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MEETING
PAPER

THERMAL ANALYSES OF NATURAL GAS STORED IN SOLUTION-MINED CAVERNS

by

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INTRODUCTION

This paper presents the technical approach and results of a heat transfer study of natural gas stored in solution-mined caverns. Specifically, natural gas storage in Dow Wells No. 13 and No. 14 in the Napoleonville salt dome south of Baton Rouge, Louisiana, is analyzed. These wells are owned by Dow Chemical and are currently leased for natural gas storage by Enron Gas Services Corporation. The objective of the study is to predict the annual average temperature of the natural gas stored in Wells No. 13 and No. 14 for several hypothetical withdrawal/injection scenarios. The annual average gas temperature is important because the volume of the gas that can be stored in a cavern at a specified wellhead pressure is a function of the temperature of the gas.