Appendix A

Calculated Results and Field Data Sheets

Table A-1

Alta Plating Calculated Results

Amp-hr/hr

Run Number	**11**	**12**	**13**	**21**	**22**	**23**
Total Amp-hours	183	537	393	390	382	383
Sampling time, min.	360	480	360	360	360	360
Amp-hr/hr	30.5	67.1	65.5	65.0	63.7	63.8

Mg/amp-hr

Run Number	**11**	**12**	**13**	**21**	**22**	**23**
Total Cr., mg/hr	*0.527*	*0.584*	*0.815*	*0.239*	*0.471*	*0.249*
Hex Cr., mg/hr	0.381	0.405	0.600	0.184	0.405	0.160
Amp-hr/hr	30.5	67.1	65.5	65.0	63.7	63.8
Total Chrome, mg/amp-hr	***0.017***	***0.009***	***0.012***	***0.004***	***0.007***	***0.004***
Hex. Chrome, mg/amp-hr	**0.012**	**0.006**	**0.009**	**0.003**	**0.006**	**0.003**

MONITORING & LABORATORY DIVISION
STATIONARY SOURCE TEST BRANCH

TEST SUMMARY AND RESULTS

FILE NO.: T-03-048
PROJECT NAME: ALTA Plating
RUN NO.: A-11

SUMMARY OF TEST DATA

Volume of Gas Sampled (Vm):	376.83	cubic feet
Vm Meter Cal. Factor (Y)	1.002	
Meter Temperature (Tm):	520	deg. R
Barometric Pressure (Pb):	30.18	inches Hg
Avg. delta H Orifice Press. (dH avg):	3.621	inches H2O
Pb + dH avg:	30.45	inches Hg.
O2 in Stack (%O2):	20.90	percent
CO in Stack (%CO):	0.0000	percent
CO2 in Stack (%CO2):	0.00	percent
N2 in Stack (%N2):	79.10	percent
Pitot Tube Factor (Cp)	0.84	
Avg. of Sqrt. of Pitot Press. (/dP avg):	0.42	/(inches H2O)
Stack Temperature (Ts)	523	deg. R
Static Pressure	-0.28	inches H2O
Absolute Stack Pressure (Ps)	30.16	inches Hg
Stack Dimensions	12	inches dia.
Stack Area (As)	0.785	square feet
H2O in Impingers and Silica Gel (Vlc):	81.3	milliliters
Sampling Time (t):	360	minutes
Nozzle Diameter (Dn):	0.375	inches
Total Chromium Mass Collected (Mn):	3110	nanograms
Hexavalent Cr. Mass Collected (Mn):	2250	nanograms

CALCULATED RESULTS

Corrected Sample Volume (Vm std):	390.14	DSCF (68 deg.F)
Water Vapor in Stack (Bws):	1.0	percent by volume
Stack Gas Molecular Wt, Dry (Md):	28.84	lb/lbmole
Stack Gas Molecular Wt, Wet	28.73	lb/lbmole
Stack Gas Velocity (Vs):	23.21	feet/second
Stack Gas Flow Rate (Qs):	1102	DSCFM(68 deg.F)
Isokinetic Ratio (%I):	100.7	percent
Total Cr Mass Conc. (Cs):	7.972	nanograms/dscf
Hex. Cr. Mass Conc. (Cs):	5.767	nanograms/dscf
Total Cr Mass Conc:	281.512	nanograms/dscm
Hex. Cr. Mass Conc:	203.666	nanograms/dscm
Total Cr. Emission Rate (Wm):	0.527	milligrams/hr Total Cr.
Hex. Cr. Emission Rate (Wm):	0.381	milligrams/hr Hex. Cr.

MONITORING & LABORATORY DIVISION
STATIONARY SOURCE TEST BRANCH

TEST SUMMARY AND RESULTS

FILE NO.: T-03-048
PROJECT NAME: ALTA Plating
RUN NO.: A-12

SUMMARY OF TEST DATA

Volume of Gas Sampled (Vm):	467.8	cubic feet
Vm Meter Cal. Factor (Y)	1.002	
Meter Temperature (Tm):	520	deg. R
Barometric Pressure (Pb):	30.3	inches Hg
Avg. delta H Orifice Press. (dH avg):	3.089	inches H2O
Pb + dH avg:	30.53	inches Hg.
O2 in Stack (%O2):	20.90	percent
CO in Stack (%CO):	0.0000	percent
CO2 in Stack (%CO2):	0.00	percent
N2 in Stack (%N2):	79.10	percent
Pitot Tube Factor (Cp)	0.84	
Avg. of Sqrt. of Pitot Press. (/dP avg):	0.37	/(inches H2O)
Stack Temperature (Ts)	522	deg. R
Static Pressure	-0.25	inches H2O
Absolute Stack Pressure (Ps)	30.28	inches Hg
Stack Dimensions	12	inches dia.
Stack Area (As)	0.785	square feet
H2O in Impingers and Silica Gel (Vlc):	101.9	milliliters
Sampling Time (t):	480	minutes
Nozzle Diameter (Dn):	0.375	inches
Total Chromium Mass Collected (Mn):	4810	nanograms
Hexavalent Cr. Mass Collected (Mn):	3330	nanograms

CALCULATED RESULTS

Corrected Sample Volume (Vm std):	485.60	DSCF (68 deg.F)
Water Vapor in Stack (Bws):	1.0	percent by volume
Stack Gas Molecular Wt, Dry (Md):	28.84	lb/lbmole
Stack Gas Molecular Wt, Wet	28.73	lb/lbmole
Stack Gas Velocity (Vs):	20.59	feet/second
Stack Gas Flow Rate (Qs):	983	DSCFM(68 deg.F)
Isokinetic Ratio (%I):	105.4	percent
Total Cr Mass Conc. (Cs):	9.905	nanograms/dscf
Hex. Cr. Mass Conc. (Cs):	6.857	nanograms/dscf
Total Cr Mass Conc:	349.796	nanograms/dscm
Hex. Cr. Mass Conc:	242.167	nanograms/dscm
Total Cr. Emission Rate (Wm):	0.584	milligrams/hr Total Cr.
Hex. Cr. Emission Rate (Wm):	0.405	milligrams/hr Hex. Cr.

MONITORING & LABORATORY DIVISION
STATIONARY SOURCE TEST BRANCH

TEST SUMMARY AND RESULTS

FILE NO.: T-03-048
PROJECT NAME: ALTA Plating
RUN NO.: A-13

SUMMARY OF TEST DATA

Volume of Gas Sampled (Vm):	364.63	cubic feet
Vm Meter Cal. Factor (Y)	1.002	
Meter Temperature (Tm):	520	deg. R
Barometric Pressure (Pb):	30.26	inches Hg
Avg. delta H Orifice Press. (dH avg):	3.267	inches H2O
Pb + dH avg:	30.50	inches Hg.
O2 in Stack (%O2):	20.90	percent
CO in Stack (%CO):	0.0000	percent
CO2 in Stack (%CO2):	0.00	percent
N2 in Stack (%N2):	79.10	percent
Pitot Tube Factor (Cp)	0.84	
Avg. of Sqrt. of Pitot Press. (/dP avg):	0.37	/(inches H2O)
Stack Temperature (Ts)	521	deg. R
Static Pressure	-0.25	inches H2O
Absolute Stack Pressure (Ps)	30.24	inches Hg
Stack Dimensions	12	inches dia.
Stack Area (As)	0.785	square feet
H2O in Impingers and Silica Gel (Vlc):	75.8	milliliters
Sampling Time (t):	360	minutes
Nozzle Diameter (Dn):	0.375	inches
Total Chromium Mass Collected (Mn):	5220	nanograms
Hexavalent Cr. Mass Collected (Mn):	3840	nanograms

CALCULATED RESULTS

Corrected Sample Volume (Vm std):	378.17	DSCF (68 deg.F)
Water Vapor in Stack (Bws):	0.9	percent by volume
Stack Gas Molecular Wt, Dry (Md):	28.84	lb/lbmole
Stack Gas Molecular Wt, Wet	28.73	lb/lbmole
Stack Gas Velocity (Vs):	20.59	feet/second
Stack Gas Flow Rate (Qs):	984	DSCFM(68 deg.F)
Isokinetic Ratio (%I):	109.3	percent
Total Cr Mass Conc. (Cs):	13.803	nanograms/dscf
Hex. Cr. Mass Conc. (Cs):	10.154	nanograms/dscf
Total Cr Mass Conc:	487.452	nanograms/dscm
Hex. Cr. Mass Conc:	358.585	nanograms/dscm
Total Cr. Emission Rate (Wm):	0.815	milligrams/hr Total Cr.
Hex. Cr. Emission Rate (Wm):	0.600	milligrams/hr Hex. Cr.

