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Testing Nickel Emissions from Metal Finishing Operations (Phase 2)

Final Report

National Risk Management Research Laboratory
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U.S. Environmental Protection Agency
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FOREWORD

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This publication has been produced as part of the Laboratory's strategic long-term research plan. It is published and made available by EPA's Office of Research and Development to assist the user community and to link researchers with their clients.

Sally Gutierrez, Director
National Risk Management Research Laboratory

PREFACE

This report provides an overview of nickel plating air emissions and waste release issues within the nickel plating industry. It is the objective of this report to assist the metal finishing community and specifically, those involved with nickel plating operations, with the management of environmental challenges that result from wastes that are potentially generated by nickel plating. Both the electrodeposition and electroless deposition processes for nickel plating have been profiled to examine resultant waste streams and potential releases.

Nickel plating practitioners are challenged to making a high-quality product that meets the needs of the customer while being competitive within the market. Furthermore, nickel plating practitioners must deal with environmental, regulatory, and technical, requirements to protect human health and the environment. This report serves as an advisory to nickel plating practitioners by providing technical information to reduce environmental impacts and lower the liabilities associated with environmental releases.

NOTICE

This document has been reviewed in accordance with the U.S. Environmental Protection Agency's peer and administrative review policies and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

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ABSTRACT:

Nickel emissions from electroplating operations are of concern to EPA**.** Therefore, EPA has determined that it would be useful and important to obtain **actual** nickel emission data from nickel plating operations using EPA-Approved testing methods (both Method 29 and Method 306A). The five nickel plating processes tested in this project were: Electroless Nickel, Rack Watts Nickel, Barrel Watts Nickel, Nickel Sulfamate, and Wood's Nickel Strike Plating. In addition, by modifying some of the operating parameters (i.e. surface tension, agitation methods, etc.), EPA can determine the impact of these operational changes on nickel emissions.

The stack testing was conducted over a two year span from June of 2004 through January of 2006. Based on the stack testing results, it was concluded that:

- Nickel emissions from typically-operated Rack Watts Nickel and Rack Nickel Sulfamate tanks (wetting agent, no mesh pad, air agitation) are not very significant (<0.05 mg/dscm).

- Nickel emissions from uncontrolled and vented Electroless Nickel, Barrel Nickel, and Wood's Nickel Strike plating are significant (greater then 0.1 mg/dscm), but can be significantly reduced (49% to 92%) by employing eductors, wetting agents, or simple mesh pads.

- Wetting agents, simple mesh pads, and eductors can be used to reduce nickel emissions from these processes with varying degrees of success. Simple mesh pads were found to be the most favorable because they outperformed wetting agents and eductors, are less expensive, and are totally external to the plating process (no impact on the plating chemistry).

Although the results of the study indicate that USEPA Method 306A and USEPA Method 29 provide similar results when measuring nickel emissions from Electroless Nickel, Watts Nickel, and Wood's nickel strike, further testing needs to be conducted on a controlled process or conducted simultaneously to determine whether Method 306A truly is an acceptable alternative to Method 29 for measuring nickel emissions from nickel plating processes in general.

Section 1.0 PROJECT DESCRIPTION AND OBJECTIVES

Purpose and Background

The nickel plating industry is a large part of the metal finishing community in the United States. It consists of job shops (independently owned plating businesses) and captive shops (metal finishing operations contained in larger manufacturing facilities). There are over 3,000 U.S. job shops that average fewer than 50 employees each with annual sales of, approximately $5 million. Captive shops that support larger manufacturing facilities can vary in size depending on their role within the company. The metal finishing industry is regulated for environmental protection and occupational health and safety due to the nature of the processes and materials required to satisfy industrial and public consumer demand. Nearly all manufactured products require some type of surface finishing. Consumers demand products that have aesthetic appeal, will not deteriorate, and have durability. The nickel plating industry provides a product that improves appearance, slows or prevents corrosion, changes magnetic properties, and increases strength and resistance to wear for manufactured parts and products.

Most of the nickel plating industry is located in or near major metropolitan areas and may generate air emissions, water discharges, and solid wastes that add to overall pollution concerns. Pollution abatement costs and expenditures for the metal finishing industry comprise nearly 20% of its budget. Industry representatives are working together with government, trade associations, and professional organizations to encourage technological advances that lead to more efficient, cleaner production while reducing waste generation and control costs.

Nickel plating is most commonly applied though the utilization of aqueous chemical reagents by means of electroplating or via a chemical reducing agent (a process that is referred to as electroless plating). Typical constituents of nickel electroplating solutions include nickel sulfate (or nickel sulfamate) nickel chloride, and boric acid, along with inorganic or organic additives that modify the crystal structure of the nickel deposit. While a variety of formulations for nickel plating exists, the Watts, Woods, and Sulfamate processes comprise the majority of the formulations used by the metal finishing industry. Also, electroless nickel is used throughout the industry and these process solutions are based on nickel sulfate plus a reducing agent containing boron or phosphorus. The phosphorus-based solutions produce nickel alloy deposits ranging from about 4% to about 12% phosphorus.

Nickel emissions from electroplating operations are of concern to EPA. Air emission estimation for electroplating is described in EPA's AP42 Manual. As part of this manual, the AP42 states: "Emissions from plating operations other than chromium electroplating can be estimated using the emission factors and operating parameters for chromium electroplating." Based on this theory, EPA developed a computer based Metal Finishing Facility Risk Screening Tool (MFFRST) which estimates emissions from electroplating operations. The tool is believed to be very accurate for chromium emissions, however, there was a need to validate air emissions for other metals such as nickel.

In Phase I of this project, it was determined that the MFFRST Model that used the AP42 methodology was not very accurate in estimating nickel emissions from nickel plating operations. Therefore, EPA has determined that it would be useful and important to obtain more **actual** nickel emission data from nickel plating operations to improve AP42 estimates using EPA-Approved testing methods (both Method 29 and Method 306A).

In addition, by modifying some of the operating parameters from one test to another within the plating process (i.e. surface tension, agitation methods, etc.) and then comparing the test results, EPA can determine the effects of these operating parameters on nickel emissions.

Process, Site, Facilities Tested

Actual data was collected by stack testing various types of nickel plating processes, operating under several different conditions, using EPA-Approved procedures. Similar testing was also conducted in Phase 1 of this project in 2004.

For Phase 2, the exhausted air from five different types of nickel plating processes was sampled and analyzed for nickel in order to obtain the nickel emissions from each process. These nickel plating processes were all production lines located in actual plating facilities. Each nickel plating process was tested several times under various conditions in order to observe the effects of that condition on nickel emissions. There were a total of twenty-three (23) actual stack tests conducted during this phase. The nickel plating processes that were tested were: Electroless Nickel Plating, Rack Watts Nickel Plating, Barrel Watts Nickel Plating, Rack Nickel Sulfamate Plating, and Rack Woods Nickel Strike Plating. The various conditions under which each of these processes was tested are summarized in the Table 1.

Some nickel plating processes were tested more (varying more operating conditions) than other nickel plating processes (i.e. Rack Watts Nickel is tested under more operating conditions than Woods Nickel Strike). The total number of stack tests (23) was based solely on the budget of the project. The decision on which plating processes were tested more than others was based on the popularity of that process in the industry. In other words, Rack Watts Nickel is far more common in the industry than Woods Nickel Strike so more emphasis (i.e. more conditions were varied) was given to Rack Watts Nickel.

The testing sites for each of these nickel plating processes were as follows:

1. Electroless Nickel Plating

Facility: Reliable Plating Company
Site: 1538 West Lake Street
Chicago, IL 60607

2. Rack Watts Nickel Plating

Facility: America's Best Quality Coatings

Site: 1602 S. First Street
Milwaukee, WI 53204

3. Barrel Watts Nickel Plating

Facility: Artistic Plating Company
Site: 405 W. Cherry Street
Milwaukee, WI 53212

4. Rack Nickel Sulfamate Plating

Facility: Elite Finishing, LLC
Site: 3270 S. 3rd Street
Milwaukee, WI 53207

5. Rack Woods Nickel Strike Plating

Facility: Artistic Plating Company
Site: 405 W. Cherry Street
Milwaukee, WI 53212

The six (6) stack tests that were completed on nickel plating processes as Phase 1 of this project are also included in Table 1 (identified as "Completed - Phase 1").

The actual nickel emission results from Phase 1 and Phase 2 were also used to estimate the effects of several plating operating parameters on nickel emissions. Based on the operating conditions selected and summarized in Table 1, we were able to estimate the effects of the following operating conditions/parameters on nickel emissions:

- air agitation versus pump (eductor) agitation
- the use of wetting agents to control the surface tension of the plating solution
- the use of simple mesh pads on the exhaust hood to control splashing
- the ratio of nickel emissions attributed to electrolysis (electroplating) versus attributed to barrel transfer (entrainment from splashing) in barrel plating
- the ratio of nickel emissions attributed to plating versus attributed to agitation and evaporation in electroless nickel plating
- the type of stack testing used (Method 29 versus Method 306A)

Table 2 summarizes these selected process parameters and which tests were compared to each other when estimating the effects of the selected parameter.

The data collected in Phase 1 was also used in Phase 2 to compare nickel emissions from various nickel processes and from same nickel processes operated under different conditions. The results

from Phase 1 and Phase 2 are comparable because identical sampling and testing methodologies was used in both phases (i.e. Method 29, three individual test runs per stack test, etc.) and because, in many cases, the same nickel plating site was tested in both Phase 1 and Phase 2 (except under different operating conditions).

TABLE 1

USEPA Nickel Project Process Summary

#	Process	Surface Tension/ Wetting Agent	Mesh Pad	Air Agitation/ Eductor	Tank Loading	Status	Site	Method
1	Electroless Nickel	NA	No		Low	**Completed- Phase 1**	Reliable	Method 29
2	Electroless Nickel	NA	No		Low	**Completed- Phase 1**	Reliable	Method 306A
3	Electroless Nickel				High	Phase 2 (USEPA-A)	Reliable	Method 29
4	Electroless Nickel			Eductor	High	Phase 2 (USEPA-B)	Reliable	Method 29
5	Electroless Nickel		Air	Eductor	High	Phase 2 (SCL 3)	Reliable	Method 29
6	Electroless Nickel	NA	No Air	Air	High	Phase 2 (SCL 4)	Reliable	Method 29
	NA	Yes	Air					
8	Rack Watts (bright) NA	Yes (30s) Yes				**Completed- Phase 1**	Site B	Method 29
9	Rack Watts (bright) NA	Yes (30s) No		Eductor	High	**Completed- Phase 1**	Site B	Method 29
10	Rack Watts (bright)	No (45-60)	Yes	Eductor	High	Phase 2 (USEPA- C)	ABQC	Method 29
11	Rack Watts (bright)	No (45-60)	Yes	Air	High	Phase 2 (SCL 1)	ABQC	Method 29
12	Rack Watts (bright)	No (45-60) No	No Air	Air High	High	Phase 2 (SCL 10)	ABQC	Method 29
13	Rack Watts (bright)	Yes (30s) No		Eductor	High	Phase 2 (USEPA- D)	ABQC	Method 29
14	Rack Watts (bright)	Yes				Phase 2 (SCL 2)	ABQC	Method 29
15	Rack Watts (bright)	Yes				Phase 2 (SCL 2)	ABQC	Method 306A
16	Barrel Watts (dull)	Yes (33) Yes				**Completed- Phase 1**	Artistic	Method 29
17	Barrel Watts (bright)	No (50s) Yes	Air	NA High	High	**Completed- Phase 1**	Artistic	Method 29
18	Barrel Watts (dull)	No (45-60) Yes	Yes Air	High		Phase 2 (USEPA-E)	Artistic	Method 29
19	Barrel Watts (dull)	No (45-60)	No		High	Phase 2 (SCL-9)***	Artistic	Method 29
20	Barrel Watts (dull)	Yes (30s) No	NA	High		Phase 2 (USEPA-F)	Artistic	Method 29
21	Barrel Watts (dull)	Yes (30s) No			High	Phase 2 (SCL-8)***	Artistic	Method 29
			NA	High				
22	Rack Sulfamate	Yes (30s)	NA			Phase 2 (SCL-5)	Elite	Method 29
23	Rack Sulfamate	Yes (30s) Yes	NA	Eductor High		Phase 2 (SCL-7)	Elite	Method 29
25	Rack Sulfamate	Yes (30s) No	NA	Eductor		Phase 2 (USEPA-G)	Elite	Method 29
26	Rack Sulfamate	Yes (30s)				Phase 2 (USEPA-G)	Elite	Method 306A
		No	Air	High				
27	Woods Strike (Rack)	No (50-60) No	No	High		Phase 2 (USEPA-I)	Artistic	Method 29
28	Woods Strike (Rack)	Yes (30s) Yes	No	NA High	High	Phase 2 (USEPA-H)	Artistic	Method 29
7	Woods Strike (Rack)	No (50-60) No	Yes Air	High		Phase 2 (SCL-6)	Artistic	Method 29
24	Woods Strike (Rack)	Yes (30s)				Phase 2 (SCL-11)	Artistic	Method 29
29	Woods Strike (Rack)	Yes (30s)	No NA	NA High		Phase 2 (USEPA-H)	Artistic	Method 306A
			NA	High				
		Yes	NA	High				
				High				

*** Absolutely no barrel transfer during testing

TABLE 2

Nickel Plating Process Operating Condition/Parameter	**Tests Compared to Evaluate the Affect of the Condition/Parameter on Nickel Emissions**
Air Agitation versus Pump (Eductor) Agitation	3-4, 5-6 (Electroless Nickel) 8-9, 10-11, 13-14 (Rack Watts) 22-23 (Rack Sulfamate)
The Use of Wetting agents	8-12, 10-13, 11-14, (Rack Watts) 16-17, 18-20, 19-21, (Barrel Watts) 27-28, 7-24 (Rack Woods Strike)
The Use of Simple Mesh Pads in Exhaust Hood	4-5, 3-6 (Electroless Nickel) 11-12, 9-13, 8-14 (Rack Watts) 16-20 17-18 (Barrel Watts) 23-25 (Rack Sulfamate) 7-27, 24-28 (Woods Nickel)
The Ratio of Nickel Emissions Attributed to Electrolysis (electroplating) Versus Attributed to Barrel Transfer (entrainment from splashing) in Barrel Plating	17-19, 16-21 (Barrel Watts)
The Ratio of Nickel Emissions Attributed to Plating Versus Attributed to Agitation/Evaporation in Electroless Nickel Plating	1-6, (Electroless Nickel)
The Type of Stack Testing Method Used (Method 29 versus Method 306A)	1-2 (Electroless Nickel) 14-15 (Rack Watts) 22-26 (Rack Sulfamate) 28-29 (Rack Woods Strike)

Project Objectives

The objectives of this project were to 1) develop actual nickel air emission data using EPA-Approved Methods 29 and 306A that may also be used in the future to establish regulations for nickel emissions and/or revise the AP-42 Methodology and consequently the MFFRST Model, 2) compare the total nickel emissions obtained using EPA Method 29 and EPA Method 306A to determine whether Method 306A is a viable alternative to Method 29 for determining nickel emissions, and 3) evaluate the factors that affect nickel emissions such as surface tension, product loading, type of process solution and type of agitation used in the process.

Section 2.0 PROJECT ORGANIZATION

Contacts

Organization	Contact	
USEPA	David Ferguson	(513-569-7518)
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ABQC Company	Matthew Kirchner	(414-649-4900)
Elite Finishing	Jaime Maliszewski	(414-489-9710)
Reliable Plating Company	Jim Greenwell	(312-421-4747)
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Name	**Responsibility**
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Name	Responsibility
Jeff Zak, P.E., SCL	Planning Coordination, Sample Collection, Sample Custody, Physical Measurement, Process Measurements, Data Validation, Data Reduction, Report Preparation
Linda Kenny, SCL	Analytical Measurements, QA Manager
Michael Huenink, ETE	Sample Collection, Physical Measurements, Process Measurements
John Lindstedt, Artistic	Testing Site Contact
Jaime Maliszewski, Elite	Testing Site Contact
Matthew Kirchner, ABQC	Testing Site Contact
Jim Greenwell, Reliable	Testing Site Contact
Chicago Plastics	Mesh Pad Supplier
Serfilco	Eductor Supplier

Section 3.0 PROCEDURE

General Approach and Testing Methodology

Three (3) test runs were conducted on each of the twenty-three (23) different nickel plating operations/conditions listed in Table 1 in order to measure the nickel concentration in the air emitted from each of these processes. Twenty (20) of the tests were conducted in accordance with EPA-Approved Method 29 of 40 CFR Part 60 Appendix A-8 (A copy of Method 29 is included in Appendix A). All applicable operating parameters were observed and recorded throughout the tests (i.e current density, temperature of plating solution, amperage, plating solution concentration, tank dimensions, etc.).

The nickel emissions from the remaining three (3) processes/conditions were measured in accordance with Method 306A of 40 CFR Part 63, Appendix A (with a couple of minor deviations detailed in Section 4.0). A copy of Method 306A of 40 CFR Part 63 Appendix A is included in Appendix B of this QAPP. The purpose of these tests was to compare the results obtained from Method 29 and Method 306A.

The stack sampling was conducted during normal plating operations at the selected facilities. Since normal plating operations at job-shop electroplating facilities are inherently **non**-steady state, the stack sampling did not rely on steady state conditions of the plating operations.

In order to ensure that the ventilation systems on each of the nickel plating processes were operating efficiently (capturing and exhausting all of the nickel emissions from the process), the ambient air near each process was also monitored/tested during the test runs. The ambient air was tested with two (2) OSHA-approved internal air monitors at each of the processes. The arithmetic mean of the two results was compared to OSHA worker exposure limits for nickel in order to grade the efficiency of the ventilation systems. If the average nickel concentration in the ambient air was below OSHA worker exposure limits for nickel, the ventilation system for that specific process was deemed efficient.

Sampling/Monitoring Points

1) Sampling Port Locations for Nickel Emissions Testing

The locations of the sampling ports in the exhaust stacks of each of the five individual nickel plating processes were determined in accordance with Section 8.1.2 of Method 29 of 40 CFR Part 60 Appendix A-8. Section 8.1.2 of Method 29 references Section 8.2.1 of Method 5 of 40 CFR Part 60 Appendix A which further references Method 1 of 40 CFR Part 60 Appendix A. Section 11.0 of Method 1 states that the sampling ports must be positioned at least two (2) stack or duct diameters downstream and a half diameter upstream from any flow disturbance. The exhaust systems from all five nickel plating testing sites were constructed so that they met this sampling port location requirement.

The sampling point locations were recorded into the field log sheets included with Appendix D of this report.

2) Traverse Point Locations for Nickel Emissions Testing

The location of the sampling (traverse) points within the exhaust stacks of each of the five individual nickel plating processes were determined in accordance with Section 11.0 of Methods 1 and 1A of 40 CFR Part 60 Appendix A. Method 1 is to be used for ducts with diameters greater than 12 inches. Method 1A is to be used for round ducts with a diameter less than 12 inches. The traverse point locations were documented and recorded on the field log sheets located in Appendix D of this report.

3) Location of Ambient Air Monitors

The ambient air monitors used to determine the effectiveness of the ventilation systems of each of the five nickel plating processes were positioned on stands or taped to columns at the perimeter of the nickel plating tanks.

4) Frequency of the Sampling Events:

Three (3) stack tests were conducted at each of the 29 testing conditions listed in Table 1 with the exception of Condition 13 in which processing problems limited the testing to one (1) stack test (See page 32 for a detailed explanation). Otherwise, all three test runs were conducted within the same day under similar operating conditions.

Section 4.0 DISCUSSION OF SAMPLING/ANALYTICAL PROCEDURES

Sampling Procedures

The sampling procedures described in Section 8.0 of EPA Method 29 of 40 CFR Part 60 Appendix A-8 (which further references Section 8.5 of Method 5 of 40 CFR Part 60 Appendix A-3) were followed when sampling the air emitted from twenty (20) of the twenty three nickel plating process scenarios listed in Table 1 for Phase 2. A copy of Method 5 of 40 CFR Part 60 Appendix A-3 was included in Appendix G of the approved QAPP.

The following parameters were recorded from each nickel plating processes throughout the testing/sampling:

- Temperature of Plating Solution
- Current Density (where applicable)
- Plating Bath Concentration, including surface tension
- Tank Dimensions
- Amperage/Voltage (where applicable)
- Types of Parts being Plated
- Plating Time
- Freeboard Height
- Air Agitation Rate (where applicable)
- Solution Circulation Rate

After the samples were collected from each test run, each sample container was marked with the following data:

- Nickel Plating Process Type
- Site Location
- Date
- Run #

Scientific Control Laboratories was responsible for completing the chain of custodies for all the samples taken at the site(s). The samples were in the custody of Scientific Control personnel at all times from each site to the Scientific Control Laboratories where they were analyzed for nickel. There was no splitting of the samples. Scientific Control Laboratories was responsible for all sampling and analysis. Environmental Technology and Engineering was subcontracted to supply the sampling equipment and calibration of sampling equipment.

Stack Testing Using USEPA Method 306A

The sampling procedure described in Section 8.0 of EPA Method 306A of 40 CFR Part 63 Appendix A (Included in Appendix C of approved QAPP) was followed when sampling the air emitted from three of the twenty three nickel plating process scenarios listed in Table 1 (with the exception of the minor deviations listed below)..

The following factors were recorded from the nickel plating processes throughout the Method 306A testing/sampling:

- Temperature of Plating Solution
- Plating Bath Concentration
- Tank Dimensions
- Types of Parts being Plated
- Freeboard
- Air Agitation Rate (where applicable)
- Solution Circulation Rate

After the samples were collected from each test run, each sample container was marked with the following data:

- Nickel Plating Process Type
- Site Location
- Date
- Run #

Scientific Control Laboratories, Inc. (SCL) was responsible for completing the chain of custodies for all the 306A samples taken at the site. The samples were in the custody of SCL personnel at all times from the site to the SCL laboratory where they were analyzed for nickel. There will be no splitting of the samples. SCL was responsible for all sampling and analysis; there were no subcontractors involved in this part of the project.

<u>Modifications to Sampling Procedures in Method 306A</u>

There were a few deviations to the EPA-Approved Method 306 A Procedure for this project. These modifications were discussed in the approved Quality Assurance Project Plan (QAPP) and include the following:

1) Section 8.1.1.9.1 B Instead of using 0.1N NaOH or 0.1N NaHCO3 as absorbing solution in the first impinger of the sampling train, a mixture of 5% HNO_3 and 10% H_2O_2 was used. This absorbing solution is the recommended absorbing solution for nickel as stipulated in EPA-Approved Method 29 of Appendix A of 40 CFR Part 60.

2) The current Method 306A (dated October 17, 2000) is a revision of the original version of Method 306A (dated January 25, 1995). The author of the original method (Frank

Clay of the USEPA) has been very critical of the new method. Mr. Clay has written an article, A Revised Method 306A- Second Review and Critique, that details the errors, omissions, and superfluous material that are found in the new 306A Method and offers some recommendations on how to improve the current method. After reading Mr. Clay's article and based on our experience of performing Method 306A, Scientific Control Laboratories concurred with Mr. Clay's opinion and included the following applicable recommendations (minor deviations) when using Method 306A.

1. A rocker switch was used to start and stop the sampling train instead of a bypass valve.
2. All runs were performed in a single day.
3. The cotton ball in the third impinger was omitted from the sampling train.
4. When recovering the sample, the tubing and nozzle (and the tubing between the first and second impinger) was rinsed three times in each direction with the absorbing solution instead of two.

A copy of Mr. Clay's article that justifies these recommendations is located in Appendix D of the approved QAPP. It is SCL's opinion that these proposed modifications are minor deviations that, in no way, affected the accuracy of the sampling results.

Ambient Air Monitoring

The sampling procedures as detailed in Section 5 (specifically Method 5.4) of OSHA-Approved Method ID-121 were followed when monitoring the internal air near the five (5) nickel plating processes. This sampling was conducted during all twenty-three (23) tests. A copy of OSHA Method ID-121 is included in Appendix F of the QAPP. Scientific Control Laboratories calibrated the air sampling pumps prior to each sampling.

Method 29 and Method 306A Field Blanks

Field Blanks were used to determine the quantity, if any, of nickel contamination in the virgin scrubbant (HNO3/H2O2) and rinse (HNO3) materials. The scrubbant material is used to capture the nickel emitted from the various nickel plating processes. The rinse material is used to rinse the probe and scrubbers after the testing. The nickel concentration present in the virgin scrubbant and rinse materials, if any, is subtracted from the nickel concentrations obtained from the actual testing.

Before testing, batches of virgin scrubbant and rinse materials were formulated at Scientific Control Laboratories.

Laboratory Analyses

The samples obtained from the stack testing were analyzed for nickel in accordance with the methods detailed in Section 11.0 of Method 29 of 40 CFR Part 60 Appendix A or Section 11 of Method 306A of 40 CFR Part 63 Appendix A. The analyses were conducted by Atomic Absorption-AA (Section 11.1.2 of Method 29). Only total nickel emissions were measured

from the various nickel plating processes using Method 29. Particulates were not measured as part of this project.

The samples obtained from the OSHA internal air monitoring were analyzed for nickel in accordance with Section 6 of OSHA-Approved Method ID-121. The analyses were performed by ICAP-AES.

The QA/QC program(s) described in Sections 9.0 and 10.0 of Method 29 of 40 CFR Part 60 Appendix A-8 and Method 306A of 40 CFR Part 63 Appendix A were followed when sampling the nickel plating system stacks. The QA/QC program described in Sections 9.0 and 10.0 of Method 29 of 40 CFR Part 60 Appendix A were followed when analyzing the resultant samples for nickel.

The laboratory QA/QC data for the stack testing samples is included in Appendix E of this report.

The QA/QC program described in Section 6 of OSHA-Approved Method ID-121 was followed when analyzing the filter samples from the internal air monitoring for nickel. The laboratory QA/QC data for the ambient air samples is included in Appendix F of this report.

Section 5.0 SUMMARY OF RESULTS

The results of the project are presented in the following tables:

Table 3. Summary of Nickel Emissions Obtained from Phase 1 and Phase 2 Stack Testing

Table 4. Comparison of Nickel Emissions (Air Agitation versus Eductors)

Table 5. Effects of Wetting Agents on Nickel Emissions

Table 6. Effects of Mesh Pads on Nickel Emissions

Table 7. Effects of Barrel Transfer on Nickel Emissions from Watts Nickel Barrel Plating

Table 8. Effects of Product Loading on Nickel Emissions from Electroless Nickel Plating

Table 9. Nickel Emissions Method 29 Compared to Method 306A

Table 10A-10E
Operating Parameters Observed During Stack Testing for Nickel Emissions

Table 11. Ambient Air Nickel Concentrations Observed During Stack Testing

The data presented in Table 3 is the actual nickel emission concentrations from each of the three (3) individual test runs from all twenty-nine conditions (29) that were tested (including the six conditions tested as part of Phase 1). The nickel emission concentrations were calculated using the analytical data obtained in accordance with the Method 29 Stack Testing procedure (or the equivalent Method 306A Stack Testing Procedure) and were performed in accordance with Section 12 of Method 29 of 40 CFR Part 60 Appendix A-8 (or the equivalent Section 12 of Method 306A depending on which method was used for the sampling). The data used for these calculations for the twenty-three Phase 2 testing conditions is included in Appendix A of this report. The data used for the calculations for the six Phase 1 testing conditions is included in Appendix A of the Final Phase 1 Report. The average of the three (3) test runs for each of the twenty-nine (29) conditions is also reported in Table 3.

The data presented in Table 4 summarizes the effects of air agitation versus eductors on nickel emissions in electroless nickel, Watts nickel, and nickel sulfamate solutions based on the testing comparison protocol listed in Table 2.

The data presented in Table 5 summarizes the effects of wetting agents on nickel emissions in Watts nickel, nickel sulfamate, and Woods nickel strike solutions based on the testing comparison protocol listed in Table 2.

The data presented in Table 6 summarizes the effects of mesh pads on nickel emissions in electroless nickel, Watts nickel, nickel sulfamate, and Woods nickel strike solutions based on the testing comparison protocol listed in Table 2.

The data presented in Table 7 summarizes the effects of barrel transfer on nickel emissions from Watts nickel barrel plating based on the testing comparison protocol listed in Table 2.

The data presented in Table 8 summarizes the effects of product loading on nickel emissions from Electroless Nickel Plating based on the testing comparison protocol listed in Table 2.

The data presented in Table 9 are the stack test results obtained from testing the same process (electroless nickel, Watts nickel, nickel sulfamate, and Woods nickel strike) using two different sampling procedures (EPA Method 29 and EPA Method 306A).

The data presented in Table 10A through 10E are the individual nickel plating process operating parameters that were recorded during the stack tests.

The data presented in Table 11 are the ambient air nickel concentrations as calculated using the analytical data obtained in accordance with OSHA-Approved Method ID-121. These calculations were performed in accordance with Section 7 of OSHA-Approved Method ID-121. The OSHA eight (8) hour, time-weighted average PEL for nickel is also included in the table for comparison purposes. The data used for these calculations are included in Appendix B of this report.

TABLE 3
Summary of Nickel Emissions Obtained from Phase 1 and Phase 2 Stack Testing

#	Process	Surface Tension/ Wetting Agent**	Mesh Pad	Air Agitation/ Eductor	Tank Loading	Results (mg/dscm) Run #1	Run #2	Run #3	Average
1*	Electroless Nickel				Low	0.478	0.126	0.220	**0.275**
2*	Electroless Nickel (306A)	NA			Low	0.060	0.311	0.381	**0.251**
3	Electroless Nickel					0.011	0.006	0.005	**0.007**
4	Electroless Nickel			Eductor	High	0.024	0.012	0.004	**0.013**
5	Electroless Nickel NA	No		Air Eductor	High	0.142	0.192	0.111	**0.148**
6	Electroless Nickel	NA No	No	Air Air	High	0.124	0.313	0.505	**0.314**
	NA	Yes		Air High					
8*	Rack Watts (bright) NA	Yes (38) Yes				0.048	0.044	0.032	**0.041**
9*	Rack Watts (bright) NA	Yes (38) No		Eductor	High	0.016	0.027	0.028	**0.024**
10	Rack Watts (bright)	No (58)	Yes	Eductor	High	0.043	0.003	0.016	**0.021**
11	Rack Watts (bright)	No (57)	Yes			0.057	0.012	0.005	**0.025**
12	Rack Watts (bright)	No (57) No	No	Air High		0.051	0.133	0.056	**0.080**
13	Rack Watts (bright)	Yes (42) No		Eductor	High	0.015	NA	NA	**0.015**
14	Rack Watts (bright)	Yes (37)				0.003	0.004	0.003/0.037/0.008	**0.011**
15	Rack Watts (bright) (306A)	Yes (37)	Yes	Air Air High	High	0.014	0.008	0.012	**0.011**
				Air High					
16*	Barrel Watts (dull)	Yes (34) Yes				0.080	0.061	0.118	**0.086**
17*	Barrel Watts (bright)	No (57) Yes	No	Air High		0.975	1.495	0.921	**1.130**
18	Barrel Watts (dull)	No (68)	Yes			0.009	<0.005	0.023	**0.012**
19	Barrel Watts (dull)***	No (68)	No			0.056	0.019	0.228	**0.101**
20	Barrel Watts (dull)	Yes (31) No		NA High		0.009	0.004	0.012	**0.008**
21	Barrel Watts (dull)***	Yes (31)		NA High		0.023	0.007	0.009	**0.013**
				NA High					
22	Rack Sulfamate	Yes (39)		NA High		0.022	0.011	0.010	**0.014**
23	Rack Sulfamate	Yes (44) Yes		NA Eductor High	High	0.018	0.013	0.020	**0.017**
25	Rack Sulfamate	Yes (44) No		NA Eductor High	High	0.004	0.006	0.006	**0.005**
26	Rack Sulfamate (306A)	Yes (35)				0.031	0.061	0.053	**0.048**
		No		Air High					
27	Woods Strike (Rack)	No (73) No	No			0.614	0.282	0.515	**0.470**
28	Woods Strike (Rack)	Yes (30s) Yes				0.129	0.162	0.252	**0.181**
7	Woods Strike (Rack)	No (61) No	Yes	Air High		0.063	0.081	0.236	**0.127**
24	Woods Strike (Rack)	Yes (30s)				0.048	0.077	0.071	**0.065**
29	Woods Strike (Rack) (306A)	Yes (40-50s)	No	NA NA High	High	0.400	0.165	0.218	**0.261**
		No		NA High					
				NA High					
		Yes		NA High					

* Phase 1
** The units for the surface tension value in the parentheses is dynes/cm
*** Absolutely no barrel transfer during testing

Table 4
Comparison of Nickel Emissions (Air Agitation versus Eductors)

Process:	**Air Agitation**	**Eductors**
Electroless Nickel	0.124	0.142
(No Mesh Pad)	0.313	0.192
6 vs 5	0.505	0.111
	0.314	**0.148**
Electroless Nickel	0.011	0.024
(Mesh Pad)	0.006	0.012
3 vs 4	0.005	0.004
	0.007	**0.013**
Rack Watts	0.048	0.016
(No Mesh Pad, Wetting Agent)	0.044	0.027
8 vs 9	0.032	0.028
	0.041	**0.024**
Rack Watts	0.057	0.043
(Mesh Pad, No Wetting Agent)	0.012	0.003
11 vs 10	0.005	0.016
	0.025	**0.021**
Rack Watts	0.003	0.015
(Mesh Pad, Wetting Agent)	0.004	NA
14 vs 13	0.003/0.037/0.008	NA
	0.011	**0.015**
Rack Sulfamate	0.022	0.043
(No Mesh Pad, Wetting Agent)	0.011	0.003
22 vs 23	0.010	0.016
	0.014	**0.017**

Results reported in mg/dscm

Table 5
Effects of Wetting Agents on Nickel Emissions

Process:	**No Wetter**	**Wetter**
Rack Watts	0.051	0.048
(No Mesh Pad, Air)	0.133	0.044
12 vs 8	0.056	0.032
	0.080	**0.041**
Rack Watts	0.043	0.015
(Mesh Pad, Eductor)	0.003	NA
10 vs 13	0.016	NA
	0.021	**0.015**
Rack Watts	0.057	0.003
(Mesh Pad, Air)	0.012	0.004
11 vs 14	0.005	0.003/0.037/0.008
	0.025	**0.011**
Barrel Watts	0.975	0.080
(No Mesh Pad)	1.495	0.061
17 vs 16	0.921	0.118
	1.130	**0.086**
Barrel Watts	0.009	0.009
(Mesh Pad)	<0.005	0.004
18 vs 20	0.023	0.012
	0.012	**0.008**
Barrel Watts	0.056	0.023
(No Mesh Pad, No Transfer)	0.019	0.007
19 vs 21	0.228	0.009
	0.101	**0.013**
Wood Strike	0.614	0.129
(No Mesh Pad)	0.252	0.162
27 vs 28	0.515	0.252
	0.470	**0.181**
Wood Strike	0.063 (0.089)*	0.048
(Mesh Pad)	0.081 (0.159)*	0.047
7 vs 24	0.236	0.071
	0.127 (0.161)*	**0.065**

Results reported in mg/dscm
* Results adjusted to compensate for cfm difference between Condition 7 and 24 (See Table 10E)

Table 6
Effects of Mesh Pads on Nickel Emissions

Process:	**No Mesh Pad**	**Mesh Pads**
Electroless Nickel	0.142	0.024
(Eductor)	0.192	0.012
5 vs 4	0.111	0.004
	0.148	**0.013**
Electroless Nickel	0.124	0.011
(Air)	0.313	0.006
6 vs 3	0.505	0.005
	0.314	**0.007**
Rack Watts	0.051	0.057
(No Wetting Agent, Air)	0.133	0.012
12 vs 11	0.056	0.005
	0.080	**0.025**
Rack Watts	0.016	0.015
(Wetting Agent, Eductor)	0.027	NA
9 vs 13	0.028	NA
	0.024	**0.015**
Rack Watts	0.048	0.003
(Wetting Agent, Air)	0.046	0.004
8 vs 14	0.032	0.003/0.037/0.008
	0.041	**0.011**
Barrel Watts	0.080	0.009
(Wetting Agent)	0.061	0.004
16 vs 20	0.118	0.012
	0.086	**0.008**
Barrel Watts	0.975	0.009
(No Wetting Agent)	1.495	<0.005
17 vs 18	0.921	0.023
	1.130	**0.012**
Nickel Sulfamate	0.018	0.004
(Wetting Agent, Eductor)	0.013	0.006
23 vs 25	0.020	0.006
	0.017	**0.005**
Wood Strike	0.614	0.063 (0.089)*
(No Wetting Agent)	0.282	0.081 (0.159)*
27 vs 7	0.515	0.236
	0.470	**0.127 (0.161)***
Wood Strike	0.129	0.048
(Wetting Agent)	0.162	0.077
28 vs 24	0.252	0.071
	0.181	**0.065**

Results reported in mg/dscm

* Results adjusted to compensate for cfm difference between Condition 7 and 27 (See Table 10E)

Table 7
Effects of Barrel Transfer on Nickel Emissions from Watts Nickel Barrel Plating

Process:	**Barrel Transfer**	**No Barrel Transfer**
Barrel Watts	0.975	0.056
(No Wetting Agent)	1.495	0.019
17 vs 19	0.921	0.228
	1.130	**0.101**
Barrel Watts	0.080	0.023
(Wetting Agent)	0.061	0.007
16 vs 21	0.118	0.009
	0.086	**0.013**

Results reported in mg/dscm

Table 8
Effects of Product Loading on Nickel Emissions from Electroless Nickel Plating

Process:	**Low Tank Loading**	**High Tank Loading**
Electroless Nickel	0.478 (0.290)*	0.124
(No Mesh Pad)	0.126 (0.078)*	0.313
1 vs 6	0.220 (0.135)*	0.505
	0.277 (0.167)*	**0.314**

Results reported in mg/dscm
* Results adjusted to compensate for cfm difference between Condition 1 and 6 (See Table 10A)

Table 9
Nickel Emissions Method 29 Compared to Method 306A

Process:	**Method 29**	**Method 306A**
Electroless Nickel	0.478	0.080
(No Mesh Pad)	0.126	0.311
1 vs 2	0.220	0.381
	0.277	**0.251**
Rack Watts	0.003	0.014
(Wetting Agent, Mesh Pad, Air)	0.004	0.008
14 vs 15	0.003/0.037/0.008	0.012
	0.011	**0.011**
Rack Sulfamate	0.022	0.031
(Wetting Agent, No Mesh Pad)	0.011	0.061
22 vs 26	0.010	0.053
	0.014	**0.048**
Wood's Strike	0.129	0.400
(Wetting Agent, No Mesh Pad)	0.162	0.165
28 vs 29	0.252	0.218
	0.181	**0.216**

Results reported in mg/dscm

Table 10A. Operating Parameters Observed During Stack Testing of Electroless Nickel Process

	Surface Tension	Nickel Content (oz/gal)	Time Actual Plating (min)*	# of Parts	Freeboard Height (in)**	Average Surface Area Plated (ft^2)	Ventilation (cfm)	Emissions (mg/m^3)
Condition 1, Run #1***	35.0	0.77	30	88	4	25.7	1,214	0.478
Condition 1, Run #2***	35.0	0.77	12	40	3	5.56	1,240	0.126
Condition 1, Run #3***	35.0	0.77	12	166	3	23.0	1,227	0.220
Condition 2, Run #1***	39.1	0.85	90	3	3	0.52	NA	0.060
Condition 2, Run #2***	39.1	0.85	60	1080	4	13.0	NA	0.311
Condition 2, Run #3***	39.1	0.85	0	0	4	0	NA	0.381
Condition 3, Run #1	68.7	0.81	115	72-416	8	5.8-22.3	1,776	0.011
Condition 3, Run #2	68.7	0.81	115	108-126	8	27-31.5	1,860	0.006
Condition 3, Run #3	68.7	0.81	105	1-126	8	12-31.5	1,860	0.005
Condition 4, Run #1	68.7	0.81	120	2,400 (barrel)	8	17.7	1,999	0.024
Condition 4, Run #2	68.7	0.81	120	2,400 (barrel)	8	17.7	2,023	0.012
Condition 4, Run #3	68.7	0.81	120	2,400 (barrel)	8	17.7	2,037	0.004
Condition 5, Run #1	68.7	0.81	120	1****	8	12.0	2,003	0.142
Condition 5, Run #2	68.7	0.81	120	1****	8	12.0	2,003	0.192
Condition 5, Run #3	68.7	0.81	120	1****	8	12.0	2,027	0.111
Condition 6, Run #1	68.7	0.81	114	15-100	8	3-16	2,039	0.124
Condition 6, Run #2	68.7	0.81	120	1****	8	12.0	1,984	0.313
Condition 6, Run #3	68.7	0.81	120	1****	8	12.0	1,929	0.505

* Out of 120 minute testing period
** Measured from vent to solution level (or foam blanket level, if applicable)
*** Phase 1 Testing
****1 Dummy Part

Table 10B. Operating Parameters Observed During Stack Testing of Rack Watts Nickel Process

	Amps	Current Density (Amps/ft^2)	Time Actual Plating (min)*	Surface Tension***	Freeboard Height (in)**	Ave Surface Area Plated (ft^2)	Nickel Content	Ventilation (cfm)	Emissions (mg/m^3)
Condition 8, Run #1****	295	42.9	100	38	9-10.5	7.0	10.9	261	0.048
Condition 8, Run #2****	300	42.9	100	38	9.5-10.5	7.0	10.9	271	0.044
Condition 8, Run #3****	300	42.1	100	38	9.5	7.0	10.9	264	0.032
Condition 9, Run #1****	288	41.1	100	38	9.5	7.0	10.9	272	0.016
Condition 9, Run #2****	280	39.4	100	38	9.5	7.0	10.9	275	0.027
Condition 9, Run #3****	276	40.0	100	38	9.5	7.0	10.9	262	0.028
Condition 10, Run #1	210	20-26	88	58	9	8.0-10.5	9.4	2,190	0.043
Condition 10, Run #2	210	20-45	84	58	9	4.5-10.5	9.4	2,200	0.003
Condition 10, Run #3	210	30	86	58	9	7.0	9.4	2,171	0.016
Condition 11, Run #1	230	28.8	100	57	9	8.0	8.2	2,168	0.057
Condition 11, Run #2	210	20.0	100	57	9	10.5	8.2	2,184	0.012
Condition 11, Run #3	210	20-26	88	57	6	8.0-10.5	8.2	2,193	0.005
Condition 12, Run #1	240	25.7	109	57	9	9.3	8.2	2,350	0.051
Condition 12, Run #2	240	25.7	105	57	9	9.3	8.2	2,362	0.133
Condition 12, Run #3	180		95	57	9		8.2	2,355	0.056
Condition 13, Run #1	130	18.6	114	42	9	7.0	9.6	2,158	0.015
Condition 14, Run #4	130	18.6	101	42	9	7.0	9.6	2,161	0.037
Condition 14, Run #5	130-180		100	42	9		9.6	2,159	0.008
Condition 14, Run #1	125-200	17-20	105	37	9	7.4-11.7	11.4	2,114	0.003
Condition 14, Run #2	120-200	17-20	96	37	9	6-11.7	11.4	2,112	0.004
Condition 14, Run #3	0	0	0	37	9	0	11.4	2,129	0.003
Condition 15, Run #1	200	17	98	37	9	11.7	11.4	NA	0.014
Condition 15, Run #2	200-240	17-20	92	37	9	11.7-12.0	11.4	NA	0.008
Condition 15, Run #3	120-240	20-30	96	37	9	4.0-12.0	11.4	NA	0.012

* Out of 120 minute testing period

** Measured from vent to solution level (or foam blanket level, if applicable)

*** dynes/cm measured with tensiometer.

**** Phase 1 Testing

Table 10C. Operating Parameters Observed During Stack Testing of Barrel Watts Nickel Process

	Surface Tension	Current Density (Amps/ft^2)	Amps	Time Actual Plating (min)*	# of Barrels***	Freeboard Height (in)**	Ave Surface Area Plated (ft^2)	Nickel Content	Ventilation (cfm)	Emissions (mg/m^3)
Condition 16, Run #1****	34	3.35-3.78	480-540	110	3	5	143	8.4	1,738	0.080
Condition 16, Run #2****	34	3.50-3.72	500-560	105	3	5	143	8.4	1,748	0.061
Condition 16, Run #3****	34	3.50-3.72	500-560	107	2	5	143	8.4	1,782	0.118
Condition 17, Run #1****	57	1.82	700	117	2	8.0	384	9.8	1,752	0.975
Condition 17, Run #2****	57	1.82	700	114	3	8.5	384	9.8	1,603	1.495
Condition 17, Run #3****	57	1.82-2.46	600-700	113	3	9	244-384	9.8	1,608	0.721
Condition 18, Run #1	68	5.28-7.46	300-400	110	4	8	40-76	8.3	1,081	0.009
Condition 18, Run #2	68	5.28	400	118	3	8	76	8.3	1,545	<0.005
Condition 18, Run #3	68	5.28	400	118	3	8	76	8.3	1,642	0.023
Condition 19, Run #1	68	5.28	400	120	1	8	76	8.3	1,778	0.056
Condition 19, Run #2	68	5.28	400	120	1	8	76	8.3	1,674	0.019
Condition 19, Run #3	68	5.28	400	120	1	8	76	8.3	1,542	0.228
Condition 20, Run #1	31	1.56-16.9	100-600	88	5	8	36-322	8.4	1,463	0.009
Condition 20, Run #2	31	5.28	400	106	3	8	76	8.4	1,521	0.004
Condition 20, Run #3	31	5.28	400	116	3	8	76	8.4	1,462	0.012
Condition 21, Run #1	31	5.28	400	120	1	8	76	8.4	1,621	0.023
Condition 21, Run #2	31	5.28	400	120	1	8	76	8.4	1,661	0.007
Condition 21, Run #3	31	5.28	400	120	1	8	76	8.4	1,597	0.009

* Out of 120 minute testing period
** Measured from vent to solution level (or foam blanket level, if applicable)
*** Number of barrels plated during testing time period.
**** Phase 1 Testing

Table 10D. Operating Parameters Observed During Stack Testing for Rack Nickel Sulfamate Process

	Current Density (Amps/ft^2)	Time Actual Plating (min)	Surface Tension***	Freeboard Height (in)**	Average Surface Area Plated (ft^2)	Nickel Content	Ventilation (cfm)	Emissions (mg/m^3)
Condition 22, Run #1	39.6-61.9	96	39	8	14.7-26.6	8.59	3,789	0.022
Condition 22, Run #2	31.9-75.5	96	39	9	5.56-26.6	8.59	3,950	0.011
Condition 22, Run #3	27.5-66.9	96	39	9	14.7-26.4	8.57	3,815	0.010
Condition 23, Run #1	35.1-61.9	98	44	9	9.4-24.0	7.73	4,237	0.018
Condition 23, Run #2	34.8-56.3	90	44	9	17.8-23.0	7.73	4,011	0.013
Condition 23, Run #3	37.2-61.9	64	44	9	9.4-24.50	7.73	4,024	0.020
Condition 25, Run #1	26.4-59.7	75	44	9	9.40-22.7	7.73	3,706	0.004
Condition 25, Run #2	27.7-47.7	45	44	9	9.40-24.0	7.73	3,568	0.006
Condition 25, Run #3	41.7	99	44	9	24.0	7.73	3,639	0.006
Condition 26, Run #1	35-61.9	88	35	9	9.4-26.6	8.51	NA	0.031
Condition 26, Run #2	16.9-49.5	77	35	9	9.4-24.0	8.51	NA	0.061
Condition 26, Run #3	25-61.9	85	35	9	17.8-26.6	8.51	NA	0.053

* Out of 120 minute testing period
** Measured from vent to solution level (or foam blanket level, if applicable)
*** dynes/cm measured with tensiometer.

Table 10E. Operating Parameters Observed During Stack Testing for Wood's Nickel Strike Process

	Current Density (Amps/ft^2)	Time Actual Plating (min)*	Surface Tension***	Freeboard Height (in)**	Ave Surface Area Plated (ft^2)	Nickel Content	Ventilation (cfm)	Emissions (mg/m^3)
Condition 7, Run #1	25.6	120	61	8.5	12.5	3.17	1,155	0.063
Condition 7, Run #2	25.6	120	61	8.5	12.5	3.17	1,610	0.081
Condition 7, Run #3	25.6	120	61	8.5	12.5	3.17	818	0.236
Condition 24, Run #1	25.6	120	37-40	8.5	12.5	3.34	850	0.048
Condition 24, Run #2	25.6	120	37-40	8.5	12.5	3.34	886	0.077
Condition 24, Run #3	25.6	120	37-40	8.5	12.5	3.34	867	0.071
Condition 27, Run #1	4.9-25.6	119	73	8.5	12.5-51.3	2.43	872	0.614
Condition 27, Run #2	25.6	120	73	8.5	12.5	2.43	859	0.282
Condition 27, Run #3	25.6	120	73	8.5	12.5	2.43	879	0.515
Condition 28, Run #1	25.6	120	37-40	8.5	12.5	1.62	860	0.129
Condition 28, Run #2	25.6	120	37-40	8.5	12.5	1.62	887	0.162
Condition 28, Run #3	25.6	120	37-40	8.5	12.5	1.62	892	0.252
Condition 29, Run #1	25.6	120	40-50	8.5	12.5	1.62	NA	0.400
Condition 29, Run #2	25.6	120	40-50	8.5	12.5	1.62	NA	0.165
Condition 29, Run #3	25.6	120	40-50	8.5	12.5	1.61	NA	0.218

* Out of 120 minute testing period
** Measured from vent to solution level (or foam blanket level, if applicable)
*** dynes/cm measured with tensiometer.

Table 11. Ambient Air Nickel Concentrations

	Nickel Concentration Ambient Air (mg/m^3)	OSHA Nickel Concentration Limit (mg/m^3)	Adequate Ventilation
Condition 3 (Reliable – East)	0.0062	1.00	Yes
Condition 3 (Reliable – West)	0.0053	1.00	Yes
Condition 4 (Reliable – East)	0.0060	1.00	Yes
Condition 4 (Reliable – West)	0.0053	1.00	Yes
Condition 5 (Reliable – East)	0.0069	1.00	Yes
Condition 5 (Reliable – West)	0.0063	1.00	Yes
Condition 6 (Reliable – East)	0.0156	1.00	Yes
Condition 6 (Reliable – West)	0.0122	1.00	Yes
Condition 10 (ABQC – East)	0.0065	1.00	Yes
Condition 10 (ABQC – West)	0.0012	1.00	Yes
Condition 11 (ABQC – East)	0.0199	1.00	Yes
Condition 11 (ABQC – West)	0.0029	1.00	Yes
Condition 12 (ABQC – East)	0.0657	1.00	Yes
Condition 12 (ABQC – West)	0.0074	1.00	Yes
Condition 13 (ABQC – East)	0.0694	1.00	Yes
Condition 13 (ABQC – West)	0.0047	1.00	Yes
Condition 14 (ABQC – East)	0.0062	1.00	Yes
Condition 14 (ABQC – West)	0.0043	1.00	Yes
Condition 15 (ABQC – East)	0.0041	1.00	Yes
Condition 15 (ABQC – West)	0.0013	1.00	Yes
Condition 18 (Artistic – North)	0.0025	1.00	Yes
Condition 18 (Artistic – South)	0.0031	1.00	Yes
Condition 19 (Artistic – North)	0.0004	1.00	Yes
Condition 19 (Artistic – South)	0.0004	1.00	Yes
Condition 20 (Artistic – North)	0.0011	1.00	Yes
Condition 20 (Artistic – South)	0.0009	1.00	Yes

Table XI. Ambient Air Nickel Concentrations (Cont.)

	Nickel Concentration Ambient Air (mg/m^3)	OSHA Nickel Concentration Limit (mg/m^3)	Adequate Ventilation
Condition 21 (Artistic – North)	0.0008	1.00	Yes
Condition 21 (Artistic – South)	0.0008	1.00	Yes
Condition 22 (Elite – North)	0.0026	1.00	Yes
Condition 22 (Elite – South)	0.0046	1.00	Yes
Condition 23 (Elite – North)	0.0036	1.00	Yes
Condition 23 (Elite – South)	0.0089	1.00	Yes
Condition 25 (Elite – North)	0.0014	1.00	Yes
Condition 25 (Elite – South)	0.0017	1.00	Yes
Condition 26 (Elite – North)	0.0064	1.00	Yes
Condition 26 (Elite – South)	0.0064	1.00	Yes
Condition 7 (Artistic – East)	0.1259	1.00	Yes
Condition 7 (Artistic – West)	0.0139	1.00	Yes
Condition 24 (Artistic – East)	0.0676	1.00	Yes
Condition 24 (Artistic – West)	0.0120	1.00	Yes
Condition 27 (Artistic – East)	0.3085	1.00	Yes
Condition 27 (Artistic – West)	0.0398	1.00	Yes
Condition 28 (Artistic – East)	0.1831	1.00	Yes
Condition 28 (Artistic – West)	0.0054	1.00	Yes
Condition 29 (Artistic – East)	0.2119	1.00	Yes
Condition 29 (Artistic – West)	0.0133	1.00	Yes

Section 6.0 DISCUSSION OF RESULTS

Table 3

The results presented in Table 1 summarize the nickel emission data obtained from both Phase 1 and Phase 2 of this project. The results from each of the three individual test runs along with the average of the three tests runs from each condition tested are reported in the table. All of the results were obtained using Method 29 stack testing except those identified as Method 306A.

Based on these results, it is apparent that the typically operated Rack Watts Nickel and the Rack Nickel Sulfamate processes (wetting agent, no mesh pads, air agitation) emit very little nickel; less than 0.05 mg/dscm. These concentrations are not much higher than the MACT hexavalent chromium limits that are based on the use of expensive composite mesh pad systems to reduce the chromium emissions. These results were expected due to the high efficiency of the Watts Nickel and Nickel Sulfamate plating process (very little gassing). Furthermore, the Rack Watts Nickel and the Rack Nickel Sulfamate solutions are typically operated with some kind of wetting agent employed in order to maintain the quality of the plating (reduce pitting, etc.). Therefore, platers need to add wetting agents to these solutions for quality purposes; the pollution control effect is a secondary benefit.

Nickel emissions being emitted from uncontrolled Wood's Nickel Strike, Barrel Nickel, and Electroless Nickel plating processes vary from 0.101 mg/dscm to 1.130 mg/dscm. "Uncontrolled" is defined as no wetting agent, eductor system or mesh pads added to the process. None of these solutions require a wetting agent for quality purposes. Therefore, these processes typically operate without one. Other reasons why the uncontrolled emissions are high include:

- The Wood's Nickel Strike process is intentionally very inefficient which causes significant gassing.

- Barrel Nickel plating has many mechanical/physical effects that increase nickel emissions (see Discussion of Table VII).

- The Electroless Nickel plating process is operated at very high temperatures, has a very high air agitation rate, and produces a significant amount of hydrogen gas as a by-product.

Paired Wilcoxon Signed-Rank tests were conducted to evaluate the effect of employing an eductor system, wetting agent or simple mesh pads at the exhaust hood. The paired Wilcoxon Signed Rank Test (WSRT) is a non-parametric test that evaluates the median difference between paired samples.

The results of the eductor system versus air agitation comparison was inconclusive (test statistic value = 0.5256, p-value=0.5992, n=6). There was insufficient information to conclude that nickel emissions were reduced by the addition of an eductor system. The results of the wetting

agent versus no wetting agent comparison was statistically significant (test statistic value = 36, p-value = 0.0078, n = 8). Nickel emissions were reduced by the addition of a wetting agent. The results of the mesh pad versus no mesh pad comparison were statistically significant (test statistic value = 55, p-value = 0.002, n = 10. Nickel emissions were reduced by the addition of simple mesh pads at the exhaust hood. The boxplots in Figure 1, 2, and 3, confirm the conclusions of the inferential tests. In each case, employing an operating parameter to reduce nickel emissions consistently reduced between process variability, but only in the case of employing a wetting agent or installing a mesh pad installed at the box hood was median nickel emissions reduced. The investigation did not evaluate the interaction between these operating parameters, therefore no conclusions can be made regarding cumulative effect of employing more than one of these operating parameters.

Figure 1. *Box plots of Nickel Emissions for Eductor System versus Air Agitation.*

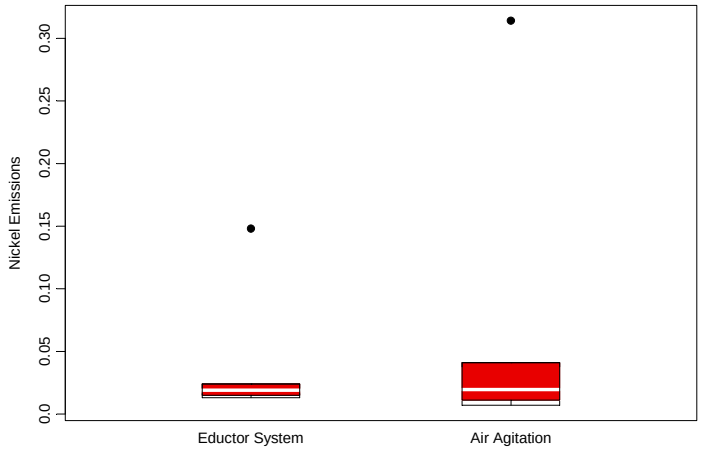
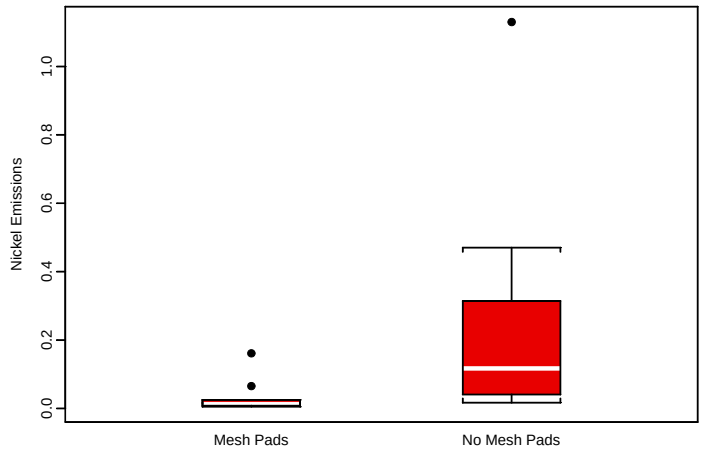


Figure 2. *Box plots of Nickel Emissions for Wetting Agent versus No Wetting Agent.*



Figure 3. *Box plots of Nickel Emissions for Mesh Pads and No Mesh Pads.*



Tables 4 through 9 present the results summarized in Table 3, in a comparison manner that illustrate the effects on nickel emissions of the operating conditions identified by this project (i.e. the effects of wetting agents, the effects of mesh pads, eductors vs. air agitation, etc.).

The nickel emissions from the rack Watts nickel process operated with a wetting agent, a mesh pad, and an eductor system (Condition 13) was only tested for one two-hour test run due to quality issues caused by the eductor system. The eductor system caused dullness and pitting in the nickel finish in many of the parts that were plated in the nickel tank. Since most of the testing conducted in this project was conducted on actual plating processes in operation, the quality of the plated parts took precedence over the stack testing. When modifications to the operating parameters of the nickel process (temp, current density, etc,) and to the eductor system itself would not alleviate the plating problems, the eductor system was decommissioned and replaced with the air agitation system. The two remaining test runs during that day were completed with the air agitation system in operation resulting in a total of five test runs conducted on a rack Watts nickel process operated with a wetting agent, a mesh pad, and an air agitation system (Condition 14).

It was later determined that the plating problems were caused by iron contamination in the nickel solution that was directed at the parts by the eductors and then becoming embedded in the plating finish causing the pitting and the dullness. It is anticipated that once the iron contamination is removed (via filtration), the eductor system can be used in the process without causing quality problems; as others have used eductors on Watt's Nickel very successfully.

As with the Phase 1 testing, there was a comparably large difference in nickel emissions measured within each of the three individual test runs of a condition tested. For example, the nickel emission concentrations for the three tests runs on the Electroless Nickel process operated with air agitation (Condition 6) were measured to be 0.124, 0.313, and 0.505 mg/dscm. The main reason for these differences within individual test runs may be the fact that operating

parameters changed slightly from test run to test run. Because these tests were conducted, for the most part, on nickel plating processes plating actual production parts, keeping all the operating parameters constant during all three test runs was not possible. Attempts were made, however, to minimize the operating parameter fluctuations where possible. Because of these differences within the individual test runs, the average of the three were taken and also reported.

Table 4

Based on the results of this study and illustrated in Table 4, when the nickel emissions are uncontrolled, the data shows nickel emissions are reduced by 53% when eductors are used for agitation in place of air (See Condition 5 versus 6). When the nickel emissions are low, whether it is due to the nickel plating process itself having low emissions (as is the case with nickel sulfamate) or the fact that the emissions are reduced by some other means (i.e., mesh pad), the effects of using eductors instead of air agitation are negligible with an average reduction of 8% (See Conditions 3 versus 4, 13 versus 14, and 22 versus 23). In fact, in many of these cases, the nickel emissions measured with the eductors in operation were actually slightly higher than those measured with the air agitation system operating. That said, we do not believe that using the eductors actually increased the emissions; simply that eductors have very little effect on the nickel emission when the emissions are low to begin with. These unexpected results obtained when emissions are low are probably due to the inherent error in the Method 29 procedure or the fact that, in some of the cases, the surface tension of the plating solution was slightly higher when the eductors were tested than when the air agitation system was tested. For example, the surface tension of the Watts Nickel solution when the eductors were tested was 42 dynes/cm while the surface tension of the same solution when the air was operating was 37 dynes/cm. Similarly, the surface tension of the Nickel Sulfamate solution when the eductors were tested was 45 dynes per centimeter while the surface tension of the same solution when the air was operating was 39 dynes per centimeter. These small differences in surface tension could have masked the emission reduction effects of the eductors because it is believed (and validated in this study) that nickel emission of a plating solution are related to its surface tension; the emissions increase as the surface tension increases.

Maintaining a constant surface tension within a plating solution is difficult because only a small amount of wetting agent is needed to reduce the surface tension from about 70 to 40 dynes/cm. To raise a surface tension in a solution to a specified level requires considerable time to allow the surface tension to rise naturally or complicated carbon treatment.

Table 5

Based on the results of this study and illustrated in Table 5, the use of wetting agents to reduce the surface tension of a nickel plating solution significantly reduces the nickel emissions from that process an average of 72% from uncontrolled tanks and an average of 42% for tanks controlled with mesh pads. In all eight comparison studies involving the use of wetting agents and encompassing Rack Watts Nickel, Barrel Watts Nickel, and Wood's Nickel Strike plating solutions, the nickel emissions measured with the wetting agent were 29% to 92% lower than the nickel emissions measured without the wetting agent.

Several chemical suppliers were contacted to determine the availability of a wetting agent specifically made for a Wood's nickel strike solution. None of these chemical manufacturers could provide one nor did they believe one was developed yet. Therefore, a wetting agent that was typically used in a Watts Nickel solution was used instead. Initial tests proved that this wetting agent was successful in reducing the surface tension of the Wood's nickel strike solution from 70 dynes/cm to 38 dynes/cm. However, it was later discovered that the acidic nature of the Wood's solution destroyed the wetting agent relatively quickly (within two to three days). Moreover, the resultant decomposition products of the wetting agent formed a film on the plating solution which adversely affected plating adhesion.

In Table 5, there are two results reported for some of the test runs of Condition 7. The results in the parenthesis are results that have been modified to account for the air ventilation rate fluctuations that occurred during the Condition 7 testing. For all the other Wood's Nickel Strike test runs, the ventilation rate measured during the testing was 818 to 892 cfm. The ventilation rate for the three Condition 7 tests runs was measured to be 1155 cfm, 1610 cfm, and 818 cfm respectively. The blower for the Wood's Nickel Strike ventilation system is a variable speed blower. It is believed that the speed was switched to "high" sometime during the first test run and then switched back to "low" after the second test run. To compensate for this dilution effect and to provide a viable comparison, the nickel emissions from the first two test runs of Condition 7 were mathematically revised to reflect a ventilation rate of 818 cfm.

Table 6

Based on the results of this study and illustrated in Table 6, the use of simple mesh pads to capture nickel emissions in the vent reduces the nickel emissions from that process. In all ten comparison studies involving the use of mesh pads and encompassing Rack Watts Nickel, Barrel Watts Nickel, Wood's Nickel Strike, Nickel Sulfamate, and Electroless Nickel plating solutions, the nickel emissions measured with the mesh pad in place were significantly lower than the nickel emissions measured without the mesh pad by an average of 88% for both controlled and uncontrolled conditions..

The mesh pad, based on this study, was the most efficient in reducing nickel emissions; outperforming the wetting agents and the eductor system as shown in Table 12.. Besides providing better reduction efficiency, simple mesh pads are less expensive to purchase than the eductor system and less expensive to use than the wetting agents. Moreover, mesh pads are totally external to plating solution system. When contemplating using a wetting agent or an eductor system, one needs to consider the effects of these items on the plating quality because they are placed in the plating tank. The mesh pad does not affect the plating at all since it is installed in the ventilation system.

Table 12. Comparison of Nickel Emission Reductions

Condition	**%Reduction of Nickel Emissions**		
	Mesh Pads	Wetting Agent	Eductors
Uncontrolled Tank	83%	69%	53%
Partially Controlled Tank	69%	45%	8%

The composite mesh pads used in this project were supplied by Chicago Plastics and were easily inserted in the face of the exhaust hoods; although some exhausts hoods had to be modified in order to accommodate the composite mesh pads (See photos in Appendix C). The composite mesh pads are constructed of intertwined polypropylene threads and are approximately three (3) inches thick. As stated above, these composite mesh pads were easily placed in the face of the exhaust hood or directly in the exhaust duct (as was the case with Elite Finishing) and are designed to capture mists and large particulates (greater than 8 microns).

Table 7

The stack testing results presented in Table 7 suggests that the majority of the nickel that is emitted from barrel nickel operations is due to mechanical/physical sources such as splashing produced during entry of the barrel into the tank, the large amounts of liquid leaving the barrel during removal from the tank, splashing from filter pumps, etc and not from the electrolysis involved in plating. These results are consistent in what was suggested in the Final Report for the Phase 1 testing.

Table 8

Based on the results presented in Table 8, it appears that the chemical reaction involved in the electroless plating process does increase the nickel emissions from an electroless nickel process. In the Final Report for Phase 1 of this project, it was suggested that the majority of the emissions from an electroless nickel plating process were due to the high temperature of the electroless nickel plating solution and the violent air agitation required in the process and that the amount of parts (or surface area of the parts) had little affect on the nickel emissions. In the Phase 1 testing (Condition 1), parts were being plated for only 12-30 minutes of the test run time (120 minutes). In Phase 2 (Condition 6), however, parts were being plated for 114 to 120 minutes of the 120 minute test run. As illustrated in Table 8, the emissions measured in Phase 2 with the high tank loading were higher than those measured during Phase 1 with the low tank loading. However, in the year that elapsed between Phase 1 and Phase 2, the EN testing site switched EN solution suppliers. The EN solution that was being used during Phase 1 of the study had a wetting agent incorporated into the chemistry while the EN solution that was being used during Phase 2 did not. Consequently, the surface tension of the EN solution in process during Phase 1 was about 30 dynes/cm lower than the surface tension of the EN solution that was in process during Phase 2. Therefore, it is inconclusive as to the cause of the increased emissions observed during

Condition 6 as compared to Condition 1 (increased parts loading or increased surface tension, or a combination of the two).

Part of the Phase 2 testing was to observe the effects of a mesh pad on the nickel emissions from the electroless nickel plating process. In order to accomplish this goal, the ventilation system for the electroless nickel tank had to be modified to accept a mesh pad. The modification to the ventilation system increased the ventilation flow rate. The ventilation rate during Phase 1 was 1214 to 1240 cfm while the ventilation rate for Phase 2 was 1860 to 2039 cfm. Therefore, to compensate for this dilution effect and to provide a viable comparison, the nickel emissions from the test runs of Condition 1 were mathematically revised to reflect a ventilation rate of 2000 cfm. The modified results are listed in parenthesis in Table 8.

Table 9

The results presented in Table 9 indicate that, although the individual test runs were not consistent, the average of the three runs using Method 29 were within 10% of the average of the three runs using Method 306A for the Electroless Nickel, Watts Nickel and Wood's Nickel Strike processes. For the Nickel Sulfamate process, the emissions measured by Method 306A were actually higher than those measured by Method 29. The inconsistency within the three individual test runs and the test runs on the Nickel Sulfamate process may have been due to the changes in operating parameters during the individual test runs. Based on this testing, we believe that Method 306A is a viable alternative to Method 29 for measuring nickel emissions. However, we believe more testing is required.

In order to validate Method 306A as a viable alternative, a non-production process should be tested in order to have absolute control over all the operating parameters to ensure that they are constant and identical during both the Method 29 and Method 306A testing. When testing production processes, the operating parameters change slightly from test run to test run based on the production needs. Another option would be to test a production process using Method 29 and Method 306A simultaneously.

The emissions from the Woods Nickel Strike process measured with Method 306A were higher than the emissions measured with Method 29. Both of these tests were conducted with wetting agent in the Woods Nickel Strike solution. The wetting agent was added in the morning of the first day. Method 29 was conducted on the first day while Method 306A was conducted on the second day. As discussed earlier, it was discovered that the acidic nature of the Woods Strike solution destroyed the wetting agent relatively quickly. Analysis on the first day using a stalagmometer indicated that the surface tension was approximately 37 dynes/cm. Analysis of the Woods Nickel Strike solution three days later using a tensiometer indicated that the surface tension was 59 dynes/cm. Therefore, the surface tension on the second day (Method 306A) may have been higher than that on the first day (Method 29); possibly in the 40-50 dynes/cm range. This discovery may explain why the Method 306A testing measured higher emissions.

Tables 10A through 10E

The purpose of Tables 10A through 10E is to summarize the working parameters observed and recorded during the testing for all of the conditions tested. As stated before, most of the testing was conducting during actual processing. Therefore, many of the operating parameters did not remain constant during all of the individual test runs within a condition. By comparing the operating parameters from one test run to another, one may be able to explain why there was a difference in nickel emissions measured from one test one to another.

Table 11

The results presented in Table 11 illustrate that the ventilation systems of all the nickel plating processes were operating efficiently because the nickel concentrations in the ambient air near the nickel plating tanks at the times of the testing were significantly below the OSHA eight hour, time weighted average permissible exposure limit for nickel. This criteria was set-up prior to testing in order to ensure that the ventilation systems were capturing the majority of nickel emissions from the plating processes.

QA/QC Summary

The data generated has been evaluated in terms of quality objectives for precision, accuracy, completeness, representativeness, and comparability, in accordance with EPA Methods 29 and 306A and OSHA Method ID-121.

Prior to analyses, demonstration of method performance and analyst capability was verified and documented through various studies as MDL, LDR, QCS, DOC, and Performance Evaluation Samples. The appropriate blanks (CCB and LRB), spikes (LFM and LFM dups), and standards (QCS, CCV, LFB) were incorporated into the analytical runs as is required by EPA Methods 29 and 306A and OSHA Method ID-121. These QC samples were evaluated to meet acceptable criteria limits, as determined by the procedures and control charts. In order to maintain consistency in applying the QC data, the "QA/QC Worksheet" was generated to condense the QC values, limits, and qualifiers, if any. These worksheets are included in Appendices E and F.

All data is considered to be of acceptable quality and validity, as determined by the laboratory QA Coordinator.

Section 7.0 CONCLUSIONS

Based on the stack testing results presented in Table 3, the following conclusions regarding nickel emissions from nickel plating processes can be made:

1) Nickel emissions from typically-operated Rack Watts Nickel and Rack Nickel Sulfamate tanks (wetting agent, no mesh pad, air agitation) are not very significant (<0.05 mg/dscm).

2) Nickel emissions from uncontrolled (no eductors, mesh pads or wetting agents) and vented Electroless Nickel, Barrel Nickel, and Wood's Nickel Strike plating processes are significant (greater then 0.1 mg/dscm), but can be significantly reduced by 49% to 92%. This can be accomplished by employing eductors, wetting agents, or simple mesh pads.

3) The use of wetting agents in nickel plating processes significantly reduced nickel emissions. The use of wetting agents to reduce the surface tension of a nickel plating solution reduces the nickel emissions from that process an average of 72% from uncontrolled tanks and an average of 42% for tanks controlled with mesh pads. At this time, however, there does not seem to be a wetting agent specifically developed for the Wood's nickel strike solution. A Watt's Nickel wetting agent can be successfully used to reduce the surface tension of the Wood's nickel strike solution. However, the acidic nature (at least 10% by volume hydrochloric acid) of the Wood's solution destroys the wetting agent relatively quickly leaving a film on the solution surface that greatly affects the plating adhesion.

4) Nickel emissions were reduced an average of 15% using eductors in lieu of air agitation for the various controlled and uncontrolled conditions…

5) Regardless of type of nickel process, using simple mesh pads to capture splashing and misting provides the best reduction of nickel emissions. These reductions averaged 69% to 89% compared to 8% to 69% for other control methods as shown in Table 12.

6) Most of the nickel emissions from nickel barrel plating operations are generated from mechanical/physical sources such as splashing produced during entry of the barrel into the tank, the large amounts of liquid leaving the barrel during removal from the tank, splashing from filter pumps, etc. and not from the electrolysis involved in plating.

7) The nickel emissions from an electroless nickel process are generated from **both** the chemical reaction involved in the electroless plating process and the high solution temperature and high agitation rate required in the process.

8) Although the results presented in Table 9 indicate that USEPA Method 306A and

USEPA Method 29 provide similar results when measuring nickel emissions from Electroless Nickel, Watts Nickel, and Wood's nickel strike, further testing needs to be conducted on a controlled process or conducted simultaneously to determine whether Method 306A truly is an acceptable alternative to Method 29 for measuring nickel emissions from nickel plating processes in general.

Three methods of reducing nickel emissions observed in this study are the use of wetting agents, eductors, and simple mesh pads. The implementation of simple mesh pads provide a better reduction efficiency, they are cheaper to employ and do not affect the quality of the plating.

Due to the extreme number of variables involved in plating (tank dimensions, current density, temperature, types of parts plated, plating times, chemical differences, etc.), the results presented in this report should not be used as absolute for all Watt's Nickel, Wood's Nickel Strike, Electroless Nickel, etc. processes "across the board" but rather as a relative guide or estimate for these processes. In the same manner, one cannot assign actual emission reduction efficiencies for wetting agents, eductors, and mesh pads solely on the results of these tests. Instead, it is much more accurate to state that these options reduce nickel emissions but the reduction percentage from process to process will vary. We base these project limitations or constraints on the fact that even though extreme care was given to control the variables within the three tests runs of a test condition, the results for each of these test runs did vary more than expected (see Table 3). We would expect the results to vary even greater when the variables are not controlled or, for example, from one Electroless Nickel tank to another.

Appendix A

Calculation Worksheets for Nickel Stack Emissions

NICKEL AIR EMISSIONS RESULTS

Test Condition	Test Site	Test Date	Test	Exhaust Gas Flow Rate	Amt. of Nickel in Sample	Nickel Emissions Rate	Nickel Emissions Concentration
3	Reliable	10/31/05	1	1776 acfm	0.033 mg.	31.0 mg/hr	0.0109 mg/dscm
			2	1860 acfm	0.017 mg.	16.3 mg/hr	0.0055 mg/dscm
			3	1860 acfm	0.017 mg.	16.2 mg/hr	0.0054 mg/dscm
			AVG	**1832 acfm**	**0.022 mg.**	**21.2 mg/hr**	**0.0073 mg/dscm**
4	Reliable	11/3/05	1	1999 acfm	0.079 mg.	74.7 mg/hr	0.0236 mg/dscm
			2	2023 acfm	0.039 mg.	37.4 mg/hr	0.0117 mg/dscm
			3	2037 acfm	0.014 mg.	13.4 mg/hr	0.0042 mg/dscm
			AVG	**2020 acfm**	**0.044 mg.**	**41.8 mg/hr**	**0.0132 mg/dscm**
5	Reliable	11/2/05	1	2003 acfm	0.477 mg.	456 mg/hr	0.142 mg/dscm
			2	2063 acfm	0.655 mg.	631 mg/hr	0.192 mg/dscm
			3	2027 acfm	0.372 mg.	358 mg/hr	0.111 mg/dscm
			AVG	**2031 acfm**	**0.501 mg.**	**482 mg/hr**	**0.148 mg/dscm**
6	Reliable	11/1/06	1	2039 acfm	0.420 mg.	405 mg/hr	0.124 mg/dscm
			2	1984 acfm	1.028 mg.	1000 mg/hr	0.313 mg/dscm
			3	1929 acfm	1.624 mg.	1568 mg/hr	0.505 mg/dscm
			AVG	**1984 acfm**	**1.024 mg.**	**991 mg/hr**	**0.314 mg/dscm**
7	Artistic	11/9/05	1	1155 acfm	0.225 mg.	118 mg/hr	0.0632 mg/dscm
			2	1610 acfm	0.257 mg.	211 mg/hr	0.0807 mg/dscm
			3	818 acfm	0.597 mg.	313 mg/hr	0.2355 mg/dscm
			AVG	**1086 acfm**	**0.360 mg.**	**214 mg/hr**	**0.1265 mg/dscm**

Notes: acfm means actual cubic feet of exhaust air per minute
mg/hr means milligrams per hour
mg/dscm means milligrams per dry standard cubic meter of exhaust air
< means less than the analytical limit of detection

NICKEL AIR EMISSIONS RESULTS

Test Condition	Test Site	Test Date	Test	Exhaust Gas Flow Rate	Amt. of Nickel in Sample	Nickel Emissions Rate	Nickel Emissions Concentration
10	ABQC	2/1/06	1	2190 acfm	0.127 mg.	151 mg/hr	0.0427 mg/dscm
			2	2205 acfm	0.009 mg.	10.9 mg/hr	0.0031 mg/dscm
			3	2171 acfm	0.046 mg.	55.1 mg/hr	0.0158 mg/dscm
			AVG	**2189 acfm**	**0.061 mg.**	**72.3 mg/hr**	**0.0205 mg/dscm**
11	ABQC	1/12/06	1	2168 acfm	0.168 mg.	201 mg/hr	0.0570 mg/dscm
			2	2184 acfm	0.035 mg.	41.9 mg/hr	0.0118 mg/dscm
			3	2193 acfm	0.015 mg.	17.8 mg/hr	0.0050 mg/dscm
			AVG	**2182 acfm**	**0.073 mg.**	**86.9 mg/hr**	**0.0246 mg/dscm**
12	ABQC	1/11/06	1	2350 acfm	0.162 mg.	195 mg/hr	0.0510 mg/dscm
			2	2362 acfm	0.424 mg.	513 mg/hr	0.1333 mg/dscm
			3	2355 acfm	0.178 mg.	217 mg/hr	0.0564 mg/dscm
			AVG	**2356 acfm**	**0.255 mg.**	**308 mg/hr**	**0.0802 mg/dscm**
13	ABQC	2/2/06	1	2158 acfm	0.043 mg.	50.6 mg/hr	0.0145 mg/dscm
14	ABQC	11/7/05	1	2114 acfm	0.013 mg.	10.0 mg/hr	0.0029 mg/dscm
			2	2112 acfm	0.017 mg.	13.2 mg/hr	0.0038 mg/dscm
			3	2129 acfm	0.011 mg.	8.6 mg/hr	0.0025 mg/dscm
			AVG	**2118 acfm**	**0.014 mg.**	**10.6 mg/hr**	**0.0031 mg/dscm**
		2/2/06	4	2161 acfm	0.109 mg.	129 mg/hr	0.0369 mg/dscm
			5	2159 acfm	0.023 mg.	27.3 mg/hr	0.0078 mg/dscm
			AVG	**2160 acfm**	**0.066 mg.**	**78.2 mg/hr**	**0.0224 mg/dscm**

Notes: acfm means actual cubic feet of exhaust air per minute
mg/hr means milligrams per hour
mg/dscm means milligrams per dry standard cubic meter of exhaust air
< means less than the analytical limit of detection

NICKEL AIR EMISSIONS RESULTS

Test Condition	Test Site	Test Date	Test	Exhaust Gas Flow Rate	Amt. of Nickel in Sample	Nickel Emissions Rate	Nickel Emissions Concentration
18	Artistic	9/27/05	1	1081 acfm	0.028 mg.	15.5 mg/hr	0.0088 mg/dscm
			2	1545 acfm	< 0.011 mg.	< 13.2 mg/hr	< 0.0053 mg/dscm
			3	1642 acfm	0.050 mg.	60.4 mg/hr	0.0229 mg/dscm
			AVG	**1423 acfm**	**0.030 mg.**	**29.7 mg/hr**	**0.0123 mg/dscm**
19	Artistic	9/28/05	1	1778 acfm	0.102 mg.	161 mg/hr	0.0563 mg/dscm
			2	1674 acfm	0.032 mg.	51 mg/hr	0.0188 mg/dscm
			3	1542 acfm	0.362 mg.	567 mg/hr	0.2278 mg/dscm
			AVG	**1665 acfm**	**0.165 mg.**	**260 mg/hr**	**0.1010 mg/dscm**
20	Artistic	9/29/05	1	1463 acfm	0.029 mg.	23.2 mg/hr	0.0094 mg/dscm
			2	1521 acfm	0.011 mg.	8.9 mg/hr	0.0035 mg/dscm
			3	1462 acfm	0.036 mg.	29.1 mg/hr	0.0120 mg/dscm
			AVG	**1482 acfm**	**0.025 mg.**	**20.4 mg/hr**	**0.0083 mg/dscm**
21	Artistic	9/30/05	1	1621 acfm	0.038 mg.	60.1 mg/hr	0.0225 mg/dscm
			2	1661 acfm	0.012 mg.	19.4 mg/hr	0.0071 mg/dscm
			3	1597 acfm	0.014 mg.	22.5 mg/hr	0.0086 mg/dscm
			AVG	**1626 acfm**	**0.021 mg.**	**34.0 mg/hr**	**0.0127 mg/dscm**
22	Elite	10/18/05	1	3789 acfm	0.065 mg.	138 mg/hr	0.0222 mg/dscm
			2	3950 acfm	0.034 mg.	72.2 mg/hr	0.0112 mg/dscm
			3	3815 acfm	0.028 mg.	59.6 mg/hr	0.0096 mg/dscm
			AVG	**3851 acfm**	**0.042 mg.**	**89.9 mg/hr**	**0.0143 mg/dscm**

Notes: acfm means actual cubic feet of exhaust air per minute
mg/hr means milligrams per hour
mg/dscm means milligrams per dry standard cubic meter of exhaust air
< means less than the analytical limit of detection

NICKEL AIR EMISSIONS RESULTS

Test Condition	Test Site	Test Date	Test	Exhaust Gas Flow Rate	Amt. of Nickel in Sample	Nickel Emissions Rate	Nickel Emissions Concentration
23	Elite	11/15/05	1	4237 acfm	0.058 mg.	120 mg/hr	0.0175 mg/dscm
			2	4011 acfm	0.042 mg.	86.1 mg/hr	0.0134 mg/dscm
			3	4024 acfm	0.062 mg.	126 mg/hr	0.0195 mg/dscm
			AVG	**4091 acfm**	**0.054 mg.**	**111 mg/hr**	**0.0168 mg/dscm**
24	Artistic	11/10/05	1	850 acfm	0.129 mg.	66.4 mg/hr	0.0479 mg/dscm
			2	886 acfm	0.209 mg.	111 mg/hr	0.0765 mg/dscm
			3	861 acfm	0.193 mg.	101 mg/hr	0.0713 mg/dscm
			AVG	**866 acfm**	**0.177 mg.**	**92.8 mg/hr**	**0.0652 mg/dscm**
25	Elite	11/25/05	1	3706 acfm	0.011 mg.	23.2 mg/hr	0.0039 mg/dscm
			2	3568 acfm	0.017 mg.	35.5 mg/hr	0.0062 mg/dscm
			3	3639 acfm	0.017 mg.	34.5 mg/hr	0.0060 mg/dscm
			AVG	**3638 acfm**	**0.015 mg.**	**31.1 mg/hr**	**0.0054 mg/dscm**
27	Artistic	10/17/05	1	872 acfm	1.673 mg.	871 mg/hr	0.614 mg/dscm
			2	859 acfm	0.755 mg.	391 mg/hr	0.282 mg/dscm
			3	879 acfm	1.393 mg.	727 mg/hr	0.515 mg/dscm
			AVG	**870 acfm**	**1.273 mg.**	**663 mg/hr**	**0.470 mg/dscm**
28	Artistic	10/19/05	1	860 acfm	0.347 mg.	182 mg/hr	0.129 mg/dscm
			2	887 acfm	0.445 mg.	236 mg/hr	0.162 mg/dscm
			3	892 acfm	0.695 mg.	368 mg/hr	0.252 mg/dscm
			AVG	**880 acfm**	**0.496 mg.**	**262 mg/hr**	**0.181 mg/dscm**

Notes: acfm means actual cubic feet of exhaust air per minute
mg/hr means milligrams per hour
mg/dscm means milligrams per dry standard cubic meter of exhaust air
< means less than the analytical limit of detection

RELIABLE PLATING | CONDITION 3 | 10/31/05 | TABLE 3-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.35	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	108.13	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.033	MILLIGRAMS
WATER COLLECTED	56	ML
STATIC PRESSURE	-0.56	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	76	0.16	0.90	62	27.08
2	75	0.16	0.90	61	27.06
3	75	0.17	0.95	63	27.89
4	76	0.16	0.90	66	27.08
5	76	0.15	0.84	68	26.22
6	76	0.24	1.34	70	33.17
7	77	0.13	0.73	73	24.44
8	77	0.08	0.45	76	19.17
9	77	0.07	0.39	79	17.93
10	77	0.07	0.39	81	17.93
11	77	0.06	0.34	83	16.60
12	76	0.06	0.34	85	16.58
13	77	0.25	1.40	87	33.89
14	77	0.32	1.79	89	38.34
15	77	0.31	1.74	91	37.73
16	77	0.28	1.57	93	35.86
17	77	0.25	1.40	97	33.89
18	77	0.20	1.12	98	30.31
19	77	0.20	1.12	100	30.31
20	76	0.31	1.74	101	37.70
21	76	0.34	1.90	103	39.48
22	77	0.34	1.90	103	39.52
23	77	0.33	1.85	105	38.93
24	77	0.31	1.74	108	37.73
AVERAGE	77		1.16	85	29.78

DRY STANDARD VOLUME	106.89	SCF
PERCENT WATER VAPOR	2.41	% VOL
FLOW RATE	1776	ACFM
	1671	DSCFM
	2840	M3/HR
NICKEL CONCENTRATION	0.0109	MG/DSCM
NICKEL EMISSION RATE	31.0	MG/HR
ISOKINETIC PERCENT	102.4	

RELIABLE PLATING | CONDITION 3 | 10/31/05 | TABLE 3-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.35	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	111.04	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.017	MILLIGRAMS
WATER COLLECTED	57	ML
STATIC PRESSURE	-0.54	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	75	0.33	1.85	101	38.86
2	74	0.35	1.96	99	39.98
3	74	0.33	1.85	98	38.82
4	75	0.30	1.68	99	37.05
5	75	0.28	1.57	99	35.79
6	75	0.27	1.51	99	35.15
7	75	0.31	1.74	100	37.66
8	75	0.34	1.90	101	39.44
9	75	0.35	1.96	102	40.02
10	74	0.35	1.96	104	39.98
11	74	0.35	1.96	105	39.98
12	74	0.33	1.85	107	38.82
13	76	0.17	0.95	109	27.92
14	76	0.21	1.18	110	31.03
15	75	0.24	1.34	110	33.14
16	75	0.16	0.90	110	27.06
17	74	0.14	0.78	110	25.29
18	74	0.25	1.40	111	33.79
19	74	0.12	0.67	111	23.41
20	74	0.07	0.39	111	17.88
21	75	0.05	0.28	111	15.13
22	75	0.05	0.28	111	15.13
23	75	0.07	0.39	111	17.90
24	74	0.08	0.45	110	19.11
AVERAGE	75		1.28	106	31.18

DRY STANDARD VOLUME	110.07	SCF
PERCENT WATER VAPOR	2.38	% VOL
FLOW RATE	1860	ACFM
	1756	DSCFM
	2984	M3/HR
NICKEL CONCENTRATION	0.0055	MG/DSCM
NICKEL EMISSION RATE	16.3	MG/HR
ISOKINETIC PERCENT	100.3	

RELIABLE PLATING | CONDITION 3 | 10/31/05 | TABLE 3-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.35	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	111.50	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.017	MILLIGRAMS
WATER COLLECTED	57	ML
STATIC PRESSURE	-0.54	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	74	0.18	1.01	101	28.67
2	74	0.18	1.01	99	28.67
3	74	0.19	1.06	98	29.46
4	74	0.17	0.95	99	27.86
5	75	0.16	0.90	99	27.06
6	75	0.23	1.29	100	32.44
7	75	0.13	0.73	101	24.39
8	75	0.09	0.50	101	20.29
9	75	0.09	0.50	102	20.29
10	76	0.08	0.45	102	19.15
11	76	0.07	0.39	101	17.91
12	75	0.06	0.34	103	16.57
13	76	0.32	1.79	107	38.30
14	76	0.33	1.85	108	38.90
15	76	0.31	1.74	109	37.70
16	76	0.29	1.62	110	36.46
17	76	0.24	1.34	111	33.17
18	75	0.25	1.40	112	33.82
19	76	0.32	1.79	112	38.30
20	77	0.36	2.02	112	40.66
21	77	0.36	2.02	113	40.66
22	77	0.34	1.90	113	39.52
23	76	0.34	1.90	114	39.48
24	76	0.33	1.85	116	38.90
AVERAGE	76		1.26	106	31.19

DRY STANDARD VOLUME	110.52	SCF
PERCENT WATER VAPOR	2.37	% VOL
FLOW RATE	1860	ACFM
	1754	DSCFM
	2981	M3/HR
NICKEL CONCENTRATION	0.0054	MG/DSCM
NICKEL EMISSION RATE	16.2	MG/HR
ISOKINETIC PERCENT	100.9	

RELIABLE PLATING | CONDITION 4 | 11/3/05 | TABLE 4-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	120.00	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.079	MILLIGRAMS
WATER COLLECTED	39	ML
STATIC PRESSURE	-0.51	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	80	0.35	1.96	72	40.20
2	81	0.34	1.90	70	39.66
3	82	0.34	1.90	70	39.70
4	82	0.31	1.74	71	37.91
5	83	0.27	1.51	76	35.41
6	83	0.23	1.29	81	32.68
7	83	0.32	1.79	82	38.55
8	83	0.34	1.90	84	39.74
9	83	0.35	1.96	87	40.32
10	84	0.36	2.02	90	40.93
11	84	0.36	2.02	93	40.93
12	84	0.34	1.90	97	39.77
13	84	0.21	1.18	99	31.26
14	83	0.24	1.34	101	33.39
15	83	0.24	1.34	101	33.39
16	84	0.23	1.29	102	32.71
17	85	0.20	1.12	104	30.53
18	85	0.24	1.34	107	33.45
19	84	0.17	0.95	108	28.12
20	85	0.15	0.84	109	26.44
21	86	0.13	0.73	109	24.64
22	85	0.11	0.62	110	22.64
23	85	0.10	0.56	110	21.59
24	85	0.09	0.50	110	20.48
AVERAGE	84		1.40	93	33.52

DRY STANDARD VOLUME	118.41	SCF
PERCENT WATER VAPOR	1.53	% VOL
FLOW RATE	1999	ACFM
	1867	DSCFM
	3172	M3/HR
NICKEL CONCENTRATION	0.0236	MG/DSCM
NICKEL EMISSION RATE	74.7	MG/HR
ISOKINETIC PERCENT	101.5	

RELIABLE PLATING | CONDITION 4 | 11/3/05 | TABLE 4-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	119.02	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.039	MILLIGRAMS
WATER COLLECTED	40	ML
STATIC PRESSURE	-0.51	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	85	0.25	1.40	109	34.14
2	86	0.26	1.46	105	34.84
3	86	0.24	1.34	108	33.48
4	86	0.23	1.29	108	32.77
5	85	0.20	1.12	108	30.53
6	85	0.25	1.40	109	34.14
7	86	0.17	0.95	110	28.18
8	86	0.11	0.62	111	22.66
9	85	0.10	0.56	111	21.59
10	86	0.09	0.50	111	20.50
11	86	0.09	0.50	112	20.50
12	86	0.10	0.56	112	21.61
13	85	0.35	1.96	112	40.39
14	85	0.36	2.02	113	40.96
15	86	0.35	1.96	114	40.43
16	86	0.33	1.85	115	39.26
17	86	0.35	1.57	118	40.43
18	85	0.27	1.51	119	35.48
19	85	0.32	1.79	120	38.62
20	85	0.35	1.96	120	40.39
21	85	0.37	2.07	121	41.53
22	84	0.36	2.02	121	40.93
23	84	0.36	2.02	121	40.93
24	85	0.34	1.90	121	39.81
AVERAGE	85		1.43	114	33.92

DRY STANDARD VOLUME	117.74	SCF
PERCENT WATER VAPOR	1.57	% VOL
FLOW RATE	2023	ACFM
	1882	DSCFM
	3198	M3/HR
NICKEL CONCENTRATION	0.0117	MG/DSCM
NICKEL EMISSION RATE	37.4	MG/HR
ISOKINETIC PERCENT	100.1	

RELIABLE PLATING | CONDITION 4 | 11/3/05 | TABLE 4-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	120.21	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.014	MILLIGRAMS
WATER COLLECTED	37	ML
STATIC PRESSURE	-0.53	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	86	0.35	1.96	114	40.42
2	87	0.35	1.96	112	40.46
3	87	0.34	1.90	112	39.88
4	87	0.30	1.68	113	37.46
5	87	0.27	1.51	114	35.54
6	86	0.27	1.51	115	35.51
7	86	0.33	1.85	117	39.26
8	87	0.36	2.02	119	41.04
9	87	0.38	2.13	119	42.16
10	88	0.37	2.07	119	41.64
11	87	0.36	2.02	119	41.04
12	87	0.35	1.96	120	40.46
13	87	0.24	1.34	120	33.51
14	87	0.28	1.57	120	36.19
15	87	0.28	1.57	120	36.19
16	86	0.26	1.46	121	34.84
17	86	0.20	1.12	121	30.56
18	87	0.23	1.29	121	32.80
19	86	0.16	0.90	121	27.33
20	85	0.13	0.73	121	24.62
21	85	0.12	0.67	122	23.65
22	86	0.11	0.62	122	22.66
23	86	0.10	0.56	121	21.61
24	85	0.09	0.50	121	20.48
AVERAGE	86		1.45	119	34.14

DRY STANDARD VOLUME	118.99	SCF
PERCENT WATER VAPOR	1.44	% VOL
FLOW RATE	2036	ACFM
	1893	DSCFM
	3217	M3/HR
NICKEL CONCENTRATION	0.0042	MG/DSCM
NICKEL EMISSION RATE	13.4	MG/HR
ISOKINETIC PERCENT	100.6	

RELIABLE PLATING | CONDITION 5 | 11/2/05 | TABLE 5-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	120.12	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.477	MILLIGRAMS
WATER COLLECTED	40	ML
STATIC PRESSURE	-0.45	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	78	0.27	1.51	65	35.25
2	78	0.23	1.29	65	32.53
3	78	0.24	1.34	66	33.23
4	77	0.25	1.40	69	33.88
5	77	0.21	1.18	72	31.06
6	78	0.23	1.29	76	32.53
7	78	0.11	0.62	78	22.50
8	77	0.08	0.45	81	19.17
9	78	0.10	0.56	83	21.45
10	79	0.16	0.90	84	27.16
11	79	0.17	0.95	87	27.99
12	78	0.20	1.12	90	30.34
13	79	0.33	1.85	92	39.00
14	79	0.31	1.74	97	37.80
15	78	0.29	1.62	98	36.53
16	79	0.25	1.40	99	33.95
17	79	0.25	1.40	101	33.95
18	80	0.21	1.18	103	31.14
19	80	0.34	1.90	105	39.63
20	81	0.36	2.02	108	40.81
21	82	0.38	2.13	108	41.97
22	81	0.38	2.13	109	41.93
23	80	0.37	2.07	109	41.34
24	79	0.36	2.02	111	40.74
AVERAGE	79		1.42	90	33.58

DRY STANDARD VOLUME	118.48	SCF
PERCENT WATER VAPOR	1.56	% VOL
FLOW RATE	2003	ACFM
	1886	DSCFM
	3205	M3/HR
NICKEL CONCENTRATION	0.1422	MG/DSCM
NICKEL EMISSION RATE	455.6	MG/HR
ISOKINETIC PERCENT	100.6	

RELIABLE PLATING | CONDITION 5 | 11/2/05 | TABLE 5-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	122.08	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.655	MILLIGRAMS
WATER COLLECTED	46	ML
STATIC PRESSURE	-0.44	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	78	0.36	2.02	104	40.71
2	78	0.33	1.85	101	38.97
3	78	0.30	1.68	102	37.15
4	79	0.27	1.51	102	35.28
5	80	0.25	1.40	102	33.98
6	81	0.24	1.34	102	33.32
7	81	0.32	1.79	104	38.48
8	80	0.36	2.02	107	40.78
9	78	0.37	2.07	108	41.26
10	77	0.37	2.07	109	41.22
11	78	0.36	2.02	110	40.70
12	78	0.34	1.90	109	39.55
13	81	0.25	1.40	110	34.01
14	82	0.27	1.51	111	35.38
15	81	0.25	1.40	112	34.01
16	80	0.24	1.34	113	33.29
17	80	0.24	1.34	113	33.29
18	80	0.25	1.40	113	33.98
19	80	0.16	0.90	114	27.18
20	79	0.14	0.78	115	25.40
21	79	0.13	0.73	114	24.48
22	79	0.17	0.95	114	27.99
23	78	0.20	1.12	114	30.34
24	79	0.19	1.06	114	29.59
AVERAGE	79		1.48	109	34.60

DRY STANDARD VOLUME	120.71	SCF
PERCENT WATER VAPOR	1.76	% VOL
FLOW RATE	2063	ACFM
	1938	DSCFM
	3293	M3/HR
NICKEL CONCENTRATION	0.1916	MG/DSCM
NICKEL EMISSION RATE	630.9	MG/HR
ISOKINETIC PERCENT	99.7	

RELIABLE PLATING | CONDITION 5 | 11/2/05 | TABLE 5-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	119.96	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.372	MILLIGRAMS
WATER COLLECTED	36	ML
STATIC PRESSURE	-0.46	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	80	0.30	1.68	110	37.21
2	81	0.28	1.57	107	35.99
3	81	0.28	1.57	107	35.99
4	82	0.25	1.40	108	34.04
5	81	0.26	1.46	109	34.68
6	80	0.26	1.46	109	34.65
7	81	0.15	0.84	110	26.34
8	81	0.11	0.62	110	22.56
9	81	0.10	0.56	111	21.51
10	82	0.13	0.73	109	24.55
11	82	0.15	0.84	110	26.37
12	81	0.17	0.95	111	28.05
13	81	0.35	1.85	112	40.24
14	82	0.33	1.85	113	39.11
15	83	0.30	1.68	115	37.33
16	84	0.26	1.46	117	34.78
17	84	0.23	1.29	118	32.71
18	83	0.20	1.12	119	30.48
19	83	0.29	1.62	119	36.70
20	82	0.34	1.90	119	39.70
21	83	0.36	2.02	119	40.89
22	84	0.36	2.02	120	40.93
23	84	0.35	1.96	120	40.35
24	84	0.35	1.96	120	40.35
AVERAGE	82		1.43	113	33.98

DRY STANDARD VOLUME	118.66	SCF
PERCENT WATER VAPOR	1.41	% VOL
FLOW RATE	2027	ACFM
	1900	DSCFM
	3229	M3/HR
NICKEL CONCENTRATION	0.1107	MG/DSCM
NICKEL EMISSION RATE	357.5	MG/HR
ISOKINETIC PERCENT	100.0	

RELIABLE PLATING CONDITION 6 11/1/05 TABLE 6-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.30	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	121.38	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.420	MILLIGRAMS
WATER COLLECTED	46	ML
STATIC PRESSURE	-0.46	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	75	0.37	2.04	66	41.13
2	75	0.36	1.98	64	40.57
3	76	0.33	1.82	66	38.88
4	77	0.31	1.71	67	37.72
5	77	0.25	1.38	71	33.87
6	77	0.24	1.32	76	33.19
7	76	0.37	2.04	79	41.17
8	76	0.38	2.09	82	41.72
9	77	0.39	2.15	86	42.30
10	77	0.40	2.20	89	42.84
11	76	0.41	2.26	91	43.33
12	76	0.37	2.04	94	41.17
13	77	0.26	1.43	97	34.54
14	77	0.28	1.54	99	35.84
15	76	0.26	1.43	100	34.51
16	75	0.23	1.27	100	32.43
17	75	0.25	1.38	101	33.81
18	75	0.27	1.49	102	35.13
19	75	0.12	0.66	104	23.42
20	76	0.09	0.50	105	20.30
21	77	0.09	0.50	106	20.32
22	77	0.11	0.61	107	22.47
23	77	0.13	0.72	107	24.42
24	78	0.14	0.77	108	25.37
AVERAGE	76		1.47	90	34.18

DRY STANDARD VOLUME	119.95	SCF
PERCENT WATER VAPOR	1.77	% VOL
FLOW RATE	2039	ACFM
	1929	DSCFM
	3277	M3/HR
NICKEL CONCENTRATION	0.1236	MG/DSCM
NICKEL EMISSION RATE	405.2	MG/HR
ISOKINETIC PERCENT	99.6	

RELIABLE PLATING | CONDITION 6 | 11/1/05 | TABLE 6-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.30	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	117.02	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	1.028	MILLIGRAMS
WATER COLLECTED	45	ML
STATIC PRESSURE	-0.48	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	76	0.18	0.99	99	28.71
2	77	0.21	1.16	98	31.04
3	77	0.23	1.27	99	32.49
4	78	0.21	1.16	99	31.07
5	77	0.24	1.32	101	33.19
6	76	0.24	1.32	101	33.15
7	75	0.11	0.61	102	22.42
8	75	0.07	0.39	102	17.89
9	75	0.07	0.39	103	17.89
10	74	0.09	0.50	103	20.26
11	74	0.12	0.66	103	23.40
12	74	0.12	0.66	104	23.40
13	75	0.37	2.04	107	41.13
14	75	0.39	2.15	108	42.22
15	76	0.35	1.93	109	40.04
16	75	0.31	1.71	110	37.65
17	75	0.27	1.49	111	35.13
18	74	0.23	1.27	112	32.40
19	75	0.31	1.71	113	37.65
20	75	0.37	2.04	113	41.13
21	76	0.42	2.31	114	43.86
22	77	0.43	2.37	115	44.42
23	76	0.43	2.37	117	44.38
24	76	0.41	2.26	118	43.33
AVERAGE	76		1.42	107	33.26

DRY STANDARD VOLUME	115.86	SCF
PERCENT WATER VAPOR	1.80	% VOL
FLOW RATE	1984	ACFM
	1879	DSCFM
	3192	M3/HR
NICKEL CONCENTRATION	0.3133	MG/DSCM
NICKEL EMISSION RATE	1000.1	MG/HR
ISOKINETIC PERCENT	98.7	

