APPENDIX I

SURVEY SENT TO PLATERS

STATE OF CALIFORNIA GEORGE DEUKMEJIAN, Governor

AIR RESOURCES BOARD
1102 Q STREET
P.O. BOX 2815
SACRAMENTO, CA 95812

June 19, 1987

Attn: Chromium Plating Permit Holders

Chromium Platers/Hexavalent Chromium Survey

On January 23, 1986, the California Air Resources Board (CARB) identified hexavalent chromium as a Toxic Air Contaminant (TAC). Following identification, the Executive Officer of the CARB is required, with participation of the control districts and in consultation with affected sources and interested public, to prepare a report on the need and appropriate degree of regulation for each TAC "needs report". In accordance with the provisions of Assembly Bill 1807 and California Health and Safety Code Section 39655, CARB, in conjunction with the San Diego Air Pollution Control District (SDAPCD), is participating in the preparation of the state-wide "needs report" for hexavalent chromium control measures.

The enclosed survey forms are designed to gather information on the emissions of hexavalent chromium by chrome platers in the San Diego Air Basin. Section 42303 of the California Health and Safety Code authorizes the CARB to request and obtain air pollution related information from owners and operators of air pollution emission sources.

The information that you provide may be released (1) to the public upon request, except trade secrets which are not emission data or other information which is exempt from disclosure or the disclosure of which is prohibited by law, and (2) to the federal Environmental Protection Agency, which protects trade secrets as provided in section 114(c) of the Clean Air Act and amendments thereto (42 USC 7401 et seq.) and in federal regulation and (3) to other public agencies provided that those agencies preserve the protections afforded information which is identified as a trade secret, or otherwise exempt from disclosure by law (Section 91000, Title 17, California Administrative Code and Health and Safety Code Section 39660).

Trade secrets, which are defined in Government Code Section 6254.7, are not considered public records and therefore will not be released to the general public. However, the Public Records Act (Government Code Section 6250 et seq.) provides that air pollution emission data are always public records, even if the data comes within the definition of trade secrets. On the

other hand, the information used to calculate air pollution emissions may be withheld from the public if the information is a trade secret.

If you believe that any of the information you are providing is a trade secret or otherwise exempt from disclosure under any other provision of law, you should identify it as such at the time of submission (Health and Safety Code Section 39660(e)). The CARB may ask you to provide documentation of your claim of trade secret or exemption at a later date.

Instructions for completing the survey forms are also provided. However, should you have any questions regarding this survey, please contact Jon Manji at (916) 322-8520.

You are requested to complete and return the survey forms on or before July 20, 1987. The completed survey should be sent to:

California Air Resources Board
Attn: Jon Manji
P. O. Box 2815
Sacramento, CA 95812

Your prompt cooperation in this matter is greatly appreciated.

Sincerely,

William V. Loscutoff

William V. Loscutoff, Chief
Toxic Pollutants Branch
Stationary Source Division

Enclosures

PLEASE PRINT OR TYPE ALL INFORMATION

CHROMIUM PLATING SURVEY - Tanks

June 1987

REPRODUCE THIS FORM AS NECESSARY - ONE FORM PER PLATING TANK

Check one: _____ hard plating

_____ decorative plating

_____ chromic acid anodizing

TANK # _____

Total Current typical range (Amperes)	Surface area of tank (ft^2)	Chromic acid concentration (lb/gal)	Total yearly chromic acid usage (lb)	Tank Temperature (°F)	Plating schedule Hours/ day	Days/ week	Weeks/ year

Other bath constituents: _____ Sulfuric acid _____ Fluoride _____ Other (specify)

Exhaust System

1. Flowrate or velocity out the stack of the tank ventilation system _____ ft^3/min or _____ ft/min
2. Temperature of exhaust out of stack _____ °F.
3. Diameter of stack _____ inches.
4. Height above ground of stack _____ ft.
5. If the tank ventilation stack serves more than one tank, list tank #s _____.

Emission Control

Control Method (e.g. demister, wet scrubber, bath blanket, foam suppressant additive)	Control efficiency (%)	Basis of estimate	Year of estimate	estimation meth. code (office use only)

Note: The sections marked "office use only" should be left blank.