MONITORING & LABORATORY DIVISION
STATIONARY SOURCE TEST BRANCH

TEST SUMMARY AND RESULTS

FILE NO.: T-03-048
PROJECT NAME: ALTA Plating
RUN NO.: A-21

SUMMARY OF TEST DATA

Volume of Gas Sampled (Vm):	346.81	cubic feet
Vm Meter Cal. Factor (Y)	1.002	
Meter Temperature (Tm):	520	deg. R
Barometric Pressure (Pb):	29.76	inches Hg
Avg. delta H Orifice Press. (dH avg):	2.917	inches H2O
Pb + dH avg:	29.97	inches Hg.
O2 in Stack (%O2):	20.90	percent
CO in Stack (%CO):	0.0000	percent
CO2 in Stack (%CO2):	0.00	percent
N2 in Stack (%N2):	79.10	percent
Pitot Tube Factor (Cp)	0.84	
Avg. of Sqrt. of Pitot Press. (/dP avg):	0.37	/(inches H2O)
Stack Temperature (Ts)	522	deg. R
Static Pressure	-0.27	inches H2O
Absolute Stack Pressure (Ps)	29.74	inches Hg
Stack Dimensions	12	inches dia.
Stack Area (As)	0.785	square feet
H2O in Impingers and Silica Gel (Vlc):	76.6	milliliters
Sampling Time (t):	360	minutes
Nozzle Diameter (Dn):	0.375	inches
Total Chromium Mass Collected (Mn):	1450	nanograms
Hexavalent Cr. Mass Collected (Mn):	1113	nanograms

CALCULATED RESULTS

Corrected Sample Volume (Vm std):	353.49	DSCF (68 deg.F)
Water Vapor in Stack (Bws):	1.0	percent by volume
Stack Gas Molecular Wt, Dry (Md):	28.84	lb/lbmole
Stack Gas Molecular Wt, Wet	28.73	lb/lbmole
Stack Gas Velocity (Vs):	20.71	feet/second
Stack Gas Flow Rate (Qs):	972	DSCFM(68 deg.F)
Isokinetic Ratio (%I):	103.5	percent
Total Cr Mass Conc. (Cs):	4.102	nanograms/dscf
Hex. Cr. Mass Conc. (Cs):	3.149	nanograms/dscf
Total Cr Mass Conc:	144.858	nanograms/dscm
Hex. Cr. Mass Conc:	111.191	nanograms/dscm
Total Cr. Emission Rate (Wm):	0.239	milligrams/hr Total Cr.
Hex. Cr. Emission Rate (Wm):	0.184	milligrams/hr Hex. Cr.

MONITORING & LABORATORY DIVISION
STATIONARY SOURCE TEST BRANCH

TEST SUMMARY AND RESULTS

FILE NO.: T-03-048
PROJECT NAME: ALTA Plating
RUN NO.: A-22

SUMMARY OF TEST DATA

Volume of Gas Sampled (Vm):	341.44	cubic feet
Vm Meter Cal. Factor (Y)	1.002	
Meter Temperature (Tm):	520	deg. R
Barometric Pressure (Pb):	29.89	inches Hg
Avg. delta H Orifice Press. (dH avg):	2.821	inches H2O
Pb + dH avg = (Pm):	30.10	inches Hg.
O2 in Stack (%O2):	20.90	percent
CO in Stack (%CO):	0.0000	percent
CO2 in Stack (%CO2):	0.00	percent
N2 in Stack (%N2):	79.10	percent
Pitot Tube Factor (Cp)	0.84	
Avg. of Sqrt. of Pitot Press. (/dP avg):	0.36	/(inches H2O)
Stack Temperature (Ts)	522	deg. R
Static Pressure	-0.25	inches H2O
Absolute Stack Pressure (Ps)	29.87	inches Hg
Stack Dimensions	12	inches dia.
Stack Area (As)	0.785	square feet
H2O in Impingers and Silica Gel (Vlc):	88.6	milliliters
Sampling Time (t):	360	minutes
Nozzle Diameter (Dn):	0.375	inches
Total Chromium Mass Collected (Mn):	2860	nanograms
Hexavalent Cr. Mass Collected (Mn):	2462	nanograms

CALCULATED RESULTS

Corrected Sample Volume (Vm std):	349.45	DSCF (68 deg.F)
Water Vapor in Stack (Bws):	1.2	percent by volume
Stack Gas Molecular Wt, Dry (Md):	28.84	lb/lbmole
Stack Gas Molecular Wt, Wet	28.71	lb/lbmole
Stack Gas Velocity (Vs):	20.37	feet/second
Stack Gas Flow Rate (Qs):	958	DSCFM(68 deg.F)
Isokinetic Ratio (%I):	103.8	percent
Total Cr Mass Conc. (Cs):	8.184	nanograms/dscf
Hex. Cr. Mass Conc. (Cs):	7.045	nanograms/dscf
Total Cr Mass Conc:	289.027	nanograms/dscm
Hex. Cr. Mass Conc:	248.806	nanograms/dscm
Total Cr. Emission Rate (Wm):	0.471	milligrams/hr Total Cr.
Hex. Cr. Emission Rate (Wm):	0.405	milligrams/hr Hex. Cr.

MONITORING & LABORATORY DIVISION
STATIONARY SOURCE TEST BRANCH

TEST SUMMARY AND RESULTS

FILE NO.: T-03-048
PROJECT NAME: ALTA Plating
RUN NO.: A-23

SUMMARY OF TEST DATA

Volume of Gas Sampled (Vm):	348.58	cubic feet
Vm Meter Cal. Factor (Y)	1.002	
Meter Temperature (Tm):	520	deg. R
Barometric Pressure (Pb):	30.14	inches Hg
Avg. delta H Orifice Press. (dH avg):	2.950	inches H2O
Pb + dH avg:	30.36	inches Hg.
O2 in Stack (%O2):	20.90	percent
CO in Stack (%CO):	0.0000	percent
CO2 in Stack (%CO2):	0.00	percent
N2 in Stack (%N2):	79.10	percent
Pitot Tube Factor (Cp)	0.84	
Avg. of Sqrt. of Pitot Press. (/dP avg):	0.37	/(inches H2O)
Stack Temperature (Ts)	521	deg. R
Static Pressure	-0.26	inches H2O
Absolute Stack Pressure (Ps)	30.12	inches Hg
Stack Dimensions	12	inches dia.
Stack Area (As)	0.785	square feet
H2O in Impingers and Silica Gel (Vlc):	76.1	milliliters
Sampling Time (t):	360	minutes
Nozzle Diameter (Dn):	0.375	inches
Total Chromium Mass Collected (Mn):	1520	nanograms
Hexavalent Cr. Mass Collected (Mn):	980	nanograms

CALCULATED RESULTS

Corrected Sample Volume (Vm std):	359.83	DSCF (68 deg.F)
Water Vapor in Stack (Bws):	1.0	percent by volume
Stack Gas Molecular Wt, Dry (Md):	28.84	lb/lbmole
Stack Gas Molecular Wt, Wet	28.73	lb/lbmole
Stack Gas Velocity (Vs):	20.62	feet/second
Stack Gas Flow Rate (Qs):	982	DSCFM(68 deg.F)
Isokinetic Ratio (%I):	104.3	percent
Total Cr Mass Conc. (Cs):	4.224	nanograms/dscf
Hex. Cr. Mass Conc. (Cs):	2.724	nanograms/dscf
Total Cr Mass Conc:	149.176	nanograms/dscm
Hex. Cr. Mass Conc:	96.179	nanograms/dscm
Total Cr. Emission Rate (Wm):	0.249	milligrams/hr Total Cr.
Hex. Cr. Emission Rate (Wm):	0.160	milligrams/hr Hex. Cr.

