

### **Wyoming State Historic Preservation Office**

Give a project status update report at the Rocky Mountain Anthropological Conference in September.

Digitize about 1778 additional sites and 1244 additional projects. Complete attribution of all Campbell County sites (about 4500).

Attend project meeting in Albuquerque in October.

## **CONCLUSION**

Gnomon, Inc. and all five (5) subcontractors have agreed on a process for the framework of this two-year project. They have also started gathering geomorphological information and entering cultural resource data into databases that will be used to create models later in the project. This data is being gathered in both the Power River Basin of Wyoming, and the Southeastern region of New Mexico. Several meetings were held with key players in this project to explain the purpose of the research, to obtain feedback and to gain support. All activities have been accomplished on time and within budget with no major setbacks.

## **REFERENCES**

No materials were referenced during this reporting period.