



CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

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ARIZONA DEPARTMENT OF WATER RESOURCES

OPERATIONS DIVISION

15 South 15th Avenue
Phoenix, Arizona 85007

NOTE: A.R.S.§45-593.C. requires that the Department be notified of change of well ownership and that the well owner is required to keep the Department's Well Registration records current and accurate. Well data and ownership changes must be submitted within thirty (30) days after changes take place. **Therefore, this form may be completed in full by either the previous or new owner.**

SAVE THIS FORM TO REPORT FUTURE CHANGES IN OWNERSHIP, CHANGES IN ADDRESS, OR CHANGE IN WELL DATA SUCH AS PUMP CAPACITY, CORRECTION OF LEGAL DESCRIPTION, CHANGE OF WELL DRILLER AND AMENDING INFORMATION PREVIOUSLY FILED.

CHANGE OF WELL INFORMATION

Well Registration No. 55-_____ File No. _____ (If known)

I/We request the following well information be changed: _____

Date: _____ Signature of Current Well Owner _____

STATEMENT OF CHANGE OF WELL OWNERSHIP

I, _____, state that I am (no longer) the (new) owner of the well described below:

_____ 1/4 _____ 1/4 _____ 1/4; Section _____ Township _____ Range _____
10 acre 40 acre 160 acre

Well Registration No. 55-_____ File No. _____ (If known)

PRINT Previous Owner's Name

PRINT New Owner's Name

Address

Address

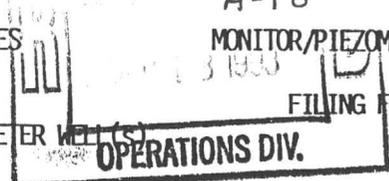
City State Zip

City State Zip

Dated _____ Signature Previous/New Owner _____

FILING FEE \$10.00

15 SOUTH 15TH AVENUE
PHOENIX, ARIZONA 85007



FILING FEE \$10.00

NOTICE OF INTENTION TO DRILL MONITOR/PIEZOMETER WELL(S)

Section §45-596, Arizona Revised Statutes provide: Prior to drilling a monitor or piezometer well, the well owner or lessee shall file a Notice of Intention to Drill on a form provided by the Department

1. WELL/LAND LOCATION:

11 (N)S | 4 (E)W | 14
Township | Range | Section

10 Acre Subdivision

NW 1/4 | NW 1/4 | NE 1/4
10 ACRE | 40 ACRE | 160 ACRE

2. County YAVAPAI

3. Applicant:

ARIMETCO INC.
Name
6245 E. BROADWAY #350
Address
TULSON AZ 85711
City State Zip

4. ALLEN E. WELLS
Name of Contact Person

Phone (602) 745-8882

Agency _____

5. Owner of Well:

ARIMETCO INC.
Name
6245 E. BROADWAY #350
Address
TULSON AZ 85711
City State Zip

6. Purpose of well drilled pursuant to this notice:

Monitor X

Piezometer _____

7. If for Deepening, Well Registration No:

55- _____

8. Owner of Land:

THE ZONDA COMPANY
Name
212 S. MARINA ST.
Address
PRESCOTT AZ 86305
City State Zip

9. Construction will start:

SEPT 20 93
Month Day Year

10. Period well will remain in use 10 Months Years

11. For monitoring wells, is pump equipment to be installed? Yes X No _____

(a) If yes, design pump capacity 8 gpm

(b) Type of pump: SUBMERSIBLE
submersible, turbine, etc

(c) What use will be made of the water monitor

12. Drilling Firm:

ARIMETCO INC.
Name
6245 E. BROADWAY #350
Address
TULSON AZ 85711
City State Zip

DWR License No. 546
NOT REQUIRED
ROC Category

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
File No. B(11-4)14AB13
Filed 9-13-93 By ak
Input _____ By _____
DUPLICATE
Mailed 9-17-93 By ak
Registration 55- 540720
AMA/INA -
W/S L8 S/B

13. Proposed method of abandonment of well after project is completed: BACK FILL W/TH

BETONITE CLAY MIX AND CEMENT GROUT PLUG TOP 20 FEET

14. Is this well to monitor existing contamination? _____ Potential contamination X. Please explain:

BACKGROUND WATER QUALITY NEAR/AT THE ZONDA MINE.