PLEASE PRINT OR TYPE
ALL INFORMATION

CHROMIUM PLATING SURVEY-GENERAL INFORMATION

June 1987

COMPANY NAME _____

MAILING ADDRESS _____

CITY _____ ZIP _____

FACILITY ADDRESS _____

CITY _____ ZIP _____

OFFICE USE ONLY

YEAR OF ESTIMATE _____ SIC _____

AIR BASIN _____ COUNTY ID _____ FACILITY ID _____

SAROAD _____ SCC _____ CONTROL _____

UTM-EAST _____ UTM-NORTH _____

1. Type of Business _____ SIC (if known) _____

2. Please enter the number of chromium decorative plating tanks at your facility _____
   the number of chromium hard plating (electrolytic plating) tanks _____
   the number of chromium anodizing treatment tanks _____

3. Please state the 12 month period for which the data are representative _____ to _____

4. Person to contact for additional information:

   Name _____ Phone ( ) _____

   _____ Date
   _____ Name and title of person completing form
   _____ Phone

5. Number of people employed at your facility. _____

6. If you have one or more wet scrubbers please answer the following questions:

   Do you recirculate the scrubber liquid back to the scrubber? _____ Yes _____ No

   If known, chromium concentration in scrubber liquid _____ oz/gal or g/lit.

   How much scrubber effluent is discharged from your plant? _____ gal/day

   Is scrubber effluent treated before discharge? ____Yes ____ No

   Scrubber effluent is discharged _____ to sewer system
   _____ to waste hauler
   _____ other _____.

7. Total surface area plated during the 12-month period in question #3. _____ (ft^2)

APPENDIX II

COST ESTIMATION

A. General Procedure

The installed capital cost and annual cash outflows for a scrubber were calculated for each known plating shop according to the assumptions in B. Five examples, including the shops with close to the largest, smallest, and median-sized tanks (in terms of total surface area), are presented in D., F., H., J., and K. Also, three examples of costs for de-misters are shown in E., G., and I.

The annual revenue requirement was determined for the eight example cases with a standard program used by ARB. In brief, the revenue requirement is the increase in revenue needed after tax considerations to offset the cash outflows represented by the capital and annual costs. In this case, parameters included six percent discount rate, 10-year economic life, double-declining balance depreciation, and total (state plus federal income tax rate at 43.6%. The inputs and results for the eight examples are:

Capital Cost	Annual Cash Flow	Annual Revenue Requirement
$305,000	$59,700	$94,240
$ 49,000	$ 8,640	$14,380
$ 12,400	$ 1,760	$ 3,230
$ 28,500	$ 4,070	$ 7,440
$ 31,200	$ 4,620	$ 8,290
$145,100	$28,300	$44,740
$ 25,000	$ 4,080	$ 6,990
$ 9,820	$ 890	$ 2,100

The linear regression of these results is

$$\text{revenue} = .313 \times \text{capital} - \$1{,}030$$

This expression was applied to the capital cost estimated for each known plating shop. The sum over all shops divided by .63 is the estimated industry-wide cost. (0.63 is the fraction of all shops for which the staff believes it has data on tank surface area.)

The estimated revenue requirement for each shop was divided by the estimated emission reduction and by the estimated cases of cancer per unit emissions in the particular air basin. This yields cost-effectivess ($/case) for each shop. The total industry cost (annual revenue requirement) divided by total reductions is the average cost-effectiveness of the proposed control measure.

B. Base Assumptions - scrubbers

1. 250 cfm/ft^2 of tank

2. Installed cost $\propto$ (cfm)$^{.7}$

3. 95% control provided by 6-foot packed bed scrubber with Chevron demister.

4. Scrubber F.O.B. $15,000 for 10,000 cfm w/fan and pumps (based on Viron prices; others quoted lower)

5. No hoods or ducts needed.

6. Capital cost factors:

Sales tax & freight	- .11
Installation	- .53
Indirect	- .37
Total	- FOB x 1.11 x 1.53 x 1.37
	= 2.33 x FOB

7. Source test - $8,000

8. Permit fees (SCAQMD):
   Initial - $100 to $7,000

Annual	- $100 to $1,700

9. Annual Cost rates:

Labor	- 1 hour/week @ $12/hr ($624/year)
Maintenance	- .05 x installed cost
Power	- 12.4 kw @ 10,000 cfm x 4,000 hr/yr x $.06/kwhr = $3,000/yr @ 10,000 cfm
Water	- free; scrubber provides make-up to plating tanks
Overhead	- .8 x [labor ($624) + maintenance/2]
Taxes & insurance	- .02 x installed cost

C. Base Assumptions - De-misters

1. 15-layer mesh pad, FOB $3,000 for 10,000 cfm

2. 4 hp fan for 10,000 cfm, P = 2" w, FOB $3,000

3. Power - 6 kw $1,500/yr @ 10,000 cfm

4. Labor - $312/year

All other assumptions as in B.

