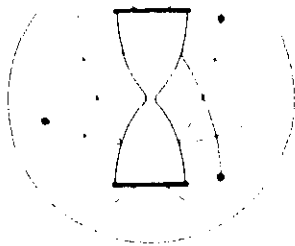


WELL SAMPLE LOCATIONS
WELL 52-4

<u>Sample #</u>	<u>Depth (ft)</u>	<u>Analysis</u>
52-4-1	405-408	WRX-AGE
52-4-2	523-525	WRX-TS
52-4-3	689-690	WRX-TS
52-4-4	810-811	WRX-TS
52-4-5	917-918	AGE-WRX-TS
52-4-6	1004-1005	WRX-TS
52-4-7	1221-1222	Hand Sample - TS
52-4-8	1369-1370	WRX-TS
52-4-9	1923-1924	WRX-TS
52-4-10	2266-2267	WRX-TS
52-4-11	2269-2270	WRX-TS
52-4-12	2578-2580	WRX-TS-AGE
52-4-13	2883-2884	WRX-TS
52-4-14	3319-3329	WRX-TS
52-4-15	3498-3499	WRX-TS-AGE



KRUEGER ENTERPRISES, INC. GEOCHRON LABORATORIES DIVISION

24 BLACKSTONE STREET • CAMBRIDGE, MA. 02139 • (617) 876-3691

POTASSIUM-ARGON AGE DETERMINATION

REPORT OF ANALYTICAL WORK

Our Sample No. R-6764

Date Received: 1/17/84

Your Reference: Letter of 1/9/84

Date Reported: 2/28/84

Submitted by: Kent W. Smith
PHILLIPS Petroleum Company
655 East 4500 South
Salt Lake City, UT 84107

Sample Description & Locality: Sample #52-4-15, fine grained igneous core.

Material Analyzed: Whole rock, -100/+200 mesh. Treated with dilute HF and HNO₃ to remove alterations.

Ar^{40*}/K⁴⁰ = .000448

AGE = 7.6 +/- 0.8 M.Y.

Argon Analyses:

Ar ^{40*} , ppm.	Ar ^{40*} / Total Ar ⁴⁰	Ave. Ar ^{40*} , ppm.
.000356	.069	.000322
.000288	.065	

Potassium Analyses:

% K	Ave. %K	K ⁴⁰ , ppm
0.570	0.589	0.719
0.608		

Constants Used:

$$\lambda_{\beta} = 4.72 \times 10^{-10} / \text{year}$$

$$\lambda_e = 0.585 \times 10^{-10} / \text{year}$$

$$K^{40}/K = 1.22 \times 10^{-4} \text{ g./g.}$$

$$\text{AGE} = \frac{1}{\lambda_e + \lambda_{\beta}} \ln \left[\frac{\lambda_{\beta} + \lambda_e}{\lambda_e} \times \frac{\text{Ar}^{40*}}{K^{40}} + 1 \right]$$

Note: Ar^{40*} refers to radiogenic Ar⁴⁰.

M.Y. refers to millions of years.

KRUEGER ENTERPRISES, INC. GEOCHRON LABORATORIES DIVISION

24 BLACKSTONE STREET • CAMBRIDGE, MA 02139 • (617) 876-3691

POTASSIUM-ARGON AGE DETERMINATION

REPORT OF ANALYTICAL WORK

Our Sample No. R-6763

Date Received: 1/17/84

Your Reference: Letter of 1/9/84

Date Reported: 2/28/84

Submitted by: Kent W. Smith
PHILLIPS Petroleum Company
655 East 4500 South
Salt Lake City, UT 84107

Sample Description & Locality: Sample #52-4-12, fine grained igneous core.

Material Analyzed: Whole rock, -100/+200 mesh. Treated with dilute HF and HNO₃ to remove alterations.

Ar⁴⁰*/K⁴⁰ = .000127

AGE = 2.2 +/- 0.2 M.Y.

