

Aggregate Exploration Program at the Saskatchewan Research Council

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Seventy-five percent of all aggregate production in Saskatchewan is used in the construction and maintenance of grid roads and highways. The relatively low monetary value of this material makes haul cost a key factor in the economics of many deposits. In order to make optimum use of sand and gravel resources it is imperative that comprehensive information be available concerning location, reserves and quality of aggregate deposits.

In Saskatchewan, Rural Municipalities (RM) are responsible for the maintenance and construction of an extensive rural grid road system. Each year over 4 million tonnes of sand and gravel are applied to the grid road network. Many RMs are in dire need of new aggregate supplies. Still others are hauling from pits far from the eventual point of use. In order to assist RMs in the search for new sources of aggregate, the Saskatchewan Research Council (SRC) developed an "Aggregate Exploration Program". Partial funding for this program (50 percent) was made available through the Canada-Saskatchewan Mineral Development Agreement (MDA) in December of 1987 and the remaining 50 percent is paid by the specific RMs being studied.

The Aggregate Exploration Program involves field exploration work, consisting of auger drilling, back-hoe trenching, sampling and geophysical surveys, and an office compilation component consisting of airphoto interpretation and compilation of available sand and gravel information, including water well records, soils maps, surficial geology maps, and testhole information available from Saskatchewan Highways and Transportation.

The prospects identified by the airphoto investigation are further assessed by SRC through field investigations. A preliminary field inspection is made of all the prospects identified in the airphoto study. This work consists of an examination of existing terrain and exposures, digging of shallow holes, and preliminary geophysical work (EM-31). Those prospects warranting follow-up subsurface testing are thus identified and tested with back-hoe and/or auger-drill rig. Priorities for this more detailed testing are set in consultation with the council of the RM concerned.

The information derived from the exploration program is presented on maps with an accompanying report which is drafted, printed and distributed to the clients.

During the 1987/88 fiscal year, four RMs (Prairiedale, Oakdale, Lacadena and Leask), comprising an area of 4776 km², were investigated. A total of 165 aggregate prospects were identified and 251 testholes were drilled.

In the 1988/89 fiscal year, seven RMs (Harris, Perdue, Progress, Deer Forks, Rosedale, Biggar and Aberdeen), comprising an area of 6713 km², are under investigation. Airphoto identification of prospects and most of the fieldwork have been completed for these areas. A total of 248 aggregate prospects were identified via airphoto interpretation, 384 testholes were drilled and 101 aggregate samples analyzed. Final reports for all areas will be complete by March 1989.

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