MONITORING & LABORATORY DIVISION
STATIONARY SOURCE TEST BRANCH

TEST SUMMARY AND RESULTS

FILE NO.: T-03-048
PROJECT NAME: ALTA Plating
RUN NO.: WB-1

SUMMARY OF TEST DATA

Volume of Gas Sampled (Vm):		311.1	cubic feet
Vm Meter Cal. Factor (Y)		1.002	
Meter Temperature (Tm):		520	deg. R
Barometric Pressure (Pb):		30.32	inches Hg
Avg. delta H Orifice Press. (dH avg):		3.833	inches H2O
Pb + dH avg:		30.60	inches Hg.
O2 in Stack (%O2):		20.90	percent
CO in Stack (%CO):		0.0000	percent
CO2 in Stack (%CO2):		0.00	percent
N2 in Stack (%N2):		79.10	percent
Pitot Tube Factor (Cp)		0.84	
Avg. of Sqrt. of Pitot Press. (/dP avg):		0.33	/(inches H2O)
Stack Temperature (Ts)		516	deg. R
Static Pressure		0.00	inches H2O
Absolute Stack Pressure (Ps)		30.32	inches Hg
Stack Dimensions		12	inches dia.
Stack Area (As)		0.785	square feet
H2O in Impingers and Silica Gel (Vlc):		0	milliliters
Sampling Time (t):		288	minutes
Nozzle Diameter (Dn):		0.375	inches
Total Chromium Mass Collected (Mn):	<	83	nanograms
Hexavalent Cr. Mass Collected (Mn):		N/A	nanograms

CALCULATED RESULTS

Corrected Sample Volume (Vm std):		323.73	DSCF (68 deg.F)
Water Vapor in Stack (Bws):		0.0	percent by volume
Stack Gas Molecular Wt, Dry (Md):		28.84	lb/lbmole
Stack Gas Molecular Wt, Wet		28.84	lb/lbmole
Stack Gas Velocity (Vs):		18.42	feet/second
Stack Gas Flow Rate (Qs):		900	DSCFM(68 deg.F)
Isokinetic Ratio (%I):		127.9	percent
Total Cr Mass Conc. (Cs):	<	0.256	nanograms/dscf
Hex. Cr. Mass Conc. (Cs):		N/A	nanograms/dscf
Total Cr Mass Conc:	<	9.054	nanograms/dscm
Hex. Cr. Mass Conc:		0.000	nanograms/dscm
Total Cr. Emission Rate (Wm):	<	0.014	milligrams/hr Total Cr.
Hex. Cr. Emission Rate (Wm):		N/A	milligrams/hr Hex. Cr.

MONITORING & LABORATORY DIVISION
STATIONARY SOURCE TESTING BRANCH

TEST SUMMARY AND RESULTS

FILE NO.: T-03-048
PROJECT NAME: ALTA Plating
RUN NO.: WP-2

SUMMARY OF TEST DATA

Volume of Gas Sampled (Vm):		454.2	cubic feet
Vm Meter Cal. Factor (Y)		1.002	
Meter Temperature (Tm):		520	deg. R
Barometric Pressure (Pb):		30.4	inches Hg
Avg. delta H Orifice Press. (dH avg):		5.100	inches H2O
Pb + dH avg:		30.78	inches Hg.
O2 in Stack (%O2):		20.90	percent
CO in Stack (%CO):		0.0000	percent
CO2 in Stack (%CO2):		0.00	percent
N2 in Stack (%N2):		79.10	percent
Pitot Tube Factor (Cp)		0.84	
Avg. of Sqrt. of Pitot Press. (/dP avg):		0.41	/(inches H2O)
Stack Temperature (Ts)		518	deg. R
Static Pressure		-0.28	inches H2O
Absolute Stack Pressure (Ps)		30.38	inches Hg
Stack Dimensions		12	inches dia.
Stack Area (As)		0.785	square feet
H2O in Impingers and Silica Gel (Vlc):		36.8	milliliters
Sampling Time (t):		360	minutes
Nozzle Diameter (Dn):		0.375	inches
Total Chromium Mass Collected (Mn):	<	85	nanograms
Hexavalent Cr. Mass Collected (Mn):	<	17	nanograms

CALCULATED RESULTS

Corrected Sample Volume (Vm std):		475.32	DSCF (68 deg.F)
Water Vapor in Stack (Bws):		0.4	percent by volume
Stack Gas Molecular Wt, Dry (Md):		28.84	lb/lbmole
Stack Gas Molecular Wt, Wet		28.80	lb/lbmole
Stack Gas Velocity (Vs):		22.85	feet/second
Stack Gas Flow Rate (Qs):		1111	DSCFM(68 deg.F)
Isokinetic Ratio (%I):		121.8	percent
Total Cr Mass Conc. (Cs):	<	0.179	nanograms/dscf
Hex. Cr. Mass Conc. (Cs):	<	0.036	nanograms/dscf
Total Cr Mass Conc:	<	6.315	nanograms/dscm
Hex. Cr. Mass Conc:	<	1.263	nanograms/dscm
Total Cr. Emission Rate (Wm):	<	0.012	milligrams/hr Total Cr.
Hex. Cr. Emission Rate (Wm):	<	0.002	milligrams/hr Hex. Cr.

+18.0
+ 6.6
123.9

$K = \frac{\quad}{\Delta P} = \frac{\quad}{0.10}$

FIELD DATA RECORD

PAGE 1 of 1

RUN NO. A-11
LOCATION Alta
DATE 1/27/03
OPERATOR D. Todd / D. Pidgley
METER BOX NO. 4206
LOCAL TIME
START/STOP 0855 / 1355

STACK DIAMETER
Ym: 1.002
H@: 1.755
E = to 18th st. N = to Alley away from S st.

PITOT TUBE FACTOR 0.84
NOZZLE DIAMETER 3/8 in.
PROBE LENGTH 4 ft.

SAMPLE TRAIN LEAK TEST
BEFORE 17 in. ~~H2O~~ Hg OK
AFTER in. ~~H2O~~ Hg
PITOT TUBE LEAK TEST
BEFORE 5.8 OK AFTER 6.5 sk

PROJECT NO. T-03-048
PLANT NAME Alta Plating
AMBIENT TEMP (F) 60 — w/drizzle outside
METER TEMP (F) 60
BAR. PRESS ("Hg) 30.18
STATIC PRESSURE ("H2O) — 0.28
ASSUMED MOISTURE (%) <1%
ASSUMED O2 (%) 20.9
ASSUMED CO2 (%) ∅
ASSUMED MW (WET, %)
ASSUMED MW (DRY, %)

POINT	CLOCK TIME	DRY GAS METER (cu. ft.)	VELOCITY dP (in. H2O)	ORIFICE dH (in. H2O) DESIRED	ORIFICE dH (in. H2O) ACTUAL	TEMPERATURES (F) STACK #2	PROBE	FILTER #3	RESIN	IMPGR #4	PUMP VAC (in. Hg)
START	0	232.91	~~0.12 @ P/L~~	~~0.12~~	—	—		—		—	—
E-1	15	246.20	0.13	~~2.6~~ 2.7	2.6	59		57		42	7
2	30	259.95	0.13	2.7	2.7	61		57		42	8
3	45	275.14	0.16	3.3	3.3	62		62		42	11
4	60	290.84	0.18	3.8	3.8	63		62		43	12
5	75	305.96	0.16	3.3	3.3	63		62		43	10
6	90	320.48	0.14	3.0	3.0	64		63		43	9
7	105	335.40	0.15	3.2	3.2	64		63		43	10
8	120	355.10	0.16	3.4	3.4	~~63~~ 65		63		43	11
9	135	366.66	0.17	3.6	3.6	63		61		43	11
10	150	383.66	~~0.20~~ 0.20	4.2	4.2	63		62		43	13
11	165	401.20	0.22 ~~0.22~~	~~4.6~~ 4.6	~~4.6~~ 4.6	62		61		43	15
12	180	418.77	0.27	4.4 ~~4.6~~	~~4.6~~ 4.4	62		60		42	15
N-1	195	431.04	0.10	2.1	2.1	61		60		42	8
2	210	445.30	0.14	3.0	3.0	61		60		43	11
3	225	460.05	0.15	3.2	3.2	63		61		43	11
4	240	474.91	0.15	3.2	3.2	63		63		42	11
5	255	490.55	~~0.16~~ 0.17	3.6	3.6	63		61		42	13
6	270	506.14	~~0.16~~ 0.17	3.6	3.6	64		60		42	13
7	285	522.89	0.20	4.2	4.2	64		63		42	15
8	300	539.70	0.21	4.2	4.2	65		62		42	15
9	315	557.04	0.22	4.6	max 4.5	64		61		42	17
10	330	574.55	0.22	4.6	max 4.4	63		61		42	17
11	345	592.12	0.23	4.7	max 4.4	64		61		42	17
12	360	609.74	0.23	4.7	max 4.4	65		62		42	17
	Theta: 360	Vm: 376.83	avg dP: 0.416 4.20		avg dH: 3.621 86.9	avg Ts 62.96 83.1					