GENERAL INSTRUCTIONS

- 1. Fill out this form in DUPLICATE and send WITH \$10.00 FEE to 15 South 15th Avenue, Phoenix, AZ 85007.
- 2. For specific instructions, limitations and conditions, see the reverse side of this form.

I state that Notice is filed in compliance with Section §45-596 and is complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on the reverse side of this form.

Signature of Applicant/Owner
ALLEN E. WELLS

AGENT: ARIMETCO INC.

SEPT 6, 1993
Date
DWR 55-44-7/90 (Rev.)

15. If construction plans have been coordinated with Az. Dept. of Environmental Quality, who is the agency contact? MR. ED POND

If construction plans have been coordinated with Az. Dept. Water Resources, Hydrology/Water Quality Division, who is the division contact? _____

16. WELL CONSTRUCTION PLAN

a) Drilling method (mud rotary, hollow-stem auger, etc.) AIR ROTARY

b) Borehole diameters: 12 1/2 inches from 0 feet to 20 feet
7 9/8 inches from 20 feet to 400 feet

c) Casing materials (PVC, steel, stainless steel, etc.):

material STEEL diameter 8 9/8 00 inches from 1' feet to 20' feet

material PVC diameter 4" ED. inches from 0 feet to 400 feet

d) Method of sealing at reductions _____

e) Annular seal materials (cement, grout, etc.); method of placement (tremied, circulated)

material CEMENT diameter 3 inches from 0 feet to 20 feet

material BENTONITE diameter 3 inches from 20 feet to 400 feet

f) Gravel packs (state material and whether natural or artificial):

material 1/4" GRAVEL, NATURAL inches from 213 feet to 400' feet

material _____ inches from _____ feet to _____ feet

g) Perforations (if pre-manufactured, please give specs of perforations or screens:

type SLOTS CUT IN PVC CASING from 213 feet to 400 feet

type _____ from _____ feet to _____ feet

h) Method of well development (bail, air lift, surge) AIR LIFT.

i) Will surface or conductor casing extending above grade be used to protect the aquifer from additional surface contaminants during drilling and construction? Yes No _____

17. Include detailed construction diagram, if available.

18. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility, storage area of hazardous materials or petroleum storage areas and tanks? Yes _____ No

CONDITIONS

- I. Construction and abandonment standards for all wells shall be in accordance with A.A.C. Rules R12-15-811 and R12-15-816.
- II. Drilling of the well shall be completed within one (1) year after the date of Notice.
- III. A Well Driller Report, is required within 30 days of completion of drilling. A Completion Report, is required to be filed with the Department within 30 days after installation of pump equipment for monitor wells.
- IV. Pump equipment may not be installed on a well drilled for piezometer purposes. If a monitor well is pumped, pumping is limited to the maximum amount required for monitor purposes, but in no case may exceed 35 gallons per minute and an annual amount of 10 acre feet total.
- V. A.A.C. Rule R12-15-811.H.2, requires that: "A monitor well shall be identified as such on the vault cover or at the top of the steel casing. Identification information will include well registration number."
- VI. Special construction standards required pursuant to A.A.C. Rule R12-15-821: _____

REC: 4/8/94

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue, Phoenix, Arizona 85007
Telephone (602) 542-1581
Fax (602) 256-0506



3-31-94

FIFE SYMINGTON
Governor

RITA P. PEARSON
Director

B 110 040 12 C A B WR 540719 LOG
ARIMETCO INC 06

6245 E BROADWAY
TUCSON AZ 85711 546

Dear Well Driller:

The Department of Water Resources issued drilling authority six months ago for the well referenced by the file and registration number as indicated on the above label. To date, our records show that this well has not been drilled.