RELIABLE PLATING CONDITION 6 11/1/05 TABLE 6-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.30	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	13.5	IN
STACK AREA	0.994	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	114.64	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	1.624	MILLIGRAMS
WATER COLLECTED	45	ML
STATIC PRESSURE	-0.45	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	76	0.35	1.93	110	40.04
2	76	0.36	1.98	109	40.61
3	77	0.31	1.71	108	37.72
4	78	0.26	1.43	108	34.57
5	78	0.22	1.21	108	31.80
6	78	0.21	1.16	108	31.07
7	77	0.30	1.65	109	37.10
8	76	0.36	1.98	109	40.61
9	76	0.37	2.04	110	41.17
10	76	0.37	2.04	110	41.17
11	76	0.36	1.98	111	40.61
12	75	0.35	1.93	111	40.00
13	75	0.23	1.27	111	32.43
14	75	0.22	1.21	112	31.71
15	74	0.20	1.10	112	30.21
16	75	0.20	1.10	112	30.24
17	75	0.18	0.99	112	28.69
18	75	0.25	1.38	111	33.81
19	74	0.13	0.72	111	24.36
20	74	0.08	0.44	110	19.11
21	76	0.08	0.44	111	19.14
22	75	0.11	0.61	111	22.42
23	74	0.13	0.72	110	24.36
24	74	0.12	0.66	111	23.40
AVERAGE	76		1.32	110	32.35

DRY STANDARD VOLUME	113.52	SCF
PERCENT WATER VAPOR	1.83	% VOL
FLOW RATE	1929	ACFM
	1826	DSCFM
	3103	M3/HR
NICKEL CONCENTRATION	0.5052	MG/DSCM
NICKEL EMISSION RATE	1567.5	MG/HR
ISOKINETIC PERCENT	99.5	

ARTISTIC | CONDITION 7 | 11/9/05 | TABLE 7-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.05	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	128.22	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.225	MILLIGRAMS
WATER COLLECTED	17	ML
STATIC PRESSURE	-0.7	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	77	0.11	0.62	68	22.52
2	77	0.14	0.78	68	25.41
3	77	0.18	1.01	69	28.81
4	76	0.19	1.06	70	29.57
5	76	0.19	1.06	72	29.57
6	76	0.17	0.95	76	27.97
7	76	0.16	0.90	79	27.14
8	76	0.14	0.78	82	25.38
9	76	0.12	0.67	87	23.50
10	77	0.10	0.56	88	21.47
11	77	0.09	0.50	89	20.37
12	76	0.08	0.45	91	19.19
13	76	0.23	1.29	93	32.54
14	76	0.25	1.40	96	33.92
15	76	0.29	1.62	99	36.53
16	76	0.35	1.96	102	40.14
17	76	0.50	2.80	103	47.97
18	75	0.54	3.02	107	49.81
19	75	0.60	3.36	109	52.50
20	74	0.60	3.36	110	52.45
21	74	0.58	3.25	112	51.57
22	73	0.56	3.14	112	50.63
23	72	0.54	3.02	114	49.67
24	72	0.52	2.91	117	48.74
AVERAGE	76		1.69	92	35.31

DRY STANDARD VOLUME	125.73	SCF
PERCENT WATER VAPOR	0.63	% VOL
FLOW RATE	1155	ACFM
	1097	DSCFM
	1864	M3/HR
NICKEL CONCENTRATION	0.0632	MG/DSCM
NICKEL EMISSION RATE	117.8	MG/HR
ISOKINETIC PERCENT	100.7	

ARTISTIC CONDITION 7 11/9/05 TABLE 7-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.05	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	114.57	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.257	MILLIGRAMS
WATER COLLECTED	22	ML
STATIC PRESSURE	-1.175	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	71	0.27	0.62	108	35.13
2	70	0.32	0.74	103	38.16
3	70	0.38	0.87	102	41.59
4	70	0.46	1.06	101	45.75
5	69	0.50	1.15	102	47.66
6	68	0.52	1.20	103	48.55
7	68	0.57	1.31	105	50.84
8	67	0.70	1.61	105	56.28
9	67	0.75	1.73	107	58.26
10	67	0.77	1.77	109	59.03
11	67	0.70	1.61	110	56.28
12	68	0.56	1.29	110	50.39
13	69	0.58	1.33	111	51.33
14	69	0.70	1.61	111	56.39
15	70	0.75	1.73	113	58.42
16	70	0.80	1.84	114	60.34
17	70	0.80	1.84	115	60.34
18	69	0.72	1.66	117	57.19
19	69	0.59	1.36	117	51.77
20	69	0.51	1.17	118	48.13
21	69	0.38	0.87	118	41.55
22	70	0.32	0.74	119	38.16
23	70	0.28	0.64	119	35.70
24	70	0.25	0.58	119	33.73
AVERAGE	69		1.26	111	49.21

DRY STANDARD VOLUME	112.47	SCF
PERCENT WATER VAPOR	0.91	% VOL
FLOW RATE	1610	ACFM
	1542	DSCFM
	2620	M3/HR
NICKEL CONCENTRATION	0.0807	MG/DSCM
NICKEL EMISSION RATE	211.4	MG/HR
ISOKINETIC PERCENT	98.9	

ARTISTIC CONDITION 7 11/9/05 TABLE 7-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.05	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	91.28	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.5970	MILLIGRAMS
WATER COLLECTED	17	ML
STATIC PRESSURE	-0.26	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	73	0.14	0.78	107	25.31
2	73	0.18	1.01	104	28.70
3	73	0.19	1.06	103	29.49
4	73	0.21	1.18	105	31.00
5	74	0.18	1.01	107	28.73
6	74	0.18	1.01	108	28.73
7	72	0.15	0.84	109	26.18
8	71	0.12	0.67	109	23.39
9	71	0.09	0.50	109	20.26
10	70	0.10	0.56	110	21.33
11	70	0.09	0.50	111	20.24
12	70	0.08	0.45	112	19.08
13	71	0.08	0.45	112	19.10
14	72	0.09	0.50	113	20.28
15	71	0.09	0.50	113	20.26
16	72	0.11	0.62	113	22.42
17	72	0.14	0.78	114	25.29
18	71	0.15	0.84	115	26.15
19	71	0.19	1.06	117	29.43
20	72	0.20	1.12	118	30.23
21	72	0.16	0.90	118	27.04
22	73	0.17	0.95	119	27.89
23	73	0.15	0.84	119	26.20
24	73	0.12	0.67	120	23.44
AVERAGE	72		0.78	112	25.01

DRY STANDARD VOLUME	89.51	SCF
PERCENT WATER VAPOR	0.89	% VOL
FLOW RATE	818	ACFM
	781	DSCFM
	1327	M3/HR
NICKEL CONCENTRATION	0.2355	MG/DSCM
NICKEL EMISSION RATE	312.6	MG/HR
ISOKINETIC PERCENT	100.7	

ABQC CONDITION 10 2/1/06 TABLE 10-1

TEST NO.	1	
BAROMETRIC PRESSURE	28.95	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	107.23	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.009	
TOTAL NICKEL COLLECTED	0.127	MILLIGRAMS
WATER COLLECTED	24	ML
STATIC PRESSURE	-1.21	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	68	0.42	0.97	52	43.78
2	68	0.45	1.04	48	45.31
3	68	0.47	1.08	50	46.31
4	68	0.47	1.08	51	46.31
5	68	0.44	1.01	53	44.81
6	69	0.52	1.20	56	48.76
7	69	0.58	1.33	61	51.49
8	69	0.60	1.38	65	52.37
9	69	0.56	1.29	69	50.60
10	69	0.52	1.20	74	48.76
11	68	0.48	1.10	78	46.80
12	68	0.44	1.01	82	44.81
13	69	0.34	0.78	84	39.42
14	70	0.38	0.87	87	41.72
15	70	0.44	1.01	89	44.89
16	71	0.44	1.01	90	44.93
17	71	0.48	1.10	92	46.93
18	71	0.54	1.24	94	49.78
19	71	0.54	1.24	97	49.78
20	72	0.50	1.15	99	47.94
21	72	0.48	1.10	101	46.98
22	72	0.46	1.06	102	45.99
23	72	0.41	0.94	102	43.42
24	72	0.41	0.94	104	43.42
AVERAGE	70		1.09	78	46.47

DRY STANDARD VOLUME	105.08	SCF
PERCENT WATER VAPOR	1.06	% VOL
FLOW RATE	2190	ACFM
	2083	DSCFM
	3539	M3/HR
NICKEL CONCENTRATION	0.0427	MG/DSCM
NICKEL EMISSION RATE	151.0	MG/HR
ISOKINETIC PERCENT	98.4	

ABQC CONDITION 10 2/1/06 TABLE 10-2

TEST NO.	2	
BAROMETRIC PRESSURE	28.95	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	105.39	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.009	
NICKEL COLLECTED	0.009	MILLIGRAMS
WATER COLLECTED	30	ML
STATIC PRESSURE	-1.23	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	72	0.39	0.90	100	42.37
2	72	0.41	0.94	99	43.42
3	72	0.42	0.97	98	43.94
4	71	0.42	0.97	99	43.90
5	72	0.49	1.13	99	47.46
6	72	0.56	1.29	100	50.74
7	72	0.58	1.33	102	51.64
8	72	0.53	1.22	103	49.36
9	72	0.53	1.22	104	49.36
10	73	0.51	1.17	106	48.47
11	73	0.48	1.10	107	47.02
12	73	0.42	0.97	108	43.98
13	71	0.37	0.85	109	41.20
14	72	0.45	1.04	109	45.48
15	72	0.45	1.04	109	45.48
16	71	0.45	1.04	110	45.44
17	71	0.45	1.04	110	45.44
18	70	0.51	1.17	111	48.33
19	70	0.58	1.33	111	51.54
20	70	0.56	1.29	112	50.64
21	71	0.52	1.20	112	48.85
22	71	0.48	1.10	112	46.93
23	71	0.46	1.06	113	45.94
24	71	0.46	1.06	113	45.94
AVERAGE	72		1.10	107	46.79

DRY STANDARD VOLUME	103.63	SCF
PERCENT WATER VAPOR	1.34	% VOL
FLOW RATE	2205	ACFM
	2084	DSCFM
	3541	M3/HR
NICKEL CONCENTRATION	0.0031	MG/DSCM
NICKEL EMISSION RATE	10.9	MG/HR
ISOKINETIC PERCENT	97.0	

ABQC CONDITION 10 2/1/06 TABLE 10-3

TEST NO.	3	
BAROMETRIC PRESSURE	28.95	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	104.75	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.009	
NICKEL COLLECTED	0.046	MILLIGRAMS
WATER COLLECTED	24	ML
STATIC PRESSURE	-1.2	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	72	0.37	0.85	108	41.24
2	73	0.43	0.99	105	44.50
3	72	0.44	1.01	106	44.98
4	72	0.44	1.01	106	44.98
5	73	0.48	1.10	107	47.02
6	73	0.54	1.24	108	49.87
7	73	0.56	1.29	108	50.79
8	73	0.52	1.20	108	48.94
9	73	0.50	1.15	109	47.99
10	73	0.46	1.06	109	46.03
11	72	0.44	1.01	109	44.98
12	72	0.42	0.97	110	43.94
13	73	0.34	0.78	111	39.57
14	73	0.40	0.92	111	42.92
15	72	0.40	0.92	111	42.88
16	71	0.42	0.97	112	43.90
17	71	0.48	1.10	112	46.93
18	71	0.51	1.17	112	48.38
19	71	0.56	1.29	113	50.69
20	70	0.58	1.33	113	51.54
21	70	0.48	1.10	113	46.89
22	71	0.48	1.10	113	46.93
23	71	0.46	1.06	114	45.94
24	71	0.42	0.97	114	43.90
AVERAGE	72		1.07	110	46.07

DRY STANDARD VOLUME	103.03	SCF
PERCENT WATER VAPOR	1.08	% VOL
FLOW RATE	2171	ACFM
	2056	DSCFM
	3494	M3/HR
NICKEL CONCENTRATION	0.0158	MG/DSCM
NICKEL EMISSION RATE	55.1	MG/HR
ISOKINETIC PERCENT	97.8	

ABQC CONDITION 11 1/12/06 TABLE 11-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.10	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	106.02	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.006	
TOTAL NICKEL COLLECTED	0.168	MILLIGRAMS
WATER COLLECTED	24	ML
STATIC PRESSURE	-1.08	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	68	0.32	0.74	47	38.11
2	68	0.37	0.85	47	40.98
3	68	0.41	0.94	47	43.13
4	68	0.41	0.94	48	43.13
5	68	0.44	1.01	51	44.68
6	68	0.48	1.10	57	46.67
7	68	0.54	1.24	59	49.50
8	68	0.54	1.24	64	49.50
9	68	0.52	1.20	69	48.58
10	69	0.50	1.15	73	47.68
11	69	0.46	1.06	78	45.73
12	69	0.44	1.01	82	44.73
13	69	0.38	0.87	85	41.56
14	69	0.42	0.97	86	43.70
15	69	0.44	1.01	89	44.73
16	69	0.44	1.01	92	44.73
17	69	0.48	1.10	96	46.71
18	68	0.52	1.20	97	48.58
19	68	0.56	1.29	99	50.41
20	68	0.54	1.24	101	49.50
21	68	0.54	1.24	102	49.50
22	68	0.52	1.20	103	48.58
23	68	0.50	1.15	106	47.63
24	68	0.47	1.08	108	46.18
AVERAGE	68		1.08	79	46.01

DRY STANDARD VOLUME	104.12	SCF
PERCENT WATER VAPOR	1.07	% VOL
FLOW RATE	2168	ACFM
	2079	DSCFM
	3533	M3/HR
NICKEL CONCENTRATION	0.0570	MG/DSCM
NICKEL EMISSION RATE	201.3	MG/HR
ISOKINETIC PERCENT	97.7	

ABQC CONDITION 11 1/12/06 TABLE 11-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.10	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	106.04	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.006	
NICKEL COLLECTED	0.035	MILLIGRAMS
WATER COLLECTED	31	ML
STATIC PRESSURE	-1.11	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	68	0.34	0.78	101	39.30
2	68	0.36	0.83	101	40.42
3	68	0.38	0.87	101	41.53
4	69	0.40	0.92	102	42.64
5	69	0.46	1.06	102	45.73
6	68	0.48	1.10	104	46.67
7	68	0.56	1.29	105	50.41
8	68	0.58	1.33	104	51.30
9	68	0.54	1.24	106	49.50
10	68	0.52	1.20	108	48.58
11	68	0.48	1.10	109	46.67
12	68	0.45	1.04	110	45.19
13	69	0.38	0.87	111	41.56
14	70	0.42	0.97	111	43.74
15	69	0.45	1.04	111	45.23
16	69	0.45	1.04	112	45.23
17	69	0.48	1.10	112	46.71
18	69	0.54	1.24	112	49.55
19	68	0.58	1.33	112	51.30
20	68	0.58	1.33	113	51.30
21	68	0.54	1.24	114	49.50
22	69	0.52	1.20	114	48.62
23	69	0.48	1.10	114	46.71
24	69	0.44	1.01	115	44.73
AVERAGE	69		1.09	109	46.34

DRY STANDARD VOLUME	104.52	SCF
PERCENT WATER VAPOR	1.38	% VOL
FLOW RATE	2184	ACFM
	2087	DSCFM
	3546	M3/HR
NICKEL CONCENTRATION	0.0118	MG/DSCM
NICKEL EMISSION RATE	41.9	MG/HR
ISOKINETIC PERCENT	97.7	

ABQC | CONDITION 11 | 1/12/06 | TABLE 11-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.10	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	107.37	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.006	
NICKEL COLLECTED	0.015	MILLIGRAMS
WATER COLLECTED	26	ML
STATIC PRESSURE	-1.09	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	69	0.42	0.97	110	43.70
2	69	0.44	1.01	109	44.73
3	70	0.45	1.04	108	45.27
4	70	0.47	1.08	109	46.27
5	70	0.50	1.15	109	47.72
6	70	0.54	1.24	109	49.60
7	69	0.56	1.29	110	50.46
8	69	0.54	1.24	111	49.55
9	69	0.52	1.20	111	48.62
10	69	0.50	1.15	111	47.68
11	69	0.48	1.10	111	46.71
12	69	0.44	1.01	112	44.73
13	69	0.37	0.85	113	41.01
14	69	0.40	0.92	113	42.64
15	69	0.42	0.97	113	43.70
16	70	0.42	0.97	114	43.74
17	70	0.44	1.01	114	44.77
18	69	0.50	1.15	115	47.68
19	69	0.57	1.31	116	50.91
20	68	0.55	1.27	116	49.96
21	69	0.53	1.22	117	49.09
22	69	0.50	1.15	118	47.68
23	69	0.45	1.04	118	45.23
24	69	0.45	1.04	119	45.23
AVERAGE	69		1.10	113	46.53

DRY STANDARD VOLUME	105.88	SCF
PERCENT WATER VAPOR	1.14	% VOL
FLOW RATE	2193	ACFM
	2098	DSCFM
	3564	M3/HR
NICKEL CONCENTRATION	0.0050	MG/DSCM
NICKEL EMISSION RATE	17.8	MG/HR
ISOKINETIC PERCENT	98.5	

ABQC CONDITION 12 1/11/06 TABLE 12-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.20	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	113.80	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.006	
TOTAL NICKEL COLLECTED	0.162	MILLIGRAMS
WATER COLLECTED	25	ML
STATIC PRESSURE	-1.01	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	70	0.38	0.87	58	41.53
2	70	0.44	1.01	52	44.68
3	70	0.46	1.06	56	45.69
4	70	0.46	1.06	57	45.69
5	70	0.52	1.20	58	48.58
6	71	0.58	1.33	60	51.35
7	71	0.60	1.38	65	52.23
8	70	0.62	1.43	69	53.04
9	70	0.62	1.43	73	53.04
10	70	0.60	1.38	77	52.18
11	70	0.60	1.38	79	52.18
12	70	0.58	1.33	84	51.30
13	70	0.42	0.97	88	43.66
14	70	0.48	1.10	90	46.67
15	70	0.48	1.10	92	46.67
16	70	0.50	1.15	93	47.63
17	69	0.50	1.15	95	47.59
18	69	0.52	1.20	97	48.53
19	69	0.64	1.47	99	53.84
20	69	0.68	1.56	101	55.50
21	69	0.68	1.56	102	55.50
22	69	0.65	1.50	103	54.26
23	68	0.63	1.45	106	53.37
24	68	0.60	1.38	107	52.08
AVERAGE	70		1.27	82	49.87

DRY STANDARD VOLUME	112.24	SCF
PERCENT WATER VAPOR	1.04	% VOL
FLOW RATE	2350	ACFM
	2257	DSCFM
	3835	M3/HR
NICKEL CONCENTRATION	0.0510	MG/DSCM
NICKEL EMISSION RATE	195.4	MG/HR
ISOKINETIC PERCENT	97.0	

ABQC CONDITION 12 1/11/06 TABLE 12-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.20	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	113.49	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.006	
NICKEL COLLECTED	0.424	MILLIGRAMS
WATER COLLECTED	30	ML
STATIC PRESSURE	-1.05	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	70	0.40	0.92	98	42.62
2	69	0.51	1.17	99	48.06
3	69	0.51	1.17	100	48.06
4	69	0.50	1.15	101	47.59
5	70	0.52	1.20	102	48.58
6	70	0.54	1.24	102	49.50
7	70	0.65	1.50	103	54.31
8	71	0.70	1.61	104	56.41
9	71	0.68	1.56	106	55.60
10	70	0.68	1.56	107	55.55
11	70	0.66	1.52	109	54.73
12	69	0.62	1.43	110	52.99
13	69	0.38	0.87	111	41.49
14	70	0.40	0.92	111	42.61
15	70	0.40	0.92	111	42.61
16	70	0.42	0.97	111	43.66
17	69	0.46	1.06	112	45.65
18	69	0.52	1.20	112	48.53
19	69	0.70	1.61	112	56.31
20	69	0.72	1.66	113	57.11
21	70	0.64	1.47	113	53.89
22	70	0.62	1.43	114	53.04
23	69	0.60	1.38	114	52.13
24	69	0.60	1.38	114	52.13
AVERAGE	70		1.29	108	50.13

DRY STANDARD VOLUME	112.29	SCF
PERCENT WATER VAPOR	1.24	% VOL
FLOW RATE	2362	ACFM
	2264	DSCFM
	3847	M3/HR
NICKEL CONCENTRATION	0.1333	MG/DSCM
NICKEL EMISSION RATE	512.9	MG/HR
ISOKINETIC PERCENT	96.8	

ABQC CONDITION 12 1/11/06 TABLE 12-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.20	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	112.64	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.006	
NICKEL COLLECTED	0.178	MILLIGRAMS
WATER COLLECTED	23	ML
STATIC PRESSURE	-1.02	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	68	0.36	0.83	103	40.34
2	69	0.38	0.87	102	41.49
3	69	0.40	0.92	102	42.56
4	69	0.40	0.92	102	42.56
5	68	0.42	0.97	103	43.57
6	68	0.48	1.10	104	46.58
7	69	0.61	1.40	104	52.56
8	70	0.65	1.50	105	54.31
9	70	0.68	1.56	107	55.55
10	70	0.66	1.52	108	54.73
11	70	0.66	1.52	109	54.73
12	71	0.62	1.43	110	53.09
13	70	0.48	1.10	112	46.67
14	71	0.50	1.15	111	47.68
15	71	0.50	1.15	112	47.68
16	71	0.50	1.15	112	47.68
17	71	0.48	1.10	113	46.72
18	70	0.52	1.20	113	48.58
19	70	0.68	1.56	113	55.55
20	70	0.72	1.66	114	57.16
21	71	0.70	1.61	116	56.41
22	71	0.68	1.56	118	55.60
23	71	0.66	1.52	118	54.78
24	71	0.61	1.40	119	52.66
AVERAGE	70		1.28	110	49.97

DRY STANDARD VOLUME	111.47	SCF
PERCENT WATER VAPOR	0.96	% VOL
FLOW RATE	2355	ACFM
	2262	DSCFM
	3843	M3/HR
NICKEL CONCENTRATION	0.0564	MG/DSCM
NICKEL EMISSION RATE	216.7	MG/HR
ISOKINETIC PERCENT	96.2	

ABQC CONDITION 13 2/2/06 TABLE 13-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.10	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	106.57	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.009	
TOTAL NICKEL COLLECTED	0.043	MILLIGRAMS
WATER COLLECTED	25	ML
STATIC PRESSURE	-1.21	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	71	0.37	0.85	45	41.10
2	71	0.41	0.94	48	43.27
3	72	0.44	1.01	49	44.86
4	72	0.44	1.01	50	44.86
5	72	0.42	0.97	54	43.83
6	71	0.47	1.08	58	46.32
7	71	0.56	1.29	61	50.56
8	71	0.56	1.29	67	50.56
9	71	0.54	1.24	72	49.65
10	72	0.50	1.15	75	47.82
11	72	0.49	1.13	78	47.34
12	72	0.43	0.99	81	44.35
13	70	0.34	0.78	85	39.36
14	71	0.37	0.85	87	41.10
15	70	0.40	0.92	89	42.69
16	71	0.42	0.97	91	43.79
17	70	0.45	1.04	93	45.28
18	69	0.54	1.24	94	49.56
19	69	0.56	1.29	96	50.47
20	70	0.52	1.20	98	48.68
21	69	0.52	1.20	100	48.63
22	69	0.48	1.10	101	46.73
23	70	0.45	1.04	102	45.28
24	70	0.40	0.92	103	42.69
AVERAGE	71		1.06	78	45.78

DRY STANDARD VOLUME	104.97	SCF
PERCENT WATER VAPOR	1.11	% VOL
FLOW RATE	2158	ACFM
	2058	DSCFM
	3498	M3/HR
NICKEL CONCENTRATION	0.0145	MG/DSCM
NICKEL EMISSION RATE	50.6	MG/HR
ISOKINETIC PERCENT	99.5	

ABQC CONDITION 14 11/7/05 TABLE 14-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.40	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	159.07	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.006	
TOTAL NICKEL COLLECTED	0.013	MILLIGRAMS
WATER COLLECTED	34	ML
STATIC PRESSURE	-1.12	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	73	0.38	2.13	63	41.50
2	72	0.41	2.30	58	43.07
3	72	0.46	2.58	59	45.62
4	72	0.46	2.58	62	45.62
5	73	0.46	2.58	66	45.66
6	73	0.48	2.69	72	46.65
7	73	0.50	2.80	76	47.61
8	73	0.47	2.63	78	46.16
9	74	0.45	2.52	82	45.21
10	74	0.42	2.35	87	43.67
11	73	0.39	2.18	88	42.05
12	72	0.37	2.07	91	40.92
13	71	0.38	2.13	96	41.43
14	71	0.42	2.35	97	43.55
15	72	0.44	2.46	99	44.62
16	72	0.44	2.46	101	44.62
17	73	0.47	2.63	102	46.16
18	73	0.50	2.80	104	47.61
19	72	0.52	2.91	106	48.51
20	72	0.50	2.80	108	47.56
21	73	0.48	2.69	109	46.65
22	73	0.46	2.58	111	45.66
23	72	0.44	2.46	112	44.62
24	72	0.39	2.18	113	42.01
AVERAGE	73		2.49	89	44.86

DRY STANDARD VOLUME	158.59	SCF
PERCENT WATER VAPOR	1.00	% VOL
FLOW RATE	2114	ACFM
	2034	DSCFM
	3455	M3/HR
NICKEL CONCENTRATION	0.0029	MG/DSCM
NICKEL EMISSION RATE	10.0	MG/HR
ISOKINETIC PERCENT	98.6	

ABQC CONDITION 14 11/7/05 TABLE 14-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.40	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	157.41	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.017	MILLIGRAMS
WATER COLLECTED	43	ML
STATIC PRESSURE	-1.12	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	69	0.42	2.35	107	43.49
2	69	0.44	2.46	106	44.49
3	69	0.46	2.58	103	45.49
4	69	0.46	2.58	106	45.49
5	69	0.48	2.69	108	46.47
6	70	0.50	2.80	109	47.47
7	70	0.53	2.97	109	48.88
8	71	0.51	2.86	111	47.99
9	71	0.47	2.63	111	46.07
10	70	0.44	2.46	112	44.53
11	70	0.42	2.35	113	43.51
12	69	0.41	2.30	114	42.95
13	71	0.32	1.79	116	38.02
14	71	0.37	2.07	117	40.88
15	70	0.41	2.30	118	42.99
16	70	0.41	2.30	118	42.99
17	70	0.43	2.41	118	44.03
18	71	0.45	2.52	119	45.08
19	71	0.52	2.91	120	48.46
20	70	0.49	2.74	120	47.00
21	70	0.47	2.63	120	46.03
22	70	0.44	2.46	120	44.53
23	71	0.44	2.46	121	44.58
24	71	0.43	2.41	121	44.07
AVERAGE	70		2.50	114	44.81

DRY STANDARD VOLUME	156.93	SCF
PERCENT WATER VAPOR	1.27	% VOL
FLOW RATE	2112	ACFM
	2035	DSCFM
	3458	M3/HR
NICKEL CONCENTRATION	0.0038	MG/DSCM
NICKEL EMISSION RATE	13.2	MG/HR
ISOKINETIC PERCENT	97.6	

ABQC CONDITION 14 11/7/05 TABLE 14-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.40	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	158.34	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.011	MILLIGRAMS
WATER COLLECTED	33	ML
STATIC PRESSURE	-1.1	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	71	0.35	1.96	115	39.75
2	72	0.41	2.30	112	43.07
3	72	0.45	2.52	112	45.12
4	71	0.45	2.52	112	45.08
5	71	0.46	2.58	112	45.58
6	72	0.47	2.63	112	46.11
7	73	0.52	2.91	112	48.55
8	73	0.49	2.74	114	47.13
9	72	0.47	2.63	116	46.11
10	72	0.45	2.52	118	45.12
11	72	0.45	2.52	118	45.12
12	72	0.42	2.35	119	43.59
13	73	0.41	2.30	119	43.11
14	73	0.44	2.46	119	44.66
15	73	0.44	2.46	120	44.66
16	72	0.45	2.52	120	45.12
17	72	0.47	2.63	121	46.11
18	72	0.49	2.74	121	47.09
19	72	0.52	2.91	121	48.51
20	73	0.50	2.80	122	47.61
21	73	0.48	2.69	122	46.65
22	73	0.45	2.52	122	45.17
23	73	0.40	2.24	123	42.58
24	72	0.40	2.24	123	42.54
AVERAGE	72		2.53	118	45.17

DRY STANDARD VOLUME	157.94	SCF
PERCENT WATER VAPOR	0.97	% VOL
FLOW RATE	2129	ACFM
	2049	DSCFM
	3482	M3/HR
NICKEL CONCENTRATION	0.0025	MG/DSCM
NICKEL EMISSION RATE	8.6	MG/HR
ISOKINETIC PERCENT	97.5	

ABQC CONDITION 14 2/2/06 TABLE 14-4

TEST NO.	2	
BAROMETRIC PRESSURE	29.10	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	105.72	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.009	
NICKEL COLLECTED	0.109	MILLIGRAMS
WATER COLLECTED	31	ML
STATIC PRESSURE	-1.21	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	71	0.35	0.81	93	40.00
2	70	0.39	0.90	92	42.16
3	70	0.41	0.94	92	43.23
4	70	0.41	0.94	93	43.23
5	70	0.50	1.15	94	47.73
6	70	0.54	1.24	97	49.61
7	70	0.52	1.20	98	48.68
8	70	0.47	1.08	99	46.28
9	70	0.47	1.08	100	46.28
10	71	0.45	1.04	101	45.33
11	71	0.45	1.04	102	45.33
12	70	0.40	0.92	102	42.69
13	70	0.44	1.01	103	44.78
14	70	0.44	1.01	105	44.78
15	70	0.44	1.01	107	44.78
16	69	0.44	1.01	108	44.74
17	69	0.44	1.01	109	44.74
18	69	0.48	1.10	110	46.73
19	69	0.58	1.33	110	51.36
20	68	0.55	1.27	110	49.97
21	68	0.52	1.20	110	48.59
22	69	0.50	1.15	111	47.69
23	69	0.48	1.10	111	46.73
24	68	0.45	1.04	111	45.20
AVERAGE	70		1.07	103	45.86

DRY STANDARD VOLUME	104.43	SCF
PERCENT WATER VAPOR	1.38	% VOL
FLOW RATE	2161	ACFM
	2060	DSCFM
	3501	M3/HR
NICKEL CONCENTRATION	0.0369	MG/DSCM
NICKEL EMISSION RATE	129.0	MG/HR
ISOKINETIC PERCENT	98.9	

ABQC CONDITION 14 2/2/06 TABL E 14-5

TEST NO.	3	
BAROMETRIC PRESSURE	29.10	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	105.45	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.009	
NICKEL COLLECTED	0.023	MILLIGRAMS
WATER COLLECTED	25	ML
STATIC PRESSURE	-1.19	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	69	0.43	0.99	104	44.22
2	69	0.45	1.04	102	45.24
3	68	0.45	1.04	102	45.20
4	68	0.45	1.04	103	45.20
5	68	0.43	0.99	103	44.18
6	68	0.48	1.10	104	46.68
7	68	0.56	1.29	105	50.42
8	68	0.56	1.29	106	50.42
9	69	0.50	1.15	108	47.69
10	69	0.48	1.10	109	46.73
11	68	0.45	1.04	109	45.20
12	68	0.42	0.97	110	43.67
13	69	0.35	0.81	110	39.90
14	69	0.38	0.87	110	41.57
15	70	0.40	0.92	111	42.69
16	70	0.42	0.97	111	43.75
17	70	0.48	1.10	111	46.77
18	70	0.52	1.20	112	48.68
19	70	0.56	1.29	112	50.52
20	70	0.54	1.24	112	49.61
21	71	0.50	1.15	112	47.78
22	71	0.45	1.04	112	45.33
23	70	0.45	1.04	113	45.28
24	71	0.40	0.92	113	42.74
AVERAGE	69		1.07	109	45.81

DRY STANDARD VOLUME	104.24	SCF
PERCENT WATER VAPOR	1.12	% VOL
FLOW RATE	2159	ACFM
	2065	DSCFM
	3509	M3/HR
NICKEL CONCENTRATION	0.0078	MG/DSCM
NICKEL EMISSION RATE	27.3	MG/HR
ISOKINETIC PERCENT	98.5	

ARTISTIC PLATING | CONDITION 18 | 9/27/05 | TABLE 18-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.35	IN HG
TIP DIAMETER	0.370	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	113.85	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.028	MILLIGRAMS
WATER COLLECTED	20	ML
STATIC PRESSURE	-0.6	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	72	0.05	0.50	73	14.27
2	72	0.05	0.55	68	15.04
3	72	0.05	0.50	69	14.27
4	72	0.05	0.50	70	14.27
5	72	0.04	0.44	72	13.45
6	73	0.04	0.44	75	13.46
7	73	0.04	0.44	78	13.46
8	72	0.05	0.50	79	14.27
9	74	0.05	0.55	83	15.07
10	74	0.06	0.61	87	15.80
11	75	0.07	0.72	89	17.20
12	74	0.07	0.72	92	17.18
13	73	0.15	1.65	94	26.07
14	74	0.14	1.54	97	25.21
15	75	0.14	1.54	100	25.24
16	75	0.13	1.43	103	24.32
17	75	0.11	1.21	107	22.37
18	74	0.11	1.21	111	22.35
19	74	0.21	2.31	111	30.88
20	76	0.29	3.19	112	36.35
21	77	0.30	3.30	113	37.01
22	76	0.34	3.30	117	39.36
23	75	0.38	3.30	117	41.58
24	75	0.39	3.30	119	42.12
AVERAGE	74		1.41	93	22.94

DRY STANDARD VOLUME	112.72	SCF
PERCENT WATER VAPOR	0.83	% VOL
FLOW RATE	1081	ACFM
	1039	DSCFM
	1765	M3/HR
NICKEL CONCENTRATION	0.0088	MG/DSCM
NICKEL EMISSION RATE	15.5	MG/HR
ISOKINETIC PERCENT	95.1	

ARTISTIC PLATING | CONDITION 18 | 9/27/05 | TABLE 18-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.35	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	74.57	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.011	MILLIGRAMS
WATER COLLECTED	24	ML
STATIC PRESSURE	0.95	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	75	0.14	0.31	99	25.22
2	75	0.14	0.31	98	25.24
3	75	0.12	0.26	99	23.36
4	75	0.11	0.24	99	22.37
5	74	0.11	0.24	101	22.35
6	74	0.12	0.26	101	23.34
7	75	0.37	0.81	102	41.03
8	76	0.38	0.84	102	41.62
9	77	0.41	0.90	103	43.27
10	77	0.41	0.90	103	43.27
11	76	0.40	0.88	103	42.70
12	76	0.39	0.86	104	42.16
13	77	0.13	0.29	107	24.36
14	77	0.14	0.31	108	25.28
15	76	0.20	0.44	109	30.19
16	76	0.23	0.51	110	32.38
17	76	0.27	0.59	111	35.08
18	77	0.24	0.53	112	33.10
19	77	0.26	0.57	113	34.46
20	76	0.27	0.59	113	35.08
21	77	0.29	0.64	114	36.39
22	78	0.27	0.59	115	35.14
23	78	0.27	0.59	117	35.14
24	77	0.26	0.57	118	34.46
AVERAGE	76		0.54	107	32.79

DRY STANDARD VOLUME	73.79	SCF
PERCENT WATER VAPOR	1.51	% VOL
FLOW RATE	1545	ACFM
	1474	DSCFM
	2504	M3/HR
NICKEL CONCENTRATION	0.0053	MG/DSCM
NICKEL EMISSION RATE	13.2	MG/HR
ISOKINETIC PERCENT	97.7	

ARTISTIC PLATING CONDITION 18 9/27/05 TABLE 18-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.35	IN HG
TIP DIAMETER	0.248	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	77.92	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.050	MILLIGRAMS
WATER COLLECTED	27	ML
STATIC PRESSURE	-1.01	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	76	0.14	0.31	114	25.31
2	77	0.26	0.57	113	34.46
3	77	0.37	0.81	113	41.10
4	77	0.38	0.84	112	41.65
5	77	0.35	0.77	112	39.98
6	78	0.39	0.86	113	42.24
7	77	0.33	0.73	113	38.82
8	77	0.32	0.70	115	38.22
9	76	0.36	0.79	117	40.51
10	75	0.36	0.79	118	40.47
11	76	0.36	0.79	119	40.51
12	76	0.27	0.59	118	35.08
13	77	0.12	0.26	120	23.41
14	77	0.11	0.24	120	22.41
15	77	0.10	0.22	120	21.37
16	78	0.10	0.22	120	21.39
17	78	0.09	0.20	121	20.29
18	78	0.09	0.20	121	20.29
19	78	0.31	0.68	121	37.66
20	77	0.36	0.79	121	40.54
21	77	0.38	0.84	122	41.65
22	77	0.40	0.88	123	42.74
23	76	0.41	0.90	124	43.23
24	76	0.40	0.88	124	42.70
AVERAGE	77		0.62	118	34.83

DRY STANDARD VOLUME	77.23	SCF
PERCENT WATER VAPOR	1.62	% VOL
FLOW RATE	1642	ACFM
	1554	DSCFM
	2641	M3/HR
NICKEL CONCENTRATION	0.0229	MG/DSCM
NICKEL EMISSION RATE	60.4	MG/HR
ISOKINETIC PERCENT	97.0	

ARTISTIC PLATING | CONDITION 19 | 9/28/05 | TABLE 19-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.20	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	2.5	MIN
NUMBER OF POINTS	24	
METER VOLUME	64.91	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.102	MILLIGRAMS
WATER COLLECTED	25	ML
STATIC PRESSURE	-1.08	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	75	0.10	0.52	75	21.44
2	75	0.10	0.52	74	21.44
3	75	0.09	0.47	72	20.34
4	75	0.08	0.42	73	19.17
5	74	0.09	0.47	73	20.32
6	74	0.08	0.42	74	19.15
7	74	0.22	1.14	76	31.76
8	74	0.46	2.39	78	45.93
9	74	0.54	2.81	78	49.77
10	74	0.62	3.22	79	53.32
11	75	0.60	3.12	81	52.51
12	75	0.58	3.02	83	51.62
13	76	0.26	1.30	84	34.60
14	76	0.31	1.61	86	37.78
15	76	0.40	2.08	89	42.91
16	75	0.45	2.34	91	45.47
17	75	0.45	2.34	92	45.47
18	74	0.42	2.18	94	43.89
19	75	0.31	1.61	96	37.74
20	76	0.35	1.82	98	40.14
21	75	0.37	1.92	99	41.23
22	74	0.40	2.08	100	42.83
23	74	0.42	2.18	101	43.89
24	75	0.40	2.08	102	42.87
AVERAGE	75		1.75	85	37.73

DRY STANDARD VOLUME	63.94	SCF
PERCENT WATER VAPOR	1.81	% VOL
FLOW RATE	1778	ACFM
	1678	DSCFM
	2851	M3/HR
NICKEL CONCENTRATION	0.0563	MG/DSCM
NICKEL EMISSION RATE	161	MG/HR
ISOKINETIC PERCENT	96.4	

ARTISTIC PLATING | CONDITION 19 | 9/28/05 | TABLE 19-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.20	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	2.5	MIN
NUMBER OF POINTS	24	
METER VOLUME	60.87	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.032	MILLIGRAMS
WATER COLLECTED	22	ML
STATIC PRESSURE	-0.96	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	76	0.22	1.14	100	31.81
2	76	0.24	1.25	98	33.24
3	75	0.28	1.46	99	35.87
4	75	0.32	1.66	99	38.35
5	74	0.30	1.56	99	37.09
6	73	0.28	1.46	99	35.80
7	73	0.26	1.35	100	34.50
8	73	0.32	1.66	101	38.27
9	74	0.34	1.77	102	39.49
10	73	0.32	1.66	104	38.27
11	73	0.32	1.66	105	38.27
12	73	0.30	1.56	105	37.06
13	73	0.10	0.52	108	21.40
14	73	0.11	0.57	109	22.44
15	74	0.12	0.62	110	23.46
16	74	0.10	0.52	110	21.42
17	74	0.09	0.47	110	20.32
18	73	0.08	0.42	110	19.14
19	73	0.24	1.25	110	33.15
20	74	0.48	2.50	110	46.92
21	73	0.54	2.81	111	49.72
22	73	0.58	3.02	111	51.53
23	74	0.60	3.12	112	52.46
24	74	0.60	3.12	113	52.46
AVERAGE	74		1.55	106	35.52

DRY STANDARD VOLUME	60.07	SCF
PERCENT WATER VAPOR	1.69	% VOL
FLOW RATE	1674	ACFM
	1585	DSCFM
	2693	M3/HR
NICKEL CONCENTRATION	0.0188	MG/DSCM
NICKEL EMISSION RATE	51	MG/HR
ISOKINETIC PERCENT	95.9	

ARTISTIC PLATING CONDITION 19 9/28/05 TABLE 19-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.20	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	2.5	MIN
NUMBER OF POINTS	24	
METER VOLUME	56.90	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.362	MILLIGRAMS
WATER COLLECTED	20	ML
STATIC PRESSURE	-0.952	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	72	0.13	0.68	102	24.36
2	72	0.16	0.83	101	27.04
3	72	0.14	0.73	100	25.29
4	73	0.14	0.73	102	25.32
5	72	0.12	0.62	102	23.42
6	73	0.12	0.62	101	23.44
7	73	0.31	1.61	102	37.67
8	73	0.46	2.39	101	45.89
9	72	0.48	2.50	102	46.83
10	72	0.54	2.81	102	49.67
11	72	0.62	3.22	103	53.22
12	72	0.60	3.12	105	52.36
13	71	0.14	0.73	107	25.27
14	71	0.12	0.62	108	23.39
15	71	0.10	0.52	108	21.36
16	72	0.07	0.36	108	17.88
17	72	0.10	0.52	109	21.38
18	71	0.12	0.62	109	23.39
19	71	0.20	1.04	109	30.20
20	71	0.26	1.35	110	34.43
21	71	0.40	2.08	110	42.71
22	70	0.34	1.77	111	39.34
23	70	0.30	1.56	111	36.95
24	69	0.26	1.35	112	34.37
AVERAGE	72		1.35	106	32.72

DRY STANDARD VOLUME	56.12	SCF
PERCENT WATER VAPOR	1.65	% VOL
FLOW RATE	1542	ACFM
	1466	DSCFM
	2492	M3/HR
NICKEL CONCENTRATION	0.2278	MG/DSCM
NICKEL EMISSION RATE	567	MG/HR
ISOKINETIC PERCENT	96.8	

ARTISTIC PLATING | CONDITION 20 | 9/29/05 | TABLE 20-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.50	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	109.24	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.029	MILLIGRAMS
WATER COLLECTED	18	ML
STATIC PRESSURE	-1.125	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	60	0.10	0.52	64	20.99
2	60	0.12	0.62	64	22.99
3	60	0.11	0.57	62	22.01
4	61	0.12	0.62	63	23.01
5	61	0.14	0.73	66	24.85
6	60	0.14	0.73	71	24.83
7	60	0.26	1.35	73	33.84
8	60	0.32	1.66	76	37.54
9	61	0.32	1.66	79	37.58
10	61	0.36	1.87	82	39.86
11	62	0.36	1.87	86	39.89
12	62	0.34	1.77	89	38.77
13	63	0.12	0.62	91	23.05
14	63	0.13	0.67	93	24.00
15	63	0.11	0.57	95	22.07
16	62	0.11	0.57	98	22.05
17	63	0.10	0.52	99	21.05
18	63	0.10	0.52	99	21.05
19	63	0.30	1.56	100	36.45
20	62	0.38	1.98	101	40.99
21	62	0.38	1.98	102	40.99
22	63	0.40	2.08	105	42.09
23	63	0.42	2.18	108	43.13
24	62	0.40	2.08	109	42.05
AVERAGE	62		1.22	86	31.05

DRY STANDARD VOLUME	108.57	SCF
PERCENT WATER VAPOR	0.77	% VOL
FLOW RATE	1463	ACFM
	1445	DSCFM
	2455	M3/HR
NICKEL CONCENTRATION	0.0094	MG/DSCM
NICKEL EMISSION RATE	23.2	MG/HR
ISOKINETIC PERCENT	95.1	

ARTISTIC PLATING | CONDITION 20 | 9/29/05 | TABLE 20-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.50	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	111.32	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.011	MILLIGRAMS
WATER COLLECTED	20	ML
STATIC PRESSURE	-1.175	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	63	0.12	0.62	101	23.06
2	63	0.12	0.62	101	23.05
3	63	0.13	0.68	100	24.00
4	62	0.11	0.57	99	22.05
5	62	0.11	0.57	99	22.05
6	63	0.10	0.52	100	21.05
7	63	0.26	1.35	101	33.94
8	63	0.32	1.66	102	37.65
9	64	0.37	1.92	103	40.52
10	64	0.40	2.08	106	42.13
11	63	0.42	2.18	109	43.13
12	62	0.38	1.98	110	40.99
13	63	0.17	0.88	110	27.44
14	63	0.19	0.99	111	29.01
15	63	0.20	1.04	112	29.76
16	64	0.24	1.25	112	32.64
17	64	0.27	1.40	112	34.61
18	64	0.29	1.51	112	35.87
19	64	0.24	1.25	112	32.64
20	65	0.28	1.46	113	35.28
21	65	0.30	1.56	114	36.52
22	65	0.30	1.56	116	36.52
23	65	0.30	1.56	117	36.52
24	65	0.26	1.35	118	34.00
AVERAGE	64		1.27	108	32.27

DRY STANDARD VOLUME	110.94	SCF
PERCENT WATER VAPOR	0.84	% VOL
FLOW RATE	1521	ACFM
	1495	DSCFM
	2540	M3/HR
NICKEL CONCENTRATION	0.0035	MG/DSCM
NICKEL EMISSION RATE	8.9	MG/HR
ISOKINETIC PERCENT	93.9	

ARTISTIC PLATING CONDITION 20 9/29/05 TABLE 20-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.50	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	106.63	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.0360	MILLIGRAMS
WATER COLLECTED	18	ML
STATIC PRESSURE	-1.16	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	65	0.16	0.83	104	26.67
2	65	0.18	0.94	102	28.29
3	66	0.20	1.04	101	29.85
4	66	0.22	1.14	102	31.31
5	66	0.18	0.94	103	28.32
6	66	0.15	0.78	103	25.85
7	65	0.25	1.30	103	33.34
8	66	0.28	1.46	106	35.32
9	67	0.25	1.30	108	33.40
10	67	0.22	1.14	109	31.34
11	67	0.22	1.14	109	31.34
12	67	0.20	1.04	110	29.88
13	67	0.12	0.62	111	23.14
14	67	0.14	0.73	111	25.00
15	68	0.13	0.68	112	24.11
16	68	0.11	0.57	112	22.18
17	68	0.11	0.57	112	22.18
18	67	0.10	0.52	112	21.13
19	67	0.28	1.46	113	35.35
20	68	0.36	1.87	113	40.12
21	67	0.39	2.03	113	41.72
22	67	0.40	2.08	115	42.25
23	67	0.38	1.98	115	41.18
24	67	0.38	1.98	118	41.18
AVERAGE	67		1.17	109	31.02

DRY STANDARD VOLUME	106.25	SCF
PERCENT WATER VAPOR	0.79	% VOL
FLOW RATE	1462	ACFM
	1429	DSCFM
	2428	M3/HR
NICKEL CONCENTRATION	0.0120	MG/DSCM
NICKEL EMISSION RATE	29.1	MG/HR
ISOKINETIC PERCENT	94.0	

ARTISTIC PLATING | CONDITION 21 | 9/30/05 | TABLE 21-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.35	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	2.5	MIN
NUMBER OF POINTS	24	
METER VOLUME	60.32	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.038	MILLIGRAMS
WATER COLLECTED	14	ML
STATIC PRESSURE	-1.05	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	64	0.09	0.47	64	20.05
2	64	0.11	0.57	63	22.16
3	65	0.10	0.52	64	21.15
4	66	0.09	0.47	66	20.08
5	66	0.09	0.47	68	20.08
6	66	0.09	0.47	69	20.08
7	67	0.28	1.46	69	35.46
8	67	0.36	1.87	69	40.21
9	67	0.39	2.03	70	41.85
10	68	0.40	2.08	71	42.42
11	68	0.42	2.18	73	43.47
12	68	0.45	2.34	75	45.00
13	68	0.10	0.52	77	21.21
14	67	0.16	0.83	79	26.80
15	67	0.24	1.25	81	32.83
16	68	0.38	1.98	82	41.35
17	68	0.46	2.39	84	45.49
18	68	0.44	2.29	85	44.49
19	69	0.34	1.77	87	39.15
20	69	0.36	1.87	89	40.28
21	68	0.38	1.98	90	41.35
22	69	0.36	1.87	91	40.28
23	69	0.36	1.87	92	40.28
24	69	0.36	1.87	93	40.28
AVERAGE	67		1.48	77	34.41

DRY STANDARD VOLUME	59.62	SCF
PERCENT WATER VAPOR	1.09	% VOL
FLOW RATE	1621	ACFM
	1571	DSCFM
	2670	M3/HR
NICKEL CONCENTRATION	0.0225	MG/DSCM
NICKEL EMISSION RATE	60.1	MG/HR
ISOKINETIC PERCENT	96.0	

ARTISTIC PLATING | CONDITION 21 | 9/30/05 | TABLE 21-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.35	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	2.5	MIN
NUMBER OF POINTS	24	
METER VOLUME	60.20	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.012	MILLIGRAMS
WATER COLLECTED	10	ML
STATIC PRESSURE	-1.07	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	70	0.08	0.42	93	19.00
2	70	0.14	0.73	92	25.14
3	70	0.17	0.88	92	27.71
4	70	0.22	1.14	92	31.52
5	70	0.32	1.66	93	38.02
6	71	0.32	1.66	93	38.05
7	71	0.36	1.87	95	40.36
8	71	0.39	2.03	97	42.01
9	71	0.39	2.03	98	42.01
10	71	0.42	2.18	98	43.59
11	70	0.45	2.34	99	45.08
12	70	0.45	2.34	99	45.08
13	71	0.12	0.62	101	23.30
14	72	0.12	0.62	101	23.32
15	72	0.11	0.57	102	22.33
16	71	0.11	0.57	104	22.31
17	71	0.10	0.57	105	21.27
18	71	0.12	0.62	105	23.30
19	71	0.26	1.35	104	34.30
20	72	0.40	2.08	105	42.58
21	71	0.50	2.60	107	47.56
22	71	0.52	2.70	108	48.51
23	71	0.54	2.81	108	49.43
24	70	0.56	2.91	109	50.29
AVERAGE	71		1.55	100	35.25

DRY STANDARD VOLUME	59.67	SCF
PERCENT WATER VAPOR	0.78	% VOL
FLOW RATE	1661	ACFM
	1604	DSCFM
	2726	M3/HR
NICKEL CONCENTRATION	0.0071	MG/DSCM
NICKEL EMISSION RATE	19.4	MG/HR
ISOKINETIC PERCENT	94.1	

ARTISTIC PLATING CONDITION 21 9/30/05 TABLE 21-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.35	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	2.5	MIN
NUMBER OF POINTS	24	
METER VOLUME	57.75	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.014	MILLIGRAMS
WATER COLLECTED	11	ML
STATIC PRESSURE	-1.04	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	72	0.12	0.62	104	23.31
2	72	0.12	0.62	102	23.32
3	72	0.11	0.57	101	22.33
4	72	0.11	0.57	101	22.33
5	73	0.10	0.52	101	21.31
6	73	0.11	0.57	101	22.35
7	73	0.32	1.66	102	38.12
8	73	0.44	2.29	102	44.70
9	74	0.52	2.70	103	48.64
10	74	0.54	2.81	103	49.57
11	74	0.54	2.81	105	49.57
12	73	0.56	2.91	106	50.43
13	74	0.12	0.62	109	23.37
14	74	0.13	0.67	110	24.32
15	75	0.15	0.78	110	26.15
16	75	0.15	0.78	110	26.15
17	75	0.12	0.62	111	23.39
18	74	0.11	0.57	111	22.37
19	74	0.26	1.35	112	34.40
20	74	0.34	1.77	112	39.33
21	74	0.38	1.98	112	41.58
22	73	0.45	2.34	113	45.21
23	73	0.45	2.34	114	45.21
24	73	0.46	2.39	117	45.71
AVERAGE	73		1.45	107	33.88

DRY STANDARD VOLUME	57.28	SCF
PERCENT WATER VAPOR	0.90	% VOL
FLOW RATE	1597	ACFM
	1532	DSCFM
	2604	M3/HR
NICKEL CONCENTRATION	0.0086	MG/DSCM
NICKEL EMISSION RATE	22.5	MG/HR
ISOKINETIC PERCENT	94.6	

ELITE | CONDITION 22 | 10/18/05 | TABLE 22-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.187	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	104.30	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.006	
TOTAL NICKEL COLLECTED	0.065	MILLIGRAMS
WATER COLLECTED	25	ML
STATIC PRESSURE	-4.1	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	64	1.00	1.00	72	67.20
2	64	1.05	1.05	74	68.86
3	64	1.05	1.05	76	68.86
4	63	1.15	1.15	78	71.99
5	61	1.20	1.20	80	73.40
6	62	1.25	1.25	83	74.99
7	64	1.55	1.55	87	83.66
8	63	1.60	1.60	91	84.92
9	65	1.60	1.60	95	85.08
10	65	1.55	1.55	99	83.74
11	66	1.40	1.40	114	79.66
12	66	1.40	1.40	118	79.66
13	66	1.40	1.40	119	79.66
14	66	1.40	1.40	121	79.66
15	65	1.35	1.35	122	78.15
16	65	1.45	1.45	122	80.99
17	64	1.40	1.40	123	79.51
18	64	1.35	1.35	122	78.08
19	64	1.65	1.65	124	86.32
20	63	1.70	1.70	125	87.53
21	64	1.85	1.85	124	91.40
22	64	1.80	1.80	125	90.16
23	63	1.85	1.85	127	91.31
24	64	1.60	1.60	128	85.00
AVERAGE	64		1.44	106	80.41

DRY STANDARD VOLUME	103.39	SCF
PERCENT WATER VAPOR	1.13	% VOL
FLOW RATE	3789	ACFM
	3652	DSCFM
	6205	M3/HR
NICKEL CONCENTRATION	0.0222	MG/DSCM
NICKEL EMISSION RATE	137.7	MG/HR
ISOKINETIC PERCENT	97.2	

ELITE | CONDITION 22 | 11/18/05 | TABLE 22-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.187	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	108.08	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.006	
NICKEL COLLECTED	0.034	MILLIGRAMS
WATER COLLECTED	23	ML
STATIC PRESSURE	-4.05	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	65	1.50	1.50	118	82.35
2	64	1.60	1.60	117	85.00
3	64	1.40	1.40	117	79.51
4	65	1.45	1.45	118	80.99
5	65	1.45	1.45	116	80.99
6	65	1.40	1.40	117	79.59
7	64	1.60	1.60	119	85.00
8	66	1.75	1.75	120	89.06
9	64	1.85	1.85	121	91.40
10	66	1.90	1.90	122	92.80
11	65	1.90	1.90	123	92.71
12	65	1.75	1.75	123	88.98
13	65	1.60	1.60	124	85.08
14	66	1.70	1.70	123	87.78
15	65	1.75	1.75	125	88.98
16	66	1.90	1.90	125	92.80
17	66	1.80	1.80	126	90.33
18	66	1.65	1.65	128	86.48
19	67	1.35	1.35	127	78.30
20	66	1.30	1.30	127	76.76
21	66	1.25	1.25	128	75.27
22	67	1.25	1.25	128	75.34
23	67	1.20	1.25	129	73.82
24	66	1.15	1.15	130	72.20
AVERAGE	65		1.56	123	83.81

DRY STANDARD VOLUME	107.39	SCF
PERCENT WATER VAPOR	1.00	% VOL
FLOW RATE	3950	ACFM
	3802	DSCFM
	6460	M3/HR
NICKEL CONCENTRATION	0.0112	MG/DSCM
NICKEL EMISSION RATE	72.2	MG/HR
ISOKINETIC PERCENT	96.9	

ELITE CONDITION 22 10/18/05 TABLE 22-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.187	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	103.86	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.006	
NICKEL COLLECTED	0.028	MILLIGRAMS
WATER COLLECTED	21	ML
STATIC PRESSURE	-4.1	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	67	1.05	1.05	125	69.03
2	66	1.10	1.10	123	70.61
3	66	1.10	1.10	123	70.61
4	67	1.10	1.10	124	70.68
5	66	1.15	1.15	124	72.20
6	66	1.20	1.20	125	73.75
7	67	1.55	1.55	125	83.90
8	67	1.65	1.65	125	86.56
9	67	1.70	1.70	126	87.87
10	66	1.80	1.80	128	90.33
11	66	1.65	1.65	129	86.48
12	67	1.70	1.70	130	87.87
13	66	1.95	1.95	130	94.02
14	67	1.90	1.90	130	92.89
15	67	1.90	1.90	131	92.89
16	66	1.80	1.80	132	90.33
17	66	1.75	1.75	132	89.06
18	66	1.65	1.65	133	86.48
19	67	1.40	1.40	134	79.74
20	68	1.25	1.25	135	75.42
21	68	1.25	1.25	135	75.42
22	67	1.20	1.20	136	73.82
23	66	1.15	1.15	137	72.20
24	66	1.10	1.10	137	70.61
AVERAGE	67		1.46	130	80.95

DRY STANDARD VOLUME	103.25	SCF
PERCENT WATER VAPOR	0.95	% VOL
FLOW RATE	3815	ACFM
	3666	DSCFM
	6229	M3/HR
NICKEL CONCENTRATION	0.0096	MG/DSCM
NICKEL EMISSION RATE	59.6	MG/HR
ISOKINETIC PERCENT	96.7	

ELITE | CONDITION 23 | 11/15/05 | TABLE 23-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.30	IN HG
TIP DIAMETER	0.187	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	118.44	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.058	MILLIGRAMS
WATER COLLECTED	30	ML
STATIC PRESSURE	-5.1	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	69	1.05	0.77	56	69.22
2	69	1.10	0.80	58	70.85
3	69	1.20	0.88	60	74.00
4	70	1.30	0.95	62	77.10
5	71	1.40	1.02	66	80.08
6	71	1.60	1.17	69	85.61
7	70	2.00	1.46	71	95.63
8	70	2.15	1.57	75	99.15
9	71	2.45	1.79	80	105.94
10	70	2.60	1.90	84	109.03
11	70	2.50	1.83	88	106.91
12	70	2.25	1.64	90	101.43
13	70	2.25	1.64	92	101.43
14	71	2.30	1.68	97	102.64
15	71	2.25	1.64	98	101.52
16	71	2.15	1.57	99	99.24
17	71	2.00	1.46	102	95.72
18	71	1.85	1.35	103	92.06
19	71	1.60	1.17	103	85.61
20	71	1.50	1.10	106	82.89
21	71	1.45	1.06	108	81.50
22	71	1.45	1.06	110	81.50
23	72	1.40	1.02	111	80.16
24	72	1.35	0.99	111	78.71
AVERAGE	71		1.31	87	89.91

DRY STANDARD VOLUME	116.96	SCF
PERCENT WATER VAPOR	1.19	% VOL
FLOW RATE	4237	ACFM
	4028	DSCFM
	6844	M3/HR
NICKEL CONCENTRATION	0.0175	MG/DSCM
NICKEL EMISSION RATE	119.8	MG/HR
ISOKINETIC PERCENT	99.6	

ELITE CONDITION 23 11/15/05 TABLE 23-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.30	IN HG
TIP DIAMETER	0.187	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	112.09	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.0420	MILLIGRAMS
WATER COLLECTED	36	ML
STATIC PRESSURE	-4.85	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	72	2.15	1.57	107	99.36
2	72	2.15	1.57	104	99.33
3	71	2.05	1.50	105	96.90
4	71	1.90	1.39	107	93.29
5	72	1.85	1.35	108	92.14
6	72	1.75	1.28	109	89.62
7	72	1.45	1.06	109	81.58
8	72	1.45	1.06	110	81.58
9	72	1.30	0.95	111	77.24
10	71	1.30	0.95	112	77.17
11	72	1.30	0.95	113	77.24
12	72	1.25	0.91	114	75.74
13	73	1.15	0.84	117	72.72
14	73	1.20	0.88	117	74.28
15	72	1.25	0.91	118	75.74
16	72	1.30	0.95	118	77.24
17	72	1.35	0.99	118	78.71
18	72	1.50	1.10	118	82.97
19	72	1.75	1.28	118	89.62
20	72	1.80	1.31	119	90.89
21	72	1.85	1.35	119	92.14
22	72	1.85	1.35	120	92.14
23	72	1.75	1.28	120	89.62
24	72	1.60	1.17	120	85.69
AVERAGE	72		1.16	114	85.12

DRY STANDARD VOLUME	111.00	SCF
PERCENT WATER VAPOR	1.50	% VOL
FLOW RATE	4011	ACFM
	3794	DSCFM
	6446	M3/HR
NICKEL CONCENTRATION	0.0134	MG/DSCM
NICKEL EMISSION RATE	86.1	MG/HR
ISOKINETIC PERCENT	100.4	

ELITE CONDITION 23 11/15/05 TABLE 23-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.30	IN HG
TIP DIAMETER	0.187	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	113.42	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.0620	MILLIGRAMS
WATER COLLECTED	31	ML
STATIC PRESSURE	-4.8	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	73	1.05	0.77	112	69.47
2	73	1.10	0.80	111	71.12
3	73	1.15	0.84	110	72.72
4	73	1.25	0.91	110	75.81
5	72	1.40	1.02	111	80.16
6	72	1.50	1.10	112	82.97
7	73	1.75	1.28	112	89.70
8	72	1.85	1.35	113	92.14
9	72	1.85	1.35	114	92.14
10	72	1.90	1.39	116	93.38
11	72	1.85	1.35	118	92.14
12	72	1.75	1.28	118	89.62
13	72	2.10	1.53	119	98.17
14	72	2.15	1.57	119	99.33
15	73	2.15	1.57	119	99.43
16	73	1.90	1.39	119	93.47
17	73	1.80	1.31	120	90.97
18	73	1.75	1.28	121	89.70
19	72	1.60	1.17	121	85.69
20	72	1.60	1.17	121	85.69
21	72	1.45	1.06	121	81.58
22	72	1.30	0.95	121	77.24
23	73	1.25	0.91	122	75.81
24	73	1.10	0.80	122	71.12
AVERAGE	72		1.17	117	85.40

DRY STANDARD VOLUME	112.36	SCF
PERCENT WATER VAPOR	1.28	% VOL
FLOW RATE	4024	ACFM
	3811	DSCFM
	6476	M3/HR
NICKEL CONCENTRATION	0.0195	MG/DSCM
NICKEL EMISSION RATE	126.2	MG/HR
ISOKINETIC PERCENT	101.2	

ARTISTIC | CONDITION 24 | 11/10/05 | TABLE 24-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.45	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	95.79	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.129	MILLIGRAMS
WATER COLLECTED	20	ML
STATIC PRESSURE	-0.31	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	74	0.10	0.56	58	21.27
2	74	0.10	0.56	59	21.27
3	75	0.11	0.62	60	22.33
4	75	0.13	0.73	62	24.27
5	75	0.14	0.78	67	25.19
6	75	0.15	0.84	71	26.08
7	76	0.18	1.01	73	28.59
8	76	0.19	1.06	78	29.37
9	76	0.19	1.06	82	29.37
10	76	0.18	1.01	86	28.59
11	76	0.14	0.78	89	25.21
12	76	0.12	0.67	91	23.34
13	76	0.18	1.01	95	28.59
14	76	0.20	1.12	97	30.14
15	76	0.23	1.29	101	32.32
16	75	0.23	1.29	102	32.29
17	75	0.23	1.29	106	32.29
18	76	0.22	1.23	108	31.61
19	77	0.17	0.95	111	27.81
20	77	0.12	0.67	112	23.37
21	76	0.09	0.50	113	20.22
22	76	0.09	0.50	114	20.22
23	77	0.09	0.50	116	20.24
24	77	0.08	0.45	117	19.08
AVERAGE	76		0.85	90	25.96

DRY STANDARD VOLUME	95.00	SCF
PERCENT WATER VAPOR	0.98	% VOL
FLOW RATE	850	ACFM
	815	DSCFM
	1386	M3/HR
NICKEL CONCENTRATION	0.0479	MG/DSCM
NICKEL EMISSION RATE	66.4	MG/HR
ISOKINETIC PERCENT	102.3	

ARTISTIC CONDITION 24 11/10/05 TABLE 24-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.45	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	96.89	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.2090	MILLIGRAMS
WATER COLLECTED	17	ML
STATIC PRESSURE	-0.31	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	78	0.17	0.95	114	27.83
2	78	0.20	1.12	113	30.19
3	78	0.22	1.23	113	31.67
4	78	0.22	1.23	115	31.67
5	78	0.23	1.29	118	32.38
6	78	0.21	1.18	119	30.94
7	77	0.17	0.95	119	27.81
8	75	0.16	0.90	119	26.93
9	76	0.15	0.84	119	26.10
10	78	0.14	0.78	119	25.26
11	78	0.12	0.67	119	23.39
12	77	0.11	0.62	120	22.37
13	78	0.11	0.62	120	22.39
14	78	0.15	0.84	120	26.15
15	75	0.16	0.90	120	26.93
16	73	0.13	0.73	120	24.23
17	72	0.14	0.78	120	25.12
18	72	0.13	0.73	120	24.21
19	73	0.18	1.01	120	28.51
20	73	0.20	1.12	120	30.05
21	74	0.19	1.06	120	29.32
22	75	0.16	0.90	121	26.93
23	74	0.14	0.78	121	25.17
24	74	0.13	0.73	121	24.25
AVERAGE	76		0.92	119	27.08

DRY STANDARD VOLUME	96.43	SCF
PERCENT WATER VAPOR	0.82	% VOL
FLOW RATE	886	ACFM
	852	DSCFM
	1447	M3/HR
NICKEL CONCENTRATION	0.0765	MG/DSCM
NICKEL EMISSION RATE	110.7	MG/HR
ISOKINETIC PERCENT	99.5	

ARTISTIC CONDITION 24 11/10/05 TABLE 24-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.45	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	96.07	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.193	MILLIGRAMS
WATER COLLECTED	17	ML
STATIC PRESSURE	-0.32	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	73	0.12	0.67	112	23.27
2	74	0.13	0.73	110	24.25
3	73	0.13	0.73	110	24.23
4	73	0.14	0.78	110	25.14
5	72	0.15	0.84	110	26.00
6	73	0.16	0.90	111	26.88
7	74	0.19	1.06	111	29.32
8	74	0.21	1.18	111	30.82
9	75	0.20	1.12	112	30.11
10	74	0.16	0.90	113	26.91
11	73	0.13	0.73	114	24.23
12	73	0.10	0.56	115	21.25
13	72	0.15	0.84	118	26.00
14	72	0.20	1.12	117	30.02
15	73	0.21	1.18	117	30.80
16	72	0.21	1.18	118	30.77
17	72	0.22	1.23	118	31.49
18	71	0.22	1.23	119	31.46
19	71	0.17	0.95	119	27.66
20	72	0.15	0.84	119	26.00
21	72	0.11	0.62	119	22.27
22	72	0.11	0.62	120	22.27
23	71	0.10	0.56	120	21.21
24	71	0.08	0.45	119	18.97
AVERAGE	73		0.88	115	26.31

DRY STANDARD VOLUME	95.56	SCF
PERCENT WATER VAPOR	0.83	% VOL
FLOW RATE	861	ACFM
	832	DSCFM
	1414	M3/HR
NICKEL CONCENTRATION	0.0713	MG/DSCM
NICKEL EMISSION RATE	100.9	MG/HR
ISOKINETIC PERCENT	100.9	

ELITE | CONDITION 25 | 11/25/05 | TABLE 25-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.10	IN HG
TIP DIAMETER	0.187	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	101.16	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.011	MILLIGRAMS
WATER COLLECTED	21	ML
STATIC PRESSURE	-4.85	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	73	1.45	1.06	68	81.88
2	73	1.45	1.06	70	81.88
3	73	1.50	1.10	71	83.28
4	73	1.50	1.10	73	83.28
5	74	1.45	1.06	76	81.95
6	74	1.45	1.06	80	81.95
7	74	1.30	0.95	84	77.60
8	74	1.25	0.91	88	76.09
9	74	1.20	0.88	91	74.56
10	74	1.00	0.73	92	68.06
11	73	0.90	0.66	96	64.51
12	73	0.85	0.62	99	62.69
13	74	1.35	0.99	101	79.08
14	74	1.35	0.99	104	79.08
15	74	1.40	1.02	108	80.53
16	74	1.40	1.02	110	80.53
17	73	1.40	1.02	111	80.45
18	73	1.45	1.06	113	81.88
19	73	1.45	1.06	117	81.88
20	73	1.50	1.10	118	83.28
21	73	1.50	1.10	118	83.28
22	72	1.45	1.06	119	81.80
23	72	1.40	1.02	119	80.38
24	72	1.30	0.95	120	77.45
AVERAGE	73		0.98	98	78.64

DRY STANDARD VOLUME	99.26	SCF
PERCENT WATER VAPOR	0.99	% VOL
FLOW RATE	3706	ACFM
	3490	DSCFM
	5930	M3/HR
NICKEL CONCENTRATION	0.0039	MG/DSCM
NICKEL EMISSION RATE	23.2	MG/HR
ISOKINETIC PERCENT	97.6	

ELITE CONDITION 25 11/16/05 TABLE 25-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.10	IN HG
TIP DIAMETER	0.187	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	98.65	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.017	MILLIGRAMS
WATER COLLECTED	19	ML
STATIC PRESSURE	-4.9	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	71	1.20	0.88	112	74.34
2	71	1.25	0.91	111	75.88
3	71	1.25	0.91	111	75.88
4	72	1.25	0.91	113	75.95
5	72	1.30	0.95	114	77.45
6	72	1.35	0.99	114	78.93
7	72	1.35	0.99	114	78.93
8	71	1.40	1.02	117	80.30
9	70	1.40	1.02	118	80.23
10	70	1.40	1.02	118	80.23
11	71	1.35	0.99	119	78.86
12	71	1.30	0.95	119	77.38
13	71	1.35	0.99	120	78.86
14	71	1.35	0.99	120	78.86
15	72	1.40	1.02	121	80.38
16	72	1.40	1.02	121	80.38
17	72	1.40	1.02	122	80.38
18	71	1.40	1.02	123	80.30
19	71	1.25	0.91	124	75.88
20	72	1.05	0.77	124	69.61
21	72	0.95	0.69	124	66.21
22	72	0.90	0.66	124	64.45
23	73	0.90	0.66	124	64.51
24	74	0.85	0.62	124	62.75
AVERAGE	72		0.91	119	75.70

DRY STANDARD VOLUME	97.02	SCF
PERCENT WATER VAPOR	0.91	% VOL
FLOW RATE	3568	ACFM
	3373	DSCFM
	5731	M3/HR
NICKEL CONCENTRATION	0.0062	MG/DSCM
NICKEL EMISSION RATE	35.5	MG/HR
ISOKINETIC PERCENT	98.7	

ARTISTIC CONDITION 25 11/16/05 TABLE 25-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.10	IN HG
TIP DIAMETER	0.187	IN
STACK DIAMETER	12	IN
STACK AREA	0.785	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	102.50	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.017	MILLIGRAMS
WATER COLLECTED	19	ML
STATIC PRESSURE	-5	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	75	1.40	1.02	118	80.60
2	75	1.40	1.02	118	80.60
3	74	1.45	1.06	118	81.95
4	75	1.45	1.06	119	82.03
5	75	1.40	1.02	119	80.60
6	75	1.35	0.99	119	79.15
7	76	1.15	0.84	120	73.12
8	75	1.05	0.77	121	69.81
9	75	0.95	0.69	121	66.40
10	75	0.95	0.69	121	66.40
11	76	0.90	0.66	121	64.69
12	76	0.85	0.62	121	62.87
13	75	1.30	0.95	122	77.67
14	75	1.35	0.99	123	79.15
15	76	1.35	0.99	124	79.23
16	76	1.35	0.99	125	79.23
17	76	1.40	1.02	124	80.68
18	76	1.40	1.02	126	80.68
19	77	1.45	1.06	127	82.18
20	77	1.45	1.06	127	82.18
21	76	1.50	1.10	126	83.51
22	76	1.40	1.02	127	80.68
23	75	1.40	1.02	128	80.60
24	74	1.35	0.99	129	79.08
AVERAGE	75		0.94	123	77.21

DRY STANDARD VOLUME	100.86	SCF
PERCENT WATER VAPOR	0.88	% VOL
FLOW RATE	3639	ACFM
	3415	DSCFM
	5803	M3/HR
NICKEL CONCENTRATION	0.0060	MG/DSCM
NICKEL EMISSION RATE	34.5	MG/HR
ISOKINETIC PERCENT	101.3	

ARTISTIC CONDITION 27 10/17/05 TABLE 27-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	97.76	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	1.673	MILLIGRAMS
WATER COLLECTED	24	ML
STATIC PRESSURE	-0.31	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	68	0.16	0.90	62	26.85
2	69	0.18	1.01	63	28.51
3	69	0.21	1.18	64	30.79
4	70	0.21	1.18	67	30.82
5	70	0.22	1.23	69	31.55
6	71	0.22	1.23	72	31.58
7	72	0.19	1.06	76	29.37
8	72	0.18	1.01	80	28.59
9	73	0.15	0.84	83	26.12
10	73	0.13	0.73	87	24.32
11	73	0.11	0.62	89	22.37
12	73	0.09	0.50	91	20.24
13	73	0.07	0.39	93	17.85
14	73	0.09	0.50	95	20.24
15	73	0.11	0.62	97	22.37
16	74	0.11	0.62	98	22.39
17	74	0.13	0.73	98	24.34
18	74	0.15	0.84	101	26.15
19	74	0.19	1.06	102	29.43
20	74	0.20	1.12	102	30.19
21	73	0.21	1.18	103	30.91
22	73	0.21	1.18	105	30.91
23	73	0.18	1.01	107	28.62
24	73	0.14	0.78	109	25.24
AVERAGE	72		0.90	88	26.66

DRY STANDARD VOLUME	96.28	SCF
PERCENT WATER VAPOR	1.16	% VOL
FLOW RATE	872	ACFM
	836	DSCFM
	1420	M3/HR
NICKEL CONCENTRATION	0.6136	MG/DSCM
NICKEL EMISSION RATE	871.1	MG/HR
ISOKINETIC PERCENT	101.2	

ARTISTIC CONDITION 27 10/17/05 TABLE 27-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	95.80	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.755	MILLIGRAMS
WATER COLLECTED	31	ML
STATIC PRESSURE	-0.33	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	74	0.08	0.45	98	19.11
2	74	0.09	0.50	97	20.25
3	74	0.11	0.62	97	22.39
4	74	0.11	0.62	98	22.39
5	74	0.13	0.73	99	24.34
6	74	0.14	0.78	99	25.26
7	74	0.17	0.95	100	27.84
8	74	0.19	1.06	102	29.43
9	73	0.22	1.23	103	31.64
10	73	0.21	1.18	106	30.91
11	74	0.20	1.12	108	30.19
12	74	0.18	1.01	109	28.64
13	74	0.16	0.90	110	27.01
14	74	0.18	1.01	111	28.64
15	75	0.20	1.12	112	30.22
16	75	0.21	1.18	112	30.97
17	75	0.21	1.18	112	30.97
18	75	0.22	1.23	113	31.70
19	75	0.16	0.90	115	27.03
20	74	0.15	0.84	116	26.15
21	74	0.12	0.67	116	23.39
22	75	0.11	0.62	117	22.41
23	75	0.09	0.50	117	20.27
24	75	0.08	0.45	118	19.11
AVERAGE	74		0.87	108	26.26

DRY STANDARD VOLUME	94.57	SCF
PERCENT WATER VAPOR	1.52	% VOL
FLOW RATE	859	ACFM
	817	DSCFM
	1388	M3/HR
NICKEL CONCENTRATION	0.2819	MG/DSCM
NICKEL EMISSION RATE	391.4	MG/HR
ISOKINETIC PERCENT	101.7	

ARTISTIC CONDITION 27 10/17/05 TABLE 27-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.25	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	96.74	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	1.393	MILLIGRAMS
WATER COLLECTED	29	ML
STATIC PRESSURE	-0.33	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	76	0.18	1.01	109	28.71
2	76	0.20	1.12	108	30.25
3	76	0.22	1.23	108	31.73
4	77	0.23	1.29	108	32.47
5	77	0.22	1.23	109	31.76
6	77	0.17	0.95	110	27.92
7	77	0.15	0.84	110	26.22
8	77	0.14	0.78	111	25.33
9	78	0.11	0.62	112	22.48
10	78	0.11	0.62	113	22.48
11	78	0.10	0.56	115	21.43
12	78	0.08	0.45	116	19.17
13	78	0.10	0.56	118	21.43
14	79	0.11	0.62	118	22.50
15	79	0.12	0.67	118	23.50
16	79	0.12	0.67	119	23.50
17	79	0.15	0.84	120	26.27
18	78	0.18	1.01	120	28.75
19	78	0.20	1.12	120	30.31
20	79	0.21	1.18	121	31.08
21	79	0.21	1.18	121	31.08
22	78	0.20	1.12	122	30.31
23	78	0.18	1.01	123	28.75
24	78	0.16	0.90	123	27.11
AVERAGE	78		0.90	116	26.86

DRY STANDARD VOLUME	95.59	SCF
PERCENT WATER VAPOR	1.41	% VOL
FLOW RATE	879	ACFM
	831	DSCFM
	1412	M3/HR
NICKEL CONCENTRATION	0.5146	MG/DSCM
NICKEL EMISSION RATE	726.6	MG/HR
ISOKINETIC PERCENT	101.1	

ARTISTIC CONDITION 28 10/19/05 TABLE 28-1

TEST NO.	1	
BAROMETRIC PRESSURE	29.30	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	96.02	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
TOTAL NICKEL COLLECTED	0.347	MILLIGRAMS
WATER COLLECTED	24	ML
STATIC PRESSURE	-0.33	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	69	0.15	0.84	63	26.01
2	70	0.17	0.95	63	27.71
3	70	0.20	1.12	66	30.06
4	69	0.21	1.18	68	30.77
5	69	0.22	1.23	70	31.49
6	69	0.23	1.29	73	32.20
7	69	0.18	1.01	78	28.49
8	70	0.17	0.95	81	27.71
9	70	0.14	0.78	83	25.15
10	69	0.11	0.62	87	22.27
11	68	0.09	0.50	89	20.12
12	68	0.08	0.45	91	18.97
13	68	0.09	0.50	93	20.12
14	68	0.10	0.56	95	21.21
15	69	0.11	0.62	97	22.27
16	69	0.13	0.73	99	24.21
17	68	0.15	0.84	100	25.98
18	69	0.17	0.95	101	27.69
19	69	0.17	0.95	102	27.69
20	68	0.18	1.01	103	28.46
21	69	0.20	1.12	106	30.03
22	69	0.19	1.07	108	29.27
23	69	0.17	0.95	108	27.69
24	68	0.14	0.78	109	25.10
AVERAGE	69		0.88	89	26.28

DRY STANDARD VOLUME	94.73	SCF
PERCENT WATER VAPOR	1.18	% VOL
FLOW RATE	860	ACFM
	830	DSCFM
	1411	M3/HR
NICKEL CONCENTRATION	0.1293	MG/DSCM
NICKEL EMISSION RATE	182.4	MG/HR
ISOKINETIC PERCENT	100.2	

ARTISTIC CONDITION 28 10/19/05 TABLE 28-2

TEST NO.	2	
BAROMETRIC PRESSURE	29.30	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	98.03	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.445	MILLIGRAMS
WATER COLLECTED	25	ML
STATIC PRESSURE	-0.32	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	69	0.10	0.56	101	21.23
2	69	0.11	0.62	99	22.27
3	68	0.13	0.73	99	24.19
4	68	0.15	0.84	99	25.98
5	68	0.17	0.95	99	27.66
6	68	0.17	0.95	101	27.66
7	69	0.18	1.01	101	28.49
8	69	0.20	1.12	102	30.03
9	68	0.21	1.18	103	30.74
10	68	0.20	1.12	104	30.00
11	68	0.17	0.95	107	27.66
12	68	0.14	0.78	108	25.10
13	68	0.16	0.90	109	26.83
14	68	0.19	1.06	109	29.24
15	69	0.21	1.18	110	30.77
16	70	0.21	1.18	110	30.80
17	70	0.22	1.23	110	31.52
18	69	0.20	1.12	111	30.03
19	69	0.18	1.01	111	28.49
20	69	0.17	0.95	112	27.69
21	70	0.15	0.84	113	26.03
22	70	0.13	0.73	113	24.23
23	70	0.11	0.62	113	22.29
24	71	0.10	0.56	114	21.27
AVERAGE	69		0.92	107	27.09

DRY STANDARD VOLUME	96.93	SCF
PERCENT WATER VAPOR	1.20	% VOL
FLOW RATE	887	ACFM
	856	DSCFM
	1454	M3/HR
NICKEL CONCENTRATION	0.1621	MG/DSCM
NICKEL EMISSION RATE	235.7	MG/HR
ISOKINETIC PERCENT	99.5	

ARTISTIC CONDITION 28 10/19/05 TABLE 28-3

TEST NO.	3	
BAROMETRIC PRESSURE	29.30	IN HG
TIP DIAMETER	0.308	IN
STACK DIAMETER	10	IN
STACK AREA	0.545	FT3
SAMPLING TIME PER POINT	5.0	MIN
NUMBER OF POINTS	24	
METER VOLUME	98.63	FT3
PITOT COEFFICIENT	0.99	
METER COEFFICIENT	1.003	
NICKEL COLLECTED	0.695	MILLIGRAMS
WATER COLLECTED	24	ML
STATIC PRESSURE	-0.3	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
0.00%	20.90%	0.00%	79.10%

TEST POINT	STACK TEMP DEG F	PITOT DEL P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	STACK VELOCITY AFPS
1	70	0.17	0.95	104	27.71
2	71	0.18	1.01	102	28.54
3	71	0.21	1.18	101	30.83
4	71	0.21	1.18	101	30.83
5	71	0.21	1.18	102	30.83
6	70	0.18	1.01	103	28.51
7	70	0.18	1.01	105	28.51
8	70	0.17	0.95	107	27.71
9	70	0.16	0.90	108	26.88
10	69	0.13	0.73	109	24.21
11	70	0.11	0.62	109	22.29
12	69	0.10	0.56	110	21.23
13	70	0.11	0.62	110	22.29
14	70	0.12	0.67	110	23.28
15	70	0.13	0.73	111	24.23
16	69	0.15	0.84	111	26.01
17	69	0.18	1.01	111	28.49
18	69	0.19	1.06	112	29.27
19	70	0.17	0.95	112	27.71
20	70	0.19	1.06	113	29.30
21	69	0.20	1.12	113	30.03
22	69	0.20	1.12	113	30.03
23	69	0.18	1.01	114	28.49
24	69	0.16	0.90	114	26.86
AVERAGE	70		0.93	109	27.25

DRY STANDARD VOLUME	97.55	SCF
PERCENT WATER VAPOR	1.14	% VOL
FLOW RATE	892	ACFM
	860	DSCFM
	1461	M3/HR
NICKEL CONCENTRATION	0.2516	MG/DSCM
NICKEL EMISSION RATE	367.5	MG/HR
ISOKINETIC PERCENT	99.7	

SAMPLE PARTICULATE CALCULATION SHEET

TEST NO.	Sample	
BAROMETRIC PRESSURE (Pb)	29.45	IN HG
TIP DIAMETER (d)	0.305	IN
STACK DIAMETER (D)	72	IN
STACK AREA (As=PI*D^2/576)	28.274	FT2
SAMPLING TIME PER POINT	2.5	MIN
NUMBER OF POINTS	24	
METER VOLUME (Vm)	66.53	FT3
PITOT COEFFICIENT (cp)	0.84	
METER COEFFICIENT (GAMA)	0.990	
PARTICULATE COLLECTED (Mn)	0.0500	GRAMS
WATER COLLECTED (Vf-Vi)	32	ML
STATIC PRESSURE (Ps)	-0.5	IN H2O

ORSAT RESULTS

CO2	O2	CO	N2
6.40%	13.40%	0.00%	80.20%

POINT	STACK TEMP DEG F	DELTA P IN H2O	ORIFICE DEL P IN H2O	METER TEMP DEG F	VELOCITY AFPS
1	275	0.32	2.20	35	37.52
2	280	0.37	2.55	38	40.48
3	278	0.37	2.55	40	40.42
4	278	0.40	2.80	41	42.03
5	280	0.50	3.50	43	47.05
6	281	0.70	4.90	44	55.71
7	282	0.72	5.00	44	56.54
8	280	0.72	5.00	44	56.46
9	280	0.62	4.30	45	52.40
10	277	0.57	3.90	46	50.14
11	276	0.65	4.50	47	53.50
12	275	0.60	4.20	48	51.37
13	282	0.70	4.90	50	55.75
14	283	0.82	5.70	53	60.38
15	282	0.85	6.00	56	61.43
16	283	0.75	5.20	60	57.74
17	280	0.59	4.10	62	51.11
18	280	0.60	4.20	65	51.54
19	280	0.60	4.20	67	51.54
20	278	0.65	4.50	70	53.58
21	279	0.72	5.00	72	56.43
22	280	0.72	5.00	74	56.46
23	277	0.65	4.50	75	53.54
24	275	0.30	2.10	75	36.32
AVERAGE	279 (Tsavg)		4.20 (DELH)	54 (Tm)	51.23 (vsavg)

DRY STANDARD VOLUME (Vmstd)	65.51	SCF
PERCENT WATER VAPOR %H2O)	2.25	% VOL
FLOW RATE (Q)	86905	ACFM
	59651	DSCFM
	101360	M3/HR
PARTICULATE CONCENTRATION (cs)	0.0118	GR/DSCF
PARTICULATE EMISSION RATE (ER)	6.08	LB/HR
LB PART PER 1000 LB GAS (EC)	0.0219	
ISOKINETIC PERCENT (I)	102.0	

PARTICULATE SAMPLE CALCULATION FORMULA

1. **DRY MOLECULAR WEIGHT (Md)** lb/lb-mole

Md = .44*% CO2 + .32*%O2 + .28*%N2 + .28*%CO

2. **WATER VAPOR PERCENT (%H2O)**

Vw std = 0.04707*(Vf - Vi)

where: Vw std = standard cubic feet of water vapor
Vf = Final volume of impingers, ml
Vi = Initial volume of impingers, ml

%H2O = Vw std * 100/(Vm std + Vw std)

where Vm std = standard cubic feet of gas sampled

3. **WET MOLECULAR WEIGHT (Ms)** lb/lb-mole

Ms = Md*(1 - %H2O/100) + 18*%H2O/100

4. **STACK PRESSURE (Ps)** in. Hg.

Ps = Pb + Pg/13.6

where: Pb = barometric pressure (uncorrected), in. Hg
Pg = stack gauge pressure, in. H2O
13.6 = specific gravity of mercury (Hg)

5. **AVERAGE STACK VELOCITY (vs)** feet per second

Vs = Kp*Cp*DELP * (Tsavg/(Ps*Ms))^0.5

where: Kp = 85.49 unit conversion
Cp = 0.84, pitot tube calibration factor
DELP = average of square root of velocity head, in. H2O
Tsavg = average stack temperature, deg R (460+F)
Ps = stack pressure
Ms = wet molecular weight

6. **STACK GAS FLOW RATE (Qs)** std. cubic feet per minute

Qs = 60*(1 - %H2O/100)*Vs*A*(528*Ps/Tsavg/29.92)

where: A = stack area, ft2
528 = std temperature, deg R
29.92 = std pressure, in. Hg

7. **DRY GAS VOLUME (Vmstd)** dry std. cubic feet

Vm std = (GAMAC*(Pb+ DELH/13.6)/29.92) * Vm

where: GAMAC = dry gas meter calibration factor corrected for meter temperature (GAMA+(Tm-70)*.00012)
Vm = volume of dry gas metered, cubic feet
Tm = average meter temperature, degrees F
DELH = average orifice pressure drop, in.H2O

8. **PARTICULATE CONCENTRATION (cs)** grains per dry standard cubic foot

Cs = Mn * 15.43/Vm std
where: Mn = particulate captured, grams
15.43 = grains per gram

9. **EMISSION RATE (ER)** pounds per hour

PMRA = Mn*A*60/(t*An*453.6) AREA METHOD lb/hr

PMRC = Cs*Qs*60/(15.43*453.6) CONC. METHOD lb/hr

ER = (PMRA + PMRC)/2

where: An = area of sampling nozzle, square feet

10. **EMISSION CONCENTRATION (EC)** lb/1000 lb exhaust gas

EC = ER * 386700 * (1-%H2O/100)/(Qs*60*Ms)

where: 386700 = cubic feet per lb mole * 1000

11. **ISOKINETIC SAMPLING PERCENTAGE (I)**

I = PMRA/PMRC

PROJECT # 2005110201: METHOD 306A FOR NICKEL

1	2	3	4	5	6	7	8
SA #	SAMPLE DESCRPTION	PH	Sample Fraction	REAGENTS FOR DIG.	Analytical Fraction	NI mg/L	TOTAL MG NI (OR IN INITIAL SAMPLE)
1	ABQC - CONDITION #15 - RUN #1	<2.0	385.0	HNO3	50.0	0.612	0.031
2	ABQC - CONDITION #15 - RUN #2	<2.0	371.0	HNO3	50.0	0.400	0.020
3	ABQC - CONDITION #15 - RUN #3	<2.0	390.0	HNO3	50.0	0.547	0.027
4	ABQC - CONDITION #15 - BLANK	<2.0	322.0	HNO3	50.0	0.074	0.004
*	MDL	<2.0		HNO3	50.0	0.075	0.004

Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. The final DL shall use the actual MDL, so that these affected samples should result as "< DL"

#8 Is the amount of NI in the 50 ml aliquot, or the 355 ml original sample, whichever you prefer, because they are the MG value will not change. (The volumes have been negated in the calculation.)

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

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Company: ABQC Corporation

Project Type: Stack Test Analysis for Nickel Emissions

RESULTS:

Condition 15

SAMPLE I.D.	TEST CONC.[1]	ACTUAL EMISSION [2]
Test Run #1	0.612 mg/L	0.0138 mg/dscm
Test Run #2	0.400 mg/L	0.0083 mg/dscm
Test Run #3	0.547 mg/L	0.0120 mg/dscm
Blank (5% HNO_3, 10% H_2O_2)	0.074 mg/L	N/A

[1] Analyzed by SCL
[2] As calculated by SCL (see attached)

Section 1

SUPPLEMENTAL CALCULATIONS FOR 306 STACK TEST REPORT
Equation (taken from Method 306A, FR 1/25/95, Pg. 4992):

$$C_{cr} = \frac{(M_{cr})(T_m + 460)}{(4998)(Y_m)(V_m)(P_{bar})}$$

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ABQC Corporation Nickel Emissions 306 Stack Test Report

Where:

C_{cr} =Concentration in stack gas in mg/dscm
M_{cr} =Amount of Cr in sample from stack sampling in micrograms
T_m =Dry gas meter temperature, ° F
Y_m =Dry gas meter correction factor
V_m =Dry gas meter volume in ft^3
P_{bar} =Barometric pressure in inches of Hg

Stack Test Results Test Run #1
(385 ml in test trial #1 sample)

M_{cr} =(0.612 mg/L - 0.074 mg/L)x(50 mL) = 26.9 micrograms
T_m = 74.23 °F
Y_m = 0.9817 (see calculation in section 2)
V_m =(2.011 m^3)(35.315 ft^3/m^3) = 71.0185 ft^3
P_{bar} = 29.9 in Hg

$$C_{cr} = \frac{(26.9)(74.23 + 460)}{(499.8)(0.9817)(71.0185)(29.9)} = \textbf{0.0138 mg/dscm}$$

Stack Test Results Test Run #2
(371 ml in test trial #2 sample)

M_{cr} =(0.400 mg/L - 0.074 mg/L)x(50 mL) = 16.3 micrograms
T_m = 78.1° F
Y_m = 0.9817 (see calculation in section 2)
V_m = (2.048 m^3)(35.315 ft^3/m^3) = 72.3251 ft^3
P_{bar} = 29.84 in Hg

$$C_{cr} = \frac{(16.3)(78.1 + 460)}{(499.8)(0.9817)(72.3251)(29.84)} = \textbf{0.0083 mg/dscm}$$

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ABQC Corporation Nickel Emissions 306 Stack Test Report

Stack Test Results Test Run #3
(390 ml in test trial #3 sample)

M_{cr} =(0.547 mg/L - 0.074 mg/L)x(50 mL) = 23.65 micrograms
T_m = 80.13 °F
Y_m = 0.9817 (see calculation in section 2)
V_m = (2.060 m^3)(35.315 ft^3/m^3) = 72.75 ft^3
P_{bar} = 29.8 in Hg

$$C_{cr} = \frac{(23.65)(80.13 + 460)}{(499.8)(0.9817)(72.75)(29.8)}$$ **= 0.0120 mg/dscm**

Section 2

Calculation for Post Test Gas Meter Calibration (Taken 12/06/05):

The meter was run for 6 minutes with a critical orifice that allows 0.75 cfm. The meter recorded a volume of 4.591 ft^3. The average temperature was 53.37° F and the barometric pressure was 30.1 in. of mercury. To calculate the standard volume of air passed through the critical orifice:

$$V_{m(std)} = (K_1)(V_m)\frac{P_{bar} + (\Delta H/13.6)}{T_m}$$ From EPA Method 5

where:
K_1 = 17.64
V_m = volume of gas recorded from post test in ft^3
P_{bar} = barometric pressure in inches of mercury
ΔH = average pressure differential across the orifice in inches of water provided on orifice calibration sheet
T_m = temperature in degrees R

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ABQC Corporation Nickel Emissions 306 Stack Test Report

$$V_{m(std)} = \frac{(17.64)(4.591)[\ 30.1 + (1.97/13.6)]}{53.37 + 460}$$

$V_{m(std)}$ = **4.771 ft^3**

To correct to standard conditions:

$$V_{cr\ (std\ )} = K' \frac{P_{bar}\ \Theta}{\sqrt{T_{amb}}}$$

where:
K' = factor from orifice calibration sheet provided with critical orifice by manufacturer
P_{bar} = barometric pressure in inches of mercury
Θ = time in minutes
T_{amb} = ambient temperature in degrees R

$$V_{cr(std)} = \frac{0.5876\ (30.1)(6)}{\sqrt{53.37 + 460}}$$

$V_{cr(std)}$ = **4.6836 ft^3**

the Y value for the post test is then:

$$Y_{m\,(after\ test\ )} = \frac{V_{cr\,(std\ )}}{V_{m\,(std\ )}}$$

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ABQC Corporation Nickel Emissions 306 Stack Test Report

Therefore,

$$Y_{m(\text{after test})} = \frac{4.6836}{4.771}$$

$$Y_{m(\text{after test})} = \mathbf{0.9817}$$

Post Y_m value as compared to pretest Y_m value

$$\frac{Y_{m(\text{pre-test})}}{Y_{m(\text{after test})}} = \frac{0.9822}{0.9817} = \mathbf{1.0005}$$

Post Y_m value as compared to manufacturer's Y_m value

$$\frac{Y_{m(\text{manu})}}{Y_{m(\text{after test})}} = \frac{0.980^{*}}{0.9817} = \mathbf{0.9983}$$

*As provided on the meter calibration sheet provided with the meter by the manufacturer

Since the Y value is between 0.95 and 1.05, the gas meter is acceptable.

PROJECT # 2005120032: METHOD 306A FOR NICKEL

1	2	3	4	5	6	7	8
SA #	SAMPLE DESCRPTION	PH	Sample Fraction	REAGENTS FOR DIG.	Analytical Fraction	NI mg/L	TOTAL MG NI (OR IN INITIAL SAMPLE)
1	12/01/2005 - CONDITION #26 - RUN #1	<2.0	397.0	HNO3	50.0	1.324	0.066
2	12/01/2005 - CONDITION #26 - RUN #2	<2.0	395.0	HNO3	50.0	2.388	0.119
3	12/01/2005 - CONDITION #26 - RUN #3	<2.0	388.0	HNO3	50.0	2.139	0.107
4	12/01/2005 - BLANK	<2.0	360.0	HNO3	50.0	0.101	0.005
*	MDL	<2.0		HNO3	50.0	0.075	0.004

Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. The final DL shall use the actual MDL, so that these affected samples should result as "< DL"

#8 Is the amount of NI in the 50 ml aliquot, or the 355 ml original sample, whichever you prefer, because they are the MG value will not change. (The volumes have been negated in the calculation.)

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TESTING — CONSULTING

Engineering Services
3158 S. Kolin Ave.
Chicago IL 60623-4889
Phone: 773-254-2406
FAX: 773-254-6661

Company: Elite Metal Finishing

Project Type: Stack Test Analysis for Nickel Emissions

RESULTS:

Condition 26

SAMPLE I.D.	TEST CONC.[1]	ACTUAL EMISSION [2]
Test Run #1	1.324 mg/L	0.0314 mg/dscm
Test Run #2	2.388 mg/L	0.0608 mg/dscm
Test Run #3	2.139 mg/L	0.0532 mg/dscm
Blank (5% HNO_3, 10% H_2O_2)	0.101 mg/L	N/A

[1] Analyzed by SCL
[2] As calculated by SCL (see attached)

Section 1

SUPPLEMENTAL CALCULATIONS FOR 306 STACK TEST REPORT
Equation (taken from Method 306A, FR 1/25/95, Pg. 4992):

$$C_{cr} = \frac{(M_{cr})(T_m + 460)}{(4998)(Y_m)(V_m)(P_{bar})}$$

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Elite Metal Finishing Nickel Emissions 306 Stack Test Report

Where:

C_{cr} =Concentration in stack gas in mg/dscm
M_{cr} =Amount of Cr in sample from stack sampling in micrograms
T_m =Dry gas meter temperature, ° F
Y_m =Dry gas meter correction factor
V_m =Dry gas meter volume in ft^3
P_{bar} =Barometric pressure in inches of Hg

Stack Test Results Test Run #1
(397 ml in test trial #1 sample)

M_{cr} =(1.324 mg/L - 0.101 mg/L)x(50 mL) = 61.15 micrograms
T_m = 80.85 °F
Y_m = 0.9817 (see calculation in section 2)
V_m =(2.048 m^3)(35.315 ft^3/m^3) = 72.3251 ft^3
P_{bar} = 29.68 in Hg

$$C_{cr} = \frac{(61.15)(80.85 + 460)}{(499.8)(0.9817)(72.3251)(29.68)} = \textbf{0.0314 mg/dscm}$$

Stack Test Results Test Run #2
(395 ml in test trial #2 sample)

M_{cr} =(2.388 mg/L - 0.101 mg/L)x(50 mL) = 114.35 micrograms
T_m = 84.17 ° F
Y_m = 0.9817 (see calculation in section 2)
V_m = (2.052 m^3)(35.315 ft^3/m^3) = 72.4664 ft^3
P_{bar} = 29.62 in Hg

$$C_{cr} = \frac{(114.35)(84.17 + 460)}{(499.8)(0.9817)(69.89)(29.84)} = \textbf{0.0608 mg/dscm}$$

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Elite Metal Finishing Nickel Emissions 306 Stack Test Report

Stack Test Results Test Run #3
(388 ml in test trial #3 sample)

M_{cr} =(2.139 mg/L - 0.101 mg/L)x(50 mL) = 101.9 micrograms
T_m = 84.1 °F
Y_m = 0.9817 (see calculation in section 2)
V_m = (2.032 m^3)(35.315 ft^3/m^3) = 71.7601 ft^3
P_{bar} = 29.61 in Hg

$$C_{cr} = \frac{(101.9)(84.1 + 460)}{(499.8)(0.9817)(71.7601)(29.61)}$$ **= 0.0532 mg/dscm**

Section 2

Calculation for Post Test Gas Meter Calibration (Taken 12/06/05):

The meter was run for 6 minutes with a critical orifice that allows 0.75 cfm. The meter recorded a volume of 4.591 ft^3. The average temperature was 53.37° F and the barometric pressure was 30.1 in. of mercury. To calculate the standard volume of air passed through the critical orifice:

$$V_{m(std)} = (K_1)(V_m)\frac{P_{bar} + (\Delta H/13.6)}{T_m}$$ From EPA Method 5

where:
K_1 = 17.64
V_m = volume of gas recorded from post test in ft^3
P_{bar} = barometric pressure in inches of mercury
ΔH = average pressure differential across the orifice in inches of water provided on orifice calibration sheet
T_m = temperature in degrees R

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Elite Metal Finishing Nickel Emissions 306 Stack Test Report

$$V_{m(std)} = \frac{(17.64)(4.591)[\,30.1 + (1.97/13.6)]}{53.37 + 460}$$

$V_{m(std)}$ = **4.771 ft^3**

To correct to standard conditions:

$$V_{cr\,(std)} = K' \frac{P_{bar}\ \Theta}{\sqrt{T_{amb}}}$$

where:
K' = factor from orifice calibration sheet provided with critical orifice by manufacturer
P_{bar} = barometric pressure in inches of mercury
Θ = time in minutes
T_{amb} = ambient temperature in degrees R

$$V_{cr(std)} = \frac{0.5876\ (30.1)(6)}{\sqrt{53.37 + 460}}$$

$V_{cr(std)}$ = **4.6836 ft^3**

the Y value for the post test is then:

$$Y_{m\,(after\ test)} = \frac{V_{cr\,(std)}}{V_{m\,(std)}}$$

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Elite Metal Finishing Nickel Emissions 306 Stack Test Report

Therefore,

$$Y_{m(\text{after test})} = \frac{4.6836}{4.771}$$

$$Y_{m(\text{after test})} = \mathbf{0.9817}$$

Post Y_m value as compared to pretest Y_m value

$$\frac{Y_{m(\text{pre-test})}}{Y_{m(\text{after test})}} = \frac{0.9822}{0.9817} = \mathbf{1.0005}$$

Post Y_m value as compared to manufacturer's Y_m value

$$\frac{Y_{m(\text{manu})}}{Y_{m(\text{after test})}} = \frac{0.980^{*}}{0.9817} = \mathbf{0.9983}$$

*As provided on the meter calibration sheet provided with the meter by the manufacturer

Since the Y value is between 0.95 and 1.05, the gas meter is acceptable.

PROJECT # 2005100306: METHOD 306A FOR NICKEL

1	2	3	4	5	6	7	8
SA #	SAMPLE DESCRPTION	PH	Sample Fraction	REAGENTS FOR DIG.	Analytical Fraction	NI mg/L	TOTAL MG NI (OR IN INITIAL SAMPLE)
1	Condition 29; Run 1	<2.0	355.0	HNO3	50.0	15.9	0.795
2	Condition 29; Run 2	<2.0	356.0	HNO3	50.0	6.51	0.326
3	Condition 29; Run 3	<2.0	378.0	HNO3	50.0	7.83	0.392
4	Field Blank 0.1N HNO3	<2.0	332.0	HNO3	50.0	0.074	0.004
5	Field Blank 5% HNO3 & 10% H202	<2.0	288.0	HNO3	50.0	0.222	0.011
*	MDL	<2.0	288.0	HNO3	50.0	0.075	0.004

Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. The final DL shall use the actual MDL, so that these affected samples should result as "< DL"

#8 Is the amount of NI in the 50 ml aliquot, or the 355 ml original sample, whichever you prefer, because they are the MG value will not change. (The volumes have been negated in the calculation.)