Smoke test @ PT 6
($TiCl_4$) → HCl + + Titanium Oxychloride + Titanium Oxides

ΔP $\frac{\Delta H}{\Delta P} = \frac{2.2}{0.1}$

FIELD DATA RECORD

PAGE 1 of 2

RUN NO. A-12
LOCATION Dec Cr Tank
DATE 1/28/04
OPERATOR D. Todd / D. Rid
METER BOX NO. 4206
LOCAL TIME
START/STOP 0820/

STACK DIAMETER 12"
Ym: 1.007
H@: 1.755

PITOT TUBE FACTOR 0.84
NOZZLE DIAMETER 3/8 in.
PROBE LENGTH 4 ft.

SAMPLE TRAIN LEAK TEST, ~~Hg~~
BEFORE 15 in. ~~H_2O~~ OK
AFTER in. H_2O
PITOT TUBE LEAK TEST
BEFORE 5.2 "Hg AFTER

PROJECT NO. T-03-048
PLANT NAME Alta
AMBIENT TEMP (F) Thin, low overcast
METER TEMP (F) 68 N Wind
BAR. PRESS ("Hg) 30.30
STATIC PRESSURE ("H2O) -0.25
ASSUMED MOISTURE (%) 1.5 %
ASSUMED O2 (%) 20.9
ASSUMED CO2 (%) 0.00
ASSUMED MW (WET, %)
ASSUMED MW (DRY, %)

POINT	CLOCK TIME	DRY GAS METER (cu. ft.)	VELOCITY dP (in. H2O)	ORIFICE dH (in. H2O) DESIRED	ORIFICE dH (in. H2O) ACTUAL	TEMPERATURES (F) STACK #2	PROBE	FILTER Am B3	RESIN	IMPGR #4	PUMP VAC (in. Hg)
START	0	609.95	Fan @ 71% ΔP = 0.12 @ PT 4	—	—	—	—	—		—	—
E-1	15	618.93	0.05	1.1	1.1	48		48		43	4
2	30	632.91	0.13	2.8	2.8	50		51		40	9
3	45	646.93	0.12	2.7	2.7	57		52		40	8
4	60	660.25	0.11	2.4	2.4	59		54		40	7.5
5	75	673.55	0.11	2.4	2.4	59		52		40	7.5
6	90	686.27	0.10	2.2	2.2	61		57		40	7
7	105	699.40	0.11	2.4	2.4	62		57		41	8
8	120	713.64	0.13	2.8	2.8	59		52		41	8½
9	135	730	0.15	3.3	3.3	62		60		42	10
10	150	—	0.19	4.2	4.2	63		61		42	14
11	~~165~~ ~~180~~ 170	769.86	0.20	4.4	4.4	63		60		42	14
12	190	792.25	0.18	~~3.7~~ 4.0	4.0	63		61		42	12.5
E-10	195	797.67	0.17	3.7	3.7	65		64		43	11
9	200	803.00	0.16	3.5	3.5	63		62		42	11
8	205	807.93	0.14	3.1	3.1	65		64		42	9
7	210	812.8	0.12	2.7	2.7	66		65		42	8
6	215	817.13	0.11	2.4	2.4	65		64		43	8
5	220	821.6	0.11	2.4	2.4	63		63		43	8
4	225	826.17	0.12	2.7	2.7	61		60		43	8
3	230	831.24	0.14	3.1	3.1	59		63		42	~~8~~ 10
2	235	835.86	0.11	2.4	2.4	58		64		42	8
1	240	839	0.04	0.88	0.88	58		62		43	3
(cont.)	see page 2 of 2 for North Port points										
	Theta:	Vm:	avg dP:		avg dH:	avg Ts					

Due to Low Amp hours
15 min Run
20 min Run
5 min Run

FIELD DATA RECORD

PAGE 2 of 2

RUN NO. A-12 (Cont.)
LOCATION Alta Dec. Cr. Tank
DATE 1/28/04
OPERATOR Whedd/D. Ridgey
METER BOX NO. 4206
LOCAL TIME
START/STOP 11630

STACK DIAMETER 12"
Ym: 1.007
H@: 1.755

PITOT TUBE FACTOR 0.84
NOZZLE DIAMETER 3/8 in.
PROBE LENGTH 4 ft.

SAMPLE TRAIN LEAK TEST
BEFORE in. H_2O
AFTER 18 in. ~~H_2O~~ ok
PITOT TUBE LEAK TEST ~~Hg~~
BEFORE AFTER 6.8" ok

PROJECT NO. T-03-048
PLANT NAME Alta Plating
AMBIENT TEMP (F)
METER TEMP (F) 60
BAR. PRESS ("Hg) 30.30
STATIC PRESSURE ("H2O) -0.25
ASSUMED MOISTURE (%) 1.5
ASSUMED O2 (%) 20.9
ASSUMED CO2 (%) —
ASSUMED MW (WET, %)
ASSUMED MW (DRY, %)

POINT	CLOCK TIME	DRY GAS METER (cu. ft.)	VELOCITY dP (in. H2O)	ORIFICE dH (in. H2O) DESIRED	ORIFICE dH (in. H2O) ACTUAL	TEMPERATURES (F) STACK #2	PROBE	FILTER AND #3	RESIN	IMPGR #4	PUMP VAC (in. Hg)
~~START~~	240 ~~0~~	See previous sheet (Run A-12, pg 1 of 2)									
N-1	260	849.63	0.04	0.88	0.88	58		63		43	2
2	280	868.17	0.13	2.9	2.9	64		62		42	8
3	300	887.40	0.13	2.9	2.9	67		65		43	9
4	320	905.15	0.11	2.4	2.4	68		66		43	8
5	340	923.27	0.12	2.6	2.6	67		65		44	8
6	360	941.37	0.12	2.6	2.6	68		66		44	8
7	380	962.52	0.17	3.7	3.7	69		67		44	11
8	400	984.10	0.17	3.7	3.7	67		64		44	11
9	420	1006.90	0.19	4.2	4.2	68		64		44	14
10	440	1030.46	0.21	4.6	Max 4.5	67		65		44	14
11	460	1054.06	0.22	4.8	Max 4.5	67		63		43	14
12	480	1077.75	0.20	4.4	4.4	65		63		43	14
	Theta: 480	Vm: 467.80	avg √dP: 0.370		3.089 avg dH: ~~0.370~~	avg Ts 62					

Moisture
1207.2 − 1145.0 = 62.2
+ 127.9 − 101.1 + 113.8 − 100.9 = 39.2
101.9

$K = \frac{\Delta H}{\Delta P} = \frac{2.4}{0.1}$

FIELD DATA RECORD

PAGE 1 of 1

RUN NO. A-13 (+8, +6)
LOCATION Alta Dec. Cr
DATE Jan 29, 2004
OPERATOR D Todd / D. Ridgley
METER BOX NO. 4206
LOCAL TIME 0811 / 1415
START/STOP

STACK DIAMETER 12"
Ym: 1.002
H@: 1.755

PITOT TUBE FACTOR 0.84
NOZZLE DIAMETER 3/8 in.
PROBE LENGTH 4 ft.