If well has been drilled, Arizona Revised Statute §45-600 requires that the driller furnish a complete and accurate **Well Driller Report** (log) within thirty (30) days of concluding drilling.

If this well has been drilled, the file needs the above mentioned report to bring the well into compliance with the law, and you should ensure that this is done.

If this letter does not meet your present circumstance, and the well is to be completed on or before the expiration date of the drilling authority, please disregard.

The Department's file numbering system is explained in detail on the reverse side of this letter.

Your immediate assistance is appreciated. If you have any questions, or need further information, please contact Carlane Stephan at (602) 542-1581.

Sincerely,

Bruce S. Davis
Chief, Operations Division

BSD:dl

DWR-55-60B-6/92(Rev.)
6-month letter

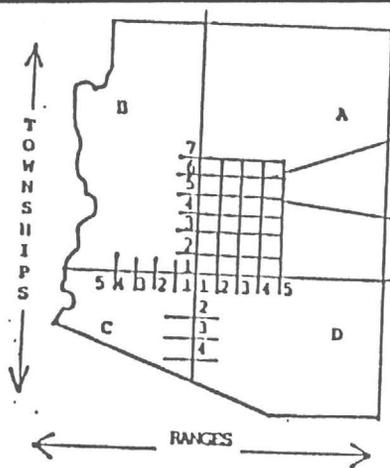


Figure 1

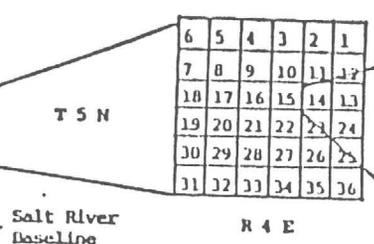


Figure 2

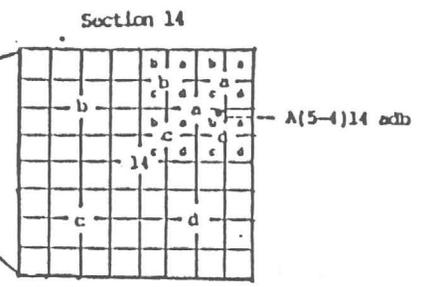


Figure 3

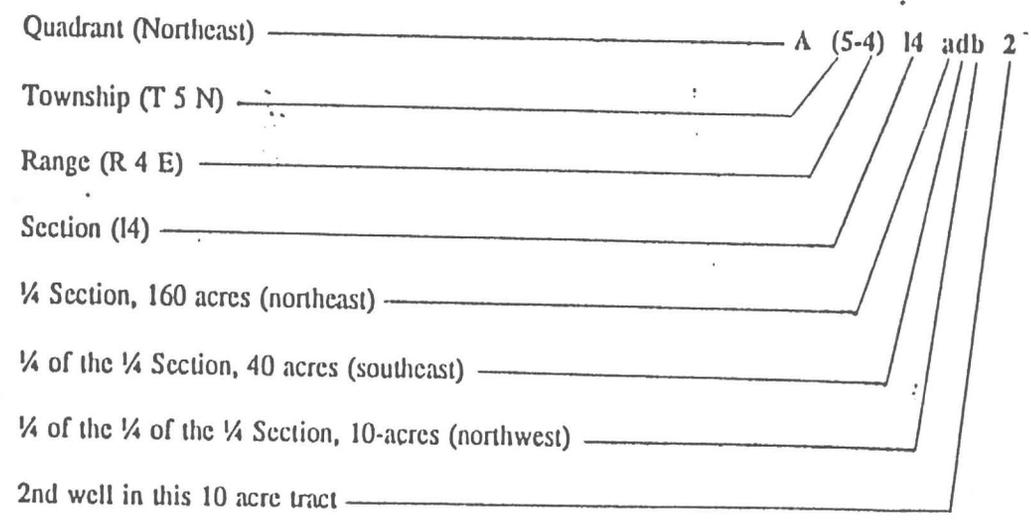
The state is divided into four Quadrants by the Gila and Salt River Baseline and Meridian. The Quadrants are labelled A, B, C and D in a counterclockwise direction starting at the northeast quadrant. See Figure 1.