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

Engineering Services
3158 S. Kolin Ave.
Chicago IL 60623-4889
Phone: 773-254-2406
FAX: 773-254-6661

Company: Artistic Plating

Project Type: Stack Test Analysis for Nickel Emissions

RESULTS:

Condition 29

SAMPLE I.D.	TEST CONC.[1]	ACTUAL EMISSION [2]
Test Run #1	15.9 mg/L	0.3997 mg/dscm
Test Run #2	6.51 mg/L	0.1645 mg/dscm
Test Run #3	7.83 mg/L	0.2176 mg/dscm
Blank (5% HNO_3, 10% H_2O_2)	0.222 mg/L	N/A

[1] Analyzed by SCL
[2] As calculated by SCL (see attached)

Section 1

SUPPLEMENTAL CALCULATIONS FOR 306 STACK TEST REPORT
Equation (taken from Method 306A, FR 1/25/95, Pg. 4992):

$$C_{cr} = \frac{(M_{cr})(T_m + 460)}{(4998)(Y_m)(V_m)(P_{bar})}$$

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Artistic Plating Nickel Emissions 306 Stack Test Report

Where:

C_{cr} =Concentration in stack gas in mg/dscm
M_{cr} =Amount of Cr in sample from stack sampling in micrograms
T_m =Dry gas meter temperature, ° F
Y_m =Dry gas meter correction factor
V_m =Dry gas meter volume in ft^3
P_{bar} =Barometric pressure in inches of Hg

Stack Test Results Test Run #1
(355 ml in test trial #1 sample)

M_{cr} =(15.9 mg/L - 0.222 mg/L)x(50 mL) = 783.9 micrograms
T_m = 75.96 °F
Y_m = 0.9817 (see calculation in section 2)
V_m =(2.027 m^3)(35.315 ft^3/m^3) = 71.5835 ft^3
P_{bar} = 29.93 in Hg

$$C_{cr} = \frac{(783.9)\,(75.96 + 460)}{(499.8)(0.9817)(71.5835)(29.93)} = \textbf{0.3997 mg/dscm}$$

Stack Test Results Test Run #2
(356 ml in test trial #2 sample)

M_{cr} =(6.51 mg/L - 0.222 mg/L)x(50 mL) = 314.4 micrograms
T_m = 75.08° F
Y_m = 0.9817 (see calculation in section 2)
V_m = (1.979 m^3)(35.315 ft^3/m^3) = 69.89 ft^3
P_{bar} = 29.84 in Hg

$$C_{cr} = \frac{(314.4)\,(75.08 + 460)}{(499.8)(0.9817)(69.89)(29.84)} = \textbf{0.1645 mg/dscm}$$

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Artistic Plating Nickel Emissions 306 Stack Test Report

Stack Test Results Test Run #3
(378 ml in test trial #3 sample)

M_{cr} =(7.83 mg/L - 0.222 mg/L)x(50 mL) = 380.4 micrograms
T_m = 74.14 °F
Y_m = 0.9817 (see calculation in section 2)
V_m = (1.808 m^3)(35.315 ft^3/m^3) = 63.85 ft^3
P_{bar} = 29.8 in Hg

$$C_{cr} = \frac{(380.4)(74.14 + 460)}{(499.8)(0.9817)(63.85)(29.8)}$$ **= 0.2176 mg/dscm**

Section 2

Calculation for Post Test Gas Meter Calibration (Taken 12/06/05):

The meter was run for 6 minutes with a critical orifice that allows 0.75 cfm. The meter recorded a volume of 4.591 ft^3. The average temperature was 53.37° F and the barometric pressure was 30.1 in. of mercury. To calculate the standard volume of air passed through the critical orifice:

$$V_{m(std)} = (K_1)(V_m)\frac{P_{bar} + (\Delta H/13.6)}{T_m}$$ From EPA Method 5

where:
K_1 = 17.64
V_m = volume of gas recorded from post test in ft^3
P_{bar} = barometric pressure in inches of mercury
ΔH = average pressure differential across the orifice in inches of water provided on orifice calibration sheet
T_m = temperature in degrees R

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Artistic Plating Nickel Emissions 306 Stack Test Report

$$V_{m(std)} = \frac{(17.64)(4.591)[\ 30.1 + (1.97/13.6)]}{53.37 + 460}$$

$V_{m(std)}$ = **4.771 ft^3**

To correct to standard conditions:

$$V_{cr\ (std\ )} = K' \frac{P_{bar}\ \Theta}{\sqrt{T_{amb}}}$$

where:
K' = factor from orifice calibration sheet provided with critical orifice by manufacturer
P_{bar} = barometric pressure in inches of mercury
Θ = time in minutes
T_{amb} = ambient temperature in degrees R

$$V_{cr(std)} = \frac{0.5876\ (30.1)(6)}{\sqrt{53.37 + 460}}$$

$V_{cr(std)}$ = **4.6836 ft^3**

the Y value for the post test is then:

$$Y_{m\ (after\ \ test\ )} = \frac{V_{cr\ (std\ )}}{V_{m\ (std\ )}}$$

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Artistic Plating Nickel Emissions 306 Stack Test Report

Therefore,

$$Y_{m(\text{after test})} = \frac{4.6836}{4.771}$$

$$Y_{m(\text{after test})} = \mathbf{0.9817}$$

Post Y_m value as compared to pretest Y_m value

$$\frac{Y_{m(\text{pre-test})}}{Y_{m(\text{after test})}} = \frac{0.9822}{0.9817} = \mathbf{1.0005}$$

Post Y_m value as compared to manufacturer's Y_m value

$$\frac{Y_{m(\text{manu})}}{Y_{m(\text{after test})}} = \frac{0.980^*}{0.9817} = \mathbf{0.9983}$$

*As provided on the meter calibration sheet provided with the meter by the manufacturer

Since the Y value is between 0.95 and 1.05, the gas meter is acceptable.

Appendix B

Calculation Worksheets for Ambient Nickel Concentrations and Field Log Sheets

Company Name: Reliable- Electroless Nickel Plating

NAME/AREA	PARAMETER	Date	Sample mg/L	Minutes	LPM Flowrate	Total LITERS	Blank mg/L	RESULTS (mg/m3)	OSHA LIM
Condition 3 - East	Ni		0.21	420	2.0	840	0	0.006250	1.00
Conditon 3 - West	Ni		0.18	420	2.0	840	0	0.005357	1.00
Blank	Ni		0	0	0	0	0		
Condition 4 - East	Ni		0.18	377	2.0	754	0	0.005968	1.00
Condition 4 - West	Ni		0.16	376	2.0	752	0	0.005319	1.00
Blank	Ni		0	0	0	0	0		
Condition 5 - East	Ni		0.21	378	2.0	756	0	0.006944	1.00
Condition 5 - West	Ni		0.19	377	2.0	754	0	0.006300	1.00
Blank	Ni		0	0	0	0	0		
Condition 6 - East	Ni		0.51	409	2.0	818	0	0.015587	1.00
Condition *6* - West	Ni		0.40	409	2.0	818	0	0.012225	1.00
Blank	NI		0	0	0	0	0		

Calculation: [(Sample (mg/L) - Blank (mg/L)) x 0.025 L] / [(Total Liters)/1000] = X (mg/m3)

PROJECT # 110077: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	**IDL** =	0.004	**LOQ** =	0.017
Digestion on 11111/05	**LOD** =	0.008	**RL** =	0.050
BY ICP ON 11/15/05	**MDL** =	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading	
LRB	25	-0.004	<MDL of 0 007 mg/L = 0.006
LFB	25	0.716	= 100 x 0 716/0 8 = 89 5% Recovery (80-120%)
110077-1	25	0.206	3 EAST
110077-2	25	0.180	3 west
110077-3	25	0.505	6 EAST
110077-4	25	0.404	6 west
110077-5	25	0.209	5 EAST
110077-6	25	0.185	5 West
110077-7	25	0.180	4 EAST
110077-8	25	0.156	4 West
110077-9	25	-0.003	= 0.006

EXPLANATIONS:

LRB =	Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.
LFB =	Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.
DILUTION =	25 ml class A volumetric flask was used to measure the final volume.
READING =	mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS **<MDL,** THEN 0.006 IS USED.

Scientific CONTROL LABORATORIES, INC. TESTING — CONSULTING

AIR MONITORING DATA SHEET

DATE– 10/31/05 Condition #3

COMPANY NAME Nelson Nickel

SAMPLER: Jeff Zeh

****

TEST TYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # —

AREA: West EN Tank (West)

PUMP SERIAL # 2005020302 1

PARAMETER(S) Ni

MEDIA TYPE —

SERIAL # —

Start ≈ 9:00am

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 420

TOTAL LITERS SAMPLED 840

****

TESTTYPE: ☐ EMPLOYEE AREA

EMPLOYEE NAME/SS # —

AREA: West EN Tank (East)

PUMP SERIAL # 2005020302 2

PARAMETER(S) Ni

MEDIA TYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 420

TOTAL LITERS SAMPLED 840

Scientific CONTROL LABORATORIES, INC.
TESTING — CONSULTING

AIR MONITORING DATA SHEET

Condition #4 11/3/05

DATE 11/3/05

COMPANY NAME Reliable Plating

SAMPLER: Jeff Zak

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # —

AREA: West TN Tank (West)

PUMP SERIAL # 2005020302 1

PARAMETER(S) Ni

MEDIA TYPE —

SERIAL # —

~ 8:45 - 3:00 PM

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 376 (min)

TOTAL LITERS SAMPLED 75a (L)

****

TESTTYPE: n EMPLOYEE ☐ AREA

EMPLOYEE NAMEISS # —

R E : West TN Tank (East)

PUMP SERIAL # 2005020302 2

PARAMETER(S) Ni

MEDIA TYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ *seconds* LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 377 min

TOTAL LITERS SAMPLED 754 (L)

Scientific Control Laboratories, Inc.
Testing — Consulting

AIR MONITORING DATA SHEET

Condition #5

DATE 11/2/05

COMPANY NAME Reliable Plzkg

SAMPLER: Jeff Zek

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # ~

AREA: West thN Tank (West)

PUMP SERIAL # 2005020302 1

PARAMETER(S) Ni

MEDIA TYPE ~

SERIAL # ~

PRE-CALIBRATION FLOW RATE check
Time (500 mL) _____ seconds LPM 2.0 ~ 8:55 – 3:05

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 377 min

TOTAL LITERS SAMPLED 754

****

TESTTYPE: ☐ EMPLOYEE AREA

EMPLOYEE NAME/SS # ~

AREA: West Tank (East)

PUMP SERIAL 1 2005 020302 2

PARAMETER(S) Ni

MEDIA TYPE ~

SERIAL # ~

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM check 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 378 min

TOTAL LITERS SAMPLED 756 L

Scientific CONTROL LABORATORIES, INC. TESTING — CONSULTING

AIR MONITORING DATA SHEET

DATE 11/1/04

COMPANY NAME Reliable Plating Cordova #6 11/1/05

SAMPLER: Jeff Zak

****

TEST TYPE: □ EMPLOYEE X AREA

EMPLOYEE NAME/SS # —

AREA: West EN Tank (West)

PUMP SERIAL # 2005020302

PARAMETER(S) Ni

MEDIATYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL)_____seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL)_____seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 409

TOTAL LITERS SAMPLED 818

~ 8:30 am
- 3:30 PM

****

TESTTYPE: □ EMPLOYEE X AREA

EMPLOYEE NAME/SS # —

AREA: West EN Tank (East)

PUMP SERIAL # 2005020302

PARAMETER(S) Ni

MEDIA TYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL)_____seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL)_____seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 409

TOTAL LITERS SAMPLED 818

Company Name: ABQC - Watts Nickel Rack

NAME/AREA	PARAMETER	Date	Sample mg/L	Minutes	LPM Flowrate	Total LITERS	Blank mg/L	RESULTS (mg/m3)	OSHA LIM
Condition 10 - East	Ni		0.21	398	2.0	796	0.002	0.006533	1.00
Conditon 10 - West	Ni		0.04	401	2.0	802	0.002	0.001185	1.00
Blank	Ni		0.002	0	0	0	0.002		
Condition 11 - East	Ni		0.62	389	2.0	778	0	0.019923	1.00
Condition 11 - West	Ni		0.09	388	2.0	776	0	0.002899	1.00
Blank	Ni		0	0	0	0	0		
Condition 12 - East	Ni		2.16	411	2.0	822	0	0.065693	1.00
Condition 12 - West	Ni		0.24	406	2.0	812	0	0.007389	1.00
Blank	Ni		0	0	0	0	0		
Condition 13 - East	Ni		2.31	416	2.0	832	0.002	0.069351	1.00
Condition 13 -West	Ni		0.15	414	2.0	828	0.002	0.004469	1.00
Blank	NI		0.002	0	0	0	0		
Condition 14 - East	Ni		0.20	403	2.0	806	0	0.006203	1.00
Condition 14 -West	Ni		0.14	403	2.0	806	0	0.004342	1.00
Blank	NI		0	0	0	0	0		
Condition 15 - East	Ni		0.13	393	2.0	786	0	0.004135	1.00
Condition 15 - West	Ni		0.04	393	2.0	786	0	0.001272	1.00
Blank	NI		0	0	0	0	0		

Calculation: [(Sample (mg/L) - Blank (mg/L)) x 0.025 L] / [(Total Liters)/1000] = X (mg/m3)

PROJECT # 020072: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	**IDL =**	0.004	**LOQ =**	0.017
Digestion on 02/06/06	**LOD =**	0.008	**RL =**	0.050
BY **ICP** ON **02/09/06**	**MDL =**	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading	
LRB	25	-0.002	<MDL of 0.007 mg/L **= 0.006**
LFB	25	2.16	= 100 x 2.16/2.0 = 108% Recovery (80-120%)
020072-1	25	0.002	= **0.006**
020072-2	25	0.209	ABQC 10 East
020072-3	25	0.036	ABQC 10 West
020072-4	25	2.310	ABQC 13 East
020072-5	25	0.149	ABQC 13 West

EXPLANATIONS:

LRB =	Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.
LFB =	Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.
DILUTION =	25 ml class A volumetric flask was used to measure the final volume.
READING =	mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

PROJECT # 010218: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	**IDL** =	0.004	**LOQ** =	0.017
Digestion ***on 01124106***	**LOD =**	0.008	**RL** =	0.050
BY ICP ***ON 01127106***	**MDL =**	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading	
LRB	25	-0.001	<MDL of 0 007 mg/L = ***0.006***
LFB	25	1.98	= 100 x 1 98/2 0 = 99% Recovery, (80-120%)
010218-1	25	2.16	ASQL 12 Ent
010218-2	25	0.238	ASQC 12 Nest
010218-3	25	-0.001	**= 0.006**
010218-4	25	0.622	ASQC 11 Ent
010218-5	25	0.087	ASQC 11 Nest

EXPLANATIONS:

LRB =	Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.
LFB =	Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.
DILUTION =	25 ml class A volumetric flask was used to measure the final volume.
READING =	mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS **<MDL,** THEN 0.006 IS USED.

PROJECT # 140200: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	**IDL =**	0.004	**LOQ =**	0.017
Digestion on 11/14/05	**LOD =**	0.008	**RL =**	0.050
BY ICP ON 11115/05	**MDL =**	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading	
LRB	25	-0.001	<MDL of 0.007 mg/L = 0.006
LFB	25	1.80	= 100 x 1.00/1 00 = 90% Recovery. (80-120%)
110200-1	25	0.202	ABQC 14 East
110200-2	25	0.144	ABQC 14 West
110200-3	25	0.000	= 0.006
110200-4	25	0.130	ABQC 15 East
110200-5	25	0.042	ABQC 15 West
110200-6	25	4.06	Woods 7 East
110200-7	25	0.448	Woods 7 West
110200-8	25	0.002	= 0.006
110200-9	25	2.11	Woods 24 East
110200-10	25	0.382	Woods 24 West

EXPLANATIONS:

LRB =	Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.
LFB =	Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.
DILUTION =	25 ml class A volumetric flask was used to measure the final volume.
READING =	mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS **<MDL**, THEN 0.006 IS USED.

Scientific
CONTECH LABORATORIES, INC.
TESTING — CONSULTING

AIR MONITORING DATA SHEET

DATE 2/1/06 Condition #10

Educton
Mesh Bag
NO Melty Agent

COMPANY NAME ASQC

SAMPLER: Jeff Zelc

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # —

AREA: Rock Watts Nickel (East)

PUMP SERIAL # 2005020302-1

PARAMETER(S) Nickel

MEDIA TYPE MCE

SERIAL # 25082359

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 398 (min)

TOTAL LITERS SAMPLED 796 (L)

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # —

AREA: Rock Watts Nickel (West)

PUMP SERIAL # 2005020302-2

PARAMETER(S) Nickel

MEDIA TYPE MCE

SERIAL # 25093158

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 401 (min)

TOTAL LITERS SAMPLED 802 (L)

Scientific CONTROL LABORATORIES, INC. TESTING — CONSULTING

AIR MONITORING DATA SHEET

Condition #11

Mesta Pump

DATE 1/12/05

COMPANY NAME ABQC

SAMPLER: JEFF Zak

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # NA

AREA: Nickel Wells East

PUMP SERIAL # 200502033021

PARAMETER(S) Nickel

MEDIA TYPE —

SERIAL # 25093115

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 389 (min)

TOTAL LITERS SAMPLED 778 (L)

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # ~~Nickel Wells West~~ NA

AREA: Nickel Wells West

PUMP SERIAL # 2005 0203022

PARAMETER(S) Nickel

MEDIA TYPE —

SERIAL # 25093146

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 388 (min)

TOTAL LITERS SAMPLED 776 (L)

Scientific CONTROL LABORATORIES, INC. TESTING — CONSULTING

AIR MONITORING DATA SHEET

DATE 1/11/06

Condition #12

COMPANY NAME DBQC

No Heater

SAMPLER: JT FT Zck

No Mesh Bag

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # NA

AREA: Nickel Walk - East

PUMP SERIAL # 2005 020 3021

PARAMETER(S) Nickel

MEDIA TYPE —

SERIAL # 25093149

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MJN.) 411 min

TOTAL LITERS SAMPLED 822 (L)

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # NA

AREA: Nickel Walk West

PUMP SERIAL # 2005 020 3022

PARAMETER(S) Nickel

MEDIA TYPE —

SERIAL # 25093112

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 406 (min)

TOTAL LITERS SAMPLED 816 (L)

Scientific Control Laboratories, Inc.
Testing — Consulting

AIR MONITORING DATA SHEET

#13

Eductor
Mesh Lab
Nelly Agent

DATE 6/2/06

COMPANY NAME SBQC

SAMPLER: Jeff Lake

****

TEST TYPE: ☐ EMPLOYEE AREA

EMPLOYEE NAME/SS # —

AREA: Rack Watts Nickel Tank (East)

PUMP SERIAL # 2005020302 1

PARAMETER(S) Nickel

MEDIA TYPE MCE

SERIAL # 2508234 9

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 416 (min)

TOTAL LITERS SAMPLED 832 (L)

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAMEISS # —

AREA: Rack Watts Nickel Tank (West)

PUMP SERIAL # 2005020302 2

PARAMETER(S) Nickel

MEDIA TYPE MCE

SERIAL # 2508277 0

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 414 (min)

TOTAL LITERS SAMPLED 828 (L)

Scientific Control Laboratories, Inc. — Testing — Consulting

AIR MONITORING **DATA** SHEET

Condition #14

DATE 11/7/05

COMPANY NAME ABQC

SAMPLER: JEFF ZAK

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # —

AREA: Rock Wells Nickel (FAST)

PUMP SERIAL # 200502030220

PARAMETER(S) Nickel

MEDIA TYPE

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0 ~9:10 - 3:50

POST-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 405 min

TOTAL LITERS SAMPLED 806 L

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAMEISS # —

AREA: Rock Wells Nickel (West)

PUMP SERIAL # 200502030221

PARAMETER(S) Nickel

MEDIA TYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 405 min

TOTAL LITERS SAMPLED 806 L

Scientific Control Laboratories, Inc. — Testing — Consulting

AIR MONITORING DATA SHEET

Christmas #13

DATE 11/8/05

COMPANY NAME ABQC

SAMPLER: JEFF ZAK

****

TEST TYPE: ☐ EMPLOYEE — ☒ AREA

EMPLOYEE NAMEISS # —

AREA: Walls Nickel (East)

PUMP SERIAL # 200J020302

PARAMETER(S) Nickel

MEDIA TYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 393 (min)

TOTAL LITERS SAMPLED 786 (L)

****

TESTTYPE: ☐ EMPLOYEE AREA

EMPLOYEE NAME/SS # —

AREA: Back Walls Nickel (West)

PUMP SERIAL # 200J020301

PARAMETER(S) Nickel

MEDIA TYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 393 (min)

TOTAL LITERS SAMPLED 786 (L)

Company Name: Artistic - Watts Nickel Barrel

NAME/AREA	PARAMETER	Date	Sample mg/L	Minutes	LPM Flowrate	Total LITERS	Blank mg/L	RESULTS (mg/m3)	OSHA LIM
Condition 18 - North	Ni		0.09	443	2.0	886	0.001	0.002511	1.00
Conditon 18 - South	Ni		0.11	443	2.0	886	0.001	0.003076	1.00
Blank	Ni		0.001	0	0	0	0.001		
Condition 19 - North	Ni		0.01	290	2.0	580	0.001	0.000388	1.00
Condition 19 - South	Ni		0.01	290	2.0	580	0.001	0.000388	1.00
Blank	Ni		0.001	0	0	0	0		
Condition 20 - North	Ni		0.04	425	2.0	850	0.001	0.001147	1.00
Condition 20 - South	Ni		0.03	426	2.0	852	0.001	0.000851	1.00
Blank	Ni		0.001	0	0	0	0		
Condition 21 - North	Ni		0.02	287	2.0	574	0.001	0.000828	1.00
Condition 21 - South	Ni		0.02	288	2.0	576	0.001	0.000825	1.00
Blank	NI		0.001	0	0	0	0		

Calculation: [(Sample (mg/L) - Blank (mg/L)) x 0.025 L] / [(Total Liters)/1000] = X (mg/m3)

PROJECT # 100016: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	**IDL** =	0.004	**LOQ** =	0.017
Digestion on *1014105*	**LOD** =	0.008	**RL** =	0.050
BY ICP ON ***1015105***	**MDL** =	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading	
LRB	25	0.211	>MDL of 0 007 mg/L & > RL of 0 05 mg/L
LFB	25	4.01	= 100 x 4 01/4 0 = 100% Recovery so okay
100016-1	25	0.092	= FLAG "B" 18 Artistic Walls North
100016-2	25	0.107	= FLAG "B" 18 Artistic Walls South
100016-3	25	0.012	19 " North
100016-4	25	0.012	19 " South
100016-5	25	0.044	20 " North
100016-6	25	0.029	20 " South
100016-7	25	0.017	21 " North
100016-8	25	0.015	21 " South
100016-9	25	0.001	=0.006

EXPLANATIONS:

LRB =	Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.
LFB =	Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.
DILUTION =	25 ml class A volumetric flask was used to measure the final volume.
READING =	mg/L as determined by average of three replicates on ICP.
FLAG "B" =	The result is over the detection limits as quantified for nickel. Therefore the result may be significant and must be "flagged" to indicate that it may be a false positive "hit", as occurred in the LRB.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

Scientific Control Laboratories, Inc.
Testing — Consulting

AIR MONITORING DATA SHEET

DATE 9/27/05

COMPANY NAME Artistic Plating Co. #18

SAMPLER: JL

****

TEST TYPE: ☐ EMPLOYEE X AREA Walls Nickel Barrel North
ND Walls, CMP

EMPLOYEE NAME/SS # —

AREA: Walls Nickel Barrel North

PUMP SERIAL #

PARAMETER(S) Nickel

MEDIA TYPE

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 443 9:00 AM —

TOTAL LITERS SAMPLED 886

****

TESTTYPE: ☐ .EMPLOYEE X AREA Walls Nickel Barrel South
ND Walls, CMP

EMPLOYEE NAME/SS # —

AREA: Walls Nickel Barrel South

PUMP'SERIAL #

PARAMETER(S) Nickel

MEDIATYPE

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 443 9:00 AM —

TOTAL LITERS SAMPLED 886

Scientific Control Laboratories, Inc.
Testing — Consulting

AIR MONITORING DATA SHEET

DATE 9/28/05

COMPANY NAME Artistic Plating Co #19

SAMPLER: JT

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA Walls Nickel Barrel North
no Metals, no CMP, no Transfer

EMPLOYEE NAME/SS #

AREA: Walls Nickel North

PUMP SERIAL #

PARAMETER(S) Nickel

MEDIA TYPE

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 290 11:45

TOTAL LITERS SAMPLED 580

****

TEST TYPE: ☐ .EMPLOYEE AREA Walls Nickel Barrel South
no Metals, no CMP, no Transfer

EMPLOYEE NAME/SS #

AREA: Walls Nickel Barrel South

PUMP SERIAL *if*

PARAMETER(S) Nickel

MEDIATYPE

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mi) seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 290 min 11:45

TOTAL LITERS SAMPLED 580 L

Scientific CONTROL LABORATORIES, INC. TESTING — CONSULTING

AIR MONITORING DATA SHEET

DATE 9/29/05

COMPANY NAME Dietrich Plating Co #20

SAMPLER: JT

****

TEST TYPE: ☐ EMPLOYEE ☒ AREA Watts Nickel Barrel North Wetter, CMP

EMPLOYEE NAME/SS #

AREA: Watts Nickel North

PUMP SERIAL #

PARAMETER(S) Nickel

MEDIA TYPE

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0 8:00 AM

POST-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 425 min

TOTAL LITERS SAMPLED 850 L

****

TEST TYPE: ☐ EMPLOYEE ☒ AREA Watts Nickel Barrel South Wetter, CMP

EMPLOYEE NAME/SS #

AREA: Watts Nickel South

PUMP SERIAL #

PARAMETER(S) Nickel

MEDIA TYPE

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0 8:00 AM

POST-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 426 min

TOTAL LITERS SAMPLED 850 (L)

Scientific CONTROL LABORATORIES, INC. TESTING — CONSULTING

AIR MONITORING DATA SHEET

DATE 9/30/15

COMPANY NAME Artistic Plzly Co #21

SAMPLER: JZ

****

TEST TYPE: ☐ EMPLOYEE X AREA Walls Nickel Barrel North

EMPLOYEE NAME/SS # — Weather, No cmp, no Transfer

AREA: Walls Nickel Barrel North

PUMP SERIAL #

PARAMETER(S) Nickel

MEDIA TYPE

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 287 min 9:15

TOTAL LITERS SAMPLED 574 (L)

****

TESTTYPE: ☐ EMPLOYEE X AREA Walls Nickel Barrel South

EMPLOYEE NAME/SS # — Weather, No cmp, no TRANSfer

AREA: Walls Nickel Barrel South

PUMP SERIAL #

PARAMETER(S) Nickel

MEDIA TYPE

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mi) seconds LPM 2.0 9:14

TOTAL SAMPLE TIME (MIN.) 288 min

TOTAL LITERS SAMPLED 576 (L)

Company Name: Elite Finishing - Nickel Sulfamate Rack

NAME/AREA	PARAMETER	Date	Sample mg/L	Minutes	LPM Flowrate	Total LITERS	Blank mg/L	RESULTS (mg/m3)	OSHA LIM
Condition 22 - North	Ni		0.09	431	2.0	862	0	0.002610	1.00
Conditon 22 - South	Ni		0.16	431	2.0	862	0	0.004640	1.00
Blank	Ni		0	0	0	0	0		
Condition 23 - North	Ni		0.06	189	2.0	378	0.006	0.003571	1.00
Condition 23 - South	Ni		0.29	401	2.0	802	0.006	0.008853	1.00
Blank	Ni		0.006	0	0	0	0		
Condition 25 - North	Ni		0.05	400	2.0	800	0.006	0.001375	1.00
Condition 25 - South	Ni		0.06	400	2.0	800	0.006	0.001688	1.00
Blank	Ni		0.006	0	0	0	0		
Condition 26 - North	Ni		0.17	331	2.0	662	0.001	0.006382	1.00
Condition 26 - South	Ni		0.17	331	2.0	662	0.001	0.006382	1.00
Blank	Ni		0.001	0	0	0	0		

Calculation: [(Sample (mg/L) - Blank (mg/L)) x 0.025 L] / [(Total Liters)/1000] = X (mg/m3)

PROJECT # 100305: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES — **IDL** = 0.004 — **LOQ** = 0.017

Digestion on **11/7/05** — **LOD** = 0.008 — **RL** = 0 050

BY ICP ON **11/9/05** — **MDL** = 0.007 — (All DL in mg/L)

DATA:

Sample #	Dilution	Reading	
LRB	25	-0.005	<MDL of 0.007 mg/L **= 0.006**
LFB	25	1.00	= 100 x 1.00/1.00 = 100% Recovery. (80.120%)
100305-1	25	*7.28*	
100305-2	25	0.914	
100305-3	25	0.085	ELITE 22 North
100305-4	25	0.16	ELITE 22 South
100305-5	25	-0.005	**= 0.006** BLANK
100305-6	25	5.83	
100305-7	25	0.174	
100305-8	25	6.90	
100305-9	25	0.433	
100305-10	25	-0.005	**= 0.006**

EXPLANATIONS:

LRB = Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.

LFB = Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.

DILUTION = 25 ml class A volumetric flask was used tn measure the final volume

PROJECT # 110325: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	IDL =	0.004	**LOQ** =	0.017
Digestion ***on*** **12/20/05**	LOD **=**	0.008	**RL** =	0.050
BY ICP ON **12/30/05**	**MDL =**	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading	
LRB	25	-0.002	<MDL *of* 0.007 mg/L **= *0.006***
LFB	25	0.75	= 100 x 0 749/0.80 = 96% Recovery. (80-120%)
110325-1	25	0.064	23 North ELITE
110325-2	25	0.288	***3*** South ELITE
110325-3	25	0.006	= **0.006**
110325-4	25	0.049	2J North ELITE
110325-5	25	0.060	2J Forth ELITE

EXPLANATIONS:

LRB =	Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.
LFB =	Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again. no filter.
DILUTION =	25 ml class A volumetric flask was used to measure the final volume.
READING =	mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

PROJECT # 120034: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	**IDL =**	0.004	**LOQ =**	0.017	
Digestion **on 12/20/05**	**LOD =**	0.008	**RL =**	0.050	
BY ICP **ON 12/30/05**	**MDL =**	0.007			(All DL in mg/L)

DATA:

Sample #	Dilution	Reading		
LRB	25	-0.002	<MDL of 0.007 mg/L	= 0.006
LFB	25	0.75	= 100 x 0.749/0.80 = 96% Recovery, (80-120%)	
120034-1	25	0.174	26 North	
120034-2	25	0.176	26 South	
120034-3	25	0.001	= 0.006	

EXPLANATIONS:

LRB =	Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.
LFB =	Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.
DILUTION =	25 ml class A volumetric flask was used to measure the final volume
READING =	mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

AIR MONITORING DATA SHEET

DATE 10/18/05 Condition #22

COMPANY NAME ELITE METAL Finishing

SAMPLER: Jeff Zell

****

TEST TYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # NA

AREA: Nickel Sulfamate Rack ~~East~~ North JE

PUMP SERIAL # 200J020302 1 d

PARAMETER(S) Ni

MEDIA TYPE ~

SERIAL # ~

PRE-CALIBRATION FLOW RATE
Time (500 mL) ~~seconds~~ LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) ~~seconds~~ LPM 2.0

TOTAL SAMPLE TIME (MIN.) 431 min

TOTAL LITERS SAMPLED 862 (L)

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # NA

AREA: Nickel Sulfamate Rack ~~East~~ South JE

PUMP SERIAL # 200J020302 2

PARAMETER(S) Ni

MEDIATYPE ~

SERIAL # ~

~8:30 am

PRE-CALIBRATION FLOW RATE
Time (500 mL) ~~seconds~~ LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) ~~seconds~~ LPM 2.0

TOTAL SAMPLE TIME (MIN.) 431 min

TOTAL LITERS SAMPLED 862 (L)

Scientific CONTROL LABORATORIES, INC. TESTING — CONSULTING

AIR MONITORING DATA SHEET

Continuation Sheet

No Mesh Req'd this time

DATE 11/15/05

COMPANY NAME ELITE

SAMPLER: _____

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # _____

AREA: Nickel Sulfamate Tank North (25082348)

PUMP SERIAL # 2005020302

PARAMETER(S) Nickel

MEDIATYPE _____

SERIAL # _____

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

12:00 — 4:09

TOTAL SAMPLE TIME (MIN.) 189 (min)

TOTAL LITERS SAMPLED 378 (L)

Bobby Died

****

TESTTYPE: ☐ 'EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # _____

AREA: Sulfamate Tank South (25082354)

PUMP SERIAL # 2005020304

PARAMETER(S) Nickel

MEDIA TYPE _____

SERIAL # _____

~ 7:00 — 4:09

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 401 (min)

TOTAL LITERS SAMPLED 802 (L)

Scientific CONTROL LABORATORIES, INC. TESTING — CONSULTING

AIR MONITORING **DATA** SHEET

#25 Fdwdin w/ Mosh Pnds

DATE 11/14

COMPANY NAME ELITE Finishing

SAMPLER:

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAMEISS #

AREA: Nickel Sulfamate Tank (North) (25082369)

PUMP SERIAL # 2005020302

PARAMETER(S) Nickel

MEDIA TYPE

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 480 min

TOTAL LITERS SAMPLED 500 (L)

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS #

AREA: Nickel Sulfamate Tank (South) (25082355)

PUMP SERIAL # 2005020302

PARAMETER(S) Nickel

MEDIA TYPE

SERIAL #

PRE-CALJBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 480 (min)

TOTAL LITERS SAMPLED 500 (L)

Scientific CONTROL LABORATORIES, INC. TESTING — CONSULTING

AIR MONITORING DATA SHEET

Condit #26

DATE 12/1/15

COMPANY **NAME** ELITE Finish

SAMPLER: Jeff Zak

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # —

AREA: Nickel Sulfamate Tank (North) (25082360)

PUMP SERIAL# 2005020302 2

PARAMETER(S) Nickel

MEDIA TYPE _____

SERIAL #_____

PRE-CALIBRATION FLOW RATE
Time (500 mL)_____seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL)_____seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 331 (min)

TOTAL LITERS SAMPLED 662 (L)

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # —

AREA: Nickel Sulfamate Tank South) 25082360

PUMP SERIAL # 20050203021

PARAMETER(S) Nickel

MEDIA TYPE —

SERIAL #_____

PRE-CALIBRATION FLOW RATE
Time (500 mL)_____seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL)_____seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 331 min

TOTAL LITERS SAMPLED 662 (L)

Company Name: Artistic - Woods

NAME/AREA	PARAMETER	Date	Sample mg/L	Minutes	LPM Flowrate	Total LITERS	Blank mg/L	RESULTS (mg/m3)	OSHA LIM
Condition 7 - East	Ni		4.06	403	2.0	806	0.002	0.125868	1.00
Conditon 7 - West	Ni		0.45	403	2.0	806	0.002	0.013896	1.00
Blank	Ni		0.002	0	0	0	0.002		
Condition 24 - East	Ni		2.11	390	2.0	780	0.002	0.067564	1.00
Condition 24 - West	Ni		0.38	393	2.0	786	0.002	0.012023	1.00
Blank	Ni		0.002	0	0	0	0		
Condition 27 - East	Ni		7.28	295	2.0	590	0	0.308475	1.00
Condition 27 - West	Ni		0.92	289	2.0	578	0	0.039792	1.00
Blank	Ni		0	0	0	0	0		
Condition 28 - East	Ni		5.83	398	2.0	796	0	0.183103	1.00
Condition 28 - West	Ni		0.17	392	2.0	784	0	0.005421	1.00
Blank	NI		0	0	0	0	0		
Condition 29 - East	Ni		6.9	407	2.0	814	0	0.211916	1.00
Condition 29 - West	Ni		0.43	403	2.0	806	0	0.013337	1.00
Blank	NI		0	0	0	0	0		

Calculation: [(Sample (mg/L) - Blank (mg/L)) x 0.025 L] / [(Total Liters)/1000] = X (mg/m3)

PROJECT # 110200: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	**IDL =**	0 004	**LOQ =**	0.017
Digestion on 11/14/05	**LOD =**	0.008	**RL =**	0 050
BY ICP ON 11/15/05	**MDL =**	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading	
LRB	25	-0.001	<MDL of 0 007 mg/L = 0.006
LFB	25	1.80	= 100 x 1.0011.00 = 90% Recovery, (80-120%)
110200-1	25	0.202	
110200-2	25	0.144	
110200-3	25	0.000	= 0.006
110200-4	25	0.130	
110200-5	25	0.042	
110200-6	25	4.06	FAST
110200-7	25	0.448	Woods 7
110200-8	25	0.002	= 0.006
110200-9	25	2.11	Woods 24 FAST
110200-10	25	0.382	Woods 24 West

EXPLANATIONS:

LRB =	Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.
LFB =	Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.
DILUTION =	25 ml class A volumetric flask was used to measure the final volume.
READING =	mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

PROJECT # 100305: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	**IDL =**	0.004	**LOQ =**	0.017
Digestion on 11/7/05	**LOD =**	0.008	**RL =**	0.050
BY ICP ON 11/9/05	**MDL =**	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading	
LRB	25	-0.005	<MDL of 0.007 mg/L = 0.006
LFB	25	1.00	= 100 x 1.00/1.00 = 100% Recovery. (80-120%)
100305-1	25	7.28	Wood's 27 East
100305-2	25	0.914	Woods 27 West
100305-3	25	0.085	ELITE 22 North
100305-4	25	0.16	ELITE 22 South
100305-5	25	-0.005	= 0.006 BLANK
100305-6	25	5.83	Wood's 28 East
100305-7	25	0.174	Wood's 28 West
100305-8	25	6.90	Wood's 29 East
100305-9	25	0.433	Wood 29 West
100305-10	25	-0.005	= 0.006 BLANK

EXPLANATIONS:

LRB =	Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.
LFB =	Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.
DILUTION =	25 ml class A volumetric flask was used to measure the final volume.
READING =	mg/L as determined by average of three replicates on ICP

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

Scientific Control Laboratories, Inc.
Testing — Consulting

AIR MONITORING DATA SHEET

Condition #7

DATE 11/9/05

COMPANY NAME Artistic Plating Co.

SAMPLER: Jeff Zak

****

TESTTYPE: ☐ EMPLOYEE AREA

EMPLOYEE NAME/SS # —

AREA: Wood's Nickel Strike (East)

PUMP SERIAL # 200502035122

PARAMETER(S) Ni

MEDIA TYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time(500 mL) ____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) ____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 403 min

TOTAL LITERS SAMPLED 806 L

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # —

AREA: Wood's Nickel Strike (West)

PUMP SERIAL # 200502035121

PARAMETER(S) Ni

MEDIA TYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL) ____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) ____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 403 min

TOTAL LITERS SAMPLED 806 L

Scientific CONTROL LABORATORIES INC. TESTING — CONSULTING

AIR MONITORING **DATA** SHEET

Audit #24

DATE 11/12/14

COMPANY NAME Detroit Piping Co

SAMPLER: Jeff Zek

****

TEST TYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # —

AREA: Wood's Nickel Skate Tank (East)

PUMP SERIAL # 2005020302

PARAMETER(S) Ni

MEDIA TYPE —

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) ____ seconds LPM a,0

POST-CALIBRATION FLOW RATE
Time (500 mL) ____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 390 (min)

TOTAL LITERS SAMPLED 780 (L)

8:30 - 3:00

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAMEJSS # —

AREA: Wood's Nickel Skate Tank (West)

PUMP SERIAL # 2005020302

PARAMETER(S) Ni

MEDIA TYPE —

SERIAL #

PRE-CALIBRATION FLOW RATE
Time (500 mL) ____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) ____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 393 (min)

TOTAL LITERS SAMPLED 786 (L)

a scientific CONTROL LABORATORIES, INC.
TESTING — CONSULTING

AIR MONITORING **DATA** SHEET

DATE 10/17/05

COMPANY NAME Artistic Plating Company #27

SAMPLER: JZ

****

TESTTYPE: □ EMPLOYEE AREA

EMPLOYEE NAME/SS # NA

AREA: Wood's Nickel Strike (East)

PUMP SERIAL # 2005020302d2

PARAMETER(S) Ni

MEDIA TYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 295 min

TOTAL LITERS SAMPLED 590 L

****

TESTTYPE: o EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # NA

AREA: Woods Nickel Strike (West)

PUMP SERIAL # 2005020302d1

PARAMETER(S) Ni

MEDIA TYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 289 min

TOTAL LITERS SAMPLED 578 L

Scientific CONTROL LABORATORIES, INC. TESTING CONSULTING

AIR MONITORING **DATA** SHEET #28

DATE 10/19/05

COMPANY NAME Artistic Plating Co (9:15) start -3:30

SAMPLER: _____

****

TESTTYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # ND

AREA: Wood's Nickel Strike (East)

PUMP SERIAL # 2005020302a

PARAMETER(S) Ni

MEDIA TYPE ~

SERIAL # _____

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 398 min

TOTAL LITERS SAMPLED 796 ~~mm~~ (L)

****

TESTTYPE: ☐ EMPLOYEE AREA

EMPLOYEE NAME/SS # NA

AREA: Woods Nickel Strike (West)

PUMP SERIAL # 2005020302a

PARAMETER(S) Ni

MEDIA TYPE ~

SERIAL # _____

PRE-CALIBRATION FLOW RATE
Time (500 mL) _____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) _____ *seconds* LPM 2.0

TOTAL SAMPLE TIME (MIN.) 392 mv

TOTAL LITERS SAMPLED 784 ~~mm~~ (L)

Scientific CONTROL LABORATORIES, INC. TESTING — CONSULTING

AIR MONITORING DATA SHEET

DATE 10/20/05

COMPANY NAME Diatistic Plzkg Company #29

SAMPLER: JK ≃ 8:30

****

TEST TYPE: ☐ EMPLOYEE ☒ AREA

EMPLOYEE NAME/SS # NA

AREA: Wood's Nickel Strike (East)

PUMP SERIAL # 2005 020 3022

PARAMETER(S) Ni

MEDIATYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL) ____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) ____ seconds LPM 2.0

TOTAL SAMPLE TIME (MIN.) 407 (min)

TOTAL LITERS SAMPLED (L)

****

TESTTYPE: ☐ EMPLOYEE AREA

EMPLOYEE NAME/SS # NA

AREA: Wood's Nickel Strike (Mid)

PUMP SERIAL # 2005 020 3021

PARAMETER(S) Ni

MEDIATYPE —

SERIAL # —

PRE-CALIBRATION FLOW RATE
Time (500 mL) ____ seconds LPM 2.0

POST-CALIBRATION FLOW RATE
Time (500 mL) ____ seconds LPM 2.0

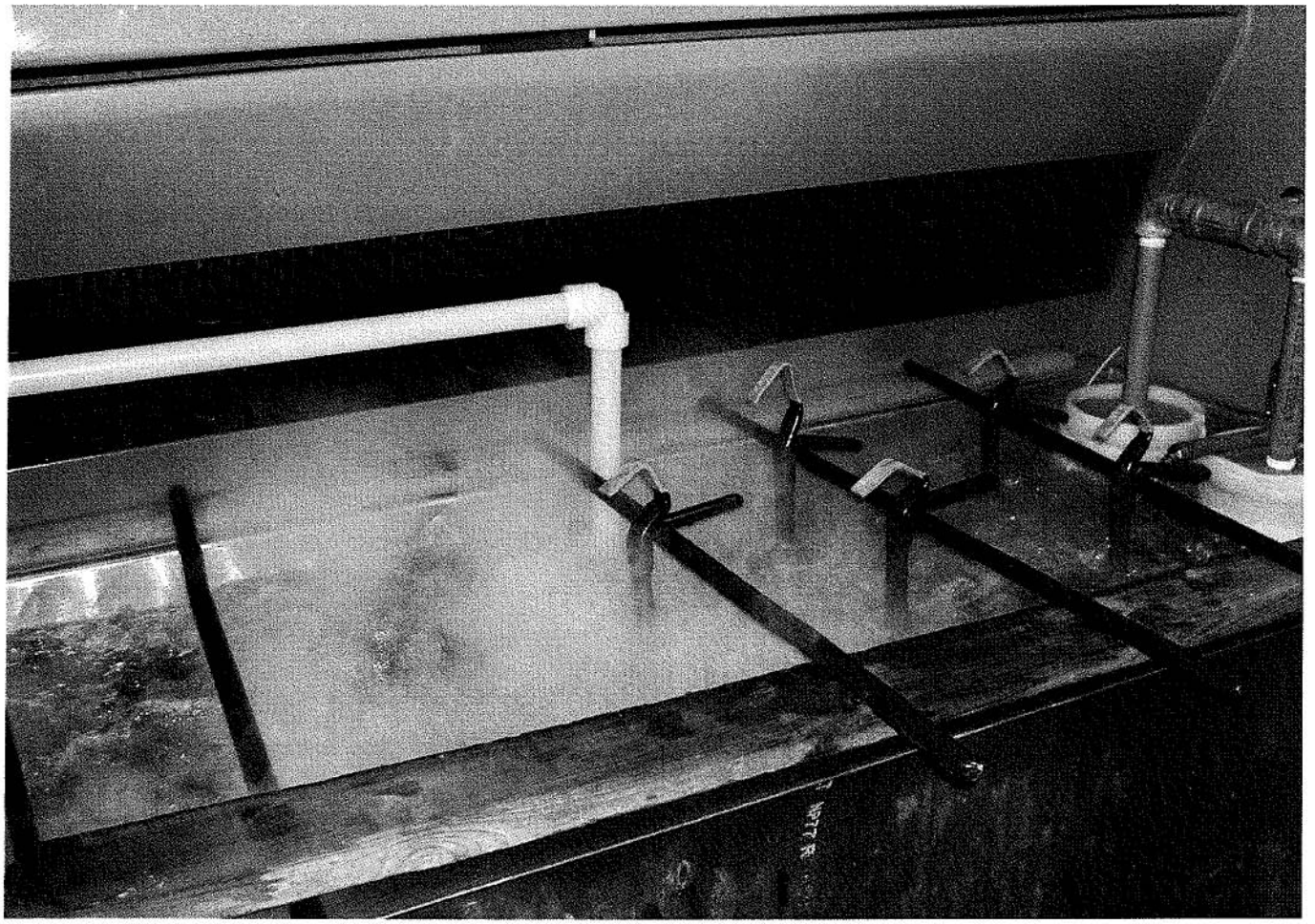
TOTAL SAMPLE TIME (MIN.) 403 (min)

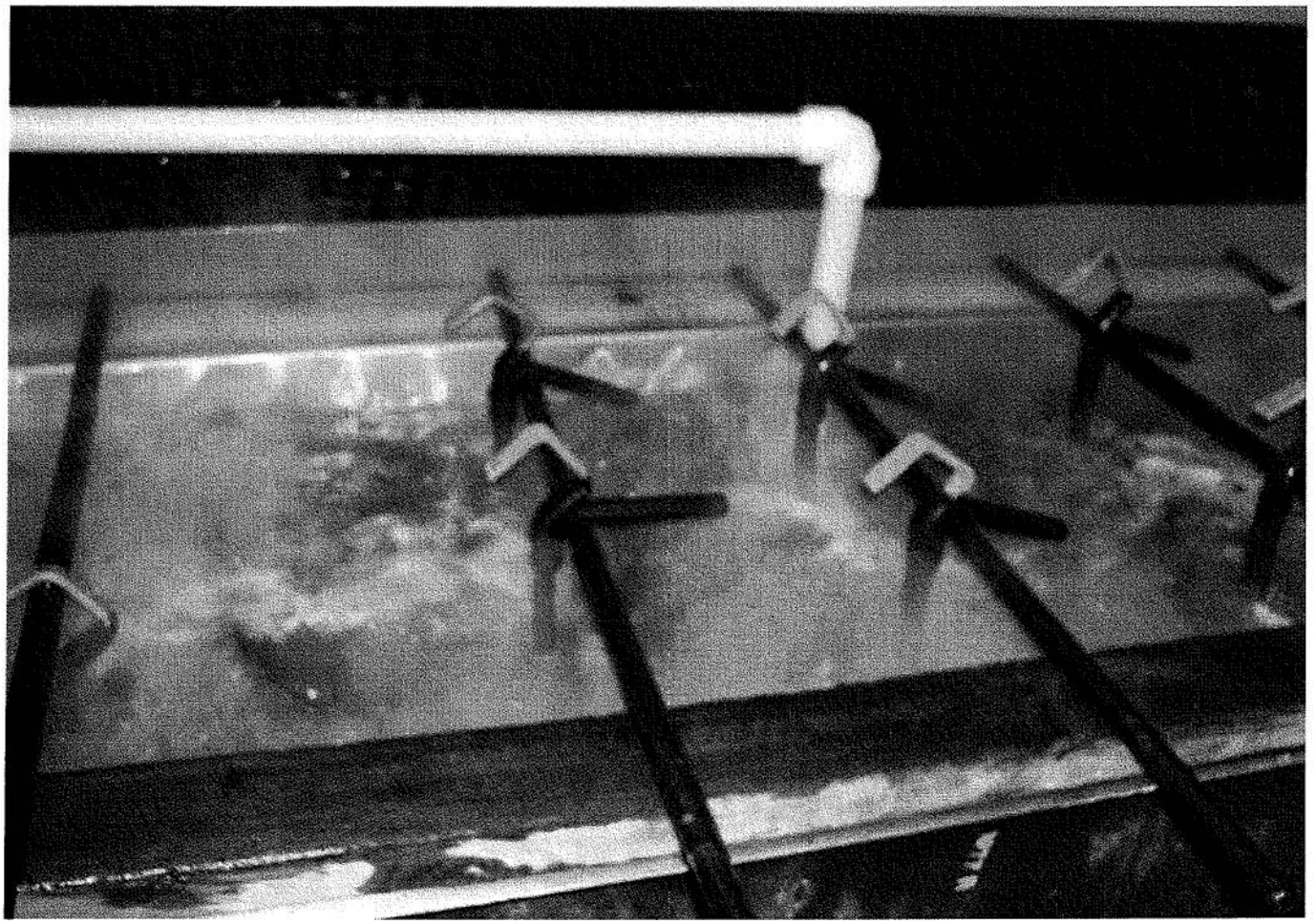
TOTAL LITERS SAMPLED 806 (L)

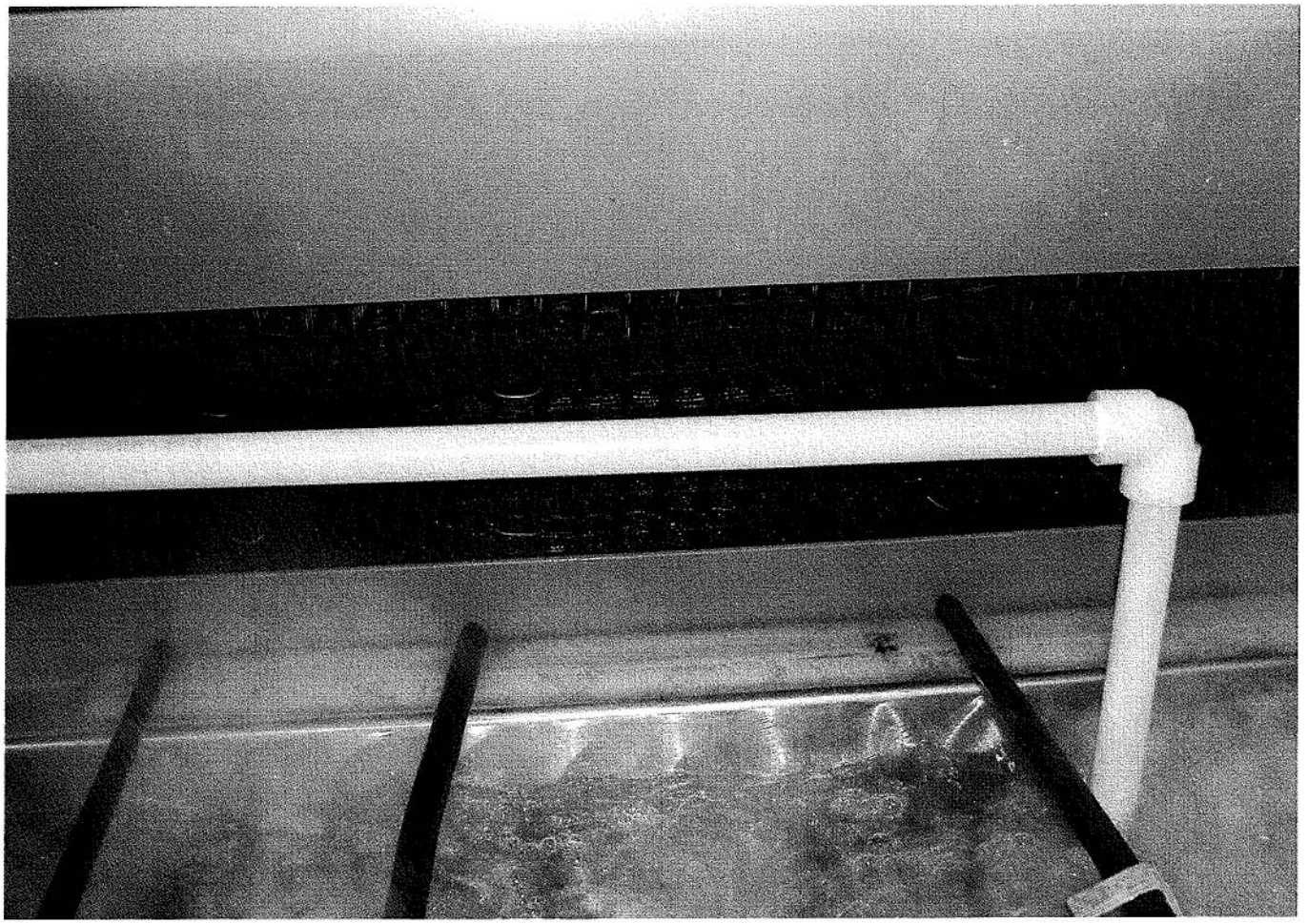
Appendix *C*

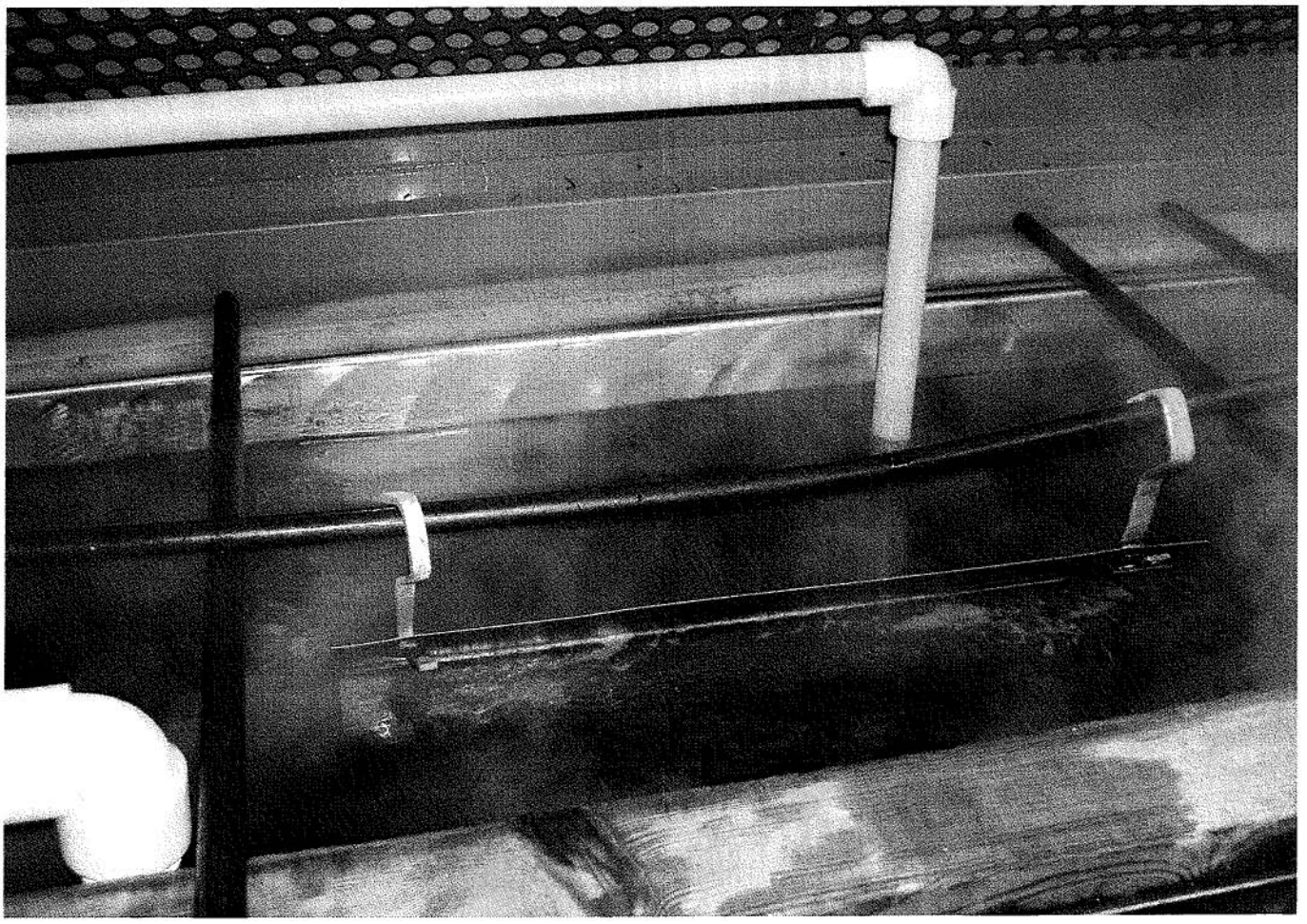
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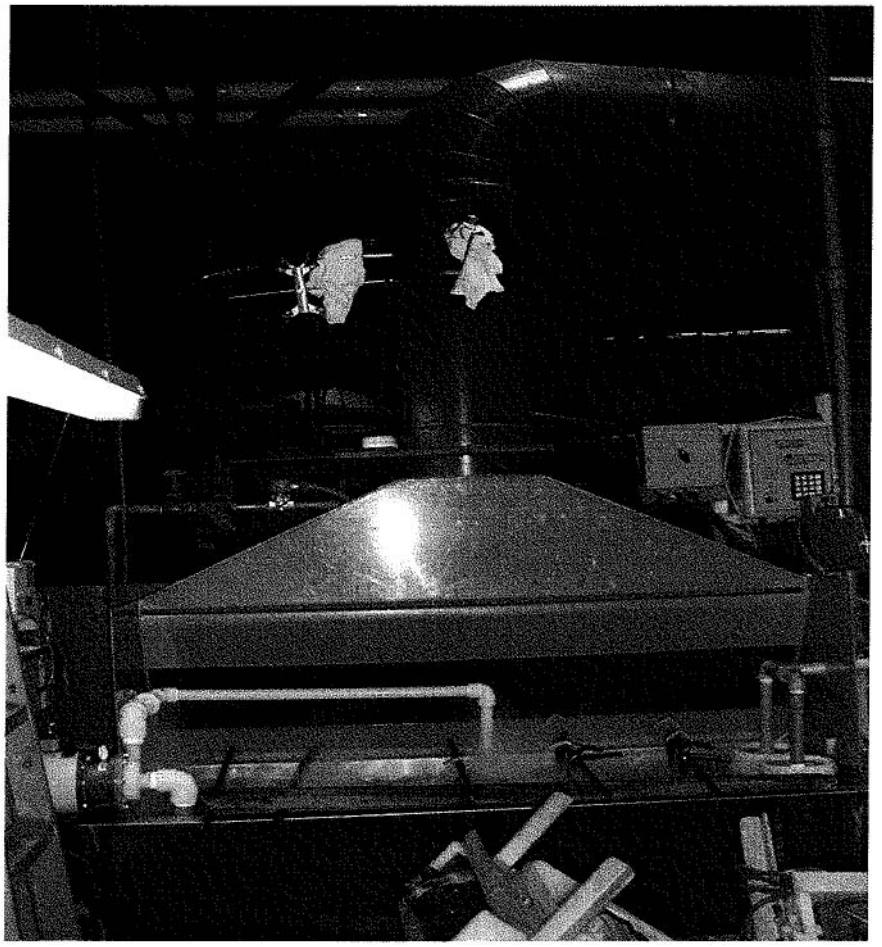
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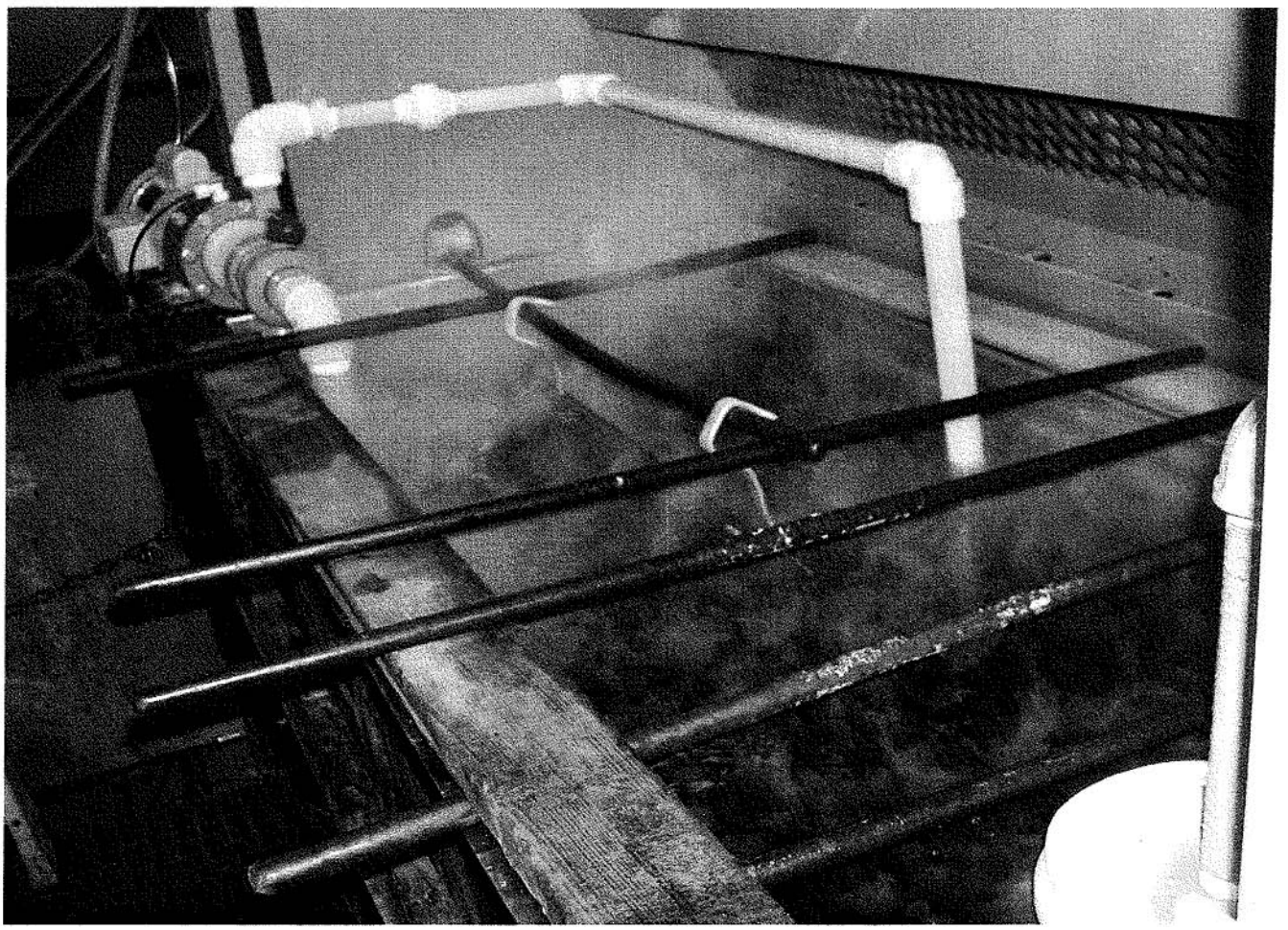


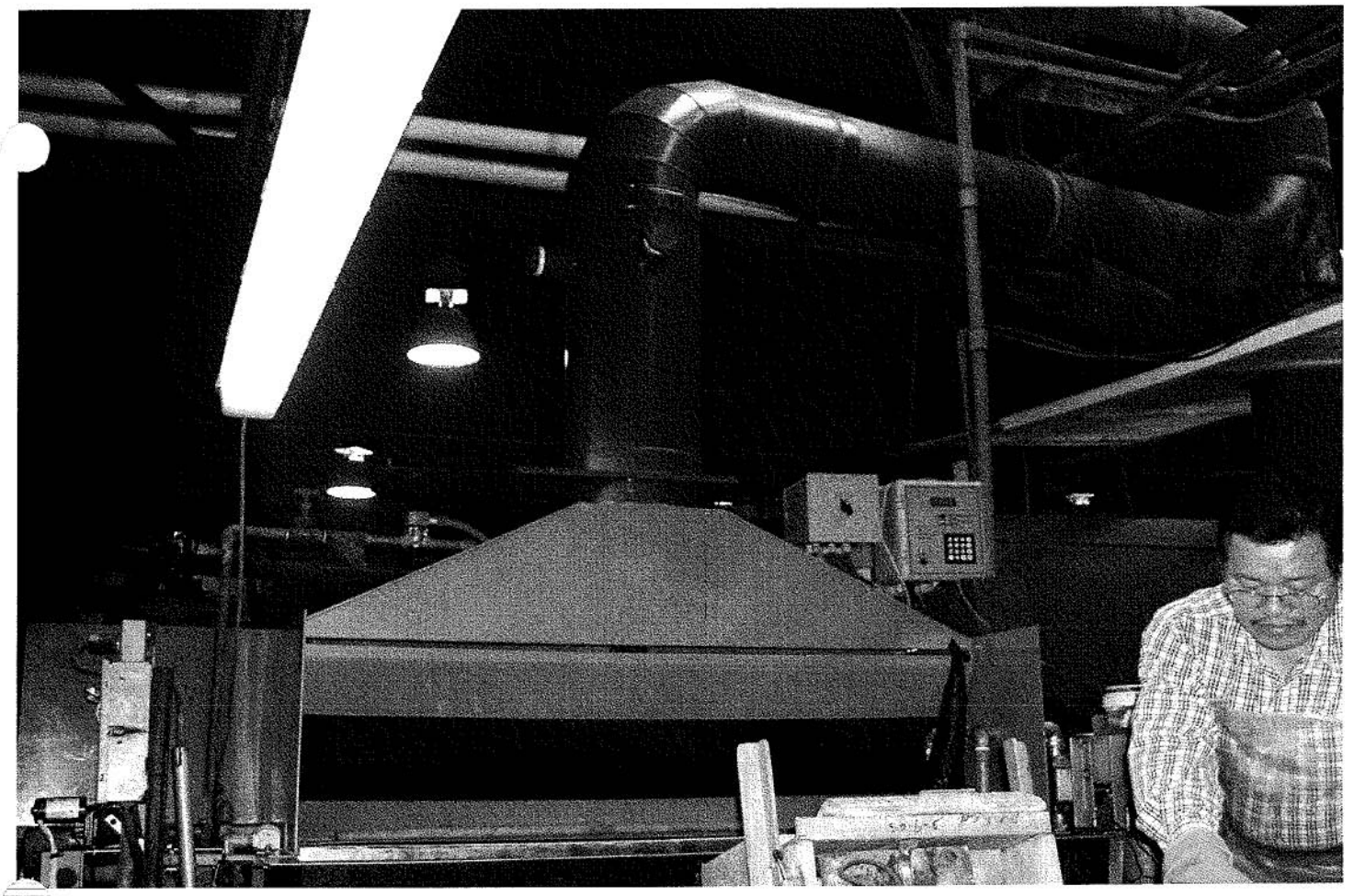


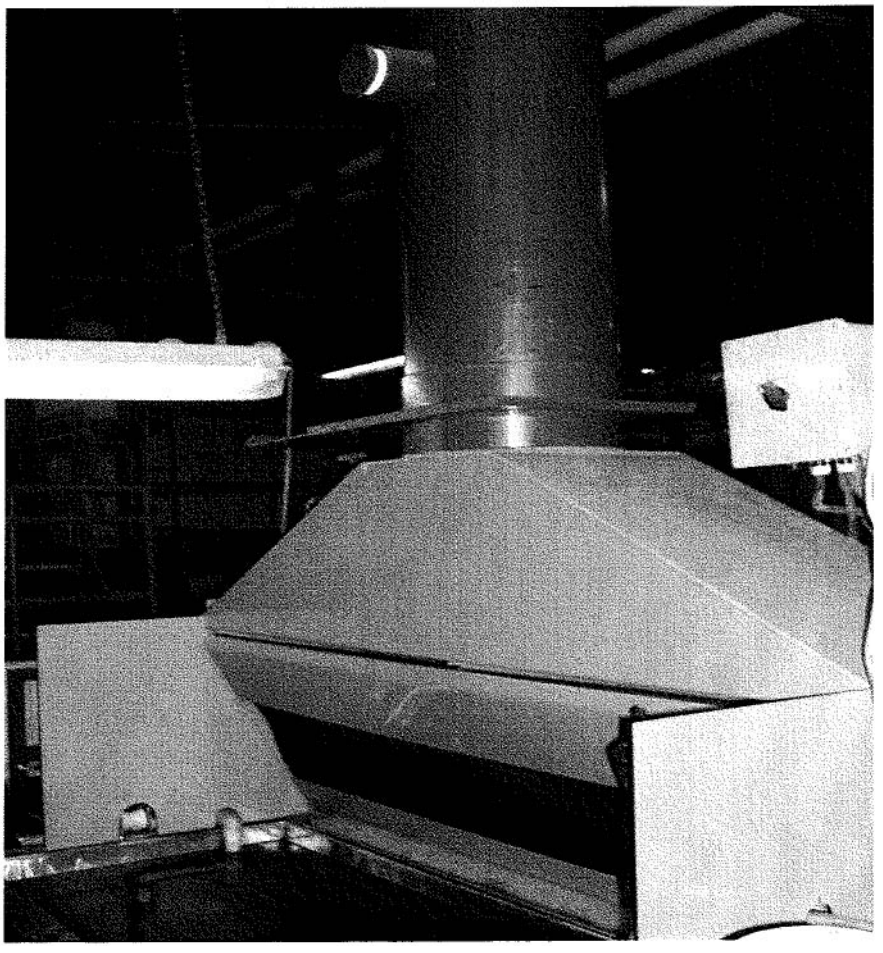


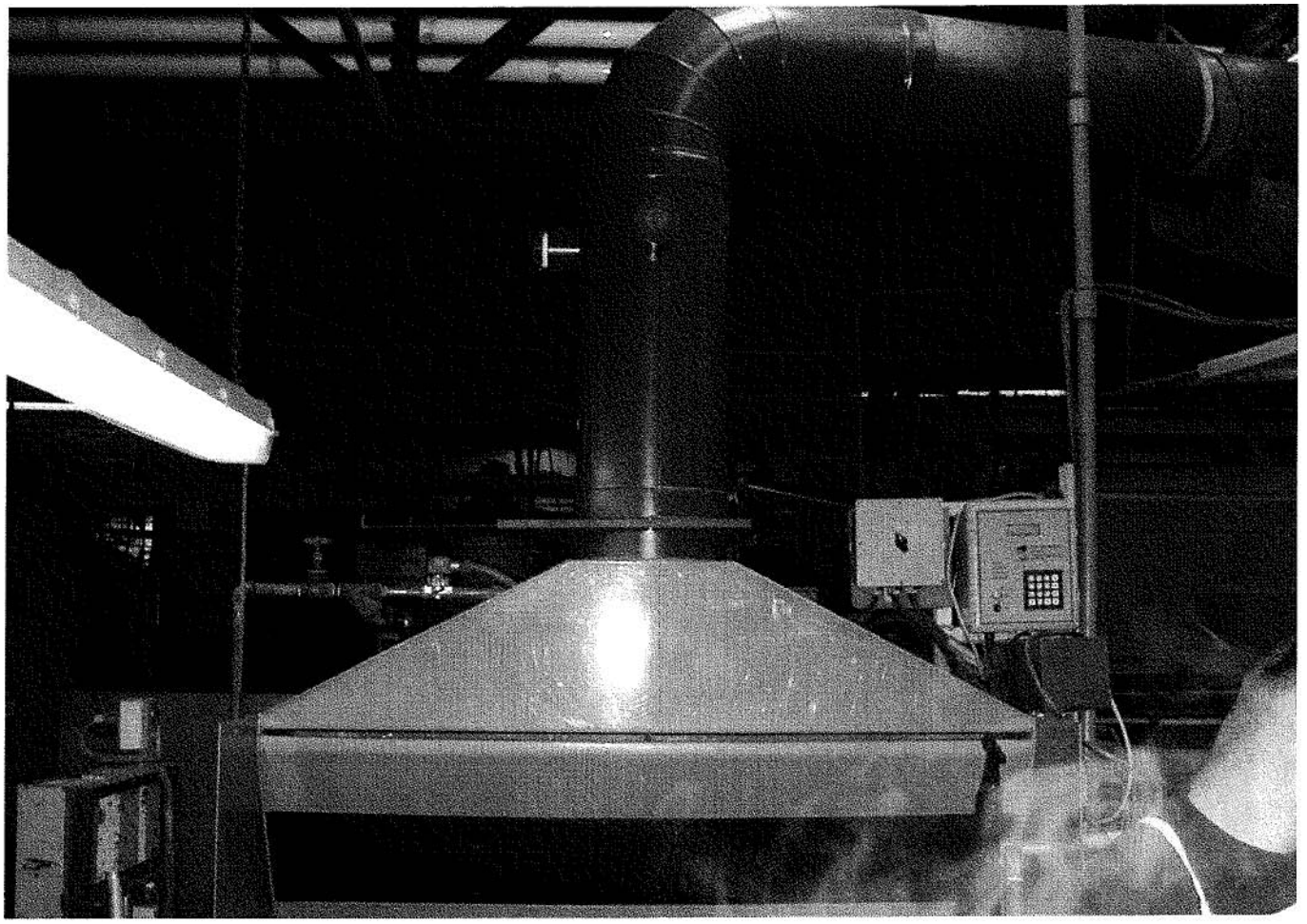


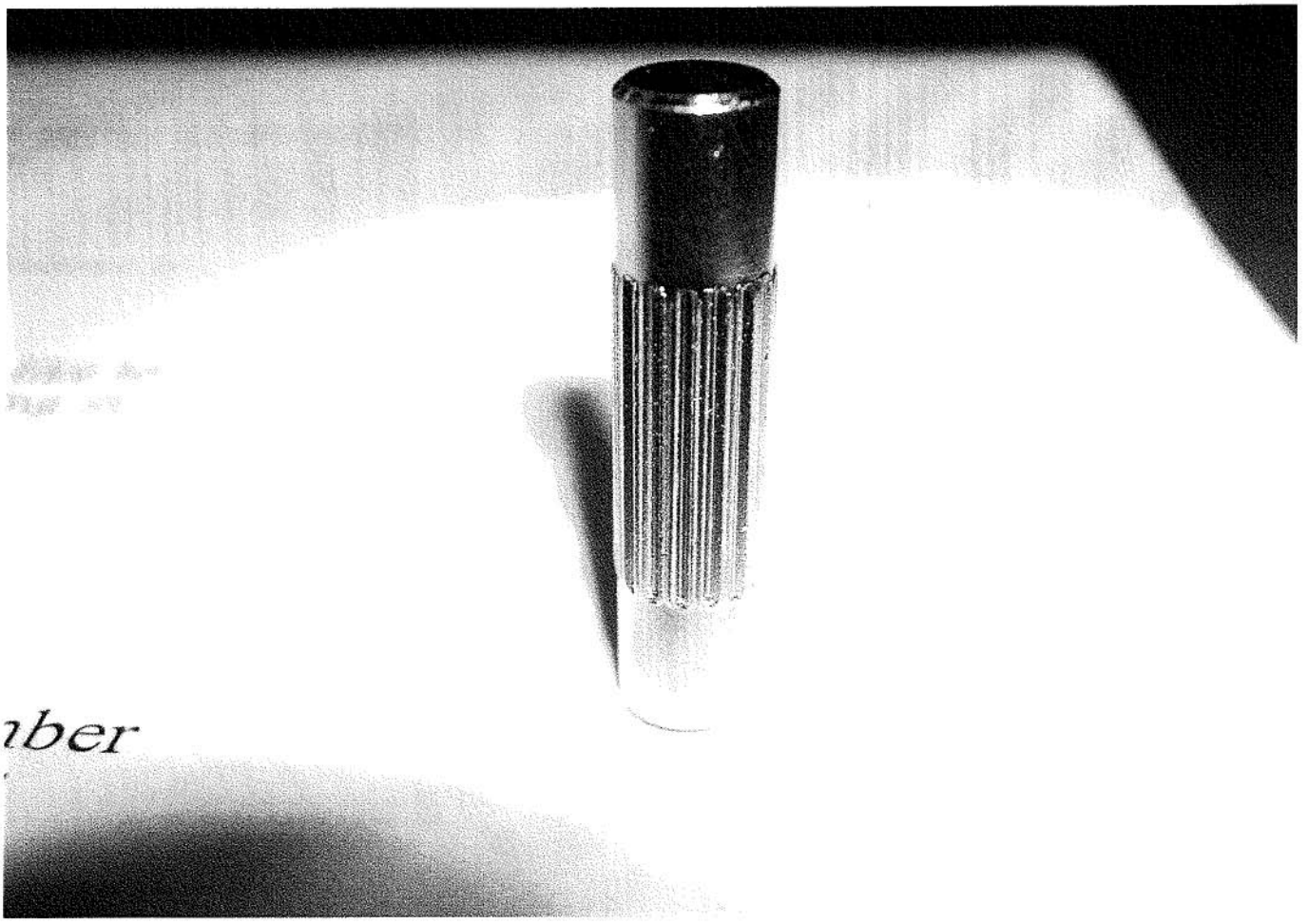


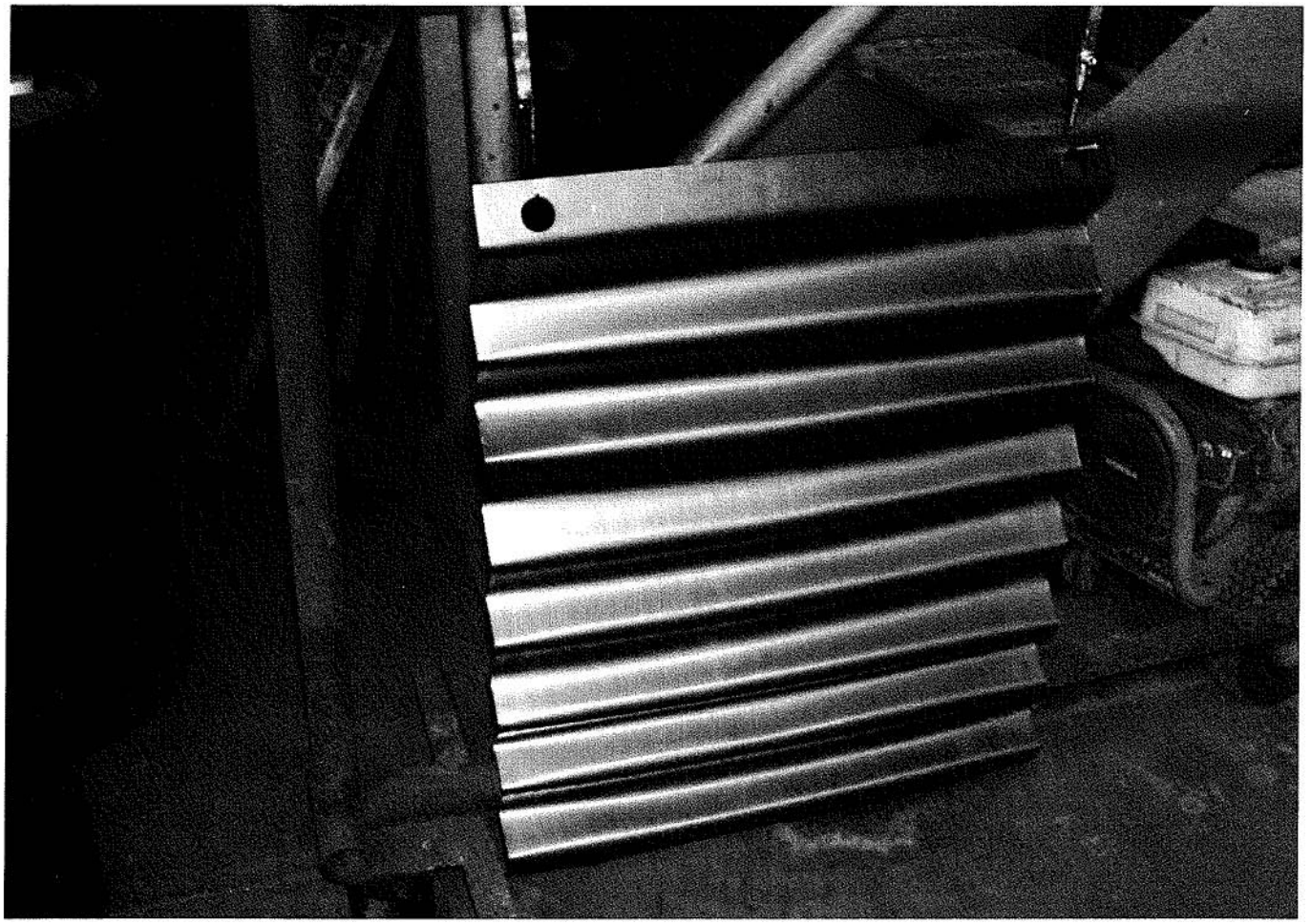




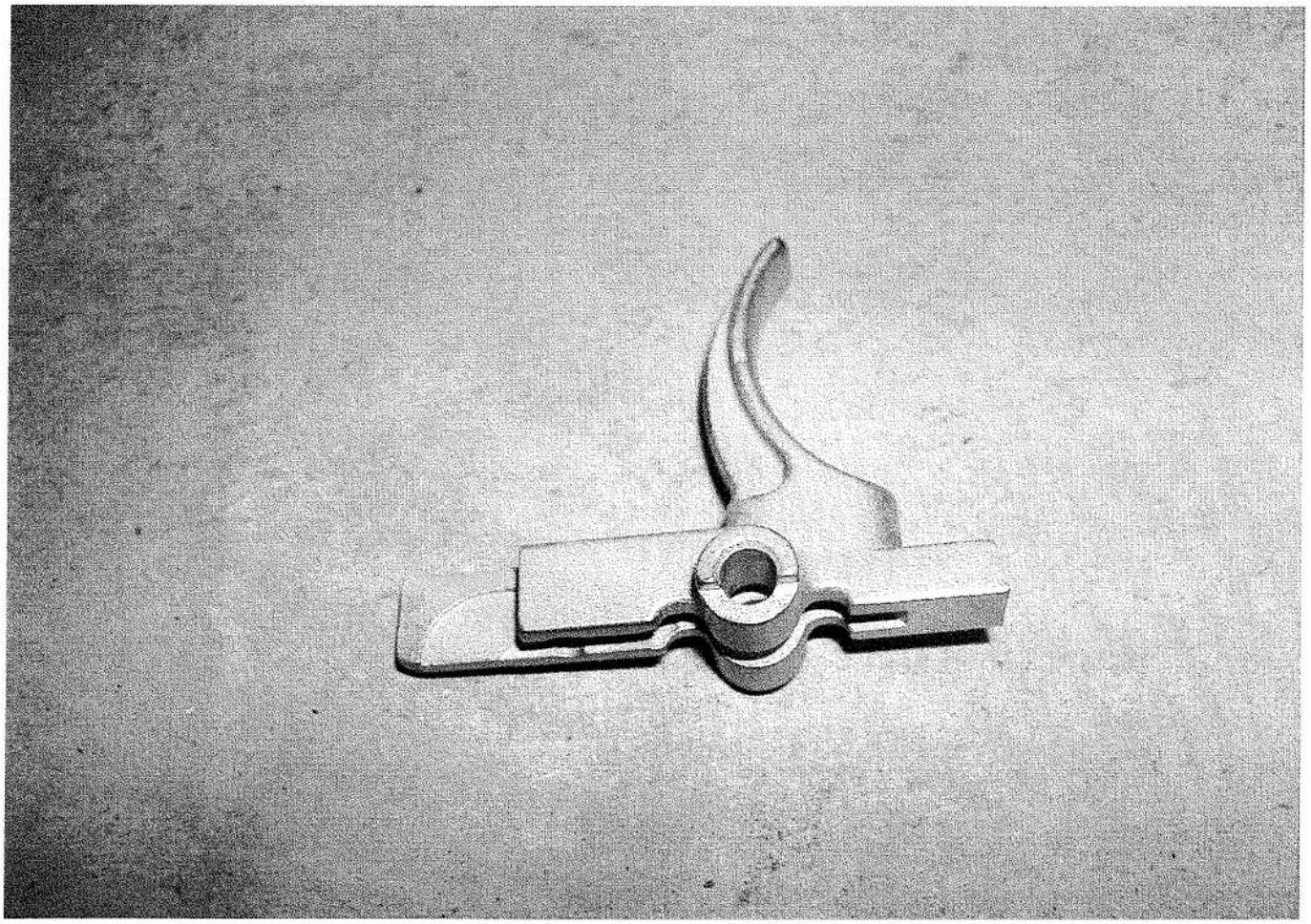


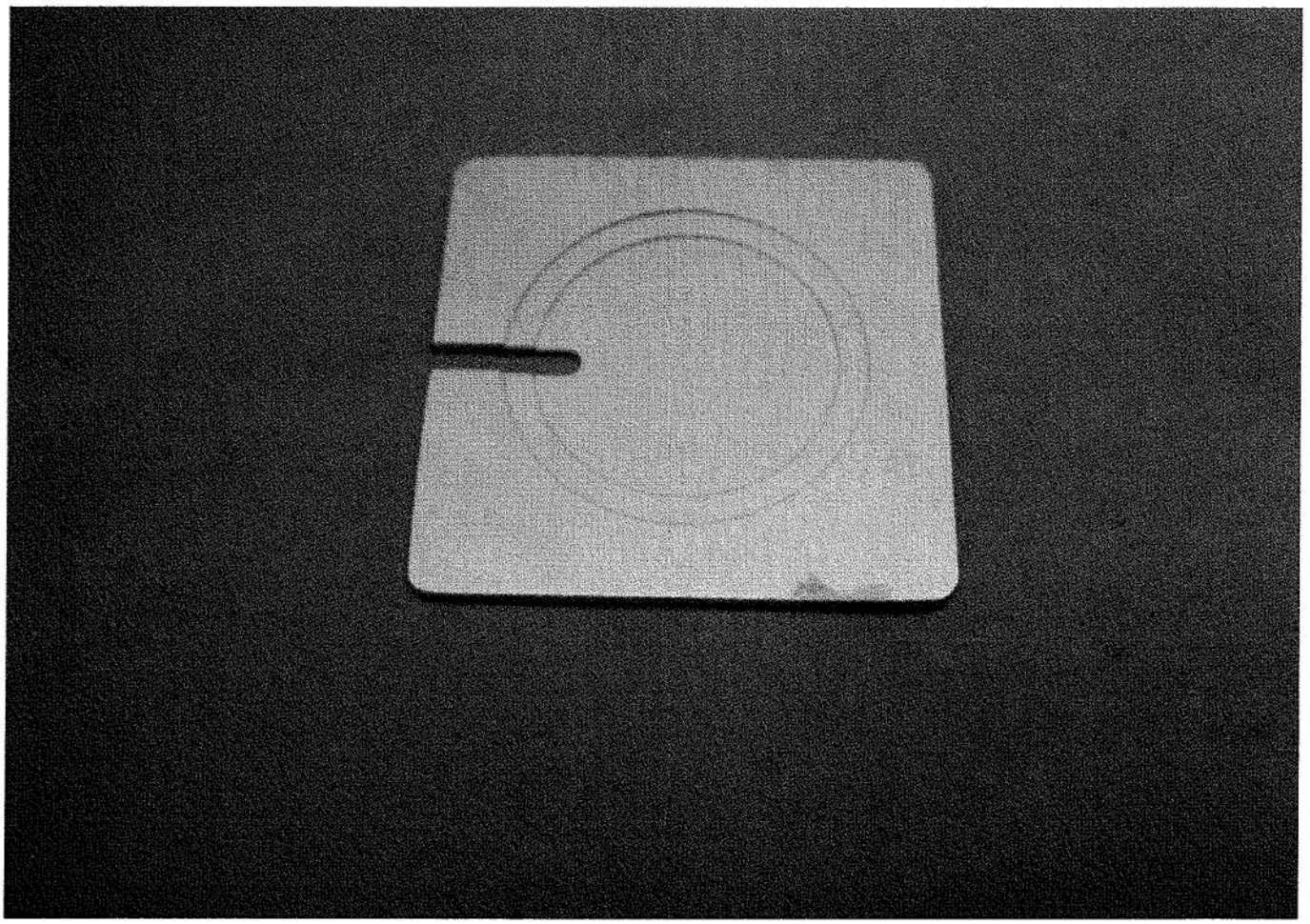


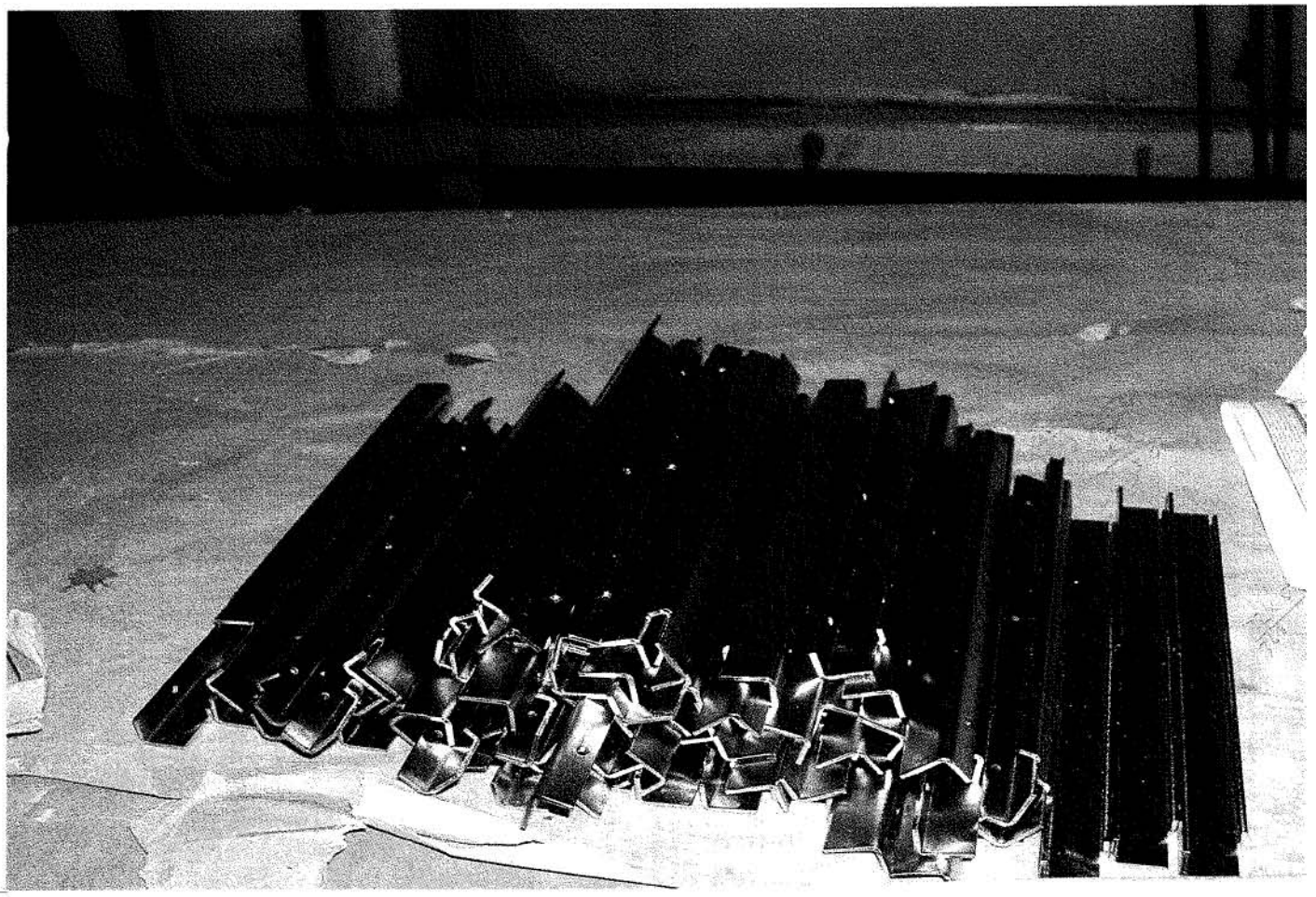

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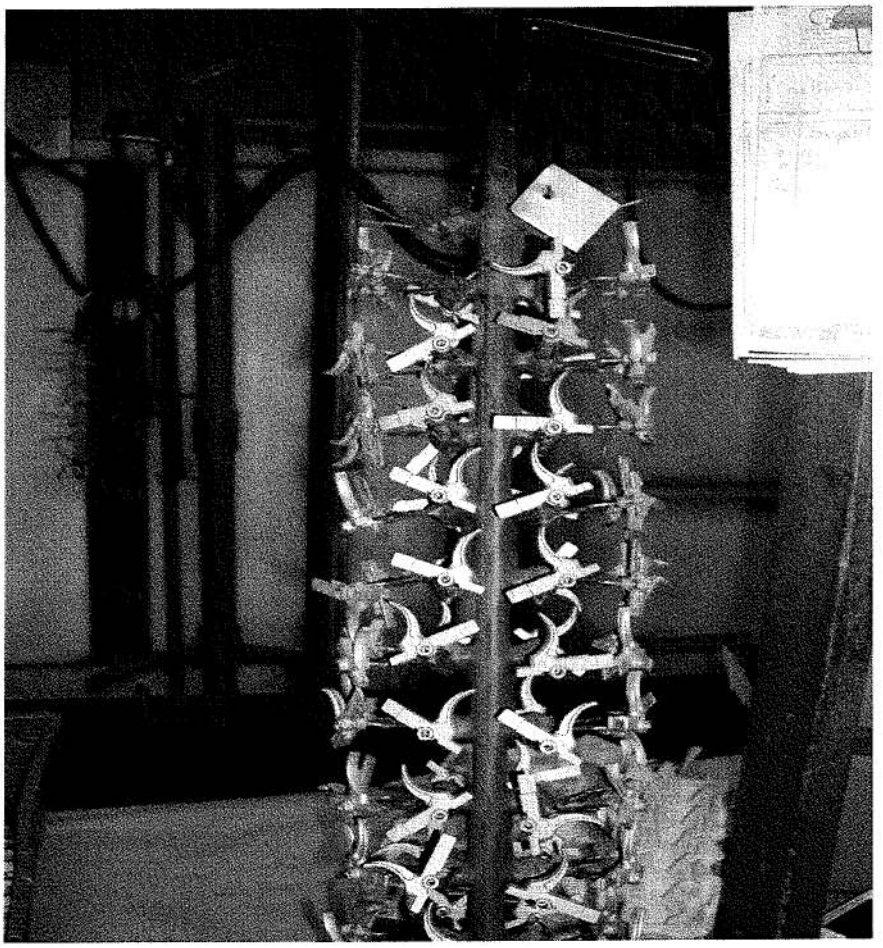