SAMPLE TRAIN LEAK TEST
BEFORE 20 in. ~~H2O~~ Hg ok
AFTER ~~20~~ 19 in. H_2O Hg ok
PITOT TUBE LEAK TEST
BEFORE 40 ok AFTER ~~40~~ 64 ok

PROJECT NO. T-03-048
PLANT NAME Alta Plating
AMBIENT TEMP (F) 56
METER TEMP (F) 60
BAR. PRESS ("Hg) 30.26
STATIC PRESSURE ("H2O) -0.25
ASSUMED MOISTURE (%) 1%
ASSUMED O2 (%) 20.9
ASSUMED CO2 (%)
ASSUMED MW (WET, %)
ASSUMED MW (DRY, %)

weather calm, foggy / Low clouds

Moisture
119.4
+ 97.6
-100.5
-100.0
-1201.0
-1141.7
75.8 ml

POINT	CLOCK TIME	DRY GAS METER (cu. ft.)	VELOCITY dP (in. H2O)	ORIFICE dH (in. H2O) DESIRED	ORIFICE dH (in. H2O) ACTUAL	TEMPERATURES (F) STACK	PROBE	FILTER	RESIN	IMPGR	PUMP VAC (in. Hg)
		078.03	Fan @ ~71%					Amb			
START	0	078.034	~~0.12~~	—	—	—		51			
E-1 out	15	92.16	~~0.12~~ 0.12	2.9	2.9	54		52		41	11
2	30	107.12	0.13	3.1	3.1	57		56		41	11.5
3	45	122.15	0.13	3.1	3.1	57		54		41	11.5
4	60	136.82	0.12	2.9	2.9	58		55		41	11
5	75	151.64	0.12	2.9	2.9	57		55		42	11
6	90	168.09	~~0.18~~ 0.16	3.8	3.8	58		57		41	16
7	105	184.20	0.15	3.5	3.5	60		58		42	14
8	120	202	0.17	4.0	4.0	60		60		42	17
9	135	219.0	0.17	4.0	4.0	61		55		42	18
10	150	232.4	0.10	2.4 ~~0.10~~	2.4	61		52		43	9
11	165	246.25	0.12	2.9	2.9	62		54		44	11
12 in	180	261.62	~~0.12~~ .15	~~2.9~~ 3.6	~~2.9~~ 3.6	62		53		43	11
W-1 out	195	275.24	0.11	2.6	2.6	60		54		43	10
2	210	289.48	0.12	2.9	2.9	59		54		43	11
3	225	303.88	0.12	2.9	2.9	63		55		44	11
4	240	317.67	0.11	2.6	2.6	64		56		44	10
5	255	330.96	0.10	2.4	2.4	63		56		44	10
6	270	349.45	0.11	2.6	2.6	63		55		45	9.5
7	285	359.13	0.14	3.4	3.4	63		56		45	11
8	300	375.34	0.16	3.8	3.8	64		57		45	15.5
9	315	392.25	0.17	4.1	4.1	64		57		45	17.5
10	330	409.00	0.18	4.3	Max 4.0	65		57		44	17.5
11	345	425.83	0.19	4.5	Max 4.0	65		58		44	17.5
12	360	442.66	0.17	4.1	Max 4.0	64		56		45	17.5
	Theta: 360	Vm: 364.63	avg √dP: 0.370		avg dH: 3.267	avg Ts 61.0					
			3.32		78.4	1464					

Last week Surface tension — ~40 dynes
This week Surface tension — ~30 dynes

$k = \frac{\Delta H}{\Delta \Gamma} = \frac{2.1}{0.10}$

FIELD DATA RECORD

PAGE 1 of 1

RUN NO. A-21
LOCATION Alta Dec. Cr
DATE 2 Feb 04
OPERATOR D Todd / D. Ridgley
METER BOX NO. 4206
LOCAL TIME
START/STOP 0900

STACK DIAMETER 12"
Ym: 1.002
H@: 1.755

PITOT TUBE FACTOR 0.84
NOZZLE DIAMETER 3/8 in.
PROBE LENGTH 4 ft.

SAMPLE TRAIN LEAK TEST
BEFORE 15" in. ~~H2O~~ Hg dg
AFTER 17" in. ~~H2O~~ Hg up
PITOT TUBE LEAK TEST
BEFORE 6.4" ob AFTER 5.5" ob

PROJECT NO. T-03-048
PLANT NAME Alta Plating
AMBIENT TEMP (F) 57
METER TEMP (F) 60
BAR. PRESS ("Hg) ~~0.26~~ 29.76
STATIC PRESSURE ("H2O) -0.2
ASSUMED MOISTURE (%) 1%
ASSUMED O2 (%) 20.9
ASSUMED CO2 (%)
ASSUMED MW (WET, %)
ASSUMED MW (DRY, %)

Rain w/ 10-20 wind fur SE

Moisture
1205.8
-1152.9
45.9
120.2
+112.0
100.5
101.0
30.7
+45.9
+76.6

POINT	CLOCK TIME	DRY GAS METER (cu. ft.)	VELOCITY dP (in. H2O) @-73%	ORIFICE dH (in. H2O) DESIRED	ORIFICE dH (in. H2O) ACTUAL	TEMPERATURES (F) STACK	PROBE	FILTER Amb	RESIN	IMPGR	PUMP VAC (in. Hg)
START	0	442.86	~~0.07~~	—	—	—		—		—	—
E-1	15	453.45	0.07	1.5	1.5	57		56		43	6
2	30	466.44	0.11	2.3	2.3	~~[illegible]~~ 58		56		44	8
3	45	481.11	0.14	3.0	3.0	59		57		45	10
4	60	495.33	0.13	2.7	2.7	60		56		45	9
5	75	509.38	0.13	2.7	2.7	61		56		45	9
6	90	522.97	0.12	2.5	2.5	62		56		44	8.5
7	105	536.51	0.12	2.5	2.5	61		55		44	8.5
8	120	545.85	0.13	2.7	2.7	62		56		43	9
9	135	565.15	~~0.13~~ 0.14	~~2.7~~ 2.9	~~2.7~~ 2.9	62		56		42	9
10	150	580.37	0.15	3.2	3.2	62		56		42	11
11	165	596.54	0.17	3.6	3.6	62		55		42	13
12	180	612.79	0.17	3.6	3.6	62		55		41	13
N-1	195	624.78	0.09	1.9	1.9	60		56		42	7
2	210	637.44	0.12	2.6	2.6	63		56		42	9
3	225	651.2	0.11	2.4	2.4	63		57		42	8
4	240	665.00	0.12	2.6	2.6	63		58		43	9
5	255	678.69	0.12	2.6	2.6	63		58		43	9
6	270	692.60	0.13	2.7	2.7	62		57		43	9
7	285	707.52	0.15	3.2	3.2	64		59		43	11
8	300	723.11	0.16	3.4	3.4	64		57		43	12
9	315	734.14	0.17	3.6	3.6	64		59		43	13
10	330	755.72	0.18	3.8	3.8	64		58		43	14
11	345	772.67	0.19	4.0	4.0	63		58		43	15
12	360	789.67	0.19	4.0	4.0	63		58		42	15
	Theta: 360	Vm: 346.81	avg dP: 0.369		avg dH: 2.92	avg Ts 61.8		56.7			

$\sqrt{2.3/at} = 0.37$ 70.0 (1.84

$K = \frac{\Delta H}{\Delta P} = \frac{2.1}{0.10}$

FIELD DATA RECORD

PAGE 1 of 1

RUN NO. A-22
LOCATION Alta Dev. Cr
DATE 2/3/04
OPERATOR D Todd / D. Pidgley
METER BOX NO. 4206
LOCAL TIME
START/STOP 8815

STACK DIAMETER 12"
Ym: 1.002
H@: 1.755

PITOT TUBE FACTOR 0.84
NOZZLE DIAMETER 3/8 in.
PROBE LENGTH 4 ft.

