$\frac{35}{25} = \frac{10}{x}$ $\frac{35}{25} = \frac{21}{x}$ $\frac{35}{25} = \frac{31}{x}$ $\frac{35}{25} = \frac{32}{x}$ 23 98 80 178 @ TD+ 1 Km

$\frac{35}{25} = \frac{56}{x}$

GL01842

$\frac{19}{250} = \frac{11.5}{x}$ 157 12 TD + 1.15 Km

9800 1463 1150 261

$\frac{19}{250} = \frac{12.5}{x}$ 164

$\rho r = a \rho w \phi^{-m}$

$= \rho w \phi^{-2} = \frac{\rho w}{\phi^2}$

For $\rho w = 1\,\Omega$-m
1 ohm-m ρ @ 25°F = 6000 ppm NaCl

Same Sh @ 200°F = 0.36 Ω-m
$= \frac{1}{3}$

So $\rho r|_{200}$ would be $\frac{1}{3}$ of $\rho r|_{25}$

For $\rho w = 5\,\Omega$-m $\Rightarrow$ 1000 ppm $|_{25}$
$\Rightarrow$ 1.9 Ω-m $|_{200}$
factor of $\frac{2}{5}$ lower

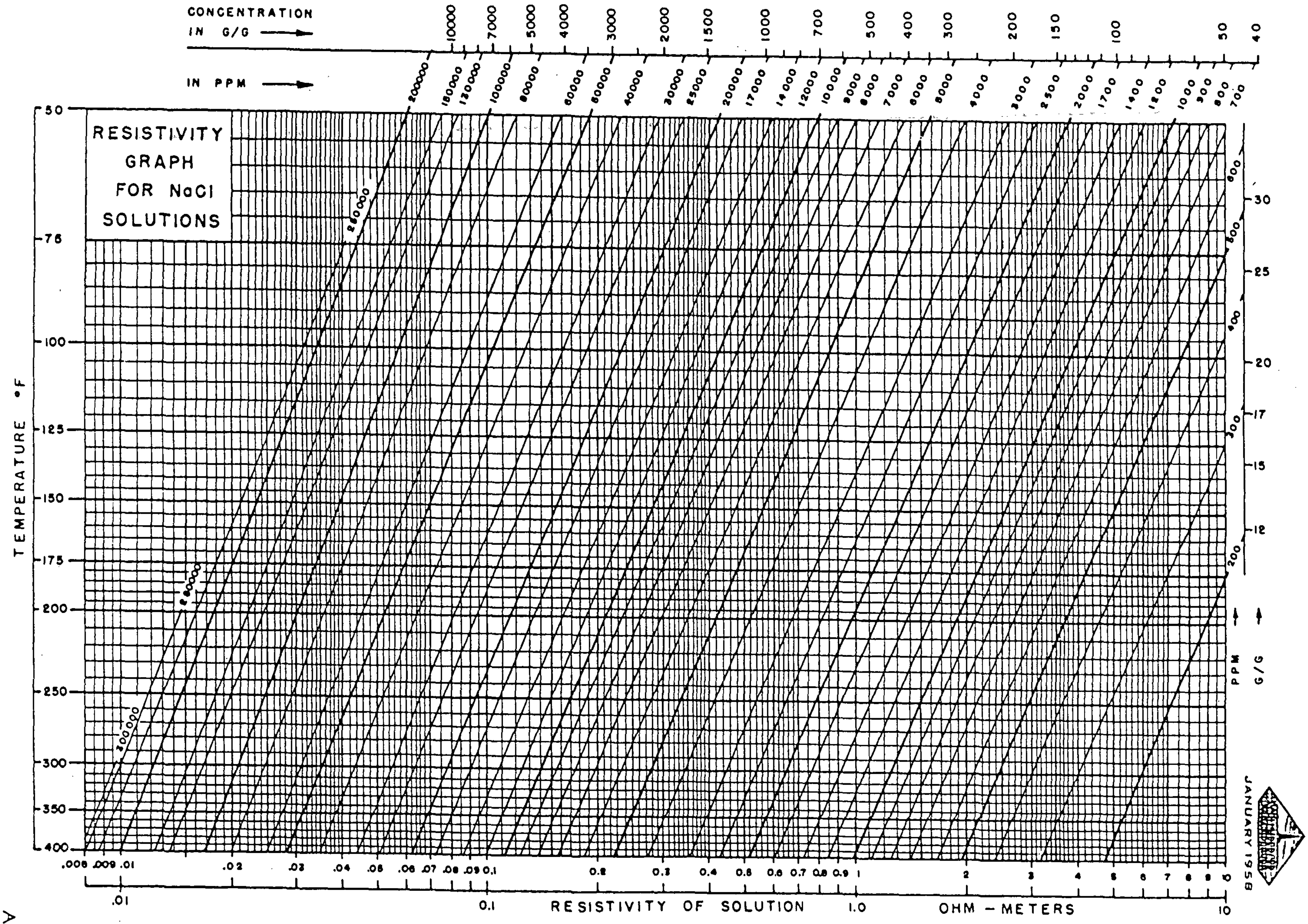
In Borehole @ 4733 $\rho = 5\,\Omega$-m
4228 $\rho \simeq 35\,\Omega$-m (guess)