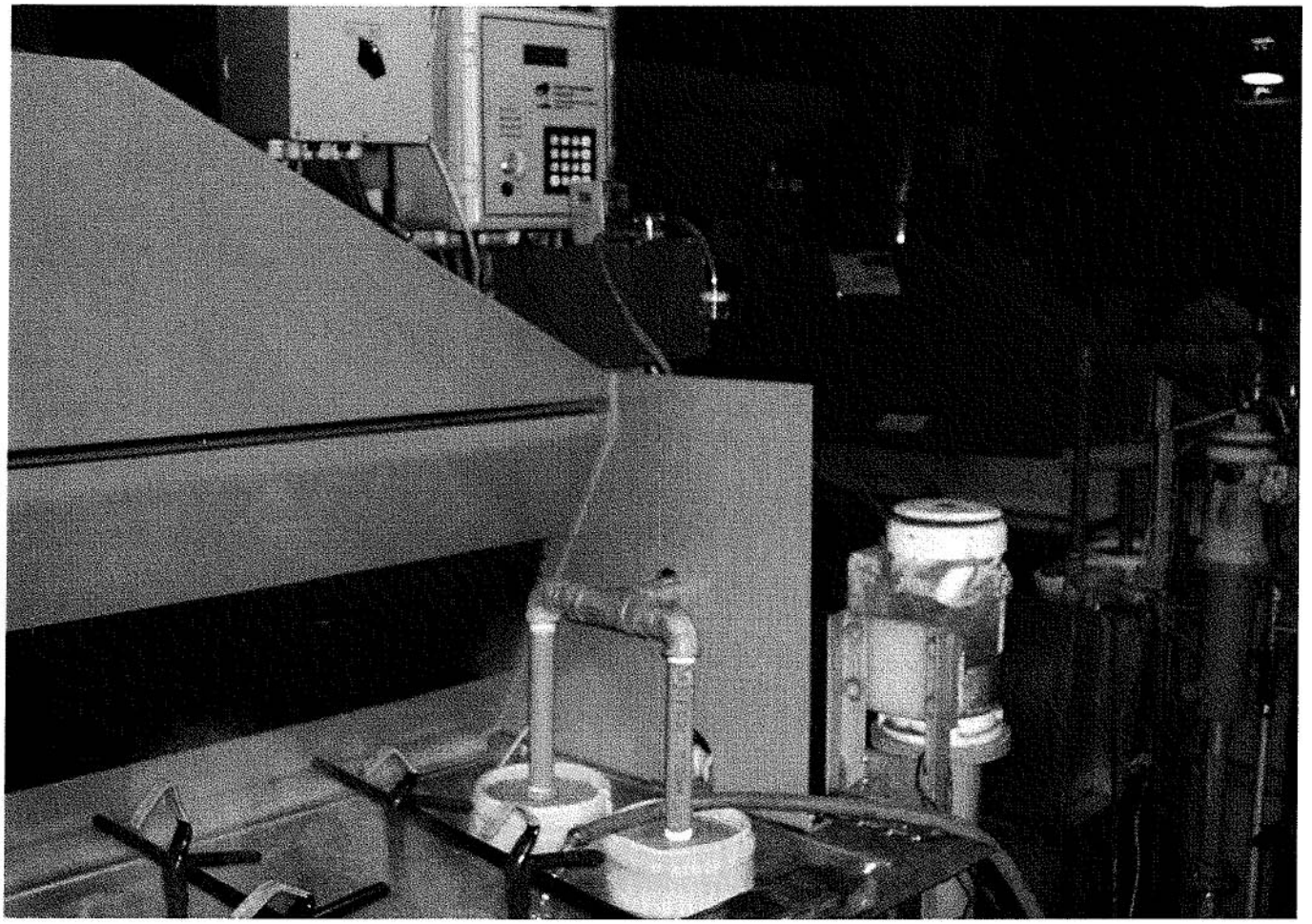


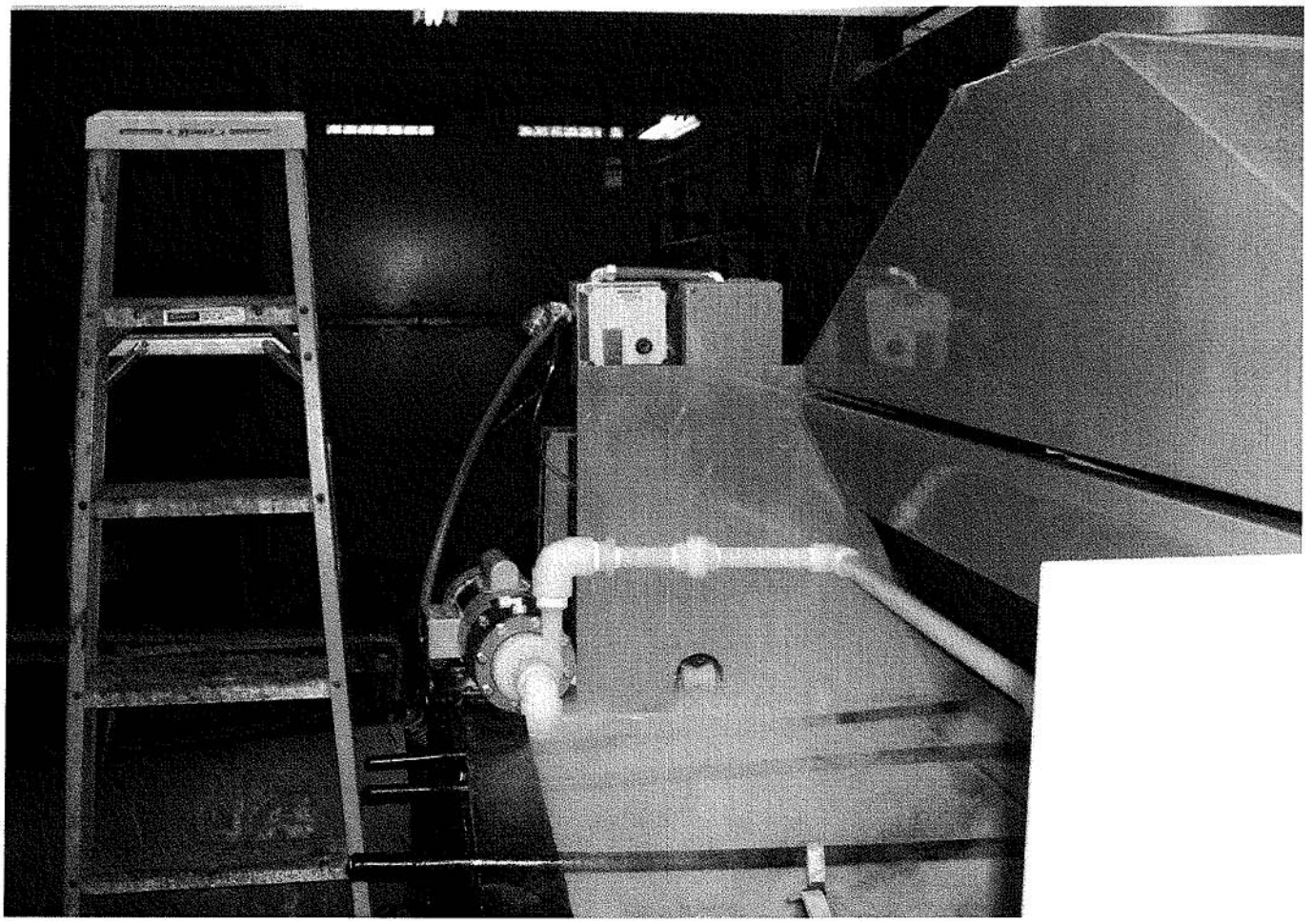




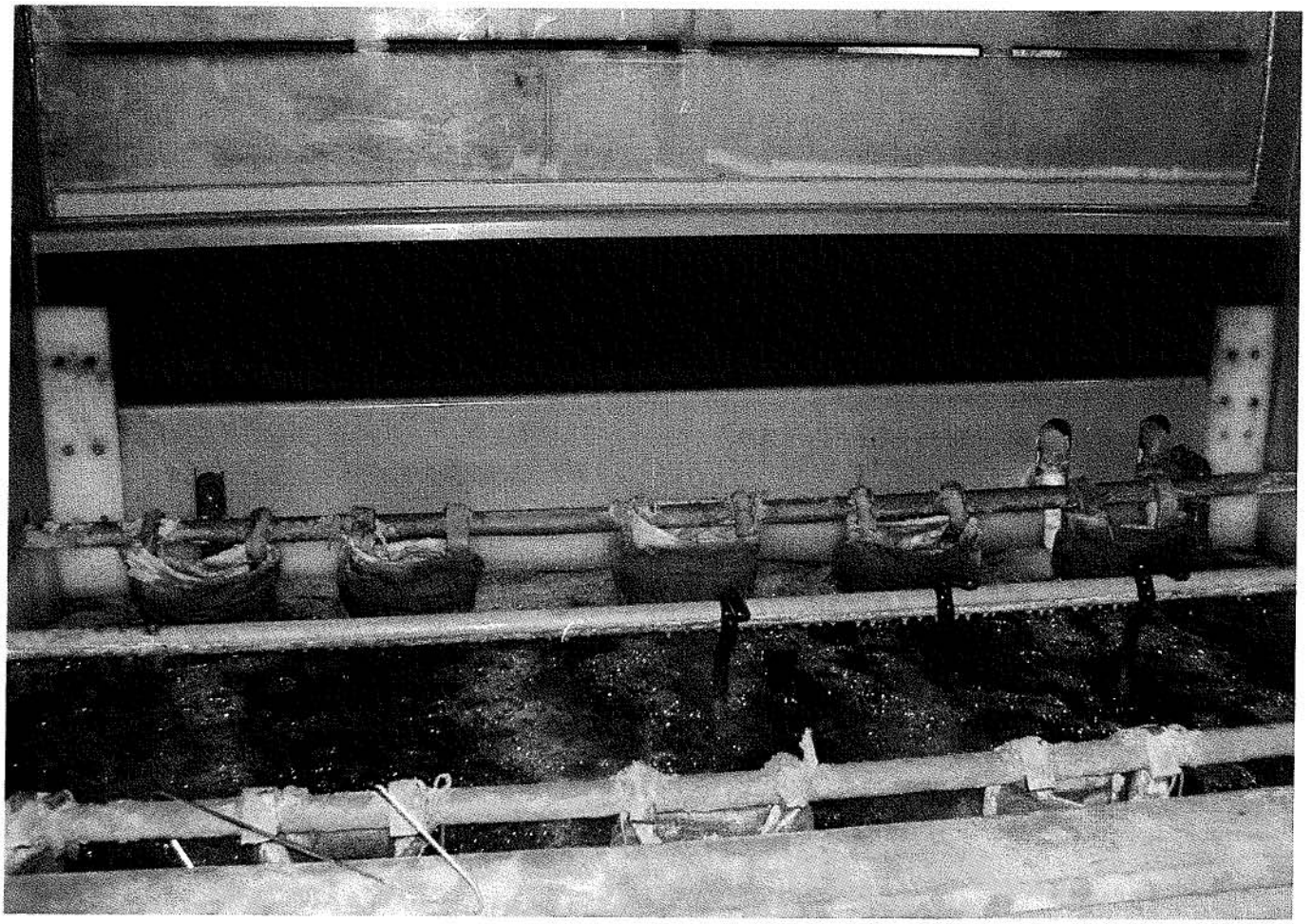


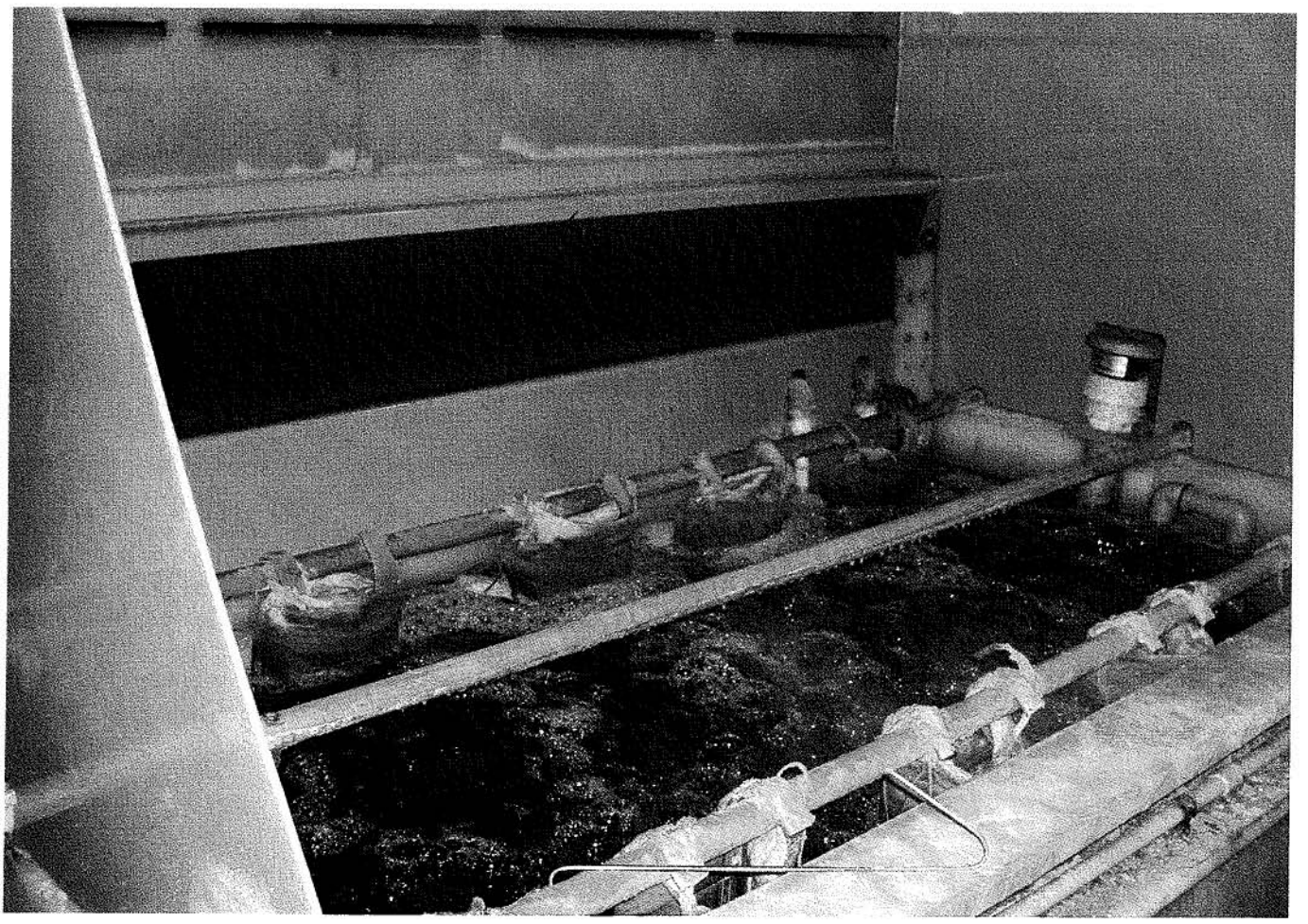


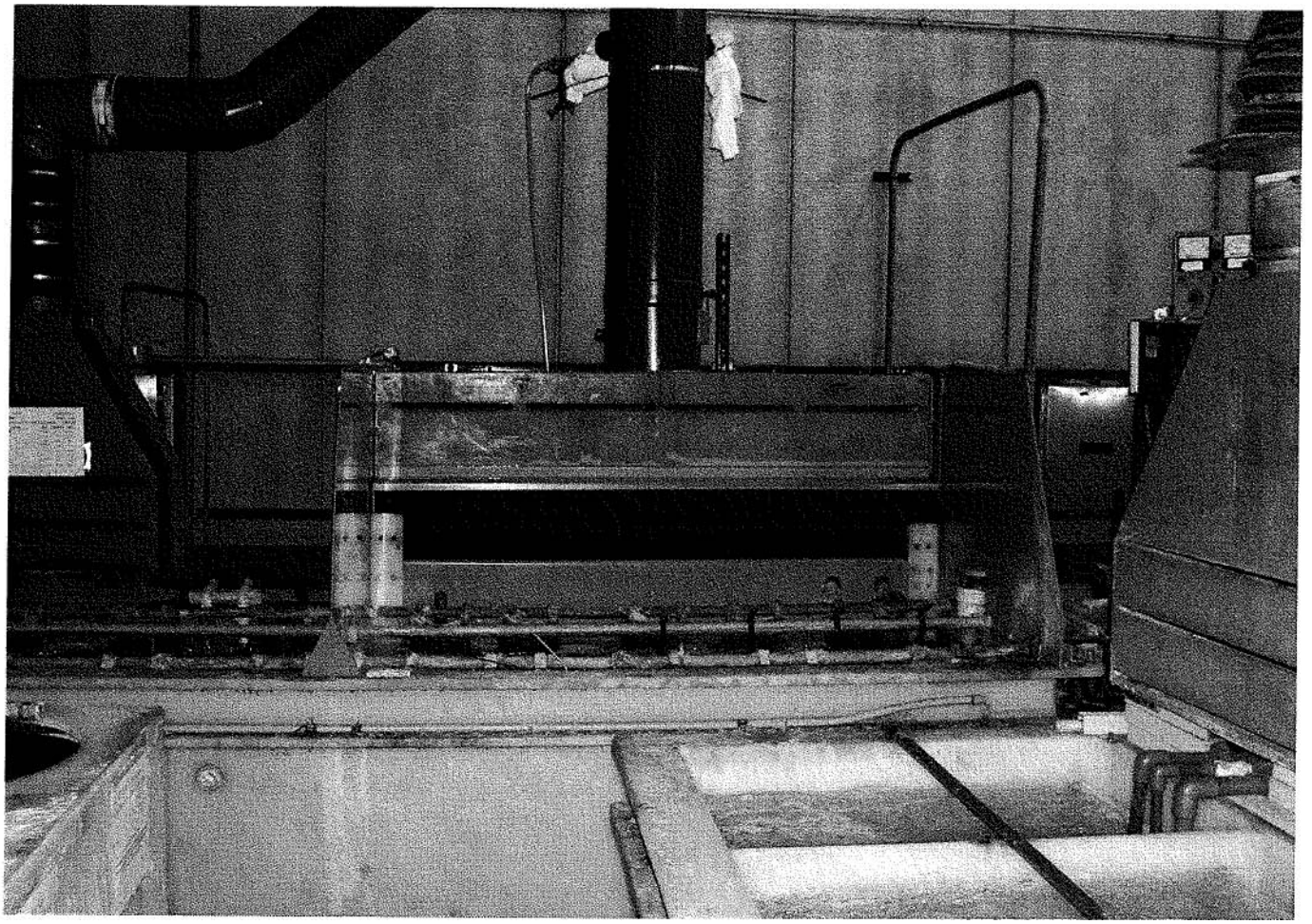


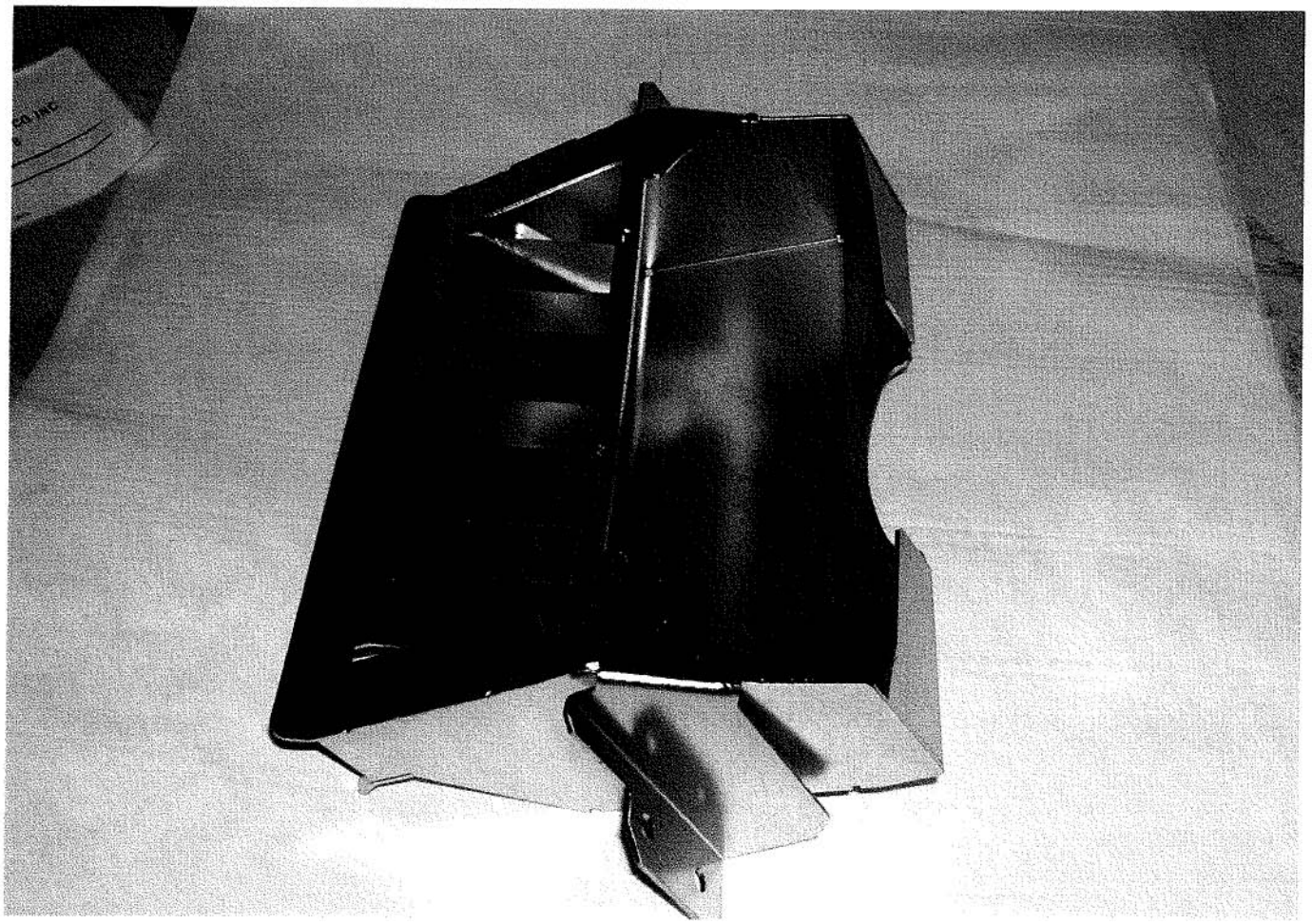


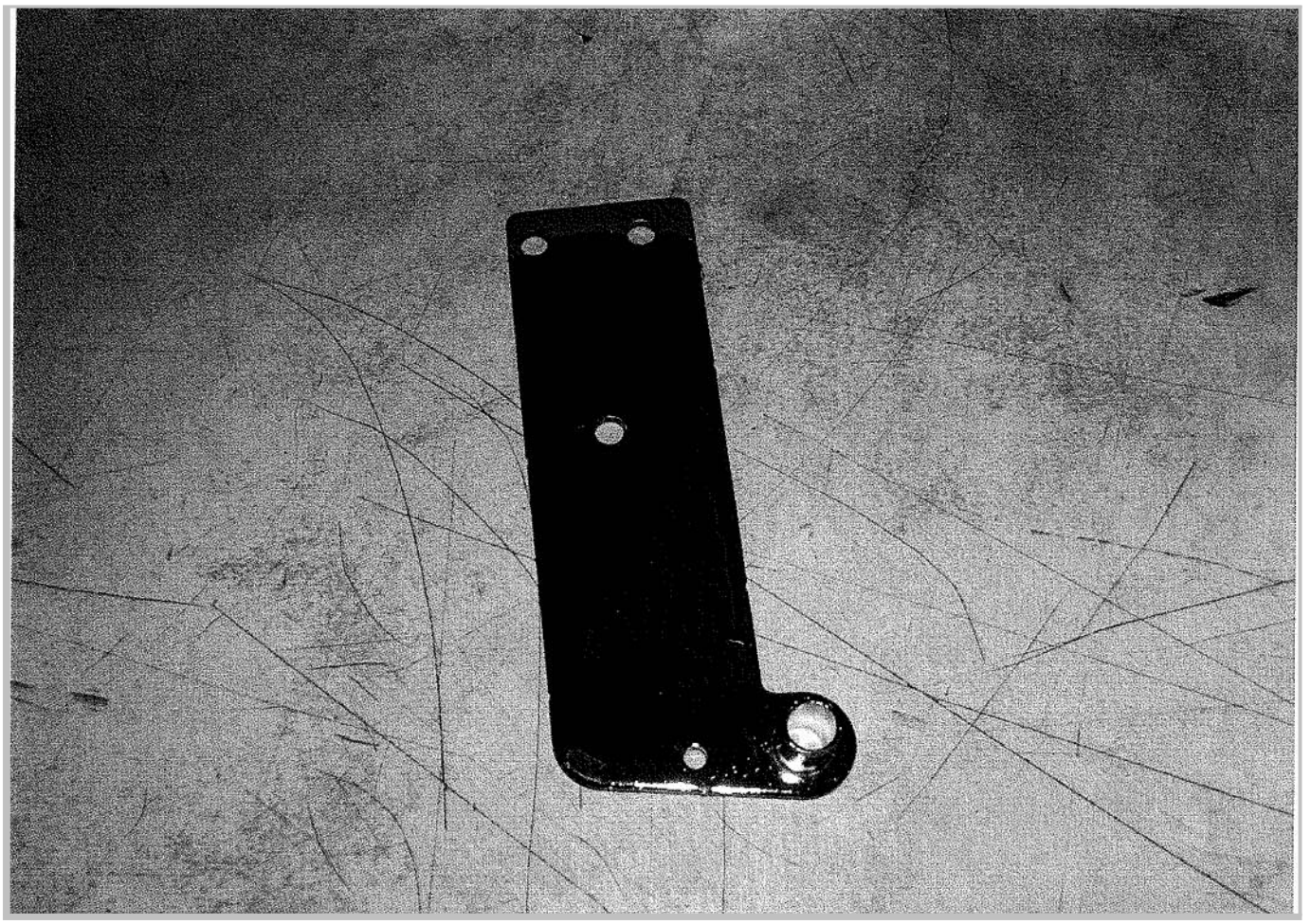
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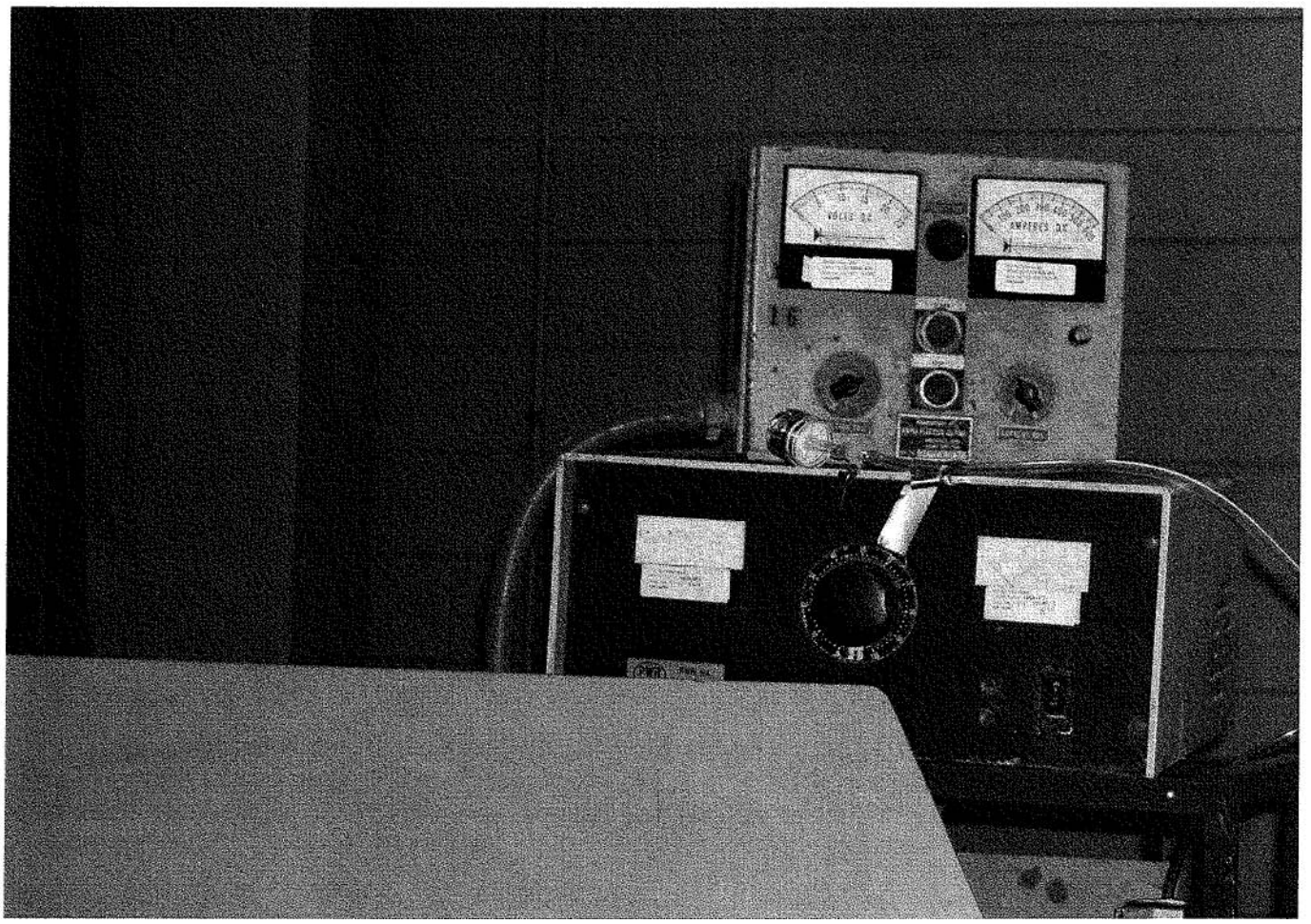


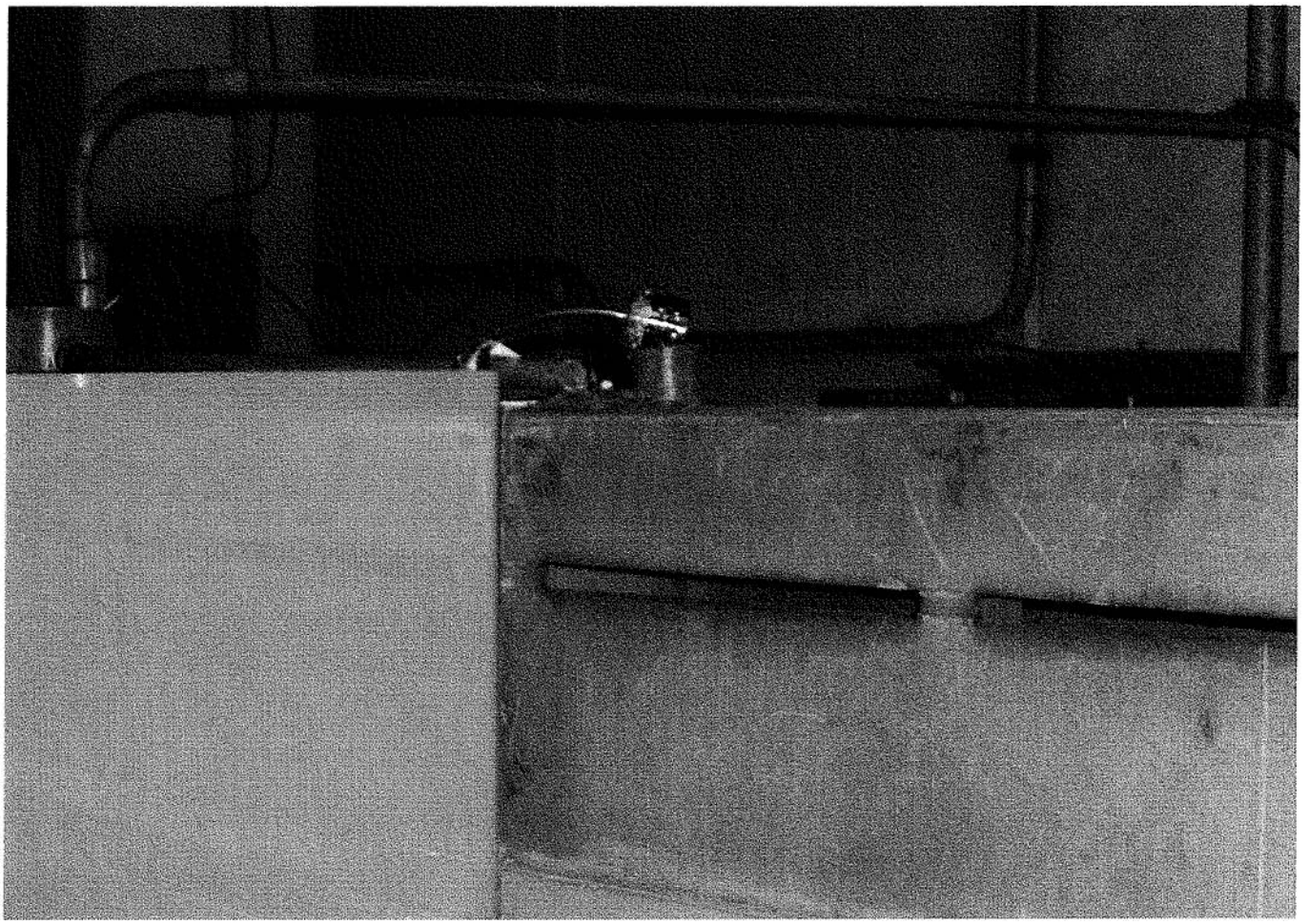








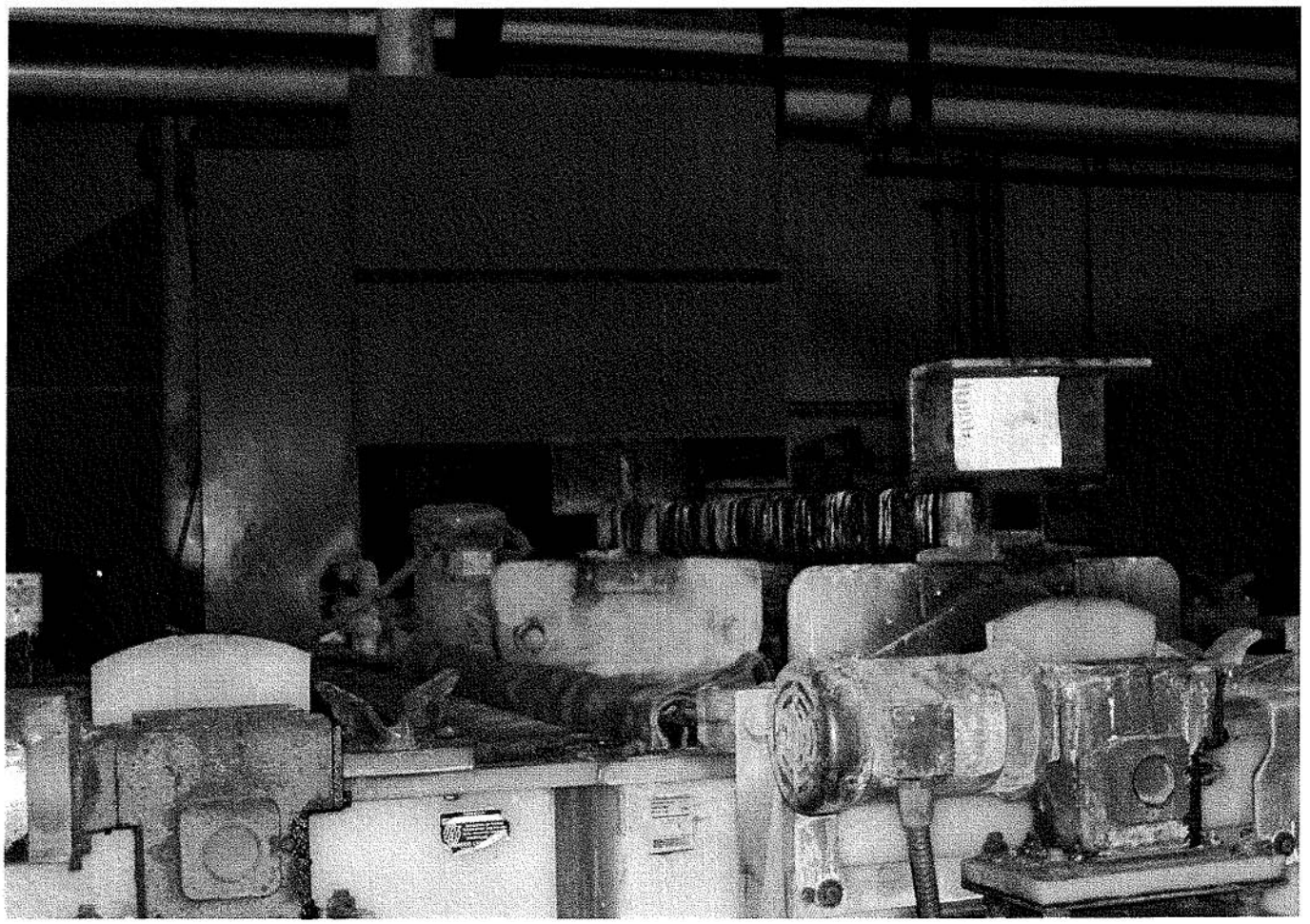

VOLTS DC
AMPERS DC

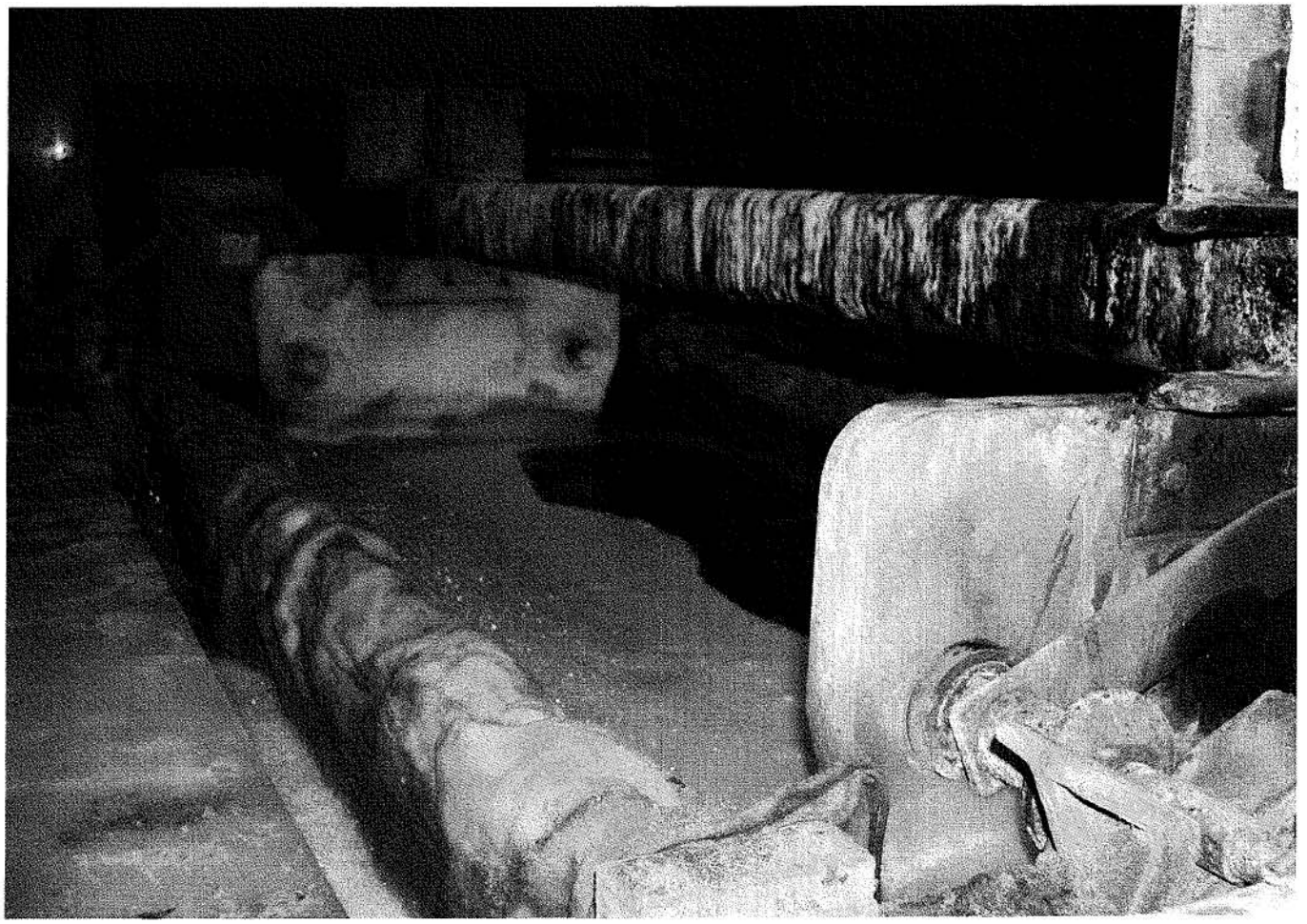


Artistic-Watts





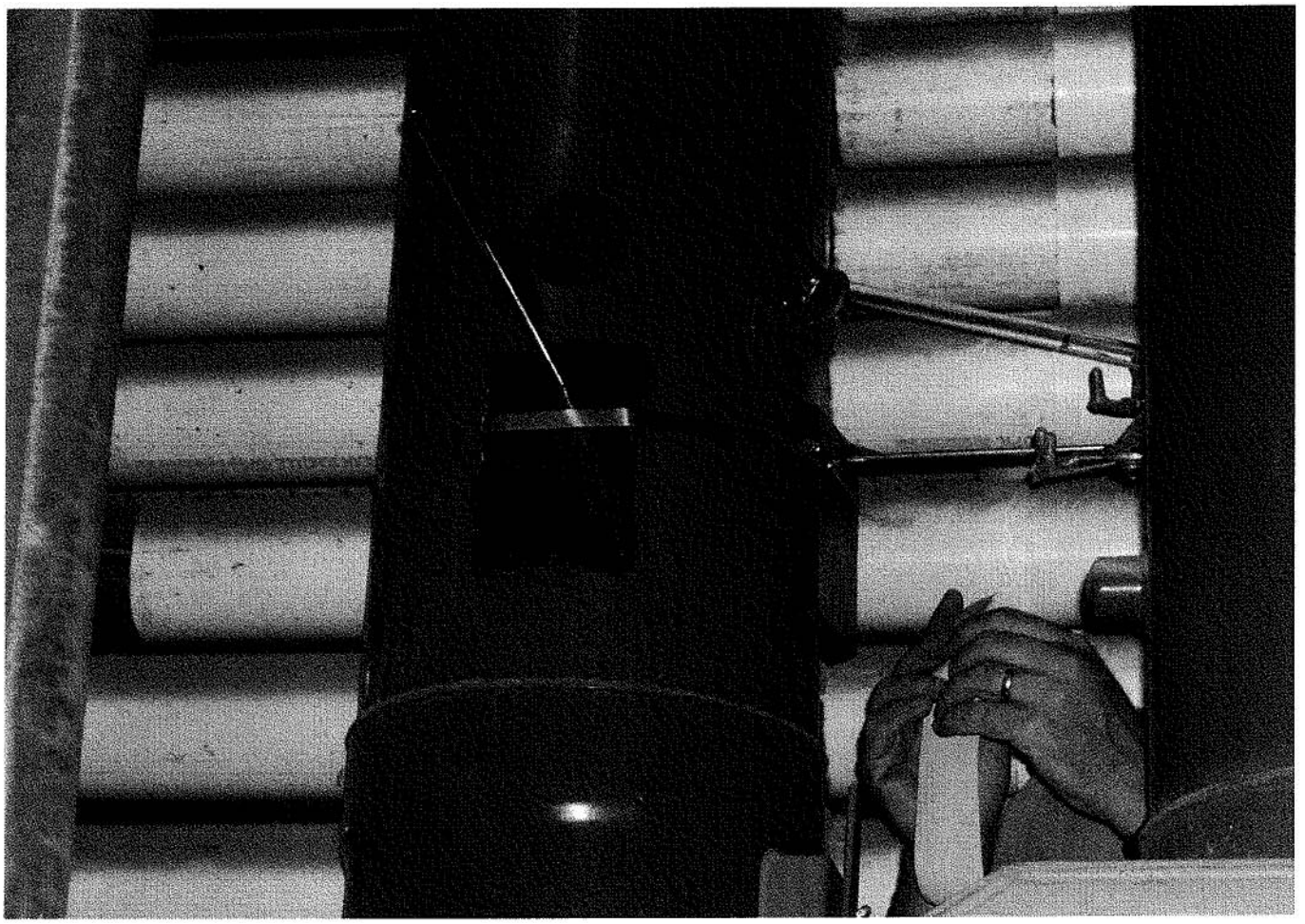


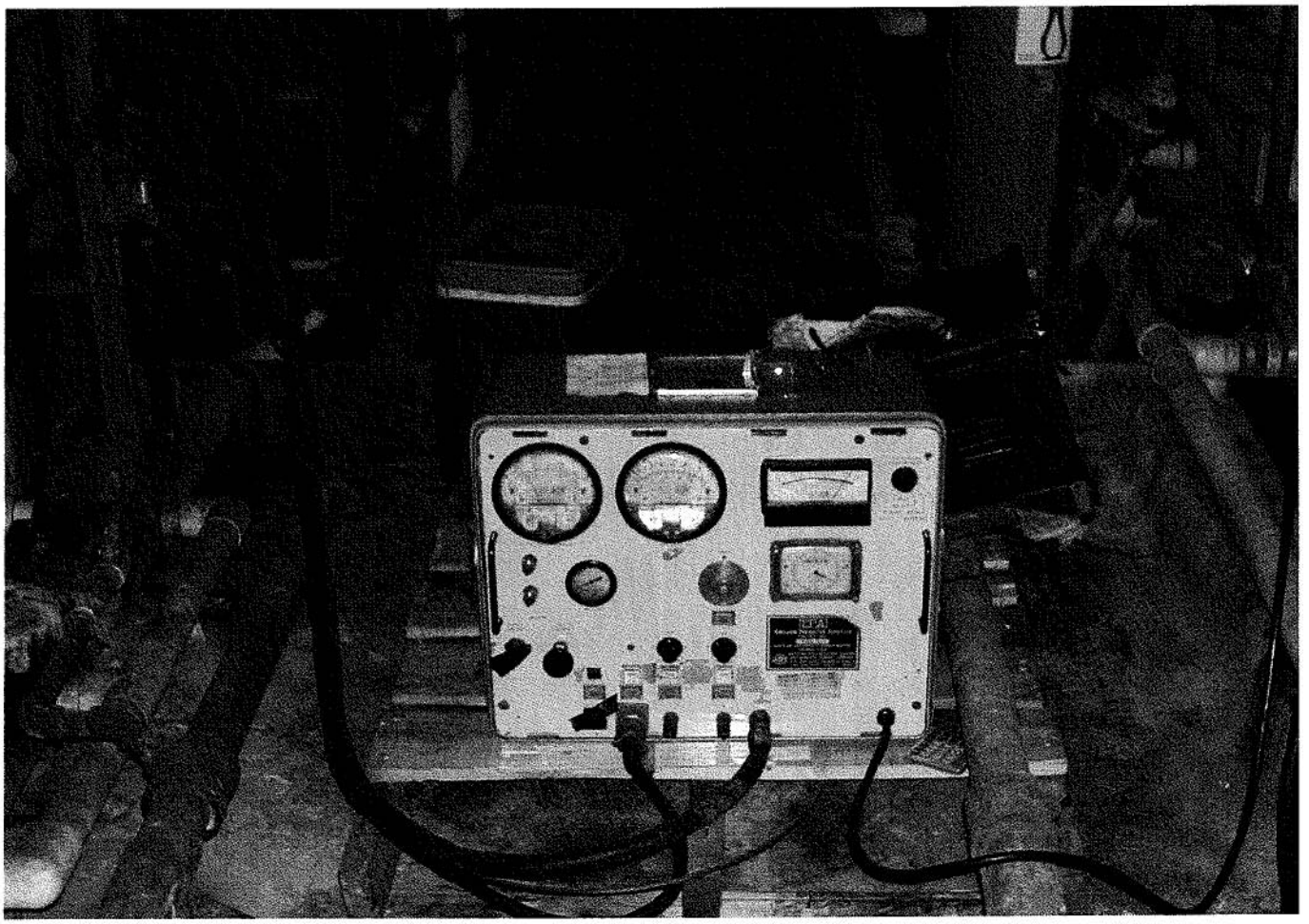


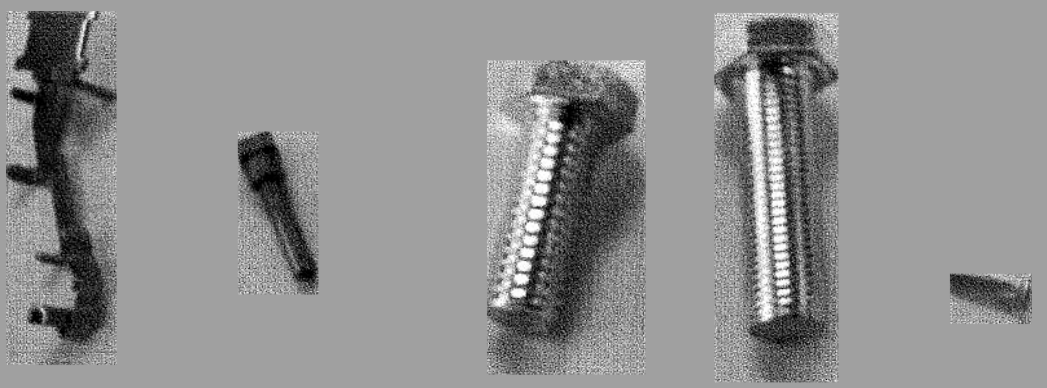


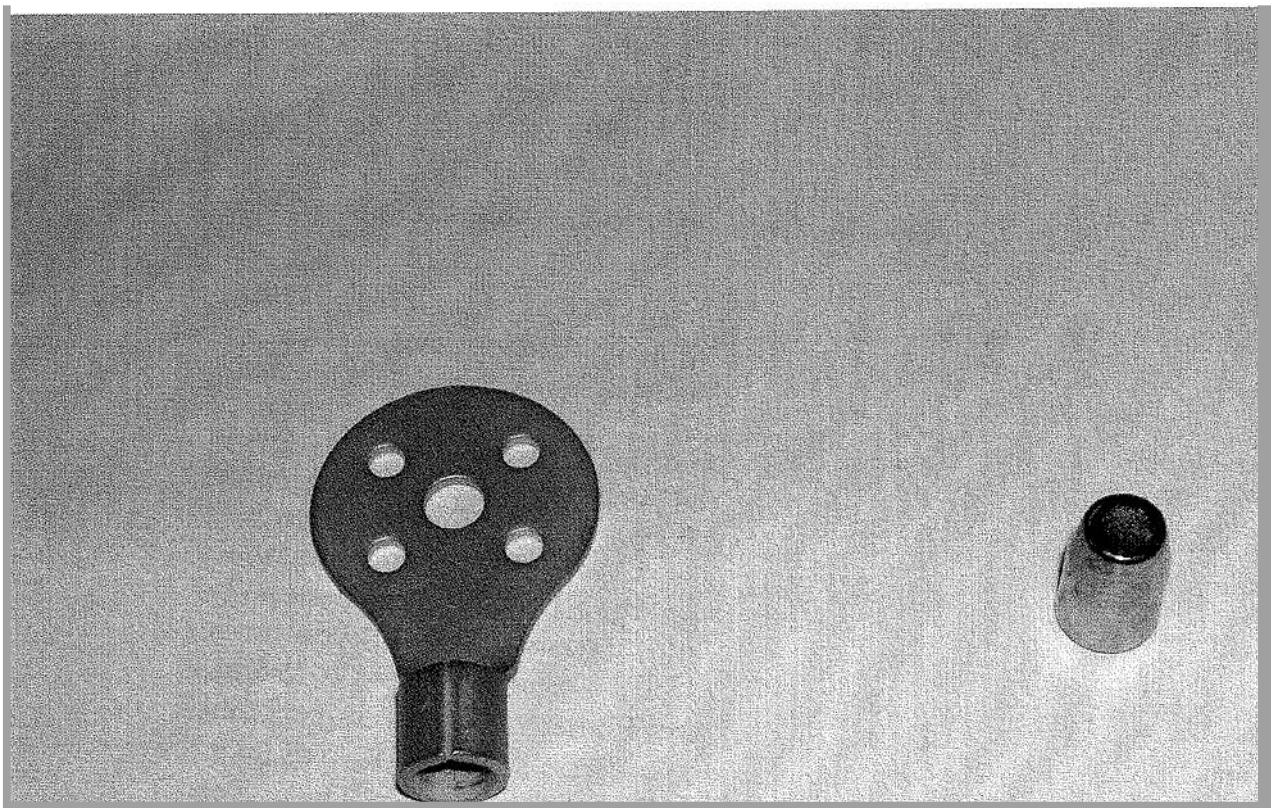


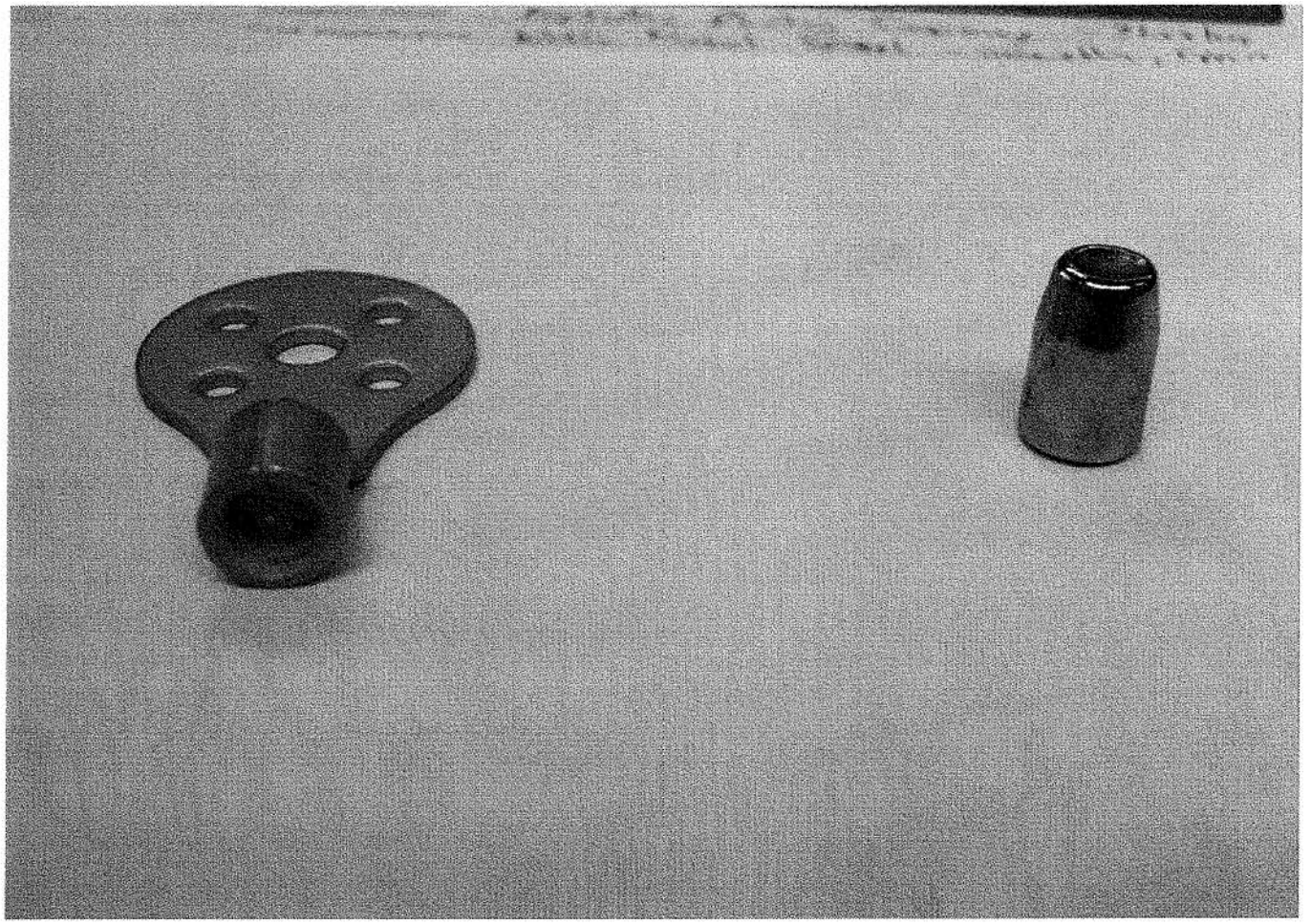




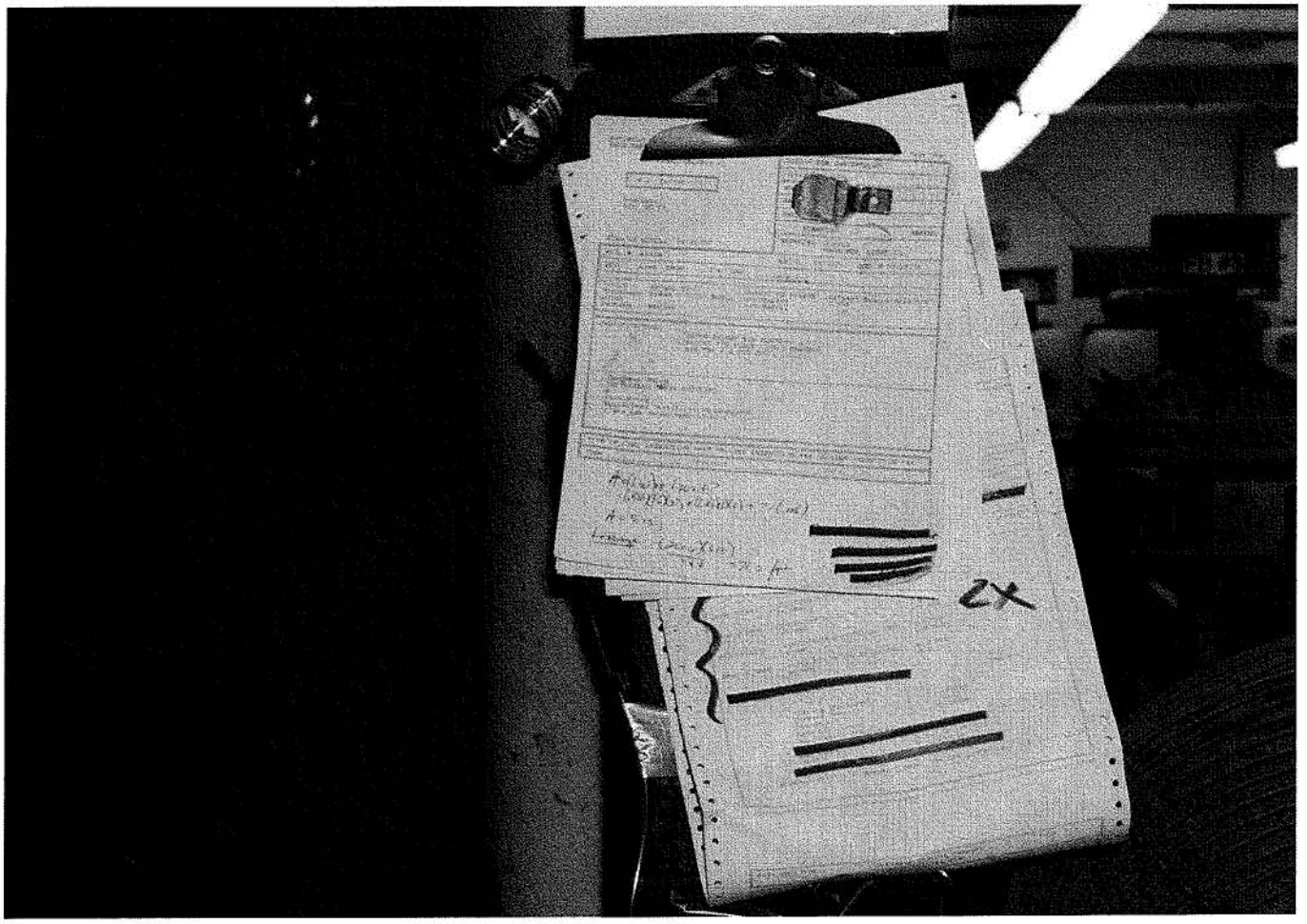


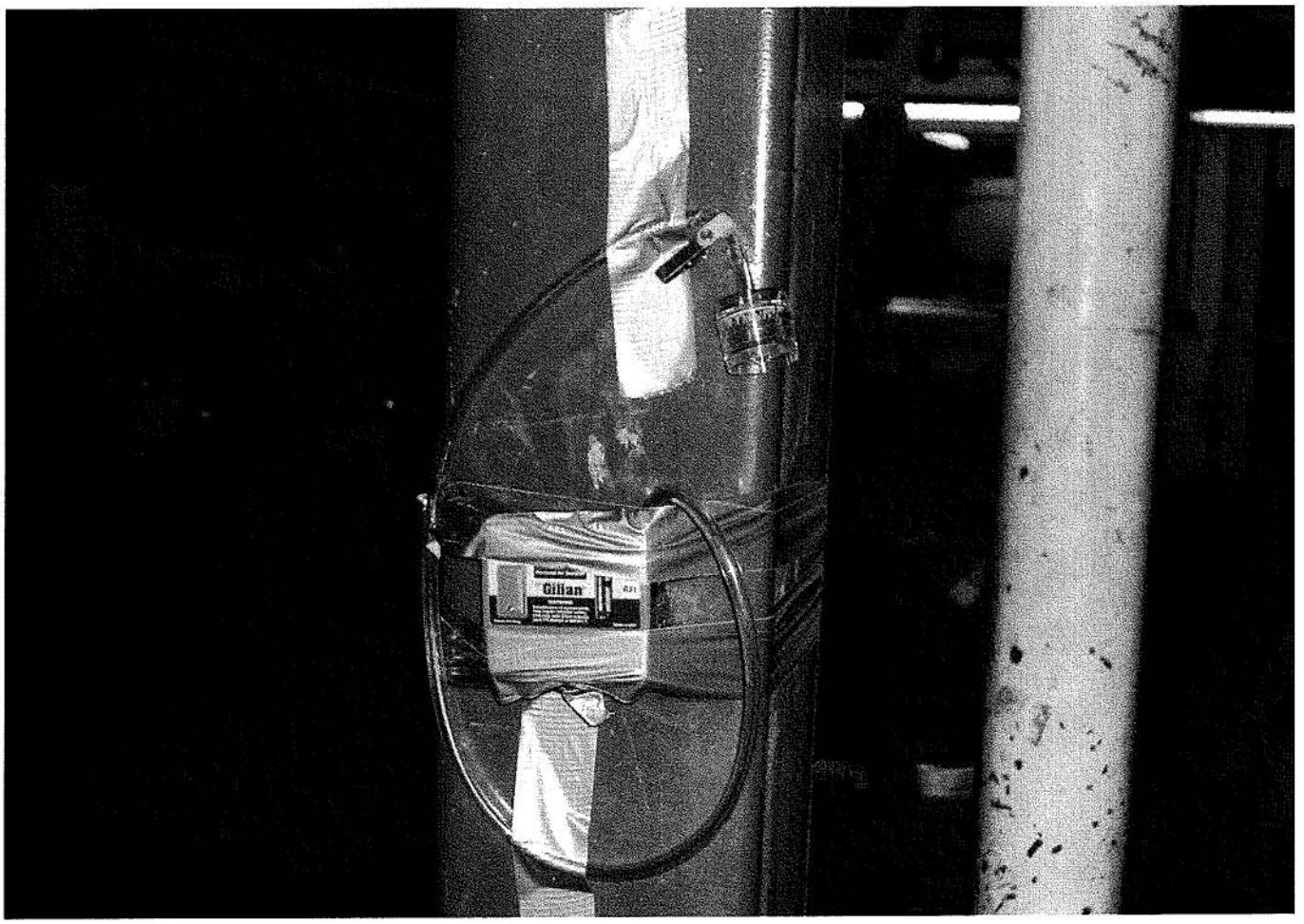


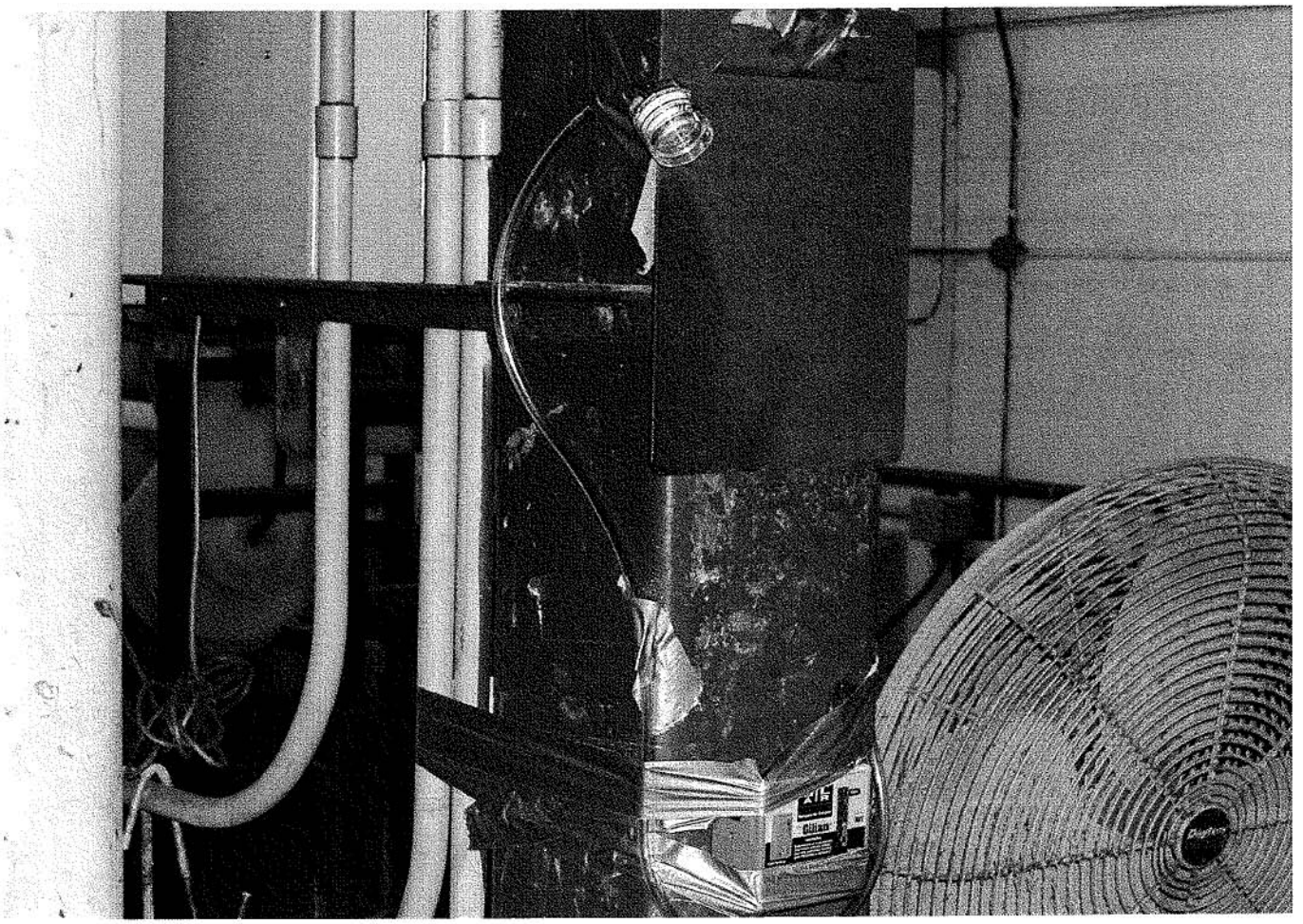









Gilian

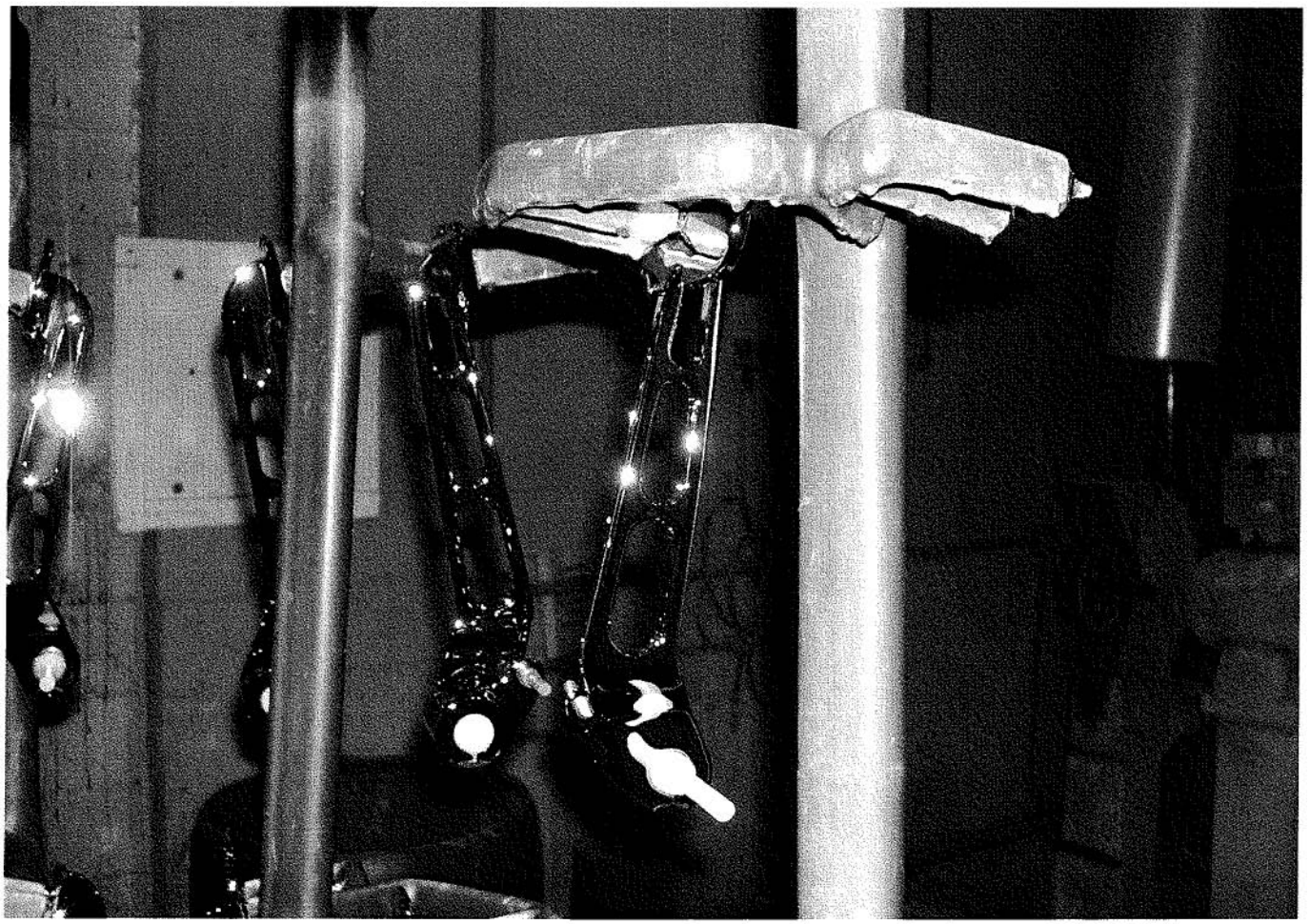

Gilson

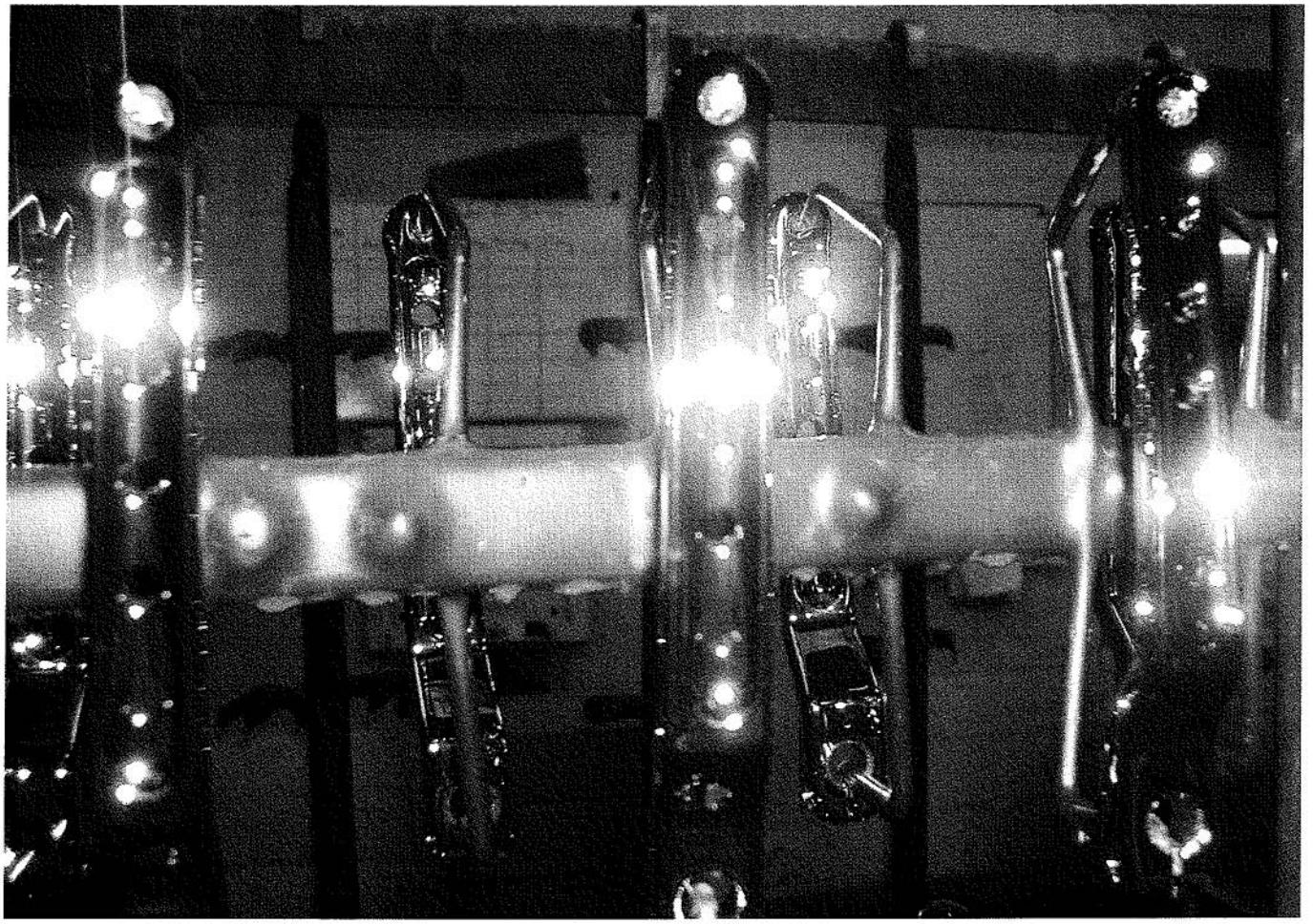
Elite

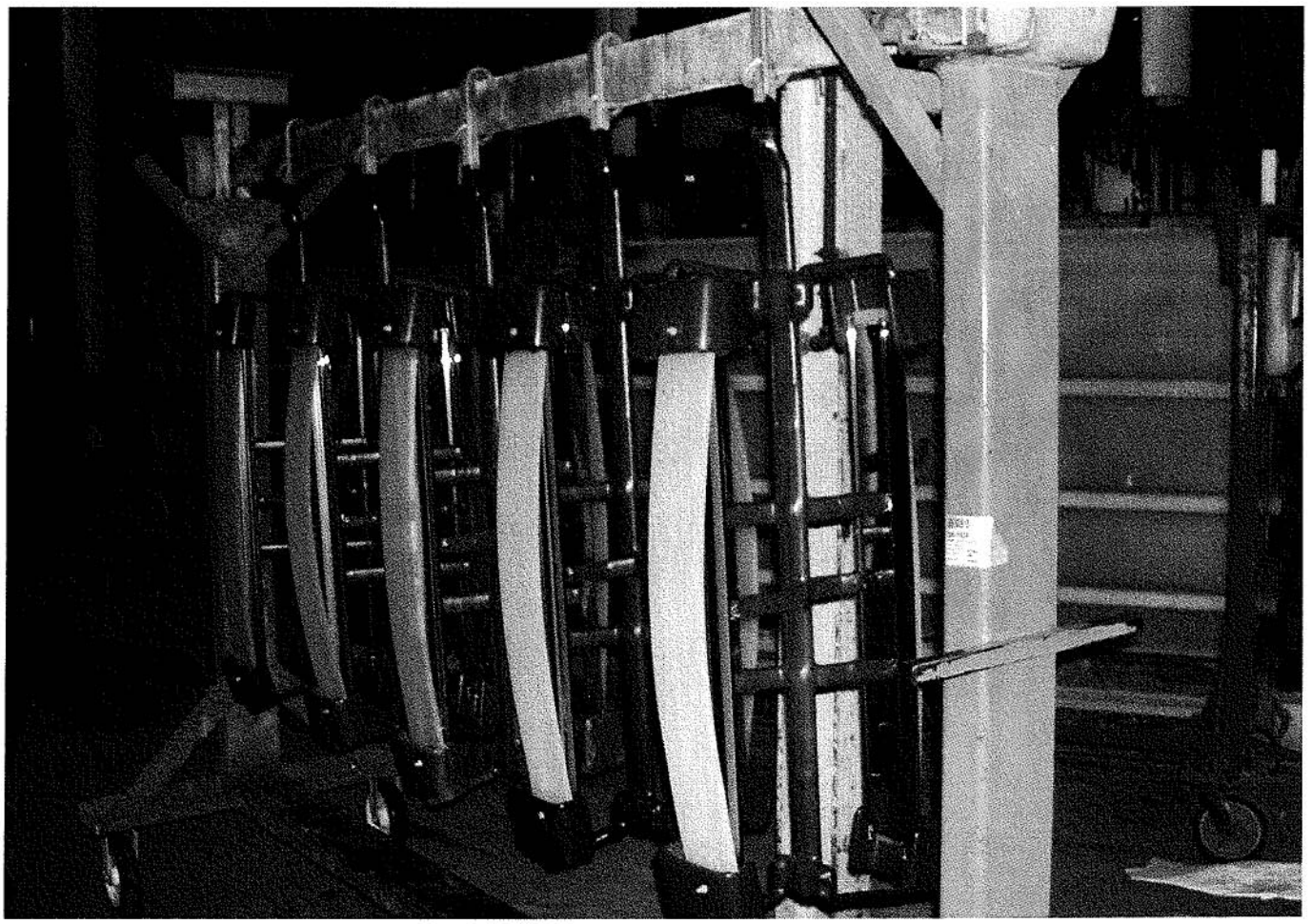

28

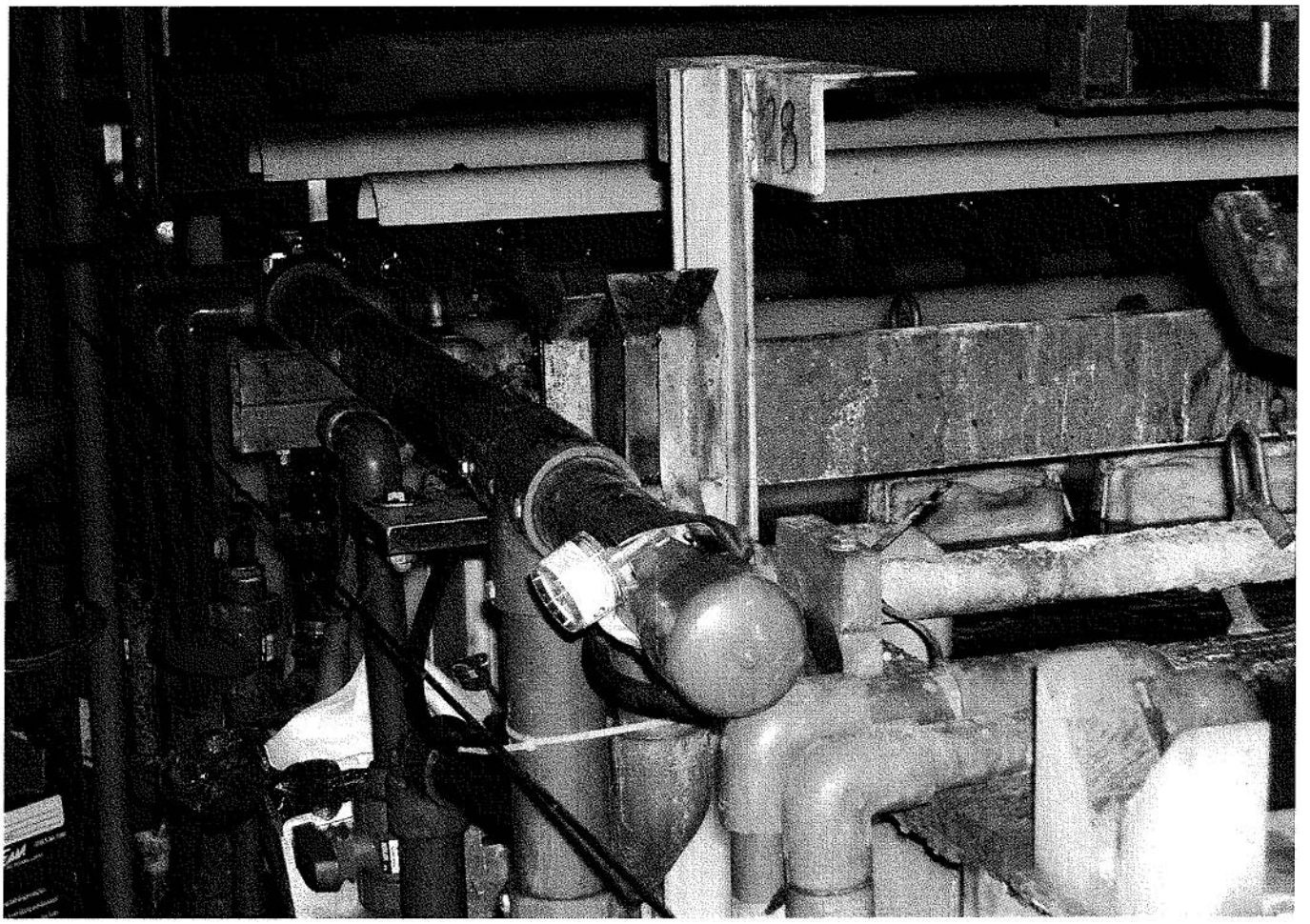


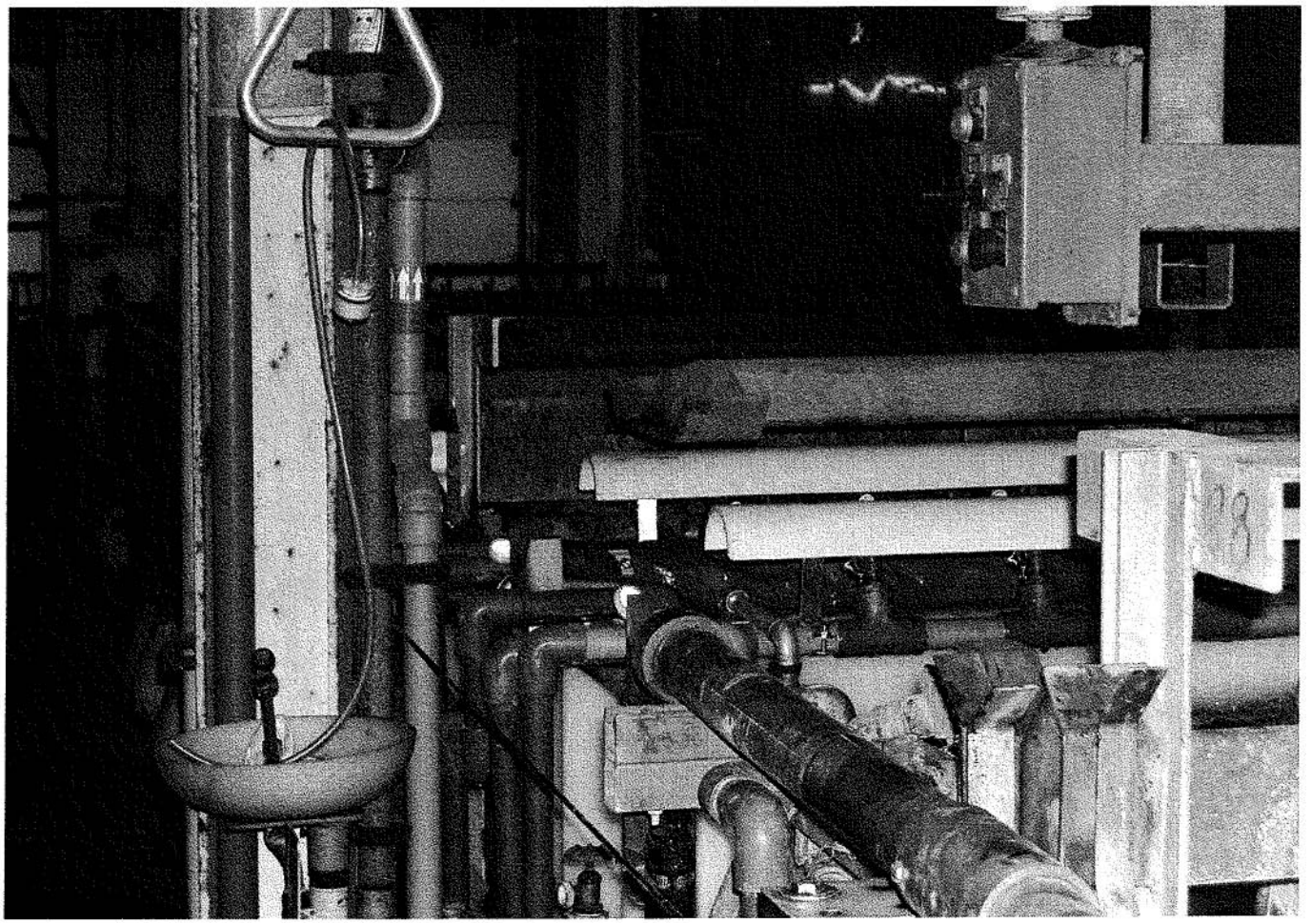




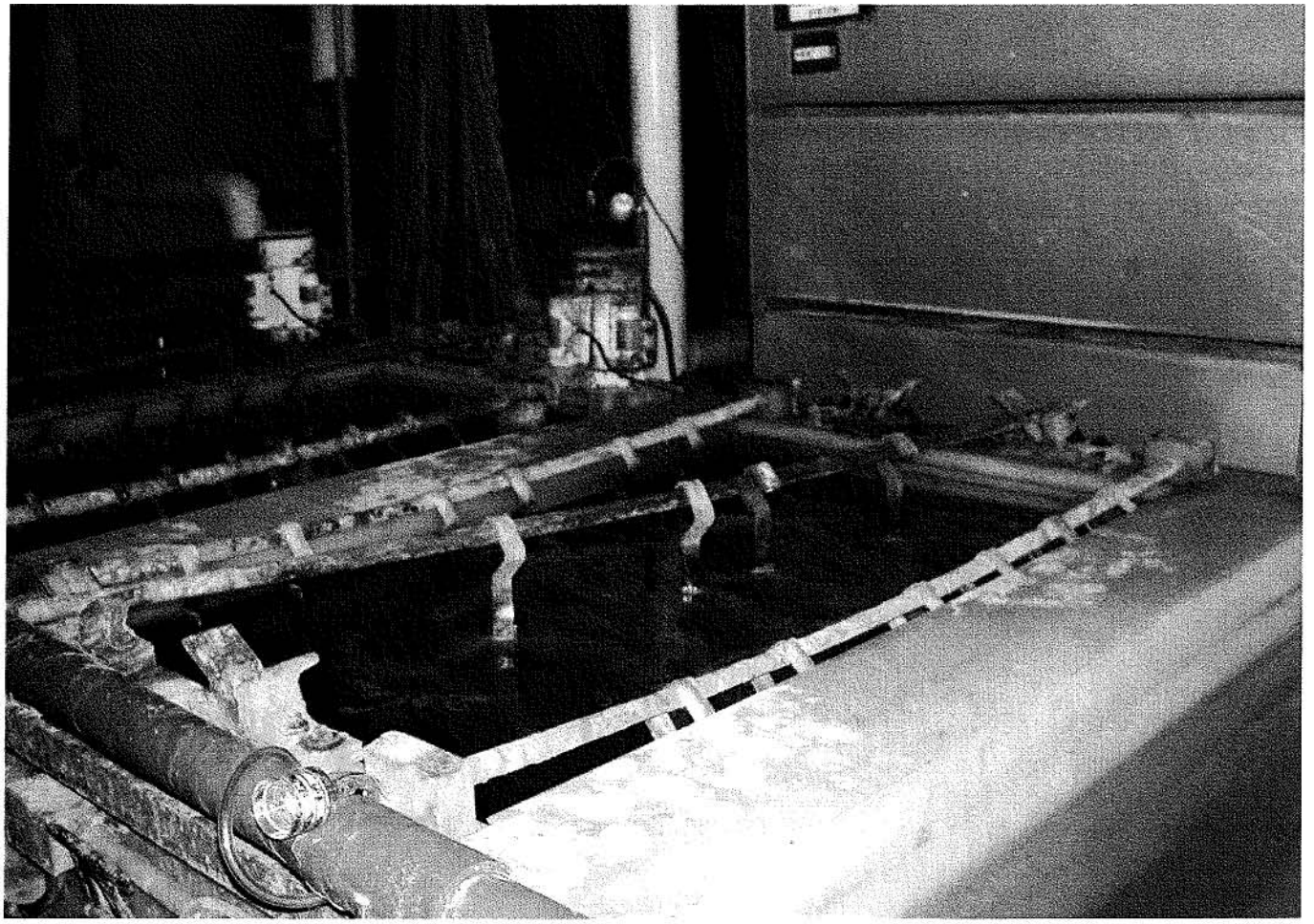


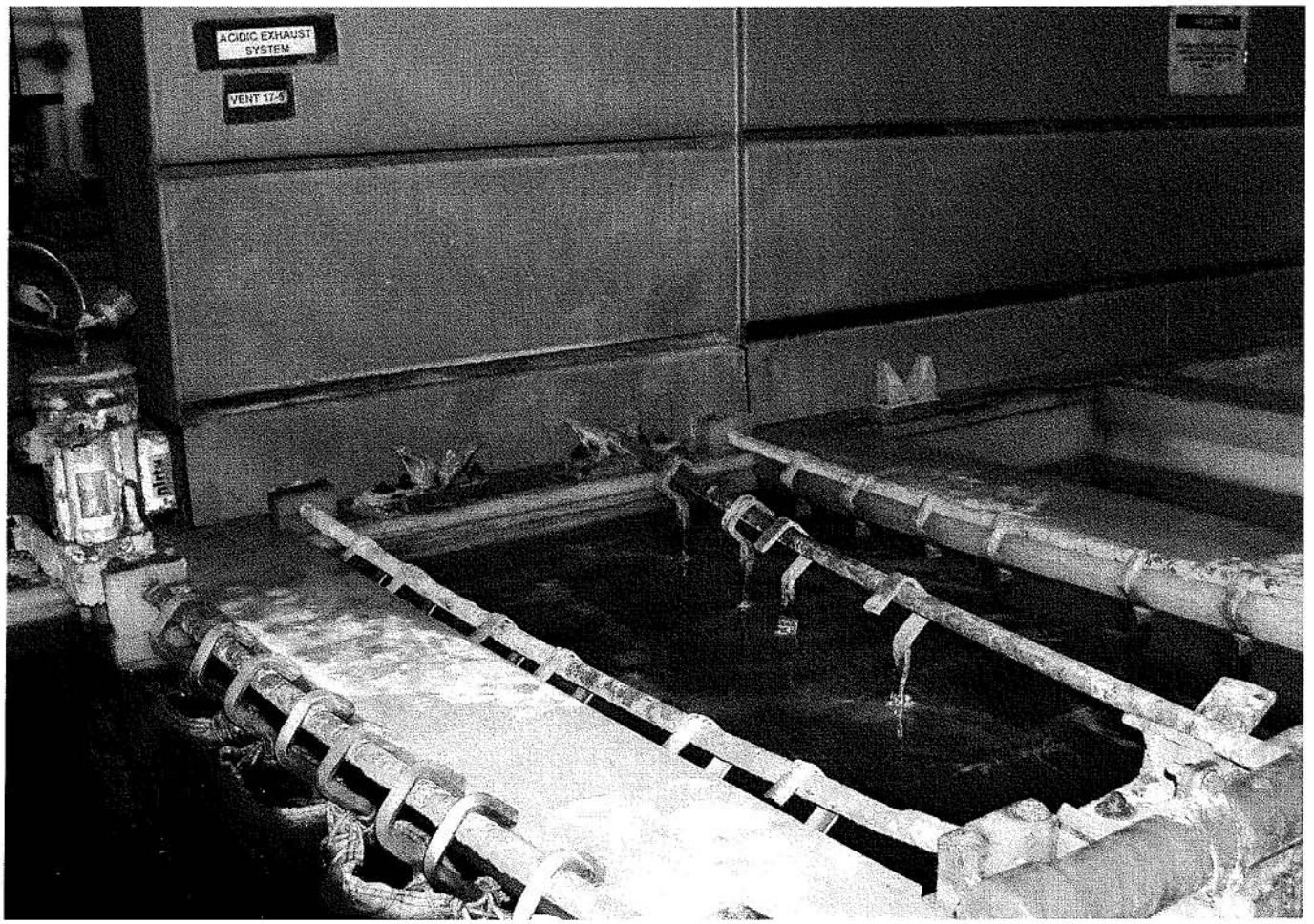


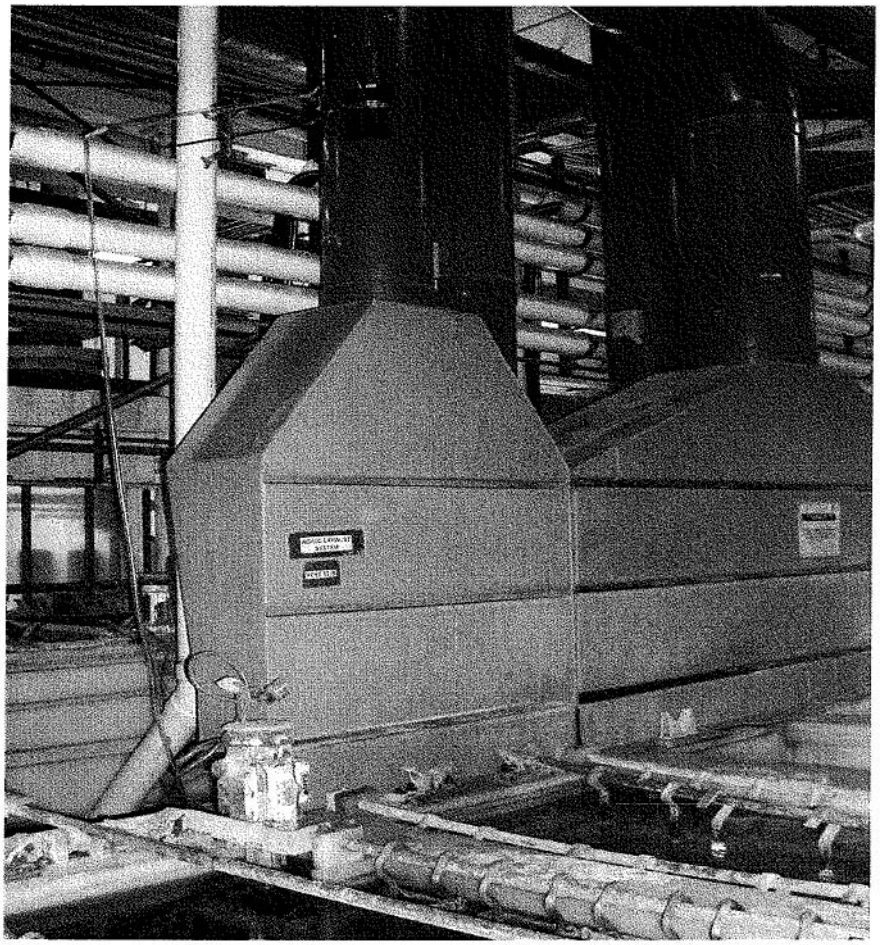


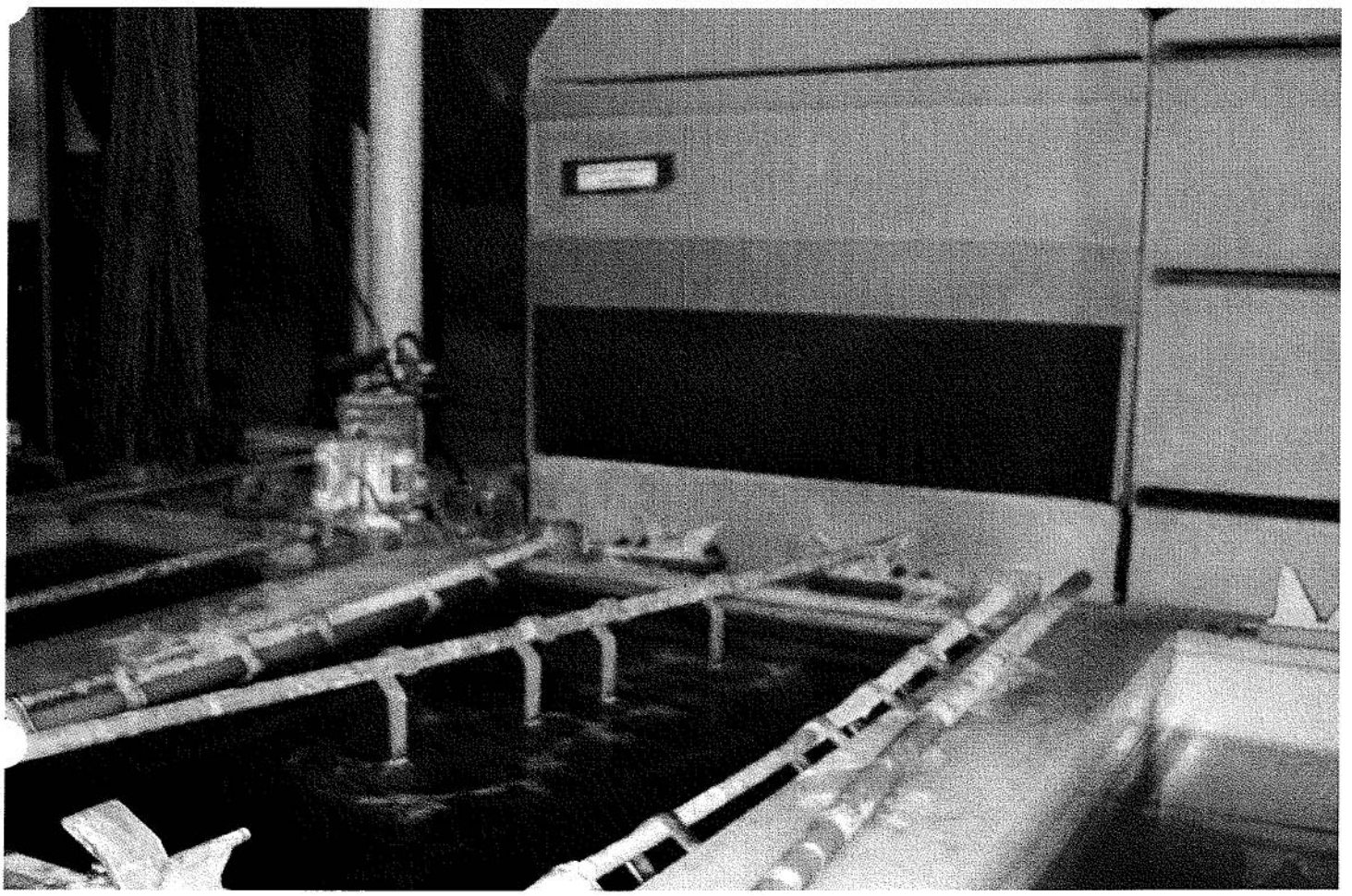


Artistic-Woods

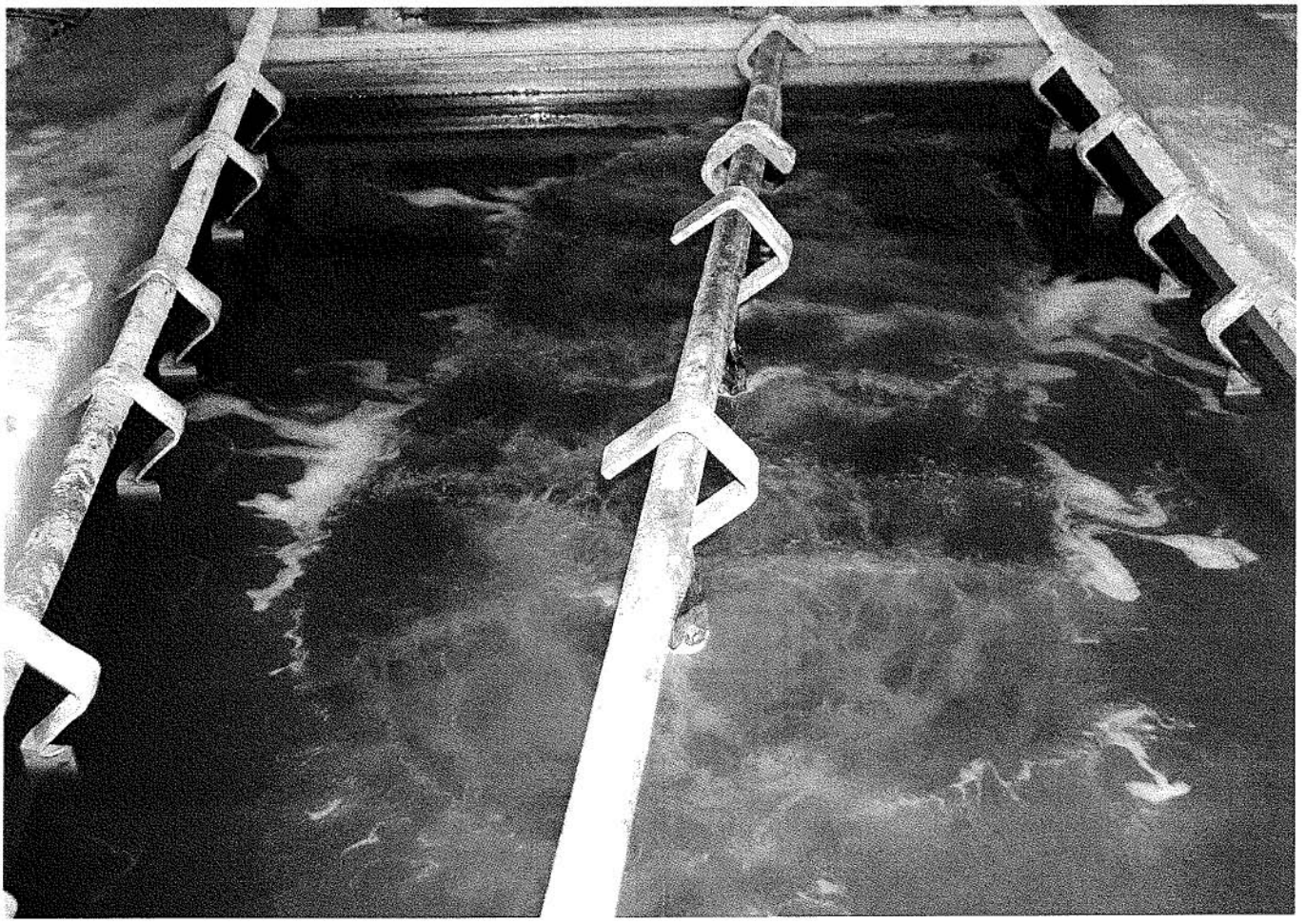



ACIDIC EXHAUST SYSTEM
VENT 17-5





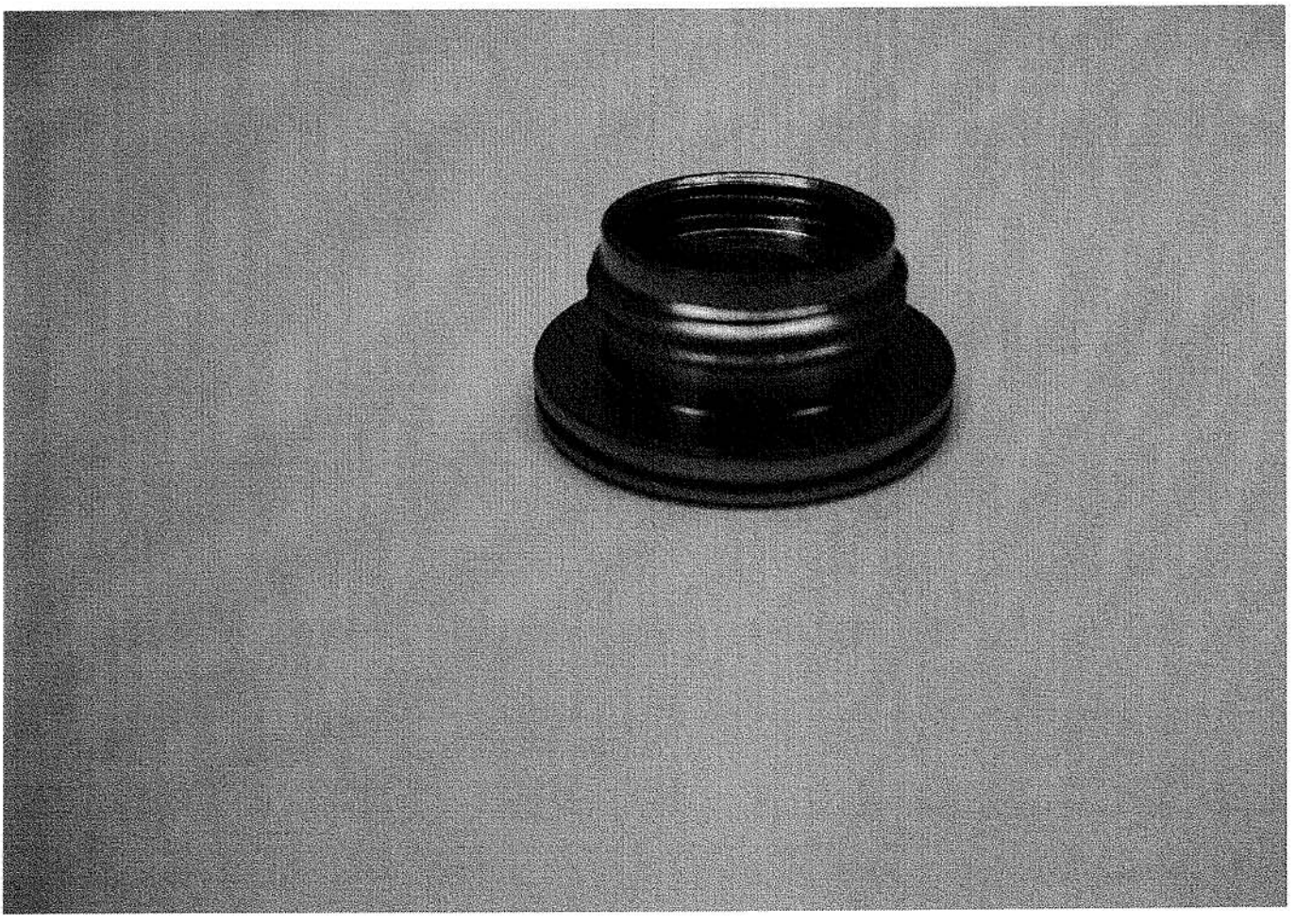

ACIDIC EXHAUST
SYSTEM

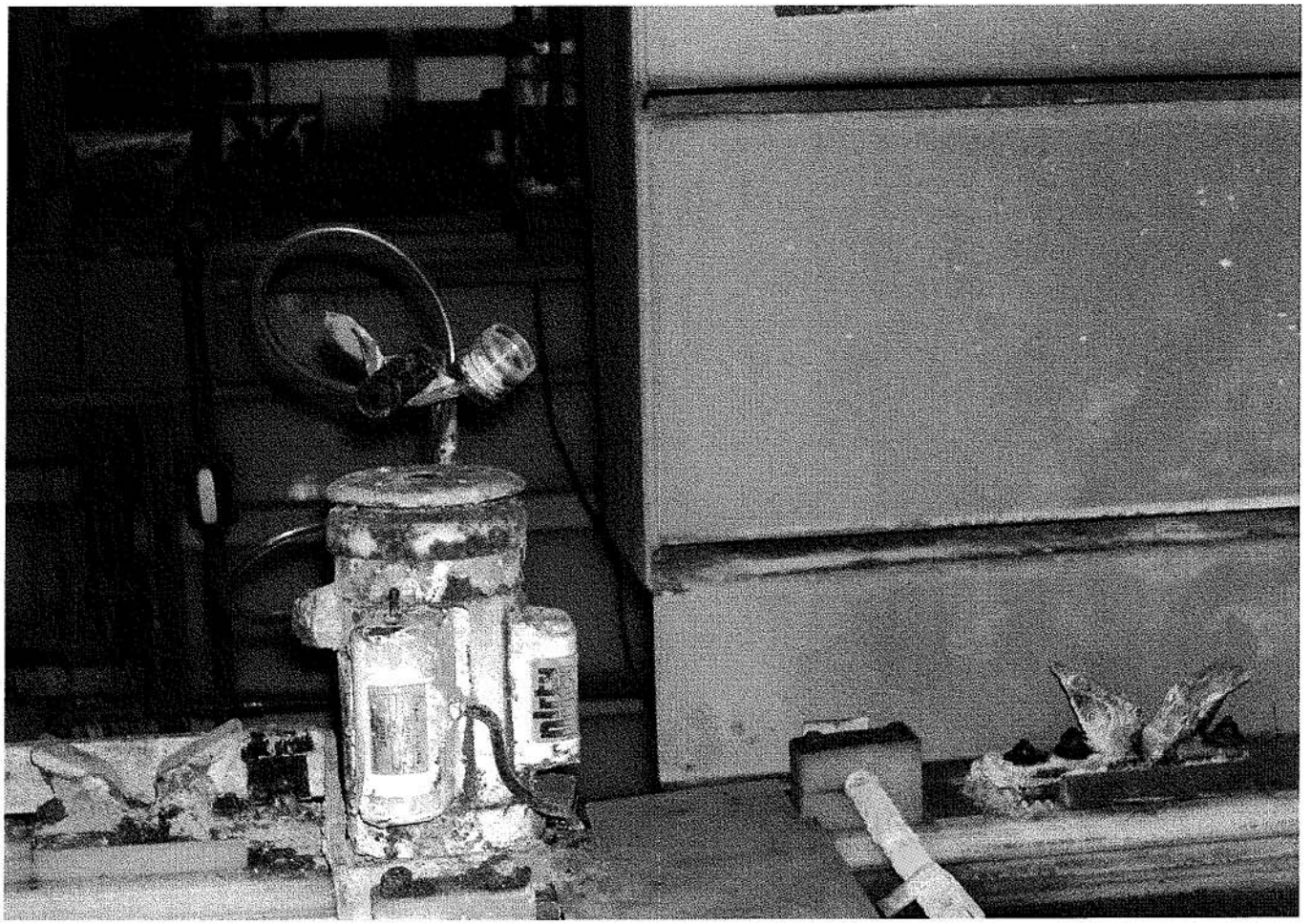



7


CORROSIVE
8


CORROSIVE
8







Appendix D

Stack Testing Field Data Sheets and Calibration Sheets

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA

γ = 1.003

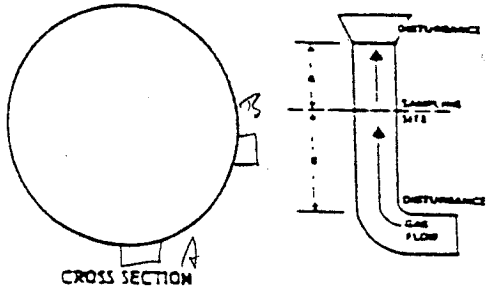
PLANT Reliable
DATE 10/31/05
LOCATION Chicago - N. Lake
OPERATOR MJH
STACK NO. Cond 3
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

AMBIENT TEMPERATURE 65
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2Ft Glass
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 13½"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

METER ΔH .725
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2
CO
N2 R

LEAK CHECK
Pre <.01@20"
Pitot OK@3"
Post <.01@20"
Pitot OK@3"



5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) x 5.6 in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) x 5.6 in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER °F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A 1	9:20		76	0.16	.90		6555.00	62	62	230	45	4	
2	25		75	0.16	.90		59.4	61	61				
3	30		75	0.17	.95		63.8	63	63	240	45	4	
4	35		76	0.16	.90		68.2	66	66				
5	40	-.54	76	0.15	.84		72.4	68	68	245	45	3½	
6	45		76	0.24	1.34		76.5	70	70				
7	50		77	0.13	.73		81.6	73	73	245	45	3	
8	55-57/03-		77	0.08	.45		85.4	76	76				
9	10:06/07		77	0.07	.39		88.2	79	79	250	45	2	
10	12		77	0.07	.39		90.9	81	81				
11	17		77	0.06	.34		93.6	83	83	255	45	2	
12	22		76	0.06	.34		96.4	85	85				
B 1	27		77	0.25	1.40		99.1	87	87	250	45	5	
2	32		77	0.32	1.79		604.1	89	89				
3	37		77	0.31	1.74		9.8	91	91	255	45	5½	
4	42		77	0.27	1.51		15.4	93	93				
5	47	-.58	77	0.25	1.40		20.7	97	97	250	45	5	
6	52		77	0.20	1.12		25.7	98	98				
7	57		77	0.20	1.12		30.3	100	100	250	45	4	
8	1102		76	0.31	1.74		34.7	101	101				
9	7		76	0.34	1.90		40.3	103	103	255	45	6½	
10	12		77	0.34	1.90		46.1	103	103				
11	17		77	0.33	1.85		52.0	105	105	250	45	6	
12	22		77	0.31	1.74		57.6	108	108				
	1127						63.13						
							108.13						

* TRIPPED CIRCUIT BREAKER FOR SAMPLING TRAIN

Environme.
Technology &
Engineering Corp.