SAMPLE TRAIN LEAK TEST
BEFORE 18 in. ~~H_2O~~ Hg ok
AFTER 18 in. ~~H_2O~~ Hg ok
PITOT TUBE LEAK TEST
BEFORE 5.4" ok AFTER 5.8" ok

PROJECT NO. T-07-048
PLANT NAME Alta Placing
AMBIENT TEMP (F) Rainy, wind from east
METER TEMP (F) 60
BAR. PRESS ("Hg) 24.89
STATIC PRESSURE ("H2O) -0.25
ASSUMED MOISTURE (%) 1%
ASSUMED O2 (%) 20.9
ASSUMED CO2 (%)
ASSUMED MW (WET, %)
ASSUMED MW (DRY, %)

POINT	CLOCK TIME	DRY GAS METER (cu. ft.)	VELOCITY dP (in. H2O) Q~25%	ORIFICE dH (in. H2O) DESIRED	ORIFICE dH (in. H2O) ACTUAL	TEMPERATURES (F) STACK	PROBE	FILTER Amb	RESIN	IMPGR	PUMP VAC (in. Hg)
START	0	789.93	—	—	—	—		—		—	—
PT→ E-1	15	801.39	0.08	1.7	1.7	58		54		44	6
2	30	815.38	0.13	2.7	2.7	59		54		42	12
3	45	830.16	0.14	3.0	3.0	60		54		41	9
4	60	844.67	0.13	2.8	2.8	60		55		40	9
5	75	858.52	0.12	2.5	2.5	60		54		41	8
PT→ 6	90	871.66	0.11	2.3	2.3	60		54		41	7
7	105	884.80	0.11	2.3	2.3	61		54		41	7
8	120	898.28	0.12	2.5	2.5	62		55		41	8
PT→ 9	135	912.53	0.13	2.8	2.8	61		54		41	9
10	150	927.71	0.15	3.2	3.2	61		54		41	10
11	165	943.86	0.17	3.6	3.6	62		55		42	12
12	180	960.04	0.17	3.6	3.6	63		56		41	12
N-1	195	971.	0.08	1.7	1.7	60		56		42	6
2	210	983.63	0.10	2.1	2.1	61		57		42	7
3	225	996.82	0.12	2.5	2.5	63		56		44	8
4	240	1010.25	0.12	2.5	2.5	62		56		41	8
5	255	1024.12	0.12	2.5	2.5	62		56		42	8
6	270	1037.27	0.12	2.5	2.5	64		57		42	8
7	285	1051.64	0.14 ~~3.2~~	2.9 ~~3.2~~	2.9 ~~3.2~~	63		56		42	9
8	300	1066.62	0.15	3.2	3.2	65		58		42	10
9	315	1082.44	0.17 ~~3.6~~	3.6 ~~3.4~~	~~3.4~~ 3.6	64		57		43	11.5
10	330	1098.41	0.17	3.6	3.6	64		58		43	11.5
11	345	1115.00	0.18	3.8	3.8	65		58		43	13
12	360	1131.37	0.18	3.8	3.8	64		58		43	13
	Theta: 360	Vm: 341.44	avg √dP: 0.366		avg dH: 2.82	avg Ts 61.8					
			3.21		67.7	1484					

$K = \frac{\Delta H}{\Delta P} = \frac{2.1}{0.10}$

AM: mostly two clouds
PM: mostly sunny
AM/PM: Cool, dry

FIELD DATA RECORD

PAGE 1 of 1

RUN NO. A-23
LOCATION Alta Dec. Cr
DATE 2/4/04
OPERATOR D Todd / D. Ridgley
METER BOX NO. 4206
LOCAL TIME
START/STOP 0815

STACK DIAMETER 12"
Ym: 1.002
H@: 1.755

PITOT TUBE FACTOR 0.84
NOZZLE DIAMETER 3/8 in.
PROBE LENGTH 4 ft.

SAMPLE TRAIN LEAK TEST, ~~Hg~~
BEFORE 17" in. ~~H2O~~
AFTER in. ~~H2O~~
PITOT TUBE LEAK TEST Hg
BEFORE 5.2' ok AFTER

PROJECT NO. T-03-048
PLANT NAME Alta Plating
AMBIENT TEMP (F)
METER TEMP (F) 60
BAR. PRESS ("Hg) 30.14
STATIC PRESSURE ("H2O) -0.26
ASSUMED MOISTURE (%) 1%
ASSUMED O2 (%) 20.9
ASSUMED CO2 (%)
ASSUMED MW (WET, %)
ASSUMED MW (DRY, %)

POINT	CLOCK TIME	DRY GAS METER (cu. ft.)	VELOCITY dP (in. H2O) @ 75 %	ORIFICE dH (in. H2O) DESIRED	ORIFICE dH (in. H2O) ACTUAL	TEMPERATURES (F) STACK	PROBE	FILTER Amb	RESIN	IMPGR	PUMP VAC (in. Hg)
START	0	131.54	~~0.10~~	—	—	—		—		—	—
E-1	15	143.73	0.10	2.1	2.1	54		48		40	6
2	30	157	0.12	2.6	2.6	56		49		40	7
3	45	170.60	0.11	2.4	2.4	57		49		40	7
4	60	184.32	0.12	2.6	2.6	59		48		40	7
pt → 5	75	197.63	0.11	2.4	2.4	59		51		40	7
6	90	210.42	0.10	2.1	2.1	60		52		40	6
7	105	223.65	0.11	2.4	2.4	59		49		40	7
8	120	237.93	0.13	2.8	2.8	60		51		40	7
9	135	252.99	0.15	3.1	3.1	61		51		40	8.5
10	150	268.5	0.16	3.4	3.4	61		51		41	9
11	165	285.00	0.18	3.8	3.8	60		50		41	10.5
12	180	301.22	0.17	3.6	3.6	61		52		41	10
N-1	195	313.00	0.10	2.1	2.1	58		53		41	6
2	210	327.88	0.13	2.8	2.8	58		54		42	8
3	225	341.3	0.11	2.4	2.4	61		55		42	7
4	240	354.44	0.11	2.4	2.4	63		57		43	7
5	255	367.82	0.12	2.5	2.5	63		57		42	7
6	270	382.00	0.13	2.8	2.8	62		56		43	7.5
7	285	396.84	0.15	3.1	3.1	62		57		43	8.5
8	300	412.86	0.17	3.6	3.6	63		57		43	10
9	315	429.33	0.18	3.8	3.8	65		58		44	10.5
10	330	446	0.18	3.8	3.8	63		57		44	10.5
11	345	463.13	0.20	4.2	4.2	66		60		44	12
12	360	480.12	0.19	4.0	4.0	65		59		44	11
	Theta: 360	Vm: 348.58	avg √dP: 0.372		avg dH: 2.95	avg Ts 60.667					
			3.33		70.45	1.436					

This Run is Post-test (Alta) 1445 warehouse, Run is designed to maximize collection of "ra entrained" chromium from hood & duct. This include super-iso sampling hood down, 3-4" gap (3-5 @ Alta) above base.

FIELD DATA RECORD

All bottles on ice & kept upright. Glass up.

PAGE 1 of 1

RUN NO.	WP-2	PITOT TUBE FACTOR	0.84	PROJECT NO.	T-07-048
LOCATION	~~Alta Dec Co~~ 1445 warehouse	NOZZLE DIAMETER	3/8 in.	PLANT NAME	Alta Plating/1445 Post-Test
DATE	2/6/04	PROBE LENGTH	4 ft.	AMBIENT TEMP (F)	57
OPERATOR	D Todd / ~~[illegible]~~			METER TEMP (F)	60
METER BOX NO.	4206			BAR. PRESS ("Hg)	30.48
LOCAL TIME				STATIC PRESSURE ("H2O)	-0.28
START/STOP	0930/1640	SAMPLE TRAIN LEAK TEST, Hg		ASSUMED MOISTURE (%)	1%
STACK DIAMETER	12"	BEFORE	15 in. H_2O ok	ASSUMED O2 (%)	20.9
Ym:	1.002	AFTER	in. H_2O	ASSUMED CO2 (%)	
H@:	1.755	PITOT TUBE LEAK TEST		ASSUMED MW (WET, %)	
		BEFORE	6.8" ok AFTER	ASSUMED MW (DRY, %)	