D. Median (approx.) Shop, Scrubber

Size: 250 cfm/ft^2 x 49 ft^2 = 12,250 cfm

Capital Cost

Installed:	$15,000 x $\left(\frac{12,250}{10,000}\right)^{.7}$ x 2.33 =	$40,000
Source test		8,000
Permit		1,000
		$49,000

Annual Costs

Labor:	$ 624
Maintenance: .05 x $40,000 =	2,000
Power: 1.22 x $3,000 =	3,660
Overhead: .8 ($642 + $1,000) =	1,310
Taxes, ins.: .02 x $40,000 =	800
Permit:	250
	$ 8,640

E. Median (approx.) Shop, De-mister

Capital cost

Installed:	$40,000 x $\frac{6,000}{15,000}$	=	$16,000
Source test			8,000
Permit			1,000
			$25,000

Annual Costs

Labor:	$ 312
Maintenance: .05 x $16,000 =	800
Power: 1.22 x $1,500 =	1,830
Overhead: .8 ($312 + $400) =	570
Taxes, Ins.: .02 x $16,000 =	320
Permit:	250
	$ 4,080

F. Small Shop: Scrubber

Size: 2 ft^2 x 250 cfm/ft^2 = 500 ft^2

Capital Cost

Installed:	$15,000 x $\left(\frac{500}{10,000}\right)^{.7}$ x 2.33 =		$ 4,290
Source test			8,000
Permit			100
			$12,400

Annual Costs

Labor:	$ 624
Maintenance: .05 x $4,290 =	215
Power: .05 x $3,000 =	150
Overhead: .8 ($624 + $108) =	586
Taxes, Ins.: .02 x $4,290 =	86
Permit:	100
	$ 1,760

G. Small Shop, De-mister

Capital cost

Installed:	$ 4,290 x $\frac{6,000}{15,000}$	=	$ 1,720
Source test			8,000
Permit			100
			$ 9,820

Annual Costs

Labor:	$ 312
Maintenance: .05 x $1,720 =	86
Power: .05 x $1,500 =	75
Overhead: .8 ($312 + $43) =	284
Taxes, Ins.: .02 x $1,720 =	34
Permit:	100
	$ 890

H. Large Shop, Scrubber

Size: 250 cfm/ft^2 x 392 ft^2 = 98,000 cfm
(use 4 scrubbers @ 25,000 cfm)

Capital Cost

Installed:	4 x $15,000 x $\left(\frac{25}{10}\right)^{.7}$ x 2.33 =	$266,000
Source test		32,000
Permit		7,000
		$305,000

Annual Costs

Labor: 4 x $624 =	$ 2,600
Maintenance: .05 x $266,000 =	13,300
Power: 98/10 x $3,000 =	29,400
Overhead: .8 ($2,600 + $6,650) =	7,400
Taxes, Ins.: .02 x $266,000 =	5,320
Permit:	1,700
	$59,700

I. Large Shop, De-mister

Capital Cost

Installed:	$266,000 x 6/15 =	$106,000
Source test		32,000
Permit		7,000
		$145,000

Annual Costs

Labor:	$ 1,300
Maintenance: .05 x $106,000 =	5,300
Power: 98/10 x $1,500 =	14,700
Overhead: .8 ($1,300 + $2,650) =	3,160
Taxes, Ins.: .02 x $106,000 =	2,120
Permit:	1,700
	$28,300

J. Shop with lowest A_t/A_p (.00033)

$A_t = 18\ ft^2$ $\qquad$ $18 \times 250 = 4{,}500\ ft^2$

Capital Cost

Installed:	$15,000 x $\left(\frac{4{,}500}{10{,}000}\right)^{.7}$ x 2.33 =	$20,000
Source test		8,000
Permit		500
		$28,500