PARTICULATE FIELD DATA

Y = 1.003

PLANT Reliable
DATE 10/31/05
LOCATION Chicago, IL
OPERATOR MTH
STACK NO. Cond 3
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

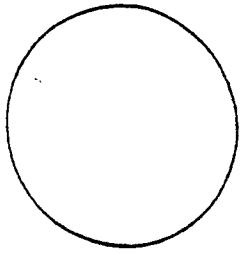
AMBIENT TEMPERATURE 65
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 13½"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

METER ΔH .725
C FACTOR Cp = .99
PROCESS WEIGHT RATE

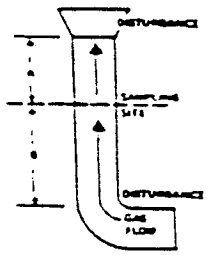
ORSAT RESULTS
CO2 A
O2 1
CO
N2 R

LEAK CHECK
Pre <.01 @ 20"
Pitot ok @ 3"
Post <.01 @ 20"
Pitot ok @ 3"

5 min/pt



CROSS SECTION

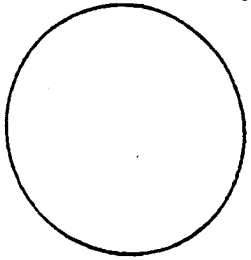


TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER °F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	1155		75	0.35	1.85		6664.00	101	101	240	45	3	
2	1200		74	0.35	1.96		69.7	99	99				
3	5		74	0.33	1.85		75.7	98	98	250	45	3	
4	10		75	0.30	1.68		81.5	99	99				
5	15	-.56	75	0.28	1.57		87.0	99	99	260	45	3	
6	20		75	0.27	1.51		92.4	99	99				
7	25		75	0.31	1.74		97.6	100	100	255	45	3	
8	30		75	0.34	1.90		703.1	101	101				
9	35		75	0.35	1.96		9.0	102	102	255	45	3½	
10	40		74	0.35	1.96		14.9	104	104				
11	45		74	0.35	1.96		20.8	105	105	250	50	3½	
12	50		74	0.33	1.85		26.7	107	107				
A1	55/56		76	0.17	.95		32.5	109	109	255	50	<2	
2	1301		76	0.21	1.18		36.5	110	110				
3	6		75	0.24	1.34		41.1	110	110	250	50	2	
4	11		75	0.16	.90		46.0	110	110				
5	16		74	0.14	.78		50.0	110	110	250	45	<2	
6	21	-.52	74	0.25	1.40		53.7	111	111				
7	26		74	0.12	.67		58.6	111	111	245	45	<2	
8	31		74	0.07	.39		62.1	111	111				
9	36		75	0.05	.28		64.7	111	111	250	50	<2	
10	41		75	0.05	.28		67.0	111	111				
11	46		75	0.07	.39		69.3	111	111	245	50	<2	
12	51		74	0.08	.45		72.1	110	110				
	1356						75.04						

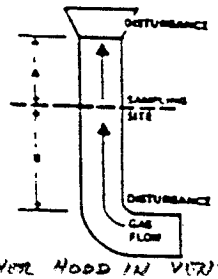
111.04

Environme
Technology &
Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



* OTHER HOOD IN VENT SYSTEM IS DAMPERED OFF (ALL DAY)

PLANT Rolaids Plant
DATE 10/31/05
LOCATION Chicago, IL
OPERATOR MJH
STACK NO. Cond #3
RUN NO. 3
SAMPLE BOX NO. 1B
METER BOX NO. 2

AMBIENT TEMPERATURE 65
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 13½"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH .725
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 1
CO
N2 R

LEAK CHECK:
Pre <.01@20"
Pitot oke 3"
Post <.01@20"
Pitot oke 3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	14:24		74	.18	1.01		6776.00	101	101	245	45	2½	
2	29		74	.18	1.01		80.4	99	99				
3	34		74	.19	1.06		84.8	98	98	255	45	2½	
4	39		74	.17	.95		89.4	99	99				
5	44	-.52	75	.16	.90		93.5	99	99	260	45	2	
6	49		75	.23	1.29		97.5	100	100				
7	54		75	.13	.73		802.4	101	101	255	45	<2	
8	59		75	.09	.50		6.1	101	101				
9	1504		75	.09	.50		9.3	102	102	250	45	<2	
10	09		76	.08	.45		12.4	102	102				
11	14		76	.07	.39		15.3	101	101	260	50	<2	
12	19		75	.06	.34		18.2	103	103				
B1	24/25		76	0.33	1.79		20.7	107	107	255	50	4	
2	30		76	0.33	1.85		26.4	108	108				
3	35		76	0.31	1.74		32.1	109	109	255	50	3½	
4	40		76	0.29	1.62		37.6	110	110				
5	45	-.56	76	0.24	1.34		43.0	111	111	250	50	3	
6	50		75	0.25	1.40		47.9	112	112				
7	55		76	0.32	1.79		52.8	112	112	245	45	4	
8	1600		77	0.36	2.02		58.5	112	112				
9	5		77	0.36	2.02		64.4	113	113	245	50	4½	
10	10		77	0.34	1.90		70.3	113	113				
11	15		76	0.34	1.90		76.1	114	114	245	50	4	
12	20		76	0.33	1.85		81.8	116	116				
	1625						6887.50						
							111.50						

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME RELIABLE PLATING DATE OF TEST 10/31/05

JOB NO. _____ TEST ENGINEER MTH

RUN NO. 1 STACK COND #3

Sample Box 1A Filter QUARTZ Wash Bottle 0.1 HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	123	100	23
2	112	100	12
3	4	0	4
SILICA	687	670	17
		TOTAL	56

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 239 ml = 339 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME Reliable Plating (SCL) DATE OF TEST 10/3/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 2 STACK Comb #3

Sample Box 2 Filter Quartz Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	117	100	17
2	114	100	14
3	6	0	6
Silica Gel	691	671	20
		TOTAL	57

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 237 ml = 337 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - Reliable Plating DATE OF TEST 10/31/05

JOB NO. _____ TEST ENGINEER MTH

RUN NO. 3 STACK Comb #3

Sample Box 18 Filter QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	126	100	26
2	115	100	15
3	5	0	5
Sil Gel	698	687	11
		TOTAL	57

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

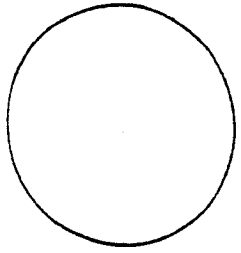
NOTES: RINSE SOL'N

FH: 100 ml

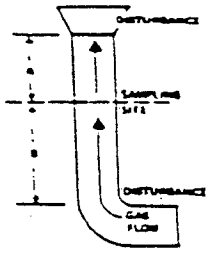
BH: 100 ml + 246 ml = 346 ml

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT: RELIABLE PLATING
DATE: 11/3/05
LOCATION: CHICAGO, ILL
OPERATOR: MJH
STACK NO.: COND # 4
RUN NO.: 1
SAMPLE BOX NO.: 1A
METER BOX NO.: 1

AMBIENT TEMPERATURE: 70 F
BAROMETRIC PRESSURE:
ASSUMED MOISTURE, %: 2%
PROBE LENGTH, in.: 2FT GLASS
NOZZLE DIAMETER, in.: 5/16"
STACK DIAMETER, in.: 13½"
PROBE HEATER SETTING: 250
HEATER BOX SETTING: 250

γ = 1.003 } 9/25
METER ΔH: .725
C FACTOR: Cp = .99

ORSAT RESULTS
CO2
O2 A1
CO
N2 R

LEAK CHECK
Pre <.01 @ 20"
Pitot OK @ 3"
Post <.01 @ 20"
Pitot OK @ 3"

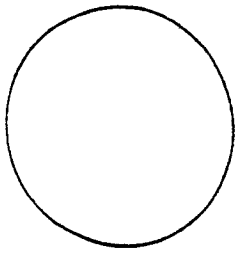
5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{in}}$), °F	OUTLET ($T_{m_{out}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	08:20		80	.35	1.96		7611.00	72	72	250	45	7½	
2	25		81	.34	1.90		17.3	70	70				
3	30		82	.34	1.90		23.4	70	70	260	45	7	
4	35		82	.31	1.74		29.5	71	71				
5	40		83	.27	1.51		35.3	76	76	260	45	5	
6	45	-.52	83	.23	1.29		40.6	81	81				
7	50		83	.32	1.79		45.5	82	82	255	45	4½	
8	55		83	.34	1.90		51.2	84	84				
9	9:00		83	.35	1.96		57.2	87	87	260	45	7	
10	05		84	.36	2.02		63.2	90	90				
11	10		84	.36	2.02		69.3	93	93	255	45	6	
12	15		84	.34	1.90		75.4	97	97				
A1	20/21		84	.21	1.18		81.2	99	99	255	45	4	
2	26		83	.24	1.34		85.9	101	101				
3	31		83	.24	1.34		90.8	101	101	255	50	4½	
4	36		84	.23	1.29		95.6	102	102				
5	41	-.49	85	.20	1.12		700.5	104	104	250	50	4	
6	46		85	.24	1.34		5.2	107	107				
7	51		84	.17	.95		10.0	108	108	250	50	3½	
8	56		85	.15	.84		14.2	109	109				
9	1001		86	.13	.73		17.9	109	109	255	55	3	
10	6		85	.11	.62		21.5	110	110				
11	11		85	.10	.56		24.8	110	110	250	55	2	
12	16		85	.09	.50		28.0	110	110				
	1021						7731.00						

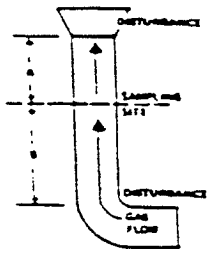
120.00

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT Reliable Plating
DATE 11/3/05
LOCATION Chicago, IL
OPERATOR MJH
STACK NO. Cond #4
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 13 1/2"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH .725 } 9/25
C FACTOR Cp = .99
PROCESS WEIGHT RATE EDUCTION, MCSW PADS IN

ORSAT RESULTS
CO2 A
O2 A
CO
N2 R

LEAK CHECK
Pre <.01 @ 20"
Pitot 0 @ 3"
Post <.01 @ 20"
Pitot 0 @ 3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER °F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	1039		85	.25	1.40		7732.00	109	109	245	45	3	
2	44		86	.26	1.46		37.2	105	105				
3	49		86	.24	1.34		42.4	108	108	260	45	3	
4	54		86	.23	1.29		47.4	108	108				
5	59		85	.20	1.12		52.3	108	108	260	45	2 1/2	
6	1104	-.52	85	.25	1.40		56.8	109	109				
7	09		86	.17	.95		61.9	110	110	255	45	2	
8	14		86	.11	.62		66.2	111	111				
9	19		85	.10	.56		69.6	111	111	260	45	<2	
10	24		86	.09	.50		72.8	111	111				
11	29		86	.09	.50		75.8	112	112	255	45	<2	
12	34		86	.10	.56		78.8	112	112				
B1	39/40		85	0.35	1.96		82.1	112	112	250	50	4	
2	45		85	0.36	2.02		87.9	113	113				
3	50		86	0.35	1.96		93.9	114	114	260	50	4	
4	55		86	0.33	1.85		99.9	115	115				
5	1200	-.50	86	0.28	1.57		805.5	118	118	255	50	3 1/2	
6	5		85	0.27	1.51		10.8	119	119				
7	10		85	0.32	1.79		16.0	120	120	255	50	3 1/2	
8	15		85	0.35	1.96		21.6	120	120				
9	20		85	0.37	2.07		27.4	121	121	250	50	4	
10	25		84	0.36	2.02		33.4	121	121				
11	30		84	0.36	2.02		39.3	121	121	245	55	3 1/2	
12	35		85	0.34	1.90		45.2	121	121				
	1240						7851.02						

119.02

Environmental
Technology &
Engineering Corp.

PARTICULATE FIELD DATA

γ = 1.003

PLANT Reliable Plating
DATE 11/3/05
LOCATION Chicago
OPERATOR MJH
STACK NO. Cond #4
RUN NO. 3
SAMPLE BOX NO. 1B
METER BOX NO. 2

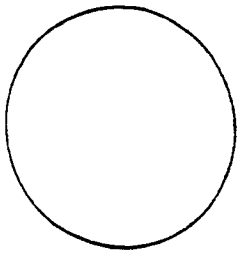
AMBIENT TEMPERATURE 75
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 13½"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

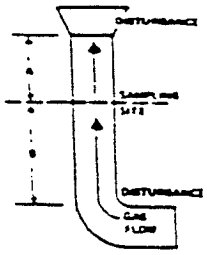
METER ΔH .725
C FACTOR Cp=.99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 1
CO
N2 R

LEAK CHECK
Pre <.01@20"
Pitot ok@3"
Post <.01@20"
Pitot ok@3"

5 min/pt


CROSS SECTION



TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER °F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	12:56		86	.35	1.96		7852.00	114	114	230	45	4½	
2	13:01		87	.35	1.96		58.0	112	112				
3	06		87	.34	1.90		64.0	112	112	245	45	4	
4	11		87	.30	1.68		69.9	113	113				
5	16	-.52	87	.27	1.51		75.4	114	114	260	45	3½	
6	21		86	.27	1.51		80.6	115	115				
7	26		86	.33	1.85		85.8	117	117	265	45	4	
8	31		87	.36	2.02		91.6	119	119				
9	36		87	.38	2.13		97.7	119	119	265	45	4½	
10	41		88	.37	2.07		903.7	119	119				
11	46		87	.36	2.02		9.8	119	119	260	45	4	
12	51		87	.35	1.96		15.6	120	120				
A1	56/57		87	0.24	1.34		21.5	120	120	250	50	3	
2	1402		87	0.28	1.57		26.4	120	120				
3	07		87	0.28	1.57		31.6	120	120	250	50	3½	
4	12		86	0.26	1.46		37.0	121	121				
5	17	-.54	86	0.20	1.12		42.0	121	121	250	50	3	
6	22		87	0.23	1.29		46.7	121	121				
7	27		86	0.16	.90		51.6	121	121	250	50	2	
8	32		85	0.13	.73		55.7	121	121				
9	37		85	0.12	.67		59.4	122	122	255	50	<2	
10	42		86	0.11	.62		62.7	122	122				
11	47		86	0.10	.56		66.0	121	121	250	55	<2	
12	52		85	0.09	.50		69.2	121	121				
	1457						7972.21						

120.21

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - RIVERSIDE DATE OF TEST 11/3/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 1 STACK COMBO #1

Sample Box 1A Filter QUARTZ (1-1) Wash Bottle 0.1 N HNO3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	113	100	13
2	113	100	13
3	5	0	5
SIL GEL	662	654	8
		TOTAL	39

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 231 ml = 331 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - Reliable DATE OF TEST 11/3/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 2 STACK Cond 1

Sample Box 2 Filter QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	110	100	10
2	114	100	14
3	4	0	4
Sil Gel	705	693	12
		TOTAL	40

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOL'N

FH: 100 ml

BH: 100 ml + 228 ml = 328 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - RELIABLE PLATING DATE OF TEST 11/3/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 3 STACK COND #4

Sample Box 18 Filter QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	110	100	10
2	112	100	12
3	3	0	3
SIL GEL	674	662	12
		TOTAL	37

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

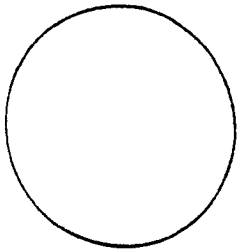
NOTES: RINSE SOL'N

FH: 100 ml

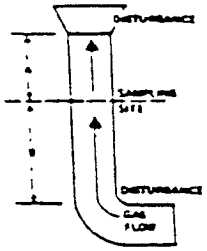
BH: 100 ml + 225 ml = 325 ml

Environment Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT Reliable
DATE 11/2/05
LOCATION Chicago, Ill
OPERATOR MJH
STACK NO. Comb 5
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

AMBIENT TEMPERATURE 60 F
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 13 1/2"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

METER ΔH 725 } 9/25
C FACTOR Cp = .99 } γ = 1.003
PROCESS WEIGHT RATE EDUCTION, NO MESH PADS

ORSAT RESULTS
CO2 A
O2
CO
N2 R

LEAK CHECK
Pre < .01 @ 20"
Pitot OK @ 3"
Post
Pitot OK @ 3"

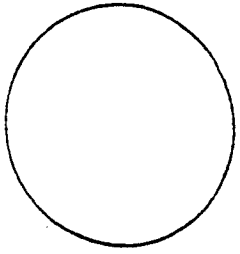
5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (A), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER ×5.6 (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	08:32		78	0.27	1.51		7246.00	65	65	260	45F	6 1/2	
2	37		78	0.23	1.29		51.4	65	65				
3	42		78	0.24	1.34		56.4	66	66	265	45F	5 1/2	
4	47	-.43	77	0.25	1.40		61.6	69	69				
5	52		77	0.21	1.18		66.8	72	72	255	45F	5	
6	57		78	0.23	1.29		71.6	76	76				
7	9:02		78	0.11	.62		76.6	78	78	250	45F	3	
8	07		77	0.08	.45		80.0	81	81				
9	12		78	0.10	.56		83.2	83	83	255	45F	3	
10	17		79	0.16	.90		86.5	84	84				
11	22		79	0.17	.95		91.1	87	87	255	45F	4	
12	27		78	0.20	1.12		94.7	90	90				
B 1	32/33		79	.33	1.85		99.3	92	92	250	45F	6 1/2	
2	38		79	.31	1.74		305.1	97	97				
3	43		78	.29	1.62		10.6	98	98	255	45F	6	
4	48		79	.25	1.40		16.0	99	99				
5	53		79	.25	1.40		21.0	101	101	260	50F	5	
6	58	-.47	80	.21	1.18		26.0	103	103				
7	1003		80	.34	1.90		30.7	105	105	255	50F	7	
8	08		81	.36	2.02		36.2	108	108				
9	13		82	.38	2.13		42.1	108	108	250	50F	7	
10	18		81	.38	2.13		48.2	109	109				
11	23		80	.37	2.07		54.2	109	109	245	50F	7	
12	28		79	.36	2.02		60.1	111	111				
END	1033						7366.12						

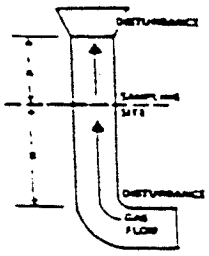
120.12

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT Reusable Plastics
DATE 11/2/05
LOCATION Chicago, Ill
OPERATOR MJH
STACK NO. Cond #5
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 65°F
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 13½"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003 } 9/25
METER ΔH .725
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO A
N2 R

LEAK CHECK
Pre <.01@20"
Pitot OK@3"
Post <.01@20"
Pitot OK@3"

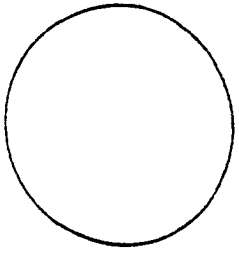
5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	10:55		78	.36	2.02		7267.00	104	104	240	45	4	
2	11:00		78	.33	1.85		73.0	101	101				
3	05		78	.30	1.68		78.8	102	102	255	45	3½	
4	10		79	.27	1.51		84.3	102	102				
5	15		80	.25	1.40		89.5	102	102	265	45	3	
6	20	-.45	81	.24	1.34		94.5	102	102				
7	25		81	.32	1.79		99.4	104	104	260	45	3½	
8	30		80	.36	2.02		405.1	107	107				
9	35		78	.37	2.07		11.1	108	108	255	45	4	
10	40		77	.37	2.07		17.2	109	109				
11	45		78	.36	2.02		23.2	110	110	250	45	4	
12	50		78	.34	1.90		29.1	109	109				
A1	55/56		81	.25	1.40		34.9	110	110	250	45	3	
2	1201		82	.27	1.51		39.9	111	111				
3	06		81	.25	1.40		45.2	112	112	255	45	3	
4	11	-.43	80	.24	1.34		50.2	113	113				
5	16		80	.24	1.34		55.1	113	113	250	45	2½	
6	21		80	.25	1.40		60.0	113	113				
7	26		80	.16	.90		64.9	114	114	250	50	<2	
8	31		79	.14	.78		68.9	115	115				
9	36		79	.13	.73		72.6	114	114	250	50	<2	
10	41		79	.17	.95		76.2	114	114				
11	46		78	.20	1.12		80.2	114	114	245	50	2	
12	51		79	.19	1.06		84.8	114	114				
	1256						7489.08						

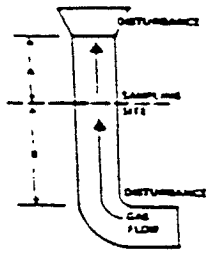
122.08

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT: REUABLE PLATING
DATE: 11/2/05
LOCATION: CHICAGO, ILL
OPERATOR: MJH
STACK NO.: COND 5
RUN NO.: 3
SAMPLE BOX NO.: 18
METER BOX NO.: 2

AMBIENT TEMPERATURE: 70 F
BAROMETRIC PRESSURE:
ASSUMED MOISTURE, %: 2%
PROBE LENGTH, in.: 2FT GLASS
NOZZLE DIAMETER, in.: 5/16"
STACK DIAMETER, in.: 13½"
PROBE HEATER SETTING: 250
HEATER BOX SETTING: 250

Y = 1.003
METER AH: .725 } 9/25
C FACTOR: Cp=.99
PROCESS WEIGHT RATE: (EDUCTION, NO PADS)

ORSAT RESULTS
CO2: A
O2: 1
CO:
N2: R

LEAK CHECK
Pre <.01@20"
Pitot OK@3"
Post <.01@20"
Pitot OK@3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (A), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	1315		80	0.30	1.68		7490.00	110	110	230	45	3	
2	20		81	0.29	1.57		95.4	107	107				
3	25		81	0.28	1.57		500.7	107	107	245	45	3	
4	30		82	0.25	1.40		506.0	108	108				
5	35	-.45	81	0.26	1.46		11.1	109	109	260	45	3	
6	40		80	0.26	1.46		16.3	109	109				
7	45		81	0.15	.84		21.5	110	110	255	45	<2	
8	50		81	0.11	.62		25.4	110	110				
9	55		81	0.10	.56		28.9	111	111	255	45	<2	
10	1400		82	0.13	.73		32.2	109	109				
11	05		82	0.15	.84		35.8	110	110	250	45	<2	
12	10		81	0.17	.95		39.7	111	111				
B1	15	16	81	0.33	1.85		544.0	112	112	250	50	3½	
2	21		82	0.33	1.85		49.7	113	113				
3	26		83	0.30	1.68		55.5	115	115	255	50	3	
4	31		84	0.26	1.46		60.9	117	117				
5	36	-.47	84	0.23	1.29		66.1	118	118	250	50	2½	
6	41		83	0.20	1.12		70.9	118	119				
7	46		83	0.29	1.62		75.4	119	119	260	50	3	
8	51		82	0.34	1.90		80.7	119	119				
9	56		83	0.36	2.02		86.5	119	119	255	55	4	
10	1501		84	0.36	2.02		92.4	120	120				
11	06		84	0.35	1.96		98.3	120	120	250	55	3½	
12	11		84	0.35	1.96		604.1	120	120				
	16						7609.96						

119.96

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - Reliable DATE OF TEST 11/2/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 1 STACK Conv 5

Sample Box 1A Filter QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	106	100	6
2	115	100	15
3	4	0	4
Sil Gel	678	663	15
		TOTAL	40

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH 100 ml

BH 100 ml + 125 ml = 325 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - RELIABLE

JOB NO. _____

DATE OF TEST 11/2/05

TEST ENGINEER MTH

RUN NO. 2 STACK Conv 5

Sample Box 2 Filter QUARTZ

Wash Bottle 0.1 N HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	108	100	8
2	116	100	16
3	4	0	4
Sil Gel	693	675	18
		TOTAL	46

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOL'N

FH: 100 ml

BH: 100 ml + 228 ml = 328 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - Reliable Plating DATE OF TEST 11/2/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 3 STACK Condition 5

Sample Box 1B Filter Quartz Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	109	100	9
2	106	100	6
3	8	0	8
Sil Gel	691	678	13
		TOTAL	36

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

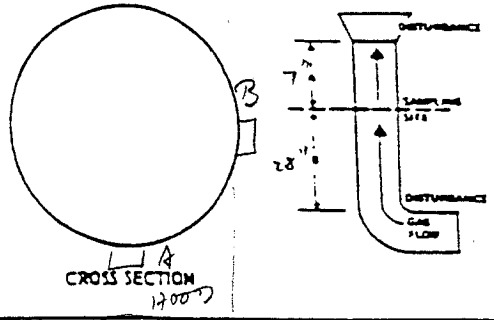
NOTES: RINSE SOL'N

FH: 100 ml

BH: 100 ml + 223 ml = 323 ml

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



PLANT Reliable Plating
DATE 11/1/05
LOCATION Chicago, Ill
OPERATOR MJH
STACK NO. Cond 6
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

AMBIENT TEMPERATURE 65°F
BAROMETRIC PRESSURE
ASSUMED MOISTURE % 3%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 13½
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH .725 } 9/25
C FACTOR Cp = .99 }
PROCESS WEIGHT RATE No MESH PADS (AIR DIRC)

ORSAT RESULTS
CO2 A
O2 7
CO
N2 R

LEAK CHECK
Pre ≤.01 @ 20"
Pitot OKC 3"
Post ≤.01 @ 20"
Pitot OKC 3"

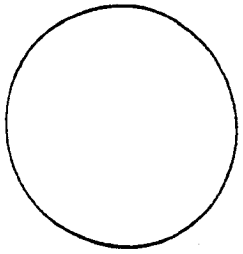
5 min/PT

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER °F	PUMP VACUUM in. Hg gauge	VELOCITY fps	PARTS
B 1	08:48		75	0.37	2.04		6890.00	66	66	255	45	8		
2	:53		75	0.36	1.98		96.2	64	64					8.34 IN
3	:58	-.45	76	0.33	1.82		902.4	66	66	255	45	7		
4	09:03		77	0.31	1.71		8.3	67	67					
5	08		77	0.25	1.38		14.0	71	71	250	45	5½		
6	13		77	0.24	1.32		19.1	76	76					
7	18		76	0.37	2.04		24.1	79	79	245	45	7½		
8	23		76	0.38	2.09		30.3	82	82					
9	28		77	0.39	2.15		36.4	86	86	255	45	7½		OUT 9:31 / IN 9:32
10	33		77	0.40	2.20		42.7	89	89					
11	38		76	0.41	2.26		49.0	91	91	260	50	7½		
12	43		76	0.37	2.04		55.4	94	94					
A 1	48/49		77	0.26	1.43		61.6	97	97	250	50	4		
2	54		77	0.28	1.54		66.5	99	99					
3	59		76	0.26	1.43		71.7	100	100	255	45	4½		
4	1004		75	0.23	1.27		76.7	100	100					
5	9	-.47	75	0.25	1.38		81.5	101	101	255	45	5		
6	14		75	0.27	1.49		86.3	102	102					
7	19		75	0.12	.66		91.5	104	104	255	50	2½		
8	24		76	0.09	.50		94.9	105	105					
9	29		77	0.09	.50		97.9	106	106	250	50	2		
10	34		77	0.11	.61		7000.9	107	107					
11	39		77	0.13	.72		4.2	107	107	245	50	2½		
12	44		78	0.14	.77		7.7	108	108					
	10:49						11.38							

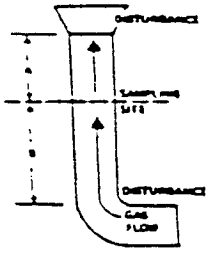
121.38

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT Reliable Plating
DATE 11/1/05
LOCATION Chicago, Ill
OPERATOR MJH
STACK NO. Cond #6
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 65 F
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 3%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 13 1/2"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH .725
C FACTOR C_p = .99
PROCESS WEIGHT RATE AIR, NO MESH PADS

ORSAT RESULTS
CO2 A
O2
CO I
N2 R

LEAK CHECK
Pre <.01@20"
Pitot 0x@3"
Post <.01@20"
Pitot 0x@3"

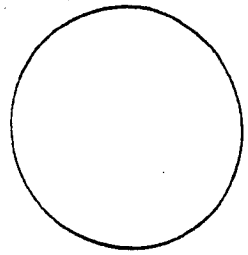
5 min/PT

TRAVERSE POINT NUMBER	SAMPLING TIME (A), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	11:12		76	0.18	.99		7012.00	99	99	255	45	2	
2	17		77	0.21	1.16		16.2	98	98				
3	22		77	0.23	1.27		20.8	99	99	265	45	2 1/2	
4	27		78	0.21	1.16		25.7	99	99				
5	32	-.47	77	0.24	1.32		30.4	101	101	260	45	2 1/2	
6	37		76	0.24	1.32		35.3	101	101				
7	42		75	0.11	.61		40.2	102	102	255	45	<2	
8	47		75	0.07	.39		43.5	102	102				
9	52		75	0.07	.39		46.3	103	103	250	45	<2	
10	57		74	0.09	.50		49.1	103	103				
11	1202		74	0.12	.66		52.2	103	103	245	45	<2	
12	07		74	0.12	.66		55.6	104	104				
B1	12 13		75	.37	2.04		59.0	107	107	250	45	4	
2	18		75	.39	2.15		65.0	108	108				
3	23		76	.35	1.93		71.1	109	109	255	45	4	
4	28		75	.31	1.71		76.9	110	110				
5	33		75	.27	1.49		82.4	111	111	250	45	3	
6	38	-.49	74	.23	1.27		87.6	112	112				
7	43		75	.31	1.71		92.4	113	113	250	50	3 1/2	
8	48		75	.37	2.04		97.9	113	113				
9	53		76	.42	2.31		103.8	114	114	255	50	4 1/2	
10	58		77	.43	2.37		10.1	115	115				
11	1303		76	.43	2.37		16.4	117	117	250	50	4 1/2	
12	08		76	.41	2.26		22.8	118	118				
END	1313						7129.02						

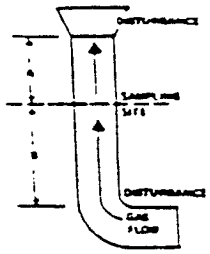
117.02

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT Reliable Plating
DATE 11/1/05
LOCATION Chicago, Ill
OPERATOR MJH
STACK NO. Cond #6
RUN NO. 3
SAMPLE BOX NO. 1B
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 3%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 13 1/2"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH .725 9/25
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2
O2 A
CO
N2 R

LEAK CHECK
Pre <.01@20"
Pitot ox@3"
Post <.01@20"
Pitot ox@3"

5 min/PT

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{in}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{out}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	13:30		76	.35	1.93		7130.00	110	110	235	45F	4	
2	35		76	.36	1.98		35.9	109	109				
3	40		77	.31	1.71		41.9	108	108	245	45F	3½	
4	45		78	.26	1.43		47.5	108	108				
5	50	-.46	78	.22	1.21		52.6	108	108	255	45F	3	
6	55		78	.21	1.16		57.3	108	108				
7	14:00		77	.30	1.65		61.9	109	109	250	45F	3½	
8	05		76	.36	1.98		67.3	109	109				
9	10		76	.37	2.04		73.2	110	110	255	45F	4	
10	15		76	.37	2.04		79.2	110	110				
11	20		76	.36	1.98		85.2	111	111	260	45F	4	
12	25		75	.35	1.93		91.1	111	111				
A 1	30/31		75	0.23	1.27		96.9	111	111	265	45F	3	
2	36		75	0.22	1.21		7201.8	112	112				
3	41		74	0.20	1.10		6.5	112	112	260	45F	2½	
4	46	-.44	75	0.20	1.10		11.0	112	112				
5	51		75	0.18	.99		15.6	112	112	255	50F	2	
6	56		75	0.25	1.38		19.7	111	111				
7	1501		74	0.13	.72		24.8	111	111	250	45F	<2	
8	06		74	0.08	.44		28.4	110	110				
9	11		76	0.08	.44		31.3	111	111	250	50F	<2	
10	16		75	0.11	.61		34.3	111	111				
11	21		74	0.13	.72		37.6	110	110	250	50F	2	
12	26		74	0.12	.66		41.2	111	111				
END	1531						7244.64						

114.64

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - RELIABLE PLATING DATE OF TEST 11/1/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 1 STACK COND #6

Sample Box 1A Filter QUARTZ Wash Bottle 0.1 N HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	112	100	12
2	116	100	16
3	4	0	4
SIL GEL	669	655	14
		TOTAL	46

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 232 ml = 332 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCC - RELIABLE DATE OF TEST 11/1/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 2 STACK Comb. #6

Sample Box 2 Filter QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	114	100	14
2	117	100	17
3	4	0	4
Sil Gel	701	691	10
		TOTAL	45

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH 100 ml

BH 100 ml + 235 ml = 335 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - RELIABLE PLATING DATE OF TEST 11/01/05

JOB NO. _____ TEST ENGINEER MJM

RUN NO. 3 STACK Cond #6

Sample Box 18 Filter QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	116	100	16
2	112	100	12
3	4	0	4
SIL GEL	682	669	13
		TOTAL	45

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 232 ml = 332 ml

Environmental Technology & Engineering Corp.

1/4 = 2.3

PARTICULATE FIELD DATA

γ = 1.003

PLANT Artistic Plating | AMBIENT TEMPERATURE 70 F | METER ΔH .725

DATE 11/9/05 | BAROMETRIC PRESSURE 29.05 | C FACTOR Cp = .99

LOCATION Milwaukee | ASSUMED MOISTURE, % 2% | PROCESS WEIGHT RATE

OPERATOR MJH | PROBE LENGTH, in. 2FT GLASS | ORSAT RESULTS | LEAK CHECK

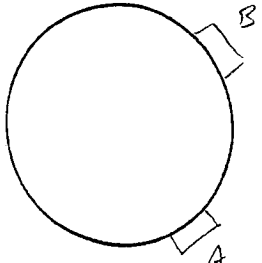
STACK NO. Cond # 7 | NOZZLE DIAMETER, in. 5/16" | CO2 A | Pre <.01@20"

RUN NO. 1 | STACK DIAMETER, in. 10" | O2 A | Pitot OK@3"

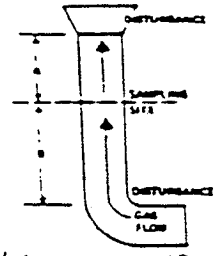
SAMPLE BOX NO. 1A | PROBE HEATER SETTING 250 | CO | Post <.01@20"

METER BOX NO. 2 | HEATER BOX SETTING 250 | N2 R | Pitot OK@3"

5 min/pt



CROSS SECTION



** OPEN DOORS IN AREA

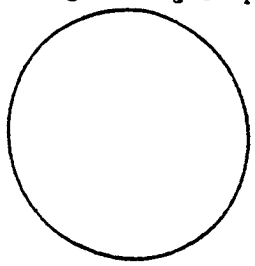
TRAVERSE POINT NUMBER	SAMPLING TIME (A), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED (x5.6)	GAS SAMPLE VOLUME (V_m), ft^3	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m,in}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER: OUTLET ($T_{m,out}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps	
A1	9:00		77	.11	.62		8451.00	68	68	265	45	3½		
2	05		77	.14	.78		54.8	68	68					
3	10		77	.18	1.01		58.9	69	69	255	45	4		
4	15		76	.19	1.06		63.5	70	70					
5	20	-.30	76	.19	1.06		68.2	72	72	250	45	4		
6	25		76	.17	.95		72.9	76	76					
7	30		76	.16	.90		77.3	79	79	245	45	3½		
8	35		76	.14	.78		81.5	82	82					
9	40		76	.12	.67		85.5	87	87	245	45	3		
10	45		77	.10	.56		89.1	88	88					
11	50		77	.09	.50		92.4	89	89	245	45	2½		
12	55		76	.08	.45		95.6	91	91					
B1	10:00/01		76	.23	1.29		98.7	93	93	255	45	4		**
2	06		76	.25	1.40		503.7	96	96					
3	11		76	.29	1.62		8.7	99	99	260	45	5		
4	16		76	.35	1.96		14.2	102	102					
5	21	-1.10	76	.50	2.80		20.1	103	103	255	45	7½		
6	26		75	.54	3.02		27.0	107	107					
7	31		75	.60	3.36		34.3	109	109	250	45	8		
8	36		74	.60	3.36		42.0	110	110					
9	41		74	.58	3.25		49.7	112	112	255	50	8		
10	46		73	.56	3.14		57.4	112	112					
11	51		72	.54	3.02		64.9	114	114	260	50	7½		
12	56		72	.52	2.91		72.2	117	117					
	11:01						9579.22							

128.22

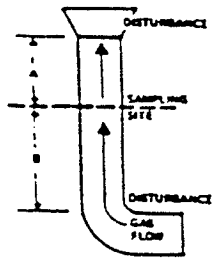
Environmental Technology & Engineering Corp.

* NEW TIP SIZE!!

PARTICULATE FIELD DATA



CROSS SECTION



PLANT: ARTISTIC PLATING
DATE: 11/9/05
LOCATION: MILWAUKEE
OPERATOR: MJH
STACK NO.: CURING #7
RUN NO.: 2
SAMPLE BOX NO.: 2
METER BOX NO.: 2

AMBIENT TEMPERATURE: 70 F
BAROMETRIC PRESSURE: 29.05
ASSUMED MOISTURE, %: 2%
PROBE LENGTH, in.: 2 FT GLASS
NOZZLE DIAMETER, in.: 1/4"
STACK DIAMETER, in.: 10"
PROBE HEATER SETTING: 250
HEATER BOX SETTING: 250

γ = 1.00 ± 9/25
METER ΔH: .725
C FACTOR: C_p = .99
PROCESS WEIGHT RATE:

ORSAT RESULTS

CO2	A
O2	A
CO	
N2	A

LEAK CHECK

Pre <.01@20"
Pitot OK@3"
Post <.01@20"
Pitot OK@3"

5 min/PT

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER x2.3 (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	1133		71	.27	.62		8580.00	108	108	260	45	2	
2	38		70	.32	.74		83.7	103	103				
3	43		70	.38	.87		87.6	102	102	260	45	2	
4	48		70	.46	1.06		91.7	101	101				
5	53		69	.50	1.15		96.3	102	102	265	45	2 1/2	
6	58	-1.20	68	.52	1.20		601.0	103	103				
7	1203		68	.57	1.31		5.8	105	105	260	45	3	
8	08		67	.70	1.61		10.7	105	105				
9	13		67	.75	1.73		16.1	107	107	255	45	3	
10	18		67	.77	1.77		21.7	109	109				
11	23		67	.70	1.61		27.5	110	110	255	45	2 1/2	
12	28		68	.56	1.29		32.8	110	110				
A1	33/34		69	.58	1.33		37.7	111	111	260	45	2 1/2	
2	39		69	.70	1.61		42.7	111	111				
3	44		70	.75	1.73		48.2	113	113	260	45	3	
4	49	-1.15	70	.80	1.84		53.7	114	114				
5	54		70	.80	1.84		59.5	115	115	255	50	3	
6	59		69	.72	1.66		65.2	117	117				
7	1304		69	.59	1.36		70.6	117	117	260	50	2 1/2	
8	09		69	.51	1.17		75.7	118	118				
9	14		69	.38	.87		80.3	118	118	255	50	2	
10	19		70	.32	.74		84.3	119	119				
11	24		70	.28	.64		87.9	119	119	245	50	<2	
12	29		70	.25	.58		91.3	119	119				
	1334						94.57						

114.57

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** FAN SYSTEM ON "LOW" (PREVIOUS TEST WAS ON "HIGH")

PARTICULATE FIELD DATA

Y = 1.003 } 9/25

PLANT Artistic Platinc
DATE 11/9/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Cond # 7
RUN NO. 3
SAMPLE BOX NO. 18
METER BOX NO. 2

AMBIENT TEMPERATURE 68 F
BAROMETRIC PRESSURE 29.05
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 10"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

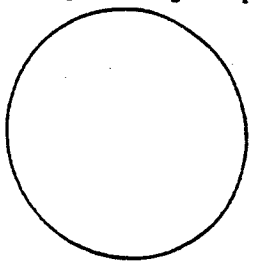
METER ΔH .725
C FACTOR Cp=.99

PROCESS WEIGHT RATE

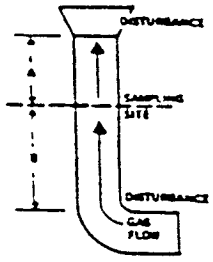
ORSAT RESULTS
CO2 A
O2 A
CO
N2 R

5 min/pt

LEAK CHECK:
Pre <.01@20"
Pitot OK@3"
Post <.01@20"
Pitot OK@3"



CROSS SECTION



TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)		PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) x5.6 in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A 1	1406		73	.14		.78		8696.00	107	107	255	45	2	
2	11		73	.18		1.01		700.0	104	104				
3	16	-.28	73	.19		1.06		4.2	103	103	255	45	2	
4	21		73	.21		1.18		8.8	105	105				
5	26		74	.18		1.01		13.5	107	107	260	45	2	
6	31		74	.18		1.01		17.8	108	108				
7	36		72	.15		.84		22.1	109	109	260	45	<2	
8	41		71	.12		.67		26.1	109	109				
9	46	-.26	71	.09		.50		29.7	109	109	255	45	<2	
10	51		70	.10		.56		32.8	110	110				
11	56		70	.09		.50		36.2	111	111	255	45	<2	
12	1501		70	.08		.45		39.3	112	112				
B 1	06 07		71	.08		.45		42.2	112	112	260	45	<2	
2	12		72	.09		.50		45.1	113	113				
3	17		71	.09		.50		48.2	113	113	260	45	<2	
4	22	-.26	72	.11		.62		51.3	113	113				
5	27		72	.14		.78		54.8	114	114	260	45	<2	
6	32		71	.15		.84		58.6	115	115				
7	37		71	.19		1.06		62.5	117	117	255	45	2	
8	42		72	.20		1.12		67.0	118	118				
9	47	-.24	72	.16		.90		71.7	118	118	260	45	2	
10	52		73	.17		.95		75.7	119	119				
11	57		73	.15		.84		79.8	119	119	255	50	2	
12	16 02		73	.12		.67		83.7	120	120				
	07							8787.28						
								91.28						

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC

JOB NO. _____

DATE OF TEST 11/9/05

TEST ENGINEER MJH

RUN NO. 1 STACK COND #7

Sample Box 1A Filter QUARTZ (7-1) Wash Bottle 0.1 HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	87	100	(13)
2	112	100	12
3	3	0	3
SIL GEL	683	668	15
		TOTAL	17

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLUTION

FH: 100 ml

BH: 100 ml + 202 ml = 302 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC DATE OF TEST 11/9/05

JOB NO. _____ TEST ENGINEER MTH

RUN NO. 2 STACK COND #7

Sample Box 2 Filter QUARTZ (7-1) Wash Bottle 0.1 HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	94	100	(6)
2	106	100	6
3	2	0	2
Si Gel	711	691	20
		TOTAL	22

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 202 ml = 302 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC DATE OF TEST 11/9/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 3 STACK COND 7

Sample Box 1B Filter QUARTZ (7-3) Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	99	100	(1)
2	104	100	4
3	2	0	2
SILICA	695	683	12
		TOTAL	17

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

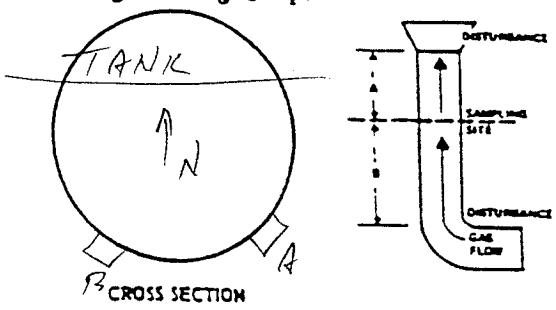
NOTES: RINSE SOLN

FH 100 ml

BH 100 ml + 205 ml = 305 ml

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PARTICULATE F..LD DATA



PLANT ABQC
DATE 2/1/06
LOCATION MILWAUKEE
OPERATOR MJH
STACK NO. COND # 10
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 28.95
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

$\gamma = 1.009$
METER ΔH .730 } 1/31/06
C FACTOR Cp = .99

PROCESS WEIGHT RATE

ORSAT RESULTS
CO2
O2 A
CO
N2 R

LEAK CHECK:
Pre <.01@20"
Pitot OK@3"
Post <.01@20"
Pitot OK@3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)		PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) x2.3 in. H_2O ACTUAL		GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	8:35		68	.42		.97		1948.00	52	52	245	45F	3	
2	40		68	.45		1.04		52.4	48	48				
3	45		68	.47		1.08		57.0	50	50	250	45 F	3½	
4	50	-1.22	68	.47		1.08		61.5	51	51				
5	55		68	.44		1.01		66.1	53	53	255	45	4	
6	9:00		69	.52		1.20		70.6	56	56				
7	05		69	.58		1.33		75.4	61	61	255	45	4½	
8	10		69	.60		1.38		80.3	65	65				
9	15		69	.56		1.29		85.4	69	69	260	45	4	
10	20		69	.52		1.20		90.4	74	74				
11	25		68	.48		1.10		95.1	78	78	255	45	3½	
12	30		68	.44		1.01		99.5	82	82				
B1	35/36		69	.34		.78		2003.9	84	84	250	45	3	
2	41		70	.38		.87		7.6	87	87				
3	46		70	.44		1.01		11.5	89	89	250	50	3½	
4	51		71	.44		1.01		15.8	90	90				
5	56	-1.20	71	.48		1.10		20.1	92	92	245	50	3½	
6	1001		71	.54		1.24		24.6	94	94				
7	06		71	.54		1.24		29.3	97	97	250	50	4	
8	11		72	.50		1.15		34.0	99	99				
9	16		72	.48		1.10		38.5	101	101	245	50	3½	
10	21		72	.46		1.06		42.9	102	102				
11	26		72	.41		.94		47.3	102	102	240	50	3	
12	31		72	.41		.94		51.2	104	104				
	1036							55.23			240			

(107.23)

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PARTICULATE FIELD DATA

γ = 1.009 } 1/31/06

PLANT ABQC
DATE 2/1/06
LOCATION MILWAUKEE
OPERATOR MJH
STACK NO. COND #10
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

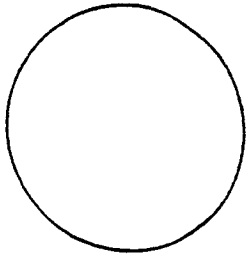
AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 28.95
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

METER ΔH .730
C FACTOR Cp = .99
PROCESS WEIGHT RATE

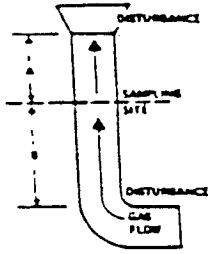
ORSAT RESULTS
CO2 A
O2 A
CO R
N2

LEAK CHECK
Pre <.01@20"
Pitot OK@3"
Post <.01@20"
Pitot OK@3"

5 min/pt



CROSS SECTION

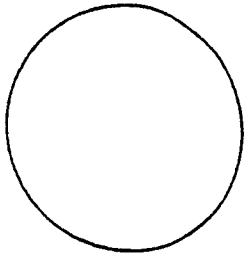


TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{P_s}$) ($\sqrt{\sqrt{P_s}}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
1	1057		72	.39	.90		2056.00	100	100	235	45	<2	
2	1102		72	.41	.94		59.9	99	99				
3	07		72	.42	.97		63.9	98	98	245	45	<2	
4	12		71	.42	.97		68.0	99	99				
5	17	-1.22	72	.49	1.13		72.1	99	99	250	45	<2	
6	22		72	.56	1.29		76.6	100	100				
7	27		72	.58	1.33		81.5	102	102	255	45	2	
8	32		72	.53	1.22		86.3	103	103				
9	37		72	.53	1.22		91.0	104	104	250	45	<2	
10	42		73	.51	1.17		95.7	106	106				
11	47		73	.48	1.10		2100.4	107	107	255	45	<2	
12	52		73	.42	.97		4.9	108	108				
1	57/58		71	.37	.85		8.9	109	109	260	45	<2	
2	1203		72	.45	1.04		12.7	109	109				
3	08		72	.45	1.04		16.8	109	109	255	45	<2	
4	13		71	.45	1.04		21.0	110	110				
5	18		71	.45	1.04		25.1	110	110	250	50	<2	
6	23	-1.24	70	.51	1.17		29.3	111	111				
7	28		70	.58	1.33		34.0	111	111	245	50	2	
8	33		70	.56	1.29		38.9	112	112				
9	38		71	.52	1.20		43.7	112	112	245	50	<2	
10	43		71	.48	1.10		48.3	112	112				
11	48		71	.46	1.06		52.6	113	113	240	50	<2	
12	53		71	.46	1.06		56.9	113	113				
	1258						2161.39						

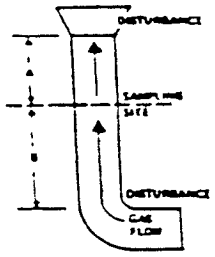
105.39

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Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ABQC
DATE 2/1/06
LOCATION MILWAUKEE, WI
OPERATOR MJH
STACK NO. COND #10
RUN NO. 3
SAMPLE BOX NO. 1B
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 28.95
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.009
METER ΔH .730 } 1/31
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO R
N2

LEAK CHECK
Pre < .01 @ 20"
Pitot OK @ 3"
Post < .01 @ 20"
Pitot OK @ 3"

5 min/PT

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	1315		72	.37	.85		2162.00	108	108	240	45	< 2	
2	20		73	.43	.99		65.9	105	105				
3	25		72	.44	1.01		70.1	106	106	240	45	< 2	
4	30		72	.44	1.01		74.4	106	106				
5	35		73	.48	1.10		78.8	107	107	245	45	2	
6	40	-1.20	73	.54	1.24		83.3	108	108				
7	45		73	.56	1.29		88.1	108	108	250	45	2	
8	50		73	.52	1.20		92.8	108	108				
9	55		73	.50	1.15		97.4	109	109	245	45	2	
10	1400		73	.46	1.06		201.9	109	109				
11	05		72	.44	1.01		6.3	109	109	245	45	< 2	
12	10		72	.42	.97		10.5	110	110				
A1	15/16		73	.34	.78		14.5	111	111	245	45	< 2	
2	21		73	.40	.92		18.3	111	111				
3	26		72	.40	.92		22.3	111	111	250	45	< 2	
4	31	-1.20	71	.42	.97		26.3	112	112				
5	36		71	.48	1.10		30.5	112	112	255	45	2	
6	41		71	.51	1.17		35.0	112	112				
7	46		71	.56	1.29		39.5	113	113	250	50	2	
8	51		70	.58	1.33		44.2	113	113				
9	56		70	.48	1.10		49.7	113	113	250	50	2	
10	1501		71	.48	1.10		53.7	113	113				
11	06		71	.46	1.06		58.3	114	114	245	50	2	
12	11		71	.42	.97		62.6	114	114				
	1516						66.75						

104.75

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ABQC DATE OF TEST 2/1/06

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 1 STACK COND #10

Sample Box 1A Filter QUARTZ 10-1 Wash Bottle 0.1 HNO_3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	87	100	(13)
2	110	100	10
3	6	0	6
SILICA	690	669	21
		TOTAL	24

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE + SOLUTION = TOTAL

FH: 100 ml

BH: 100 ml + 203 ml = 303 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ABQ C
DATE OF TEST 2/1/06
JOB NO.
TEST ENGINEER MJH

RUN NO. 2 STACK Conv #10
Sample Box 2 Filter QUARTZ "10-2" Wash Bottle 0.1 HNO3
Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	94	100	(6)
2	110	100	10
3	5	0	5
SILICA	682	661	21
		TOTAL	30

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS
PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN
FH: 100 ml
RH: 100 ml + 209 ml = 309 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - AEQC DATE OF TEST 2/1/06

JOB NO. _____ TEST ENGINEER MTH

RUN NO. 3 STACK Combo #10

Sample Box 18 Filter QUARTZ "10-3" Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	100	100	—
2	111	100	11
3	4	0	4
Si Gel	699	690	9
		TOTAL	24

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

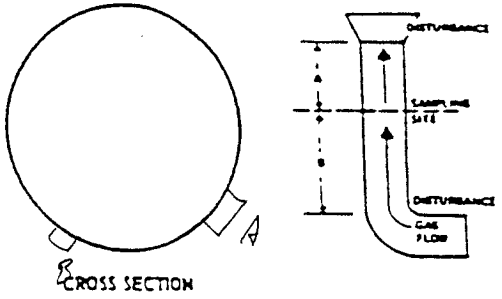
NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 215 ml = 315 ml

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



PLANT ABQC
DATE 1/12/06
LOCATION Milwaukee
OPERATOR MJM
STACK NO. Cond 11
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

AMBIENT TEMPERATURE 65F
BAROMETRIC PRESSURE 29.10
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

Y = 1.006
METER ΔH .722 } 11/29/05
C FACTOR Cp = .99

PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO
N2 R

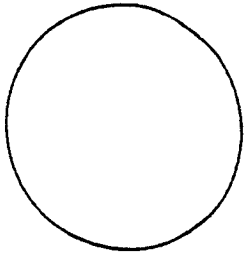
LEAK CHECK
Pre <.01 @ 20"
Pitot OK @ 3"
Post <.01 @ 20"
Pitot OK @ 3"

5 min/pt

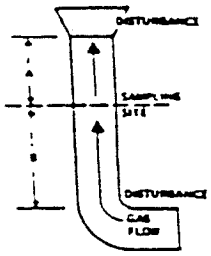
TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{P_s}$) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B 1	8:20		68	.32	.74		903.00		47	230	45	4½	
2	25		68	.37	.85		6.8		47				
3	30		68	.41	.94		10.9		47		45	5½	
4	35	-1.06	68	.41	.94		15.2		48				
5	40		68	.44	1.01		19.5		51	245	45	6	
6	45		68	.48	1.10		23.8		57				
7	50		68	.54	1.24		28.4		59		45	7	
8	55		68	.54	1.24		33.2		64				
9	9:00		68	.52	1.20		38.0		69	245	45	6½	
10	05		69	.50	1.15		42.7		73				
11	10		69	.46	1.06		47.4		78		45	6	
12	15		69	.44	1.01		51.8		82				
A 1	20/21		69	.38	.87		56.1		85	240	45	4½	
2	26		69	.42	.97		59.9		86				
3	31		69	.44	1.01		64.2		89		50	5½	
4	36	-1.10	69	.44	1.01		68.3		92				
5	41		69	.48	1.10		72.5		96	250	50	6	
6	46		68	.52	1.20		77.0		97				
7	51		68	.56	1.29		81.6		99		50	7	
8	56		68	.54	1.24		86.4		101				
9	1001		68	.54	1.24		91.0		102	245	50	7	
10	06		68	.52	1.20		95.6		103				
11	11		68	.50	1.15		1000.2		106		50	6½	
12	16		68	.47	1.08		4.7		108				
	1021						1009.02			240	50		
							106.02						

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ABQC
DATE 1/12/06
LOCATION MILWAUKEE
OPERATOR MJH
STACK NO. COND #11
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 65F
BAROMETRIC PRESSURE 29.10
ASSUMED MOISTURE, % 20%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

Y = 1.006
METER ΔH .722 } 11/29
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 /
CO /
N2 R

LEAK CHECK
Pre <.01@20"
Pitot OKE3"
Post <.01@20"
Pitot OKE3"

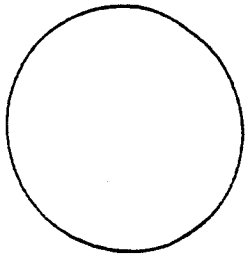
5 min/PT

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft^3	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	1042		68	.34	.78		1010.00		101	235	45	3	
2	47		68	.36	.83		13.7		101				
3	52		68	.38	.87		17.6		101	245	45	3½	
4	57	-1.10	69	.40	.92		21.6		102				
5	1102		69	.46	1.06		25.7		102	250	45	4	
6	07		68	.48	1.10		30.1		104				
7	12		68	.56	1.29		34.5		105	255	45	5	
8	17		68	.58	1.33		39.4		104				
9	22		68	.54	1.24		44.3		106	250	45	4½	
10	27		68	.52	1.20		49.0		108				
11	32		68	.48	1.10		53.7		109	245	50	4	
12	37		68	.45	1.04		58.1		110				
B1	42/43		69	.38	.87		62.5		111	240	50	3	
2	48		70	.42	.97		66.4		111				
3	53		69	.45	1.04		70.5		111	240	50	4	
4	58		69	.45	1.04		74.9		112				
5	1203	-1.12	69	.48	1.10		79.3		112	245	50	4	
6	08		69	.54	1.24		83.7		112				
7	13		68	.58	1.33		88.4		112	250	50	4½	
8	18		68	.58	1.33		93.3		113				
9	23		68	.54	1.24		98.1		114	245	50	4½	
10	28		69	.52	1.20		1102.8		114				
11	33		69	.48	1.10		7.4		114	240	55	4	
12	38		69	.44	1.01		11.8		115				
	1243						1116.04			240	55		

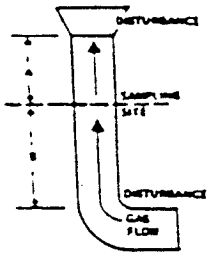
106.04

Environmet
Technology &
Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ABQC
DATE 1/12/06
LOCATION MILWAUKEE
OPERATOR MJH
STACK NO. COND #11
RUN NO. 3
SAMPLE BOX NO. 1B
METER BOX NO. 2

AMBIENT TEMPERATURE 68 F
BAROMETRIC PRESSURE 29.10
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.006
METER ΔH .722 } 11/29
C FACTOR Cp = .99

PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO R
N2

LEAK CHECK
Pre <.01@20"
Pitot OKC3"
Post <.01@20"
Pitot OKC3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	1300		69	.42	.97		1117.00		110	240	45	4	
2	05		69	.44	1.01		21.2		109				
3	10		70	.45	1.04		25.6		108		45	4½	
4	15	-1.08	70	.47	1.08		30.0		109				
5	20		70	.50	1.15		34.6		109	255	45	4½	
6	25		70	.54	1.24		39.3		109				
7	30		69	.56	1.29		44.1		110		45	5	
8	35		69	.54	1.24		48.8		111				
9	40		69	.52	1.20		53.5		111	250	50	4½	
10	45		69	.50	1.15		58.1		111				
11	50		69	.48	1.10		62.7		111		50	4	
12	55		69	.44	1.01		67.1		112				
A 1	1400/01		69	.37	.85		71.5		113	245	50	3½	
2	06		69	.40	.92		75.4		113				
3	11		69	.42	.97		79.4		113		50	4	
4	16		70	.42	.97		83.7		114				
5	21	-1.10	70	.44	1.01		88.0		114	240	50	4	
6	26		69	.50	1.15		92.3		115				
7	31		69	.57	1.31		96.8		116		50	5	
8	36		68	.55	1.27		1201.7		116				
9	41		69	.53	1.22		6.4		117	245	55	4½	
10	46		69	.50	1.15		11.0		118				
11	51		69	.45	1.04		15.6		118		55	4	
12	56		69	.45	1.04		20.0		119				
	1501						24.37			240	55		

107.37

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME ABQC - SC LABS DATE OF TEST 1/12/06

JOB NO. — TEST ENGINEER MJH

RUN NO. 1 STACK Coal #11

Sample Box 1A Filter QUARTZ 11-1 Wash Bottle 0.1 HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	96	100	(4)
2	108	100	8
3	4	0	4
SILICA	694	678	16
		TOTAL	24

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLUTION

FH: 100 ml

BH: 100 ml + 208 ml = 308 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME ABQC - SC LABS DATE OF TEST 1/12/06

JOB NO. — TEST ENGINEER MJH

RUN NO. 2 STACK COND #11

Sample Box 2 Filter 11-2 QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	98	100	(2)
2	108	100	8
3	5	0	5
SILICA	710	690	20
		TOTAL	31

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

Fil: 100 ml

Eff: 100 ml + 211 ml = 311 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME ABQC - SC LABS DATE OF TEST 1/12/06

JOB NO. — TEST ENGINEER MJH

RUN NO. 3 STACK COND #11

Sample Box 18 Filter 11-3 QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	97	100	(3)
2	106	100	6
3	6	0	6
SILICA	711	694	17
		TOTAL	26

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

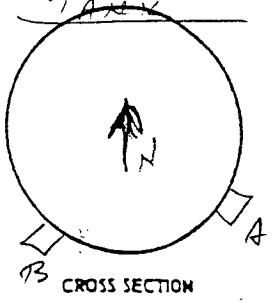
NOTES: RINSE SOL'N

IH: 100 ml

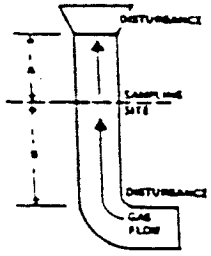
BH: 100 ml + 209 ml = 309 ml

Environm l
Technology &
Engineering Corp.

PARTICULATE F..LD DATA



CROSS SECTION



PLANT ABQC
DATE 1/11/06
LOCATION Milwaukee, WI
OPERATOR MJH
STACK NO. Cond #12
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

AMBIENT TEMPERATURE 68
BAROMETRIC PRESSURE 29.20
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

METER ΔH .722 } 11/29/05
C FACTOR Cp=.99 } γ=1.006
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2
O2 A
CO
N2 R

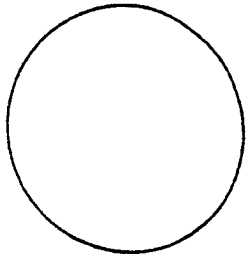
LEAK CHECK
Pre 4.01@20"
Pitot OK@3"
Post 4.01@20"
Pitot OK@3"

5 min/pt QUARTZ FILTER

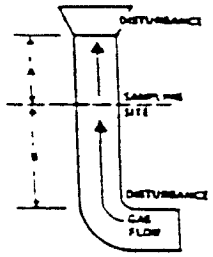
TRAVERSE POINT NUMBER	SAMPLING TIME (Θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER 12.3 (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A 1	9:30		70	0.38	.87		558.00		58	230	45	5	
2	35		70	0.44	1.01		62.2		52				
3	40	-1.00	70	0.46	1.06		66.5		56		45	6½	
4	45		70	0.46	1.06		71.0		57				
5	50		70	0.52	1.20		71.5		58	245	45	7	
6	55		71	0.58	1.33		80.3		60				
7	10:00		71	0.60	1.38		85.2		65		45	7½	
8	05		70	0.62	1.43		90.3		69				
9	10		70	0.62	1.43		95.4		73	240	45	8	
10	15		70	0.60	1.38		600.3		77				
11	20		70	0.60	1.38		5.2		79		45	7½	
12	25		70	0.58	1.33		10.1		84				
B 1	30/31		70	.42	.97		15.0		88	245	45	5	
2	36		70	.48	1.10		19.0		90				
3	41		70	.48	1.10		23.5		92		50	6	
4	46		70	.50	1.15		27.9		93				
5	51	-1.02	69	.50	1.15		32.4		95	250	50	6½	
6	56		69	.52	1.20		37.0		97				
7	1101		69	.64	1.47		41.6		99		50	7½	
8	06		69	.68	1.56		46.6		101				
9	11		69	.68	1.56		51.7		102	245	50	8	
10	16		69	.65	1.50		56.9		103				
11	21		68	.63	1.45		62.0		106		50	7½	
12	26		68	.60	1.38		66.9		107				
	1131						71.80			240	50		
							113.80						

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ABQC
DATE 1/11/06
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Cond #12
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 65F
BAROMETRIC PRESSURE 29.20
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.006
METER ΔH .722
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO
N2 R

LEAK CHECK
Pre <.01@20"
Pitot OKC3"
Post <.01@20"
Pitot OKC3"

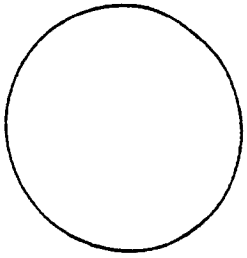
5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft^3	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B 1	11:55		70	0.40	.92		674.00		98	240	40	3½	
2	12:00		69	0.51	1.17		78.2		99				
3	05		69	0.51	1.17		82.8		100		40	4	
4	10	-1.02	69	0.50	1.15		87.4		101				
5	15		70	0.52	1.20		91.9		102	250	45	4½	
6	20		70	0.54	1.24		96.5		102				
7	25		70	0.65	1.50		701.2		103		45	5½	
8	30		71	0.70	1.61		706.4		104				
9	35		71	0.68	1.56		711.7		106	245	45	5½	
10	40		70	0.68	1.56		17.0		107				
11	45		70	0.66	1.52		22.3		109		45	5	
12	50		69	0.62	1.43		27.4		110				
A 1	55/56		69	.38	.87		32.4		111	240	45	2½	
2	1301		70	.40	.92		36.2		111				
3	06		70	.40	.92		40.2		111		50	3	
4	11	-1.08	70	.42	.97		44.3		111				
5	16		69	.46	1.06		48.5		112	245	50	3½	
6	21		69	.52	1.20		52.8		112				
7	26		69	.70	1.61		57.3		112		50	5½	
8	31		69	.72	1.66		62.5		113				
9	36		70	.64	1.47		67.9		113	245	50	5	
10	41		70	.62	1.43		72.9		114				
11	46		69	.60	1.38		77.8		114		50	4½	
12	51		69	.60	1.38		82.6		114				
	1356						787.49			240	50		

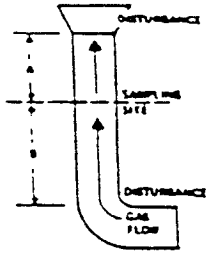
113.49

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ABQC
DATE 11/11/06
LOCATION MILWAUKIE
OPERATOR MJH
STACK NO. COND #12
RUN NO. 3
SAMPLE BOX NO. 18
METER BOX NO. 2

AMBIENT TEMPERATURE 65 F
BAROMETRIC PRESSURE 29.20
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

Y = 1.006
METER ΔH .722 } 11/29/05
C FACTOR Cp = .99 }
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 /
CO
N2 R

LEAK CHECK
Pre <.01 @ 20"
Pitot OK @ 3"
Post <.01 @ 20"
Pitot OK @ 3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (A), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	14:20		68	.36	.83		789.00		103	240	45	3	
2	25		69	.38	.87		92.8		102				
3	30		69	.40	.92		96.7		102		45	3 1/2	
4	35	-1.00	69	.40	.92		800.7		102				
5	40		68	.42	.97		4.7		103	255	45	3 1/2	
6	45		68	.48	1.10		8.8		104				
7	50		69	.61	1.40		13.3		104		45	5 1/2	
8	55		70	.65	1.50		18.3		105				
9	1500		70	.68	1.56		23.5		107	245	45	6	
10	5		70	.66	1.52		28.7		108				
11	10		70	.66	1.52		33.8		109		50	5 1/2	
12	15		71	.62	1.43		38.9		110				
B1	20/21		70	.48	1.10		43.8		112	240	50	4	
2	26		71	.50	1.15		48.2		111				
3	31		71	.50	1.15		52.6		112		50	4 1/2	
4	36		71	.50	1.15		57.1		112				
5	41	-1.04	71	.48	1.10		61.6		113	250	50	4	
6	46		70	.52	1.20		66.0		113				
7	51		70	.68	1.56		70.6		113		50	5 1/2	
8	56		70	.72	1.66		75.8		114				
9	1601		71	.70	1.61		81.1		116	245	55	6	
10	06		71	.68	1.56		86.4		118				
11	11		71	66	1.52		91.6		118		55	5 1/2	
12	16		71	61	1.40		96.7		119				
	1621						901.6			240	55		

112.6

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME ABQC - SCL PROJECT DATE OF TEST 1/1/06

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 1 STACK Combo #12

Sample Box 1A Filter QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	82	100	(18)
2	116	100	16
3	6	0	6
Silica	684	663	21
		TOTAL	25

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 204 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME ABQC - SCLABS DATE OF TEST 1/11/96

JOB NO. _____ TEST ENGINEER MTH

RUN NO. 2 STACK Comb #12

Sample Box 2 Filter QUARTZ 12.2 Wash Bottle 0.1 N HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	97	100	(3)
2	114	100	14
3	6	0	6
Silica	699	686	13
		TOTAL	30

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOL'N

FH: 100 ml

BH: 100 ml + 217 ml = 317 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME ABQC - SCL DATE OF TEST 1/11/06

JOB NO. _____ TEST ENGINEER MTH

RUN NO. 3 STACK Cond #12 12-3

Sample Box 18 Filter QUARTZ Wash Bottle 0.1 HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	95	100	(5)
2	110	100	10
3	4	0	4
SIL GEL	698	684	14
		TOTAL	23

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

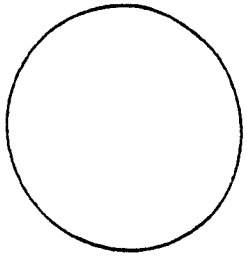
NOTES: RINSE SOLUTION

FH: 100 ml

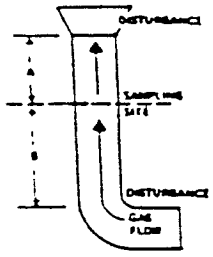
BH: 100 ml + 209 ml = 309 ml

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ASQC
DATE 2/2/06
LOCATION MILWAUKEE
OPERATOR MJH
STACK NO. COND # 13
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.10
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

METER ΔH .730 γ = 1.009 1/31/06
C FACTOR C_p = .99
PROCESS WEIGHT RATE EDUCTION + PADS + SURE TOUCH REDUCER

ORSAT RESULTS
CO2 A
O2 A
CO 1
N2 R

LEAK CHECK
Pre <.01@20"
Pitot OK@3"
Post <.01@20"
Pitot OK@3"

5 min/PT

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{P_s}$) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A 1	8:46		71	.37	.85		2268.00	45	45	255	45	3½	
2	51		71	.41	.94		72.2	48	48				
3	56		72	.44	1.01		76.5	49	49	250	45	4	
4	9:01		72	.44	1.01		81.1	50	50				
5	06		72	.42	.97		85.6	54	54	245	45	4	
6	11	-1.22	71	.47	1.08		90.0	58	58				
7	16		71	.56	1.29		94.5	61	61	240	45	4½	
8	21		71	.56	1.29		99.5	67	67				
9	26		71	.54	1.24		304.4	72	72	245	45	4	
10	31		72	.50	1.15		9.2	75	75				
11	36		72	.49	1.13		13.9	78	78	250	45	4	
12	41		72	.43	.99		18.4	81	81				
B 1	46/47		70	.34	.78		22.7	85	85	250	45	3	
2	52		71	.37	.85		26.4	87	87				
3	57		70	.40	.92		30.3	89	89	245	45	3½	
4	1002		71	.42	.97		34.3	91	91				
5	07	-1.20	70	.45	1.04		38.5	93	93	250	45	3½	
6	12		69	.54	1.24		42.9	94	94				
7	17		69	.56	1.29		47.6	96	96	245	50	4½	
8	22		70	.52	1.20		52.5	98	98				
9	27		69	.52	1.20		57.1	100	100	245	50	4	
10	32		69	.48	1.10		61.7	101	101				
11	37		70	.45	1.04		66.2	102	102	240	50	3½	
12	42		70	.40	.92		70.5	103	103				
	1047						2374.57						

106.57

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ABQC DATE OF TEST 2/2/06

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 1 STACK COND #13

Sample Box 1A Filter QUARTZ "13-1" Wash Bottle 0.1 HNO_3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	92	100	(8)
2	110	100	10
3	6	0	6
SILGEL	702	685	17
		TOTAL	25

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

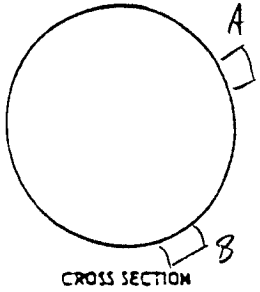
NOTES: RINSE SOLN

FH: 100 ml

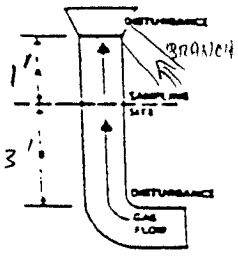
BH: 100 ml + 208 ml = 308 ml

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ABQC
DATE 11/7/05
LOCATION MILWAUKIE
OPERATOR MTH
STACK NO. COND #14
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.40
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH .725 } 9/25
C FACTOR Qp = .99

PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO
N2 R

LEAK CHECK
Pre < .01 @ 20"
Pitot OK @ 3"
Post < .01 @ 20"
Pitot OK @ 3"

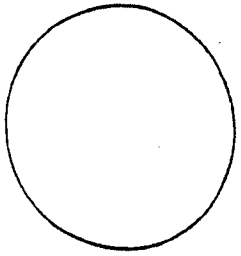
5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (A), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A 1	09:07		73	.38	2.13		7974.00	63	63	260	45	6	
2	12		72	.41	2.30		80.3	58	58				
3	17		72	.46	2.58		87.0	59	59	255	45	8	
4	22	-1.10	72	.46	2.58		93.9	62	62				
5	27		73	.46	2.58		8000.8	66	66	255	45	8	
6	32		73	.48	2.69		7.8	72	72				
7	37		73	.50	2.80		14.7	76	76	245	45	8 1/2	
8	42		73	.47	2.63		21.8	78	78				
9	47		74	.45	2.52		28.8	82	82	240	45	7	
10	52		74	.42	2.35		35.5	87	87				
11	57		73	.39	2.18		41.9	88	88	250	45	6	
12	10:02		72	.37	2.07		48.2	91	91				
B 1	07/08		71	.38	2.13		54.4	96	96	250	45	6	
2	13		71	.42	2.35		60.4	97	97				
3	18		72	.44	2.46		66.6	99	99	260	45	6 1/2	
4	23	-1.14	72	.44	2.46		73.1	101	101				
5	28		73	.47	2.63		79.7	102	102	260	50	7	
6	33		73	.50	2.80		86.3	104	104				
7	38		72	.52	2.91		93.2	106	106	255	50	7	
8	43		72	.50	2.80		100.3	108	108				
9	48		73	.48	2.69		7.3	109	109	250	50	6 1/2	
10	53		73	.46	2.58		13.0	111	111				
11	58		72	.44	2.46		20.4	112	112	250	50	6	
12	1103		72	.39	2.18		26.9	113	113				
	1108						8133.07						

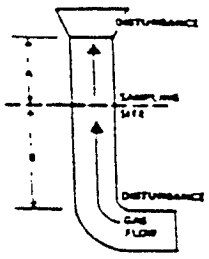
159.07

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ABQC
DATE 11/7/05
LOCATION MILWAUKEE
OPERATOR MJH
STACK NO. COND #14
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.40
ASSUMED MOISTURE, % 20%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH .725 9/25/05
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2
CO 1
N2 12

LEAK CHECK
Pre <.01 @ 20"
Pitot OK @ 3"
Post <.01 @ 20"
Pitot OK @ 3"

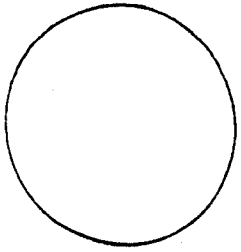
5 min/PT

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{P_s}$) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	11:29		69	.42	2.35		8134.00	107	107	255	45	3½	
2	34		69	.44	2.46		40.7	106	106				
3	39		69	.46	2.58		47.1	103	103	265	45	4	
4	44	-1.12	69	.46	2.58		53.8	106	106				
5	49		69	.48	2.69		60.6	108	108	260	45	4	
6	54		70	.50	2.80		67.4	109	109				
7	59		70	.53	2.97		74.4	109	109	260	45	4½	
8	1204		71	.51	2.86		81.6	111	111				
9	09		71	.47	2.63		88.6	111	111	255	45	4	
10	14		70	.44	2.46		95.3	112	112				
11	19		70	.42	2.35		201.8	113	113	260	45	3½	
12	24		69	.41	2.30		8.1	114	114				
A1	29/30		71	.32	1.79		14.4	116	116	265	45	3	
2	35		71	.37	2.07		20.0	117	117				
3	40		70	.41	2.30		26.0	118	118	270	50	3½	
4	45		70	.41	2.30		32.3	118	118				
5	50	-1.12	70	.43	2.41		38.5	118	118	265	50	4	
6	55		71	.45	2.52		44.9	119	119				
7	1300		71	.52	2.91		51.5	120	120	265	50	4½	
8	5		70	.49	2.74		58.6	120	120				
9	10		70	.47	2.63		65.4	120	120	260	50	4	
10	15		70	.44	2.46		72.1	120	120				
11	20		71	.44	2.46		78.5	121	121	255	55	3½	
12	25		71	.43	2.41		85.0	121	121				
	1330						8291.41				55		

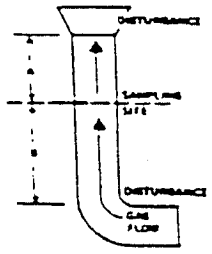
157.41

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ABQC
DATE 11/7/05
LOCATION MILWAUKEE
OPERATOR MJL
STACK NO. Cond #14
RUN NO. 3A * No PARTS PROBLEM
SAMPLE BOX NO. 18
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH .735 9/25
C FACTOR Cp = .99
PROCESS WEIGHT RATE * No PARTS

ORSAT RESULTS
CO2 A
O2 A
CO 1
N2 12

LEAK CHECK
Pre <.01 @ 20"
Pitot OK @ 3"
Post <.01 @ 20"
Pitot OK @ 3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	1348		71	.35	1.96		8292.00	115	115	235 F	45	3	
2	53		72	.41	2.30		98.2	112	112				
3	58		72	.45	2.52		304.4	112	112	260	45	4	
4	1403		71	.45	2.52		11.1	112	112				
5	08	-1.10	71	.46	2.58		17.7	112	112	265	45	4	
6	13		72	.49	2.63		24.4	112	112				
7	18		73	.52	2.91		31.2	112	112	260	45	5	
8	23		73	.49	2.74		38.3	114	114				
9	28		72	.47	2.63		45.1	116	116	255	45	4½	
10	33		72	.45	2.52		51.8	118	118				
11	38		72	.45	2.52		58.4	118	118	250	45	4	
12	43		72	.42	2.35		65.0	119	119				
B1	48/49		73	.41	2.30		71.3	119	119	250	50	4	
2	54		73	.44	2.46		77.7	119	119				
3	59		73	.44	2.46		84.2	120	120	255	50	4	
4	1504		72	.45	2.52		90.6	120	120				
5	09	-1.10	72	.47	2.63		97.2	121	121	255	50	4½	
6	14		72	.49	2.74		403.9	121	121				
7	19		72	.52	2.91		10.8	121	121	260	50	4½	
8	24		73	.50	2.80		17.7	122	122				
9	29		73	.48	2.69		24.6	122	122	255	50	4½	
10	34		73	.45	2.52		31.4	122	122				
11	39		73	.40	2.24		37.9	123	123	250	50	4	
12	44		72	.40	2.24		44.2	123	123				
	1549						3450.34						

158.34

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ABQC DATE OF TEST 11/7/05

JOB NO. _____ TEST ENGINEER HTH

RUN NO. 1 STACK Cond 14

Sample Box 1A Filter QUARTZ 14-1 Wash Bottle 0.1 HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	95	100	(5)
2	117	100	17
3	7	0	7
Silica	674	659	15
		TOTAL	34

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 219 ml = 319 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ABQC DATE OF TEST 11/7/05

JOB NO. _____ TEST ENGINEER MTH

RUN NO. 2 STACK Comb #14

Sample Box 2 Filter QUARTZ (14.2) Wash Bottle 0.1 N HNO3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	102	100	2
2	114	100	14
3	5	0	5
Sil Gel	689	667	22
		TOTAL	43

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 221 ml = 321 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ABQC DATE OF TEST 11/7/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 3A STACK Cond 14

Sample Box 1B Filter QUARTZ (14-3A) Wash Bottle 0.1 HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	99	100	(1)
2	113	100	13
3	5	0	5
Sil Gel	692	674	16
		TOTAL	33

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

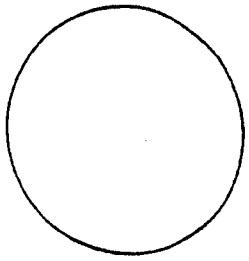
NOTES: RINSE SOLN

FH: 100 ml

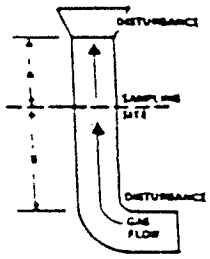
BH: 100 ml + 217 ml = 317 ml

Environmet
Technology &
Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ABQC
DATE 2/2/06
LOCATION MILWAUKEE
OPERATOR MJH
STACK NO. Cond #1 & 2
RUN NO. 4 (1-3 from 1/05)
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.10
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.009
METER ΔH .730 } 1/31/06
C FACTOR Cp = .99
PROCESS WEIGHT RATE PADS + AIR ALITATION + SURFACTANT

ORSAT RESULTS
CO2 A
O2 A
CO /
N2 R

LEAK CHECK
Pre < .01 @ 20"
Pitot OKC 3"
Post < .01 @ 20"
Pitot OKC 3"

5 min /pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	11:21		71	.35	.81		2376.00	93	93	245	45	<2	
2	26		70	.39	.90		79.9	92	92				
3	31		70	.41	.94		84.1	92	92	245	45	<2	
4	36		70	.41	.94		88.4	93	93				
5	41	-1.22	70	.50	1.15		92.6	94	94	250	45	2	
6	46		70	.54	1.24		97.1	97	97				
7	51		70	.52	1.20		401.9	98	98	250	45	2	
8	56		70	.47	1.08		6.5	99	99				
9	1201		70	.47	1.08		11.0	100	100	250	45	2	
10	06		71	.45	1.04		15.4	101	101				
11	11		71	.45	1.04		19.7	102	102	255	45	<2	
12	16		70	.40	.92		24.0	102	102				
A1	21/22		70	.44	1.01		28.1	103	103	250	45	<2	
2	27		70	.44	1.01		32.4	105	105				
3	32		70	.44	1.01		36.7	107	107	245	45	<2	
4	37	-1.20	69	.44	1.01		41.1	108	108				
5	42		69	.44	1.01		45.4	109	109	250	50	<2	
6	47		69	.48	1.10		49.8	110	110				
7	52		69	.58	1.33		54.3	110	110	250	50	2	
8	57		68	.55	1.27		59.2	110	110				
9	1302		68	.52	1.20		63.9	110	110	245	50	<2	
10	7		69	.50	1.15		68.5	111	111				
11	12		69	.48	1.10		73.0	111	111	245	50	<2	
12	17		68	.45	1.04		77.4	111	111				
	1322						2481.72						

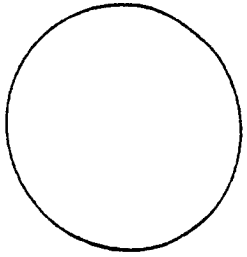
105.72

Appendix D - 2

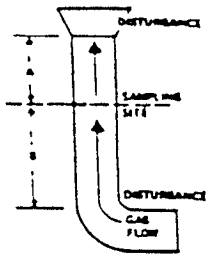
Stack Testing Field Data Sheets and Calibration Sheets

Environmet
Technology &
Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ABQC
DATE 2/2/06
LOCATION MILWAUKEE
OPERATOR MTH
STACK NO. Cond 1/4
RUN NO. 5
SAMPLE BOX NO. 1B
METER BOX NO. 2

AMBIENT TEMPERATURE 68F
BAROMETRIC PRESSURE 29.10
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250 F
HEATER BOX SETTING 250

γ = 1.009
METER ΔH .730 1/31/06
C FACTOR Cp = .99

PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO
N2 E

LEAK CHECK
Pre < .01@20"
Pitot OKC3"
Post < .01@20"
Pitot OKC3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	1342		69	.43	.99		2483.00	104	104	240	45F	2	
2	47		69	.45	1.04		87.4	102	102				
3	52		68	.45	1.04		91.8	102	102	250	45	2	
4	57		68	.45	1.04		96.2	103	103				
5	1402	-1.20	68	.43	.99		500.5	103	103	255	45	2	
6	07		68	.48	1.10		4.8	104	104				
7	12		68	.56	1.29		9.3	105	105	260	45	2½	
8	17		68	.56	1.29		14.1	106	106				
9	22		69	.50	1.15		19.0	108	108	255	45	2	
10	27		69	.48	1.10		23.5	109	109				
11	32		68	.45	1.04		27.9	109	109	250	45	2	
12	37		68	.42	.97		32.2	110	110				
B 1	42/43		69	.35	.81		36.5	110	110	250	45	<2	
2	48		69	.38	.87		40.3	110	110				
3	53		70	.40	.92		44.4	111	111	245	50	2	
4	58		70	.42	.97		48.5	111	111				
5	1503	-1.18	70	.48	1.10		52.7	111	111	245	50	2	
6	08		70	.52	1.20		57.1	112	112				
7	13		70	.56	1.29		61.8	112	112	250	50	2½	
8	18		70	.54	1.24		66.6	112	112				
9	23		71	.50	1.15		71.3	112	112	250	50	2	
10	28		71	.45	1.04		75.8	112	112				
11	33		70	.45	1.04		80.1	113	113	245	55	<2	
12	38		71	.40	.92		84.4	113	113				
	1543						~~2588.45~~ 105.45				55		

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - AEOC DATE OF TEST 2/2/06

JOB NO. _____ TEST ENGINEER MTR

RUN NO. "4" STACK CORD 14

Sample Box 2 Filter QUARTZ "14-4" Wash Bottle 0.1 HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	98	100	(2)
2	108	100	8
3	4	0	4
SILICA	206	685	21
		TOTAL	31

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 210 ml = 310 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ABQC DATE OF TEST 2/2/06

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 5 STACK Cond #4

Sample Box 18 Filter QUARTZ "14-5" Wash Bottle 0.1 HNO3

Beaker No. _____

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	98	100	(2)
2	110	100	10
3	3	0	3
Silica	716	702	14
		TOTAL	25

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

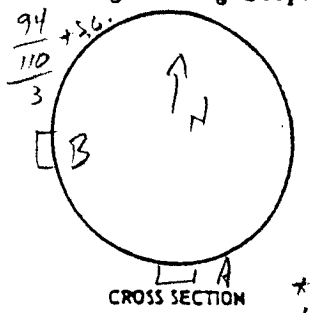
NOTES: RINSE SOLN

FH: 100 ml

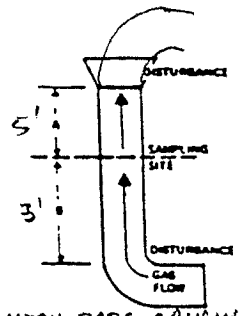
BH: 100 ml + 211 ml = 311 ml

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



* MESH PADS CAUSING LOWER AIR FLOW UNTIL "HIGH" FAN KICKED ON

PLANT: ARTISTIC
DATE: 9/27/05
LOCATION: MILWAUKEE
OPERATOR: MJH
STACK NO.: CONDITION "B"
RUN NO.: 1
SAMPLE BOX NO.: 1A
METER BOX NO.: 2

AMBIENT TEMPERATURE: 75
BAROMETRIC PRESSURE:
ASSUMED MOISTURE, %: 3%
PROBE LENGTH, in.: 2FT GLASS
NOZZLE DIAMETER, in.: 3/8"
STACK DIAMETER, in.: 12"
PROBE HEATER SETTING: 250 F
HEATER BOX SETTING: 250 F

METER ΔH: 1.003 / .725 } 9/25/05
C FACTOR: Cp=.99

ORSAT RESULTS
CO2 4
O2 1
CO
N2 R

LEAK CHECK
Pre <.01@20"
Pitot oke3"
Post <.01@20"
Pitot oke3"

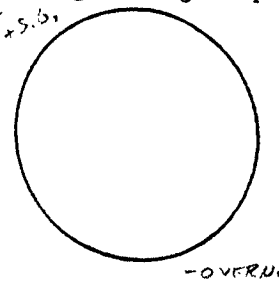
NOTE: NEAR-BY OVERHEAD DOOR WIDE OPEN 1/2 OF TEST (~30 EAST OF TANK)

5 min/PT

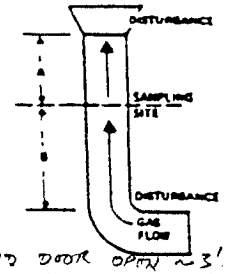
TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) x/1 in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps	PTS
A1	9:40		72	.045	.50		3278.00	73	73	225	45	3		0.5
2	45		72	.050	.55		81.4	68	68					0.8
3	50	-.30	72	.045	.50		84.9	69	69	230	45	2½		1.4
4	55		72	.045	.50		88.2	70	70					2.1
5	1000		72	.040	.44		91.5	72	72	230	45	2		3.0
6	5		73	.040	.44		94.5	75	75					4.3
7	10		73	.040	.44		97.6	78	78	235	45	2		7.7
8	15		72	.045	.50		300.6	79	79					9.0
9	20		74	.050	.55		3.8	83	83	230	45	2		9.9
10	25		74	.055	.61		7.1	87	87					10.6
11	30		75	.065	.72		10.5	89	89	235	45	2½		11.2
12	35		74	.065	.72		14.2	92	92					11.5
B1	40/41 *		73	.15	1.65		17.8	94	94	230	45	4½		
2	46		74	.14	1.54		23.1	97	97					
3	51		75	.14	1.54		28.6	100	100	235	50	4½		
4	56		75	.13	1.43		33.9	103	103					
5	1101		75	.11	1.21		39.1	107	107	240	50	4		
6	6	-1.00	74	.11	1.21		43.8	111	111					
7	11		74	.21	2.31		48.5	111	111	235	50	5½		
8	16		76	.29	3.19		54.7	112	112					
9	21		77	.30	3.30		61.8	113	113	230	50	7½		
10	26		76	.34	3.30	*3.74*	69.2	117	117					
11	31		75	.38	3.30	4.18	76.6	117	117	230	50	7½		
12	36		75	.39	3.30	4.29	83.9	119	119					
	1141						391.85							
							113.85							

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



-OVERNIGHT DOOR OPEN ~3' THROUGHOUT TEST

PLANT Artistic
DATE 9/27/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. CONDITION "B"
RUN NO. 2
SAMPLE BOX NO. 2A
METER BOX NO. 2

AMBIENT TEMPERATURE 75F
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 3%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250F
HEATER BOX SETTING 230F

METER ΔH .725 (Y=1.003) 9/25
C FACTOR Cp=.99

PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2
CO
N2 1R

LEAK CHECKS
Pre <.01@20"
Pitot OKC 3"
Post <.01@20"
Pitot OKC 3"

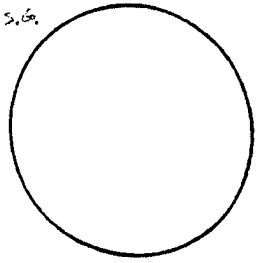
5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER ×2.2 (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft^3	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	1207		75	.14	.31		3393.00	112	112	225	45	<2	
2	12		75	.14	.31		95.5	112	112				
3	17		75	.12	.26		98.0	113	113	235	45	<2	
4	22		75	.11	.24		400.4	110	110				
5	27	-1.05	74	.11	.24		2.8	111	111	240	45	<2	
6	32		74	.12	.26		405.1	111	111				
7	37		75	.37	.81		7.5	111	111	235	45	2	
8	42		76	.38	.84		11.3	110	110				
9	47		77	.41	.90		15.2	110	110	240	50	2	
10	52		77	.41	.90		19.2	111	111				
11	57		76	.40	.88		23.1	113	113	235	50	2	
12	1302		76	.39	.86		27.1	115	115				
A1	07/8		77	.13	.29		31.0	115	115	230	50	<2	
2	13		77	.14	.31		33.3	117	117				
3	18		76	.20	.44		35.7	118	118	230	45	<2	
4	23	-.84	76	.23	.51		38.6	119	119				
5	28		76	.27	.59		41.6	119	119	235	45	<2	
6	33		77	.24	.53		44.9	119	119				
7	38		77	.26	.57		48.0	119	119	240	45	<2	
8	43		76	.27	.59		51.2	119	119				
9	48		77	.29	.64		54.5	119	119	235	50	<2	
10	53		78	.27	.59		57.8	120	120				
11	58		78	.27	.59		61.1	121	121	235	50	<2	
12	1403		77	.26	.57		64.3	121	121				
END	1408						467.57						
							(74.57)						

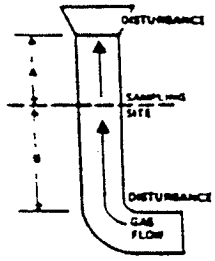
Environmental Technology & Engineering Corp.

112 / 104 1 S.G.

PARTICULATE FIELD DATA



CROSS SECTION



- OVERHEAD DOOR CLOSED FOR 1/2 OF TEST

PLANT Artistic Plating
DATE 9/27/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Condition 18
RUN NO. 3
SAMPLE BOX NO. 18
METER BOX NO. 2

AMBIENT TEMPERATURE 75 F
BAROMETRIC PRESSURE
ASSUMED MOISTURE, % 3%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 1/4"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250 F
HEATER BOX SETTING 250 F

γ = 1.003
METER ΔH .725
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS

CO2	A
O2	
CO	1
N2	R

LEAK CHECK

Pre <.01 @ 20"
Pitot OK @ 3"
Post <.01 @ 20"
Pitot OK @ 3"

5 MIN / PT

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	1430		76	.34	.31		3469.00	114	114	240	45	<2	
2	35		77	.26	.57		71.5	113	113				
3	40		77	.37	.81		74.8	113	113	245	45	<2	
4	45		77	.38	.84		78.6	112	112				
5	50	-1.00	77	.35	.77		82.3	112	112	240	45	<2	
6	55		78	.39	.86		85.9	113	113				
7	1500		77	.33	.73		89.9	113	113	235	45	<2	
8	5		77	.32	.70		93.5	115	115				
9	10		76	.36	.79		97.0	117	117	235	45	<2	
10	15		75	.36	.79		500.7	118	118				
11	20		76	.36	.79		504.4	119	119	230	45	<2	
12	25		76	.27	.59		8.2	118	118				
B1	30/31		77	.12	.26		11.5	120	120	235	45	<2	
2	36		77	.11	.24		13.7	120	120				
3	41		77	.10	.22		16.0	120	120	235	45	<2	
4	46		78	.10	.22		18.1	120	120				
5	51		78	.09	.20		20.2	121	121	240	45	<2	
6	56	-1.02	78	.09	.20		22.2	121	121				
7	1601		78	.31	.68		24.2	121	121	245	50	<2	
8	06		77	.36	.79		27.6	121	121				
9	11		77	.38	.84		31.4	122	122	240	50	<2	
10	16		77	.40	.88		35.2	123	123				
11	21		76	.41	.90		39.2	124	124	235	50	<2	
12	26		76	.40	.88		43.2	124	124				
	1631						46.92						
							77.92						

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME Artistic Plating DATE OF TEST 9/27/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 1 STACK Condition "18"

Sample Box 1A Filter Quartz Wash Bottles (2)

Beaker No. 0.1 HNO_3

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	94	100	(6)
2	110	100	10
3	3	0	3
Silica	685	672	13
		TOTAL	20

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [20] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES:

FH 100 ml RINSE

BH " + 207 ml sol'n = 307 ml TOTAL

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME Artistic Plating DATE OF TEST 9/27/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 2 STACK Condition "18"

Sample Box 2 Filter QUARTS Wash Bottles (2)

Beaker No. 0.1 HNO_3

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	103	100	3
2	107	100	7
3	2	0	2
Silica	687	675	12
		TOTAL	24

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES:

FH 100 ml RINSE

BH " + 212 ml SOLN = 312 ml TOTAL

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME Artistic Plating DATE OF TEST 9/27/05

JOB NO. _____ TEST ENGINEER MSH

RUN NO. 3 STACK Condition "18"

Sample Box 18 Filter QUARTZ Wash Bottles (2)

Beaker No. 0.1 HNO_3

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	112	100	12
2	104	100	4
3	1	0	1
Silica	695	685	10
		TOTAL	27

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES:

FH 100 ml RINSE

BH " + 217 ml SOLN = 317 ml TOTAL

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Engineering Corp.