mostly cloudy w/trace rain

moisture 1

$K = \frac{\Delta H}{\Delta P}$

POINT	CLOCK TIME	DRY GAS METER (cu. ft.)	VELOCITY dP (in. H2O) ~75%	ORIFICE dH (in. H2O) DESIRED	ORIFICE dH (in. H2O) ACTUAL (Super Isok.)	TEMPERATURES (F) STACK	PROBE	FILTER Amb	RESIN	IMPGR	PUMP VAC (in. Hg)
START	0	480.28	—	—	—	—		—		—	—
S-1 W-1	15	494.26	0.10	2.2	5.2 max	56		55		43	16
2	30	543.82	0.14	3.1	5.2	56		55		43	16
3	45	553.3	0.14	3.1	5.1	56		55		40	16
4	60	558.41	0.13	2.8	5.1	56		55		40	16
5	75	571.56	0.12	2.4	5.1	56		55		40	16
6	90	590.64	0.12	2.4	5.1	56		56		40	16
7	105	609.7	0.17	3.7	5.0	57		56		40	16
8	120	629.0	0.18	~~5.8~~ 3.9	5.0	57		56		40	16
9	135	648.0	0.20	4.4	5.1	57		56		40	16
10	150	667.30	0.22	4.8	5.2	57		57		40	16
11	165	686.58	0.23	5.0	5.2	58		57		41	16
12	180	705.71	0.23	5.0	5.1	58		57		41	16
W-1	195	724.31	0.15	3.3	5.1	59		57		41	16
2	210	743.63	0.18	3.9	5.1	58		57		41	16
3	225	763.76	0.19	4.1 ~~[illegible]~~	5.1	59		57		41	16
4	240	783.	0.16	3.5	5.1	58		58		41	16
5	255	800.94	0.17	3.7	5.1	58		58		41	16
6	270	820.2	0.16	3.5	5.1	59		58		41	16
7	285	839.15	0.17	3.7	5.1	58		58		41	16
8	300	858.24	0.18	3.9	5.1	59		58		41	16
9	315	877.28	0.19	4.2	5.1	59		58		41	16
10	330	896.27	0.20	4.4	5.0	59		59		42	16
11	345	915.28	0.21	4.6	5.0	59		59		42	16
12	360	934.48	0.21	4.6	5.0	60		59		42	16
	Theta: 360	Vm: 454.20	avg dP: 0.416 4.15		avg dH: 5.10 122.4	avg Ts 57.71 1385					

moisture
1222.2
-1170.6
51.6
85.3
+100.4
-100.6
-99.9
-14.8
51.6
-14.8
36.8

California Air Resources Board
Monitoring & Laboratory Division

Hex. Cr. Sample Train Setup Sheet

(Use with Nozzle Measurement Sheet & Hex Cr Recovery Sheet)

Project: Alta Plating — Page #: 1 of 2

Project #: 03-048 — Proj. Lead: DTodd/DRidgley

	Date	Train #		Nozzle S/N	Nozzle Dia., in.	Probe S/N	Probe Cp		Impingers, ml	Silica Gel, grams	Moisture Total, ml	Impingers No.	Impingers pH
1	01/21/04	WB-1			.380			Final:	83.5 85.4	1179.8		1	9.0
								Tare:	104.5 100.3	1149.6		2	9.0 9.0
								Diff:	-31.7	30.2	-3.79	3	
2	01/27/04	A-11			.380			Final:	112.9 107.3	1199.8		1	9.0
								Tare:	80.9 100.7	1144.1		2	9.0 9.0
								Diff:	25.6	55.7	81.3	3	
3	01/28/04	A-12			.380			Final:	127.9 113.8	1207.2		1	9.0
								Tare:	101.1 100.9	1145.0		2	9.0 9.0
								Diff:	39.7	62.2	101.9	3	
4	01/29/04	A-13			.380			Final:	117.4 77.6	1201.0		1	9.0
								Tare:	100.5 100.0	1147.7		2	9.0 9.0
								Diff:	16.5	53.3	75.8	3	
5	2/2/04	A-21			.380			Final:	120.2 112.0	1205.6		1	9.0
								Tare:	100.5 101.0	1159.9		2	9.0 9.0
								Diff:	30.7	45.9	76.6	3	
6	2/3/04	A-22			.380			Final:	136.0 108.1	1212.9		1	9.0 9.0
								Tare:	100.6 100.6	1167.2		2	9.0 9.0
								Diff:	42.9	45.7	88.6	3	
7	2/4/04	A-23			.380			Final:	131.3 109.7	1199.1		1	9.0 9.0
								Tare:	100.3 100.3	1151.5		2	9.0 9.0
								Diff:	28.3	47.6	76.1	3	

California Air Resources Board
Monitoring & Laboratory Division

Hex. Cr. Sample Train Setup Sheet

(Use with Nozzle Measurement Sheet & Hex Cr Recovery Sheet)

Project: Auto Plating
Project #: 03-048

Page #: 2 of 2
Proj. Lead: Ross / Bradley

	Date	Train #	Filter #	Nozzle S/N	Nozzle Dia., in.	Probe S/N	Probe Cp		Impingers, ml	Silica Gel, grams	Moisture Total, ml	Impingers No.	Impingers pH
1	9/14/04	WP-2			.380			Final:	85.3 / 100.4	1232.2		1	9.0
								Tare:	100.4 / 99.9	1170.6		2	9.0 / 9.0
								Diff:	14.8	51.6	36.8	3	
2								Final:				1	
								Tare:				2	
								Diff:				3	
3								Final:				1	
								Tare:				2	
								Diff:				3	
4								Final:				1	
								Tare:				2	
								Diff:				3	
5								Final:				1	
								Tare:				2	
								Diff:				3	
6								Final:				1	
								Tare:				2	
								Diff:				3	
7								Final:				1	
								Tare:				2	
								Diff:				3	

California Air Resources Board
Monitoring & Laboratory Division

Method 425 Recovery Field Data Sheet

Project: **Alta Plating** Page: 1 of 2
Project #: 03-048 Project Lead: D.Todd/D.Ridgley

			Container No.1 (Probe Rinse)	Container No. 2 (Impinger 1)	Container No. 3 (Impinger 2)
1	01/21/04 WAREHOUSE PRE TEST DATA Run #: WB-1	pH	9.0	9.0	9.0
		Tare (gm)	0	100.5	100.3
		Final (gm)	100.2	83.5	85.4
		Diff (gm)	100.2	-17.0	-14.9
			Container No.1 (Probe Rinse)	Container No. 2 (Impinger 1)	Container No. 3 (Impinger 2)
2	01/27/04 ALTA PLATING 1ST DAY Run #: A-11	pH	9.0	9.0	9.0
		Tare (gm)	0	100.9	100.7
		Final (gm)	98.3	119.9	107.3
		Diff (gm)	98.3	19.0	6.6
			Container No.1 (Probe Rinse)	Container No. 2 (Impinger 1)	Container No. 3 (Impinger 2)
3	01/28/04 Run #: A-12	pH	9.0	9.0	9.0
		Tare (gm)	0	101.1	100.9
		Final (gm)	89.2	127.9	113.8
		Diff (gm)	89.2	26.8	12.9
			Container No.1 (Probe Rinse)	Container No. 2 (Impinger 1)	Container No. 3 (Impinger 2)
4	Run #: A-13	pH	9.0	9.0	9.0
		Tare (gm)	0	100.5	100.0
		Final (gm)	100.0	119.4	97.6
		Diff (gm)	100	18.9	-2.4
			Container No.1 (Probe Rinse)	Container No. 2 (Impinger 1)	Container No. 3 (Impinger 2)
5	Run #: A-21	pH	9.0	9.0	9.0
		Tare (gm)	0	100.5	101.0
		Final (gm)	111.2	120.2	112.0
		Diff (gm)	111.2	19.7	11.0

California Air Resources Board
Monitoring & Laboratory Division

Method 425 Recovery Field Data Sheet

Project: **Alta Plating** Page: 2 of 2
Project #: 03-048 Project Lead: D.Todd/D.Ridgley