Samples 4733 $|_{\rho w = 1\Omega\text{-m}} = 12.8$ $|_{\rho w = 5\Omega\text{-m}} = 18.5$

applying correct factors $\frac{12.8}{3} = 4.3$ $\frac{18.5 \times 2}{5} = 7.4$

These are in the ball park.

Figure 2



RESISTIVITY GRAPH FOR NaCl SOLUTIONS
CONCENTRATION IN G/G
IN PPM
TEMPERATURE °F
RESISTIVITY OF SOLUTION OHM - METERS
PPM
G/G
JANUARY 1958

Thanks for your comments!
Joel

Disposition: delete

To: J.KUPAR (DOE4428)
To: P.WRIGHT (DOE4433)
From: P.WRIGHT (DOE4433) Posted: Tue 7-Apr-87 14:18 EDT Sys 64 (78)
Subject: PROGRAM REVIEW ABSTRACT
Acknowledgment Sent

MEMO TO: KERRY SCHWARTZ, MERIDIAN

FROM: MIKE WRIGHT, UURI

SUBJECT: NEW ABSTRACT FOR MY PRESENTATION AT PROGRAM REVIEW

DATE: April 7, 1987

Kerry,

Please replace the abstract we originally sent you for the CASCADES with the following one. Note that the title has been changed, too. Thanks for your help.

Mike Wright

CALDERA RESERVOIR INVESTIGATIONS PROGRAM

Phillip M. Wright
University of Utah Research Institute

Caldera volcanic environments are young volcanic environments in which the type of high-silica volcanic rocks that are believed to indicate a large magma chamber in the subsurface are often found. Such a magma chamber could provide the heat source for geothermal systems. Thus, caldera environments are fruitful places to look for geothermal energy. From the geologic viewpoint, there are a great many questions remaining to be answered about caldera environments. This is especially true in evaluating the geothermal potential in particular volcanic areas, in locating geothermal systems in these areas, and in siting wells to intersect production zones. The objective of the Caldera Reservoir Investigations Program is to develop analytical and interpretive tools for industry to use in locating and evaluating geothermal reservoirs within young volcanic regions.

During the past two years the program has concentrated on the Cascades region of the northwestern U.S. DOE has been performing cost-shared research with industry consisting of coring in specifically chosen areas and in obtaining geophysical well logs down hole as well as physical and chemical properties of the core. These data are being compared to surface geological, geochemical and geophysical data for the purpose of developing and verifying new analytical tools and testing existing tools.

of two holes cored by GEO Operator, Inc., a subsidiary of Geothermal Resources International. Thermal Power Company has completed one corehole on the north slopes of Mt. Jefferson, near Breitenbush Hot Springs, Oregon. California Energy Company is presently coring near Crater Lake, Oregon. The costs for obtaining this core and the geophysical well logs taken in the holes is being shared by DOE and the industry participant. Joint research is being performed, with the industry participants being encouraged to publish their own studies on these projects. Research organizations working with the industry participants include UURI, the Oregon Department of Geology and Mineral Industries, Southern Methodist University, The U.S. Geological Survey and the University of Wyoming.

UURI's scientific efforts have concentrated on conceptual models of Cascades magmatic-hydrothermal systems and on the interpretation of geophysical measurements in this young volcanic environment. Our conceptual model studies have been enhanced by UURI's independent acquisition of core samples from a fossil geothermal system at Glacier Peak, WA. Electrical resistivity and magnetotelluric surveys have been used in Cascades geothermal exploration, and we have studied the causes of low-resistivity anomalies using samples and well logs provided by the DOE-sponsored coreholes. These studies have demonstrated that low-resistivity anomalies may result from zones of smectite which have been produced by low-temperature alteration of volcanic glass. Methods to distinguish anomalies of this type from those associated with high-temperature geothermal systems are needed.

Disposition: delete