PARTICULATE FI D DATA

γ = 1.003

PLANT Artistic
DATE 9/28/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Condition 19
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

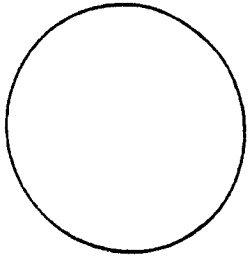
AMBIENT TEMPERATURE 75 F
BAROMETRIC PRESSURE 29.20
ASSUMED MOISTURE, % 3%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250 F
HEATER BOX SETTING 250 F

METER ΔH .725
C FACTOR Cp = .99
PROCESS WEIGHT RATE

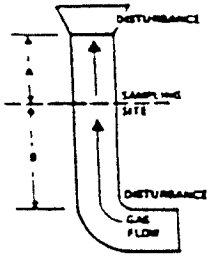
ORSAT RESULTS
CO2 A
O2 A
CO 1
N2 R

LEAK CHECK
Pre 2.01@20"
Pitot ok@3"
Post <.01@20"
Pitot ok@3"

2 1/2 min/pt



CROSS SECTION



TRAVERSE POINT NUMBER	SAMPLING TIME (A), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	12:00		75	0.10	.52		3549.00	75	75	235	45 F	2	
2	2½		75	0.10	.52		50.6	74	74				
3	5		75	0.09	.47		52.3	72	72	240	45 F	<2	
4	7½	-1.1	75	0.09	.42		53.9	73	73				
5	10		74	0.09	.47		55.4	73	73	245	45 F	2	
6	12½		74	0.08	.42		57.0	74	74				
7	15		74	0.12	1.14		58.4	76	76	240	45F	3	
8	17½		74	0.26	2.39		60.7	78	78				
9	20		74	0.30	2.81		64.0	78	78	235	45 F	6½	
10	22½		74	0.34	3.22		67.5	79	79				
11	25		75	0.33	3.12		71.3	81	81	235	45 F	6½	
12	27½		75	0.32	3.02		75.0	83	83				
A1	30/31		76	0.16	1.30		78.6	84	84	240	45 F	3½	
2	33½		76	0.31	1.61		81.0	86	86				
3	36	-1.04	76	0.40	2.08		83 8	89	89	235	45F	4½	
4	38½		75	0.45	2.34		86.8	91	91				
5	41		75	0.45	2.34		90.0	92	92	230	45 F	5½	
6	43½		74	0.42	2.18		93.2	94	94				
7	46		75	0.31	1.61		96.3	96	96	240	50 F	4½	
8	48½		76	0.35	1.82		98.9	98	98				
9	51		75	0.37	1.92		601.9	99	99	235	50 F	4½	
10	53½		74	0.40	2.08		4.8	100	100				
11	56		74	0.42	2.18		7.7	101	101	230	50F	5	
12	58½		75	0.40	2.08		10.9	102	102				
	1301						13.91				50 F		

64.91

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PARTICULATE FI D DATA

$\gamma = 1.003$

PLANT ARTISTIC PLATING — AMBIENT TEMPERATURE 75F — METER ΔH .725

DATE 9/28/05 — BAROMETRIC PRESSURE 29.20 — C FACTOR Cp=.99

LOCATION MILWAUKEE, WI — ASSUMED MOISTURE, % 3% — PROCESS WEIGHT RATE CONDITION 19 BARREL -NO HOOK PADS, NO IN/OUT

OPERATOR MJH — PROBE LENGTH, in. 2FT GLASS — ORSAT RESULTS — LEAK CHECK

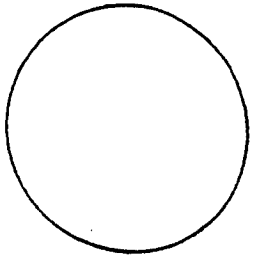
STACK NO. CONDITION 19 — NOZZLE DIAMETER, in. 5/16" — CO2 A — Pre 4.01@20"

RUN NO. 2 — STACK DIAMETER, in. 12 Ø — O2 A — Pitot OK@3"

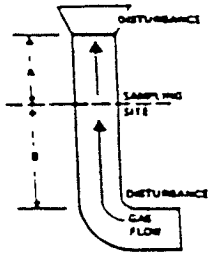
SAMPLE BOX NO. 2 — PROBE HEATER SETTING 250 F — CO R — Post 4.01@20"

METER BOX NO. 2 — HEATER BOX SETTING 250 F — N2 — Pitot OK@3"

2½ min/PT



CROSS SECTION



TRAVERSE POINT NUMBER	SAMPLING TIME (A), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft^3	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A 1	1337:30		76	0.22	1.14		3615.00	100	100	230	45F	<2	
2	40		76	0.24	1.25		17.6	98	98				
3	42½		75	0.28	1.46		19.4	99	99	235	45F	2	
4	45		75	0.32	1.66		22.0	99	99				
5	47½	-1.00	74	0.30	1.56		24.8	99	99	245	45F	2	
6	50		73	0.28	1.46		27.5	99	99				
7	52½		73	0.26	1.35		30.0	100	100	240	45F	2	
8	55		73	0.32	1.66		32.5	101	101				
9	57½		74	0.34	1.77		35.2	102	102	245	45F	2½	
10	1400		73	0.32	1.66		38.1	104	104				
11	2½		73	0.30	1.66		40.7	105	105	235	45	2½	
12	5		73	0.30	1.56		43.2	105	105				
B 1	7½/8½		73	0.10	.52		46.0	108	108	235	45	<2	
2	11		73	0.11	.57		47.5	109	109				
3	13½		74	0.12	.62		49.2	110	110	230	45	<2	
4	16		74	0.10	.52		50.8	110	110				
5	18½		74	0.09	.47		52.3	110	110	240	45	<2	
6	21		73	0.08	.42		53.7	110	110				
7	23½	-.92	73	0.24	1.25		55.1	110	110	245	50	2	
8	26		74	0.48	2.50		57.3	110	110				
9	28½		73	0.54	2.81		60.8	111	111	240	50	3½	
10	31		73	0.58	3.02		64.3	111	111				
11	33½		74	0.60	3.12		67.8	112	112	235	50	4	
12	36		74	0.60	3.12		71.6	113	113				
	14 38½						75.87						
							(60.87)						

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA

γ = 1.003

PLANT ARTISTIC PLATING — AMBIENT TEMPERATURE 70F — METER ΔH .725

DATE 9/28/05 — BAROMETRIC PRESSURE 29.20 — C FACTOR Cp=.99

LOCATION MILWAUKEE — ASSUMED MOISTURE, % 3% — PROCESS WEIGHT RATE

OPERATOR MTH — PROBE LENGTH, in. 2FT GLASS — ORSAT RESULTS — LEAK CHECK

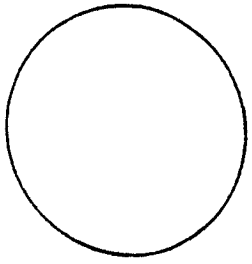
STACK NO. CONDITION 19 — NOZZLE DIAMETER, in. 5/16" — CO2 A — Pre <.01@20"

RUN NO. 3 — STACK DIAMETER, in. 12" — O2 A — Pitot OK@3"

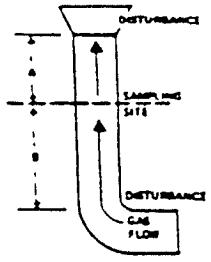
SAMPLE BOX NO. 1B — PROBE HEATER SETTING 250F — CO — Post <.01@20"

METER BOX NO. 2 — HEATER BOX SETTING 250 F — N2 A — Pitot OK@3"

2½ mm/pt



CROSS SECTION



TRAVERSE POINT NUMBER	SAMPLING TIME (A), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	15:30		72	0.13	.68		3677.00	102	102	245	45F	2	
2	32½		72	0.16	.83		78.9	101	101				
3	35		72	0.14	.73		80.9	100	100	250	45F	2	
4	37½		73	0.14	.73		82.7	102	102				
5	110	-1.04	72	0.12	.62		84.5	102	102	245	45F	2	
6	42½		73	0.12	.62		86.2	101	101				
7	45		73	0.31	1.61		87.8	102	102	240	45F	2½	
8	47½		73	0.46	2.39		90.5	101	101				
9	50		72	0.48	2.50		93.8	102	102	235	45F	5½	
10	52½		72	0.54	2.81		97.1	102	102				
11	55		72	0.62	3.22		700.6	103	103	230	45F	7	
12	57½		72	0.60	3.12		4.3	105	105				
A1	1600/01		71	0.14	.73		708.0	107	107	235	45F	2	
2	3½		71	0.12	.62		10.3	108	108				
3	6		71	0.10	.52		11.9	108	108	240	45F	2	
4	8½		72	0.07	.36		13.4	108	108				
5	11	-.90	72	0.10	.52		14.7	109	109	235	45F	2	
6	13½		71	0.12	.62		16.3	109	109				
7	16		71	0.20	1.04		18.0	109	109	230	50 F	3	
8	18½		71	0.26	1.35		20.2	110	110				
9	21		71	0.40	2.08		22.6	110	110	235	50	5	
10	23½		70	0.34	1.77		25.7	111	111				
11	26		70	0.30	1.56		28.6	111	111	230	50	4	
12	28½		69	0.26	1.35		31.3	112	112				
	16:31						33.90						
							(56.90)						

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME Artistic Platina DATE OF TEST 9/28/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 1 STACK Condition 19

Sample Box 1A Filter QUARTZ Wash Bottles 2 (FH+BH)

Beaker No. 0.1 HNO3

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	106	100	6
2	108	100	8
3	3	0	3
Sil Gel	695	687	8
		TOTAL	25

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOL'N

FH = 100 ml

BH = 100 ml + 217 ml = 317 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC DATE OF TEST 9/28/05

JOB NO. _____ TEST ENGINEER NTH

RUN NO. 2 STACK CONDITION 19

Sample Box 2 Filter QUARTZ Wash Bottles FH + BH

Beaker No. 0.1 HNO_3

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	110	100	10
2	108	100	8
3	1	0	1
SILGEL	695	692	3
		TOTAL	22

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH = 100 ml

BH = 100 ml + 219 ml = 319 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC DATE OF TEST 9/28/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 3 STACK CONDITION 19

Sample Box 1B Filter QUARTZ Wash Bottles FH + BH

Beaker No. 0.1 HNO3

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	111	100	11
2	102	100	2
3	2	0	2
Sil Gel	700	695	5
		TOTAL	20

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH = 100 ml

BH = 100 ml + 215 = 315 ml

Environme
Technology &
Engineering Corp.

PARTICULATE FI D DATA

γ = 1.003
9/25/05

PLANT Artistic Platin
DATE 9/29/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Condition 20
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

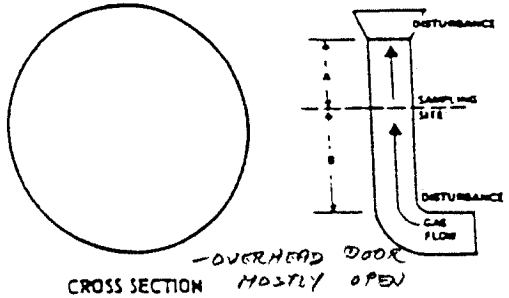
AMBIENT TEMPERATURE 65 F
BAROMETRIC PRESSURE 29.50
ASSUMED MOISTURE, % 3%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250 F
HEATER BOX SETTING 250 F

METER a H. .725
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO 1
N2 R

LEAK CHECK:
Pre < .01 @ 20"
Pitot OK @ 3"
Post < .01 @ 20"
Pitot OK @ 3"

5 min/pt



CROSS SECTION — OVERHEAD DOOR MOSTLY OPEN

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{in}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{out}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	8:58		60	0.10	.52		3736.00	64	64	235	40 F	< 2	
2	9:03		60	0.12	.62		39.4	64	64				
3	08		60	0.11	.57		43.0	62	62	240	40 F	< 2	
4	13		61	0.12	.62		46.5	63	63				
5	18		61	0.14	.73		50.1	65	65	250	45 F	< 2	
6	23	-1.10	60	0.14	.73		53.7	71	71				
7	28		60	.26	1.35		57.4	73	73	245	45 F	2	
8	33		60	.32	1.66		62.4	76	76				
9	38		61	.32	1.66		67.9	79	79	240	45 F	2 1/2	
10	43		61	.36	1.87		73.5	82	82				
11	48		62	.36	1.87		79.4	86	86	235	45 F	2 1/2	
12	53		62	.34	1.77		85.2	89	89				
B1	958/59		63	.12	.62		90.8	91	91	235	45 F	< 2	
2	1004		63	.13	.67		94.1	93	93				
3	09		63	.11	.57		97.6	95	95	235	45 F	< 2	
4	14		62	.11	.57		800.7	98	98				
5	19		63	.10	.52		3.9	99	99	240	45 F	< 2	
6	24	-1.15	63	.10	.52		7.0	99	99				
7	29		63	.30	1.56		10.1	100	100	245	45 F	2	
8	34		62	.38	1.98		15.3	101	101				
9	39		62	.38	1.98		21.2	102	102	240	50 F	2 1/2	
10	44		63	.40	2.08		27.1	105	105				
11	49		63	.42	2.18		33.0	108	108	235	50 F	3	
12	54		62	.40	2.08		39.2	109	109				
	1059						845.24						

109.24

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Technology &
Engineering Corp.

PARTICULATE FI D DATA

γ = 1.003

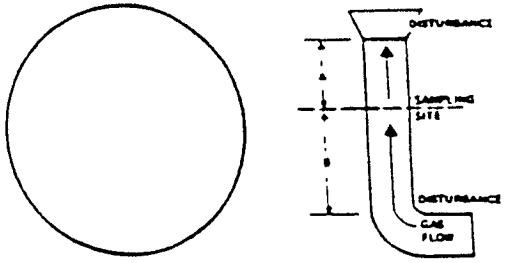
PLANT Artistic
DATE 9/29/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Condition 20
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.50
ASSUMED MOISTURE, % 3%
PROBE LENGTH, in. 2 Ft Glass
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 12" ϕ
PROBE HEATER SETTING 250 F
HEATER BOX SETTING 250 F

METER ΔH .725
C FACTOR C_p = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO
N2 R

LEAK CHECK
Pre <.01 @ 20"
Pitot OKC 3"
Post <.01 @ 20"
Pitot OKC 3"



CROSS SECTION OVERHEAD DOOR OPEN FULLY

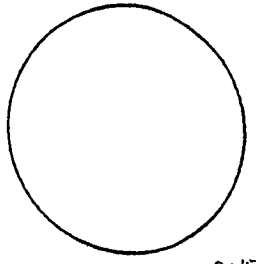
≤ min/PT

TRAVERSE POINT NUMBER	SAMPLING TIME (A), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	11:29		63	.12	.62		3847.00	101	101	230	45F	2	
2	:34		63	.12	.62		50.3	101	101				
3	:39		63	.13	.68		53.7	100	100	240	45	2	
4	:44		62	.11	.57		57.3	99	99				
5	:49	-1.15	62	.11	.57		60.5	99	99	250	45	2	
6	:54		63	.10	.52		63.8	100	100				
7	:59		63	.26	1.35		66.7	101	101	245	45	3½	
8	12:04		63	.32	1.66		71.8	102	102				
9	09		64	.37	1.92		76.9	103	103	240	45	4½	
10	14		64	.40	2.08		82.8	106	106				
11	19		63	.42	2.18		88.8	109	109	235	45	5	
12	24		62	.38	1.98		95.0	110	110				
A1	29/30		63	.17	.88		900.8	110	110	240	45	2½	
2	35		63	.19	.99		4.6	111	111				
3	40		63	.20	1.04		8.7	112	112	245	45	3	
4	45		64	.24	1.25		13.2	112	112				
5	50	-1.20	64	.27	1.40		17.8	112	112	240	50	3½	
6	55		64	.29	1.51		22.8	112	112				
7	1300		64	.24	1.25		27.9	112	112	235	50	3	
8	5		65	.28	1.46		32.8	113	113				
9	10		65	.30	1.56		37.8	114	114	240	50	4	
10	15		65	.30	1.56		43.0	116	116				
11	20		65	.30	1.56		48.2	117	117	245	50	4	
12	25		65	.26	1.35		53.4	118	118				
	1330						58.32						

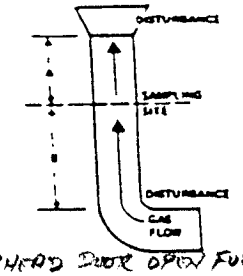
111.32

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



OVERHEAD DOOR OPEN FULLY

PLANT Artistic Platina
DATE 9/29/05
LOCATION Milwaukee
OPERATOR MSH
STACK NO. Condition 20
RUN NO. 3
SAMPLE BOX NO. 1B
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.50
ASSUMED MOISTURE, % 3%
PROBE LENGTH, in. 2 Ft Glass
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 12 ø
PROBE HEATER SETTING 250 F
HEATER BOX SETTING 250 F

γ = 1.003
METER AH .725 } 9/25/05
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2
O2 A
CO
N2 1R

LEAK CHECKS
Pre ≤.01@20"
Pitot OK@3"
Post ≤.01@20"
Pitot OK@3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	1358		65	.16	.83		3960.00	104	104	230	45F	<2	
2	1403		65	.18	.94		63.9	102	102				
3	8		66	.20	1.04		67.9	101	101	245	45F	<2	
4	13		66	.22	1.14		72.2	102	102				
5	18		66	.18	.94		76.8	103	103	250	45	<2	
6	23	-1.14	66	.15	.78		80.8	103	103				
7	28		65	.25	1.30		84.5	103	103	255	45	2	
8	33		66	.28	1.46		89.5	106	106				
9	38		67	.25	1.30		94.6	108	108	245	50	2	
10	43		67	.22	1.14		99.4	109	109				
11	48		67	.22	1.14		4004.0	109	109	240	45	<2	
12	53		67	.20	1.04		8.6	110	110				
B1	1458/59		67	.12	.62		13.0	111	111	235	45	<2	
2	1504		67	.14	.73		16.2	111	111				
3	9		68	.13	.68		19.6	112	112	240	45	<2	
4	14		68	.11	.57		23.2	112	112				
5	19		68	.11	.57		26.3	112	112	245	45	<2	
6	24	-1.18	67	.10	.52		29.5	112	112				
7	29		67	.28	1.46		32.4	113	113	240	50	2	
8	34		68	.36	1.87		37.4	113	113				
9	39		67	.39	2.03		43.1	113	113	245	50	2½	
10	44		67	.40	2.08		49.1	115	115				
11	49		67	.38	1.98		55.1	115	115	240	50	2	
12	54		67	.38	1.98		60.8	118	118				
	1559						4066.63						
							106.63						

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - Artistic

JOB NO. _____

DATE OF TEST 9/29/05

TEST ENGINEER MTH

RUN NO. 1 STACK Cond #20

Sample Box 1A Filter QUARTZ

Wash Bottles FH + BH

Beaker No. 0.1 NNO_3

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	93	100	(7)
2	109	100	9
3	3	0	3
Silica	677	664	13
		TOTAL	18

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH = 100 ml

BH = 100 ml + 205 ml = 305 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC PLATING DATE OF TEST 9/29/05

JOB NO. _____ TEST ENGINEER MJH

RUN NO. 2 STACK CONDITION 20

Sample Box 2 Filter QUARTZ Wash Bottles FH + BH

Beaker No. 0.1 HNO3

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	96	100	(4)
2	106	100	6
3	2	0	2
SILICA	705	689	16
		TOTAL	20

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOL'N

FH = 100 ml

BH = 100 ml + 204 = 304 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC

JOB NO. _____

DATE OF TEST 9/29/05

TEST ENGINEER MJN

RUN NO. 3 STACK CONDITION 20

Sample Box 18 Filter QUARTZ

Wash Bottles FW + SW

Beaker No. 0.1 $NaNO_3$

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	91	100	(9)
2	108	100	8
3	3	0	3
Silica Gel	693	677	16
		TOTAL	18

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES:

Environmental Techno & Engineering Corp.

PARTICULATE F[illegible]LD DATA

PLANT Artistic Plating
DATE 9/30/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Condition 2
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

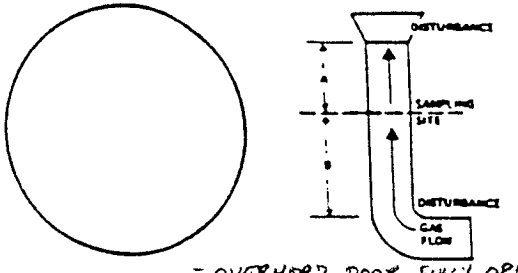
AMBIENT TEMPERATURE 65F
BAROMETRIC PRESSURE 29.35
ASSUMED MOISTURE, % 3%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 12" ϕ
PROBE HEATER SETTING 250 F
HEATER BOX SETTING 250 F

METER a.H. .725 γ=1.003 9/25/05
C FACTOR Cp=.99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 1
CO
N2 R

LEAK CHECKS
Pre <.01@20"
Pitot ok@3"
Post <.01@20"
Pitot ok@3"

2½ min/PT



CROSS SECTION - OVERHEAD DOOR FULLY OPEN
- MILKY WHITE HAZE ON OUTSIDE OF PROBE

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	10:02½		64	.09	.47		4070.00	64	64	250	45	<2	
2	5		64	.11	.57		71.6	63	63				
3	7½		65	.10	.52		73.3	64	64	255	45	<2	
4	10		66	.09	.47		74.9	66	66				
5	12½		66	.09	.47		76.4	68	68	250	45	<2	
6	15	-1.02	66	.09	.47		78.0	69	69				
7	17½		67	.28	1.46		79.5	69	69	245	45	2	
8	20		67	.36	1.87		82.2	69	69				
9	22½		67	.39	2.03		85.1	70	70	240	45	3½	
10	25		68	.40	2.08		88.2	71	71				
11	27½		68	.42	2.18		91.3	73	73	240	45	3½	
12	30		68	.45	2.34		94.4	75	75				
A 1	32½/33		68	.10	.52		97.7	77	77	245	45	<2	
2	35½		67	.16	.83		99.3	79	79				
3	38		67	.24	1.25		4101.3	81	81	240	45	2	
4	40½		68	.38	1.98		3.7	82	82				
5	43	-1.08	68	.46	2.39		6.7	84	84	235	45	3½	
6	45½		68	.44	2.29		9.9	85	85				
7	48		69	.34	1.77		13.1	87	87	235	45	2½	
8	50½		69	.36	1.87		15.9	89	89				
9	53		68	.38	1.98		18.7	90	90	240	45	3	
10	55½		69	.36	1.87		21.7	91	91				
11	58		69	.36	1.87		24.5	92	92	235	50	3	
12	1100½		69	.36	1.87		27.4	93	93				
	1103						130.32						

60.32

Environmental
Technology &
Engineering Corp.

PARTICULATE FIELD DATA

γ = 1.003
METER ΔH .725 } 9/25/05
C FACTOR Cp = .99

PLANT ARTISTIC PLATING
DATE 9/30/05
LOCATION MILWAUKEE
OPERATOR MJH
STACK NO. CONDITION 2
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

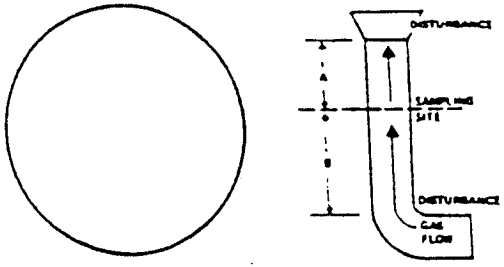
AMBIENT TEMPERATURE
BAROMETRIC PRESSURE 29.35
ASSUMED MOISTURE, % 3%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 12" ϕ
PROBE HEATER SETTING 250 F
HEATER BOX SETTING 250 F

PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2
CO
N2 NR

LEAK CHECKS
Pre < .01 @ 20"
Pitot OK @ 3"
Post < .01 @ 20"
Pitot OK @ 3"

2½ min/PT



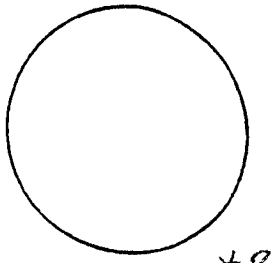
CROSS SECTION

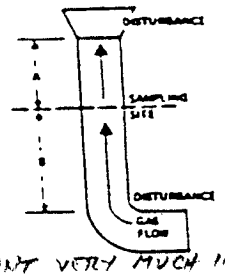
TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	11:35		70	.08	.42		4132.00	93	93	230 F	~~230 F~~	<2	
2	37½		70	.14	.73		33.4	92	92		45 F		
3	40		70	.17	.88		35.2	92	92	235 F		<2	
4	42½		70	.22	1.14		37.2	92	92		45 F		
5	45		70	.32	1.66		39.5	93	93	245 F		2	
6	47½	-1.04	71	.32	1.66		42.3	93	93		45 F		
7	50		71	.36	1.87		45.0	95	95	250 F		2½	
8	52½		71	.39	2.03		47.9	97	97		45 F		
9	55		71	.39	2.03		50.9	98	98	240 F		2½	
10	57½		71	.42	2.18		53.9	98	98		45 F		
11	1200		70	.45	2.34		57.0	99	99	240		2½	
12	2½		70	.45	2.34		60.2	99	99		45 F		
B1	5 6		71	.12	.62		63.4	101	101	245		3	
2	8½		72	.12	.62		65.0	101	101		45 F		
3	11		72	.11	.57		66.7	102	102	240		<2	
4	13½		71	.11	.57		68.3	104	104		45 F		
5	16		71	.10	.52		69.9	105	105	235		<2	
6	18½	-1.10	71	.12	.62		71.4	105	105		50 F		
7	21		71	.26	1.35		73.1	104	104	240		2	
8	23½		72	.40	2.08		75.5	105	105		50 F		
9	26		71	.50	2.60		78.6	107	107	245		3	
10	28½		71	.52	2.70		81.9	108	108		50 F		
11	31		71	.54	2.81		85.2	108	108	240		3½	
12	33½		70	.56	2.91		88.7	109	109		50 F		
	1236						4192.20						

(60.20)

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA





CROSS SECTION

PLANT ARTISTIC PLATING
DATE 9/30/05
LOCATION MILWAUKEE
OPERATOR MJH
STACK NO. CONDITION 21
RUN NO. 3
SAMPLE BOX NO. 1B
METER BOX NO. 2

AMBIENT TEMPERATURE 75F
BAROMETRIC PRESSURE 29.35
ASSUMED MOISTURE, % 3%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 12" Ø
PROBE HEATER SETTING 250 F
HEATER BOX SETTING 250 F

γ = 1.003
METER ΔH .725
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2
O2 A
CO 1
N2 R

LEAK CHECKS
Pre ≤.01 @ 20"
Pitot OK @ 3"
Post ≤.01 @ 20"
Pitot OK @ 3"

2½ min/PT

* PLANT VERY MUCH IN "IDLE MODE" TODAY (LITTLE TRAFFIC)

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)		PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B 1	1305		72	.12		.62		4194.00	104	104	245	45F	2	
2	7½		72	.12		.62		95.6	102	102				
3	10		72	.11		.57		97.3	101	101	245	45	2	
4	12½		72	.11		.57		99.0	101	101				
5	15		73	.10		.52		200.6	101	101	240	45	2	
6	17½	-1.06	73	.11		.57		2.2	101	101				
7	20		73	.32		1.66		3.8	102	102	245	45	4	
8	22½		73	.44		2.29		6.6	102	102				
9	25		74	.52		2.70		9.7	103	103	240	50	6	
10	27½		74	.54		2.81		13.1	103	103				
11	30		74	.54		2.81		16.6	105	105	250	50	6	
12	32½		73	.56		2.91		20.1	106	106				
A 1	35/36		74	.12		.62		23.6	109	109	255	50	2	
2	38½		74	.13		.67		25.3	110	110				
3	41		75	.15		.78		27.0	110	110	255	45	2	
4	43½		75	.15		.78		28.8	110	110				
5	46		75	.12		.62		30.7	111	111	250	45	2	
6	48½		74	.11		.57		32.3	111	111				
7	51	-1.02	74	.26		1.35		33.9	112	112	245	45	3½	
8	53½		74	.34		1.77		36.3	112	112				
9	56		74	.38		1.98		39.1	112	112	240	50	4½	
10	58½		73	.45		2.34		42.0	113	113				
11	1401		73	.45		2.34		45.3	114	114	235	50	5	
12	3½		73	.46		2.39		48.4	117	117				
	1406							51.75				50		

(57.75)

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME Artistic Plating — DATE OF TEST 9/30/05

JOB NO. _____ — TEST ENGINEER MTH

RUN NO. 1 — STACK Condition 2 1

Sample Box 1A — Filter Quartz — Wash Bottles FH + BH

Beaker No. 0.1 HNO_3

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	98	100	-2
2	109	100	9
3	2	0	2
Silica Gel	710	705	5
		TOTAL	14

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOL'N

FH = 100 ml

BH = 100 ml + 209 = 309 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME Artistic Plating
JOB NO. _____

DATE OF TEST 9-30-05
TEST ENGINEER MJH

RUN NO. 2 STACK Condition 21
Sample Box 2 Filter Quartz Wash Bottle FH + BH
Beaker No. 0.1 HNO_3

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	103	100	3
2	102	100	2
3	2	0	2
Sil Gel	694	691	3
		TOTAL	10

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS
PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE
FH = 100 ml
BH = 100 ml + 207 ml = 307 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME Artistic Plating
JOB NO. _____

DATE OF TEST 9-30-05
TEST ENGINEER MJH

RUN NO. 3 STACK Condition 21
Sample Box 1B Filter QUARTZ Wash Bottle BH + FH
Beaker No. .1 N HNO_3

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	98	100	-2
2	104	100	4
3	1	0	1
Silica	718	710	8
		TOTAL	11

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS
PARTICULATE COLLECTED [ ] GRAMS

NOTES:

Environm
Technology &
Engineering Corp.

PARTICULATE FIELD DATA

PLANT Elite Finishing
DATE 10/18/05
LOCATION Milwaukee
OPERATOR MTH/CSH
STACK NO. Cond #22
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 3

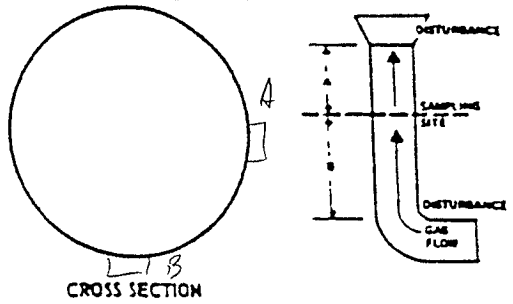
AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.25
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 3/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING —
HEATER BOX SETTING 250

γ = 1.006
METER ΔH 1.007 } 10/11/05
C FACTOR Cp=.99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO A
N2 A

LEAK CHECK
Pre <.01@20"
Pitot OKC3"
Post <.01@20"
Pitot OKC3"

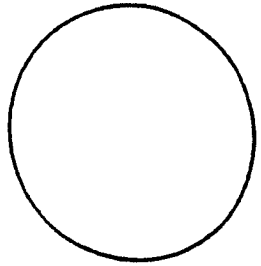
5 min/pt



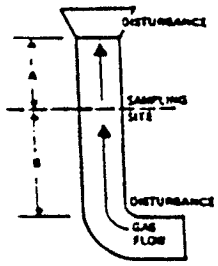
TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m), ft^3	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A 1	8:38		64	1.00	1.00		0019.00	72	72	230	45	8	
2	:43		64	1.05	1.05		23.0	74	74				
3	:48		64	1.05	1.05		27.0	76	76	235	45	8½	
4	:53	-4.0	63	1.15	1.15		31.0	78	78				
5	:58		61	1.20	1.20		35.1	80	80	245	45	9	
6	9:03		62	1.25	1.25		39.2	83	83				
7	:08		64	1.55	1.55		43.3	87	87	250	45	12	
8	:13		63	1.60	1.60		47.9	91	91				
9	:18		65	1.60	1.60		52.5	95	95	245	45	12	
10	:23		65	1.55	1.55		57.1	99	99				
11	:28		66	1.40	1.40		61.6	114	114	245	45	11	
12	:33		66	1.40	1.40		55.9	118	118				
B 1	38/40		66	1.40	1.40		70.2	119	119	255	45	11	
2	45		66	1.40	1.40		74.3	121	121				
3	50	-4.2	65	1.35	1.35		78.6	122	122	245	50	11	
4	55		65	1.45	1.45		82.8	122	122				
5	10:00		64	1.40	1.40		87.0	123	123	245	50	11	
6	05		64	1.35	1.35		91.2	122	122				
7	10		64	1.65	1.65		95.4	124	124	240	55	13	
8	15		63	1.70	1.70		100.0	125	125				
9	20		64	1.85	1.85		104.6	124	124	240	55	14	
10	25		64	1.80	1.80		109.3	125	125				
11	30		63	1.85	1.85		114.0	127	127	250	60	14	
12	35		64	1.60	1.60		119.7	128	128				
	10:40						123.30						
							104.30						

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT Elite
DATE 10/18/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Cond 22
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 3

AMBIENT TEMPERATURE 75F
BAROMETRIC PRESSURE 29.25
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 3/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING —
HEATER BOX SETTING 250

γ = 1.006
METER ΔH 1.007 10/11/05
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO —
N2 R

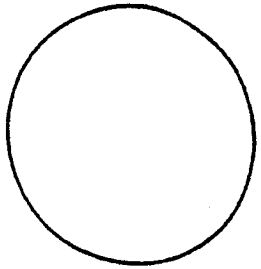
LEAK CHECK
Pre <.01@20"
Pitot OK@3"
Post <.01@20"
Pitot OK@3"

5 min/pt

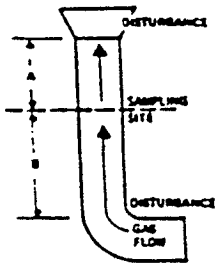
TRAVERSE POINT NUMBER	SAMPLING TIME (Θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	11:35		65	1.50	1.50		124.00	118	118	235	50	5	
2	40	-4.0"	64	1.60	1.60		28.6	117	117				
3	45		64	1.40	1.40		33.2	117	117	245	50	4½	
4	50		65	1.45	1.45		37.5	118	118				
5	55		65	1.45	1.45		41.9	116	116	240	50	5	
6	1200		65	1.40	1.40		46.3	117	117				
7	5		64	1.60	1.60		50.5	119	119	245	50	5	
8	10		66	1.75	1.75		55.1	120	120				
9	15	-4.1	64	1.85	1.85		59.8	121	121	250	55	6	
10	20		66	1.90	1.90		64.7	122	122				
11	25		65	1.90	1.90		69.6	123	123	245	55	6	
12	30		65	1.75	1.75		74.6	123	123				
A1	35/36		65	1.60	1.60		79.3	124	124	250	55	5	
2	41		66	1.70	1.70		83.9	123	123				
3	46	-4.1	65	1.75	1.75		88.7	125	125	245	50	4½	
4	51		66	1.90	1.90		93.4	125	125				
5	56		66	1.80	1.80		98.5	126	126	245	55	5½	
6	1301		66	1.65	1.65		203.3	128	128				
7	6		67	1.35	1.35		7.8	127	127	245	55	4½	
8	11		66	1.30	1.30		12.0	127	127				
9	16	-4.0	66	1.25	1.25		16.1	128	128	240	50	4	
10	21		67	1.25	1.25		20.1	128	128				
11	26		67	1.20	1.20		24.2	129	129	240	50	4	
12	31		66	1.15	1.15		28.1	130	130				
	1336						32.08						
							(108.08)						

Environmental Technology & Engineering Corp.

PARTICULATE F LD DATA



CROSS SECTION



PLANT Elito Finishing
DATE 10/18/05
LOCATION Milwaukee
OPERATOR MTH
STACK NO. Cond #22
RUN NO. 3
SAMPLE BOX NO. 1B
METER BOX NO. 3

AMBIENT TEMPERATURE 75F
BAROMETRIC PRESSURE 29.05
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 3/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING -
HEATER BOX SETTING 250F

METER ΔH 1.007 } 10/11/05
C FACTOR Cp = .99 } γ = 1.006

ORSAT RESULTS
CO2 A
O2 1
CO
N2 R

LEAK CHECK
Pre <.01@20"
Pitot OK@3"
Post <.01@20"
Pitot OK@3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (A), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft^3	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	13:57		67	1.05	1.05		233.00	125	125	240	45	6½	
2	14:02		66	1.10	1.10		36.8	123	123				
3	:07		66	1.10	1.10		40.6	123	123	250	45	7	
4	:12	-4.0	67	1.10	1.10		44.3	124	124				
5	17		66	1.15	1.15		49.1	124	124	240	45	7	
6	22		66	1.20	1.20		51.9	125	125				
7	27		67	1.55	1.55		55.7	125	125	245	45	9	
8	32		67	1.65	1.65		60.2	125	125				
9	37		67	1.70	1.70		64.6	126	126	240	45	9	
10	42	-4.1	66	1.80	1.80		69.2	128	128				
11	47		66	1.65	1.65		74.1	129	129	250	45	10	
12	52		67	1.70	1.70		78.7	130	130				
B1	57/58		66	1.95	1.95		83.4	130	130	245	45	12	
2	1503		67	1.90	1.90		88.4	130	130				
3	8	-4.2	67	1.90	1.90		93.4	131	131	240	45	12	
4	13		66	1.80	1.80		98.4	132	132				
5	18		66	1.75	1.75		303.2	132	132	245	45	11	
6	23		66	1.65	1.65		8.0	133	133				
7	28		67	1.40	1.40		12.6	134	134	255	45	10	
8	33		68	1.25	1.25		16.9	135	135				
9	38	-4.0	68	1.25	1.25		21.0	135	135	250	45	8	
10	43		67	1.20	1.20		25.1	136	136				
11	48		66	1.15	1.15		29 1	137	137	245	50	7½	
12	53		66	1.10	1.10		33.0	137	137				
	1558						36.86						
							103.860						

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ELITE FINISHING

JOB NO. _____

DATE OF TEST 10/18/05

TEST ENGINEER MTH

RUN NO. 1 STACK Comb #22

Sample Box 1A Filter QUARTZ Wash Bottle 0.1 N HNO3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	82	100	(18)
2	116	100	16
3	8	0	8
Silica Gel	727	708	19
		TOTAL	25

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES:

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - Elite Finishing

JOB NO. _____

DATE OF TEST 10/18/05

TEST ENGINEER MJH

RUN NO. 2 STACK Cond. #22

Sample Box 2 Filter Quartz (22-2) Wash Bottle 0.1 HNO3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	92	100	(8)
2	110	100	10
3	5	0	5
Sil Gel	665	649	16
		TOTAL	23

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH 100 ml

BH 100 ml + 207 ml = 307 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ELITE

DATE OF TEST 10/18/05

JOB NO. _____

TEST ENGINEER MJH

RUN NO. 3 STACK COND #22

Sample Box 18 Filter QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. _____

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	93	100	(7)
2	110	100	10
3	6	0	6
SIL GEL	739	727	12
		TOTAL	21

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES:

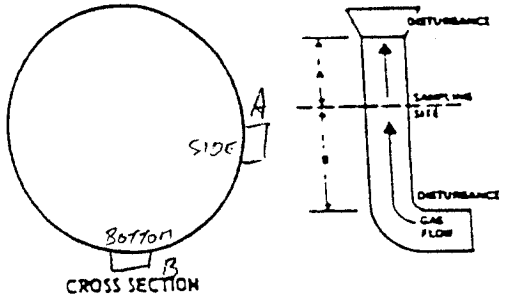
RINSE SOLN

FH: 100 ml

BH: 100 ml + 209 ml = 309 ml

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



PLANT Elite Finishing
DATE 11/15/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. COND #23
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.30
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 3/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH .725 } 9/15/05
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO 1
N2 R

LEAK CHECK
Pre < .01 @ 20"
Pitot OK @ 3"
Post < .01 @ 20"
Pitot OK @ 3"

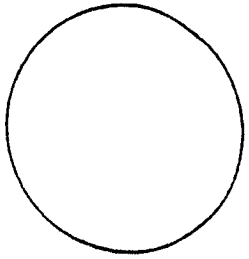
5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{\Delta P_s}$) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	.73 DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A 1	8:53		69	1.05		.77	9081.00	56	56	260	40F	3	
2	:58		69	1.10		.80	85.1	58	58				
3	9:03	-5.0	69	1.20		.88	89.2	60	60	255	45F	3	
4	:08		70	1.30		.95	93.5	62	62				
5	13		71	1.40		1.02	97.9	66	66	255	45	3½	
6	18		71	1.60		1.17	9102.5	69	69				
7	23		70	2.00		1.46	7.3	71	71	255	45	4	
8	28		70	2.15		1.57	12.6	75	75				
9	33	-5.1	71	2.45		1.79	18.1	80	80	255	45	4½	
10	38		70	2.60		1.90	23.8	84	84				
11	43		70	2.50		1.83	29.7	88	88	250	45	5	
12	48		70	2.25		1.64	35.5	90	90				
B1	53/54		70	2.25		1.64	41.0	92	92	250	45	4½	
2	59		71	2.30		1.68	46.5	97	97				
3	1004	-5.1	71	2.25		1.64	52.0	98	98	255	45	4½	
4	9		71	2.15		1.57	57.3	99	99				
5	14		71	2.00		1.46	62.6	102	102	250	50	4	
6	19		71	1.85		1.35	67.8	103	103				
7	24		71	1.60		1.17	72.6	103	103	260	50	3½	
8	29		71	1.50		1.10	77.3	106	106				
9	34	-5.2	71	1.45		1.06	81.9	108	108	255	50	3½	
10	39		71	1.45		1.06	86.3	110	110				
11	44		72	1.40		1.02	90.8	111	111	260	50	3	
12	49		72	1.35		.99	95.1	111	111				
	1054						9199.44						

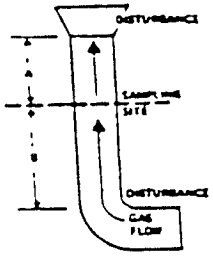
(118.44)

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT Elite Finishing
DATE 11/15/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Comb #23
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.30
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 3/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH = .725 9/25
C FACTOR Cp = .99

PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO
N2 R

LEAK CHECK
Pre <.01 @ 20"
Pitot OK @ 3"
Post <.01 @ 20"
Pitot OK @ 3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	11:14		72	2.15	1.57		9200.00	107	107	250	45	2½	
2	19		72	2.15	1.57		5.5	104	104				
3	24	-4.9	71	2.05	1.50		10.9	105	105	260	45	2½	
4	29		71	1.90	1.39		16.2	107	107				
5	34		72	1.85	1.35		21.3	108	108	265	45	2	
6	39		72	1.75	1.28		26.4	109	109				
7	44		72	1.45	1.06		31.4	109	109	270	45	2	
8	49		72	1.45	1.06		35.9	110	110				
9	54	-4.9	72	1.30	.95		40.4	111	111	260	45	2	
10	59		71	1.30	.95		44.7	112	112				
11	1204		72	1.30	.95		49.0	113	113	255	45	2	
12	09		72	1.25	.91		53.3	114	114				
A1	14/15		73	1.15	.84		57.4	117	117	255	45	2	
2	20		73	1.20	.88		61.4	117	117				
3	25	-5.0	72	1.25	.91		65.5	118	118	255	45	2	
4	30		72	1.30	.95		69.6	118	118				
5	35		72	1.35	.99		73.9	118	118	250	50	2	
6	40		72	1.50	1.10		78.3	118	118				
7	45		72	1.75	1.28		82.8	118	118	255	50	2	
8	50		72	1.80	1.31		87.6	119	119				
9	55	-4.7	72	1.85	1.35		92.6	119	119	255	50	2½	
10	1300		72	1.85	1.35		97.5	120	120				
11	5		72	1.75	1.28		302.5	120	120	260	50	2	
12	10		72	1.60	1.17		7.4	120	120				
END	1315						9312.09						
							112.09						

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA

PLANT Elite Finishing
DATE 11/15/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Cond 23
RUN NO. 3
SAMPLE BOX NO. 1B
METER BOX NO. 2

AMBIENT TEMPERATURE 72 F
BAROMETRIC PRESSURE 29.30
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 3/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH = .725
C FACTOR Cp = .99
9/25/05

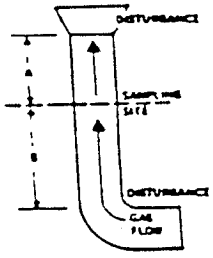
PROCESS WEIGHT RATE NO MOSH PADS

ORSAT RESULTS
CO2 A
O2 A
CO 1
N2 R

LEAK CHECK
Pre <.01@20"
Pitot OK@3"
Post <.01@20"
Pitot OK@3"

5 min/pt

CROSS SECTION



TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	13:35		73	1.05	.77		93.13,00	112	112	250	40F	2	
2	40		73	1.10	.80		16.9	111	111				
3	45		73	1.15	.84		21.0	110	110	260	40	2	
4	50	-4.8	73	1.25	.91		25.1	110	110				
5	55		72	1.40	1.02		29.4	111	111	265	45	2	
6	1400		72	1.50	1.10		33.9	112	112				
7	05		73	1.75	1.28		38.6	112	112	260	45	2½	
8	10		72	1.85	1.35		43.5	113	113				
9	15	-4.9	72	1.85	1.35		48.5	114	114	265	45	2½	
10	20		72	1.90	1.39		53.6	116	116				
11	25		72	1.85	1.35		58.7	118	118	260	45	2½	
12	30		72	1.75	1.28		63.7	118	118				
B1	35/36		72	2.10	1.53		68.7	119	119	260	45	3	
2	41		72	2.15	1.57		74.0	119	119				
3	46	-4.8	73	2.15	1.57		79.4	119	119	255	50	3	
4	51		73	1.90	1.39		84.7	119	119				
5	56		73	1.80	1.31		89.9	120	120	255	50	2½	
6	1501		73	1.75	1.28		94.8	121	121				
7	06		72	1.60	1.17		99.6	121	121	255	50	2½	
8	11		72	1.60	1.17		9404.5	121	121				
9	16	-4.7	72	1.45	1.06		09.3	121	121	260	50	2	
10	21		72	1.30	.95		13.9	121	121				
11	26		73	1.25	.91		18.3	122	122	255	50	2	
12	31		73	1.10	.80		22.5	122	122				
END	1536						9426.42						

113.42

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - Elite

JOB NO. _____

DATE OF TEST 11/15/05

TEST ENGINEER MJH

RUN NO. 1 STACK Cond #23

Sample Box 1A Filter Quartz (22.1) Wash Bottle 0.1 N HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	101	100	1
2	110	100	10
3	3	0	3
Silica	676	660	16
		TOTAL	30

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 214 ml = 314 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - Elite

JOB NO. _____

DATE OF TEST 11/15/05

TEST ENGINEER MJH

RUN NO. 2 STACK Cond #23

Sample Box 2 Filter QUARTZ (23-2) Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	107	100	7
2	110	100	10
3	2	0	2
Sil Gel	673	656	17
		TOTAL	36

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOL'N

FH: 100 ml

BH: 100 ml + 219 ml = 319 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - Elite

JOB NO. _____

DATE OF TEST 11/15/05

TEST ENGINEER KTH

RUN NO. 3 STACK Conv #23

Sample Box 18 Filter Quartz (23-3) Wash Bottle 0.1 N NO3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	107	100	7
2	111	100	11
3	2	0	2
Sic Gel	687	676	11
		TOTAL	31

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

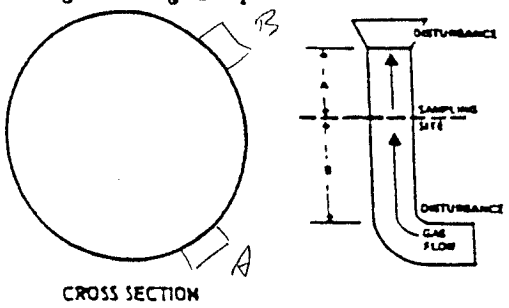
NOTES: Rinse Soln

FH: 100 ml

BH: 100 ml + 220 ml = 320 ml

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION

PLANT ARTISTIC
DATE 11/10/05
LOCATION MILWAUKEE
OPERATOR MJH
STACK NO. COMB # 24
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

AMBIENT TEMPERATURE 75 F
BAROMETRIC PRESSURE 29.45
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 10"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

METER ΔH .725 } 9/25 (γ = 1.003)
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 1
CO
N2 R

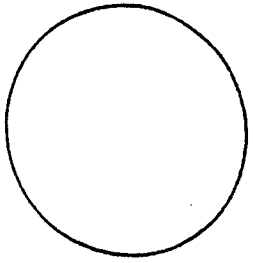
LEAK CHECK
Pre <.01 @ 20"
Pitot OK @ 3"
Post <.01 @ 20"
Pitot OK @ 3"

5 min/pt

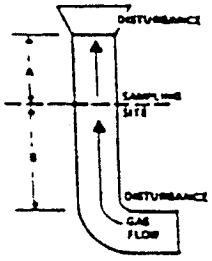
TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft^3	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	GAS SAMPLE TEMPERATURE AT DRY GAS METER OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B 1	8:27		74	.10	.56		8789.00	58	58	245	45	2	
2	:32		74	.10	.56		92.5	59	59				
3	:37		75	.11	.62		96.1	60	60	250	45	2 1/2	
4	:42	-.31	75	.13	.73		799.7	62	62				
5	:47		75	.14	.78		803.6	67	67	240	45	3	
6	:52		75	.15	.84		7.7	71	71				
7	:57		76	.18	1.01		11.7	73	73	255	45	3 1/2	
8	9:02		76	.19	1.06		16.1	78	78				
9	07	-.31	76	.19	1.06		20.6	82	82	255	45	4	
10	12		76	.18	1.01		25.1	86	86				
11	17		76	.14	.78		29.5	89	89	255	45	3	
12	22		76	.12	.67		33.4	91	91				
A 1	27/28		76	.18	1.01		36.9	95	95	255	45	3 1/2	
2	33		76	.20	1.12		41.3	97	97				
3	38		76	.23	1.29		45.8	101	101	255	45	4	
4	43	-.32	75	.23	1.29		50.7	102	102				
5	48		75	.23	1.29		55.6	106	106	260	45	4	
6	53		76	.22	1.23		60.5	108	108				
7	58		77	.17	.95		65.2	111	111	265	50	3	
8	1003		77	.12	.67		69.3	112	112				
9	08	-.31	76	.09	.50		72.7	113	113	270	50	2	
10	13		76	.09	.50		75.8	114	114				
11	18		77	.09	.50		78.8	116	116	255	50	2	
12	23		77	.08	.45		81.8	117	117				
END	1028						8884.79						
							(95.79)						

Environm
Technology &
Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT Artistic
DATE 11/10/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Conv # 24
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 75 F
BAROMETRIC PRESSURE 27.45
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 10"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003 } 9/25
METER ΔH .725
C FACTOR Cp = .99

ORSAT RESULTS
CO2 A
O2 I
CO
N2 R

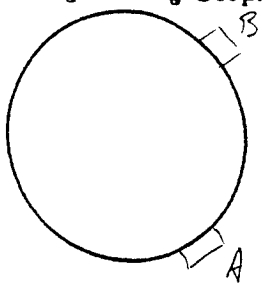
LEAK CHECK
Pre < .01 @ 20"
Pitot ok @ 3"
Post < .01 @ 20"
Pitot ok @ 3"

5 min/pt

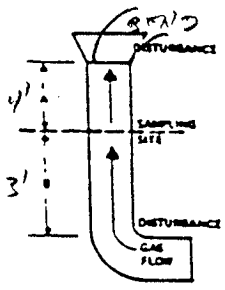
TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	10:45		78	.17	.95		8886.00	114	114	245	45	<2	
2	50		78	.20	1.12		90.2	113	113				
3	55	-.32	78	.22	1.23		94.8	113	113	265	45	2	
4	11 00		78	.22	1.23		99.6	115	115				
5	05		78	.23	1.29		904.4	118	118	270	45	2	
6	10		78	.21	1.18		9.4	119	119				
7	15		77	.17	.95		14.1	119	119	260	45	<2	
8	20		75	.16	.90		18.2	119	119				
9	25	-.31	76	.15	.84		22.2	119	119	260	45	<2	
10	30		78	.14	.78		25.9	119	119				
11	35		78	.12	.67		29.6	119	119	270	45	<2	
12	40		77	.11	.62		33.1	120	120				
B1	45/46		78	.11	.62		36.4	120	120	265	45	<2	
2	51		78	.15	.84		39.7	120	120				
3	56		75	.16	.90		43.5	120	120	270	45	<2	
4	12 01	-.31	73	.13	.73		47.5	120	120				
5	06		72	.14	.78		51.1	120	120	265	50	<2	
6	11		72	.13	.73		54.8	120	120				
7	16		73	.18	1.01		58.4	120	120	255	50	2	
8	21		73	.20	1.12		62.7	120	120				
9	26	-.30	74	.19	1.06		67.3	120	120	260	50	2	
10	31		75	.16	.90		71.7	121	121				
11	36		74	.14	.78		75.7	121	121	245	50	<2	
12	41		74	.13	.73		79.4	121	121				
	12 46						3982.89						
							(96.89)						

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT Artistic Plating
DATE 11/10/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Cond #24
RUN NO. 3
SAMPLE BOX NO. 1B
METER BOX NO. 2

AMBIENT TEMPERATURE 72 F
BAROMETRIC PRESSURE 29.45
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 10"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

Y = 1.003
METER ΔH 0.725 9/25/05
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO 1
N2 R

LEAK CHECK:
Pre < .01 @ 20"
Pitot OK @ 3"
Post < .01 @ 20"
Pitot OK @ 3"

5 min/PT

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	1305		73	.12	.67		8984.00	112	112	235 F	45	<2	
2	10		74	.13	.73		87.6	110	110				
3	15	-.32	73	.13	.73		91.4	110	110	255	45	<2	
4	20		73	.14	.78		95.2	110	110				
5	25		72	.15	.84		99.0	110	110	255	45	2	
6	30		73	.16	.90		9003.0	111	111				
7	35		74	.19	1.06		7.1	111	111	245	45	2	
8	40		74	.21	1.18		11.5	111	111				
9	45	-.30	75	.20	1.12		16.2	112	112	240	45	2	
10	50		74	.16	.90		20.7	113	113				
11	55		73	.13	.73		24.8	114	114	245	45	<2	
12	1400		73	.10	.56		28.5	115	115				
A1	05/06		72	.15	.84		31.7	118	118	260	45	2	
2	11		72	.20	1.12		35.6	117	117				
3	16		73	.21	1.18		40.1	117	117	260	45	2	
4	21	-.34	72	.21	1.18		44.8	118	118				
5	26		72	.22	1.23		49.5	118	118	255	50	2 1/2	
6	31		71	.22	1.23		54.2	119	119				
7	36		71	.17	.95		58.9	119	119	255	50	2	
8	41		72	.15	.84		63.1	119	119				
9	46	-.30	72	.11	.62		67.0	119	119	260	50	<2	
10	51		72	.11	.62		70.4	120	120				
11	56		71	.10	.56		73.8	120	120	255	50	<2	
12	1501		71	.08	.45		77.1	119	119				
END	06						9080.07						
							(96.07)						

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC

JOB NO. _____

DATE OF TEST 11/10/05

TEST ENGINEER MJH

RUN NO. 1 STACK COMM #24

Sample Box 1A Filter QUARTZ

Wash Bottle 0.1 HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	95	100	(5)
2	108	100	8
3	3	0	3
SIL GEL	691	677	14
		TOTAL	20

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLUTION

FH: 100 ml

BH: 100 ml + 206 ml = 306 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC

JOB NO. _____

DATE OF TEST 11/10/05

TEST ENGINEER MJH

RUN NO. 2 STACK COND #24

Sample Box 2 Filter QUARTZ (24-2) Wash Bottle 0.1 HNO3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	95	100	(5)
2	105	100	5
3	2	0	2
SIL GEL	726	711	15
		TOTAL	17

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOL'N

FH: 100 ml

BH: 100 ml + 202 ml = 302 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC

JOB NO. _____

DATE OF TEST 11/10/05

TEST ENGINEER MJH

RUN NO. 3 STACK COND #24

Sample Box 13 Filter QUARTZ (24.3) Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	98	100	(2)
2	106	100	6
3	2	0	2
SILICA	702	691	11
		TOTAL	17

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 206 ml = 306 ml

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA

PLANT ELITE FINISHING
DATE 11/16/05
LOCATION MILWAUKEE
OPERATOR MEM
STACK NO. COND 25
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

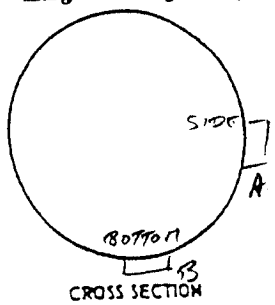
AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.10
ASSUMED MOISTURE, % 27o
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 3/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250 F
HEATER BOX SETTING 250

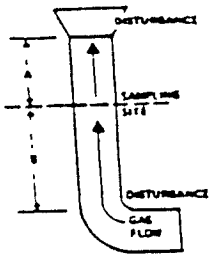
γ = 1.003
METER ΔH = .725 } 9/25
C FACTOR Cp = .99
PROCESS WEIGHT RATE MESH PADS IN

ORSAT RESULTS
CO2 A
O2 A
CO R
N2 R

LEAK CHECK
Pre <.01 @ 20"
Pitot OK @ 3"
Post <.01 @ 20"
Pitot OK @ 3"

5 min/pt



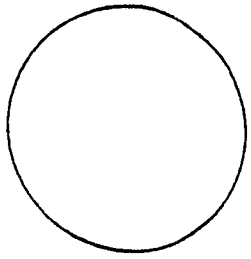


TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B 1	9:00		73	1.45	1.06		9428.00	68	68	270	45	3½	
2	05		73	1.45	1.06		32.5	70	70				
3	10	-4.9	73	1.50	1.10		37.0	71	71	260	45	4	
4	15		73	1.50	1.10		41.7	73	73				
5	20		74	1.45	1.06		46.3	76	76	260	45	3½	
6	25		74	1.45	1.06		50.8	80	80				
7	30		74	1.30	.95		55.3	84	84	255	45	3½	
8	35		74	1.25	.91		59.4	88	88				
9	40	-5.0	74	1.20	.88		63.4	91	91	260	45	3	
10	45		74	1.00	.73		67.4	92	92				
11	50		73	.90	.66		71.0	96	96	260	45	2½	
12	55		73	.85	.62		74.5	99	99				
A 1	1000/01		74	1.35	.99		77.9	101	101	265	45	3½	
2	06		74	1.35	.99		82.1	104	104				
3	11	-4.9	74	1.40	1.02		86.3	108	108	265	50	3½	
4	16		74	1.40	1.02		90.5	110	110				
5	21		73	1.40	1.02		94.8	111	111	260	50	3½	
6	26		73	1.45	1.06		99.1	113	113				
7	31		73	1.45	1.06		503.5	117	117	270	50	3½	
8	36		73	1.50	1.10		7.9	118	118				
9	41	-4.7	73	1.50	1.10		12.3	118	118	265	50	3½	
10	46		72	1.45	1.06		16.7	119	119				
11	51		72	1.40	1.02		21.1	119	119	255	55	3	
12	56		72	1.30	.95		25.2	120	120				
	1101						9529.16						

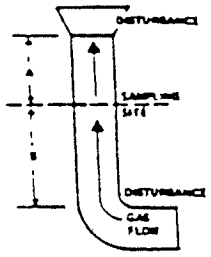
101.16

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT Elite Finishing
DATE 11/16/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Cond 25
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 75 F
BAROMETRIC PRESSURE 29.10
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 3/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH = .725 } 9/25
C FACTOR Cp = .99

PROCESS WEIGHT RATE MESH PADS IN

ORSAT RESULTS
CO2 A
O2 A
CO R
N2

LEAK CHECK
Pre <.01@20"
Pitot 0x@3"
Post <.01@20"
Pitot 0x@3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{in}}$), °F	OUTLET ($T_{m_{out}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	1121		71	1.20	.88		9530.00	112	112	250	45	<2	
2	26		71	1.25	.91		33.9	111	111				
3	31	-5.0	71	1.25	.91		37.9	111	111	265	45	<2	
4	36		72	1.25	.91		41.9	113	113				
5	41		72	1.30	.95		45.9	114	114	270	45	<2	
6	46		72	1.35	.99		50.1	114	114				
7	51		72	1.35	.99		54.4	114	114	270	45	2	
8	56		71	1.40	1.02		58.8	117	117				
9	1201	-4.9	70	1.40	1.02		63.2	118	118	265	45	2	
10	06		70	1.40	1.02		67.8	118	118				
11	11		71	1.35	.99		72.5	119	119	265	45	2	
12	16		71	1.30	.95		76.8	119	119				
B1	21/22		71	1.35	.99		80.9	120	120	270	45	2	
2	27		71	1.35	.99		85.3	120	120				
3	32	-4.8	72	1.40	1.02		89.6	121	121	270	50	2	
4	37		72	1.40	1.02		93.9	121	121				
5	42		72	1.40	1.02		98.3	122	122	270	50	2	
6	47		71	1.40	1.02		602.6	123	123				
7	52		71	1.25	.91		606.9	124	124	265	50	<2	
8	57		72	1.05	.77		11.0	124	124				
9	1302	-4.9	72	.95	.69		14.8	124	124	260	50	<2	
10	07		72	.90	.66		18.3	124	124				
11	12		73	.90	.66		21.8	124	124	250	55	<2	
12	17		74	.85	.62		25.3	124	124				
	1322						9628.65						
							98.65						

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PARTICULATE F LD DATA

Y = 1.003

PLANT Elite Finishing
DATE 11/16/05
LOCATION Milwaukee
OPERATOR M.JH
STACK NO. Cond 25
RUN NO. 3
SAMPLE BOX NO. 1B
METER BOX NO. 2

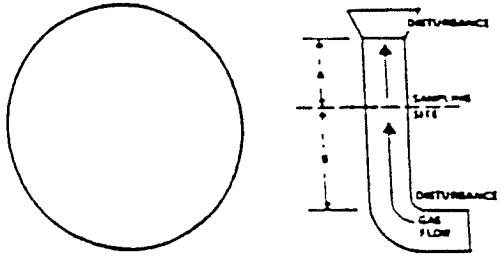
AMBIENT TEMPERATURE 75F
BAROMETRIC PRESSURE 29.10
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2Ft Glass
NOZZLE DIAMETER, in. 3/16"
STACK DIAMETER, in. 12"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

METER ΔH = .725
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 /
CO
N2 R

LEAK CHECK
Pre < .01 @ 20"
Pitot ox @ 3"
Post < .01 @ 20"
Pitot ox @ 3"

5 min/PT



CROSS SECTION

TRAVERSE POINT NUMBER	SAMPLING TIME (A), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	1340		75	1.40	1.02		9630.00	118	118	240	45	2	
2	45		75	1.40	1.02		34.5	118	118				
3	50		74	1.45	1.06		39.0	118	118	260	45	2	
4	55	-4.9	75	1.45	1.06		43.5	119	119				
5	1400		75	1.40	1.02		48.0	119	119	255	45	2	
6	5		75	1.35	.99		52.6	119	119				
7	10		76	1.15	.84		56.9	120	120	260	45	<2	
8	15		75	1.05	.77		61.0	121	121				
9	20		75	.95	.69		64.9	121	121	255	45	<2	
10	25	-4.9	75	.95	.69		68.6	121	121				
11	30		76	.90	.66		72.2	121	121	260	45	<2	
12	35		76	.85	.62		75.7	121	121				
A1	40/41		75	1.30	.95		79.2	122	122	265	50	2	
2	46		75	1.35	.99		83.4	123	123				
3	51	-5.1	76	1.35	.97		87.8	124	124	270	50	2	
4	56		76	1.35	.99		92.2	125	125				
5	1501		76	1.40	1.02		96.6	124	124	265	50	2	
6	06		76	1.40	1.02		701.0	126	126				
7	11		77	1.45	1.06		5.4	127	127	270	50	2	
8	16		77	1.45	1.06		9.9	127	127				
9	21	-4.9	76	1.50	1.10		14.5	126	126	255	50	2	
10	26		76	1.40	1.02		19.2	127	127				
11	31		75	1.40	1.02		23.6	128	128	245	55	2	
12	36		74	1.35	.99		28.2	129	129				
	1541						9732.50						

102.50

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ELITE
JOB NO. _____

DATE OF TEST 11/16/05
TEST ENGINEER MTH

RUN NO. 1 STACK COND 25

Sample Box 1A Filter QUARTZ (25-1) Wash Bottle 0.1 HNO3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	96	100	(4)
2	108	100	8
3	2	0	2
SIL GEL	667	652	15
		TOTAL	21

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 206 ml = 306 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ELITE

JOB NO. _____

DATE OF TEST 11/16/05

TEST ENGINEER MJH

RUN NO. 2 STACK COND 25

Sample Box 2 Filter QUARTZ (25-2) Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	97	100	(3)
2	103	100	3
3	3	0	3
SIL GEL	698	682	16
		TOTAL	19

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOL'N

FH: 100 ml

BH: 100 ml + 203 ml = 303 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ELITE

JOB NO. _____

DATE OF TEST 11/16/05

TEST ENGINEER MJH

RUN NO. 3 STACK CONT #25

Sample Box 1B Filter QUARTZ (25-3) Wash Bottle 0.1 HNO3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	101	100	1
2	108	100	8
3	2	0	2
SIL GEL	675	667	8
		TOTAL	19

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES:

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PARTICULATE F LD DATA

PLANT Artistic
DATE 10/17/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Cond # 27
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

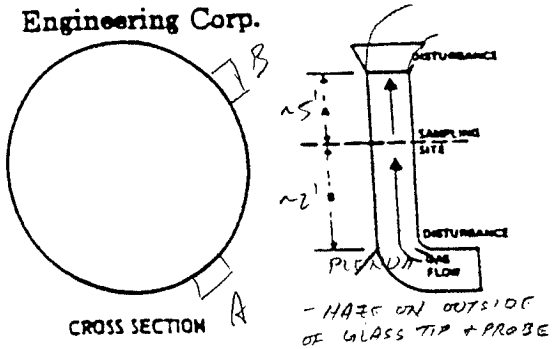
AMBIENT TEMPERATURE 65
BAROMETRIC PRESSURE 29.85
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 24" Glass
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 10"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003 } 9/26/05
METER ΔH .725
C FACTOR Cp = .99

ORSAT RESULTS
CO2 A
O2
CO
N2 R

LEAK CHECKS
Pre < .01 @ 20"
Pitot OKEJ"
Post < .01 @ 20"
Pitot OKEJ"

5 min/pt



- HAZE ON OUTSIDE OF GLASS TIP + PROBE

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) x5.6 in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	9:10		68	0.16	.90		5415.00	62	62	235	45	2½	
2	15		69	0.18	1.01		19.2	63	63				
3	20		69	0.21	1.18		23.6	64	64	240	45	3½	
4	25	-.29	70	021	1.18		28.4	67	67				
5	30		70	0.22	1.23		33.3	69	69	245	45	4	
6	35		71	0.22	1.23		38.2	72	72				
7	40		72	0.19	1.06		43.1	76	76	255	45	3½	
8	45		72	0.18	1.01		47.7	80	80				
9	50		73	0.15	.84		52.2	83	83	260	45	3	
10	55		73	0.13	.73		56.2	87	87				
11	1000		73	0.11	.62		59.8	89	89	255	45	2	
12	5		73	0.09	.50		63.2	91	91				
B1	10/11		73	.07	.39		66.3	93	93	250	45	2½	
2	16		73	.09	.50		69.1	95	95				
3	21		73	.11	.62		72.1	97	97	245	50	2	
4	26	-.32	74	.11	.62		75.6	98	98				
5	31		74	.13	.73		79.0	98	98	255	50	2½	
6	36		74	.15	.84		82.6	101	101				
7	41		74	.19	1.06		86.5	102	102	250	50	3½	
8	46		74	.20	1.12		90.8	102	102				
9	51		73	.21	1.18		95.4	103	103	245	50	3½	
10	56		73	.21	1.18		500.1	105	105				
11	1101		73	.18	1.01		4.8	107	107	245	50	3	
12	6		73	.14	.78		9.1	109	109				
	1111						5512.76						
							97.76						

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Engineering Corp.

PARTICULATE FI .D DATA

PLANT Artistic
DATE 10/17/05
LOCATION Milwaukee
OPERATOR MJH
STACK NO. Cond # 27
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

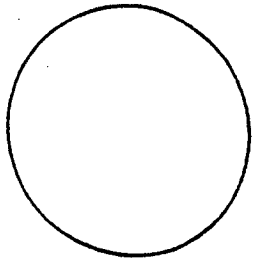
AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.25
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2 FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 10"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

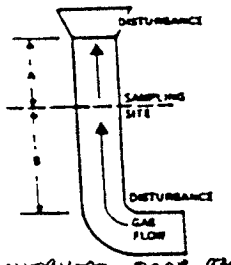
γ = 1.003
METER ΔH .725
C FACTOR Cp = 0.99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO /
N2 R

LEAK CHECKS
Pre < .01 @ 20"
Pitot OK @ 3"
Post < .01 @ 20"
Pitot OK @ 3"

5 min/pt





CROSS SECTION – LG. OVERHEAD DOOR ON EAST WALL OPEN ½ OF TEST (PREVIOUSLY CLOSED)

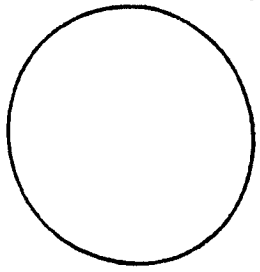
TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	11:46		74	.08	.45		5514.00	98	98	245	45 F	<2	
2	:51		74	.09	.50		17.0	97	97				
3	:56		74	.11	.62		20.2	97	97	255	45 F	<2	
4	12:01		74	.11	.62		23.8	98	98				
5	:06		74	.13	.73		27.3	99	99	265	45 F	<2	
6	:11	-.33	74	.14	.78		31.0	99	99				
7	:16		74	.17	.95		34.9	100	100	255	45 F	~2	
8	:21		74	.19	1.06		39.1	102	102				
9	:26		73	.22	1.23		43.6	103	103	250	45 F	2	
10	:31		73	.21	1.18		48.4	106	106				
11	36		74	.20	1.12		53.1	108	108	245	45 F	2	
12	41		74	.18	1.01		57.7	109	109				
A1	46/47		74	.16	.90		62.0	110	110	240	45 F	<2	
2	52		74	.18	1.01		66.0	111	111				
3	57		75	.20	1.12		70.2	112	112	250	45 F	2	
4	1302		75	.21	1.18		74.8	112	112				
5	7		75	.21	1.18		79.5	112	112	245	45 F	2	
6	12		75	.22	1.23		84.1	113	113				
7	17	-.34	75	.16	.90		88.9	115	115	240	45 F	<2	
8	22		74	.15	.84		92.9	116	116				
9	27		74	.12	.67		96.7	116	116	245	50 F	<2	
10	32		75	.11	.62		600.2	117	117				
11	37		75	.09	.50		3.6	117	117	240	50 F	<2	
12	42		75	.08	.45		6.8	118	118				
	1347						5609.80						
							(95.80)						

Environmental Technology & Engineering Corp.

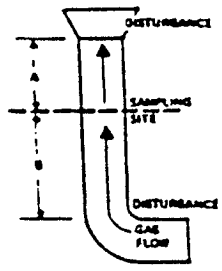
PARTICULATE FIELD DATA

γ = 1.003

PLANT Artistic | AMBIENT TEMPERATURE 75 | METER ΔH 0.725
DATE 10/17/05 | BAROMETRIC PRESSURE 29.25 | C FACTOR Cp = .99
LOCATION Milwaukee | ASSUMED MOISTURE, % 2% | PROCESS WEIGHT RATE
OPERATOR MJH | PROBE LENGTH, in. 2FT GLASS | ORSAT RESULTS | LEAK CHECK
STACK NO. Cond #27 | NOZZLE DIAMETER, in. 5/16" | CO2 A | Pre <.01@20"
RUN NO. 3 | STACK DIAMETER, in. 10" | O2 A | Pitot OK@3"
SAMPLE BOX NO. 1B | PROBE HEATER SETTING 250 | CO | Post <.01@20"
METER BOX NO. 2 | HEATER BOX SETTING 250 | N2 A | Pitot OK@3"
5 min/pt



CROSS SECTION



OVERHEAD DOOR OPEN

TRAVERSE POINT NUMBER	SAMPLING TIME (A), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER: INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A1	14:16		76	.18	1.01		5611.00	109	109	240 F	45 F	<2	
2	:21		76	.20	1.12		15.6	108	108				
3	:26		76	.22	1.23		20.2	108	108	250 F	45 F	2	
4	:31		77	.23	1.29		25.0	108	108				
5	:36	-.33	77	.22	1.23		29.9	109	109	255	45	2	
6	:41		77	.17	.95		34.6	110	110				
7	:46		77	.15	.84		38.9	110	110	250	45	<2	
8	:51		77	.14	.78		42.7	111	111				
9	:56		78	.11	.62		46.4	112	112	255	45	<2	
10	15:01		78	.11	.62		49.8	113	113				
11	:06		78	.10	.56		53.2	115	115	245	45	<2	
12	:11		78	.08	.45		56.3	116	116				
B1	16:17		78	.10	.56		59.3	118	118	255	45	<2	
2	22		79	.11	.62		62.6	118	118				
3	27		79	.12	.67		66.1	118	118	260	50	<2	
4	32		79	.12	.67		69.6	119	119				
5	37		79	.15	.84		73.2	120	120	255	45	<2	
6	42	-.33	78	.18	1.01		77.0	120	120				
7	47		78	.20	1.12		81.2	120	120	255	45	2	
8	52		79	.21	1.18		85.7	121	121				
9	57		79	.21	1.18		90.3	121	121	250	50	2	
10	1602		78	.20	1.12		94.9	122	122				
11	7		78	.18	1.01		99.4	123	123	245	50	<2	
12	12		78	.16	.90		703.7	123	123				
	1617						5707.74						
							96.74						

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC

JOB NO. _____

DATE OF TEST 10/17/05

TEST ENGINEER MJH

RUN NO. 1 STACK COND #27

Sample Box 1A Filter QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	90	100	(10)
2	111	100	11
3	5	0	5
SIL GEL	705	687	18
		TOTAL	24

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE & SOLN

FH 100 ml

BH 100 ml + 206 ml = 306 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC

JOB NO. _____

DATE OF TEST 10/17/05

TEST ENGINEER MJ

RUN NO. 2 STACK COND #27

Sample Box 2 Filter QUARTZ (27-2) Wash Bottle 0.1 HNO_3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	95	100	(5)
2	110	100	10
3	6	0	6
SIL GEL	698	678	20
		TOTAL	31

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN

FH: 100 ml

BH: 100 ml + 211 ml = 311 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - Artistic

JOB NO. _____

DATE OF TEST 10/17/05

TEST ENGINEER M.TH

RUN NO. 3 STACK Cond #27

Sample Box 1B Filter QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. -

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	108	100	8
2	108	100	8
3	4	0	4
Sil Gel	714	705	9
		TOTAL	29

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

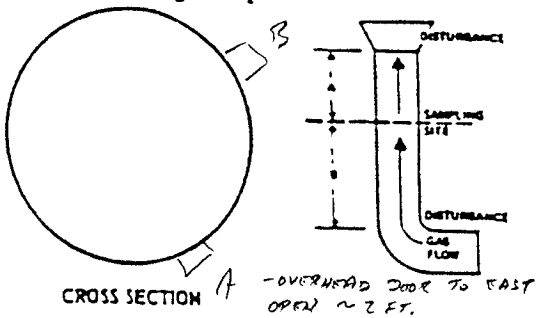
NOTES: RINSE SAMPLE

FH: 100 ml

BH: 100 ml + 220 ml = 320 ml

Environmental Technology & Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION

- OVERHEAD DOOR TO EAST OPEN ~2 FT.

PLANT ARTISTIC
DATE 10/19/05
LOCATION MILWAUKEE
OPERATOR MJH
STACK NO. CONV 28
RUN NO. 1
SAMPLE BOX NO. 1A
METER BOX NO. 2

AMBIENT TEMPERATURE 65
BAROMETRIC PRESSURE 29.30
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 10"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

METER ΔH .725
C FACTOR Cp = .99
γ = 1.003
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO /
N2 A

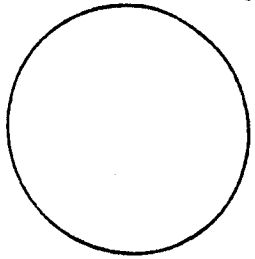
LEAK CHECK
Pre <.01 @ 20"
Pitot OK @ 3"
Post <.01 @ 20"
Pitot OK @ 3"

5 min/pt

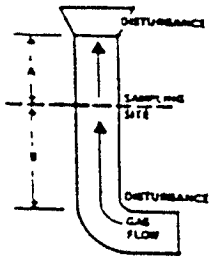
TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) ×5.6 in., H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), °F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A 1	9:03		69	.15	.84		5709.00	63	63	240	45	2½	
2	08		70	.17	.95		13.2	63	63				
3	13		70	.20	1.12		17.5	66	66	245	45	3	
4	18	-.32	69	.21	1.18		22.2	68	68				
5	23		69	.22	1.23		27.0	70	70	255	45	3½	
6	28		69	.23	1.29		31.9	73	73				
7	33		69	.18	1.01		36.8	78	78	250	45	3	
8	38		70	.17	.95		41.1	81	81				
9	43		70	.14	.78		45.3	83	83	245	45	2½	
10	48		69	.11	.62		49.1	87	87				
11	53		68	.09	.50		52.5	89	89	245	45	2	
12	58		68	.08	.45		55.6	91	91				
B 1	1003/04		68	.09	.50		58.5	93	93	250	45	2	
2	9		68	.10	.56		61.7	95	95				
3	14		69	.11	.62		65.0	97	97	255	45	2	
4	19		69	.13	.73		68.3	99	99				
5	24	-.34	68	.15	.84		71.8	100	100	250	45	2½	
6	29		69	.17	.95		75.4	101	101				
7	34		69	.17	.95		79.5	102	102	250	45	2½	
8	39		68	.18	1.01		83.7	103	103				
9	44		69	.20	1.12		88.2	106	106	245	50	3	
10	49		69	.19	1.07		92.8	108	108				
11	54		69	.17	.95		97.3	108	108	240	50	2½	
12	59		68	.14	.78		801.4	109	109				
	10:04						5805.02						
							96.02						

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PARTICULATE FIELD DATA



CROSS SECTION



PLANT Artistic
DATE 10/19/05
LOCATION Milwa
OPERATOR MJH
STACK NO. Cond #28
RUN NO. 2
SAMPLE BOX NO. 2
METER BOX NO. 2

AMBIENT TEMPERATURE 70F
BAROMETRIC PRESSURE 29.30
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 10"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER A.H. .725 9/25
C FACTOR Cp = 99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO
N2 R

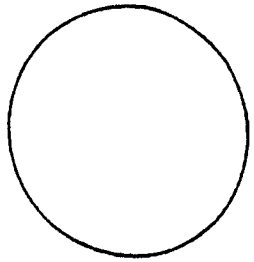
LEAK CHECK
Pre <.01 @ 20"
Pitot ok @ 3"
Post <.01 @ 20"
Pitot ok @ 3"

5 min/pt

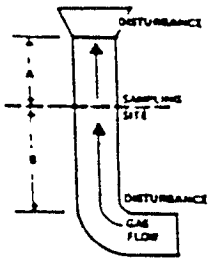
TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD ($\sqrt{P_s}$)		PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
B1	11:30		69	.10		.56		5806.00	101	101	230	40	<2	
2	35		69	.11		.62		9.4	99	99				
3	40		68	.13		.73		12.8	99	99	240	45	<2	
4	45		68	.15		.84		16.5	99	99				
5	50		68	.17		.95		20.5	99	99	255	45	<2	
6	55	-.30	68	.17		.95		24.7	101	101				
7	1200		69	.18		1.01		28.9	101	101	260	45	<2	
8	5		69	.20		1.12		33.2	102	102				
9	10		68	.21		1.18		37.8	103	103	255	45	<2	
10	15		68	.20		1.12		42.4	104	104				
11	20		68	.17		.95		47.0	107	107	250	45	<2	
12	25		68	.14		.78		51.2	108	108				
A1	30/31		68	.16		.90		54.8	109	109	250	45	<2	
2	36		68	.19		1.06		58.8	109	109				
3	41		69	.21		1.18		63.2	110	110	245	45	<2	
4	46	-.34	70	.21		1.18		67.7	110	110				
5	51		70	.22		1.23		72.3	110	110	245	50	<2	
6	56		69	.20		1.12		77.0	111	111				
7	1301		69	.18		1.01		81.5	111	111	250	45	<2	
8	6		69	.17		.95		85.8	112	112				
9	11		70	.15		.84		89.9	113	113	245	50	<2	
10	16		70	.13		.73		93.8	113	113				
11	21		70	.11		.62		97.4	113	113	240	50	<2	
12	26		71	.10		.56		900.9	114	114				
	1331							5904.03						
								(98.03)						

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Engineering Corp.

PARTICULATE FIELD DATA



CROSS SECTION



PLANT ARTISTIC
DATE 10/19/05
LOCATION Milwaukee
OPERATOR MTH
STACK NO. CND #28
RUN NO. 3
SAMPLE BOX NO. 18
METER BOX NO. 2

AMBIENT TEMPERATURE 70 F
BAROMETRIC PRESSURE 29.30
ASSUMED MOISTURE, % 2%
PROBE LENGTH, in. 2FT GLASS
NOZZLE DIAMETER, in. 5/16"
STACK DIAMETER, in. 10"
PROBE HEATER SETTING 250
HEATER BOX SETTING 250

γ = 1.003
METER ΔH .725
C FACTOR Cp = .99
PROCESS WEIGHT RATE

ORSAT RESULTS
CO2 A
O2 A
CO
N2 R

LEAK CHECK
Pre <.01@20"
Pitot OKC J"
Post <.01@20"
Pitot OK@3"

5 min/pt

TRAVERSE POINT NUMBER	SAMPLING TIME (θ), min.	STATIC PRESSURE (in. H_2O)	STACK TEMPERATURE (T_s), °F	VELOCITY HEAD (ΔP_s) ($\sqrt{\Delta P_s}$)		PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm), ft³	GAS SAMPLE TEMPERATURE AT DRY GAS METER INLET ($T_{m_{IN}}$), °F	OUTLET ($T_{m_{OUT}}$), F	SAMPLE BOX TEMPERATURE °F	TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER F	PUMP VACUUM in. Hg gauge	VELOCITY fps
A 1	13'55		70	.17		.95		5905.00	104	104	235	45	<2	
2	14:00		71	.18		1.01		9.3	102	102				
3	05		71	.21		1.18		13.7	101	101	245	45	<2	
4	10		71	.21		1.18		18.4	101	101				
5	15		71	.21		1.18		23.1	102	102	250	45	<2	
6	20	-.28	70	.18		1.01		27.8	103	103				
7	25		70	.18		1.01		32.1	105	105	250	45	<2	
8	30		70	.17		.95		36.4	107	107				
9	35		70	.16		.90		40.6	108	108	255	45	<2	
10	40		69	.13		.73		44.5	109	109				
11	45		70	.11		.62		48.1	109	109	250	45	<2	
12	50		69	.10		.56		51.4	110	110				
B 1	55/56		70	.11		.62		54.6	110	110	255	45	<2	
2	1501		70	.12		.67		58.0	110	110				
3	06		70	.13		.73		61.5	111	111	250	45	<2	
4	11		69	.15		.84		65.2	111	111				
5	16	-.32	69	.18		1.01		69.1	111	111	250	45	<2	
6	21		69	.19		1.06		73.3	112	112				
7	26		70	.17		.95		77.7	112	112	245	50	<2	
8	31		70	.19		1.06		81.9	113	113				
9	36		69	.20		1.12		86.3	113	113	240	50	<2	
10	41		69	.20		1.12		90.9	113	113				
11	46		69	.18		1.01		95.4	114	114	240	50	<2	
12	51		69	.16		.90		99.7	114	114				
	1556							6003.63						
								98.63						

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC

JOB NO. _____

DATE OF TEST 10/19/05

TEST ENGINEER MJH

RUN NO. 1 STACK COND #28

Sample Box 1A Filter QUARTZ Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	95	100	(5)
2	110	100	10
3	4	0	4
SIL GEL	717	702	15
		TOTAL	24

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE + SOLUTION

FH: 100 ml

BH: 100 ml + 209 ml = 309 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC

JOB NO. _____

DATE OF TEST 10/19/05

TEST ENGINEER MJH

RUN NO. 2 STACK Cooling #28

Sample Box 2 Filter QUARTZ

Wash Bottle 0.1 HNO_3

Beaker No. —

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	97	100	(3)
2	105	100	5
3	3	0	3
SIL GEL	691	671	20
		TOTAL	25

PARTICULATE COLLECTED

	Final Wt. g	~~Tare~~ Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLUTION

FH: 100 ml

BH: 100 ml + 205 ml = 305 ml

LABORATORY DATA SHEET
PARTICULATE & WATER COLLECTED

JOB NAME SCL - ARTISTIC

DATE OF TEST 10/9/07

JOB NO. _____

TEST ENGINEER MTH

RUN NO. 3 STACK Comb. #2 & 8

Sample Box 13 Filter QUARTZ Wash Bottle 0.1 N NaOH

Beaker No. _____

WATER COLLECTED

Impinger No.	Final Wt. g	Initial Wt. g	Collected grams
1	(94)	100	(6)
2	113	100	13
3	3	0	3
Silica Gel	731	717	14
		TOTAL	36

PARTICULATE COLLECTED

	Final Wt. g	Tare Wt. g	Collected grams
Filter			
Washings			
		TOTAL	

WATER COLLECTED [ ] GRAMS

PARTICULATE COLLECTED [ ] GRAMS

NOTES: RINSE SOLN'S

F/F: 100 ml

B/F: 100 ml + 210 ml = 310 ml

STACK TESTING CALIBRATION DATA

The probe tips, pitot tubes, dry gas meters, and sample box orifices used in the test efforts were calibrated prior to the testing in accordance with the procedures outlined in the Maintenance, Calibration, and Operation of Isokinetic Source-Sampling Equipment as published by the US EPA as well as the applicable sections of EPA Methods 1 -4 and 29. The values obtained were:

Test Condition	Test Date	Control Box ID	Orifice Coeff. (ΔH@)	Dry Gas Meter Coeff. (γ)	Control Box Calib. Date	Probe Tip Diameters
3	10/31/05	2	0.725	1.003	9/25/05	0.308 in.
4	11/3/05	2	0.725	1.003	9/25/05	0.308 in.
5	11/2/05	2	0.725	1.003	9/25/05	0.308 in.
6	11/1/05	2	0.725	1.003	9/25/05	0.308 in.
7	11/09/05	2	0.725	1.003	9/25/05	0.248 in., 0.308 in.
10	2/1/06	2	0.730	1.009	1/31/06	0.248 in.
11	1/12/06	2	0.722	1.006	11/29/05	0.248 in.
12	1/11/06	2	0.722	1.006	11/29/05	0.248 in.
13	2/2/06	2	0.730	1.009	1/31/06	0.248 in.
14	11/7/05	2	0.725	1.003	9/25/05	0.308 in.
	2/206	2	0.730	1.009	1/31/06	0.248 in.
18	9/27/05	2	0.725	1.003	9/25/05	0.248 in., 0.370 in.
19	9/28/05	2	0.725	1.003	9/25/05	0.308 in.
20	9/29/05	2	0.725	1.003	9/25/05	0.308 in.
21	9/30/05	2	0.725	1.003	9/25/05	0.308 in.
22	10/18/05	3	1.007	1.006	10/11/05	0.187 in.
23	11/15/05	2	0.725	1.003	9/25/05	0.187 in.
24	11/10/05	2	0.725	1.003	9/25/05	0.308 in.
25	11/16/05	2	0.725	1.003	9/25/05	0.187 in.
27	10/17/05	2	0.725	1.003	9/25/05	0.308 in.
28	10/19/05	2	0.725	1.003	9/25/05	0.308 in.

The flow measurements were made with standard pitot tubes which were carefully inspected every 60 days (at the dates of control box calibrations listed in the above table). The pitot tubes and associated tubing were also inspected throughout each day of test efforts to avoid plugging of orifices or holes in the tubing. For all of the test efforts, the two pitot tubes used had coefficients (C_p) of 0.99.

The dry gas meters installed in the control boxes were temperature compensating meters; therefore, only a slight temperature correction need be made to the volume of gas sampled. The correction factors for the meters could best be described by the equation:

$$\gamma = \gamma \text{ (as listed above)} + [(T_M - 70) \times 0.00012]$$

stack test calc. sheet

3064

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

Plant: ABQC
Date: 11/8/05 Time: 8:45 A.M.
Location: [redacted]/ Rock Walls N. Tank
Operators: DZ/CW
Beginning Stack Temp.: 66.2
Ending Stack Temp.:
Average Stack Temp.:
Barometer: 29.9

Run # 1

Pre-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 21.5 in. Hg

Post-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 21.5 in. Hg

Traverse Point #	Cyclonic Flow Angle	Δp	√Δp	√Δp x 5min (√Δp) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)
						0	588213	66.2	21.0
1		0.35	0.5916	4.41	4 25	4 25	286	66.4	21.5
2		0.41	0.6403	4.77	4 46	9 11	370	67.2	21.5
3		0.45	0.6708	4.99	5 -	14 11	449	68.0	21.5
4		0.45	0.6708	4.99	5 -	19 11	532	69.2	21.5
5		0.46	0.6782	5.05	5 03	24 14	616	70.3	21.5
6		0.47	0.6856	5.11	5 7	29 21	701	71.7	21.5
7		0.52	0.7211	5.37	5 22	34 43	791	72.7	21.5
8		0.49	0.700	5.21	5 13	39 56	878	73.5	21.5
9		0.47	0.6856	5.11	5 7	45 03	962	74.3	21.5
10		0.45	0.6708	4.99	5 -	50 03	589050	75.0	21.5
11		0.45	0.6708	4.99	5 -	55 03	132	75.6	21.5
12		0.42	0.6481	4.83	4 50	59 53	212	75.5	21.5
			8.0337						

SE/NW

A

						0			
1		0.41	0.6403	4.77	4 46	4 46	589292	75.5	21.5
2		0.44	0.6633	4.94	4 56	9 42	378	75.9	21.5
3		0.44	0.6633	4.94	4 56	14 38	458	76.3	21.5
4		0.45	0.6708	4.99	5 -	19 38	542	76.7	21.5
5		0.47	0.6856	5.11	5 7	24 45	628	77.1	21.5
6		0.49	0.700	5.21	5 13	29 58	715	77.5	21.5
7		0.52	0.7211	5.37	5 22	35 20	807	78.0	21.5
8		0.50	0.7071	5.27	5 16	40 36	894	78.4	21.5
9		0.48	0.6928	5.16	5 10	45 46	981	78.8	21.5
10		0.45	0.6708	4.99	5 -	50 46	590070	78.7	21.5
11		0.40	0.6325	4.71	4 43	55 29	145	78.7	21.5
12		0.40	0.6325	4.71	4 43	60 12	224	78.6	21.5
	av.		0.6714			tot. 2hrs 5sec.	tot. 2011 2.011 M^3	av. 74.23	

SW/NE

B

306A

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

Plant: ABQC
Date: 11/8/05 Time: 11 05 A.M.
Location: Rack Wells N. Tank
Operators: SZ/CW
Beginning Stack Temp.: 73.2
Ending Stack Temp.:
Average Stack Temp.:
Barometer: 29.84

Run # 2

Pre-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 21.0 in. Hg

Post-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 21.5 in. Hg

Traverse Point #	Cyclonic Flow Angle	Δp	√Δp	√Δp x 5min (√Δp) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)	
						0	591255			
1		0.35	0.5916	4.41	4:25	4:25	332	77.7	21.5	SE/NW
2		0.41	0.6403	4.77	4:46	9:11	412	78.0	21.5	A
3		0.45	0.6708	4.99	5 -	14:11	498	78.0	21.5	
4		0.45	0.6708	4.99	5 -	19:11	584	78.2	21.5	
5		0.46	0.6782	5.05	5 03	24:14	670	78.7	21.5	
6		0.47	0.6856	5.11	5 07	29:21	758	79.3	21.5	
7		0.52	0.7211	5.37	5 22	34:43	849	79.4	21.5	
8		0.49	0.7000	5.21	5 13	39:56	938	79.6	21.5	
9		0.47	0.6856	5.11	5 7	45:03	592027	79.6	21.5	
10		0.45	0.6708	4.99	5 -	50:03	111	79.7	21.5	
11		0.45	0.6708	4.99	5 -	55:03	198	79.9	21.5	
12		0.42	0.6481	4.83	4 50	59:53	280	80.0	21.5	

						0	590232	73.2		
1		0.41	0.6403	4.77	4 46	4:46	312	73.8	21.0	SW/NE
2		0.44	0.6633	4.94	4 56	9:42	401	75.2	21.0	
3		0.44	0.6633	4.94	4 56	14:38	480	76.1	21.5	B
4		0.45	0.6708	4.99	5 -	19:38	565	77.4	21.5	
5		0.47	0.6856	5.11	5 07	24:45	652	78.1	21.5	
6		0.49	0.7000	5.21	5 13	29:58	741	78.0	21.5	
7		0.52	0.7211	5.37	5 22	35:20	832	78.2	21.5	
8		0.50	0.7071	5.27	5 16	40:36	920	78.4	21.5	
9		0.48	0.6928	5.16	5 10	45:46	591009	78.5	21.5	
10		0.45	0.6708	4.99	5 -	50:46	095	79.3	21.5	
11		0.40	0.6325	4.71	4 43	55:29	174	79.1	21.5	
12		0.40	0.6325	4.71	4 43	60:12	256	78.8	21.5	
	av.		a0.6714			tot. 2hrs 5sec	tot 2,048 2.048 M^3	av. 75.1		

306A

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

Plant: ABQC
Date: 11/8/05 Time: 130
Location: Rack Watts Ni Tank
Operators: JJ/CW
Beginning Stack Temp.:
Ending Stack Temp.:
Average Stack Temp.:
Barometer: 29.8

Run # 3

Pre-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 21.5 in. Hg

Post-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 21.5 in. Hg

Traverse Point #	Cyclonic Flow Angle	Δp	$\sqrt{\Delta p}$	$\sqrt{\Delta p}$ x 5min ($\sqrt{\Delta p}$) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)	
						0	592286			
1		0.35	0.5916	4.41	4.26	4:25	362	71.9	21.5	SE/NW
2		0.41	0.6403	4.77	4 46	9:11	443	73.1	21.5	A
3		0.45	0.6708	4.99	5 -	14:11	527	74.4	21.5	
4		0.45	0.6708	4.99	5 -	19:11	613	75.6	21.5	
5		0.46	0.6782	5.05	5 03	24:14	698	76.9	21.5	
6		0.47	0.6856	5.11	5 07	29:21	785	78.1	21.5	
7		0.52	0.7211	5.37	5 22	34:43	876	79.3	21.5	
8		0.49	0.7000	5.21	5 13	39:56	966	80.1	21.5	
9		0.47	0.6856	5.11	5 7	45:03	593053	80.9	21.5	
10		0.45	0.6708	4.99	5 -	50:03	139	81.4	21.5	
11		0.45	0.6708	4.99	5 -	55:03	237	81.9	21.5	
12		0.42	0.6481	4.83	4 50	59:53	309	81.9		

						0	309			
1		0.41	0.6403	4.77	4 46	4:46	394	81.4	21.5	SW/NE
2		0.44	0.6633	4.94	4 56	9:42	481	81.6	21.5	B
3		0.47	0.6633	4.94	4 56	14:38	563	81.8	21.5	
4		0.45	0.6708	4.99	5 -	19:38	649	82.0	21.5	
6		0.47	0.6856	5.11	5 07	24:46	737	82.3	21.5	
6		0.49	0.7000	5.21	5 13	29:58	827	82.4	21.5	
7		0.52	0.7211	5.37	5 22	35:20	919	82.7	21.5	
8		0.50	0.7071	5.27	5 16	40:36	594009	82.7	21.5	
9		0.48	0.6928	5.16	5 10	45:46	099	82.6	21.5	
10		0.45	0.6708	4.99	5 -	50:46	186	82.7	21.5	
11		0.40	0.6325	4.71	4 43	55:29	265	82.7	21.5	
12		0.40	0.6325	4.71	4 43	60:12	346	82.7	21.5	
	av.		av. 0.6714			tot 2 hrs 5 sec.s	tot 2060 2.060 M^3	av. 80.13		

306A

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

Plant: —
Date: 12/06/05 Time: 11⁰⁰ am
Location: —
Operators: CW
Beginning Stack Temp.: —
Ending Stack Temp.: —
Average Stack Temp.: —
Barometer: 30.1

Run # ____

Post Calibration

Pre-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 20.0 in. Hg

Post-Test Leak Check ____ M^3/min
M^3/min x 35.315 = ____ Ft^3/min
Critical Orifice Vacuum ____ in. Hg

Traverse Point #	Cyclonic Flow Angle	Δp	√Δp	√Δp x 5min / (√Δp) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)
						0	600575	52.4	20.0
						1	597	52.7	20.0
						2	619	53.0	20.0
						3	640	53.3	20.0
						4	662	53.7	20.0
						5	683	54.0	20.0
						6	705	54.5	20.0

Traverse Point #	Cyclonic Flow Angle	Δp	√Δp	√Δp x 5min / (√Δp) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)
	av.		av.			tot.	tot. 130	av. 53.37	

.130 M^3

stack test calc. sheet

306A

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

Plant: Elite Metal Finishing
Date: 12/1/05 Time: 10:12 AM
Location:
Operators: SZ/CW
Beginning Stack Temp.:
Ending Stack Temp.:
Average Stack Temp.:
Barometer: 29.68

Run # 1

Pre-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 22.0 in. Hg

Post-Test Leak Check _____ M^3/min
M^3/min x 35.315 = _____ Ft^3/min
Critical Orifice Vacuum _____ in. Hg

(Side) A all in

Traverse Point #	Cyclonic Flow Angle	Δp	√Δp	√Δp x 5min (√Δp) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)
						0	594357		
1		1.30	1.1402	5.03	5 2	5 2	443	69.9	24.0
2		1.35	1.1619	5.13	5 8	10 10	530	70.5	24.0
3		1.35	1.1619	5.13	5 8	15 18	618	71.4	24.0
4		1.35	1.1619	5.13	5 8	20 26	704	73.1	24.0
5		1.40	1.1832	5.22	5 14	25 40	791	74.9	24.0
6		1.40	1.1832	5.22	5 14	30 54	879	76.8	23.0
7		1.45	1.2042	5.31	5 19	36 13	969	78.4	23.0
8		1.45	1.2042	5.31	5 19	41 32	5058	79.7	23.0
9		1.50	1.2247	5.41	5 25	46 57	150	80.9	23.0
10		1.40	1.1832	5.22	5 14	52 11	237	81.7	23.0
11		1.40	1.1832	5.22	5 14	57 25	326	82.5	23.0
12		1.35	1.1619	6.13	5 8	62 33	412	83.1	23.0

(Cup-down) B all in

						0	595412		
1		1.40	1.1832	5.22	5 14	5 14	503	83.3	22.0
2		1.40	1.1832	5.22	5 14	10 28	593	83.7	22.0
3		1.45	1.2042	5.31	5 19	15 47	685	84.0	22.0
4		1.45	1.2042	5.31	5 19	21 06	777	84.4	22.0
5		1.40	1.1832	5.22	5 14	26 20	867	84.6	22.0
6		1.35	1.1619	5.13	5 8	31 28	955	84.9	22.0
7		1.15	1.0724	4.73	4 44	36 12	6037	85.1	22.0
8		1.05	1.0247	4.52	4 31	40 43	114	85.3	22.0
9		0.95	0.9747	4.30	4 18	45 01	188	85.5	22.0
10		0.95	0.9747	4.30	4 18	49 19	263	85.5	22.0
11		0.90	0.9487	4.19	4 12	53 31	335	85.6	22.0
12		0.85	0.9220	4.07	4 4	57 35	405	85.6	22.0
	av.		av. 1.13295			tot. 120 min	tot. 2048	av 80.85	
						08 sec	2.048 M^3		

307 A

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

Plant: Elite Metal Finishing
Date: 12/1/05 Time: 12:28pm
Location:
Operators: SZ lcw
Beginning Stack Temp.:
Ending Stack Temp.:
Average Stack Temp.:
Barometer: 29.62

Run # 2

Pre-Test Leak Check — M^3/min
M^3/min x 35.315 = — Ft^3/min
Critical Orifice Vacuum 22.0 in. Hg

Post-Test Leak Check _____ M^3/min
M^3/min x 35.315 = _____ Ft^3/min
Critical Orifice Vacuum _____ in. Hg

Traverse Point #	Cyclonic Flow Angle	Δp	√Δp	√Δp x 5min (Δp) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)
						0	597398		
1		1.30	1.1402	5.03	5 2	5 2	485	84.6	22.0
2		1.35	1.1619	5.13	5 8	10 10	572	84.7	22.0
3		1.35	1.1619	5.13	5 8	15 18	660	84.8	21.5
4		1.35	1.1619	5.13	5 8	20 26	750	84.8	21.5
5		1.40	1.1832	5.22	5 14	25 40	836	85.0	21.5
6		1.40	1.1832	5.22	5 14	30 54	926	85.1	21.5
7		1.45	1.2042	5.31	5 19	36 13	598018	85.1	21.5
8		1.45	1.2042	5.31	5 19	41 32	102	85.0	21.5
9		1.50	1.2247	5.41	5 23	46 57	198	85.1	21.5
10		1.40	1.1832	5.22	5 14	52 11	289	86.1	21.5
11		1.40	1.1832	5.22	5 14	57 25	377	85.0	21.5
12		1.35	1.1619	5.13	5 8	62 33	464	83.1	21.5

						0	596412		
1		1.40	1.1832	5.22	5 14	5 14	500	81.2	22.0
2		1.40	1.1832	5.22	5 14	10 28	590	81.7	22.0
3		1.45	1.2042	5.31	5 19	15 47	681	82.5	22.0
4		1.45	1.2042	5.31	5 19	21 06	773	83.2	22.0
5		1.45	1.1832	5.22	5 14	26 20	862	83.4	22.0
6		1.35	1.1619	5.13	5 8	31 28	951	83.6	22.0
7		1.15	1.0724	4.73	4 44	36 12	7039	83.6	22.0
8		1.05	1.0247	4.52	4 31	40 43	110	83.8	22.0
9		0.95	0.9747	4.30	4 18	45 01	182	84.1	22.0
10		0.95	0.9747	4.30	4 18	49 19	255	84.3	22.0
11		0.90	0.9487	4.19	4 12	53 31	328	84.6	22.0
12		0.85	0.9220	4.07	4 4	57 35	398	84.7	22.0
	av.		av. 1.132955			tot. 120m, 0sec	tot. 2052	av 84.17	

2.052 M^3

306A

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

503-334-6764

Plant: Elite Metal Finishing Run # 3
Date: 12/1/05 Time: 2 40 pm
Location:
Operators: JS/CW
Beginning Stack Temp.: 81.1
Ending Stack Temp.: 85.7
Average Stack Temp.: 84.1
Barometer: 29.61

Pre-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 21.5 in. Hg

Post-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 21.0 in. Hg

Traverse Point #	Cyclonic Flow Angle	Δp	√Δp	√Δp x 5min (√Δp) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)
						0	598471		
1		1.30	1.1402	5.03	5 2	5 2	555	81.1	21.5
2		1.35	1.1619	5.13	5 8	10 10	641	81.3	21.5
3		1.35	1.1619	5.13	5 8	15 18	728	81.8	21.5
4		1.35	1.1619	5.13	5 8	20 26	817	82.3	21.5
5		1.40	1.1832	5.22	5 14	25 40	904	82.6	21.5
6		1.40	1.1832	5.22	5 14	30 54	992	82.9	21.5
7		1.45	1.2042	5.31	5 19	36 13	9081	83.1	21.5
8		1.45	1.2042	5.31	5 19	41 32	172	83.4	21.5
9		1.50	1.2247	5.41	5 25	46 57	264	83.6	21.5
10		1.40	1.1832	5.22	5 14	52 11	355	84.0	21.5
11		1.40	1.1832	5.22	5 14	5725	452	84.3	21.5
12		1.35	1.1619	5.13	5 8	6233	527	84.5	21.0
						0	599527		
1		1.40	1.1832	5.22	5 14	5 14	616	84.5	21.0
2		1.40	1.1832	5.22	5 14	10 28	707	84.7	21.0
3		1.45	1.2042	5.31	5 19	15 47	794	84.9	21.0
4		1.45	1.2042	5.31	5 19	21 06	890	85.0	21.0
5		1.40	1.1832	5.22	5 14	26 20	984	85.2	21.0
6		1.35	1.1619	5.13	5 8	31 28	600062	85.4	21.0
7		1.15	1.0724	4.73	4 44	36 12	138	85.5	21.0
8		1.05	1.0247	4.52	4 31	40 43	217	85.5	21.0
9		0.95	0.9747	4.30	4 18	45 01	289	85.6	21.0
10		0.95	0.9747	4.30	4 18	49 19	362	85.7	21.0
11		0.90	0.9487	4.19	4 12	53 31	433	85.7	21.0
12		0.85	0.9220	4.07	4 4	5735	503	85.7	21.0
	av.		av. 1.13295			tot. 120m	tot. 2032	av 84.1	

0854 2.032 M^3

306A

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

Plant: —
Date: 12/06/05 Time: 11 00 am
Location: —
Operators: CW
Beginning Stack Temp.: —
Ending Stack Temp.: —
Average Stack Temp.: —
Barometer: 30.1

Post Calibration

Run #

Pre-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 20.0 in. Hg

Post-Test Leak Check ____ M^3/min
M^3/min x 35.315 = ____ Ft^3/min
Critical Orifice Vacuum ____ in. Hg

Traverse Point #	Cyclonic Flow Angle	Δp	$\sqrt{\Delta p}$	$\frac{\sqrt{\Delta p} \times 5min}{(\sqrt{\Delta p}) avg}$	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)
						0	600575	52.4	20.0
						1	597	52.7	20.0
						2	619	53.0	20.0
						3	640	53.3	20.0
						4	662	53.7	20.0
						5	683	54.0	20.0
						6	705	54.5	20.0

	av.		av.			tot.	tot. 130	av. 53.37	

.130 M^3

306A

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

Plant: Artistic Plating
Date: 10/20/05 Time: 9 10 am
Location: ~~[illegible]~~ Woods N. Strike (Cond. 29)
Operators: JZ/CW
Beginning Stack Temp.: 64.6° F
Ending Stack Temp.: 82.9
Average Stack Temp.:
Barometer: 29.93

Run # 1

Pre-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 21.0 in. Hg

Post-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 22.0 in. Hg

Traverse Point #	Cyclonic Flow Angle	Δp	$\sqrt{\Delta p}$	$\sqrt{\Delta p}$ x 5min ($\sqrt{\Delta p}$) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)
						0	582,205	62.3	21.0
1		0.17	.4123	5.08	5' 5"	5 5	290	64.6	21.5
2		0.18	.4243	5.23	5' 14"	10 19	378	65.8	21.5
3		0.21	.4583	5.65	5 39"	15 58	470	68.2	21.5
4		0.21	.4583	5.65	5 39	21 37	567	69.9	22.0
5		0.21	.4583	5.65	5 39	27 16	662	71.4	22.0
6		0.18	.4243	5.23	5 14	32 30	750	72.8	22.0
7		0.18	.4243	5.23	5 14	37 44	841	75.0	22.0
8		0.17	.4123	5.08	5 5	42 49	924	77.7	22.0
9		0.16	.4	4.93	4' 50"	47 45	583 008	79.3	22.0
10		0.13	.3606	4.45	4 27"	52 12	084	79.1	22.0
11		0.11	.3317	4.09	4' 5"	56 17	154	78.9	22.0
12		0.10	.3162	3.90	3 54"	60' 11"	220	78.8	22.0

A

						0	583220	75.7	22.0
1		0.11	.3317	4.09	4' 6"	4 6	290	77.3	22.0
2		0.12	.3464	4.27	4' 16"	8 22	363	77.5	21.5
3		0.13	.3606	4.45	4' 27"	12 49	438	77.4	21.5
4		0.15	.3873	4.77	4' 47"	17 36	519	76.6	21.5
5		0.18	.4243	5.23	5' 14"	22 50	598	77.1	21.5
6		0.19	.4359	5.37	5' 23"	28 13	698	78.5	21.5
7		0.17	.4123	5.08	5' 5"	33 18	784	80.8	21.5
8		0.19	.4359	5.37	5' 23"	38 41	875	80.7	22.0
9		0.20	.4472	5.51	5' 31"	44 12	968	80.5	22.0
10		0.20	.4472	5.51	5' 31"	49 43	584 062	82.1	22.0
11		0.18	.4243	5.23	5' 14"	54 57	150	83.8	22.0
12		0.16	.4	4.93	4 56"	59 53	232	82.9	22.0
	av.		av. .4056			tot. 2 hrs	tot. 2,027	av. 75.96	
						4 sec	2.027 M^3		

B

306A

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

Plant: Artistic Plating Run # 2
Date: 10/20/05 Time: 1135 AM
Location: ~~#2 Stack Woods~~ Woods Ni Strike (Cond.29)
Operators: JZ/CW
Beginning Stack Temp.: 74.5
Ending Stack Temp.: 75.0
Average Stack Temp.:
Barometer: 29.84

Pre-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 21.0 in. Hg

Post-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 22.0 in. Hg

Traverse Point #	Cyclonic Flow Angle	Δp	√Δp	√Δp x 5min (√Δp) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)
						0	585227	75.1	22.0
1		0.17	.4123	5.08	5 5	5' 5"	311	75.6	22.0
2		0.18	.4243	5.23	5 14	10' 19"	397	76.3	22.0
3		0.21	.4583	5.65	5 39	15' 58"	490	76.6	22.0
4		0.21	.4583	5.65	5 39	21' 37"	583	76.6	22.0
5		0.21	.4583	5.65	5 39	27' 16"	675	76.3	22.0
6		0.18	.4243	5.23	5 14	32' 30"	762	76.2	22.0
7		0.18	.4243	5.23	5 14	37' 44"	848	75.4	22.0
8		0.17	.4123	5.08	5 5	42' 49"	932	76.2	22.0
9		0.16	.4	4.93	4 56	47' 45"	586 014	75.2	22.0
10		0.13	.3606	4.45	4 27	52' 12"	094	75.2	22.0
11		0.11	.3317	4.09	4 5	56' 17"	154	75.2	22.0
12		0.10	.3162	3.90	3 54	60' 11"	219	75.0	22.0

A

						0	584240	74.5	22.0
1		0.11	.3317	4.09	4 6	4' 6"	308	74.3	22.0
2		0.12	.3464	4.27	4 16	8' 22"	374	73.8	22.5
3		0.13	.3606	4.45	4 27	12' 49"	450	74.0	22.0
4		0.15	.3873	4.77	4 27	17' 36"	531	74.3	22.0
5		0.18	.4243	5.23	5 14	22' 50"	618	74.4	22.0
6		0.19	.4359	5.37	5 23	28' 13"	707	74.5	22.0
7		0.17	.4123	5.08	5 5	33' 18"	790	74.4	22.0
8		0.19	.4359	5.37	5 23	38' 41"	879	74.6	22.0
9		0.20	.4472	5.51	5 31	44' 12"	971	74.6	22.0
10		0.20	.4472	5.51	5 31	49' 43"	585064	74.7	22.0
11		0.18	.4243	5.23	5 14	54' 57"	149	75.1	22.0
12		0.16	.4	4.93	4 56	59' 53"	227	75.1	22.0
	av.		av. .4056			tot. 2hrs 4sec.	tot. 1979 1.979 M^3	av. 75.08	

B

387 D

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

Plant: Artistic
Date: 10/20 Time: 2:00 pm
Location: Woods Ni Strike (cond. 29)
Operators: JZ/CW
Beginning Stack Temp.: 72.2
Ending Stack Temp.:
Average Stack Temp.:
Barometer: 29.8

Run # 3

Pre-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 21.0 in. Hg

Post-Test Leak Check _____ M^3/min
M^3/min x 35.315 = _____ Ft^3/min
Critical Orifice Vacuum _____ in. Hg

Traverse Point #	Cyclonic Flow Angle	Δp	√Δp	√Δp x 5min (√Δp) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)
						0	586227	72.2	21.0
1		0.17	.4123	5.08	5'5''	5'5'	310	72.6	22.0
2		0.15	.4243	5.23	5'14''	10'19	396	72.8	22.0
3		0.21	.4583	5.65	5'39''	15'58	489	73.3	22.0
4		0.21	.4583	5.65	5'39''	21'37	582	74.7	22.0
5		0.21	.4583	5.65	5'39''	27'16	674	74.7	22.0
6		0.18	.4243	5.23	5'14''	32'30	761	75.0	22.0
7		0.18	.4243	5.23	5'14''	37'49	848	75.5	22.0
8		0.17	.4123	5.08	5'5''	42'49	931	75.7	22.0
9		0.16	.4	4.93	4'56''	47'45	587013	75.2	22.0
10		0.13	.3606	4.45	4'27''	52'12	086	74.9	22.0
11		0.11	.3317	4.09	4'5''	56'17	154	75.2	22.0
12		0.10	.3162	3.90	3'54''	60'11	218	74.8	22.0

A

						0	587218	73.1	22.0
1		0.11	.3317	4.09	4'6''	4'6''	285	73.6	22.0
2		0.12	.3464	4.27	4'16''	8'22''	356	73.5	22.0
3		0.13	.3606	4.45	4'27''	12'49''	431	73.8	22.0
4		0.15	.3873	4.77	4'27''	17'36''	507	73.3	22.0
5		0.18	.4243	5.23	5'14''	22'50''	597	73.6	22.0
6		0.19	.4359	5.37	5'23''	28'13''	681	73.9	22.0
7		0.17	.4123	5.08	5'5''	33'18''	765	74.1	22.0
8		0.19	.4359	5.37	5'23''	38'41''	853	74.2	22.0
9		0.20	.4472	5.51	5'31''	44'12''	944	74.5	22.0
10		0.20	.4472	5.51	5'31''	49'43''	588035	74.7	22.0
11		0.18	.4243	5.23	5'14''	54'57''	121	74.5	22.0
12		0.16	.4	4.93	4'56''	59'53''	204	74.6	22.0
	av.		av. .4056			tot. 2hrs 4 sec.	tot. 1,808 1.808 M^3	av. 74.14	

B

308A

VELOCITY TRAVERSE AND POINT SAMPLE TIME CALCULATION SHEET

Plant: —
Date: 12/06/05 Time: 11⁰⁰ am
Location: —
Operators: CW
Beginning Stack Temp.: —
Ending Stack Temp.: —
Average Stack Temp.: —
Barometer: 30.1

Run #

Post Calibration

Pre-Test Leak Check 0 M^3/min
M^3/min x 35.315 = 0 Ft^3/min
Critical Orifice Vacuum 20.0 in. Hg

Post-Test Leak Check ______ M^3/min
M^3/min x 35.315 = ______ Ft^3/min
Critical Orifice Vacuum ______ in. Hg

Traverse Point #	Cyclonic Flow Angle	Δp	√Δp	√Δp x 5min / (√Δp) avg	min. + sec. sample time	running time min.	gas meter reading (L)	gas meter temp.	critical orifice vacuum (in.hg)
						0	600575	52.4	20.0
						1	597	52.7	20.0
						2	619	53.0	20.0
						3	640	53.3	20.0
						4	662	53.7	20.0
						5	683	54.0	20.0
						6	705	54.5	20.0

	av.		av.			tot.	tot. 130	av. 53.37	

.130 M^3

Appendix E

Laboratory QA/QC Data for Stack Testing Samples

NI STACK TEST PROJECT P1

A When Samples received in house, they are logged in.
IDs double checked by QA Coordinator when delivered to lab.
Three samples per test run are received… 1) front half- or probe rinse
2) filter
3) back half- or impringer

D The Filter part of the sample run:
1) these are large filter pads delivered in petrie dishes
2) they are digested according to Method 29, sec 8.3.1.2.
3) 4 rnls HF, and 6 rnls conc HN03 are the acids used.
4) As long as the filter < 1 g, digestion is complete, in that the final solution is clear and colorless.
Even though the procedure says to use 0.5 g sections; the chance of contamination is increased, and reagent use would double, conflicting with our pollution prevention philosophy.
5) When the microwave digestions are completed, the digestion solution is quantitatively transferred to a 4-oz bottle and capped.
6) A LRB and LFB is also included with this prep batch

E The Probe rinse part of the sample run:
1) these are dellivered in quart glass jars.
2) they are digested according to Method 29, sec 8.3.3.
3) the initial total volume of the sample is measured and recorded.
4) the pH is checked with paper to insure it is < 2.0, and this is recorded.
5) Since the sample is to be analyzed for nickel only, the total volume is used.
The sample is "quantitatively" transferred to an appropriate sized beaker.
6) Reduce volume to about 20 mls, by evaporating on a hot plate.
this may take a couple of days, and sample must be protected from contamination, by covering the beakers overnight.
7) The 20 rnls is then quantitatively transferred to a microwave vessel.
8) 4 rnls HF, and 6 rnls conc HN03 are added to each vessel and the samples are then microwaved..
9) A LRB and LFB is also included with this prep batch.
10) The digestate is then added to the corresponding "filter digestate" for the analytical fraction.
The digestion sample is expected to be clear and colorless to be complete.

