

ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS FY12 Project Description

THE ALASKA GEOLOGIC MATERIALS CENTER

The Alaska Geologic Materials Center (GMC) in Eagle River holds nonproprietary rock core and cuttings that represent nearly 13 million feet of exploration and production drilling (76,000 linear feet of core) on Federal, State, and private lands in Alaska, including the Alaska outer continental shelf. Additionally, the collection holds more than 252,000 linear feet of diamond-drilled hard-rock mineral core, representing more than 1,800 exploratory boreholes; rock samples from more than 1,650 oil and gas exploratory or production wells; samples for geotechnical boreholes; and numerous surface rock and sediment samples. The GMC also maintains extensive geochemical data, reports derived from third-party sampling, and has an archive of more than 187,000 processed slides, including petrographic thin sections and paleontological glass slides derived from this rock.

The GMC is operated by the Alaska Department of Natural Resources, Division of Geological & Geophysical Surveys, with support from cooperating government agencies that include the U.S. Bureau of Land Management (BLM), U.S. Geological Survey (USGS), U.S. Bureau of Ocean Energy Management (BOEM), and Alaska Oil and Gas Conservation Commission (AOGCC). The mission of the GMC is to permanently archive, index, protect, and make available for public inspection, accessible geologic materials and related data to help advance exploration and knowledge of Alaska's natural resources. Chief users of the GMC are the oil and gas industry, although use by the minerals industry, government, engineering firms, and academic institutions is increasing.

The current staff consists of a Curator, two full-time geologists, a contract curator, two volunteers, and two student interns. The Curator's focus is to preserve and ensure the safety of the samples stored at the facility and make the samples and their derived data more accessible to the public. Despite the ongoing struggle to maintain the 26-year-old collection in a much older and deteriorating facility, many improvements have occurred at the GMC. Its staff completed two major curation projects involving valuable core sample collections at risk of severe material and data loss, with funding in part from the National Geologic and Geophysical Data Preservation Program of USGS and the Minerals Data Information Rescue of Alaska program. As a result, for example, much of the data associated with the Amchitka Island hard-rock core has been greatly improved and, after countless hours of rigorous work by contract curator Don Hartman, 94 percent of the 818 deteriorating boxes of moldy coal-bed methane core from five wells has been cleaned, re-boxed, and moved to an environmentally controlled storage area. This effort has made the core accessible once again, allowing geoscientists an opportunity to study and log the young, unique coal sections found throughout the core.

During FY2011, the GMC hosted 511 visits to its facility in Eagle River by industry, government, and academic personnel to examine rock samples and processed materials, breaking the 2008 record of 497 visitors. An analysis of visitor statistics dating back to 1999 has resulted in a very informative GMC visitor statistics summary, highlighting trends in the total number of yearly visitors, the types of groups visiting the facility (fig. 1), and the agencies, companies, and universities who most frequently visit the facility. The results indicate an average increase of 12 visits per year between 1999 to present with 43 percent of the visits coming from the oil and gas industry and 19, 13, 11, 10, and 4 percent coming from academia, the general public, the mining industry, state agencies, and the federal government, respectively.

GMC staff has completed 45 percent of its inventory-mapping project, a focused effort to provide an updated, detailed inventory of the entire collection. The inventory map will identify empty shelves and provide the location and counts of specific sample types, more accurate core recovery data and footage estimates, and unique IDs (barcodes) for every box. GMC staff has already incorporated 60 percent of the entire oil and gas collection into a working barcode/database system. This massive effort will make our hoped-for future transition to a new repository much more manageable, improve the quality of the collection data, and pave the way for a web interface to query the available materials at the GMC.