			Container No.1 (Probe Rinse)	Container No. 2 (Impinger 1)	Container No. 3 (Impinger 2)
1	Run #: A.22	pH	9.0	9.0	9.0
		Tare (gm)	Ø	100.6	100.6
		Final (gm)	79.1	136.0	108.1
		Diff (gm)	79.1	35.4	7.5
			Container No.1 (Probe Rinse)	Container No. 2 (Impinger 1)	Container No. 3 (Impinger 2)
2	Run #: A.23	pH	9.0	9.0	9.0
		Tare (gm)	Ø	100.3	100.2
		Final (gm)	118.8	121.3	107.7
		Diff (gm)	118.8	21.0	7.5
			Container No.1 (Probe Rinse)	Container No. 2 (Impinger 1)	Container No. 3 (Impinger 2)
3	Run #: WP.2	pH	9.0	9.0	9.0
		Tare (gm)	Ø	100.6	99.9
		Final (gm)	98.0	85.3	100.4
		Diff (gm)	98.0	-15.3	0.5
			Container No.1 (Probe Rinse)	Container No. 2 (Impinger 1)	Container No. 3 (Impinger 2)
4	Run #:	pH			
		Tare (gm)			
		Final (gm)			
		Diff (gm)			
			Container No.1 (Probe Rinse)	Container No. 2 (Impinger 1)	Container No. 3 (Impinger 2)
5	Run #:	pH			
		Tare (gm)			
		Final (gm)			
		Diff (gm)			

Monitoring & Laboratory Division

PQ100 Ambient Sampling Data

Facility: Alta Plating

Date: 1/27/04

Operator: D Todd David Todd

Filter ID#: A-11A A = Alta 1A = First Run, ambient sample

PQ100 ID#: 318 ARB # 20021266

FLOW CHECK:

Initial (SLPM): 10.00 ~~9.97~~ Batt @ 98%

Final (SLPM): 10.0

SAMPLE COLLECTION:

Start Time: 11:36

Stop Time: 15:20

Elapsed Time (min): 226 (225 min)

Flow Rate (SLPM): 10.0 10.0

Total Volume Sampled (Std.Liters): 2,260

Comments:

Monitoring & Laboratory Division

PQ100 Ambient Sampling Data

Facility: Alta Plating Ambient

Date: 1/28/04

Operator: David Todd

Filter ID#: _____ Ann #: A-12A

PQ100 ID#: 318

FLOW CHECK:

Initial (SLPM): 10.0 9.97-10.03 Dty 99%

Final (SLPM): 10.0 Dty 97%

SAMPLE COLLECTION:

Start Time: 08:53

Stop Time: 15:55

Elapsed Time (min): 422

Flow Rate (SLPM): 10

Total Volume Sampled (Std.Liters): 4,220

15:55
08:53
7:02
x60
420+02 = 422

Comments:

Monitoring & Laboratory Division

PQ100 Ambient Sampling Data

Facility: Alta

Date: 1/29/04

Operator: David Todd

Filter ID#: Run #A-13A

PQ100 ID#: 318 ARB# 20021266

FLOW CHECK:

Initial (SLPM): ~~0845~~ 10.0 Rly 99%

Final (SLPM): 10.0 Rly 97%

SAMPLE COLLECTION:

Start Time: ~~10.0~~ 0845

Stop Time: 13:55

Elapsed Time (min): 310

Flow Rate (SLPM): 10.0

Total Volume Sampled (Std.Liters): 3,100

Comments:

Monitoring & Laboratory Division

PQ100 Ambient Sampling Data

Facility: Alta Platin

Date: 2 Feb 04

Operator: D Todd

Filter ID#: Run # A-21

PQ100 ID#: 348

FLOW CHECK:

Initial (SLPM): ~~0910~~ 10.0 Bty 99%

Final (SLPM): 10.0 Bty 99%

SAMPLE COLLECTION:

Start Time: 0910

Stop Time: 1503

Elapsed Time (min): 353 (352 min)

Flow Rate (SLPM): 10.0

Total Volume Sampled (Std.Liters): 3,530

14:63
- 9:10
153
x60
300+53 = 350

Comments:

Monitoring & Laboratory Division

PQ100 Ambient Sampling Data

Facility: Alta

Date: 2/3/04

Operator: David Todd

Filter ID#: _____ Run # A-22A

PQ100 ID#: 348

FLOW CHECK:

Initial (SLPM): ~~0841~~ 10.0 Bty 99% @ 10:2[illegible], 9.97, Bty-97%

Final (SLPM): 10.0 Bty 91% @ 11:10, 10.0 lpm, Bty-94%

SAMPLE COLLECTION:

Start Time: 0841

Stop Time: 1354

Elapsed Time (min): 313

Flow Rate (SLPM): 10.0

Total Volume Sampled (Std.Liters): 3,130

Comments: Sampler Problem? Do to unusual Heavy steam for Nickel bath (Hot, steamy agitated)? Readout of sampler includes many [illegible] at some zeros and letters (i.e. "min") on sampler readout.

Monitoring & Laboratory Division

PQ100 Ambient Sampling Data

Facility: A Hca

Date: 2/4/04

Operator: D Todd

Filter ID#: 1 Run # A-23A

PQ100 ID#: 248

FLOW CHECK:

Initial (SLPM): 10.0 Dty 99 %

Final (SLPM): 10.0 Dty 91 %

SAMPLE COLLECTION:

Start Time: 0817

Stop Time: 1408

Elapsed Time (min): 350

Flow Rate (SLPM): 10.0

Total Volume Sampled (Std.Liters): 3,500

Comments:

Monitoring & Laboratory Division

PQ100 Ambient Sampling Data

Facility: Alta

Date: 2/5/04

Operator: D Todd

Filter ID#: A-33A

PQ100 ID#: 348

FLOW CHECK:

Initial (SLPM): 10.0 Bty 99%

Final (SLPM): 10.0 99%

SAMPLE COLLECTION:

Start Time: 08:38

Stop Time: 14:17

Elapsed Time (min): 339

Flow Rate (SLPM): 10

Total Volume Sampled (Std.Liters): 3,390

Amp-Hr meter
start: 50242
stop: 50372
Diff: 130

Comments: Ambient only (w/o parallel stack test) AM - tank curtains down still and side doors closed.
PM - side doors open back curtains up side curtains still down DTodd

Monitoring & Laboratory Division

PQ100 Ambient Sampling Data

Facility: Alta

Date: 2/6/04

Operator: D Todd

Filter ID#: _____ Run # A-32A

PQ100 ID#: 348

FLOW CHECK:

Initial (SLPM): 10.0

Final (SLPM): 10.0

SAMPLE COLLECTION:

Start Time: 0837

Stop Time: 16:07

Elapsed Time (min): 450

Flow Rate (SLPM): 10.0

Total Volume Sampled (Std.Liters): 4,500

Amp-Hr meter
start: 50424
stop: 50606
Diff: 182

Comments: Ambient only (w/o parallel stack test). All side doors closed, back splash curtain up, side curtains down. PM:

Noon: Side Door open, Cr tank fumes drift to Amb samples

Monitoring & Laboratory Division

PQ100 Ambient Sampling Data

Facility: Alta

Date: 2/8/09 (Sunday)

Operator: D Todd

Filter ID#: Run#: A-31A

PQ100 ID#: 348

FLOW CHECK:

Initial (SLPM): 10.0

Final (SLPM): 10.0

SAMPLE COLLECTION:

Start Time: 03:00 (programmed)

Stop Time: 9 Feb 08:07 ~~11:00 (programmed)~~

Elapsed Time (min): ~~1,745~~ 1,747 (recorded)

Flow Rate (SLPM): 10

Total Volume Sampled (Std.Liters): ~~17,450~~ 17,470

Amp-Hr meter — still plotting.

start: 50606 (Fri @ 1615)

stop: 50748 (Mon @ 8:07)

Diff: 142 — set amp-hrs

Assume zero Amp hours during this run - Sunday run

Comments: Ambient only (w/o parallel stack test).
Sunday - Facility (Alta) closed. No open doors. No plotting. No grinding.

Monitoring & Laboratory Division

PQ100 Ambient Sampling Data

Facility: Alta

Date: 2/9/04

Operator: D Todd

Filter ID#: Run # A-30A

PQ100 ID#: 348

FLOW CHECK:

Initial (SLPM): 10.0

Final (SLPM): 10.0

SAMPLE COLLECTION:

Start Time: 10:02

Stop Time: 16:10

Elapsed Time (min): 368

Flow Rate (SLPM): 10

Total Volume Sampled (Std.Liters): 3,680

Amp-Hr meter
start: 50783
stop: 50955
Diff: 172

Comments: Ambient only (w/o parallel stack test) side door open