F This analytical fraction corresponds to "analytical fraction 1A":
1) includes the filter pad and the probe rinse.
2) When the digested solutions are combined, the final volume is adjusted to a convenient level with DI water. (usually 100 mls)
3) This sample is now ready for analysis by Flame AA.

G The impinger samples corresponds to "analytical fraction 2A":
1) dellivered in quart glass jars.
2) digested according to Method 29, sec 8.3.4. And 8.3.4.2
3) the initial total volume of the sample is measured and recorded.
4) the pH is checked with paper to insure it is < 2.0, and this is recorded.
5) Since the sample is to be analyzed for nickel only, the total volume is used.
The sample is "quantitatively" transferred to an appropriate sized beaker.
6) Reduce volume to about 20 mls, by evaporating on a hot plate.
this may take a couple of days, and sample must be protected from contamination, by covering the beakers overnight.
7) The 20 rnls is then quantitatively transferred to a microwave vessel.

NI STACK TEST PROJECT P2

8) 10 rnls of 3% H2O2, and 10 rnls 50% HN03 are added to each vessel and the samples are then microwaved.
9) A LRB and LFB is also included with this prep batch.
10) quantitatively transfer the digested sample to a labeled 4-oz bottle.
For uniformity, the volume is adjusted to 50 rnls using a 50-ml class A graduate.
The digestion sample is expected to be clear and colorless to be complete.
11) This sample is now ready for analysis by Flame AA.

I **The Microwave program is as follows:**

RAMP:	20 min
	power = 1000 watts
	temp = 170 degC
HOLD:	10 min
	power = 700 watts
	temp = 170 degC
VENT:	10 min

The applications specialists at MILESTONE, determined that since the Microwave Digestion Unit has the capacity to monitor and control temperature, the program was set up a bit different than that stated in the Method 29.

J Volumes were determined with Class A graduated cylinders, from 25 to 250-ml sizes. Because of the large volumes involved, measuring was to 0.2 rnls with the 25-ml only. The other two were 0.5. at best.

K All pHs were checked and recorded as <2.0.

L **"QUANTITATIVELY"** means that the containers used to transfer or hold the sample were carefully rinsed with DI, and those "rinses" were added to the sample base.

M Procedure for Method 306A

N For the calculation we are not concerned with volumes; just the actual mg of NI present. The initial volume of sample, and evaporating it down, is of no consequence. If a portion of the initial volume was used, this would be taken into account. The analytical fraction volume is used to adjust the mg/L Reading to just "MG".

PROJECT # 080033: METHOD 29 FOR NICKEL

date: 11/01/05

1 **Method Detection Limit for Flame AA of Nickel:** **0.075 mg/L**

This MDL is calculated as per 40CFR Part 136, Appendix B.

2 **Detection for Impinger sample:** **0.004 mg Ni**

0.075 mg/L **X** "AF 2A" mls **X** "Initial Sample Volume" mls / "SF 2A" mls **X** 1 L / 1000 mls

MDL	FINAL MLS (AF 2A)	MLS OF ORIGINAL SAMPLE	MLS USED	CONVERSION TO "MG NI"	
0.075	50	300	300	0.001	**0.0038**

Although the actual mls of "original sample" varied, the volume used is that which will yield the highest value for the MDL.

2 **Detection for filter & probe rinse sample:** **0.007 mg Ni**

0.075 mg/L **X** "AF 1A" mls **X** "Sample Volume" mls / "SF 1" mls **X** 1 L / 1000 mls

MDL	FINAL MLS (AF 1A)	MLS OF ORIGINAL SAMPLE	MLS USED	CONVERSION TO "MG NI"	
0.075	100	100 (+ 1 filter)	100	0.001	**0.0075**

3 **Detection for TOTAL RUN sample:** **0.011 mg Ni**

= Impinger + filter & probe rinse

306A

NI STACK TEST PROJECT

H **The BLANK Sample batch**

1) dellivered in quart glass jars.
2) digested according to Method 306A, sec 11.3.1.1
3) the initial total volume of the sample is measured and recorded.
4) the pH is checked with paper to insure it is < 2.0, and this is recorded.
5) Since the sample is to be analyzed for nickel only, the total volume is used.
   The sample is "quantitatively" transferred to an appropriate sized beaker.
6) Reduce volume to about100 mls, by evaporating on a hot plate.
   When the volume is about 100 mls, add 10 mls conc HNO3.
   Reflux the sample to ***near dryness***.
   Add another 5 mls conc. HNO3, and complete the digestion
   Quantitatively transfer the solution to a 50 ml volumetric flask.
   Add 0.5 mls conc HNO3, and dilute to volume. (do not add Ca(NO3)2--this is nc
7) These solutions are now ready for Flame AA analysis.

PROJECT # 2005110202: METHOD 29 FOR NICKEL

1	2	3	4	5	6	7	8	9	10	11	12
SA #	SAMPLE DESCRPTION	RUN ID	PH	Sample Fraction (SF = SF_A)	EVAP. TO	REAGENTS FOR DIG.	MICRO-Dig. BY	Analytical Fraction (AF = AF_A)	NI mg/L (C_{a1} or C_{a2})	MG NI IN INITIAL SAMPLE	TOTAL MG PER RUN
2	impinger	Cond. 3: RUN #1	< 2.0	336	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.048
3	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.447	0.045	
1	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
39	impinger	BLANK	< 2.0	300	20	HNO3 + H2O2	8.3.4.2	50	0.078	0.004	0.015
4	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.106	0.011	
38	probe rinse		< 2.0	99.0	20	HF + HNO3	8.3.1.2				
6	impinger	Cond. 3: RUN # 2	< 2.0	334	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.032
7	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.285	0.029	
5	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
9	impinger	Cond. 3: RUN # 3	< 2.0	344	20	HNO3 + H2O2	8.3.4.2	50	0.087	0.004	0.032
10	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.274	0.027	
8	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
12	impinger	Cond. 6: RUN #1	< 2.0	331	20	HNO3 + H2O2	8.3.4.2	50	0.087	0.004	0.435
13	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	4.306	0.431	
11	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
15	impinger	Cond. 6: RUN #2	< 2.0	334	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	1.043
16	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	10.394	1.039	
14	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
18	impinger	Cond. 6: RUN #3	< 2.0	335	20	HNO3 + H2O2	8.3.4.2	50	0.100	0.005	1.639
19	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	16.344	1.634	
17	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
21	impinger	Cond. 5: RUN #1	< 2.0	325	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.492
22	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	4.878	0.488	
20	probe rinse		< 2.0	96.0	20	HF + HNO3	8.3.1.2				
24	impinger	Cond. 5: RUN #2	< 2.0	328	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.670
25	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	6.664	0.666	
23	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
27	impinger	Cond. 5: RUN #3	< 2.0	223	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.387
28	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	3.829	0.383	
26	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
30	impinger	Cond. 4: RUN #1	< 2.0	334	20	HNO3 + H2O2	8.3.4.2	50	0.090	0.005	0.094
31	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.895	0.090	
29	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
33	impinger	Cond. 4: RUN #2	< 2.0	325	20	HNO3 + H2O2	8.3.4.2	50	0.106	0.005	0.054
34	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.483	0.048	
32	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
36	impinger	Cond. 4: RUN #3	< 2.0	324	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.029
37	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.249	0.025	
35	probe rinse		< 2.0	96.0	20	HF + HNO3	8.3.1.2				
	impinger	MDL		300	20	HNO3 + H2O2	8.3.4.2	50	0.075	0.004	0.011
	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.075	0.008	
	probe rinse			100.0	20	HF + HNO3	8.3.1.2				

10 Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. Readings that read less than the MDL were qualified with "<", which may or may not carry over to the final result.

11 **mg Ni** = "Rdg" in mg/L **X** Analytical Fraction (mls) **X** "INITIAL SAMPLE VOL" in mls / "SF 2A" in mls **X** 1 L / 1000 mls
Initial sample volume is "Sample Fraction", as **all sample was used.** (There were no "splits")
So, "INITIAL SAMPLE VOL" in mls / "SF 2A" in mls = 1 (per Eq 29-2, & -3)

12 According to RUN ID, the filter+probe rinse were added to impinger results: as "mg of Nickel".

QA/QC WORK SHEET for NICKEL

FLAA METHOD SOP MET-040
5100 AA

Date: 1/9/2006
Analyst: LK

(Mg/L)
IDL= 0.027
MDL= 0.075
RL = 0.10
LDR = 0.10 to 8.0

1 CURRENT COPY OF METHOD AVAILABLE IN WINLAB.

2 INSTRUMENT SET-UP:

(For Specific instrument settings, see current copy of method.)

3 CALIBRATION:

Cal Curve:	Conc	Result	% Rec.	
	0.25	0.237	94.7	
	0.50	0.517	103.3	
	1.00	1.019	101.9	
	2.00	2.069	103.5	
	5.00	4.966	99.3	
Corr. Coef:	xxxxxxxxx	0.9998		(> 0.995)

4 STANDARD TRACEABILITY

QC STANDARD	Standard Name, Company, & Lot #
Calibration	CPI QC-21 41M044
CCV, CRA, AAT	CPI QC-21 41M044
QCS, LFM	CPI 05F011

5 SAMPLE ANALYTICAL RUN

MAT-RIX	SAMPLE	STD CONC	READING Mg/L	BLK	RESULT	DIL 1	DIL 2	QC RESULTS	Mg/L	REP'T mg/L	ICP	
	CCV	5.00	4.981		4.981			100				(95-105%R)
	QCS	2.00	2.043		2.043			102				(95-105%R)
	CCB		-0.024		-0.024			-0.024				(< MDL)
	CRA	0.05	0.077	0.056	0.021			42				(70-130%R)
	CRA	0.10	0.128	0.036	0.092			92				(70-130%R)
	CRA	0.25	0.230	-0.018	0.248			99				(90-110%R)
	CCV	0.25	0.213	-0.018	0.231			92				(90-110%R)
	LRB		-0.015	-0.001	-0.014			-0.014				(< MDL)
	LFB	1.50	1.608	-0.015	1.623			108				(80-120%R)
M29	202-1+3		0.431	-0.015	0.447	1.0	1.0		0.447	**0.447**		
M29	DUP		0.405	-0.030	0.434	1.0	1.0	2.8				(<10 RPD, IF SA > 20X MDL)
M29	SPK	1.00	1.431	0.006	1.425	1.0	1.0	98				(80-120%R)
M29	SER DIL	2/10	0.255	-0.027	0.282	1.0	1.0	1.0				(<10%DIFF)
M29	202-4+38		0.096	-0.011	0.106	1.0	1.0		0.106	**0.106**		
M29	202-5+7		0.249	-0.036	0.285	1.0	1.0		0.285	**0.285**		
M29	202-8+10		0.238	-0.036	0.274	1.0	1.0		0.274	**0.274**		
M29	202-11+13		4.303	-0.003	4.306	1.0	1.0		4.306	**4.306**		
	CCB		-0.008	-0.037	0.029			0.029				(< MDL)
	CCV	5.00	4.966	-0.008	4.974			99				(90-110%R)
M29	202-14+16		8.861	-0.001	8.862	1.0	1.0		8.862			
M29	202-14+16		1.033	-0.006	1.039	10.0	1.0		10.394	**10.394**		
M29	202-17+19		13.060	-0.055	13.115	1.0	1.0		13.115			
M29	202-17+19		1.637	0.003	1.634	10.0	1.0		16.344	**16.344**		
M29	202-20+22		4.871	-0.007	4.878	1.0	1.0		4.878	**4.878**		
M29	202-23+25		5.913	-0.036	5.949	1.0	1.0		5.949			
M29	202-23+25		0.645	-0.021	0.666	10.0	1.0		6.664	**6.664**		
M29	202-26+28		3.860	0.031	3.829	1.0	1.0		3.829	**3.829**		
M29	202-29+31		0.928	0.033	0.895	1.0	1.0		0.895	**0.895**		
M29	202-32+34		0.449	-0.035	0.483	1.0	1.0		0.483	**0.483**		
M29	202-35+37		0.311	0.063	0.249	1.0	1.0		0.249	**0.249**		
	CCB		0.036	-0.021	0.057			0.057				(< MDL)
	CCV	0.50	0.469	0.036	0.433			87	RERUN ONCE!			(90-110%R)
	CCV	0.50	0.488	0.016	0.472			94	OK; SO CONT.			(90-110%R)
	LRB		-0.010	-0.021	0.010			0.010				(< MDL)
	LFB	1.00	1.033	-0.020	1.053			105				(80-120%R)
M29	202-2		0.078	0.027	0.051	1.0	1.0		0.051	**0.074**		
M29	DUP		0.057	0.027	0.030	1.0	1.0	50.9	SEE SER			(<10 RPD, IF SA > 20X MDL)
M29	SPK	1.00	1.084	-0.030	1.114	1.0	1.0	106				(80-120%R)
M29	SER DIL	2/10	0.183	-0.033	0.216	1.0	1.0	3.1				(<10%DIFF)
M29	DSER DIL	2/10	0.191	-0.047	0.238	1.0	1.0	9.8	OK; SO CONT.			(<10%DIFF)
M29	202-39		0.042	-0.035	0.078	1.0	1.0		0.078	**0.078**		
M29	202-6		-0.024	0.059	-0.082	1.0	1.0		-0.082	**0.074**		
M29	202-9		0.050	-0.038	0.087	1.0	1.0		0.087	**0.087**		
M29	202-12		0.032	-0.055	0.087	1.0	1.0		0.087	**0.087**		
	CCB		0.009	-0.020	0.029			0.029				(< MDL)
	CCV	1.00	1.091	0.009	1.082			108				(90-110%R)
M29	202-15		0.013	-0.039	0.052	1.0	1.0		0.052	**0.074**		
M29	202-18		0.052	-0.048	0.100	1.0	1.0		0.100	**0.100**		
M29	202-21		-0.001	-0.048	0.048	1.0	1.0		0.048	**0.074**		
M29	202-24		0.028	-0.005	0.033	1.0	1.0		0.033	**0.074**		
M29	202-27		0.068	0.017	0.051	1.0	1.0		0.051	**0.074**		
M29	202-30		0.045	-0.045	0.090	1.0	1.0		0.090	**0.090**		
M29	202-33		0.068	-0.038	0.106	1.0	1.0		0.106	**0.106**		
M29	202-36		0.078	0.003	0.074	1.0	1.0		0.074	**0.074**		
	CCB		-0.005	0.021	-0.027			-0.027				(< MDL)
	CCV	0.25	0.266	-0.005	0.271			108				(90-110%R)

Method Name: NI
Method Description: Nickel

Element: Ni

Date: 01/09/2006
Technique: Flame
Wavelength: 232.0 nm
Lamp Current: 15
Sample Info File: Untitled

Calibration Equation: Zero Intercept: Linear
Slit Width: 0.20 nm
Energy: 70
Results Data Set:

Element: Ni Seq. No.: 1 AS Loc.: --- Date: 01/09/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.074	0.074	0.000	08:35:00
2			0.075	0.075	0.000	08:35:02
3			0.075	0.075	0.000	08:35:04
Mean:			0.075			
SD :			0.000			
%RSD:			0.46			

Auto-zero performed.

Element: Ni Seq. No.: 2 AS Loc.: --- Date: 01/09/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.008	0.083	-0.009	08:36:44
2			0.004	0.078	-0.005	08:36:46
3			0.009	0.083	-0.009	08:36:48
Mean:			0.007			
SD :			0.003			
%RSD:			40.94			

Auto-zero performed.

Element: Ni Seq. No.: 3 AS Loc.: --- Date: 01/09/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.039	0.121	-0.044	08:36:57
2			0.005	0.087	-0.013	08:36:59
3			0.266	0.347	-0.275	08:37:01
Mean:			0.103			
SD :			0.142			
%RSD:			137.20			

Auto-zero performed.

Element: Ni Seq. No.: 4 AS Loc.: --- Date: 01/09/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.106	0.079	-0.005	08:38:11
2			-0.097	0.088	-0.014	08:38:14
3			-0.100	0.085	-0.011	08:38:17
Mean:			-0.101			
SD :			0.005			
%RSD:			4.53			

Auto-zero performed.

Element: Ni Seq. No.: 5 AS Loc.: --- Date: 01/09/2006
Sample ID: Calib Blank

Not Stable

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.003	0.081	-0.006	08:41:11
2			0.005	0.088	-0.014	08:41:13
3			0.007	0.091	-0.016	08:41:15
Mean:			0.003			
SD :			0.005			
%RSD:			189.79			

Auto-zero performed.

Element: Ni Seq. No.: 6 AS Loc.: --- Date: 01/09/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.000	0.087	-0.013	08:41:35
2			-0.001	0.086	-0.011	08:41:37
3			-0.003	0.084	-0.009	08:41:39
Mean:			-0.001			
SD :			0.002			
%RSD:			151.73			

Auto-zero performed.

Element: Ni Seq. No.: 7 AS Loc.: --- Date: 01/09/2006
Sample ID: CAL STD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.004	0.090	-0.005	08:42:24
2			0.005	0.091	-0.005	08:42:26
3			0.003	0.089	-0.004	08:42:28
Mean:			0.004			
SD :			0.001			
%RSD:			24.43			

Standard number 1 applied. [0.25]
Correlation Coefficient: 1.0000 Slope: 0.0162

Run Blank for awhile before continuing.

Element: Ni Seq. No.: 36 AS Loc.: --- Date: 01/09/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.003	0.087	-0.011	09:21:13
2			-0.001	0.082	-0.007	09:21:15
3			-0.003	0.081	-0.005	09:21:17
Mean:			0.000			
SD :			0.003			
%RSD:			2081.21			

Auto-zero performed.

Element: Ni Seq. No.: 37 AS Loc.: --- Date: 01/09/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.004	0.079	-0.003	09:40:22
2			-0.003	0.080	-0.003	09:40:24
3			-0.005	0.079	-0.002	09:40:26
Mean:			-0.004			
SD :			0.001			
%RSD:			20.40			

Auto-zero performed.

Element: Ni Seq. No.: 38 AS Loc.: --- Date: 01/09/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.001	0.079	-0.002	09:46:18
2			0.001	0.080	-0.002	09:46:20
3			-0.001	0.078	-0.001	09:46:23
Mean:			0.000			
SD :			0.001			
%RSD:			187.21			

Auto-zero performed.

Element: Ni Seq. No.: 39 AS Loc.: --- Date: 01/09/2006
Sample ID: ~~CAL STD~~ DI WK 1-9-06

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.001	0.080	-0.003	09:46:40
2			0.000	0.079	-0.002	09:46:42
3			-0.001	0.078	-0.001	09:46:44
Mean:			0.000			
SD :			0.001			
%RSD:			244.31			

Standard number 1 applied. [0.25]
Correlation Coefficient: 0.9979 Slope: 0.0377

Element: Ni Seq. No.: 40 AS Loc.: --- Date: 01/09/2006
Sample ID: CAL STD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.009	0.088	0.000	09:47:11
2			0.009	0.088	0.000	09:47:13
3			0.009	0.088	0.000	09:47:15
Mean:			0.009			
SD :			0.000			
%RSD:			3.40			

Standard number 1 applied. [0.25]
Correlation Coefficient: 0.9998 Slope: 0.0377

Element: Ni Seq. No.: 41 AS Loc.: --- Date: 01/09/2006
Sample ID: cal std 2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.018	0.097	0.001	09:47:29
2			0.021	0.100	-0.002	09:47:31
3			0.020	0.099	0.000	09:47:33
Mean:			0.020			
SD :			0.001			
%RSD:			6.26			

Standard number 2 applied. [0.50]
Correlation Coefficient: 0.9998 Slope: 0.0377

Element: Ni Seq. No.: 42 AS Loc.: --- Date: 01/09/2006
Sample ID: cal std 3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.039	0.118	0.000	09:48:03
2			0.038	0.117	0.001	09:48:05
3			0.039	0.118	0.000	09:48:07
Mean:			0.039			
SD :			0.000			
%RSD:			1.06			

Standard number 3 applied. [1.00]
Correlation Coefficient: 0.9998 Slope: 0.0377

Element: Ni Seq. No.: 43 AS Loc.: --- Date: 01/09/2006
Sample ID: cal std 4

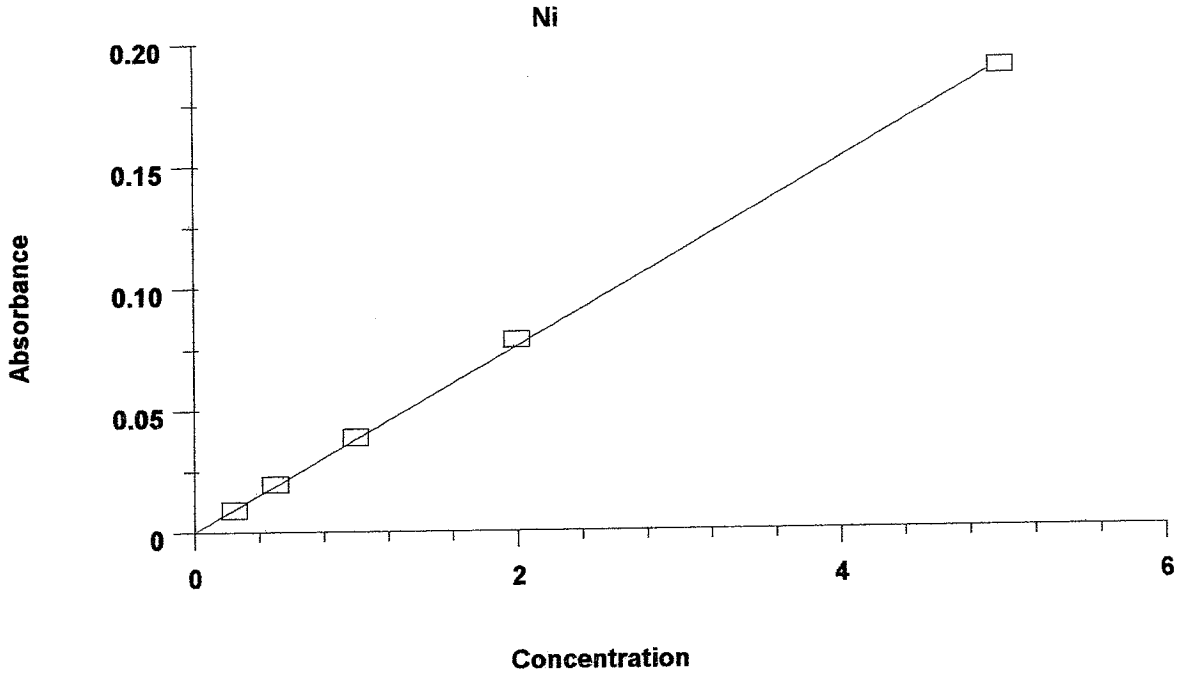
Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.078	0.157	0.001	09:48:25
2			0.079	0.158	0.001	09:48:27
3			0.078	0.157	0.001	09:48:30
Mean:			0.078			
SD :			0.000			
%RSD:			0.56			

Standard number 4 applied. [2.00]
Correlation Coefficient: 0.9997 Slope: 0.0377

Element: Ni Seq. No.: 44 AS Loc.: --- Date: 01/09/2006
Sample ID: cal std 5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.188	0.267	0.001	09:48:47
2			0.188	0.267	0.002	09:48:49
3			0.189	0.267	0.001	09:48:51
Mean:			0.188			
SD :			0.001			
%RSD:			0.27			

Standard number 5 applied. [5.00]
Correlation Coefficient: 0.9998 Slope: 0.0378

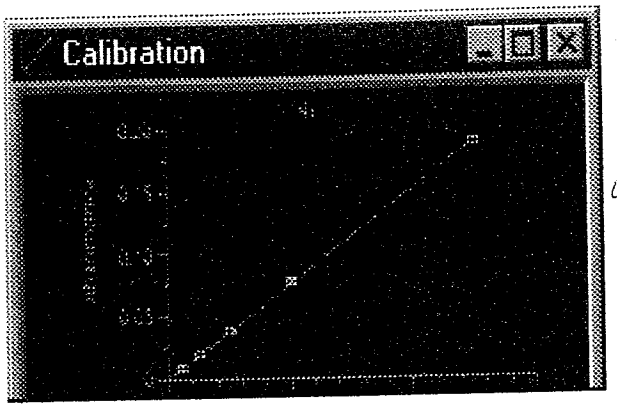


Calibration data for Ni

Standard ID	Mean Signal (Absorbance)	Entered Concentration (mg/L)	Calculated Concentration (mg/L)	Standard Deviation	%RSD
Calib Blank	0.000	----	0.000	0.0009	187.2082
CAL STD	0.009	0.25	0.2368	0.0003	3.3956
cal std 2	0.020	0.50	0.5167	0.0012	6.2608
cal std 3	0.039	1.00	1.019	0.0004	1.0583
cal std 4	0.078	2.00	2.069	0.0004	0.5556
cal std 5	0.188	5.00	4.966	0.0005	0.2662

Correlation Coefficient: 0.99978 Slope: 0.03784

OK



OOPS on Print

Element: Ni Seq. No.: 45 AS Loc.: --- Date: 01/09/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	5.002	5.002	0.189	0.268	0.001	09:49:39
2	4.997	4.997	0.189	0.268	0.001	09:49:41
3	4.944	4.944	0.187	0.266	0.001	09:49:43
Mean:	4.981	4.981	0.188			
SD :	0.0317	0.0317	0.001			
%RSD:	0.64	0.64	0.64			

Element: Ni Seq. No.: 46 AS Loc.: --- Date: 01/09/2006
Sample ID: qcs

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.020	2.020	0.076	0.155	0.001	09:50:05
2	2.036	2.036	0.077	0.156	0.001	09:50:07
3	2.072	2.072	0.078	0.157	0.001	09:50:10
Mean:	2.043	2.043	0.077			
SD :	0.0267	0.0267	0.001			
%RSD:	1.31	1.31	1.31			

Element: Ni Seq. No.: 47 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0143	-0.0143	-0.001	0.078	-0.001	09:50:29
2	0.0124	0.0124	0.000	0.079	-0.003	09:50:31
3	-0.0698	-0.0698	-0.003	0.076	0.001	09:50:33
Mean:	-0.0239	-0.0239	-0.001			
SD :	0.0419	0.0419	0.002			
%RSD:	175.3	175.3	175.28			

Element: Ni Seq. No.: 48 AS Loc.: --- Date: 01/09/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0009	0.0009	0.000	0.079	-0.002	09:50:39

Auto-zero performed.

Element: Ni Seq. No.: 49 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0500	-0.0500	-0.002	0.077	0.000	09:50:47
2	0.0695	0.0695	0.003	0.082	-0.005	09:50:49
3	0.1486	0.1486	0.006	0.085	-0.008	09:50:51
Mean:	0.0560	0.0560	0.002			
SD :	0.1000	0.1000	0.004			
%RSD:	178.5	178.5	178.50			

Element: Ni Seq. No.: 50 AS Loc.: --- Date: 01/09/2006
Sample ID: cra 0.05

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0583	0.0583	0.002	0.081	-0.002	09:51:08
2	-0.0034	-0.0034	0.000	0.079	0.001	09:51:11
3	0.1755	0.1755	0.007	0.086	-0.006	09:51:13
Mean:	0.0768	0.0768	0.003			
SD :	0.0909	0.0909	0.003			
%RSD:	118.3	118.3	118.26			

Element: Ni Seq. No.: 51 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0028	0.0028	0.000	0.079	-0.002	09:51:28
2	-0.0157	-0.0157	-0.001	0.078	-0.001	09:51:31
3	-0.0071	-0.0071	0.000	0.079	-0.001	09:51:33
Mean:	-0.0067	-0.0067	0.000			
SD :	0.0093	0.0093	0.000			
%RSD:	139.5	139.5	139.48			

Element: Ni Seq. No.: 52 AS Loc.: --- Date: 01/09/2006
Sample ID: cra 0.1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1333	0.1333	0.005	0.084	-0.002	09:53:39
2	0.1612	0.1612	0.006	0.085	-0.003	09:53:41
3	0.0901	0.0901	0.003	0.082	-0.001	09:53:43
Mean:	0.1282	0.1282	0.005			
SD :	0.0358	0.0358	0.001			
%RSD:	27.92	27.92	27.92			

Element: Ni Seq. No.: 53 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0336	0.0336	0.001	0.080	-0.004	09:54:42
2	0.0624	0.0624	0.002	0.081	-0.005	09:54:45
3	0.0113	0.0113	0.000	0.079	-0.002	09:54:47
Mean:	0.0358	0.0358	0.001			
SD :	0.0256	0.0256	0.001			
%RSD:	71.61	71.61	71.61			

this blank for 0.1 ppm

Element: Ni Seq. No.: 54 AS Loc.: --- Date: 01/09/2006
Sample ID: cra 0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1925	0.1925	0.007	0.086	0.001	09:55:20
2	0.2165	0.2165	0.008	0.087	0.000	09:55:22
3	0.2287	0.2287	0.009	0.088	0.000	09:55:24
Mean:	0.2126	0.2126	0.008			
SD :	0.0184	0.0184	0.001			
%RSD:	8.67	8.67	8.67			

A little Low
So return

Element: Ni Seq. No.: 55 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0011	-0.0011	0.000	0.079	-0.001	09:56:18
2	-0.0281	-0.0281	-0.001	0.078	0.000	09:56:20
3	-0.0246	-0.0246	-0.001	0.078	0.000	09:56:22
Mean:	-0.0179	-0.0179	-0.001			
SD :	0.0147	0.0147	0.001			
%RSD:	82.07	82.07	82.07			

use this blank

Element: Ni Seq. No.: 56 AS Loc.: --- Date: 01/09/2006
Sample ID: cra 0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2321	0.2321	0.009	0.088	0.000	09:56:47
2	0.2285	0.2285	0.009	0.088	0.000	09:56:49
3	0.2294	0.2294	0.009	0.088	0.000	09:56:52
Mean:	0.2300	0.2300	0.009			
SD :	0.0018	0.0018	0.000			
%RSD:	0.80	0.80	0.80			

OK

Element: Ni Seq. No.: 57 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0392	-0.0392	-0.001	0.078	0.000	09:57:40
2	-0.0343	-0.0343	-0.001	0.078	0.000	09:57:42
3	-0.0201	-0.0201	-0.001	0.078	-0.001	09:57:45
Mean:	-0.0312	-0.0312	-0.001			
SD :	0.0099	0.0099	0.000			
%RSD:	31.73	31.73	31.73			

Element: Ni Seq. No.: 58 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0159	-0.0159	-0.001	0.078	-0.001	10:03:38
2	0.0509	0.0509	0.002	0.081	-0.004	10:03:40
3	-0.0378	-0.0378	-0.001	0.078	0.000	10:03:42
Mean:	-0.0009	-0.0009	0.000			
SD :	0.0462	0.0462	0.002			
%RSD:	4903	4903	4902.95			

Element: Ni Seq. No.: 59 AS Loc.: --- Date: 01/09/2006
Sample ID: lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0081	-0.0081	0.000	0.079	0.000	10:06:42
2	-0.0325	-0.0325	-0.001	0.078	0.000	10:06:44
3	-0.0051	-0.0051	0.000	0.079	-0.001	10:06:47
Mean:	-0.0153	-0.0153	-0.001			
SD :	0.0150	0.0150	0.001			
%RSD:	98.46	98.46	98.46			

Element: Ni Seq. No.: 60 AS Loc.: --- Date: 01/09/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.621	1.621	0.061	0.140	0.001	10:08:30
2	1.607	1.607	0.061	0.140	0.000	10:08:32
3	1.596	1.596	0.060	0.139	0.000	10:08:35
Mean:	1.608	1.608	0.061			
SD :	0.0124	0.0124	0.000			
%RSD:	0.77	0.77	0.77			

Element: Ni Seq. No.: 61 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.4422	0.4422	0.017	0.096	0.000	10:09:14
2	0.4224	0.4224	0.016	0.095	0.001	10:09:17
3	0.4290	0.4290	0.016	0.095	0.000	10:09:19
Mean:	0.4312	0.4312	0.016			
SD :	0.0101	0.0101	0.000			
%RSD:	2.34	2.34	2.34			

Element: Ni Seq. No.: 62 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0223	-0.0223	-0.001	0.078	0.000	10:09:59
2	-0.0304	-0.0304	-0.001	0.078	0.000	10:10:01
3	-0.0357	-0.0357	-0.001	0.078	0.000	10:10:03
Mean:	-0.0295	-0.0295	-0.001			
SD :	0.0068	0.0068	0.000			
%RSD:	22.97	22.97	22.97			

Element: Ni Seq. No.: 63 AS Loc.: --- Date: 01/09/2006
Sample ID: d202-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.4099	0.4099	0.016	0.095	0.001	10:10:29
2	0.4021	0.4021	0.015	0.094	0.001	10:10:31
3	0.4023	0.4023	0.015	0.094	0.001	10:10:33
Mean:	0.4047	0.4047	0.015			
SD :	0.0044	0.0044	0.000			
%RSD:	1.10	1.10	1.10			

Element: Ni Seq. No.: 64 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0228	-0.0228	-0.001	0.078	0.000	10:10:50
2	0.0470	0.0470	0.002	0.081	-0.003	10:10:52
3	-0.0051	-0.0051	0.000	0.079	-0.001	10:10:54
Mean:	0.0064	0.0064	0.000			
SD :	0.0363	0.0363	0.001			
%RSD:	570.5	570.5	570.46			

Element: Ni Seq. No.: 65 AS Loc.: --- Date: 01/09/2006
Sample ID: s202-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.419	1.419	0.054	0.133	0.001	10:11:14
2	1.419	1.419	0.054	0.133	0.001	10:11:16
3	1.455	1.455	0.055	0.134	0.000	10:11:18
Mean:	1.431	1.431	0.054			
SD :	0.0204	0.0204	0.001			
%RSD:	1.43	1.43	1.43			

Element: Ni Seq. No.: 66 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0081	-0.0081	0.000	0.079	-0.001	10:11:34
2	-0.0226	-0.0226	-0.001	0.078	0.000	10:11:36
3	-0.0498	-0.0498	-0.002	0.077	0.000	10:11:38
Mean:	-0.0269	-0.0269	-0.001			
SD :	0.0212	0.0212	0.001			
%RSD:	78.83	78.83	78.83			

Element: Ni Seq. No.: 67 AS Loc.: --- Date: 01/09/2006
Sample ID: ser202-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2490	0.2490	0.009	0.088	0.000	10:12:34
2	0.2584	0.2584	0.010	0.089	0.000	10:12:36
3	0.2584	0.2584	0.010	0.089	0.000	10:12:39
Mean:	0.2553	0.2553	0.010			
SD :	0.0054	0.0054	0.000			
%RSD:	2.12	2.12	2.12			

Element: Ni Seq. No.: 68 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0092	-0.0092	0.000	0.079	-0.001	10:12:52
2	-0.0237	-0.0237	-0.001	0.078	0.000	10:12:54
3	0.0002	0.0002	0.000	0.079	-0.002	10:12:56
Mean:	-0.0109	-0.0109	0.000			
SD :	0.0120	0.0120	0.000			
%RSD:	110.3	110.3	110.30			

Element: Ni Seq. No.: 69 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-4+38

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1234	0.1234	0.005	0.084	-0.004	10:13:28
2	0.0758	0.0758	0.003	0.082	-0.002	10:13:30
3	0.0873	0.0873	0.003	0.082	-0.002	10:13:32
Mean:	0.0955	0.0955	0.004			
SD :	0.0248	0.0248	0.001			
%RSD:	25.98	25.98	25.98			

Element: Ni Seq. No.: 70 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0460	-0.0460	-0.002	0.077	0.000	10:13:47
2	-0.0325	-0.0325	-0.001	0.078	0.000	10:13:49
3	-0.0285	-0.0285	-0.001	0.078	-0.001	10:13:51
Mean:	-0.0356	-0.0356	-0.001			
SD :	0.0092	0.0092	0.000			
%RSD:	25.69	25.69	25.69			

Element: Ni Seq. No.: 71 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-5+7

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2487	0.2487	0.009	0.088	0.000	10:14:14
2	0.2356	0.2356	0.009	0.088	0.000	10:14:16
3	0.2635	0.2635	0.010	0.089	0.000	10:14:18
Mean:	0.2493	0.2493	0.009			
SD :	0.0140	0.0140	0.001			
%RSD:	5.61	5.61	5.61			

Element: Ni Seq. No.: 72 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0355	-0.0355	-0.001	0.078	0.000	10:14:32
2	-0.0216	-0.0216	-0.001	0.078	0.000	10:14:34
3	-0.0513	-0.0513	-0.002	0.077	0.001	10:14:37
Mean:	-0.0361	-0.0361	-0.001			
SD :	0.0149	0.0149	0.001			
%RSD:	41.13	41.13	41.13			

Element: Ni Seq. No.: 73 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-8+10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2427	0.2427	0.009	0.088	0.000	10:14:59
2	0.2428	0.2428	0.009	0.088	0.001	10:15:02
3	0.2280	0.2280	0.009	0.088	0.001	10:15:04
Mean:	0.2378	0.2378	0.009			
SD :	0.0085	0.0085	0.000			
%RSD:	3.58	3.58	3.58			

Element: Ni Seq. No.: 74 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0368	0.0368	0.001	0.080	-0.003	10:15:20
2	-0.0027	-0.0027	0.000	0.079	-0.001	10:15:23
3	-0.0435	-0.0435	-0.002	0.077	0.000	10:15:25
Mean:	-0.0031	-0.0031	0.000			
SD :	0.0401	0.0401	0.002			
%RSD:	1285	1285	1284.97			

Element: Ni Seq. No.: 75 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-11+13

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.321	4.321	0.163	0.243	0.001	10:15:44
2	4.294	4.294	0.162	0.241	0.001	10:15:46
3	4.295	4.295	0.163	0.242	0.001	10:15:48
Mean:	4.303	4.303	0.163			
SD :	0.0153	0.0153	0.001			
%RSD:	0.35	0.35	0.35			

Element: Ni Seq. No.: 76 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0251	-0.0251	-0.001	0.078	0.000	10:16:08
2	-0.0573	-0.0573	-0.002	0.077	0.001	10:16:10
3	-0.0277	-0.0277	-0.001	0.078	0.000	10:16:12
Mean:	-0.0367	-0.0367	-0.001			
SD :	0.0179	0.0179	0.001			
%RSD:	48.65	48.65	48.65			

Element: Ni Seq. No.: 77 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0435	-0.0435	-0.002	0.077	0.000	10:16:20
2	0.0037	0.0037	0.000	0.079	-0.002	10:16:22
3	0.0164	0.0164	0.001	0.080	-0.003	10:16:24
Mean:	-0.0078	-0.0078	0.000			
SD :	0.0316	0.0316	0.001			
%RSD:	405.9	405.9	405.92			

Element: Ni Seq. No.: 78 AS Loc.: --- Date: 01/09/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.959	4.959	0.188	0.267	0.001	10:16:49
2	4.957	4.957	0.188	0.267	0.001	10:16:51
3	4.981	4.981	0.188	0.268	0.002	10:16:53
Mean:	4.966	4.966	0.188			
SD :	0.0134	0.0134	0.001			
%RSD:	0.27	0.27	0.27			

Element: Ni Seq. No.: 79 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0201	-0.0201	-0.001	0.078	-0.001	10:17:12
2	0.0152	0.0152	0.001	0.080	-0.002	10:17:14
3	0.0035	0.0035	0.000	0.079	-0.001	10:17:16
Mean:	-0.0005	-0.0005	0.000			
SD :	0.0180	0.0180	0.001			
%RSD:	3822	3822	3821.57			

Element: Ni Seq. No.: 80 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-14+16

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	8.833	8.833	0.334	0.413	0.002	10:17:34
Sample absorbance is greater than that of the highest standard.						
2	8.899	8.899	0.337	0.416	0.001	10:17:36
Sample absorbance is greater than that of the highest standard.						
3	8.851	8.851	0.335	0.414	0.001	10:17:38
Sample absorbance is greater than that of the highest standard.						
Mean:	8.861	8.861	0.335			
SD :	0.0340	0.0340	0.001			
%RSD:	0.38	0.38	0.38			

Sample absorbance is greater than that of the highest standard.

Element: Ni Seq. No.: 81 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0336	-0.0336	-0.001	0.078	0.000	10:18:00
2	-0.0242	-0.0242	-0.001	0.078	0.000	10:18:02
3	0.0387	0.0387	0.001	0.080	-0.003	10:18:04
Mean:	-0.0064	-0.0064	0.000			
SD :	0.0393	0.0393	0.001			
%RSD:	617.8	617.8	617.84			

Element: Ni Seq. No.: 82 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-14+16 x10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.026	1.026	0.039	0.118	0.001	10:19:09
2	1.032	1.032	0.039	0.118	0.001	10:19:11
3	1.041	1.041	0.039	0.118	0.000	10:19:14
Mean:	1.033	1.033	0.039			
SD :	0.0076	0.0076	0.000			
%RSD:	0.74	0.74	0.74			

Element: Ni Seq. No.: 83 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0408	-0.0408	-0.002	0.077	0.000	10:19:30
2	-0.0721	-0.0721	-0.003	0.076	0.001	10:19:32
3	-0.0507	-0.0507	-0.002	0.077	0.000	10:19:34
Mean:	-0.0546	-0.0546	-0.002			
SD :	0.0160	0.0160	0.001			
%RSD:	29.31	29.31	29.31			

Element: Ni Seq. No.: 84 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-17+19

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	13.09	13.09	0.495	0.574	0.001	10:19:59
Sample absorbance is greater than that of the highest standard.						
2	13.10	13.10	0.496	0.575	0.001	10:20:01
Sample absorbance is greater than that of the highest standard.						
3	13.06	13.06	0.494	0.573	0.001	10:20:04
Sample absorbance is greater than that of the highest standard.						
Mean:	13.08	13.08	0.495			
SD :	0.0230	0.0230	0.001			
%RSD:	0.18	0.18	0.18			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 85 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0163	-0.0163	-0.001	0.078	-0.001	10:20:19
2	0.0532	0.0532	0.002	0.081	-0.003	10:20:21
3	-0.0292	-0.0292	-0.001	0.078	0.000	10:20:23
Mean:	0.0026	0.0026	0.000			
SD :	0.0443	0.0443	0.002			
%RSD:	1709	1709	1708.94			

Element: Ni Seq. No.: 86 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-17+19 x10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.627	1.627	0.062	0.141	0.001	10:21:17
2	1.666	1.666	0.063	0.142	0.000	10:21:20
3	1.618	1.618	0.061	0.140	0.001	10:21:22
Mean:	1.637	1.637	0.062			
SD :	0.0256	0.0256	0.001			
%RSD:	1.56	1.56	1.56			

Element: Ni Seq. No.: 87 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0551	0.0551	0.002	0.081	-0.003	10:21:42
2	-0.0445	-0.0445	-0.002	0.077	0.000	10:21:45
3	-0.0306	-0.0306	-0.001	0.078	0.000	10:21:47
Mean:	-0.0067	-0.0067	0.000			
SD :	0.0540	0.0540	0.002			
%RSD:	810.8	810.8	810.76			

Element: Ni Seq. No.: 88 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-20+22

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.886	4.886	0.185	0.264	0.001	10:22:10
2	4.831	4.831	0.183	0.262	0.001	10:22:12
3	4.897	4.897	0.185	0.264	0.001	10:22:14
Mean:	4.871	4.871	0.184			
SD :	0.0352	0.0352	0.001			
%RSD:	0.72	0.72	0.72			

Element: Ni Seq. No.: 89 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0493	-0.0493	-0.002	0.077	0.000	10:22:30
2	-0.0133	-0.0133	-0.001	0.079	-0.001	10:22:32
3	-0.0438	-0.0438	-0.002	0.077	0.001	10:22:35
Mean:	-0.0355	-0.0355	-0.001			
SD :	0.0194	0.0194	0.001			
%RSD:	54.78	54.78	54.78			

Element: Ni Seq. No.: 90 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-23+25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	5.940	5.940	0.225	0.304	0.001	10:23:00
Sample absorbance is greater than that of the highest standard.						
2	5.925	5.925	0.224	0.303	0.002	10:23:02
Sample absorbance is greater than that of the highest standard.						
3	5.875	5.875	0.222	0.301	0.001	10:23:04
Sample absorbance is greater than that of the highest standard.						
Mean:	5.913	5.913	0.224			
SD :	0.0342	0.0342	0.001			
%RSD:	0.58	0.58	0.58			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 91 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0631	-0.0631	-0.002	0.077	0.001	10:23:35
2	0.0004	0.0004	0.000	0.079	-0.001	10:23:37
3	-0.0012	-0.0012	0.000	0.079	-0.002	10:23:39
Mean:	-0.0213	-0.0213	-0.001			
SD :	0.0362	0.0362	0.001			
%RSD:	169.7	169.7	169.66			

Element: Ni Seq. No.: 92 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-23+25 x10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.6306	0.6306	0.024	0.103	0.001	10:24:34
2	0.6471	0.6471	0.024	0.104	0.001	10:24:37
3	0.6575	0.6575	0.025	0.104	0.001	10:24:39
Mean:	0.6451	0.6451	0.024			
SD :	0.0135	0.0135	0.001			
%RSD:	2.10	2.10	2.10			

Element: Ni Seq. No.: 93 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0060	0.0060	0.000	0.079	-0.002	10:25:18
2	0.0629	0.0629	0.002	0.081	-0.004	10:25:20
3	0.0230	0.0230	0.001	0.080	-0.002	10:25:22
Mean:	0.0306	0.0306	0.001			
SD :	0.0292	0.0292	0.001			
%RSD:	95.37	95.37	95.37			

Element: Ni Seq. No.: 94 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-26+28

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	3.834	3.834	0.145	0.224	0.001	10:25:50
2	3.872	3.872	0.147	0.226	0.001	10:25:53
3	3.874	3.874	0.147	0.226	0.000	10:25:55
Mean:	3.860	3.860	0.146			
SD :	0.0225	0.0225	0.001			
%RSD:	0.58	0.58	0.58			

Element: Ni Seq. No.: 95 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0034	0.0034	0.000	0.079	-0.001	10:26:11
2	0.0606	0.0606	0.002	0.081	-0.004	10:26:13
3	0.0362	0.0362	0.001	0.080	-0.003	10:26:15
Mean:	0.0334	0.0334	0.001			
SD :	0.0287	0.0287	0.001			
%RSD:	86.03	86.03	86.03			

Element: Ni Seq. No.: 96 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-29+31

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.9253	0.9253	0.035	0.114	0.001	10:26:38
2	0.9260	0.9260	0.035	0.114	0.000	10:26:40
3	0.9332	0.9332	0.035	0.114	0.000	10:26:42
Mean:	0.9282	0.9282	0.035			
SD :	0.0044	0.0044	0.000			
%RSD:	0.47	0.47	0.47			

Element: Ni Seq. No.: 97 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0491	-0.0491	-0.002	0.077	0.001	10:26:59
2	-0.0371	-0.0371	-0.001	0.078	0.000	10:27:01
3	-0.0171	-0.0171	-0.001	0.078	-0.001	10:27:03
Mean:	-0.0345	-0.0345	-0.001			
SD :	0.0162	0.0162	0.001			
%RSD:	46.89	46.89	46.89			

Element: Ni Seq. No.: 98 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-32+34

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.4242	0.4242	0.016	0.095	0.000	10:27:42
2	0.4207	0.4207	0.016	0.095	0.000	10:27:44
3	0.5014	0.5014	0.019	0.098	-0.002	10:27:46
Mean:	0.4488	0.4488	0.017			
SD :	0.0456	0.0456	0.002			
%RSD:	10.17	10.17	10.17			

Element: Ni Seq. No.: 99 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1494	0.1494	0.006	0.085	-0.007	10:28:01
2	0.0253	0.0253	0.001	0.080	-0.002	10:28:03
3	0.0136	0.0136	0.001	0.080	-0.001	10:28:05
Mean:	0.0627	0.0627	0.002			
SD :	0.0752	0.0752	0.003			
%RSD:	119.9	119.9	119.90			

Element: Ni Seq. No.: 100 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-35+37

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2780	0.2780	0.011	0.090	0.000	10:28:26
2	0.3551	0.3551	0.013	0.092	-0.002	10:28:28
3	0.3012	0.3012	0.011	0.090	0.000	10:28:30
Mean:	0.3114	0.3114	0.012			
SD :	0.0395	0.0395	0.001			
%RSD:	12.70	12.70	12.70			

Element: Ni Seq. No.: 101 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0387	-0.0387	-0.001	0.078	0.000	10:28:45
2	0.0108	0.0108	0.000	0.079	-0.002	10:28:47
3	-0.0341	-0.0341	-0.001	0.078	0.000	10:28:49
Mean:	-0.0207	-0.0207	-0.001			
SD :	0.0273	0.0273	0.001			
%RSD:	132.2	132.2	132.22			

Element: Ni Seq. No.: 102 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0133	0.0133	0.001	0.080	-0.003	10:40:03
2	0.0193	0.0193	0.001	0.080	-0.002	10:40:05
3	0.0762	0.0762	0.003	0.082	-0.005	10:40:07
Mean:	0.0362	0.0362	0.001			
SD :	0.0347	0.0347	0.001			
%RSD:	95.83	95.83	95.83			

Element: Ni Seq. No.: 103 AS Loc.: --- Date: 01/09/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.4625	0.4625	0.018	0.097	0.001	10:41:52
2	0.4709	0.4709	0.018	0.097	0.001	10:41:54
3	0.4731	0.4731	0.018	0.097	0.001	10:41:56
Mean:	0.4688	0.4688	0.018			
SD :	0.0056	0.0056	0.000			
%RSD:	1.19	1.19	1.19			

Low - rerun.

Element: Ni Seq. No.: 104 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0009	0.0009	0.000	0.079	-0.002	10:42:27
2	0.0194	0.0194	0.001	0.080	-0.002	10:42:29
3	0.0267	0.0267	0.001	0.080	-0.002	10:42:31
Mean:	0.0157	0.0157	0.001			
SD :	0.0133	0.0133	0.001			
%RSD:	84.93	84.93	84.93			

Element: Ni Seq. No.: 105 AS Loc.: --- Date: 01/09/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.4758	0.4758	0.018	0.097	0.001	10:42:53
2	0.4903	0.4903	0.019	0.098	0.000	10:42:55
3	0.4981	0.4981	0.019	0.098	0.000	10:42:57
Mean:	0.4881	0.4881	0.018			
SD :	0.0113	0.0113	0.000			
%RSD:	2.32	2.32	2.32			

Element: Ni Seq. No.: 106 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0097	-0.0097	0.000	0.079	-0.001	10:43:14
2	-0.0285	-0.0285	-0.001	0.078	0.000	10:43:16
3	-0.0239	-0.0239	-0.001	0.078	0.000	10:43:18
Mean:	-0.0207	-0.0207	-0.001			
SD :	0.0098	0.0098	0.000			
%RSD:	47.22	47.22	47.22			

Element: Ni Seq. No.: 107 AS Loc.: --- Date: 01/09/2006
Sample ID: lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0140	-0.0140	-0.001	0.078	0.000	10:43:36
2	-0.0012	-0.0012	0.000	0.079	0.000	10:43:38
3	-0.0157	-0.0157	-0.001	0.078	0.000	10:43:40
Mean:	-0.0103	-0.0103	0.000			
SD :	0.0079	0.0079	0.000			
%RSD:	76.69	76.69	76.69			

Element: Ni Seq. No.: 108 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0249	-0.0249	-0.001	0.078	-0.001	10:43:57
2	-0.0042	-0.0042	0.000	0.079	-0.002	10:43:59
3	-0.0300	-0.0300	-0.001	0.078	-0.001	10:44:01
Mean:	-0.0197	-0.0197	-0.001			
SD :	0.0137	0.0137	0.001			
%RSD:	69.22	69.22	69.22			

Element: Ni Seq. No.: 109 AS Loc.: --- Date: 01/09/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.016	1.016	0.038	0.117	0.001	10:44:23
2	1.047	1.047	0.040	0.119	0.000	10:44:25
3	1.035	1.035	0.039	0.118	0.000	10:44:27
Mean:	1.033	1.033	0.039			
SD :	0.0158	0.0158	0.001			
%RSD:	1.53	1.53	1.53			

Element: Ni Seq. No.: 110 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0700	0.0700	0.003	0.082	-0.004	10:44:40
2	-0.0536	-0.0536	-0.002	0.077	0.000	10:44:43
3	0.0657	0.0657	0.002	0.082	-0.004	10:44:45
Mean:	0.0274	0.0274	0.001			
SD :	0.0701	0.0701	0.003			
%RSD:	256.0	256.0	256.01			

Element: Ni Seq. No.: 111 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1189	0.1189	0.005	0.084	-0.003	10:45:02
2	0.0636	0.0636	0.002	0.081	-0.001	10:45:04
3	0.0521	0.0521	0.002	0.081	0.000	10:45:06
Mean:	0.0782	0.0782	0.003			
SD :	0.0357	0.0357	0.001			
%RSD:	45.66	45.66	45.66			

Element: Ni Seq. No.: 112 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0048	-0.0048	0.000	0.079	-0.001	10:45:21
2	0.0442	0.0442	0.002	0.081	-0.003	10:45:23
3	0.0417	0.0417	0.002	0.081	-0.003	10:45:25
Mean:	0.0270	0.0270	0.001			
SD :	0.0276	0.0276	0.001			
%RSD:	102.0	102.0	101.99			

Element: Ni Seq. No.: 113 AS Loc.: --- Date: 01/09/2006
Sample ID: d202-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0331	0.0331	0.001	0.080	0.000	10:46:14
2	0.0689	0.0689	0.003	0.082	-0.001	10:46:16
3	0.0696	0.0696	0.003	0.082	-0.001	10:46:18
Mean:	0.0572	0.0572	0.002			
SD :	0.0209	0.0209	0.001			
%RSD:	36.57	36.57	36.57			

Element: Ni Seq. No.: 114 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0069	-0.0069	0.000	0.079	-0.002	10:46:34
2	-0.0216	-0.0216	-0.001	0.078	-0.001	10:46:36
3	-0.0606	-0.0606	-0.002	0.077	0.001	10:46:38
Mean:	-0.0297	-0.0297	-0.001			
SD :	0.0278	0.0278	0.001			
%RSD:	93.53	93.53	93.53			

Element: Ni Seq. No.: 115 AS Loc.: --- Date: 01/09/2006
Sample ID: s202-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.089	1.089	0.041	0.120	0.000	10:47:04
2	1.078	1.078	0.041	0.120	0.000	10:47:06
3	1.086	1.086	0.041	0.120	0.000	10:47:08
Mean:	1.084	1.084	0.041			
SD :	0.0055	0.0055	0.000			
%RSD:	0.50	0.50	0.50			

Element: Ni Seq. No.: 116 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0447	-0.0447	-0.002	0.077	0.000	10:48:19
2	-0.0233	-0.0233	-0.001	0.078	-0.001	10:48:21
3	-0.0316	-0.0316	-0.001	0.078	0.000	10:48:23
Mean:	-0.0332	-0.0332	-0.001			
SD :	0.0108	0.0108	0.000			
%RSD:	32.45	32.45	32.45			

Element: Ni Seq. No.: 117 AS Loc.: --- Date: 01/09/2006
Sample ID: ser202-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1896	0.1896	0.007	0.086	0.000	10:49:21
2	0.1695	0.1695	0.006	0.085	0.000	10:49:23
3	0.1889	0.1889	0.007	0.086	-0.001	10:49:25
Mean:	0.1827	0.1827	0.007			
SD :	0.0114	0.0114	0.000			
%RSD:	6.26	6.26	6.26			

Element: Ni Seq. No.: 118 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0764	-0.0764	-0.003	0.076	0.000	10:49:41
2	0.0027	0.0027	0.000	0.079	-0.002	10:49:43
3	-0.0675	-0.0675	-0.003	0.076	0.000	10:49:45
Mean:	-0.0471	-0.0471	-0.002			
SD :	0.0433	0.0433	0.002			
%RSD:	91.96	91.96	91.96			

Element: Ni Seq. No.: 119 AS Loc.: --- Date: 01/09/2006
Sample ID: dser202-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1939	0.1939	0.007	0.086	0.000	10:50:10
2	0.1817	0.1817	0.007	0.086	0.000	10:50:12
3	0.1974	0.1974	0.007	0.086	0.000	10:50:14
Mean:	0.1910	0.1910	0.007			
SD :	0.0083	0.0083	0.000			
%RSD:	4.32	4.32	4.32			

Element: Ni Seq. No.: 120 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0122	-0.0122	0.000	0.079	-0.001	10:50:35
2	-0.0507	-0.0507	-0.002	0.077	0.000	10:50:37
3	-0.0589	-0.0589	-0.002	0.077	0.000	10:50:39
Mean:	-0.0406	-0.0406	-0.002			
SD :	0.0249	0.0249	0.001			
%RSD:	61.41	61.41	61.41			

Element: Ni Seq. No.: 121 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0237	-0.0237	-0.001	0.078	-0.001	10:53:11
2	-0.0375	-0.0375	-0.001	0.078	0.000	10:53:13
3	-0.0451	-0.0451	-0.002	0.077	0.000	10:53:15
Mean:	-0.0354	-0.0354	-0.001			
SD :	0.0108	0.0108	0.000			
%RSD:	30.62	30.62	30.62			

Element: Ni Seq. No.: 122 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-39

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0152	0.0152	0.001	0.080	0.000	10:53:33
2	0.0617	0.0617	0.002	0.081	-0.001	10:53:36
3	0.0497	0.0497	0.002	0.081	-0.001	10:53:38
Mean:	0.0422	0.0422	0.002			
SD :	0.0241	0.0241	0.001			
%RSD:	57.20	57.20	57.20			

Element: Ni Seq. No.: 123 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0226	-0.0226	-0.001	0.078	-0.001	10:53:52
2	-0.0108	-0.0108	0.000	0.079	-0.001	10:53:54
3	-0.0375	-0.0375	-0.001	0.078	0.000	10:53:56
Mean:	-0.0236	-0.0236	-0.001			
SD :	0.0134	0.0134	0.001			
%RSD:	56.60	56.60	56.60			

Element: Ni Seq. No.: 124 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-6

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0396	0.0396	0.001	0.081	0.001	10:54:13
2	0.0440	0.0440	0.002	0.081	0.000	10:54:15
3	0.0728	0.0728	0.003	0.082	0.000	10:54:17
Mean:	0.0521	0.0521	0.002			
SD :	0.0180	0.0180	0.001			
%RSD:	34.61	34.61	34.61			

Element: Ni Seq. No.: 125 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0444	-0.0444	-0.002	0.077	0.000	10:54:31
2	-0.0433	-0.0433	-0.002	0.077	0.000	10:54:33
3	-0.0253	-0.0253	-0.001	0.078	-0.001	10:54:36
Mean:	-0.0376	-0.0376	-0.001			
SD :	0.0107	0.0107	0.000			
%RSD:	28.50	28.50	28.50			

Element: Ni Seq. No.: 126 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-9

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0592	0.0592	0.002	0.081	-0.001	10:54:51
2	0.0543	0.0543	0.002	0.081	0.000	10:54:53
3	0.0355	0.0355	0.001	0.080	0.000	10:54:56
Mean:	0.0497	0.0497	0.002			
SD :	0.0125	0.0125	0.000			
%RSD:	25.15	25.15	25.15			

Element: Ni Seq. No.: 127 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0627	-0.0627	-0.002	0.077	0.000	10:55:11
2	-0.0403	-0.0403	-0.002	0.077	-0.001	10:55:14
3	-0.0626	-0.0626	-0.002	0.077	0.000	10:55:16
Mean:	-0.0552	-0.0552	-0.002			
SD :	0.0129	0.0129	0.000			
%RSD:	23.38	23.38	23.38			

Element: Ni Seq. No.: 128 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-12

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0108	0.0108	0.000	0.079	0.001	10:55:43
2	0.0578	0.0578	0.002	0.081	-0.001	10:55:45
3	0.0272	0.0272	0.001	0.080	0.000	10:55:47
Mean:	0.0319	0.0319	0.001			
SD :	0.0239	0.0239	0.001			
%RSD:	74.72	74.72	74.72			

Element: Ni Seq. No.: 129 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0756	-0.0756	-0.003	0.076	0.001	10:56:02
2	-0.0567	-0.0567	-0.002	0.077	0.000	10:56:04
3	-0.0891	-0.0891	-0.003	0.076	0.001	10:56:06
Mean:	-0.0738	-0.0738	-0.003			
SD :	0.0162	0.0162	0.001			
%RSD:	22.01	22.01	22.01			

Element: Ni Seq. No.: 130 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0574	-0.0574	-0.002	0.077	-0.001	10:58:09
2	-0.0944	-0.0944	-0.004	0.075	0.001	10:58:11
3	-0.0627	-0.0627	-0.002	0.077	0.000	10:58:13
Mean:	-0.0715	-0.0715	-0.003			
SD :	0.0200	0.0200	0.001			
%RSD:	27.93	27.93	27.93			

Element: Ni Seq. No.: 131 AS Loc.: --- Date: 01/09/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0749	-0.0749	-0.003	0.076	0.000	10:58:58

Auto-zero performed.

Element: Ni Seq. No.: 132 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0368	-0.0368	-0.001	0.075	0.001	10:59:05
2	0.0016	0.0016	0.000	0.076	0.000	10:59:07
3	-0.0244	-0.0244	-0.001	0.075	0.001	10:59:10
Mean:	-0.0199	-0.0199	-0.001			
SD :	0.0196	0.0196	0.001			
%RSD:	98.59	98.59	98.59			

Element: Ni Seq. No.: 133 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0042	0.0042	0.000	0.076	0.000	11:03:17
2	0.0226	0.0226	0.001	0.077	-0.001	11:03:19
3	0.0005	0.0005	0.000	0.076	0.000	11:03:21
Mean:	0.0091	0.0091	0.000			
SD :	0.0118	0.0118	0.000			
%RSD:	129.6	129.6	129.55			

Element: Ni Seq. No.: 134 AS Loc.: --- Date: 01/09/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.085	1.085	0.041	0.117	0.000	11:03:45
2	1.112	1.112	0.042	0.118	0.000	11:03:47
3	1.077	1.077	0.041	0.117	0.001	11:03:50
Mean:	1.091	1.091	0.041			
SD :	0.0185	0.0185	0.001			
%RSD:	1.70	1.70	1.70			

Element: Ni Seq. No.: 135 AS Loc.: --- Date: 01/09/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2860	0.2860	0.011	0.087	0.000	11:04:12
2	0.2812	0.2812	0.011	0.087	0.000	11:04:14
3	0.3049	0.3049	0.012	0.088	-0.001	11:04:16
Mean:	0.2907	0.2907	0.011			
SD :	0.0125	0.0125	0.000			
%RSD:	4.31	4.31	4.31			

Element: Ni Seq. No.: 136 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0382	0.0382	0.001	0.078	-0.002	11:04:29
2	-0.0004	-0.0004	0.000	0.076	0.000	11:04:31
3	0.0352	0.0352	0.001	0.078	-0.002	11:04:33
Mean:	0.0243	0.0243	0.001			
SD :	0.0214	0.0214	0.001			
%RSD:	88.08	88.08	88.08			

Element: Ni Seq. No.: 137 AS Loc.: --- Date: 01/09/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2361	0.2361	0.009	0.085	0.000	11:04:50
2	0.2298	0.2298	0.009	0.085	0.000	11:04:52
3	0.2255	0.2255	0.009	0.085	0.000	11:04:55
Mean:	0.2305	0.2305	0.009			
SD :	0.0053	0.0053	0.000			
%RSD:	2.32	2.32	2.32			

W Tong 1/10 unnecessary

Element: Ni Seq. No.: 138 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0163	-0.0163	-0.001	0.076	-0.001	11:05:11
2	-0.0424	-0.0424	-0.002	0.075	0.000	11:05:13
3	-0.0603	-0.0603	-0.002	0.074	0.001	11:05:15
Mean:	-0.0396	-0.0396	-0.002			
SD :	0.0221	0.0221	0.001			
%RSD:	55.83	55.83	55.83			

Element: Ni Seq. No.: 139 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-15

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0145	0.0145	0.001	0.077	0.001	11:05:31
2	-0.0011	-0.0011	0.000	0.076	0.001	11:05:33
3	0.0247	0.0247	0.001	0.077	0.001	11:05:36
Mean:	0.0127	0.0127	0.000			
SD :	0.0130	0.0130	0.000			
%RSD:	102.1	102.1	102.10			

Element: Ni Seq. No.: 140 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0180	-0.0180	-0.001	0.076	-0.001	11:05:50
2	-0.0700	-0.0700	-0.003	0.074	0.001	11:05:52
3	-0.0546	-0.0546	-0.002	0.074	0.000	11:05:54
Mean:	-0.0475	-0.0475	-0.002			
SD :	0.0267	0.0267	0.001			
%RSD:	56.14	56.14	56.14			

Element: Ni Seq. No.: 141 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-18

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0412	0.0412	0.002	0.078	-0.001	11:06:10
2	0.0686	0.0686	0.003	0.079	-0.001	11:06:12
3	0.0468	0.0468	0.002	0.078	0.000	11:06:14
Mean:	0.0522	0.0522	0.002			
SD :	0.0145	0.0145	0.001			
%RSD:	27.71	27.71	27.71			

Element: Ni Seq. No.: 142 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0601	-0.0601	-0.002	0.074	0.000	11:06:28
2	-0.0373	-0.0373	-0.001	0.075	0.000	11:06:30
3	-0.0472	-0.0472	-0.002	0.074	0.000	11:06:33
Mean:	-0.0482	-0.0482	-0.002			
SD :	0.0114	0.0114	0.000			
%RSD:	23.72	23.72	23.72			

Element: Ni Seq. No.: 143 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-21

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0212	-0.0212	-0.001	0.075	0.001	11:06:47
2	0.0196	0.0196	0.001	0.077	0.000	11:06:49
3	0.0000	0.0000	0.000	0.076	0.001	11:06:51
Mean:	-0.0005	-0.0005	0.000			
SD :	0.0204	0.0204	0.001			
%RSD:	3851	3851	3850.97			

Element: Ni Seq. No.: 144 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0534	-0.0534	-0.002	0.074	0.000	11:07:07
2	-0.0746	-0.0746	-0.003	0.073	0.001	11:07:09
3	-0.0421	-0.0421	-0.002	0.075	0.000	11:07:11
Mean:	-0.0567	-0.0567	-0.002			
SD :	0.0165	0.0165	0.001			
%RSD:	29.13	29.13	29.13			

Element: Ni Seq. No.: 145 AS Loc.: --- Date: 01/09/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0196	-0.0196	-0.001	0.075	-0.001	11:07:15

Auto-zero performed.

Element: Ni Seq. No.: 146 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0253	-0.0253	-0.001	0.074	0.000	11:07:22
2	0.0546	0.0546	0.002	0.078	-0.003	11:07:24
3	-0.0451	-0.0451	-0.002	0.074	0.001	11:07:27
Mean:	-0.0052	-0.0052	0.000			
SD :	0.0528	0.0528	0.002			
%RSD:	1006	1006	1006.49			

Element: Ni Seq. No.: 147 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-24

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0279	0.0279	0.001	0.076	0.001	11:07:46
2	0.0186	0.0186	0.001	0.076	0.001	11:07:48
3	0.0371	0.0371	0.001	0.077	0.000	11:07:51
Mean:	0.0279	0.0279	0.001			
SD :	0.0093	0.0093	0.000			
%RSD:	33.30	33.30	33.30			

Element: Ni Seq. No.: 148 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0788	0.0788	0.003	0.078	-0.004	11:08:05
2	-0.0244	-0.0244	-0.001	0.075	0.000	11:08:08
3	-0.0044	-0.0044	0.000	0.075	-0.001	11:08:10
Mean:	0.0167	0.0167	0.001			
SD :	0.0547	0.0547	0.002			
%RSD:	328.4	328.4	328.36			

Element: Ni Seq. No.: 149 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-27

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0580	0.0580	0.002	0.078	0.001	11:08:27
2	0.0942	0.0942	0.004	0.079	0.000	11:08:29
3	0.0520	0.0520	0.002	0.077	0.001	11:08:31
Mean:	0.0680	0.0680	0.003			
SD :	0.0229	0.0229	0.001			
%RSD:	33.58	33.58	33.58			

Element: Ni Seq. No.: 150 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0437	-0.0437	-0.002	0.074	0.001	11:08:46
2	-0.0562	-0.0562	-0.002	0.073	0.001	11:08:49
3	-0.0341	-0.0341	-0.001	0.074	0.001	11:08:51
Mean:	-0.0447	-0.0447	-0.002			
SD :	0.0111	0.0111	0.000			
%RSD:	24.81	24.81	24.81			

Element: Ni Seq. No.: 151 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-30

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0290	0.0290	0.001	0.077	0.001	11:09:08
2	0.0638	0.0638	0.002	0.078	-0.001	11:09:10
3	0.0424	0.0424	0.002	0.077	0.000	11:09:12
Mean:	0.0451	0.0451	0.002			
SD :	0.0176	0.0176	0.001			
%RSD:	38.96	38.96	38.96			

Element: Ni Seq. No.: 152 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0277	-0.0277	-0.001	0.074	0.001	11:09:29
2	-0.0357	-0.0357	-0.001	0.074	0.001	11:09:31
3	-0.0507	-0.0507	-0.002	0.074	0.001	11:09:33
Mean:	-0.0381	-0.0381	-0.001			
SD :	0.0117	0.0117	0.000			
%RSD:	30.66	30.66	30.66			

Element: Ni Seq. No.: 153 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-33

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0608	0.0608	0.002	0.078	-0.001	11:09:48
2	0.0483	0.0483	0.002	0.077	-0.001	11:09:51
3	0.0933	0.0933	0.004	0.079	-0.002	11:09:53
Mean:	0.0675	0.0675	0.003			
SD :	0.0233	0.0233	0.001			
%RSD:	34.48	34.48	34.48			

Element: Ni Seq. No.: 154 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0012	0.0012	0.000	0.075	-0.001	11:10:08
2	0.0049	0.0049	0.000	0.076	-0.001	11:10:10
3	0.0034	0.0034	0.000	0.076	-0.001	11:10:12
Mean:	0.0032	0.0032	0.000			
SD :	0.0019	0.0019	0.000			
%RSD:	58.53	58.53	58.53			

Element: Ni Seq. No.: 155 AS Loc.: --- Date: 01/09/2006
Sample ID: 202-36

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1020	0.1020	0.004	0.079	-0.002	11:10:29
2	0.0831	0.0831	0.003	0.079	-0.002	11:10:31
3	0.0475	0.0475	0.002	0.077	0.000	11:10:33
Mean:	0.0775	0.0775	0.003			
SD :	0.0276	0.0276	0.001			
%RSD:	35.65	35.65	35.65			

Element: Ni Seq. No.: 156 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0581	0.0581	0.002	0.078	-0.003	11:10:46
2	0.0104	0.0104	0.000	0.076	-0.001	11:10:48
3	-0.0048	-0.0048	0.000	0.075	0.000	11:10:51
Mean:	0.0213	0.0213	0.001			
SD :	0.0328	0.0328	0.001			
%RSD:	154.4	154.4	154.37			

Element: Ni Seq. No.: 157 AS Loc.: --- Date: 01/09/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0012	-0.0012	0.000	0.075	0.000	11:10:58
2	0.0124	0.0124	0.000	0.076	-0.001	11:11:00
3	-0.0270	-0.0270	-0.001	0.074	0.000	11:11:03
Mean:	-0.0053	-0.0053	0.000			
SD :	0.0200	0.0200	0.001			
%RSD:	377.6	377.6	377.55			

Element: Ni Seq. No.: 158 AS Loc.: --- Date: 01/09/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2641	0.2641	0.010	0.085	0.000	11:11:23
2	0.2662	0.2662	0.010	0.086	0.000	11:11:25
3	0.2665	0.2665	0.010	0.086	0.000	11:11:27
Mean:	0.2656	0.2656	0.010			
SD :	0.0013	0.0013	0.000			
%RSD:	0.50	0.50	0.50			

METALS PREP FORM

Set #

Prep Method: (check only one per page)

4mls HF
6 mls HNO_3

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [x] OTHER: Lg Filters

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	11/14	1[30]			LFB		not measured		11
		started Micro 2[05] p.				LRB				98
1				110202	3		1 filter		0008	2
					8 LK	LFM DUP				3
					9 LK	LFM			10009	4
2					10				0010	5
3					13					6
4					16					0
5					19					7
6					22					9
7					25					10
8					28					12
9					31					13
10					34					14
11					37					15
12		done								

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05F011
QC-7		
P		
Sn		
OTHER		

.5

Analyst: LK

Start Date: 11/14

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

front half probe rinse + filter

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [X] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	11/18	1PM	evaporated down (on hot plate)		LFB		100		10
		mi	CW	11/21		LRB				4
1			12.0	110202	1	100 100				14
					5	~~LFM DUP~~ 98				13
					8	~~LFM~~ 98				6
2					11	97				9
3					14	98				15
4					17	97				0
5					20	96				8
6					23	97				11
7					26	98				5
8					29	97				3
9					32	97				12
10					35	96				7
11					38	99				2
12										
								Done 11/22/05		

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05F011
QC-7		
P		
Sn		
OTHER		

1.0

Analyst:_____

Start Date:_____

METALS PREP FORM

Set # [ ]

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

Back 1/2 Impingers

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	11/21	9 AM	Evaporating		LFB		50		4
			n/t			Lab LRB Acct				7
1			<2.0	110202	2	339 336				5
			<2.0		6	337 ~~LFM DUP~~ 334				12
			<2.0		9	346 ~~LFM~~ 344				13
2			<2.0		12	332 331				2
3			<2.0		15	335 334				9
4			<2.0		18	332 335				11
5			<2.0		21	325 325				6
6			<2.0		24	328 328				0
7			<2.0		27	323 223				14
8			<2.0		30	331 334				3
9			<2.0		33	328 325				8
10			<2.0		36	325 324				15
11			<2.0		39	300 300				10
12										
		11/22	8am - microwave							

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05F011
QC-7		
P		
Sn		
OTHER		

1.0

Analyst: _____

Start Date: _____

PROJECT # 2006020074: METHOD 29 FOR NICKEL

1	2	3	4	5	6	7	8	9	10	11	12
SA #	SAMPLE DESCRPTION	RUN ID	PH	Sample Fraction (SF = SF_A)	EVAP. TO	REAGENTS FOR DIG.	MICRO-Dig. BY	Analytical Fraction (AF = AF_A)	NI mg/L (C_{a1} or C_{a2})	MG NI IN INITIAL SAMPLE	TOTAL MG PER RUN
8	impinger	BLANK	< 2.0	302	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.017
15	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.136	0.014	
1	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
9	impinger	Cond. 10-1	< 2.0	300	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.144
16	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	1.401	0.140	
2	probe rinse		< 2.0	99.0	20	HF + HNO3	8.3.1.2				
10	impinger	Cond. 10-2	< 2.0	309	20	HNO3 + H2O2	8.3.4.2	50	0.082	0.004	0.026
17	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.217	0.022	
3	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
11	impinger	Cond. 10-3	< 2.0	316	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.063
18	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.595	0.060	
4	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
12	impinger	Cond. 13-1	< 2.0	306	20	HNO3 + H2O2	8.3.4.2	50	0.080	0.004	0.060
19	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.558	0.056	
5	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
13	impinger	Cond. 14-4	< 2.0	313	20	HNO3 + H2O2	8.3.4.2	50	0.097	0.005	0.126
20	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	1.213	0.121	
6	probe rinse		< 2.0	99.0	20	HF + HNO3	8.3.1.2				
14	impinger	Cond. 14-5	< 2.0	310	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.040
21	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.358	0.036	
7	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
	impinger	MDL		300	20	HNO3 + H2O2	8.3.4.2	50	0.075	0.004	0.011
	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.075	0.008	
	probe rinse			100.0	20	HF + HNO3	8.3.1.2				

10 Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. Readings that read less than the MDL were qualified with "<", which may or may not carry over to the final result.

11 **mg Ni** = "Rdg" in mg/L **X** Analytical Fraction (mls) **X** "INITIAL SAMPLE VOL" in mls / "SF 2A" in mls **X** 1 L / 1000 mls
Initial sample volume is "Sample Fraction", as **all sample was used.** (There were no "splits")
So, "INITIAL SAMPLE VOL" in mls / "SF 2A" in mls = 1 (per Eq 29-2, & -3)

12 According to RUN ID, the filter+probe rinse were added to impinger results: as "mg of Nickel".

QA/QC WORK SHEET for NICKEL

FLAA METHOD SOP MET-040
5100 AA

Date: 2/10/2006
Analyst: LK

(Mg/L)
IDL= 0.027
MDL= 0.075
RL = 0.10
LDR = 0.10 to 8.0

1 CURRENT COPY OF METHOD AVAILABLE IN WINLAB.
2 INSTRUMENT SET-UP:
(For Specific instrument settings, see current copy of method.)

3 CALIBRATION:

Cal Curve:	Conc	Abs	Result	% Rec.	
	0.25	0.009	0.245	97.8	
	0.50	0.020	0.537	107.4	
	1.00	0.035	0.956	95.6	
	2.00	0.078	2.097	104.9	
	5.00	0.184	4.964	99.3	
Corr. Coef:	xxxxxxxxx		0.9995		(> 0.995)

4 STANDARD TRACEABILITY

QC STANDARD	Standard Name, Company, & Lot #
Calibration	CPI QC-21 Lot # 05H062
CCV, CRA, AAT	CPI QC-21 Lot # 05H062
QCS, LFM	CPI QC-19 Lot # 05FO11

5 SAMPLE ANALYTICAL RUN

MAT-RIX	SAMPLE	STD CONC	READING Mg/L	BLK	RESULT	DIL 1	DIL 2	QC RESULTS	Mg/L	REP'T mg/L	ICP	
	CCV	5.00	4.969		4.969			99				(95-105%R)
	QCS	2.00	2.129		2.129			106				(95-105%R)
	STD	10.00	9.083		9.083			91				(90-110%R)
	CCB		-0.004	-0.007	0.003			0.003				(< MDL)
	CRA	0.05	0.051	-0.004	0.055			109				(70-130%R)
	CRA	0.10	0.098	-0.004	0.102			102				(70-130%R)
	LRB		0.030	-0.006	0.036			0.036				(< MDL)
	LFB	2.00	1.980	-0.006	1.986			99				(80-120%R)
121	218-1		2.201	0.009	2.192	1.0	1.0		2.192	**2.192**		
121	218-2		0.284	-0.006	0.290	1.0	1.0		0.290	**0.290**		
	218-3		0.061	-0.005	0.066	1.0	1.0		0.066	**0.074**		
121	218-4		0.676	0.006	0.671	1.0	1.0		0.671	**0.671**		
121	218-5		0.144	-0.008	0.151	1.0	1.0		0.151	**0.151**		
	CCB		0.001	0.011	-0.009			-0.009				(< MDL)
	CCV	0.25	0.249	0.001	0.247			99				(90-110%R)
	LRB		0.056	0.009	0.048			0.048				(< MDL)
	LFB	2.00	2.117	0.004	2.113			106				(80-120%R)
121	072-1		0.063	0.010	0.054	1.0	1.0		0.054	**0.074**		
121	072-2		0.262	-0.001	0.264	1.0	1.0		0.264	**0.264**		
121	072-3		0.086	0.007	0.080	1.0	1.0		0.080	**0.080**		
121	072-4		2.357	-0.003	2.360	1.0	1.0		2.360	**2.360**		
121	072-5		0.179	-0.001	0.180	1.0	1.0		0.180	**0.180**		
	CCB		-0.024	-0.018	-0.006			-0.006				(< MDL)
	CCV	1.00	0.949	-0.024	0.973			97				(90-110%R)
	LRB		0.023	-0.006	0.029			0.029				(< MDL)
	LFB	1.00	1.076	-0.005	1.081			108				(80-120%R)
M29	*074-8		0.058	0.005	0.053	1.0	1.0		0.053	<~~0.00~~ .074		
	SPK	1.0	1.113	-0.018	1.131	1.0	1.0	108				(80-120%R)
	DUP	1.0	1.030	-0.008	1.038	1.0	1.0	8.5				(<10 RPD, IF SA > 20X MDL)
	SER DIL	2/10	0.226	-0.020	0.246	1.0	1.0	8.8				(<10%DIFF)
	CCB		-0.019	0.004	-0.023			-0.023				(< MDL)
	CCV	0.50	0.510	-0.019	0.529			106				(90-110%R)
M29	074-9		0.033	-0.013	0.046	1.0	1.0		0.046	**0.074**		
M29	074-10		0.058	-0.024	0.082	1.0	1.0		0.082	**0.082**		
9	074-11		0.031	-0.008	0.039	1.0	1.0		0.039	**0.074**		
9	074-12		0.069	-0.011	0.080	1.0	1.0		0.080	**0.080**		
M29	074-13		0.101	0.003	0.097	1.0	1.0		0.097	**0.097**		
M29	074-14		0.075	0.001	0.074	1.0	1.0		0.074	**0.074**		
	CCB		0.010	-0.005	0.015			0.015				(< MDL)

QA/QC WORK SHEET for NICKEL P2

FLAA METHOD SOP MET-040

5100 AA

Date: 2/10/2006

Analyst: LK

	CCV	2.00	2.085	0.010	2.075			104				(90-110%R)
	LRB		0.025	0.001	0.024			0.024				(< MDL)
	LFB	0.50	0.592	0.019	0.574			115				(80-120%R)
M29	*074-1+15		0.122	-0.013	0.136	1.0	1.0		0.136	**0.136**		
	SPK	1.0	1.185	0.001	1.184	1.0	1.0	105				(80-120%R)
	DUP	1.0	1.170	-0.008	1.178	1.0	1.0	0.5				(<10 RPD, IF SA > 20X MDL)
	SER DIL		0.236	-0.011	0.247	1.0	1.0	4.4				(<10%DIFF)
	CCB		-0.028	0.006	-0.034			-0.034				(< MDL)
	CCV	0.25	0.233	-0.028	0.261			104				(90-110%R)
	CCV	0.10	0.089	-0.009	0.098			98				(90-110%R)
M29	074-2+16		1.394	-0.007	1.401	1.0	1.0		1.401	**1.401**		
M29	074-3+17		0.234	0.017	0.217	1.0	1.0		0.217	**0.217**		
M29	074-4+18		0.613	0.018	0.595	1.0	1.0		0.595	**0.595**		
M29	074-5+19		0.559	0.001	0.558	1.0	1.0		0.558	**0.558**		
M29	074-6+20		1.209	-0.004	1.213	1.0	1.0		1.213	**1.213**		
M29	074-7+21		0.355	-0.003	0.358	1.0	1.0		0.358	**0.358**		
	CCB		0.002	0.002	0.000			0.000				(< MDL)
	CCV	2.00	2.078	0.002	2.076			104				(90-110%R)

Method Name: NI
Method Description: Nickel

Element: Ni

Date: 02/10/2006
Technique: Flame
Wavelength: 232.0 nm
Lamp Current: 20
Sample Info File: Untitled

Calibration Equation: Zero Intercept: Linear
Slit Width: 0.20 nm
Energy: 71
Results Data Set:

Element: Ni Seq. No.: 24 AS Loc.: --- Date: 02/10/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.000	0.097	0.007	10:15:47
2			-0.001	0.096	0.007	10:15:49
3			0.001	0.098	0.007	10:15:51
Mean:			0.000			
SD :			0.001			
%RSD:			745.34			

Auto-zero performed.

Element: Ni Seq. No.: 25 AS Loc.: --- Date: 02/10/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.000	0.097	0.007	10:15:57
2			0.000	0.097	0.007	10:15:59
3			0.000	0.097	0.007	10:16:01
Mean:			0.000			
SD :			0.000			
%RSD:			576.54			

Auto-zero performed.

Element: Ni Seq. No.: 26 AS Loc.: --- Date: 02/10/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.001	0.098	0.007	10:20:59
2			0.001	0.098	0.007	10:21:02
3			0.001	0.098	0.006	10:21:04
Mean:			0.001			
SD :			0.000			
%RSD:			48.75			

Auto-zero performed.