Annual Costs

Labor:	$ 624
Maintenance: .05 x $20,000 =	1,000
Power: .45 x 3,000 =	1,350
Overhead: .8 ($624 + $500) =	900
Taxes, Ins.: .02 x $20,000 =	400
Permit:	150
	$ 4,420

K. Shop with high A_t/A_p (.07)

$A_t = 15\ ft^2$

Capital cost $(15/18)^{.7} \times 20{,}000 + 8{,}500 = \$26{,}100$

Annual cost $(15/18)^{.7} \times 4{,}420 = \$3{,}890$

APPENDIX III

AIR POLLUTION CONTROL DISTRICT PERMIT COSTS AND FEES

	Bay Area	Sacramento County	San Joaquin County	South Coast
New/Modified Permits				
Permit review	360	$400-$1,600[a]	$32-$250[a]	$117-$7,388[a]
Construction permit	--	--	$30	--
Operating permit		$200	--	--
Special	$4,000[b]	$4,000[b]	$4,000[b]	$4,000[b]
Annual Permit	$ 83	$200-$800[a]	$32-$250[a]	$99-$1,772[a]

a depends on size of electric motors and consumption of power

b estimated charge for conducting an inlet/outlet source test for Cr(VI)

TABLE A

ESTIMATED LOCAL DISTRICT COSTS FOR
PERMITTING OF CHROME PLATERS & ANODIZERS
(DOLLARS & PERSON-YEARS)

AIR BASIN	NUMBER OF FACILITIES IN AIR BASIN	INITIAL PERMITS FISCAL COST/ AIR BASIN	INITIAL PERMITS STAFF TIME/ AIR BASIN (person-years)	ANNUAL PERMIT RENEWAL FISCAL COST/ AIR BASIN	ANNUAL PERMIT RENEWAL STAFF TIME/ AIR BASIN (person-years)
North Central Coast[a]	1	$ 1670.	0.023	$ 220.	0.003
North Coast[a]	1	$ 1670.	0.023	$ 220.	0.003
Sacramento Valley	19	$25650.	0.23	$3420.	0.038
San Diego	38	$51870.	0.57	$6920.	0.076
San Francisco Bay Area	45	$54000.	0.68	$7200.	0.09
San Joaquin Valley[a]	27	$39220.	0.61	$5230.	0.081
South Central Coast[a]	12	$32670.	0.27	$4360.	0.036
South Coast	273	$409500.	4.1	$54600.	0.55
TOTALS(rounded off):	416	$620000.	6.6	$82000.	0.88

ASSUMPTIONS: 1)For initial permits, an average of either 30 or 45 person-hours was used for calculation purposes. This figure takes into account factors such as review & granting of authority-to-construct, review and/or audit of necessary source tests, and permit application review by engineering staff. The 30 person-hour figure was used for urban districts, and the 45 person-hour figure was used for rural districts.

2)For annual permit renewal in urban districts, 4 person-hours was the figure used for preparing these estimates. For rural districts, a figure of 6 person-hours was used. This includes factors such as district file review before the site visit, and the actual site inspection.

[a] 45 person-hours per facility for initial permitting, 6 person-hours for annual permitting-see assumptions 1 & 2, above

12/21/87 ver.1

TABLE B

-ESTIMATED PERMIT COST PER FACILITY-

AIR BASIN	DISTRICT LABOR RATE	INITIAL FISCAL COST[1] HARD & DEC. PLATING, CHROMIC ACID ANODIZING	ANNUAL FISCAL COST[2] HARD & DEC. PLATING, CHROMIC ACID ANODIZING
North Central Coast[b,d]	$37.00/hr.	$1665.00	$222.00
North Coast[b,d]	$37.00/hr.	$1665.00	$222.00
San Diego[a]	$45.50/hr.	$1365.00	$182.00
San Francisco Bay Area	$40.00/hr.	$1200.00	$160.00
Sacramento Valley[a]	$45.00/hr.	$1350.00	$180.00
San Joaquin Valley[c,d]			
-Fresno APCD	$26.38/hr.	$1187.10	$158.28
-Tulare APCD	$37.00/hr.	$1665.00	$222.00
South Central Coast[d]			
-Ventura APCD	$60.50/hr.	$2722.50	$363.00
South Coast	$50.00/hr.	$1500.00	$200.00

[1]this figure was calculated using the following numbers: 1)average number of hours for a new permit application, including the following factors: granting of authority to construct, permit review by engineering staff, review and/or audit of necessary source tests, and other APCD staff time, 2)cost for district engineer staff time. A figure of 30 hours was used for districts in urban areas, and 45 hours was estimated for rural districts.

