

K & A
LABORATORIES

15-187-2071

February 17, 1995

Ms. Julie Wainscott
Amoco Corporation
P.O. Box 3385
Tulsa, Oklahoma 74102

Re: Final Report
Standard Core Analysis Test Results
Amoco Corporation
Wells: No. 1 Grace Kilgore, No. 1
Tapscott, and Federal Land Bank "C"
Stanton County, Kansas
K&A Job No. 95-7012-03

Dear Ms. Wainscott:

This report presents the final results of the standard core analysis tests performed on cleaned one-inch-diameter samples supplied by Amoco Corporation, Tulsa, Oklahoma. These tests were authorized by Ms. Julie Wainscott on February 9, 1995. A summary of these test results and the procedures used are provided below. Note that the samples have been separated for each well and arranged in decending depth order.

The standard core analysis test results are presented in tabular form on pages 3 through 5. These results include air permeabilities, helium porosities, and grain densities. Crossplots of air permeabilities and porosities are presented on pages 6 through 8.

The procedures used for these tests are as follows: upon arrival, the samples were oven dried for 24 hours at a temperature of 220° Fahrenheit. After allowing the samples to cool in a desiccator, a helium porosity and an air permeability were measured for each sample.

Helium porosities were measured at room conditions using a Boyles' Law double-celled helium porosimeter. Bulk volumes were measured using an Archimedes mercury immersion technique. Air permeabilities were measured using steady-state flow techniques at a confining stress of 400 psi. Test results are presented in tabular and graphical form as well as on diskette.

The conditions, under which this report is presented, are described immediately following this report. We request that the report be used in its entirety if reproductions are to be made. Please contact us if you have any questions concerning these data, or if we may be of further service.

Respectfully Submitted,

K&A LABORATORIES

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JMC/tj

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STANDARD CORE ANALYSIS SUMMARY

AMOCO CORPORATION
WELL NO. 1 GRACE KILGORE
STANTON COUNTY, KANSAS
SECTION 20-29S-39N

<u>Sample Number</u>	<u>Depth, feet</u>	<u>Air Permeability, md</u>	<u>Porosity, percent</u>	<u>Grain Density, gm/cc</u>
474K	5,474.7	0.162	6.4	2.71
475K	5,475.3	0.143	7.3	2.69
477K	5,477.3	0.0219	3.8	2.72
485K	5,485.8	0.00899	1.7	2.72
486K	5,486.9	0.0965	4.3	2.71
488K	5,488.7	0.0268	3.8	2.71
495K	5,495.5	0.0323	3.2	2.71
970K	5,497.0	0.512	7.3	2.70
978K	5,497.7	0.183	5.5	2.70
980K	5,498.0	0.0699	4.1	2.73
511K	5,511.2	0.0164	3.4	2.71
512K	5,512.5	0.0334	3.1	2.70

STANDARD CORE ANALYSIS SUMMARY

AMOCO CORPORATION
WELL NO. 1 TAPSCOTT
LOWER MORROW FORMATION
STANTON COUNTY, KANSAS
API WELL NO. 1518720684

<u>Sample Number</u>	<u>Depth, feet</u>	<u>Air Permeability, md</u>	<u>Porosity, percent</u>	<u>Grain Density, gm/cc</u>
595T	5,595.0	0.0608	3.8	2.77
597T	5,597.5	0.0776	3.2	2.68
615T	5,615.1	0.102	8.5	2.72
617T	5,617.8	3.08	9.7	2.74
618T	5,618.5	0.341	7.7	2.72
620T	5,620.8	0.0895	7.8	2.73
623T	5,623.5	0.00731	3.6	2.71
626T	5,626.9	0.00486	2.5	2.75
628T	5,628.3	*0.337	5.3	2.71
633T	5,633.2	0.00176	1.8	2.80