Argon Analyses:

Ar ⁴⁰ *, ppm.	Ar ⁴⁰ */ Total Ar ⁴⁰	Ave. Ar ⁴⁰ *, ppm.
.000114	.127	.000119
.000125	.103	

Potassium Analyses:

% K	Ave. %K	K ⁴⁰ , ppm
0.743	0.771	0.940
0.798		

Constants Used:

$\lambda_\beta = 4.72 \times 10^{-10}$ / year

$\lambda_e = 0.585 \times 10^{-10}$ / year

K⁴⁰/K = 1.22×10^{-4} g./g.

$$AGE = \frac{1}{\lambda_e + \lambda_\beta} \ln \left[\frac{\lambda_\beta + \lambda_e}{\lambda_e} \times \frac{Ar^{40*}}{K^{40}} + 1 \right]$$

Note: Ar⁴⁰* refers to radiogenic Ar⁴⁰.

M.Y. refers to millions of years.



KRUEGER ENTERPRISES, INC. GEOCHRON LABORATORIES DIVISION

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POTASSIUM-ARGON AGE DETERMINATION

REPORT OF ANALYTICAL WORK

Our Sample No. R-6762

Date Received: 1/17/84

Your Reference: Letter of 1/9/84

Date Reported: 2/28/84

Submitted by: Kent W. Smith
PHILLIPS Petroleum Company
655 East 4500 South
Salt Lake City, UT 84107

Sample Description & Locality: Sample #52-4-5, fine grained igneous core.

Material Analyzed: Whole rock, -100/+200 mesh. Treated with dilute HF and HNO₃ to remove alterations.

Ar⁴⁰*/K⁴⁰ = .000237

AGE = 4.1 +/- 0.4 M.Y.

Argon Analyses:

Ar ⁴⁰ *, ppm.	Ar ⁴⁰ * / Total Ar ⁴⁰	Ave. Ar ⁴⁰ *, ppm.
.000145	.184	.000194
.000233	.095	
.000204	.108	

Potassium Analyses:

% K	Ave. %K	K ⁴⁰ , ppm
0.621	0.670	0.818
0.723		
0.667		

Constants Used:

$\lambda_\beta = 4.72 \times 10^{-10} / \text{year}$

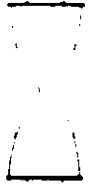
$\lambda_e = 0.585 \times 10^{-10} / \text{year}$

$K^{40}/K = 1.22 \times 10^{-4} \text{ g./g.}$

$$\text{AGE} = \frac{1}{\lambda_e + \lambda_\beta} \ln \left[\frac{\lambda_\beta + \lambda_e}{\lambda_e} \times \frac{\text{Ar}^{40*}}{K^{40}} + 1 \right]$$

Note: Ar⁴⁰* refers to radiogenic Ar⁴⁰.

M.Y. refers to millions of years.



KRUEGER ENTERPRISES, INC.

GEOCHRON LABORATORIES DIVISION

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POTASSIUM-ARGON AGE DETERMINATION

REPORT OF ANALYTICAL WORK

Our Sample No. R-6761

Date Received: 1/17/84

Your Reference: Letter of 1/9/84

Date Reported: 2/28/84

Submitted by: Kent W. Smith
 PHILLIPS Petroleum Company
 655 East 4500 South
 Salt Lake City, UT 84107

Sample Description & Locality: Sample #52-4-1, obsidian core.

Material Analyzed: Whole rock, -100/+200 mesh.

Ar^{40*}/K⁴⁰ = .000033

AGE = 0.6 +/- 0.1 M.Y.

Argon Analyses:

Ar ^{40*} , ppm.	Ar ^{40*} / Total Ar ⁴⁰	Ave. Ar ^{40*} , ppm.
.000167	.077	.000159
.000151	.069	

Potassium Analyses:

% K	Ave. %K	K ⁴⁰ , ppm
4.029	3.941	4.807
3.852		

Constants Used:

$$\lambda_{\beta} = 4.72 \times 10^{-10} / \text{year}$$

$$\lambda_e = 0.585 \times 10^{-10} / \text{year}$$

$$K^{40}/K = 1.22 \times 10^{-4} \text{ g./g.}$$

$$AGE = \frac{1}{\lambda_e + \lambda_{\beta}} \ln \left[\frac{\lambda_{\beta} + \lambda_e}{\lambda_e} \times \frac{Ar^{40*}}{K^{40}} + 1 \right]$$

Note: Ar^{40*} refers to radiogenic Ar⁴⁰.

M.Y. refers to millions of years.