[2]this figure was calculated using the following numbers: 1)average number of hours for a site visit and any other necessary inspection, 2)cost of district enforcement staff time. Time for these annual inspections was estimated at 4 hours for urban districts, and 6 hours for rural districts.

[a]this is an average of engineering staff costs, as there are differing levels of staff engineers(e.g.,assistant engineer, associate engineer, etc.)

[b]hourly rate used was that of Tulare APCD

[c]due to wide differences in district hourly charges, costs for facilities in Tulare APCD were calculated separately, and costs for the rest of the SJVAB were calculated using the rate for Fresno APCD

[d]this air basin was considered rural for calculation purposes

12/20/87

CALCULATIONS AND ASSUMPTIONS FOR TABLE A

FISCAL COST PER AIR BASIN -INITIAL PERMITS

FISCAL COST PER AIR BASIN	=	DISTRICT STAFF TIME PER FACILITY	X	DISTRICT LABOR RATE	X	NUMBER OF FACILITIES IN AIR BASIN

WHERE:

FISCAL COST PER AIR BASIN

= The total fiscal cost of issuing permits to chrome platers and chromic acid anodizers in a given air basin.

DISTRICT STAFF TIME PER FACILITY

= 30 hours for a facility located within an urban air basin, or 45 hours for a facility located within a rural air basin. These figures are based on information supplied by both an urban and a rural district. They take into consideration the following factors: 1) review and granting of authority-to-construct, 2) permit review by engineering staff, and 3) review and/or audit of necessary source tests, and other district staff time.

DISTRICT LABOR RATE

= A dollars-per-hour figure for district engineering staff time, as obtained from either district rules and regulations or district staff. This rate covers the cost of staff salaries and other costs incurred in support of district staff time. A district rate felt to be typical of those in a given air basin was used to calculate costs for that air basin.

NUMBER OF FACILITIES IN AIR BASIN

= Total number of identified hard & decorative chrome platers and chromic acid anodizers in an air basin, as determined by mail and telephone surveys.

example -for San Francisco Bay Area Air Basin(SFBAAB):

FISCAL COST PER AIR BASIN = 30 HRS. X $40.00/HR. X 45 = **$54,000**

STAFF TIME PER AIR BASIN -INITIAL PERMITS

$$\text{STAFF TIME PER AIR BASIN} = \text{DISTRICT STAFF TIME PER FACILITY} \times \text{NUMBER OF FACILITIES IN AIR BASIN} \times \frac{1\ \text{DAY}}{8\ \text{HRS.}} \times \frac{1\ \text{YEAR}}{250\ \text{DAYS}}$$

WHERE:

STAFF TIME PER AIR BASIN

= The estimated total amount of district staff time necessary to issue permits for chrome platers and chromic acid anodizers located within an air basin.

DISTRICT STAFF TIME PER FACILITY' and 'NUMBER OF FACILITIES IN AIR BASIN' are defined in the 'FISCAL COST PER AIR BASIN -INITIAL PERMITS' section. 250 working days per year is assumed, taking into account weekends and holidays.

example -for SFBAAB:

$$\text{STAFF TIME PER AIR BASIN} = 30\ \text{HRS.} \times 45 \times \frac{1\ \text{DAY}}{8\ \text{HRS.}} \times \frac{1\ \text{YEAR}}{250\ \text{DAYS}}$$

= 0.675 PERSON-YEARS

FISCAL COST PER AIR BASIN -ANNUAL PERMIT RENEWAL

ANNUAL FISCAL COST PER AIR BASIN	=	DISTRICT STAFF TIME PER FACILITY	X	DISTRICT LABOR RATE	X	NUMBER OF FACILITIES IN AIR BASIN

WHERE:

ANNUAL FISCAL COST PER AIR BASIN

= The total fiscal cost estimated for the districts within an air basin to renew permits for chrome platers and chromic acid anodizers within that air basin.

DISTRICT STAFF TIME PER FACILITY

= 4 hours for a facility located within an urban air basin, or 6 hours for a facility located within a rural air basin. These figures are based on information supplied by both an urban and a rural district. Allowance is made for the following factors: 1) review of facility files at the district office, 2) arrangement of a site visit and conduction of an inspection, and 3) write up of an inspection report.