* Partial Fracture

STANDARD CORE ANALYSIS SUMMARY

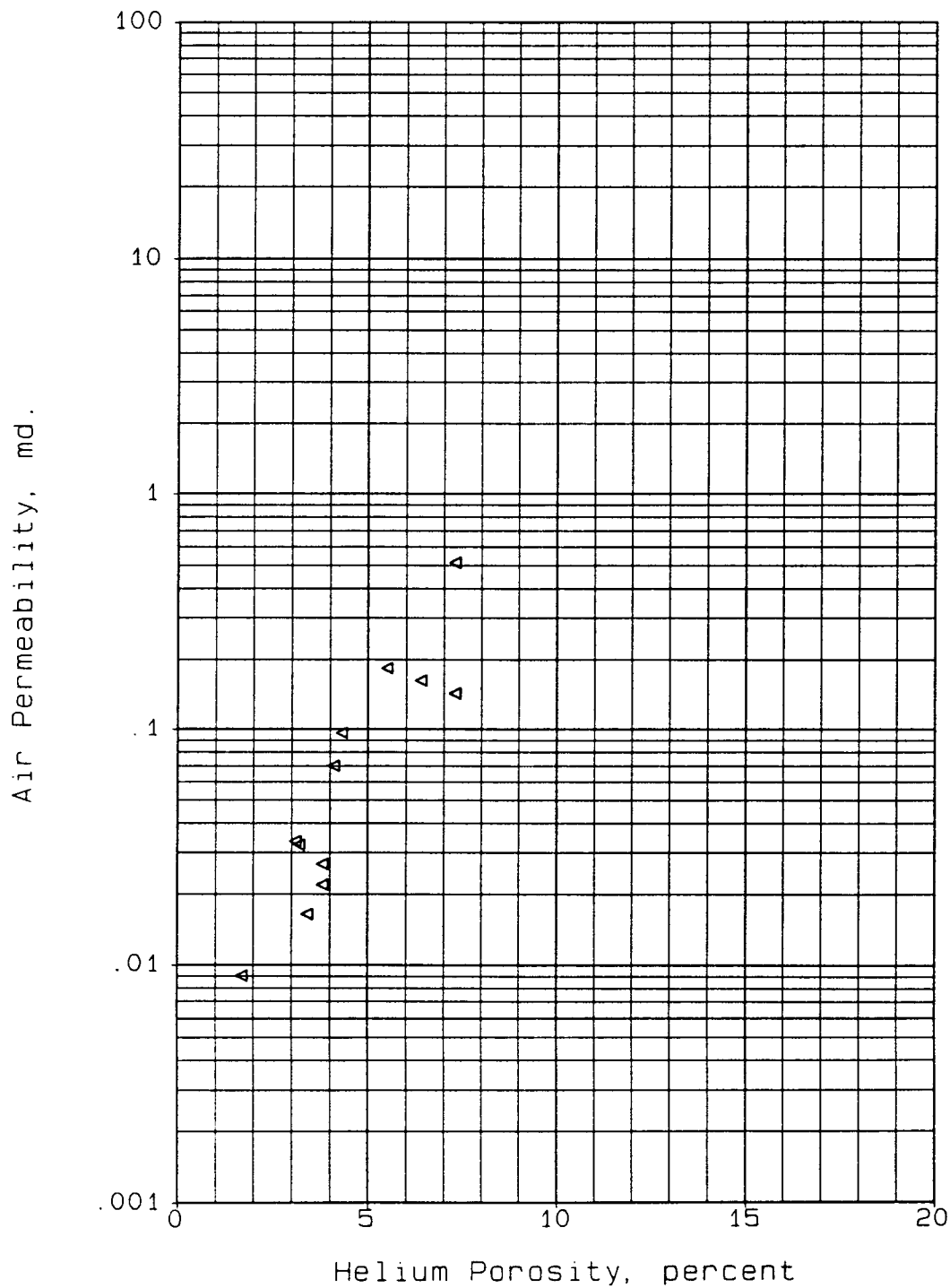
AMOCO CORPORATION
WELL FEDERAL LAND BANK "C"
LOWER MORROW FORMATION
STANTON COUNTY, KANSAS
SECTION 21-29S-39N

<u>Sample Number</u>	<u>Depth, feet</u>	<u>Air Permeability, md</u>	<u>Porosity, percent</u>	<u>Grain Density, gm/cc</u>
481F	5,481.1	0.0109	1.8	2.83
482F	5,482.4	0.0339	3.9	2.74
483F	5,483.5	0.0430	3.0	2.74
856F	5,485.5	0.00801	2.6	2.75
497F	5,497.2	0.00820	1.2	2.71
498F	5,498.1	0.0368	2.3	2.71
501F	5,501.4	0.0219	6.9	2.70
502F	5,502.1	0.00186	3.2	2.72
503F	5,503.0	0.0612	7.5	2.69
504F	5,504.4	0.00386	3.3	2.72
507F	5,507.9	0.00684	4.2	2.72
509F	5,509.9	0.0821	8.1	2.71
121F	5,512.1	0.211	11.1	2.69
516F	5,516.4	*0.277	9.9	2.69