Each Quadrant is divided into Townships numbered north and south from the Baseline, and Range numbered east and west of the Meridian. The Township number appears on a topographic map on either side margin (eg: T 5 N); the range number appear on the top or bottom margin (eg: R 4 E). A north township and an east range is in Quadrant A. A north Township and west Range is in Quadrant B, etc.

An intersection of Township 5 North (T 5 N) and Range 4 East (R 4 E) is also called a Township. It is enlarged in Figure 2. A Township usually contain 36 square miles (or Sections), numbered in a serpentine pattern beginning in the northeast corner.

Section 14 has been enlarged in Figure 3 to show how it is further subdivided into progressively smaller sets of quadrants. The smallest quadrant represents a 10-acre parcel of land. Each set of quadrants is labelled a, b, c, and d in a counterclockwise direction starting in the northeast corner.

The well number is defined by assembling the Quadrant, Township, Range, Section and the three subsection quadrant identifiers. It pin points the 10-acre parcel of and in which the well is located. If there are two or more wells in the same 10-acre parcel, consecutive numbers, beginning with 1, are added at the end.



Thus well number A (5-4) 14 adb 2 identifies a well which is the second well (2) in the northwest quarter (b) of the southeast quarter (d) of the northeast quarter (a) of Section 14 in Township 5 North and Range 4 East, which is located in the northeast Quadrant (A) of the State.

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: _____
Address: _____

Street City State Zip

2. Driller Name: _____
Address: _____

Street City State Zip

3. Location: N/S E/W 1/4 1/4 1/4
 Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-_____ (Required)

5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole _____ ft.

7. Type of casing _____

8. Diameter and length of casing _____ in. from _____ to _____, _____ in from _____ to _____.

9. Method of sealing at reduction points _____

10. Perforated from _____ to _____, from _____ to _____, from _____ to _____.

11. Size of cuts _____ Number of cuts per foot _____

12. If screen was installed: Length _____ ft. Diam _____ in. Type _____

13. Method of construction _____
(drilled, dug, driven, bored, jetted, etc)

14. Date started _____
Month Day Year

15. Date completed _____
Month Day Year

16. Depth to water _____ ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation: _____

19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-540719
File No. B(11-4)12cab
Received _____ By _____
Entered _____ By _____

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue
Phoenix, Arizona 85007

Registration No. 55-540719

File No. _____

COMPLETION REPORT

1. Per A.R.S. § 45-600, the Completion Report is to be filed with the Department within 30 days after installation of pump equipment by the registered well owner.
2. Drawdown of the water level for a non-flowing well should be measured in feet after not less than 4 hours of continuous operation and while still in operation and for a flowing well the shut-in pressure should be measured in feet above the land or in pounds per square inch at the land surface.
3. The static groundwater level should be measured in feet from the land surface immediately prior to the well capacity test.
4. The tested pumping capacity of the well in gallons per minute for a non-flowing well should be determined by measuring the discharge of the pump after continuous operation for at least 4 hours and for a flowing well by measuring the natural flow at the land surface.

LOCATION OF THE WELL:

 N/S E/W 1/4 1/4 1/4
 Township Range Section 10-acre 40-acre 160-acre

EQUIPMENT INSTALLED:

Kind of pump _____
Turbine, centrifugal, etc.

Kind of power _____ H.P. Rating of Motor _____
Electric, natural gas, gasoline, etc.

Pumping Capacity _____ Date pump installed: _____
Gallons per minute

WELL TEST:

Test pumping capacity _____ Date Well Tested: _____
Gallons per minute

Method of Discharge Measurement _____
Weir, orifice, current meter, etc.

Static Groundwater Level _____ ft. Drawdown _____ ft.