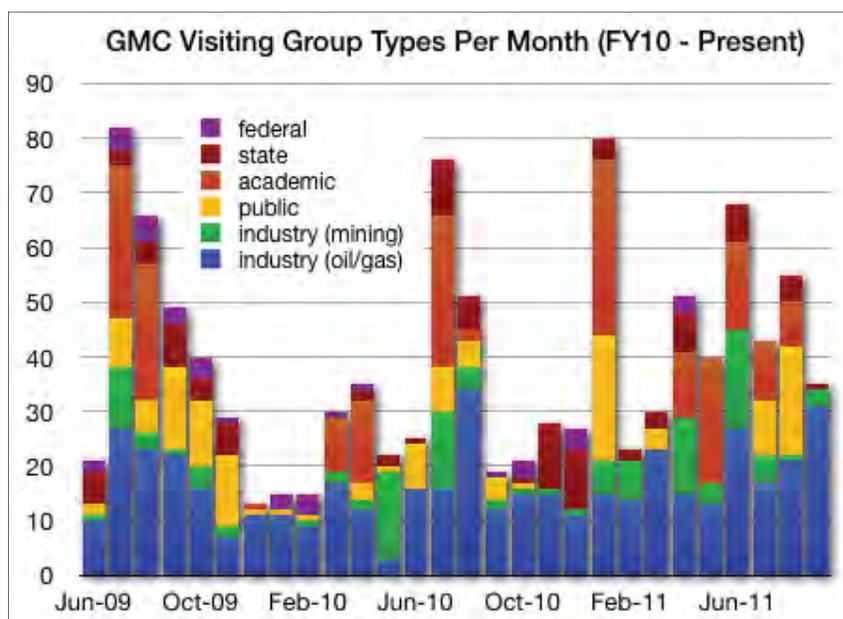


Figure 1. Number of monthly visits, FY10 to present, by group types.

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As a result of this project, GMC staff has released a detailed GMC inventory summary. The staff now has a much better understanding of the facility's inventory growth rate, the number of boxes, amount of core, sample types, and the sample volume distribution (fig. 2) that make up the entire 77,060 ft³ collection. For example, the GMC's 28-year average growth rate is 2,752 cubic feet of samples per year. After the limited space in the main warehouse was filled, the GMC in 1992 purchased its first of 60 shipping containers. Since that time, additional sample donations have filled roughly three shipping containers per year.

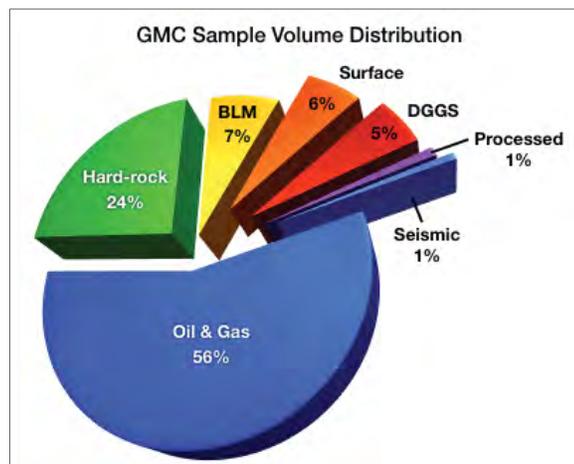


Figure 2. Pie chart showing percentages of sample collection groups by volume.

The results indicate that, of the 11 respondents who commented on their satisfaction, only 36 percent were satisfied with the usability, convenience, and storage conditions of material. More encouraging, however, was that 83 percent of respondents report making a positive economic, exploration, or research decision as a direct result of utilizing the current facility. A summary of the GMC user survey is now available online. Special thanks to all of those who took the time provide such valuable feedback.

DGGS managers, working with the Alaska Department of Transportation & Public Facilities and GMC staff, are developing plans for a new facility to help ensure the future accessibility and protection of the material currently stored at the GMC. Site selection and preliminary design work plans are described in a concept study report and a brochure, *A Vision for Responsible Stewardship*, both downloadable from the GMC website (<http://dggs.alaska.gov/gmc/>). The Curator has drafted an Inventory Transfer Plan summarizing the logistics and costs associated with the transfer of the entire inventory from the Eagle River facility to a larger repository potentially located in Anchorage. We estimate that moving the entire GMC collection will involve three months of work requiring 2,250 pallets to be loaded into 113 forty-foot tractor-trailer truckloads.

Despite the challenges associated with safely maintaining and providing access to this valuable geologic library, GMC staff are working hard to provide more useful geologic information to the users and accommodate their current needs. We encourage users who haven't visited the GMC in the past several years to do so and, as always, user feedback is most welcome.

"We resampled core from a chromium prospect to assess platinum-group elements, which led to a discovery of over 20 grams/ton of platinum and palladium on Alaska state land. The area is now staked and under exploration."

Curt Freeman, President
Avalon Development Corp.