DISTRICT LABOR RATE

= A dollars-per-hour figure for district engineering staff time, as obtained from either district rules and regulations or district staff. This rate covers the cost of staff salaries and other costs incurred in support of district staff time. A district rate felt to be typical of those in a given air basin was used to calculate costs for that air basin.

NUMBER OF FACILITIES IN AIR BASIN

= Total number of identified hard & decorative chrome platers and chromic acid anodizers in an air basin, as determined by mail and telephone surveys.

example -for SFBAAB:

$$\text{ANNUAL FISCAL COST PER AIR BASIN} = 4 \text{ HRS.} \times \frac{\$40.00}{\text{HOUR}} \times 45 = \$7,200$$

STAFF TIME PER AIR BASIN -ANNUAL PERMIT RENEWAL

$$\text{STAFF TIME PER AIR BASIN} = \text{DISTRICT STAFF TIME PER FACILITY} \times \text{NUMBER OF FACILITIES IN AIR BASIN} \times \frac{1 \text{ DAY}}{8 \text{ HRS.}} \times \frac{1 \text{ YEAR}}{250 \text{ DAYS}}$$

WHERE:

STAFF TIME PER AIR BASIN

= The total estimated amount of district staff time necessary to renew permits for chrome platers and chromic acid anodizers within an air basin.

'DISTRICT STAFF TIME PER FACILITY' and **'NUMBER OF FACILITIES IN AIR BASIN'** are defined in the **'FISCAL COST PER AIR BASIN** -ANNUAL PERMIT RENEWAL' section. 250 working days per year is assumed, taking into account weekends and holidays.

example -for SFBAAB

$$\text{STAFF TIME PER AIR BASIN} = 4 \text{ HRS.} \times 45 \times \frac{1 \text{ DAY}}{8 \text{ HRS.}} \times \frac{1 \text{ YEAR}}{250 \text{ DAYS}}$$

= 0.09 PERSON-YEARS

CALCULATIONS AND ASSUMPTIONS FOR TABLE B

INITIAL FISCAL COST (PER FACILITY)

INITIAL FISCAL COST	=	DISTRICT LABOR RATE	X	PERMIT PROCESSING TIME

WHERE:

INITIAL FISCAL COST

= The estimated charge to the permit applicant to cover district staff costs incurred in processing the permit application. It does not include emission source testing, but does include district review and/or audit of such tests.

DISTRICT LABOR RATE

= A dollars-per-hour figure for district engineering staff time, as obtained from either district rules and regulations or district staff. This rate covers the cost of staff salaries and other costs incurred in support of district staff time. A district rate felt to be typical of those in a given air basin was used to calculate costs for that air basin.

PERMIT PROCESSING TIME

= The amount of time necessary for a district to process a permit application from a chrome plater or a chromic acid anodizer. Either 30 hours or 45 hours is used for this figure, the latter being used for rural districts and the former for urban districts. These times take into account factors such as the following: 1) granting of authority-to-construct, 2) permit review by district engineering staff, 3) review and/or audit of necessary source tests, and 4) other necessary district staff time.

example -for SFBAAB:

$$\text{INITIAL FISCAL COST} = \frac{\$40.00}{\text{HOUR}} \times 30 \text{ HOURS} = \$1200.00$$

ANNUAL FISCAL COST (PER FACILITY)

$$\text{ANNUAL FISCAL COST} = \text{DISTRICT LABOR RATE} \times \text{PERMIT RENEWAL TIME}$$

WHERE:

ANNUAL FISCAL COST

= The charge to a permit holder to cover the costs incurred by the district in the renewal of a permit. This estimate does not include source testing.

DISTRICT LABOR RATE

See definition in '**INITIAL FISCAL COST**' section.

PERMIT RENEWAL TIME

= The amount of time necessary for a district to renew a plating facility permit. A figure of either 4 hours for urban districts, or 6 hours for rural districts, was used. Allowance is made for the following factors: 1) review of facility files at the district office, 2) arrangement of a site visit and conduction of an inspection, and 3) write up of an inspection report.

example -for SFBAAB:

$$\text{ANNUAL FISCAL COST} = \frac{\$40.00}{\text{HOUR}} \times 4 \text{ HOURS} = \$160.00$$