Total Pumping Lift _____ ft. Drawdown _____ lbs.
(Flowing Well)

I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

_____, 19_____
Date

Print Well Owner's Name

Signature of Well Owner or Agent

Address

City State Zip

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue
Phoenix, Arizona 85007

Registration No. 55-540719

File No. _____

COMPLETION REPORT

1. Per A.R.S. § 45-600, the Completion Report is to be filed with the Department within 30 days after installation of pump equipment by the registered well owner.
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3. The static groundwater level should be measured in feet from the land surface immediately prior to the well capacity test.
4. The tested pumping capacity of the well in gallons per minute for a non-flowing well should be determined by measuring the discharge of the pump after continuous operation for at least 4 hours and for a flowing well by measuring the natural flow at the land surface.

LOCATION OF THE WELL:

11 (N)S 4 (E)W 12 NW 1/4 NE 1/4 SW 1/4
 Township Range Section 10-acre 40-acre 160-acre

EQUIPMENT INSTALLED:

Kind of pump _____
Turbine, centrifugal, etc.

Kind of power _____ H.P. Rating of Motor _____
Electric, natural gas, gasoline, etc.

Pumping Capacity _____ Date pump installed: _____
Gallons per minute

WELL TEST:

Test pumping capacity _____ Date Well Tested: _____
Gallons per minute

Method of Discharge Measurement _____
Weir, orifice, current meter, etc.

Static Groundwater Level _____ ft. Drawdown _____ ft.

Total Pumping Lift _____ ft. Drawdown _____ lbs.
(Flowing Well)

I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

_____, 19____
Date

Print Well Owner's Name

Signature of Well Owner or Agent

Address

City State Zip

Pump SELECTION: A-16

WELL DIAMETER: $5 \frac{7}{8}$ "

VOLTAGE: 120V

DESIRED YIELD: ≈ 5 gpm

PHASE: single

TOTAL DYNAMIC HEAD: 251'

PUMP TYPE: TURBINE

PWL: 250'

~~CENTRIFUGAL~~

SWL: 223'

ABOVE GROUND: 1'

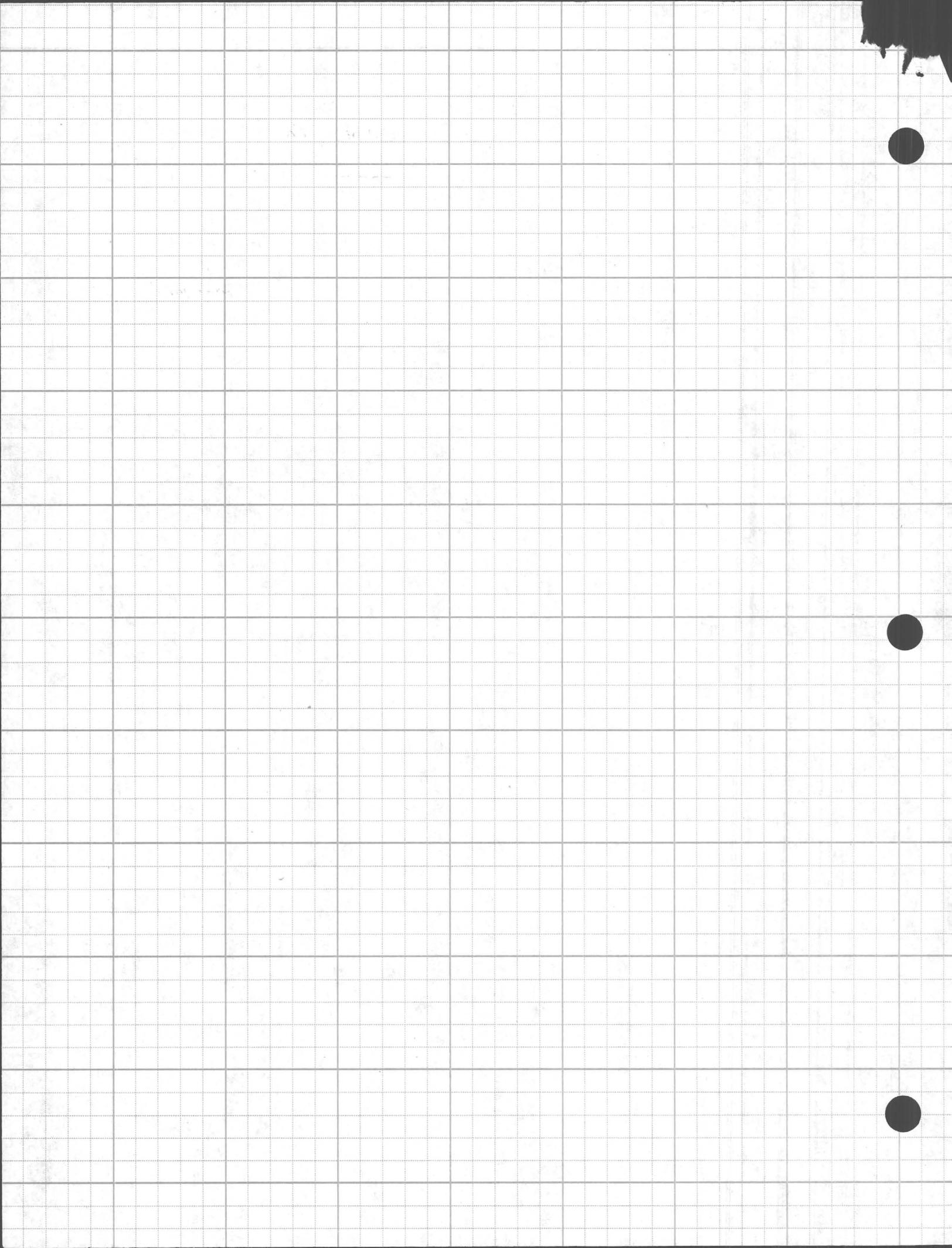
HOSEPOWER: $\frac{(5)(8.33)(251)(1)}{33000}$