* Partial Fracture

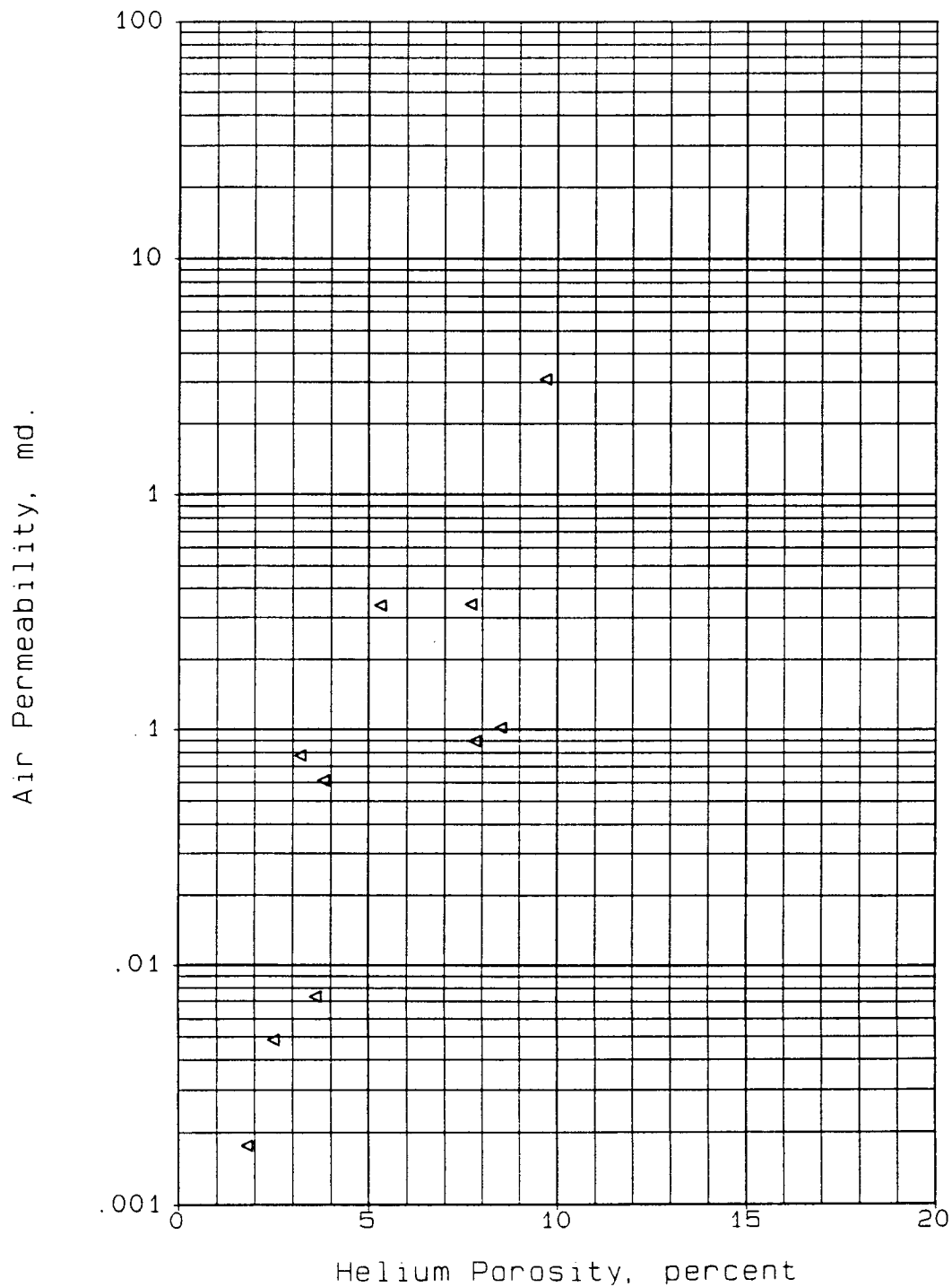
AIR PERMEABILITY VS. POROSITY CROSSPLOT

AMOCO CORPORATION
WELL NO. 1 GRACE KILGORE
STANTON COUNTY, KANSAS
SECTION 20-29S-39N



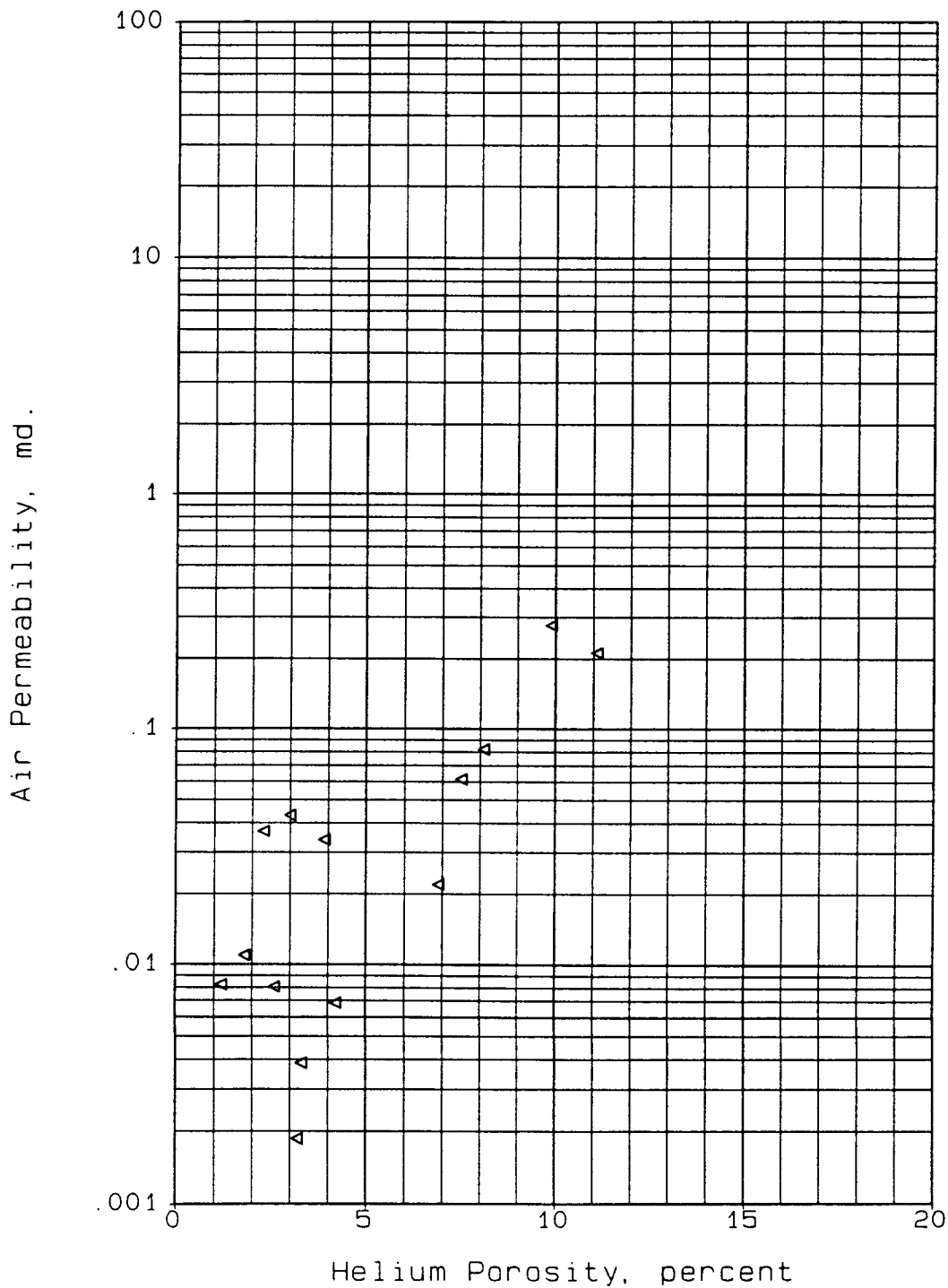
AIR PERMEABILITY VS. POROSITY CROSSPLOT

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AIR PERMEABILITY VS. POROSITY CROSSPLOT

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CONDITIONS AND QUALIFICATIONS

K&A Laboratories will endeavor to provide accurate and reliable laboratory measurements of the cores provided by the client. The results of any core analysis are necessarily affected by the condition in which the core is received and the selection of the samples to be analyzed. In the absence of direction by the client, K&A Laboratories will utilize its best geological and engineering judgment in selecting the samples to be analyzed. It should be recognized that most cores do not have uniform properties and that selection of truly representative samples is rarely possible. Unless otherwise directed, the samples will normally be selected from the highest quality segments. Thus, use of the properties measured in this report in reservoir calculations could result in an overestimation in reservoir volume and/or deliverability. K&A Laboratories assumes no responsibility nor offers any guarantee of the productivity or performance of any oil or gas well or hydrocarbon recovery process based upon the data presented in this report.