FRICTION LOSSES: $\approx 0'$

= 0.3168 hp.

CASING DIAMETER: 4"

$\approx \frac{1}{2}$ hp.



A-16 PIPE HEAD LOSS

FLUID: H₂O @ 20°C

PIPE: STEEL SCHO 40

$$\nu: 1.06 \times 10^{-5} \text{ ft}^2/\text{s}$$

NOMINAL $\phi = 4''$

Length: 251'

ID: 4.026''

f: 0.0884

SLOW VELOCITY

$$V = \frac{(5 \text{ gpm})(0.13368)}{0.0884} = 7.56 \text{ ft/min}$$
$$= 0.126 \text{ ft/sec}$$

REYNOLDS NUMBER

$$R_e = \frac{(0.126)(4.026)(1/12)}{1.06 \times 10^{-5} \text{ ft}^2/\text{s}} = 3988 \approx 4000$$

$R_e (4000) > 2100 \rightarrow$ TURBULANT FLOW

RELATIVE ROUGHNESS

$e = 0.0002$ (commercial STEEL)

$$e/d = \frac{0.0002}{4.026 (1/12)} = 0.000596$$
$$= 6.0 \times 10^{-4}$$

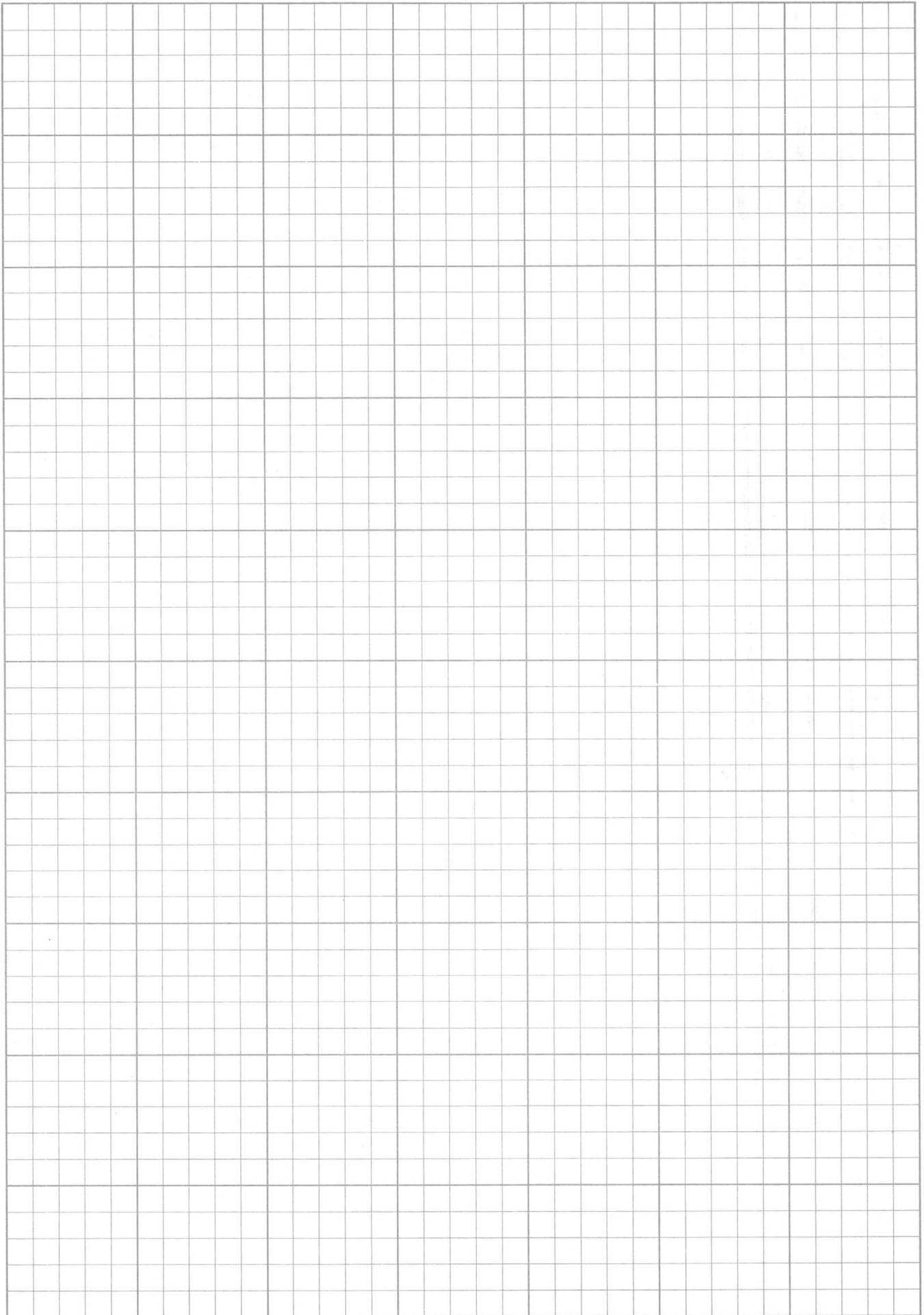
FRICITION FACTOR

FROM TABLE 17.3

$$f = 0.0405$$

HEAD LOSS

$$HL = (0.0399) \frac{(251')}{(4.026'') (1/12)} \frac{(0.126 \text{ ft/sec})^2}{2 (32.2 \text{ ft/sec}^2)}$$
$$= 29.85 (0.0002465) = 0.00736 \text{ ft} \approx \underline{\text{negligible}}$$



WELL CONSTRUCTION:

FROM CONVERSATION WITH
JOHN PETERSON ON 8/30/93

WELL: A-14

9" ϕ hole TO 23'

8" ϕ CASING TO 18'

5 7/8" ϕ hole FROM 23' TO 315'

CASING TYPE: STEEL

DATE: 10/10/2010
TIME: 10:00 AM

NO. 1000

11-11

1000

1000

1000

1000

1000