Element: Ni Seq. No.: 27 AS Loc.: --- Date: 02/10/2006
Sample ID: CAL STD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.009	0.107	0.007	10:21:53
2			0.009	0.107	0.007	10:21:55
3			0.009	0.107	0.007	10:21:57
Mean:			0.009			
SD :			0.000			
%RSD:			3.70			

Standard number 1 applied. [0.25]
Correlation Coefficient: 0.9997 Slope: 0.0376

Element: Ni Seq. No.: 28 AS Loc.: --- Date: 02/10/2006
Sample ID: cal std 2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.019	0.117	0.007	10:22:14
2			0.020	0.118	0.007	10:22:17
3			0.021	0.119	0.006	10:22:19
Mean:			0.020			
SD :			0.001			
%RSD:			3.10			

Standard number 2 applied. [0.50]
Correlation Coefficient: 0.9998 Slope: 0.0376

Element: Ni Seq. No.: 29 AS Loc.: --- Date: 02/10/2006
Sample ID: cal std 3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.035	0.133	0.007	10:22:47
2			0.035	0.133	0.007	10:22:49
3			0.036	0.134	0.007	10:22:51
Mean:			0.035			
SD :			0.000			
%RSD:			0.64			

Standard number 3 applied. [1.00]
Correlation Coefficient: 0.9998 Slope: 0.0376

Element: Ni Seq. No.: 30 AS Loc.: --- Date: 02/10/2006
Sample ID: cal std 4

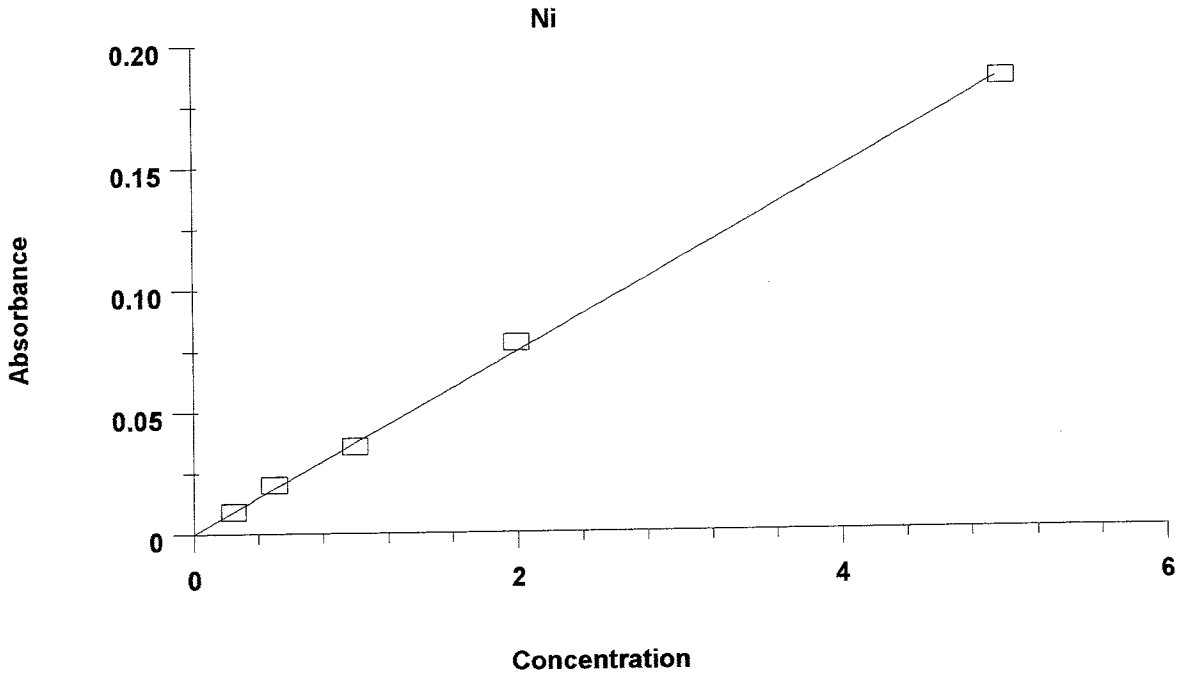
Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.078	0.176	0.006	10:23:09
2			0.078	0.175	0.007	10:23:11
3			0.077	0.175	0.007	10:23:13
Mean:			0.078			
SD :			0.000			
%RSD:			0.52			

Standard number 4 applied. [2.00]
Correlation Coefficient: 0.9997 Slope: 0.0376

Element: Ni Seq. No.: 31 AS Loc.: --- Date: 02/10/2006
Sample ID: cal std 5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.185	0.283	0.007	10:23:31
2			0.183	0.281	0.007	10:23:33
3			0.184	0.282	0.007	10:23:35
Mean:			0.184			
SD :			0.001			
%RSD:			0.39			

Standard number 5 applied. [5.00]
Correlation Coefficient: 0.9995 Slope: 0.0371



Calibration data for Ni

Standard ID	Mean Signal (Absorbance)	Entered Concentration (mg/L)	Calculated Concentration (mg/L)	Standard Deviation	%RSD
Calib Blank	0.000	----	0.000	0.0004	48.7522
CAL STD	0.009	0.25	0.2445	0.0003	3.6976
cal std 2	0.020	0.50	0.5372	0.0006	3.0989
cal std 3	0.035	1.00	0.9560	0.0002	0.6443
cal std 4	0.078	2.00	2.097	0.0004	0.5235
cal std 5	0.184	5.00	4.964	0.0007	0.3890

Correlation Coefficient: 0.99953 Slope: 0.03705

Element: Ni Seq. No.: 32 AS Loc.: --- Date: 02/10/2006
Sample ID: ccv-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.946	4.946	0.183	0.281	0.007	10:23:53
2	4.976	4.976	0.184	0.282	0.006	10:23:55
3	4.987	4.987	0.185	0.283	0.007	10:23:58
Mean:	4.969	4.969	0.184			
SD :	0.0213	0.0213	0.001			
%RSD:	0.43	0.43	0.43			

Element: Ni Seq. No.: 33 AS Loc.: --- Date: 02/10/2006
Sample ID: qcs-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.127	2.127	0.079	0.177	0.007	10:24:17
2	2.138	2.138	0.079	0.177	0.007	10:24:19
3	2.121	2.121	0.079	0.177	0.007	10:24:21
Mean:	2.129	2.129	0.079			
SD :	0.0083	0.0083	0.000			
%RSD:	0.39	0.39	0.39			

Element: Ni Seq. No.: 34 AS Loc.: --- Date: 02/10/2006
Sample ID: std-10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	9.081	9.081	0.336	0.434	0.007	10:24:46
Sample absorbance is greater than that of the highest standard.						
2	9.065	9.065	0.336	0.434	0.007	10:24:48
Sample absorbance is greater than that of the highest standard.						
3	9.104	9.104	0.337	0.435	0.007	10:24:50
Sample absorbance is greater than that of the highest standard.						
Mean:	9.083	9.083	0.337			
SD :	0.0195	0.0195	0.001			
%RSD:	0.21	0.21	0.21			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 35 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0093	-0.0093	0.000	0.098	0.007	10:25:22
2	0.0052	0.0052	0.000	0.098	0.006	10:25:24
3	-0.0161	-0.0161	-0.001	0.097	0.007	10:25:27
Mean:	-0.0067	-0.0067	0.000			
SD :	0.0109	0.0109	0.000			
%RSD:	161.3	161.3	161.34			

Element: Ni Seq. No.: 36 AS Loc.: --- Date: 02/10/2006
Sample ID: ~~cra-0.05~~ ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0132	-0.0132	0.000	0.097	0.007	10:25:37
2	0.0144	0.0144	0.001	0.098	0.006	10:25:39
3	-0.0120	-0.0120	0.000	0.098	0.007	10:25:42
Mean:	-0.0036	-0.0036	0.000			
SD :	0.0156	0.0156	0.001			
%RSD:	431.9	431.9	431.92			

Element: Ni Seq. No.: 37 AS Loc.: --- Date: 02/10/2006
Sample ID: cra-0.05

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0510	0.0510	0.002	0.100	0.006	10:26:01
2	0.0508	0.0508	0.002	0.100	0.007	10:26:03
3	0.0667	0.0667	0.002	0.100	0.006	10:26:05
Mean:	0.0562	0.0562	0.002			
SD :	0.0091	0.0091	0.000			
%RSD:	16.23	16.23	16.23			

Element: Ni Seq. No.: 38 AS Loc.: --- Date: 02/10/2006
Sample ID: cra-0.1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0996	0.0996	0.004	0.102	0.007	10:26:21
2	0.0801	0.0801	0.003	0.101	0.008	10:26:23
3	0.1147	0.1147	0.004	0.102	0.007	10:26:25
Mean:	0.0981	0.0981	0.004			
SD :	0.0174	0.0174	0.001			
%RSD:	17.70	17.70	17.70			

Element: Ni Seq. No.: 39 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0014	0.0014	0.000	0.098	0.006	10:26:44
2	-0.0093	-0.0093	0.000	0.098	0.007	10:26:47
3	-0.0098	-0.0098	0.000	0.098	0.006	10:26:49
Mean:	-0.0059	-0.0059	0.000			
SD :	0.0063	0.0063	0.000			
%RSD:	107.0	107.0	107.03			

Element: Ni Seq. No.: 40 AS Loc.: --- Date: 02/10/2006
Sample ID: lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0239	0.0239	0.001	0.099	0.007	10:27:23
2	0.0371	0.0371	0.001	0.099	0.006	10:27:25
3	0.0285	0.0285	0.001	0.099	0.007	10:27:27
Mean:	0.0298	0.0298	0.001			
SD :	0.0067	0.0067	0.000			
%RSD:	22.44	22.44	22.44			

Element: Ni Seq. No.: 41 AS Loc.: --- Date: 02/10/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.988	1.988	0.074	0.172	0.007	10:27:59
2	1.962	1.962	0.073	0.171	0.007	10:28:01
3	1.990	1.990	0.074	0.172	0.007	10:28:03
Mean:	1.980	1.980	0.073			
SD :	0.0153	0.0153	0.001			
%RSD:	0.77	0.77	0.77			

Element: Ni Seq. No.: 42 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0176	0.0176	0.001	0.099	0.006	10:28:26
2	0.0160	0.0160	0.001	0.099	0.006	10:28:28
3	-0.0058	-0.0058	0.000	0.098	0.007	10:28:30
Mean:	0.0093	0.0093	0.000			
SD :	0.0131	0.0131	0.000			
%RSD:	141.4	141.4	141.42			

Element: Ni Seq. No.: 43 AS Loc.: --- Date: 02/10/2006
Sample ID: 218-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.192	2.192	0.081	0.179	0.006	10:28:47
2	2.213	2.213	0.082	0.180	0.007	10:28:49
3	2.199	2.199	0.081	0.179	0.007	10:28:52
Mean:	2.201	2.201	0.082			
SD :	0.0111	0.0111	0.000			
%RSD:	0.50	0.50	0.50			

Element: Ni Seq. No.: 44 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0107	-0.0107	0.000	0.098	0.007	10:29:21
2	-0.0087	-0.0087	0.000	0.098	0.007	10:29:23
3	0.0010	0.0010	0.000	0.098	0.007	10:29:26
Mean:	-0.0061	-0.0061	0.000			
SD :	0.0063	0.0063	0.000			
%RSD:	102.3	102.3	102.32			

Element: Ni Seq. No.: 45 AS Loc.: --- Date: 02/10/2006
Sample ID: 218-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2790	0.2790	0.010	0.108	0.007	10:29:45
2	0.2898	0.2898	0.011	0.109	0.007	10:29:47
3	0.2819	0.2819	0.010	0.108	0.007	10:29:49
Mean:	0.2836	0.2836	0.011			
SD :	0.0056	0.0056	0.000			
%RSD:	1.98	1.98	1.98			

Element: Ni Seq. No.: 46 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0042	-0.0042	0.000	0.098	0.007	10:30:10
2	-0.0049	-0.0049	0.000	0.098	0.007	10:30:12
3	-0.0055	-0.0055	0.000	0.098	0.007	10:30:14
Mean:	-0.0049	-0.0049	0.000			
SD :	0.0006	0.0006	0.000			
%RSD:	13.01	13.01	13.01			

Element: Ni Seq. No.: 47 AS Loc.: --- Date: 02/10/2006
Sample ID: 218-3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0812	0.0812	0.003	0.101	0.006	10:30:34
2	0.0508	0.0508	0.002	0.100	0.007	10:30:36
3	0.0508	0.0508	0.002	0.100	0.007	10:30:39
Mean:	0.0609	0.0609	0.002			
SD :	0.0175	0.0175	0.001			
%RSD:	28.73	28.73	28.73			

Element: Ni Seq. No.: 48 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0025	0.0025	0.000	0.098	0.007	10:30:58
2	0.0093	0.0093	0.000	0.098	0.006	10:31:00
3	0.0052	0.0052	0.000	0.098	0.007	10:31:02
Mean:	0.0057	0.0057	0.000			
SD :	0.0035	0.0035	0.000			
%RSD:	61.08	61.08	61.08			

Element: Ni Seq. No.: 49 AS Loc.: --- Date: 02/10/2006
Sample ID: 218-4

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.6766	0.6766	0.025	0.123	0.007	10:31:19
2	0.6721	0.6721	0.025	0.123	0.007	10:31:22
3	0.6801	0.6801	0.025	0.123	0.007	10:31:24
Mean:	0.6763	0.6763	0.025			
SD :	0.0040	0.0040	0.000			
%RSD:	0.59	0.59	0.59			

Element: Ni Seq. No.: 50 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0073	-0.0073	0.000	0.098	0.007	10:31:46
2	-0.0111	-0.0111	0.000	0.098	0.007	10:31:48
3	-0.0044	-0.0044	0.000	0.098	0.007	10:31:51
Mean:	-0.0076	-0.0076	0.000			
SD :	0.0033	0.0033	0.000			
%RSD:	44.18	44.18	44.18			

Element: Ni Seq. No.: 51 AS Loc.: --- Date: 02/10/2006
Sample ID: 218-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1360	0.1360	0.005	0.103	0.007	10:32:10
2	0.1481	0.1481	0.005	0.103	0.006	10:32:12
3	0.1467	0.1467	0.005	0.103	0.006	10:32:14
Mean:	0.1436	0.1436	0.005			
SD :	0.0066	0.0066	0.000			
%RSD:	4.60	4.60	4.60			

Element: Ni Seq. No.: 52 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0095	0.0095	0.000	0.098	0.007	10:32:39
2	0.0095	0.0095	0.000	0.098	0.007	10:32:41
3	0.0131	0.0131	0.000	0.098	0.006	10:32:44
Mean:	0.0107	0.0107	0.000			
SD :	0.0021	0.0021	0.000			
%RSD:	19.46	19.46	19.46			

Element: Ni Seq. No.: 53 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0035	0.0035	0.000	0.098	0.007	10:32:54
2	0.0037	0.0037	0.000	0.098	0.007	10:32:56
3	-0.0035	-0.0035	0.000	0.098	0.007	10:32:59
Mean:	0.0013	0.0013	0.000			
SD :	0.0041	0.0041	0.000			
%RSD:	325.9	325.9	325.87			

Element: Ni Seq. No.: 54 AS Loc.: --- Date: 02/10/2006
Sample ID: ccv-0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2678	0.2678	0.010	0.108	0.006	10:33:22
2	0.2337	0.2337	0.009	0.107	0.007	10:33:25
3	0.2443	0.2443	0.009	0.107	0.007	10:33:27
Mean:	0.2486	0.2486	0.009			
SD :	0.0175	0.0175	0.001			
%RSD:	7.02	7.02	7.02			

Element: Ni Seq. No.: 55 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0202	0.0202	0.001	0.099	0.007	10:33:57
2	-0.0019	-0.0019	0.000	0.098	0.007	10:33:59
3	0.0081	0.0081	0.000	0.098	0.007	10:34:01
Mean:	0.0088	0.0088	0.000			
SD :	0.0110	0.0110	0.000			
%RSD:	125.5	125.5	125.54			

Appendix E - 2

Laboratory QA/QC Data for Stack Testing Samples

Element: Ni Seq. No.: 56 AS Loc.: --- Date: 02/10/2006
Sample ID: lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0582	0.0582	0.002	0.100	0.007	10:34:20
2	0.0577	0.0577	0.002	0.100	0.007	10:34:23
3	0.0534	0.0534	0.002	0.100	0.007	10:34:25
Mean:	0.0564	0.0564	0.002			
SD :	0.0027	0.0027	0.000			
BRSD:	4.73	4.73	4.73			

Element: Ni Seq. No.: 57 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0055	0.0055	0.000	0.098	0.007	10:34:43
2	0.0156	0.0156	0.001	0.099	0.006	10:34:45
3	-0.0094	-0.0094	0.000	0.098	0.007	10:34:47
Mean:	0.0039	0.0039	0.000			
SD :	0.0126	0.0126	0.000			
%RSD:	322.8	322.8	322.78			

Element: Ni Seq. No.: 58 AS Loc.: --- Date: 02/10/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.127	2.127	0.079	0.177	0.007	10:35:00
2	2.101	2.101	0.078	0.176	0.007	10:35:02
3	2.122	2.122	0.079	0.177	0.007	10:35:05
Mean:	2.117	2.117	0.078			
SD :	0.0136	0.0136	0.001			
%RSD:	0.64	0.64	0.64			

Element: Ni Seq. No.: 59 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0115	0.0115	0.000	0.098	0.007	10:35:19
2	0.0158	0.0158	0.001	0.099	0.006	10:35:22
3	0.0025	0.0025	0.000	0.098	0.007	10:35:24
Mean:	0.0099	0.0099	0.000			
SD :	0.0068	0.0068	0.000			
%RSD:	68.64	68.64	68.64			

Element: Ni Seq. No.: 60 AS Loc.: --- Date: 02/10/2006
Sample ID: 072-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0622	0.0622	0.002	0.100	0.007	10:35:48
2	0.0656	0.0656	0.002	0.100	0.007	10:35:51
3	0.0624	0.0624	0.002	0.100	0.007	10:35:53
Mean:	0.0634	0.0634	0.002			
SD :	0.0019	0.0019	0.000			
%RSD:	3.04	3.04	3.04			

Element: Ni Seq. No.: 61 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0017	-0.0017	0.000	0.098	0.007	10:36:12
2	-0.0028	-0.0028	0.000	0.098	0.007	10:36:14
3	0.0007	0.0007	0.000	0.098	0.007	10:36:16
Mean:	-0.0013	-0.0013	0.000			
SD :	0.0018	0.0018	0.000			
%RSD:	138.8	138.8	138.75			

Element: Ni Seq. No.: 62 AS Loc.: --- Date: 02/10/2006
Sample ID: 072-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2678	0.2678	0.010	0.108	0.007	10:36:34
2	0.2550	0.2550	0.009	0.107	0.007	10:36:36
3	0.2640	0.2640	0.010	0.108	0.007	10:36:38
Mean:	0.2623	0.2623	0.010			
SD :	0.0066	0.0066	0.000			
%RSD:	2.51	2.51	2.51			

Element: Ni Seq. No.: 63 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0005	0.0005	0.000	0.098	0.007	10:36:58
2	0.0140	0.0140	0.001	0.098	0.006	10:37:01
3	0.0050	0.0050	0.000	0.098	0.007	10:37:03
Mean:	0.0065	0.0065	0.000			
SD :	0.0069	0.0069	0.000			
%RSD:	106.1	106.1	106.08			

Element: Ni Seq. No.: 64 AS Loc.: --- Date: 02/10/2006
Sample ID: 072-3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0833	0.0833	0.003	0.101	0.007	10:37:21
2	0.0761	0.0761	0.003	0.101	0.007	10:37:23
3	0.0990	0.0990	0.004	0.102	0.006	10:37:25
Mean:	0.0862	0.0862	0.003			
SD :	0.0117	0.0117	0.000			
%RSD:	13.60	13.60	13.60			

Element: Ni Seq. No.: 65 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0010	-0.0010	0.000	0.098	0.007	10:37:44
2	-0.0071	-0.0071	0.000	0.098	0.007	10:37:47
3	-0.0004	-0.0004	0.000	0.098	0.007	10:37:49
Mean:	-0.0028	-0.0028	0.000			
SD :	0.0037	0.0037	0.000			
%RSD:	131.2	131.2	131.18			

Element: Ni Seq. No.: 66 AS Loc.: --- Date: 02/10/2006
Sample ID: 072-4

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.339	2.339	0.087	0.185	0.007	10:38:07
2	2.365	2.365	0.088	0.186	0.007	10:38:09
3	2.369	2.369	0.088	0.186	0.007	10:38:11
Mean:	2.357	2.357	0.087			
SD :	0.0163	0.0163	0.001			
%RSD:	0.69	0.69	0.69			

Element: Ni Seq. No.: 67 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0066	-0.0066	0.000	0.098	0.007	10:38:32
2	-0.0051	-0.0051	0.000	0.098	0.007	10:38:34
3	0.0099	0.0099	0.000	0.098	0.006	10:38:36
Mean:	-0.0006	-0.0006	0.000			
SD :	0.0091	0.0091	0.000			
%RSD:	1512	1512	1511.65			

Element: Ni Seq. No.: 68 AS Loc.: --- Date: 02/10/2006
Sample ID: 072-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1799	0.1799	0.007	0.105	0.007	10:38:51
2	0.1817	0.1817	0.007	0.105	0.007	10:38:53
3	0.1761	0.1761	0.007	0.104	0.007	10:38:55
Mean:	0.1792	0.1792	0.007			
SD :	0.0029	0.0029	0.000			
%RSD:	1.59	1.59	1.59			

Element: Ni Seq. No.: 69 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0199	-0.0199	-0.001	0.097	0.007	10:39:18
2	-0.0268	-0.0268	-0.001	0.097	0.007	10:39:21
3	-0.0069	-0.0069	0.000	0.098	0.007	10:39:23
Mean:	-0.0179	-0.0179	-0.001			
SD :	0.0101	0.0101	0.000			
%RSD:	56.43	56.43	56.43			

Element: Ni Seq. No.: 70 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0177	-0.0177	-0.001	0.097	0.007	10:39:45
2	-0.0264	-0.0264	-0.001	0.097	0.007	10:39:47
3	-0.0264	-0.0264	-0.001	0.097	0.007	10:39:49
Mean:	-0.0235	-0.0235	-0.001			
SD :	0.0050	0.0050	0.000			
%RSD:	21.26	21.26	21.26			

Element: Ni Seq. No.: 71 AS Loc.: --- Date: 02/10/2006
Sample ID: ccv-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.9524	0.9524	0.035	0.133	0.007	10:41:17
2	0.9413	0.9413	0.035	0.133	0.007	10:41:19
3	0.9532	0.9532	0.035	0.133	0.007	10:41:21
Mean:	0.9490	0.9490	0.035			
SD :	0.0067	0.0067	0.000			
%RSD:	0.70	0.70	0.70			

Element: Ni Seq. No.: 72 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0007	0.0007	0.000	0.098	0.006	10:42:59
2	-0.0042	-0.0042	0.000	0.098	0.007	10:43:01
3	-0.0136	-0.0136	-0.001	0.097	0.007	10:43:04
Mean:	-0.0057	-0.0057	0.000			
SD :	0.0072	0.0072	0.000			
%RSD:	126.8	126.8	126.80			

Element: Ni Seq. No.: 73 AS Loc.: --- Date: 02/10/2006
Sample ID: lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0070	0.0070	0.000	0.098	0.007	10:43:18
2	0.0279	0.0279	0.001	0.099	0.007	10:43:20
3	0.0335	0.0335	0.001	0.099	0.006	10:43:22
Mean:	0.0228	0.0228	0.001			
SD :	0.0140	0.0140	0.001			
%RSD:	61.34	61.34	61.34			

Element: Ni Seq. No.: 74 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0051	-0.0051	0.000	0.098	0.007	10:43:37
2	-0.0022	-0.0022	0.000	0.098	0.007	10:43:39
3	-0.0067	-0.0067	0.000	0.098	0.007	10:43:41
Mean:	-0.0047	-0.0047	0.000			
SD :	0.0023	0.0023	0.000			
%RSD:	48.70	48.70	48.70			

Element: Ni Seq. No.: 75 AS Loc.: --- Date: 02/10/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.071	1.071	0.040	0.138	0.007	10:43:55
2	1.079	1.079	0.040	0.138	0.007	10:43:57
3	1.077	1.077	0.040	0.138	0.007	10:43:59
Mean:	1.076	1.076	0.040			
SD :	0.0041	0.0041	0.000			
%RSD:	0.38	0.38	0.38			

Element: Ni Seq. No.: 76 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0138	0.0138	0.001	0.098	0.006	10:44:20
2	-0.0013	-0.0013	0.000	0.098	0.006	10:44:22
3	0.0028	0.0028	0.000	0.098	0.007	10:44:24
Mean:	0.0051	0.0051	0.000			
SD :	0.0078	0.0078	0.000			
BRSD:	153.2	153.2	153.21			

Element: Ni Seq. No.: 77 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-8

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0568	0.0568	0.002	0.100	0.007	10:44:40
2	0.0573	0.0573	0.002	0.100	0.007	10:44:42
3	0.0595	0.0595	0.002	0.100	0.007	10:44:45
Mean:	0.0579	0.0579	0.002			
SD :	0.0014	0.0014	0.000			
%RSD:	2.48	2.48	2.48			

Element: Ni Seq. No.: 78 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0387	-0.0387	-0.001	0.097	0.007	10:52:21
2	-0.0199	-0.0199	-0.001	0.097	0.007	10:52:23
3	-0.0255	-0.0255	-0.001	0.097	0.007	10:52:25
Mean:	-0.0280	-0.0280	-0.001			
SD :	0.0096	0.0096	0.000			
%RSD:	34.37	34.37	34.37			

Element: Ni Seq. No.: 79 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0129	0.0129	0.000	0.098	0.005	10:52:34
2	-0.0342	-0.0342	-0.001	0.097	0.007	10:52:36
3	-0.0313	-0.0313	-0.001	0.097	0.007	10:52:38
Mean:	-0.0175	-0.0175	-0.001			
SD :	0.0264	0.0264	0.001			
%RSD:	150.8	150.8	150.81			

Element: Ni Seq. No.: 80 AS Loc.: --- Date: 02/10/2006
Sample ID: lfm

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.115	1.115	0.041	0.139	0.007	10:52:55
2	1.109	1.109	0.041	0.139	0.007	10:52:58
3	1.116	1.116	0.041	0.139	0.007	10:53:00
Mean:	1.113	1.113	0.041			
SD :	0.0039	0.0039	0.000			
%RSD:	0.35	0.35	0.35			

Element: Ni Seq. No.: 81 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0045	0.0045	0.000	0.098	0.007	10:53:13
2	-0.0253	-0.0253	-0.001	0.097	0.007	10:53:15
3	-0.0035	-0.0035	0.000	0.098	0.007	10:53:17
Mean:	-0.0081	-0.0081	0.000			
SD :	0.0154	0.0154	0.001			
%RSD:	189.9	189.9	189.87			

Element: Ni Seq. No.: 82 AS Loc.: --- Date: 02/10/2006
Sample ID: dup lfm

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.025	1.025	0.038	0.136	0.007	10:53:36
2	1.024	1.024	0.038	0.136	0.007	10:53:38
3	1.040	1.040	0.039	0.136	0.006	10:53:40
Mean:	1.030	1.030	0.038			
SD :	0.0088	0.0088	0.000			
%RSD:	0.86	0.86	0.86			

Element: Ni Seq. No.: 83 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0091	-0.0091	0.000	0.098	0.006	10:53:54
2	-0.0304	-0.0304	-0.001	0.097	0.007	10:53:56
3	-0.0197	-0.0197	-0.001	0.097	0.007	10:53:58
Mean:	-0.0197	-0.0197	-0.001			
SD :	0.0106	0.0106	0.000			
%RSD:	53.96	53.96	53.96			

Element: Ni Seq. No.: 84 AS Loc.: --- Date: 02/10/2006
Sample ID: ser

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0,2774	0.2274	0,008	0.106	0,006	10:54:13
2	0,2151	0.2151	0,008	0,106	0,007	10:54:15
3	0.2360	0.2360	0,009	0.107	0,007	10:54:17
Mean:	0.2262	0.2262	0,008			
SD :	0.0105	0.0105	0.000			
%RSD:	4.65	4.65	4.65			

Element: Ni Seq. No.: 85 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0118	-0,0118	0,000	0,098	0,007	10:57:50
2	0,0198	0,0198	0,001	0,099	0.006	10:57:52
3	0.0037	0.0037	0,000	0,098	0,007	10:57:55
Mean:	0.0039	0.0039	0,000			
SD :	0.0158	0.0158	0.001			
%RSD:	403.9	403.9	403.87			

Element: Ni Seq. No.: 86 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0205	-0,0205	-0.001	0.097	0,007	10:58:02
2	-0.0187	-0.0187	-0,001	0.097	0.007	10:58:05
3	-0,0179	-0.0179	-0,001	0,097	0,007	10:58:07
Mean:	-0.0190	-0.0190	-0,001			
SD :	0.0013	0.0013	0.000			
%RSD:	6,85	6,85	6,85			

Element: Ni Seq. No.: 87 AS Loc.: --- Date: 02/10/2006
Sample : ccv-0.5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5081	0.5081	0.019	0.117	0,007	10:58:32
2	0.5158	0,5158	0,019	0,117	0,007	10:58:34
3	0.5046	0.5046	0.019	0.117	0,007	10:58:36
Mean:	0.5095	0.5095	0,019			
SD :	0.0057	0.0057	0.000			
%RSD:	1.13	1.13	1.13			

Element: Ni Seq. No.: 88 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0177	-0.0177	-0.001	0.097	0.007	10:58:57
2	-0.0051	-0.0051	0.000	0.098	0.006	10:59:00
3	-0.0158	-0.0158	-0.001	0.097	0.007	10:59:02
Mean:	-0.0129	-0.0129	0.000			
SD :	0.0068	0.0068	0.000			
%RSD:	52.77	52.77	52.77			

Element: Ni Seq. No.: 89 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-9

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0411	0.0411	0.002	0.099	0.007	10:59:23
2	0.0310	0.0310	0.001	0.099	0.007	10:59:25
3	0.0268	0.0268	0.001	0.099	0.007	10:59:27
Mean:	0.0330	0.0330	0.001			
SD :	0.0073	0.0073	0.000			
%RSD:	22.24	22.24	22.24			

Element: Ni Seq. No.: 90 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0197	-0.0197	-0.001	0.097	0.007	10:59:47
2	-0.0183	-0.0183	-0.001	0.097	0.007	10:59:49
3	-0.0333	-0.0333	-0.001	0.097	0.007	10:59:51
Mean:	-0.0238	-0.0238	-0.001			
SD :	0.0083	0.0083	0.000			
%RSD:	34.77	34.77	34.77			

Element: Ni Seq. No.: 91 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0582	0.0582	0.002	0.100	0.007	11:00:09
2	0.0570	0.0570	0.002	0.100	0.007	11:00:11
3	0.0584	0.0584	0.002	0.100	0.007	11:00:13
Mean:	0.0579	0.0579	0.002			
SD :	0.0008	0.0008	0.000			
%RSD:	1.36	1.36	1.36			

Element: Ni Seq. No.: 92 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0099	0.0099	0.000	0.098	0.006	11:00:34
2	-0.0170	-0.0170	-0.001	0.097	0.007	11:00:36
3	-0.0170	-0.0170	-0.001	0.097	0.007	11:00:38
Mean:	-0.0081	-0.0081	0.000			
SD :	0.0155	0.0155	0.001			
%RSD:	192.6	192.6	192.59			

Element: Ni Seq. No.: 93 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-11

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0227	0.0227	0.001	0.099	0.007	11:00:54
2	0.0342	0.0342	0.001	0.099	0.007	11:00:57
3	0.0364	0.0364	0.001	0.099	0.007	11:00:59
Mean:	0.0311	0.0311	0.001			
SD :	0.0074	0.0074	0.000			
%RSD:	23.71	23.71	23.71			

Element: Ni Seq. No.: 94 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0455	-0.0455	-0.002	0.096	0.007	11:01:16
2	-0.0259	-0.0259	-0.001	0.097	0.007	11:01:18
3	-0.0419	-0.0419	-0.002	0.096	0.007	11:01:20
Mean:	-0.0378	-0.0378	-0.001			
SD :	0.0105	0.0105	0.000			
%RSD:	27.72	27.72	27.72			

Element: Ni Seq. No.: 95 AS Loc.: --- Date: 02/10/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0309	-0.0309	-0.001	0.097	0.007	11:01:45

Auto-zero performed.

Element: Ni Seq. No.: 96 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0173	-0.0173	-0,001	0.096	0.007	11:02:07
2	-0.0009	-0.0009	0.000	0.097	0.007	11:02:09
3	-0.0153	-0.0153	-0.001	0.096	0.007	11:02:11
Mean:	-0.0112	-0.0112	0.000			
SD :	0.0090	0.0090	0.000			
%RSD:	80.11	80.11	80.11			

Element: Ni Seq. No.: 97 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-12

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0670	0.0670	0.002	0.099	0.007	11:02:36
2	0.0644	0.0644	0.002	0.099	0.007	11:02:38
3	0.0754	0.0754	0.003	0.100	0.007	11:02:41
Mean:	0.0690	0.0690	0.003			
SD :	0.0058	0.0058	0.000			
%RSD:	8.36	8.36	8.36			

Element: Ni Seq. No.: 98 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0000	0.0000	0.000	0.097	0.007	11:03:07
2	0.0061	0.0061	0.000	0.097	0.007	11:03:09
3	0.0042	0.0042	0.000	0.097	0.007	11:03:11
Mean:	0.0034	0.0034	0.000			
SD :	0.0031	0.0031	0.000			
%RSD:	91.31	91.31	91.31			

Element: Ni Seq. No.: 99 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-13

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0958	0.0958	0.004	0.100	0.007	11:03:26
2	0.1032	0.1032	0.004	0.101	0.007	11:03:28
3	0.1032	0.1032	0.004	0.101	0.007	11:03:30
Mean:	0.1008	0.1008	0.004			
SD :	0.0043	0.0043	0.000			
%RSD:	4.24	4.24	4.24			

Element: Ni Seq. No.: 100 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0152	-0.0152	-0.001	0.096	0.007	11:03:50
2	0.0029	0.0029	0.000	0.097	0.007	11:03:52
3	0.0152	0.0152	0.001	0.097	0.007	11:03:54
Mean:	0.0010	0.0010	0.000			
SD :	0.0153	0.0153	0.001			
%RSD:	1584	1584	1584.50			

Element: Ni Seq. No.: 101 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-14

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0729	0.0729	0.003	0.100	0.007	11:04:25
2	0.0662	0.0662	0.002	0.099	0.007	11:04:27
3	0.0861	0.0861	0.003	0.100	0.007	11:04:29
Mean:	0.0751	0.0751	0.003			
SD :	0.0101	0.0101	0.000			
%RSD:	13.46	13.46	13.46			

Element: Ni Seq. No.: 102 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0011	0.0011	0.000	0.097	0.007	11:04:58
2	-0.0042	-0.0042	0.000	0.097	0.007	11:05:00
3	-0.0126	-0.0126	0.000	0.096	0.007	11:05:02
Mean:	-0.0052	-0.0052	0.000			
SD :	0.0069	0.0069	0.000			
%RSD:	132.3	132.3	132.25			

Element: Ni Seq. No.: 103 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0061	-0.0061	0.000	0.097	0.007	11:05:35
2	-0.0022	-0.0022	0.000	0.097	0.007	11:05:37
3	0.0381	0.0381	0.001	0.098	0.006	11:05:40
Mean:	0.0099	0.0099	0.000			
SD :	0.0245	0.0245	0.001			
%RSD:	246.4	246.4	246.45			

Element: Ni Seq. No.: 104 AS Loc.: --- Date: 02/10/2006
Sample ID: ccv-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.106	2.106	0.078	0.175	0.007	11:06:46
2	2.062	2.062	0.076	0.173	0.007	11:06:48
3	2.087	2.087	0.077	0.174	0.007	11:06:50
Mean:	2.085	2.085	0.077			
SD :	0.0216	0.0216	0.001			
%RSD:	1.04	1.04	1.04			

Element: Ni Seq. No.: 105 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0038	0.0038	0.000	0.097	0.007	11:07:28
2	0.0002	0.0002	0.000	0.097	0.007	11:07:30
3	-0.0004	-0.0004	0.000	0.097	0.007	11:07:33
Mean:	0.0012	0.0012	0.000			
SD :	0.0023	0.0023	0.000			
%RSD:	187.5	187.5	187.55			

Element: Ni Seq. No.: 106 AS Loc.: --- Date: 02/10/2006
Sample ID: lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0309	0.0309	0.001	0.098	0.006	11:07:56
2	0.0150	0.0150	0.001	0.097	0.007	11:07:58
3	0.0301	0.0301	0.001	0.098	0.007	11:08:00
Mean:	0.0253	0.0253	0.001			
SD :	0.0090	0.0090	0.000			
%RSD:	35.41	35.41	35.41			

Element: Ni Seq. No.: 107 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0067	0.0067	0.000	0.097	0.006	11:08:41
2	0.0220	0.0220	0.001	0.098	0.007	11:08:44
3	0.0269	0.0269	0.001	0.098	0.006	11:08:46
Mean:	0.0185	0.0185	0.001			
SD :	0.0106	0.0106	0.000			
%RSD:	56.93	56.93	56.93			

Element: Ni Seq. No.: 108 AS Loc.: --- Date: 02/10/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5973	0.5973	0.022	0.119	0.006	11:09:03
2	0.5800	0.5800	0.021	0.118	0.007	11:09:05
3	0.5991	0.5991	0.022	0.119	0.007	11:09:07
Mean:	0.5921	0.5921	0.022			
SD :	0.0106	0.0106	0.000			
%RSD:	1.78	1.78	1.78			

Element: Ni Seq. No.: 109 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0202	0.0202	0.001	0.098	0.006	11:09:23
2	0.0101	0.0101	0.000	0.097	0.006	11:09:25
3	0.0181	0.0181	0.001	0.097	0.006	11:09:27
Mean:	0.0161	0.0161	0.001			
SD :	0.0053	0.0053	0.000			
%RSD:	33.00	33.00	33.00			

Element: Ni Seq. No.: 110 AS Loc.: --- Date: 02/10/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.6011	0.6011	0.022	0.119	0.006	11:09:46
2	0.6002	0.6002	0.022	0.119	0.006	11:09:48
3	0.5978	0.5978	0.022	0.119	0.006	11:09:50
Mean:	0.5997	0.5997	0.022			
SD :	0.0017	0.0017	0.000			
%RSD:	0.28	0.28	0.28			

Element: Ni Seq. No.: 111 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0070	-0.0070	0.000	0.097	0.007	11:10:18
2	-0.0253	-0.0253	-0.001	0.096	0.007	11:10:20
3	-0.0079	-0.0079	0.000	0.097	0.007	11:10:22
Mean:	-0.0134	-0.0134	0.000			
SD :	0.0103	0.0103	0.000			
%RSD:	76.58	76.58	76.58			

Element: Ni Seq. No.: 112 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-1+15

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1152	0.1152	0.004	0.101	0.007	11:10:45
2	0.1366	0.1366	0.005	0.102	0.006	11:10:47
3	0.1144	0.1144	0.004	0.101	0.007	11:10:49
Mean:	0.1221	0.1221	0.005			
SD :	0.0126	0.0126	0.000			
%RSD:	10.33	10.33	10.33			

Element: Ni Seq. No.: 113 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0051	0.0051	0.000	0.097	0.006	11:11:23
2	-0.0013	-0.0013	0.000	0.097	0.007	11:11:25
3	0.0002	0.0002	0.000	0.097	0.006	11:11:27
Mean:	0.0013	0.0013	0.000			
SD :	0.0033	0.0033	0.000			
%RSD:	250.1	250.1	250.08			

Element: Ni Seq. No.: 114 AS Loc.: --- Date: 02/10/2006
Sample ID: lfm

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.179	1.179	0.044	0.141	0.007	11:11:40
2	1.189	1.189	0.044	0.141	0.006	11:11:43
3	1.188	1.188	0.044	0.141	0.006	11:11:45
Mean:	1.185	1.185	0.044			
SD :	0.0054	0.0054	0.000			
%RSD:	0.46	0.46	0.46			

Element: Ni Seq. No.: 115 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0022	-0.0022	0.000	0.097	0.007	11:12:30
2	-0.0061	-0.0061	0.000	0.097	0.007	11:12:32
3	-0.0144	-0.0144	-0.001	0.096	0.007	11:12:34
Mean:	-0.0076	-0.0076	0.000			
SD :	0.0063	0.0063	0.000			
%RSD:	82.62	82.62	82.62			

Element: Ni Seq. No.: 116 AS Loc.: --- Date: 02/10/2006
Sample ID: lfm dup

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.173	1.173	0.043	0.140	0.007	11:12:57
2	1.173	1.173	0.043	0.140	0.007	11:12:59
3	1.165	1.165	0.043	0.140	0.007	11:13:01
Mean:	1.170	1.170	0.043			
SD :	0.0044	0.0044	0.000			
%RSD:	0.38	0.38	0.38			

Element: Ni Seq. No.: 117 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0170	-0.0170	-0.001	0.096	0.007	11:13:33
2	-0.0193	-0.0193	-0.001	0.096	0.007	11:13:35
3	0.0040	0.0040	0.000	0.097	0.006	11:13:38
Mean:	-0.0108	-0.0108	0.000			
SD :	0.0128	0.0128	0.000			
%RSD:	119.0	119.0	119.03			

Element: Ni Seq. No.: 118 AS Loc.: --- Date: 02/10/2006
Sample ID: ser

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2375	0.2375	0.009	0.106	0.007	11:13:53
2	0.2289	0.2289	0.008	0.105	0.007	11:13:55
3	0.2428	0.2428	0.009	0.106	0.007	11:13:57
Mean:	0.2364	0.2364	0.009			
SD :	0.0070	0.0070	0.000			
%RSD:	2.97	2.97	2.97			

Element: Ni Seq. No.: 119 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0097	0.0097	0.000	0.097	0.006	11:14:11
2	0.0227	0.0227	0.001	0.098	0.006	11:14:14
3	-0.0144	-0.0144	-0.001	0.096	0.007	11:14:16
Mean:	0.0060	0.0060	0.000			
SD :	0.0189	0.0189	0.001			
%RSD:	313.6	313.6	313.63			

Element: Ni Seq. No.: 120 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0323	-0.0323	-0.001	0.096	0.007	11:14:51
2	-0.0242	-0.0242	-0.001	0.096	0.007	11:14:53
3	-0.0285	-0.0285	-0.001	0.096	0.007	11:14:55
Mean:	-0.0283	-0.0283	-0.001			
SD :	0.0041	0.0041	0.000			
%RSD:	14.34	14.34	14.34			

Element: Ni Seq. No.: 121 AS Loc.: --- Date: 02/10/2006
Sample ID: ccv-0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2328	0.2328	0.009	0.105	0.006	11:15:15
2	0.2453	0.2453	0.009	0.106	0.006	11:15:17
3	0.2199	0.2199	0.008	0.105	0.007	11:15:19
Mean:	0.2327	0.2327	0.009			
SD :	0.0127	0.0127	0.000			
%RSD:	5.47	5.47	5.47			

Element: Ni Seq. No.: 122 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0256	-0.0256	-0.001	0.096	0.007	11:15:37
2	-0.0292	-0.0292	-0.001	0.096	0.007	11:15:39
3	-0.0179	-0.0179	-0.001	0.096	0.007	11:15:41
Mean:	-0.0242	-0.0242	-0.001			
SD :	0.0058	0.0058	0.000			
%RSD:	23.96	23.96	23.96			

Element: Ni Seq. No.: 123 AS Loc.: --- Date: 02/10/2006
Sample ID: ccv-0.1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0996	0.0996	0.004	0.101	0.006	11:15:57
2	0.0917	0.0917	0.003	0.100	0.007	11:15:59
3	0.0904	0.0904	0.003	0.100	0.007	11:16:01
Mean:	0.0939	0.0939	0.003			
SD :	0.0050	0.0050	0.000			
%RSD:	5.31	5.31	5.31			

Element: Ni Seq. No.: 124 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0415	-0.0415	-0.002	0.095	0.007	11:16:15
2	-0.0305	-0.0305	-0.001	0.096	0.007	11:16:17
3	-0.0226	-0.0226	-0.001	0.096	0.007	11:16:20
Mean:	-0.0315	-0.0315	-0.001			
SD :	0.0095	0.0095	0.000			
%RSD:	30.19	30.19	30.19			

Element: Ni Seq. No.: 125 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0285	-0.0285	-0.001	0.096	0.007	11:16:28
2	-0.0227	-0.0227	-0.001	0.096	0.007	11:16:30
3	-0.0395	-0.0395	-0.001	0.095	0.007	11:16:32
Mean:	-0.0303	-0.0303	-0.001			
SD :	0.0085	0.0085	0.000			
%RSD:	28.18	28.18	28.18			

Element: Ni Seq. No.: 126 AS Loc.: --- *Date:* 02/10/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0197	-0.0197	-0.001	0.096	0.007	11:16:36

Auto-zero performed.

Element: Ni Seq. No.: 127 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0123	-0.0123	0.000	0.096	0.007	11:16:44
2	-0.0020	-0.0020	0.000	0.096	0.007	11:16:46
3	0.0058	0.0058	0.000	0.096	0.007	11:16:48
Mean:	-0.0028	-0.0028	0.000			
SD :	0.0091	0.0091	0.000			
%RSD:	320.2	320.2	320.19			

Element: Ni Seq. No.: 128 AS Loc.: --- Date: 02/10/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0072	0.0072	0.000	0.096	0.007	11:16:52

Auto-zero performed.

Element: Ni Seq. No.: 129 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0106	-0.0106	0.000	0.096	0.007	11:16:58
2	-0.0090	-0.0090	0.000	0.096	0.007	11:17:00
3	-0.0123	-0.0123	0.000	0.096	0.007	11:17:02
Mean:	-0.0106	-0.0106	0.000			
SD :	0.0016	0.0016	0.000			
%RSD:	15.25	15.25	15.25			

Element: Ni Seq. No.: 130 AS Loc.: --- Date: 02/10/2006
Sample ID: ccv-0.1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1067	0.1067	0.004	0.100	0.006	11:17:20
2	0.1085	0.1085	0.004	0.100	0.007	11:17:23
3	0.0893	0.0893	0.003	0.100	0.007	11:17:25
Mean:	0.1015	0.1015	0.004			
SD :	0.0106	0.0106	0.000			
%RSD:	10.41	10.41	10.41			

Element: Ni Seq. No.: 131 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0125	-0.0125	0.000	0.096	0.007	11:17:39
2	-0.0038	-0.0038	0.000	0.096	0.007	11:17:41
3	-0.0056	-0.0056	0.000	0.096	0.007	11:17:43
Mean:	-0.0073	-0.0073	0.000			
SD :	0.0046	0.0046	0.000			
%RSD:	62.79	62.79	62.79			

Element: Ni Seq. No.: 132 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-2+16

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.411	1.411	0.052	0.149	0.007	11:17:58
2	1.386	1.386	0.051	0.148	0.007	11:18:01
3	1.397	1.397	0.052	0.148	0.006	11:18:03
Mean:	1.398	1.398	0.052			
SD :	0.0126	0.0126	0.000			
%RSD:	0.90	0.90	0.90			

Element: Ni Seq. No.: 133 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0063	0.0063	0.000	0.097	0.007	11:19:08
2	0.0179	0.0179	0.001	0.097	0.007	11:19:10
3	0.0265	0.0265	0.001	0.097	0.006	11:19:12
Mean:	0.0169	0.0169	0.001			
SD :	0.0101	0.0101	0.000			
%RSD:	59.99	59.99	59.99			

Element: Ni Seq. No.: 134 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-3+17

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2393	0.2393	0.009	0.105	0.007	11:19:33
2	0.2307	0.2307	0.009	0.105	0.007	11:19:35
3	0.2307	0.2307	0.009	0.105	0.007	11:19:37
Mean:	0.2336	0.2336	0.009			
SD :	0.0050	0.0050	0.000			
%RSD:	2.14	2.14	2.14			

Element: Ni Seq. No.: 135 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0217	0.0217	0.001	0.097	0.006	11:19:53
2	0.0168	0.0168	0.001	0.097	0.007	11:19:55
3	0.0141	0.0141	0.001	0.097	0.007	11:19:57
Mean:	0.0175	0.0175	0.001			
SD :	0.0038	0.0038	0.000			
%RSD:	21.94	21.94	21.94			

Element: Ni Seq. No.: 136 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-4+18

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.6003	0.6003	0.022	0.119	0.007	11:20:13
2	0.5994	0.5994	0.022	0.119	0.007	11:20:15
3	0.6388	0.6388	0.024	0.120	0.005	11:20:18
Mean:	0.6129	0.6129	0.023			
SD :	0.0225	0.0225	0.001			
%RSD:	3.67	3.67	3.67			

Element: Ni Seq. No.: 137 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0188	0.0188	0.001	0.097	0.006	11:20:47
2	-0.0108	-0.0108	0.000	0.096	0.007	11:20:49
3	-0.0038	-0.0038	0.000	0.096	0.007	11:20:51
Mean:	0.0014	0.0014	0.000			
SD :	0.0155	0.0155	0.001			
%RSD:	1118	1118	1117.51			

Element: Ni Seq. No.: 138 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-5+19

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5594	0.5594	0.021	0.117	0.007	11:22:07
2	0.5527	0.5527	0.020	0.117	0.006	11:22:09
3	0.5651	0.5651	0.021	0.117	0.007	11:22:12
Mean:	0.5591	0.5591	0.021			
SD :	0.0062	0.0062	0.000			
%RSD:	1.11	1.11	1.11			

Element: Ni Seq. No.: 139 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0054	-0.0054	0.000	0.096	0.007	11:22:29
2	-0.0042	-0.0042	0.000	0.096	0.007	11:22:31
3	-0.0020	-0.0020	0.000	0.096	0.007	11:22:33
Mean:	-0.0039	-0.0039	0.000			
SD :	0.0017	0.0017	0.000			
%RSD:	45.04	45.04	45.04			

Element: Ni Seq. No.: 140 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-6+20

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.212	1.212	0.045	0.141	0.007	11:22:49
2	1.220	1.220	0.045	0.142	0.007	11:22:51
3	1.196	1.196	0.044	0.141	0.007	11:22:53
Mean:	1.209	1.209	0.045			
SD :	0.0124	0.0124	0.000			
%RSD:	1.03	1.03	1.03			

Element: Ni Seq. No.: 141 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0087	-0.0087	0.000	0.096	0.007	11:23:06
2	0.0005	0.0005	0.000	0.096	0.006	11:23:09
3	-0.0013	-0.0013	0.000	0.096	0.007	11:23:11
Mean:	-0.0031	-0.0031	0.000			
SD :	0.0049	0.0049	0.000			
%RSD:	155.9	155.9	155.91			

Element: Ni Seq. No.: 142 AS Loc.: --- Date: 02/10/2006
Sample ID: 074-7+21

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.3496	0.3496	0.013	0.109	0.007	11:23:27
2	0.3574	0.3574	0.013	0.110	0.006	11:23:29
3	0.3588	0.3588	0.013	0.110	0.006	11:23:31
Mean:	0.3553	0.3553	0.013			
SD :	0.0050	0.0050	0.000			
%RSD:	1.39	1.39	1.39			

Element: Ni Seq. No.: 143 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0081	0.0081	0.000	0.097	0.006	11:23:48
2	0.0040	0.0040	0.000	0.097	0.006	11:23:50
3	-0.0058	-0.0058	0.000	0.096	0.006	11:23:53
Mean:	0.0021	0.0021	0.000			
SD :	0.0071	0.0071	0.000			
%RSD:	338.8	338.8	338.80			

Element: Ni Seq. No.: 144 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0070	0.0070	0.000	0.097	0.005	11:25:05
2	-0.0108	-0.0108	0.000	0.096	0.006	11:25:07
3	0.0103	0.0103	0.000	0.097	0.006	11:25:09
Mean:	0.0022	0.0022	0.000			
SD :	0.0114	0.0114	0.000			
%RSD:	525.0	525.0	525.00			

Element: Ni Seq. No.: 145 AS Loc.: --- Date: 02/10/2006
Sample ID: ccv-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.072	2.072	0.077	0.173	0.007	11:25:22
2	2.062	2.062	0.076	0.173	0.007	11:25:24
3	2.100	2.100	0.078	0.174	0.006	11:25:26
Mean:	2.078	2.078	0.077			
SD :	0.0199	0.0199	0.001			
%RSD:	0.96	0.96	0.96			

Element: Ni Seq. No.: 146 AS Loc.: --- Date: 02/10/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0170	-0.0170	-0.001	0.096	0.007	11:25:42
2	-0.0283	-0.0283	-0.001	0.095	0.007	11:25:44
3	-0.0148	-0.0148	-0.001	0.096	0.007	11:25:47
Mean:	-0.0200	-0.0200	-0.001			
SD :	0.0073	0.0073	0.000			
%RSD:	36.29	36.29	36.29			

METALS PREP FORM

Set #

Prep Method: **(check only one per page)**

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

MATRIX: **(check only one per page)**

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	2/6	845			LFB		100		6
						Label LRB Actual				9
1		pH<2.0		020974	1	100 100			First half	4
					2	LFM DUP 99				0
					3	LFM 100				2
2					4	98				3
3					5	97				5
4					6	99				7
5				↓	7	100		↓	↓	8
6				020074	15		1 filter			16
7					16		↓			15
8					17					14
9					18					13
10					19					12
11					20					11
12					21		↓			10

SPIKING STDS	PROVIDER	LOT #
QG21	1	05H062
QC-7		
P		
Sn		
OTHER		

0.5

Analyst: _____

Start Date: _____

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:

3 mls H_2O_2
5 mls HNO_3

4 Impingers

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	7/6	915A			LFB		50		2
						Lab LRB Act				0
1		pH<2.0	020076		8	300 302				3
			|		9	303 LFM DUP 300				4
			|		10	309 LFM 309				5
2			|		11	315 316				6
3			|		12	308 306				7
4			|		13	310 313				8
5			✓		14	311 310				9
6										
7										
8										
9										
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	054062
QC-7		
P		
Sn		
OTHER		

D.S.

Analyst: _____

Start Date: _____

PROJECT # 2006010214: METHOD 29 FOR NICKEL

1	2	3	4	5	6	7	8	9	10	11	12
SA #	SAMPLE DESCRPTION	RUN ID	PH	Sample Fraction (SF = SF_A)	EVAP. TO	REAGENTS FOR DIG.	MICRO-Dig. BY	Analytical Fraction (AF = AF_A)	NI mg/L (C_{a1} or C_{a2})	MG NI IN INITIAL SAMPLE	TOTAL MG PER RUN
2	impinger	Cond. 12: RUN #1	< 2.0	308	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.183
3	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	1.792	0.179	
1	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
5	impinger	Cond. 12: RUN #2	< 2.0	316	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.445
6	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	4.409	0.441	
4	probe rinse		< 2.0	99.0	20	HF + HNO3	8.3.1.2				
8	impinger	Cond. 12: RUN #3	< 2.0	309	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.199
9	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	1.949	0.195	
7	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
11	impinger	BLANK	< 2.0	304	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.021
12	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.170	0.017	
10	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
14	impinger	Cond. 11: RUN #1	< 2.0	312	20	HNO3 + H2O2	8.3.4.2	50	0.083	0.004	0.189
15	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	1.845	0.185	
13	probe rinse		< 2.0	96.0	20	HF + HNO3	8.3.1.2				
17	impinger	Cond. 11: RUN #2	< 2.0	312	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.056
18	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.522	0.052	
16	probe rinse		< 2.0	99.0	20	HF + HNO3	8.3.1.2				
20	impinger	Cond. 11: RUN #3	< 2.0	314	20	HNO3 + H2O2	8.3.4.2	50	0.104	0.005	0.036
21	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.306	0.031	
19.	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
	impinger	MDL		300	20	HNO3 + H2O2	8.3.4.2	50	0.075	0.004	0.011
	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.075	0.008	
	probe rinse			100.0	20	HF + HNO3	8.3.1.2				

10 Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. Readings that read less than the MDL were qualified with "<", which may or may not carry over to the final result.

11 **mg Ni** = "Rdg" in mg/L X Analytical Fraction (rnls) X "INITIAL SAMPLE VOL" in rnls I "SF 2 A in rnls X 1 L / 1000 rnls
Initial sample volume is "Sample Fraction", as all sample was used. (There were no "splits")
So. "INITIAL SAMPLE VOL" in rnls / "SF 2A" in rnls = 1 (per Eq 29-2, & -3)

12 According to RUN ID, the filter+probe rinse were added to irnpinger results: as "mg of Nickel"

PROJECT # 2005110324: METHOD 29 FOR NICKEL

1	2	3	4	5	6	7	8	9	10	11	12
SA #	SAMPLE DESCRPTION	RUN ID	PH	Sample Fraction (SF = SF_A)	EVAP. TO	REAGENTS FOR DIG.	MICRO-Dig. BY	Analytical Fraction (AF = AF_A)	NI mg/L (C_{a1} or C_{a2})	MG NI IN INITIAL SAMPLE	TOTAL MG PER RUN
2	impinger	Cond. 23: TEST #1	< 2.0	314	20	HNO3 + H2O2	8.3.4.2	50	0.297	0.015	0.077
3	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.617	0.062	
1	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
5	impinger	Cond. 23: TEST #2	< 2.0	318	20	HNO3 + H2O2	8.3.4.2	50	0.101	0.005	0.061
6	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.557	0.056	
4	probe rinse		< 2.0	95.0	20	HF + HNO3	8.3.1.2				
8	impinger	Cond. 23: TEST #3	< 2.0	320	20	HNO3 + H2O2	8.3.4.2	50	0.083	0.004	0.081
9	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.769	0.077	
7	probe rinse		< 2.0	96.0	20	HF + HNO3	8.3.1.2				
11	impinger	BLANK	< 2.0	302	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.019
12	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.157	0.016	
10	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
14	impinger	Cond. 25: TEST #1	< 2.0	303	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.030
15	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.258	0.026	
13	probe rinse		< 2.0	96.0	20	HF + HNO3	8.3.1.2				
17	impinger	Cond. 25: TEST #2	< 2.0	299	20	HNO3 + H2O2	8.3.4.2	50	0.099	0.005	0.036
18	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.308	0.031	
16	probe rinse		< 2.0	95.0	20	HF + HNO3	8.3.1.2				
20	impinger	Cond. 25: TEST #3	< 2.0	308	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.036
21	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.326	0.033	
19	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
	impinger	MDL		300	20	HNO3 + H2O2	8.3.4.2	50	0.075	0.004	0.011
	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.075	0.008	
	probe rinse			100.0	20	HF + HNO3	8.3.1.2				

10 Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. Readings that read less than the MDL were qualified with "<", which may or may not carry over to the final result.

11 **mg Ni** = "Rdg" in mg/L **X** Analytical Fraction (mls) **X** "INITIAL SAMPLE VOL" in mls **/** "SF 2A" in mls **X** 1 L **/** 1000 mls
Initial sample volume is "Sample Fraction", as **all sample was used.** (There were no "splits")
So, "INITIAL SAMPLE VOL" in mls **/** "SF 2A" in mls = 1 (per Eq 29-2, & -3)

12 According to RUN ID, the filter+probe rinse were added to impinger results: as "mg of Nickel".

QA/QC WORK SHEET for NICKEL

FLAA METHOD SOP MET-040
5100 AA

Date: 2/2/2006
Analyst: LK

(Mg/L)
IDL= 0.027
MDL= 0.075
RL = 0.10
LDR = 0.10 to 8.0

1 CURRENT COPY OF METHOD AVAILABLE IN WINLAB.

2 INSTRUMENT SET-UP:

(For Specific Instrument settings, see current copy of method.)

3 CALIBRATION:

Cal Curve:	Conc	Abs	Result	% Rec.	
	0.25	0.009	0.248	99.3	
	0.50	0.019	0.511	102.2	
	7.00	0.036	0.974	97.4	
	2.00	0.077	2.097	104.9	
	5.00	0.182	4.963	99.3	
Corr. Coef:	xxxxxxxxx		0.9996		(> 0.995)

4 STANDARD TRACEABILITY

QC STANDARD	Standard Name, Company, & Lot #
Calibration	CPI QC-21 Lot # 05H062
CCV, CRA, AAT	CPI QC-21 Lot # 05H062
QCS, LFM	CPI QC-19 Lot # 05FO11

5 SAMPLE ANALYTICAL RUN

MAT-RIX	SAMPLE	STD CONC	READING Mg/L	BLK	RESULT	DIL 1	DIL 2	QC RESULTS	Mg/L	REP'T mg/L	ICP	
	CCV	5.00	4.936		4.936			99				(95-105%R)
	QCS	2.00	2.085		2.085			104				(95-105%R)
	CCB		-0.013		-0.013			-0.013				(< MDL)
	CRA	0.05	0.032	-0.013	0.045			89				(70-130%R)
	CRA	0.10	0.068	-0.020	0.089			89				(70-130%R)
	LRB		0.004	-0.020	0.025			0.025				(< MDL)
	LFB	1.00	1.107	0.006	1.101			110				(80-120%R)
M29	203-11		0.074	0.009	0.065	1.0	1.0		0.065	**0.074**	.070	2/1
M29	203-10+12		0.122	-0.002	0.124	1.0	1.0		0.124	**0.124**	.159	
M29	203-23		0.091	0.015	0.076	1.0	1.0		0.076	**0.076**	.084	2/1
	203-22+24		2.176	0.005	2.171	1.0	1.0		2.171	**2.171**	2.173	2/1
	CCB		0.020	0.033	-0.014			-0.014				(< MDL)
	CCV	0.25	0.270	0.020	0.251			100				(90-110%R)
M29	~~203-11~~ 324-1+3		0.644	0.027	0.617	1.0	1.0		0.617	**0.617**		
	SPK	1.0	1.622	0.019	1.603	1.0	1.0	99				(80-120%R)
	DUP	1.0	1.604	0.019	1.585	1.0	1.0	1.1				(<10 RPD, IF SA > 20X MDL)
	SER DIL	2/10	0.340	0.026	0.315	1.0	1.0	1.9				(<10%DIFF)
M29	324-4+6		0.559	0.002	0.557	1.0	1.0		0.557	**0.557**		
M29	324-7+9		0.781	0.012	0.769	1.0	1.0		0.769	**0.769**		
M29	324-10+12		0.157	0.000	0.157	1.0	1.0		0.157	**0.157**		
	CCB		0.004	-0.019	0.023			0.023				(< MDL)
	CCV	0.50	0.516	0.004	0.512			102				(90-110%R)
M29	324-13+15		0.247	-0.011	0.258	1.0	1.0		0.258	**0.258**		
M29	324-16+18		0.277	-0.031	0.308	1.0	1.0		0.308	**0.308**		
M29	324-19+21		0.308	-0.018	0.326	1.0	1.0		0.326	**0.326**		
M29	214-1+3		1.786	-0.006	1.792	1.0	1.0		1.792	**1.792**		
M29	214-4+6		4.415	0.006	4.409	1.0	1.0		4.409	**4.409**		
	CCB		-0.026	-0.030	0.004			0.004				(< MDL)
	CCV	1.00	0.952	-0.026	0.978			98				(90-110%R)
M29	214-7+9		1.925	-0.024	1.949	1.0	1.0		1.949	**1.949**		
M29	214-10+12		0.157	-0.013	0.170	1.0	1.0		0.170	**0.170**		
M29	214-13+15 ✓		1.836	-0.009	1.845	1.0	1.0		1.845	**1.845**		
M29	214-16+18		0.530	0.009	0.522	1.0	1.0		0.522	**0.522**		
M29	214-19+21		0.305	-0.001	0.306	1.0	1.0		0.306	**0.306**		
	CCB		0.004	0.006	-0.002			-0.002				(< MDL)
	CCV	2.00	2.090	0.004	2.086			104				(90-110%R)
	LRB		0.068	0.007	0.060			0.060				(< MDL)
	LFB	1.00	1.073	-0.026	1.099			115				(80-120%R)
M29	*324-2		0.294	-0.003	0.297	1.0	1.0		0.297	**0.297**		

QA/QC WORK SHEET for NICKEL p2

FLAA METHOD SOP MET-040
5100 AA

Date: 2/2/2006
Analyst: LK

5 SAMPLE ANALYTICAL RUN

MAT-RIX	SAMPLE	STD CONC	READING Mg/L	BLK	RESULT	DIL 1	DIL 2	QC RESULTS	Mg/L	REP'T mg/L	ICP	
	SPK	1.0	1.246	-0.017	1.263	1.0	1.0	97				(80-120%R)
	DUP	1.0	1.188	0.005	1.183	1.0	1.0	6.6				(<10 RPD, IF SA > 20X MDL)
	SER DIL	2/10	0.229	-0.003	0.232	1.0	1.0	8.3				(<10%DIFF)
	CCB		-0.014	0.005	-0.019			-0.019				(< MDL)
	CCV	0.25	0.229	-0.014	0.243			97				(90-110%R)
M29	324-5		0.087	-0.014	0.101	1.0	1.0		0.101	**0.101**		
M29	324-8		0.090	0.007	0.083	1.0	1.0		0.083	**0.083**		
M29	324-11		0.068	0.003	0.065	1.0	1.0		0.065	**0.074**		
M29	324-14		0.072	-0.003	0.074	1.0	1.0		0.074	**0.074**		
	DUP		0.065	-0.039	0.104	1.0	1.0	33.2				(<10 RPD, IF SA > 20X MDL)
	CCB		-0.009	0.016	-0.025			-0.025				(< MDL)
	CCV	2.00	2.072	-0.009	2.081			104				(90-110%R)
M29	324-17		0.081	-0.018	0.099	1.0	1.0		0.099	**0.099**		
M29	324-20		0.057	-0.009	0.066	1.0	1.0	1.4	0.066	**0.074**		
M29	214-2		0.077	0.007	0.071	1.0	1.0		0.071	**0.074**		
M29	214-5		0.049	-0.017	0.066	1.0	1.0		0.066	**0.074**		
M29	214-8		0.060	0.005	0.056	1.0	1.0		0.056	**0.074**		
	CCB		-0.045	-0.004	-0.041			-0.041				(< MDL)
	CCV	0.50	0.471	-0.045	0.516			103				(90-110%R)
M29	214-11		0.022	-0.050	0.072	1.0	1.0		0.072	**0.074**		
	DUP		0.104	-0.004	0.108	1.0	1.0	40.8				(<10 RPD, IF SA > 20X MDL)
[illegible]	214-14		0.049	-0.035	0.083	1.0	1.0	15.8	0.083	**0.083**		
M29	214-17		0.034	-0.024	0.058	1.0	1.0		0.058	**0.074**		
M29	214-20		0.066	-0.039	0.104	1.0	1.0		0.104	**0.104**		
	CCB		0.009	0.011	-0.002			-0.002				(< MDL)
	CCV	0.25	0.233	0.009	0.224			90				(90-110%R)

Method Name: NI
Method Description: Nickel

Eiement: Ni

LAMP A w/ Bg.

Date: 02/02/2006
Technique: Flame
Wavelength: 232.0 nm
Lamp Current: 20
Sample Info File: Untitled

Calibration Equation: Zero Intercept: Linear
Slit Width: 0.20 nm
Energy: 71
Results Data Set:

Element: Ni Seq. No.: 265 AS Loc.: --- Date: 02/02/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.011	0.096	0.006	10:18:41
2			-0.011	0.096	0.006	10:18:43
3			-0.011	0.095	0.006	10:18:45
Mean:			-0.011			
SD :			0.000			
%RSD:			1.39			

Auto-zero performed.

Element: Ni Seq. No.: 266 AS Loc.: --- Date: 02/02/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.000	0.096	0.005	10:18:53
2			0.001	0.096	0.006	10:18:55
3			0.001	0.097	0.005	10:18:57
Mean:			0.001			
SD :			0.001			
%RSD:			61.54			

Auto-zero performed.

Element: Ni Seq. No.: 267 AS Loc.: --- Date: 02/02/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.001	0.096	0.006	10:19:01
2			-0.001	0.096	0.006	10:19:03
3			-0.001	0.096	0.006	10:19:05
Mean:			-0.001			
SD :			0.000			
%RSD:			14.29			

Auto-zero performed

Element: Ni Seq. No.: 268 AS Loc.: --- Date: 02/02/2006
Sample ID: CAL STD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.009	0.105	0.006	10:19:28
2			0.009	0.105	0.005	10:19:30
3			0.009	0.105	0.006	10:19:33
Mean:			0.009			
SD :			0.000			
BRSD:			2.79			

Standard number 1 applied. [0.25]
Correlation Coefficient: 0.9985 Slope: 0.0371

Element: Ni Seq. No.: 269 AS Loc.: --- Date: 02/02/2006
Sample ID: cal std 2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.018	0.114	0.006	10:19:58
2			0.019	0.115	0.006	10:20:00
3			0.019	0.115	0.006	10:20:02
Mean:			0.019			
SD :			0.000			
BRSD:			1.99			

Standard number 2 applied. [0.50]
Correlation Coefficient: 0.9988 Slope: 0.0370

Element: Ni Seq. No.: 270 AS Loc.: --- Date: 02/02/2006
Sample ID: cal std 3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.036	0.131	0.006	10:20:22
2			0.036	0.132	0.006	10:20:24
3			0.036	0.131	0.006	10:20:26
Mean:			0.036			
SD :			0.000			
%RSD:			0.44			

Standard number **3** applied. [1.00]
Correlation Coefficient: 0.9992 Slope: 0.0368

Element: Ni Seq. No.: 271 AS Loc.: --- Date: 02/02/2006
Sample ID: cal std 4

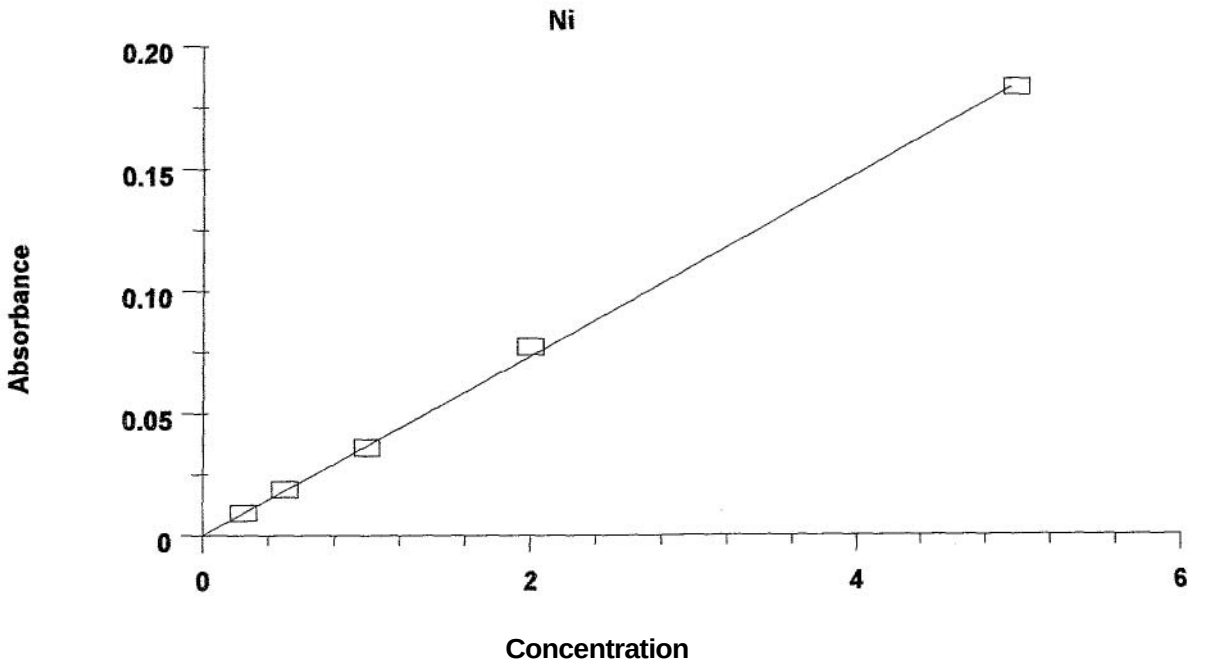
Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.077	0.172	0.005	10:20:46
2			0.076	0.172	0.006	10:20:49
3			0.078	0.174	0.005	10:20:51
Mean:			0.077			
SD :			0.001			
%RSD:			1.58			

Standard number 4 applied. [2.00]
Correlation Coefficient: 0.9996 Slope: 0.0367

Element: Ni Seq. No.: 272 A5 Loc.: --- Date: 02/02/2006
Sample ID: cal std 5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.182	0.278	0.005	10:21:14
2			0.183	0.279	0.005	10:21:16
3			0.181	0.277	0.005	10:21:18
Mean:			0.182			
SD :			0.001			
%RSD:			0.50			

Standard number 5 applied. [5.00]
Correlation Coefficient: 0.9996 Slope: 0.0367



Calibration data for Ni

Standard ID	**Mean** Signal (Absorbance)	Entered Concentration (mg/L)	Calculated Concentration (mg/L)	Standard Deviation	%RSD
Calib Blank	0.000	----	0.000	0.0001	14.2878
CAL STD	0.009	0.25	0.2482	0.0003	2.7920
cal std 2	0.019	0.50	0.5112	0.0004	1.9883
cal std **3**	0.036	1.00	0.9742	0.0002	0.4437
cal std 4	0.077	2.00	2.097	0.0012	1.5791
cal std 5	0.182	5.00	4.963	0.0009	0.4990

Correlation Coefficient: 0.99961 Slope: 0.03669

Element: Ni Seq. No.: 273 AS Loc.: --- Date: 02/02/2006
Sample ID: ccv-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.904	4.904	0.180	0.276	0.005	10:21:32
2	4.946	4.946	0.181	0.277	0.005	10:21:34
3	4.959	4.959	0.182	0.278	0.005	10:21:36
Mean:	4.936	4.936	0.181			
SD :	0.0291	0.0291	0.001			
%RSD:	0.59	0.59	0.59			

Element: Ni Seq. No.: 274 AS Loc.: --- Date: 02/02/2006
Sample ID: qcs-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.092	2.092	0.077	0.172	0.006	10:22:04
2	2.073	2.073	0.076	0.172	0.007	10:22:06
3	2.091	2.091	0.077	0.172	0.006	10:22:08
Mean:	2.085	2.085	0.077			
SD :	0.0109	0.0109	0.000			
%RSD:	0.52	0.52	0.52			

Element: Ni Seq. No.: 275 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0067	-0.0067	0.000	0.095	0.006	10:24:48
2	-0.0213	-0.0213	-0.001	0.095	0.006	10:24:50
3	-0.0116	-0.0116	0.000	0.095	0.006	10:24:52
Mean:	-0.0132	-0.0132	0.000			
SD :	0.0074	0.0074	0.000			
%RSD:	56.26	56.26	56.26			

Element: Ni **Seq.** No.: 276 AS Loc.: --- Date: 02/02/2006
Sample ID: cra-0.05

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0464	0.0464	0.002	0.097	0.006	10:25:22
2	0.0112	0.0112	0.000	0.096	0.007	10:25:24
3	0.0371	0.0371	0.001	0.097	0.006	10:25:26
Mean:	0.0315	0.0315	0.001			
SD :	0.0182	0.0182	0.001			
%RSD:	57.81	57.81	57.81			

Element: Ni Seq. No.: 277 AS Loc.: --- Date: 02/02/2006
Sample ID: cra-0.1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0639	0.0639	0.002	0.098	0.007	10:25:50
2	0.0732	0.0732	0.003	0.098	0.007	10:25:52
3	0.0677	0.0677	0.002	0.098	0.007	10:25:54
Mean:	0.0682	0.0682	0.003			
SD :	0.0047	0.0047	0.000			
%RSD:	6.85	6.85	6.85			

Element: Ni Seq. No.: 278 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0193	-0.0193	-0.001	0.095	0.006	10:26:16
2	-0.0328	-0.0328	-0.001	0.094	0.007	10:26:18
3	-0.0091	-0.0091	0.000	0.095	0.006	10:26:20
Mean:	-0.0204	-0.0204	-0.001			
SD :	0.0119	0.0119	0.000			
%RSD:	58.39	58.39	58.39			

Element: Ni Seq. No.: 279 AS Loc.: --- Date: 02/02/2006
Sample ID: lrb f+pr

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0026	0.0026	0.000	0.096	0.006	10:26:55
2	-0.0029	-0.0029	0.000	0.096	0.007	10:26:57
3	0.0128	0.0128	0.000	0.096	0.007	10:26:59
Mean:	0,0042	0.0042	0.000			
SD :	0.0080	0.0000	0.000			
%RSD:	189.8	189.8	189.78			

Element: Ni Seq. No.: 280 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0092	0.0092	0.000	0,096	0.005	10:27:47
2	0.0001	0.0001	0.000	0.096	0.006	10:27:49
3	0.0084	0.0084	0.000	0.096	0.006	10:27:51
Mean:	0.0059	0.0059	0.000			
SD :	0.0051	0.0051	0.000			
%RSD:	85.93	85.93	85.93			

Element: Ni Seq. No.: 281 AS Loc.: --- Date: 02/02/2006
Sample ID: lfb f+pr

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.063	1.063	0.039	0.135	0.007	10:29:10
2	1.093	1.093	0.040	0.136	0.006	10:29:12
3	1.107	1.107	0.041	0.136	0.006	10:29:14
Mean:	1.088	1.088	0.040			
SD :	0.0225	0.0225	0.001			
%RSD:	2.07	2.07	2.07			

Element: Ni Seq. No.: 282 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0096	-0.0096	0.000	0.095	0.006	10:31:33
2	-0.0503	-0.0503	-0.002	0.094	0.008	10:31:36
3	-0.0373	-0.0373	-0.001	0.094	0.007	10:31:38
Mean:	-0.0324	-0.0324	-0.001			
SD :	0.0208	0.0208	0.001			
%RSD:	64.12	64.12	64.12			

Element: Ni Seq. No.: 283 AS Loc.: --- Date: 02/02/2006
Sample ID: 203-11

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0640	0.0640	0.002	0.098	0.006	10:32:05
2	0.0774	0.0774	0.003	0.098	0,005	10:32:07
3	0.0792	0.0792	0.003	0.099	0.005	10:32:09
Mean:	0.0735	0.0735	0.003			
SD :	0.0083	0.0083	0.000			
%RSD:	11.23	11.23	11.23			

Element: Ni Seq. No.: 284 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0103	-0.0103	0.000	0.095	0.006	10:32:26
2	0.0088	0.0088	0.000	0.096	0.005	10:32:28
3	-0.0045	-0.0045	0.000	0.095	0.006	10:32:30
Mean:	-0.0020	-0.0020	0.000			
SD :	0.0098	0.0098	0.000			
%RSD:	489.3	489.3	489.25			

Element: Ni Seq. No.: 285 AS Loc.: --- Date: 02/02/2006
Sample ID: 203-10+12

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1169	0.1169	0.004	0.100	0.006	10:32:50
2	0.1113	0.1113	0.004	0.100	0.006	10:32:52
3	0.1382	0.1382	0.005	0.101	0.005	10:32:54
Mean:	0.1221	0.1221	0.004			
SD :	0.0142	0.0142	0.001			
%RSD:	11.65	11.65	11.65			

Element: Ni Seq. No.: 286 AS Loc.: --- Date: 02/02/2006
Sample ID: **ccb**

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0295	-0.0295	-0.001	0.095	0.006	10:33:13
2	-0.0191	-0.0191	-0.001	0.095	0.006	10:33:15
3	-0.0291	-0.0291	-0.001	0.095	0.006	10:33:17
Mean:	-0.0259	-0.0259	-0.001			
SD :	0,0059	0.0059	0.000			
%RSD:	22.78	22.78	22.78			

Element: Ni Seq. No.: 287 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0534	-0.0534	-0.002	0.094	0.007	10:33:35
2	-0.0420	-0.0420	-0.002	0.094	0.007	10:33:37
3	-0.0626	-0.0626	-0.002	0.093	0.007	10:33:39
Mean:	-0.0527	-0.0527	-0.002			
SD :	0.0103	0,0103	0.000			
%RSD:	19.58	19.58	19.58			

Element: Ni Seq. No.: 288 AS Loc.: --- Date: 02/02/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0344	-0.0344	-0.001	0.094	0.006	10:33:44

Auto-zero performed.

Element: Ni Seq. No.: 289 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0002	0.0002	0.000	0.094	0.006	10:33:50
2	0.0341	0.0341	0.001	0.096	0.005	10:33:53
3	0.0109	0.0109	0.000	0.095	0.006	10:33:55
Mean:	0.0151	0.0151	0.001			
SD :	0.0173	0.0173	0.001			
%RSD:	115.0	115.0	114.98			

Element: Ni Seq. No.: 290 AS Loc.: --- Dare: 02/02/2006
Sample ID: 203-23

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0973	0.0973	0.004	0.098	0.006	10:34:12
2	0.0826	0.0826	0.003	0.097	0.007	10:34:14
3	0.0926	0.0926	0.003	0.098	0.006	10:34:17
Mean:	0.0908	0.0908	0.003			
SD :	0.0075	0.0075	0.000			
%RSD:	8.30	8.30	8.30			

Element: Ni Seq. No.: 291 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0026	-0.0026	0.000	0.094	0.006	10:34:34
2	-0.0080	-0.0080	0.000	0.094	0.007	10:34:36
3	0.0259	0.0259	0.001	0.095	0.005	10:34:38
Mean:	0.0051	0.0051	0.000			
SD :	0.0182	0.0182	0.001			
%RSD:	356.6	356.6	356.64			

Element: Ni Seq. No.: 292 AS Loc.: --- Date: 02/02/2006
Sample ID: 203-22+24

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.168	2.168	0.080	0.174	0.006	10:34:56
2	2.173	2.173	0.080	0.174	0.006	10:34:58
3	2.187	2.187	0.080	0.175	0.006	10:35:00
Mean:	2.176	2.176	0.080			
SD :	0.0097	0.0097	0.000			
%RSD:	0.45	0.45	0.45			

Element: Ni Seq. No.: 293 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0355	0.0355	0.001	0.096	0.005	10:35:49
2	0.0153	0.0153	0.001	0.095	0.006	10:35:51
3	0.0492	0.0492	0.002	0.096	0.005	10:35:54
Mean:	0.0334	0.0334	0.001			
SD :	0.0171	0.0171	0.001			
%RSD:	51.14	51.14	51.14			

Element: Ni Seq. No.: 294 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0149	0.0149	0.001	0.095	0.006	10:36:00
2	0.0288	0.0288	0.001	0.095	0.006	10:36:03
3	0.0155	0.0155	0.001	0.095	0.006	10:36:05
Mean:	0.0197	0.0197	0.001			
SD :	0.0078	0.0078	0.000			
%RSD:	39.73	39.73	39.73			

Element: Ni Seq. No.: 295 AS Loc.: --- Date: 02/02/2006
Sample ID: ccv-0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2672	0.2672	0.010	0.104	0.006	10:36:29
2	0.2671	0.2671	0.010	0.104	0.005	10:36:32
3	0.2767	0.2767	0.010	0.105	0.005	10:36:34
Mean:	0.2703	0.2703	0.010			
SD :	0.0055	0.0055	0.000			
%RSD:	2.04	2.04	2.04			

Element: Ni Seq. No.: 296 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0215	0.0215	0.001	0.095	0.006	10:36:53
2	0.0465	0.0405	0.001	0.096	0.005	10:36:56
3	0.0193	0.0193	0.001	0.095	0.005	10:36:58
Mean:	0.0271	0.0271	0.001			
SD :	0.0116	0.0116	0.000			
%RSD:	42.91	42.91	42.91			

Element: Ni Seq. No.: 297 AS Loc.: --- Date: 02/02/2006
Sample ID: *324-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak ***Area***	Bkgnd Area	Time
1	0.6406	0.6406	0.024	0.118	0.006	10:37:30
2	0.6395	0.6395	0.023	0.118	0.006	10:37:32
3	0.6519	0.6519	0.024	0.118	0.006	10:37:34
Mean:	0.6440	0.6440	0.024			
SD :	0.0069	0.0069	0.000			
%RSD:	1.07	1.07	1.07			

Element: Ni Seq. No.: 298 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0221	0.0221	0.001	0.095	0.006	10:37:53
2	0.0175	0.0175	0.001	0.095	0.006	10:37:55
3	0.0168	0.0168	0.001	0.095	0.006	10:37:57
Mean:	0.0188	0.0188	0.001			
SD :	0.0029	0.0029	0.000			
%RSD:	15.26	15.26	15.26			

Element: Ni Seq. No.: 299 AS Loc.: --- Date: 02/02/2006
Sample ID: s324-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.596	1.596	0.059	0.153	0.006	10:38:18
2	1.621	1.621	0.059	0.154	0.006	10:38:20
3	1.650	1.650	0.061	0.155	0.006	10:38:23
Mean:	1.622	1.622	0.060			
SD :	0.0270	0.0270	0.001			
%RSD:	1.66	1.66	1.66			

Element: Ni Seq. No.: 300 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0230	0.0230	0.001	0.095	0.006	10:38:39
2	0,0171	0.0171	0.001	0.095	0.006	10:38:41
3	0.0171	0.0171	0.001	0.095	0.006	10:38:43
Mean:	0.0191	0.0191	0.001			
SD :	0.0034	0.0034	0.000			
%RSD:	17.65	17.65	17.65			

Element: Ni Seq. No.: 301 AS Loc.: --- Date: 02/02/2006
Sample ID: sd324-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.596	1.596	0.059	0.153	0.006	10:39:05
2	1.613	1.613	0.059	0.154	0.006	10:39:07
3	1.602	1.602	0.059	0.153	0.006	10:39:09
Mean:	1.604	1.604	0.059			
SD :	0.0087	0.0087	0.000			
%RSD:	0.54	0.54	0.54			

Element: Ni Seq. No.: 302 AS Loc.: --- Date: 02/02/2036
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0408	0.0408	0.001	0.096	0.005	10:39:23
2	0.0202	0.0202	0.001	0.095	0.006	10:39:25
3	0.0162	0.0162	0.001	0.095	0.007	10:39:27
Mean:	0.0258	0.0258	0.001			
SD :	0.0132	0.0132	0.000			
%RSD:	51.25	51.25	51.25			

Element: Ni Seq. No.: 303 AS Loc.: --- Date: 02/02/2006
Sample ID: ser324-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.3389	0.3389	0.012	0.107	0.007	10:40:00
2	0.3537	0.3537	0.013	0.107	0.006	10:40:02
3	0.3287	0.3287	0.012	0.106	0.007	10:40:04
Mean:	0.3404	0.3404	0.012			
SD :	0.0126	0.0126	0.000			
%RSD:	3.69	3.69	3.69			

Element: Ni Seq. No.: 304 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	Stndeonc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0217	0.0217	0.001	0.095	0.006	10:40:17
2	0.0115	0.0115	0.000	0.095	0.006	10:40:19
3	-0.0268	-0.0268	-0.001	0.093	0.008	10:40:21
Mean:	0.0021	0.0021	0.000			
SD :	0.0256	0.0256	0.001			
%RSD:	1202	1202	1202.00			

Element: Ni Seq. No.: 305 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-4+6

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5527	0.5527	0.020	0.115	0.006	10:41:12
2	0.5795	0.5795	0.021	0.116	0.006	10:41:14
3	0.5451	0.5451	0.020	0.114	0.006	10:41:16
Mean:	0.5591	0.5591	0.021			
SD :	0.0181	0.0181	0.001			
%RSD:	3.24	3.24	3.24			

Element: Ni Seq. No.: 306 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0071	-0.0071	0.000	0.094	0.007	10:41:38
2	0.0268	0.0268	0.001	0.095	0.006	10:41:41
3	0.0159	0.0159	0.001	0.095	0.006	10:41:43
Mean:	0.0118	0.0118	0.000			
SD :	0.0173	0.0173	0.001			
%RSD:	146.0	146.0	146.05			

Element: Ni Seq. No.: 307 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-7+9

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.7695	0.7695	0.028	0.123	0.006	10:42:02
2	0.8041	0.8041	0.030	0.124	0.006	10:42:04
3	0.7678	0.7678	0.028	0.123	0.007	10:42:06
Mean:	0.7805	0.7805	0.029			
SD :	0.0205	0.0205	0.001			
%RSD:	2.62	2.62	2.62			

Element: Ni Seq. No.: 308 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0288	0.0288	0.001	0.095	0.006	10:42:31
2	-0.0042	-0.0042	0.000	0.094	0.006	10:42:33
3	-0.0235	-0.0235	-0.001	0.094	0.007	10:42:35
Mean:	0.0004	0.0004	0.000			
SD :	0.0265	0.0265	0.001			
%RSD:	7256	7256	7256.20			

Element: Ni Seq. No.: 309 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-10+12

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1553	0.1553	0.006	0.100	0.007	10:43:07
2	0.1373	0.1373	0.005	0.099	0.007	10:43:09
3	0.1785	0.1785	0.007	0.101	0.006	10:43:11
Mean:	0.1570	0.1570	0.006			
SD :	0.0207	0.0207	0.001			
%RSD:	13.15	13.15	13.15			

Element: Ni Seq. No.: 310 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0217	-0.0217	-0.001	0.094	0.006	10:44:00
2	-0.0237	-0.0237	-0.001	0.094	0.006	10:44:02
3	-0.0106	-0.0106	0.000	0.094	0.006	10:44:04
Mean:	-0.0187	-0.0187	-0.001			
SD :	0.0071	0.0071	0.000			
%RSD:	37.90	37.90	37.90			

Element: Ni Seq. No.: 311 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0016	0.0016	0.000	0.094	0.005	10:44:11
2	-0.0078	-0.0078	0.000	0.094	0.006	10:44:13
3	0.0182	0.0182	0.001	0.095	0.005	10:44:15
Mean:	0.0040	0.0040	0.000			
SD :	0.0132	0.0132	0.000			
%RSD:	329.0	329.0	329.00			

Element: Ni Seq. No.: 312 AS Loc.: --- Date: 02/02/2006
Sample ID: ccv-0.5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5241	0.5241	0.019	0.114	0.006	10:44:36
2	0.5166	0.5166	0.019	0.113	0.006	10:44:38
3	0.5084	0.5084	0.019	0.113	0.006	10:44:40
Mean:	0.5164	0.5164	0.019			
SD :	0.0078	0.0078	0.000			
%RSD:	1.52	1.52	1.52			

Element: Ni Seq. No.: 313 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0080	-0.0080	0.000	0.094	0.006	10:45:02
2	-0.0295	-0.0295	-0.001	0.093	0.007	10:45:04
3	0.0036	0.0036	0.000	0.095	0.005	10:45:06
Mean:	-0.0113	-0.0113	0.000			
SD :	0.0168	0.0168	0.001			
%RSD:	148.9	148.9	148.91			

Element: Ni Seq. No.: 314 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-13+15

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2248	0.2248	0.008	0.103	0.007	10:45:23
2	0.2505	0.2505	0.009	0.104	0.006	10:45:25
3	0.2649	0.2649	0.010	0.104	0.006	10:45:27
Mean:	0.2467	0.2467	0.009			
SD :	0.0203	0.0203	0.001			
%RSD:	8.23	8.23	8.23			

Element: Ni **Seq.** No.: 315 AS Loc.: --- Date: 02/02/2006
Sample ID: **ccb**

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0270	-0.0270	-0.001	0.093	0.006	10:45:43
2	-0.0443	-0.0443	-0.002	0.093	0.007	10:45:45
3	-0.0366	-0.0366	-0.001	0.093	0.007	10:45:47
Mean:	-0.0360	-0.0360	-0.001			
SD :	0.0087	0.0087	0.000			
%RSD:	24.12	24.12	24.12			

Element: Ni Seq. No.: 316 AS Loc.: --- Date: 02/02/2006
Sample ID: **ccb**

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0071	-0.0071	0.000	0.094	0.005	10:46:02
2	-0.0421	-0.0421	-0.002	0.093	0.006	10:46:04
3	-0.0430	-0.0430	-0.002	0.093	0.007	10:46:07
Mean:	-0.0307	-0.0307	-0.001			
SD :	0.0205	0.0205	0.001			
%RSD:	66.59	66.59	66.59			

Element: Ni **Seq.** No.: 317 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-16+18

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2713	0.2713	0.010	0.104	0.006	10:46:26
2	0.2871	0.2871	0.011	0.105	0.006	10:46:28
3	0.2736	0.2736	0.010	0.104	0.006	10:46:30
Mean:	0.2773	0.2773	0.010			
SD :	0.0086	0.0086	0.000			
%RSD:	3.08	3.08	3.08			

Element: Ni Seq. No.: 318 AS Loc.: --- Date: 02/02/2055
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0392	-0.0392	-0.001	0.093	0.007	10:46:51
2	-0.0459	-0.0459	-0.002	0.093	0.007	10:46:53
3	-0.0290	-0.0290	-0.001	0.093	0.006	10:46:55
Mean:	-0.0380	-0.0380	-0.001			
SD :	0.0085	0.0085	0.000			
%RSD:	22.44	22.44	22.44			

Element: Ni Seq. No.: 319 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0077	-0.0077	0,000	0.094	0.005	10:47:04
2	-0.0066	-0.0066	0.000	0.094	0.005	10:47:07
3	-0.0401	-0.0401	-0.001	0.093	0.007	10:47:09
Mean:	-0.0181	-0.0181	-0.001			
SD :	0.0191	0.0191	0.001			
%RSD:	105.2	105.2	105.25			

Element: Ni Seq. No.: 320 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-19+21

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.3012	0.3012	0.011	0.105	0.006	10:47:28
2	0.2984	0.2984	0.011	0.105	0.006	10:47:30
3	0.3245	0.3245	0.012	0.106	0.005	10:47:32
Mean:	0.3080	0.3080	0.011			
SD :	0.0143	0.0143	0.001			
%RSD:	4.65	4.65	4.65			

Element: Ni Seq. No.: 321 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0073	-0.0073	0.000	0.094	0.006	10:47:57
2	-0.0031	-0.0031	0.000	0.094	0.006	10:47:59
3	-0.0075	-0.0075	0.000	0.094	0.006	10:48:01
Mean:	-0.0060	-0.0060	0.000			
SD :	0.0025	0.0025	0.000			
%RSD:	41.56	41.56	41.56			

Element: Ni Seq. No.: 322 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.791	1.791	0.066	0.160	0.005	10:48:18
2	1.772	1.772	0.065	0.159	0.006	10:48:20
3	1.795	1.795	0.066	0.160	0.005	10:48:22
Mean:	1.786	1.786	0.066			
SD :	0.0123	0.0123	0.000			
%RSD:	0.69	0.69	0.69			

Element: Ni Seq. No.: 323 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0077	0.0077	0.000	0.095	0.005	10:48:46
2	-0.0015	-0.0015	0.000	0.094	0.005	10:48:48
3	0.0111	0.0111	0.000	0.095	0.005	10:48:51
Mean:	0.0058	0.0058	0.000			
SD :	0.0065	0.0065	0.000			
%RSD:	112.6	112.6	112.55			

Element: Ni Seq. No.: 324 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-4+6

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.352	4.352	0.160	0.254	0.006	10:49:08
2	4.461	4.461	0.164	0.258	0.005	10:49:10
3	4.431	4.431	0.163	0.257	0.005	10:49:12
Mean:	4.415	4.415	0.162			
SD :	0.0564	0.0564	0.002			
%RSD:	1.28	1.28	1.28			

Element: Ni Seq. No.: 325 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0255	-0.0255	-0.001	0.093	0.006	10:50:11
2	-0.0334	-0.0334	-0.001	0.093	0.006	10:50:13
3	-0.0319	-0.0319	-0.001	0.093	0.006	10:50:16
Mean:	-0.0303	-0.0303	-0.001			
SD :	0.0042	0.0042	0.000			
%RSD:	13.78	13.78	13.78			

Element: Ni Seq. No.: 326 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0098	-0.0098	0.000	0.094	0.006	10:50:23
2	-0.0332	-0.0332	-0.001	0.093	0.007	10:50:26
3	-0.0363	-0.0363	-0.001	0.093	0.006	10:50:28
Mean:	-0.0264	-0.0264	-0.001			
SD :	0.0144	0.0144	0.001			
%RSD:	54.67	54.67	54.67			

Element: Ni Seq. No.: 327 AS Loc.: --- Date: 02/02/2006
Sample ID: ccv-1.0

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.9410	0.9410	0.035	0.129	0.007	10:51:02
2	0.9500	0.9500	0.035	0.129	0.006	10:51:04
3	0.9644	0.9644	0.035	0.130	0.005	10:51:06
Mean:	0.9518	0.9518	0.035			
SD :	0.0118	0.0118	0.000			
%RSD:	1.24	1.24	1.24			

Element: Ni Seq. No.: 328 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0465	-0.0465	-0.002	0.093	0.003	10:51:45
2	-0.0275	-0.0275	-0.001	0.093	0.006	10:51:47
3	0.0033	0.0033	0.000	0.095	0.005	10:51:49
Mean:	-0.0236	-0.0236	-0.001			
SD :	0.0251	0.0251	0.001			
BRSD:	106.5	106.5	106.53			

Element: Ni Seq. No.: 329 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-7+9

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.910	1.910	0.070	0.164	0.006	10:52:33
2	1.915	1.915	0.070	0.165	0.007	10:52:35
3	1.949	1.949	0.072	0.166	0.006	10:52:37
Mean:	1.925	1.925	0.071			
SD :	0.0209	0.0209	0.001			
%RSD:	1.09	1.09	1.09			

Element: Ni Seq. No.: 33G AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0126	-0.0126	0.000	0.094	0.006	10:53:32
2	-0.0235	-0.0235	-0.001	0.094	0.006	10:53:34
3	-0.0042	-0.0042	0.000	0.094	0.006	10:53:37
Mean:	-0.0134	-0.0134	0.000			
SD :	0.0097	0.0097	0.000			
%RSD:	72.15	72.15	72.15			

Element: Ni Seq. No.: 331 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-10+12

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	**Time**
1	0.1683	0.1683	0.006	0.101	0.006	10:53:59
2	0,1424	0.1424	0.005	0.100	0.006	10:54:01
3	0.1591	0.1591	0.006	0.100	0.006	10:54:03
Mean:	0.1566	0.1566	0.006			
SD :	0.0131	0.0131	0.000			
%RSD:	8.39	8.39	8.39			

Element: Ni Seq. No.: 332 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0100	0.0100	0.000	0.095	0.005	10:54:50
2	-0.0257	-0.0257	-0.001	0.093	0.007	10:54:52
3	-0.0100	-0.0100	0.000	0.094	0.006	10:54:54
Mean:	-0.0086	-0.0086	0.000			
SD :	0.0179	0.0179	0.001			
BRSD:	209.0	209.0	209.03			

Element: Ni Seq. No.: 333 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-13+15

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.819	1.819	0.067	0.161	0.007	10:55:13
2	1.861	1.861	0.068	0.163	0.007	10:55:15
3	1.828	1.828	0.067	0.161	0.007	10:55:17
Mean:	1.836	1.836	0.067			
SD :	0.0223	0.0223	0.001			
%RSD:	1.21	1.21	1.21			

Element: Ni Seq. No.: 334 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0122	0.0122	0.000	0.095	0.006	10:55:37
2	0.0020	0.0020	0.000	0.094	0.006	10:55:39
3	0.0113	0.0113	0.000	0.095	0.006	10:55:41
Mean:	0.0085	0.0085	0.000			
SD :	0.0056	0.0056	0.000			
%RSD:	66.41	66.41	66.41			

Element: Ni Seq. No.: 335 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-16+18

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5226	0.5226	0.019	0.114	0.007	10:55:59
2	0.5389	0.5389	0.020	0.114	0.007	10:56:01
3	0.5288	0.5288	0.019	0.114	0.007	10:56:03
Mean:	0.5301	0.5301	0.019			
SD :	0.0082	0.0082	0.000			
%RSD:	1.54	1.54	1.54			

Element: Ni Seq. No.: 336 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0049	-0.0049	0.000	0.094	0.006	10:56:18
2	-0.0080	-0.0080	0.000	0.094	0.006	10:56:20
3	0.0115	0.0115	0.000	0.095	0.006	10:56:22
Mean:	-0.0005	-0.0005	0.000			
SD :	0.0105	0.0105	0.000			
%RSD:	2156	2156	2156.28			

Element: Ni Seq. No.: 337 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-19+21

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2877	0.2877	0.011	0.105	0.007	10:56:39
2	0.3106	0.3106	0.011	0.106	0.006	10:56:41
3	0.3176	0.3176	0.012	0.106	0.006	10:56:43
Mean:	0.3053	0.3053	0.011			
SD :	0.0156	0.0156	0.001			
%RSD:	5.13	5.13	5.13			

Element: Ni Seq. No.: 338 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0088	0.0088	0.000	0.095	0.006	10:57:25
2	-0.0064	-0.0064	0.000	0.094	0.006	10:57:28
3	0.0140	0.0140	0.001	0.095	0.006	10:57:30
Mean:	0.0055	0.0055	0.000			
SD :	0.0106	0.0106	0.000			
%RSD:	193.8	193.8	193.76			

Element: Ni Seq. No.: 339 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0091	-0.0091	0.000	0.094	0.006	10:57:42
2	-0.0069	-0.0069	0.000	0.094	0.006	10:57:45
3	0.0268	0.0268	0.001	0.095	0.005	10:57:47
Mean:	0.0036	0.0036	0.000			
SD :	0.0201	0.0201	0.001			
%RSD:	561.5	561.5	561.54			

Element: Ni Seq. No.: 340 AS Loc.: --- Date: 02/02/2006
Sample ID: ccv-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.099	2.099	0.077	0.171	0.006	10:58:01
2	2.063	2.063	0.076	0.170	0.006	10:58:03
3	2.109	2.109	0.077	0.172	0.006	10:58:05
Mean:	2.090	2.090	0.077			
SD :	0.0244	0.0244	0.001			
%RSD:	1.17	1.17	1.17			

Element: Ni Seq. No.: 341 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0060	0.0060	0.000	0.095	0.005	10:58:28
2	0.0073	0.0073	0.000	0.095	0.006	10:58:30
3	0.0082	0.0082	0.000	0.095	0.006	10:58:32
Mean:	0.0072	0.0072	0.000			
SD :	0.0011	0.0011	0.000			
%RSD:	15.32	15.32	15.32			

Element: Ni Seq. No.: 342 AS Loc.: --- Date: 02/02/2006
Sample ID: lrb i

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0698	0.0698	0.003	0.097	0.006	10:58:52
2	0.0656	0.0656	0.002	0.097	0.006	10:58:54
3	0.0673	0.0673	0.002	0.097	0.006	10:58:56
Mean:	0.0676	0.0676	0.002			
SD :	0.0021	0.0021	0.000			
%RSD:	3.13	3.13	3.13			

Element: Ni Seq. No.: 343 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0414	-0.0414	-0.002	0.093	0.007	10:59:14
2	0.0082	0.0082	0.000	0.095	0.006	10:59:16
3	-0.0436	-0.0436	-0.002	0.093	0.007	10:59:18
Mean:	-0.0256	-0.0256	-0.001			
SD :	0.0293	0.0293	0.001			
%RSD:	114.5	114.5	114.45			

Element: Ni Seq. No.: 344 AS Loc.: --- Date: 02/02/2006
Sample ID: lfb i

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.086	1.086	0.040	0.134	0.006	10:59:39
2	1.079	1.079	0.040	0.134	0.006	10:59:41
3	1.056	1.056	0.039	0.133	0.006	10:59:43
Mean:	1.073	1.073	0.039			
SD :	0.0159	0.0159	0.001			
%RSD:	1.48	1.48	1.48			

Element: Ni Seq. No.: 345 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0128	-0.0128	0.000	0.094	0.006	11:00:01
2	0.0038	0.0038	0.000	0.095	0.005	11:00:03
3	-0.0002	-0.0002	0.000	0.094	0.006	11:00:05
Mean:	-0.0030	-0.0030	0.000			
SD :	0.0087	0.0087	0.000			
%RSD:	284.9	284.9	284.88			

Element: Ni Seq. No.: 346 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2935	0.2935	0.011	0.105	0.006	11:00:24
2	0.3163	0.3163	0.012	0.106	0.005	11:00:27
3	0.2716	0.2716	0.010	0.104	0.006	11:00:29
Mean:	0.2938	0.2938	0.011			
SD :	0.0223	0.0223	0.001			
%RSD:	7.60	7.60	7.60			

Element: Ni Seq. No.: 347 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0206	-0.0206	-0.001	0.094	0.006	11:01:15
2	-0.0301	-0.0301	-0.001	0.093	0.006	11:01:17
3	-0.0002	-0.0002	0.000	0.094	0.005	11:01:19
Mean:	-0.0170	-0.0170	-0.001			
SD :	0.0153	0.0153	0.001			
%RSD:	90.12	90.12	90.12			

Element: Ni **Seq.** No.: 348 AS Loc.: --- Date: 02/02/2006
Sample ID: s324-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.238	1.238	0.045	0.140	0.006	11:01:44
2	1.270	1.270	0.047	0.141	0.005	11:01:46
3	1.231	1.231	0.045	0.140	0.007	11:01:48
Mean:	1.246	1.246	0.046			
SD :	0.0207	0.0207	0.001			
%RSD:	1.66	1.66	1.66			

Element: Ni Seq. No.: 349 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0080	0.0080	0.000	0.095	0.005	11:02:05
2	-0.0097	-0.0097	0.000	0.094	0.005	11:02:07
3	0.0179	0.0179	0.001	0.095	0.005	11:02:09
Mean:	0.0054	0.0054	0.000			
SD :	0.0139	0.0139	0.001			
%RSD:	257.9	257.9	257.91			

Element: Ni Seq. No.: 350 AS Loc.: --- Date: 02/02/2006
Sample ID: sd324-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.185	1.185	0.043	0.138	0.006	11:02:29
2	1.183	1.183	0.043	0.138	0.005	11:02:31
3	1.196	1.196	0.044	0.138	0.005	11:02:33
Mean:	1.188	1.188	0.044			
SD :	0.0070	0.0070	0.000			
%RSD:	0.59	0.59	0.59			

Element: Ni Seq. No.: 351 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0002	-0.0002	0.000	0.094	0.005	11:02:55
2	-0.0097	-0.0097	0.000	0.094	0.006	11:02:57
3	0.0013	0.0013	0.000	0.094	0.005	11:02:59
Mean:	-0.0029	-0.0029	0.000			
SD :	0.0059	0.0059	0.000			
%RSD:	207.9	207.9	207.95			

Element: Ni Seq. No.: 352 AS Loc.: --- Date: 02/02/2006
Sample ID: ser324-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2275	0.2275	0.008	0.103	0.006	11:03:24
2	0.2461	0.2461	0.009	0.103	0.005	11:03:27
3	0.2124	0.2124	0.008	0.102	0.006	11:03:29
Mean:	0.2287	0.2287	0.008			
SD :	0.0169	0.0169	0.001			
%RSD:	7.39	7.39	7.39			

Element: Ni Seq. No.: 353 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0086	-0.0086	0.000	0.094	0.005	11:03:47
2	-0.0199	-0.0199	-0.001	0.094	0.005	11:03:50
3	-0.0128	-0.0128	0.000	0.094	0.005	11:03:52
Mean:	-0.0137	-0.0137	-0.001			
SD :	0.0057	0.0057	0.000			
%RSD:	41.60	41.60	41.60			

Element: Ni Seq. No.: 354 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0022	-0.0022	0.000	0.094	0.005	11:04:31
2	0.0122	0.0122	0.000	0.095	0.005	11:04:33
3	0.0060	0.0060	0.000	0.095	0.005	11:04:35
Mean:	0.0053	0.0053	0.000			
SD :	0.0072	0.0072	0.000			
%RSD:	135.1	135.1	135.09			

Element: Ni Seq. No.: 355 AS Loc.: --- Date: 02/02/2006
Sample ID: ccv-0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2277	0.2277	0.008	0.103	0.006	11:04:52
2	0.2319	0.2319	0.009	0.103	0.006	11:04:54
3	0.2260	0.2260	0.008	0.103	0.006	11:04:56
Mean:	0.2285	0.2285	0.008			
SD :	0.0030	0.0030	0.000			
%RSD:	1.32	1.32	1.32			

Element: Ni Seq. No.: 356 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0026	-0.0026	0.000	0.094	0.005	11:05:12
2	-0.0195	-0.0195	-0.001	0.094	0.006	11:05:14
3	-0.0197	-0.0197	-0.001	0.094	0.005	11:05:16
Mean:	-0.0139	-0.0139	-0.001			
SD :	0.0098	0.0098	0.000			
%RSD:	70.72	70.72	70.72			

Element: Ni Seq. No.: 357 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0842	0.0842	0.003	0.097	0.006	11:05:33
2	0.1008	0.1008	0.004	0.098	0.005	11:05:35
3	0.0755	0.0755	0.003	0.097	0.005	11:05:37
Mean:	0.0868	0.0868	0.003			
SD :	0.0129	0.0129	0.000			
%RSD:	14.82	14.82	14.82			

Element: Ni Seq. No.: 358 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0095	0.0095	0.000	0.095	0.005	11:05:58
2	0.0100	0.0100	0.000	0.095	0.005	11:06:00
3	0.0000	0.0000	0.000	0.094	0.005	11:06:03
Mean:	0.0065	0.0065	0.000			
SD :	0.0056	0.0056	0.000			
%RSD:	86.70	86.70	86.70			

Element: Ni Seq. No.: 359 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-8

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0915	0.0915	0.003	0.098	0.005	11:06:22
2	0.0842	0.0842	0.003	0.097	0.006	11:06:24
3	0.0932	0.0932	0.003	0.098	0.006	11:06:26
Mean:	0.0896	0.0896	0.003			
SD :	0.0048	0.0048	0.000			
%RSD:	5.31	5.31	5.31			

Element: Ni Seq. No.: 360 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0005	-0.0005	0.000	0.094	0.005	11:06:52
2	-0.0077	-0.0077	0.000	0.094	0.006	11:06:54
3	0.0175	0.0175	0.001	0.095	0.005	11:06:56
Mean:	0.0031	0.0031	0.000			
SD :	0.0130	0.0130	0.000			
%RSD:	418.5	418.5	418.47			

Element: Ni Seq. No.: 361 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-11

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0766	0.0766	0.003	0.097	0.005	11:07:10
2	0.0620	0.0620	0.002	0.097	0.005	11:07:13
3	0.0647	0.0647	0.002	0.097	0.005	11:07:15
Mean:	0.0678	0.0678	0.002			
SD :	0.0078	0.0078	0.000			
%RSD:	11.44	11.44	11.44			

Element: Ni Seq. No.: 362 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0182	-0.0182	-0.001	0.094	0.006	11:07:29
2	-0.0605	-0.0605	-0.002	0.092	0.008	11:07:31
3	-0.0383	-0.0383	-0.001	0.093	0.007	11:07:33
Mean:	-0.0390	-0.0390	-0.001			
SD :	0.0212	0.0212	0.001			
%RSD:	54.23	54.23	54.23			

Element: Ni Seq. No.: 363 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-14

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0609	0.0609	0.002	0.097	0.006	11:07:49
2	0.0751	0.0751	0.003	0.097	0.005	11:07:51
3	0.0591	0.0591	0.002	0.097	0.006	11:07:53
Mean:	0.0650	0.0650	0.002			
SD :	0.0088	0.0088	0.000			
BRSD:	13.51	13.51	13.51			

Element: Ni Seq. No.: 364 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0027	-0.0027	0.000	0.094	0.005	11:08:05
2	0.0071	0.0071	0.000	0.095	0.005	11:08:07
3	-0.0122	-0.0122	0.000	0.094	0.006	11:08:10
Mean:	-0.0026	-0.0026	0.000			
SD :	0.0097	0.0097	0.000			
%RSD:	369.8	369.8	369.79			

Element: Ni Seq. No.: 365 AS Loc.: --- Date: 02/02/2006
Sample ID: dup 324-14

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0746	0.0746	0.003	0.097	0.005	11:08:27
2	0.0711	0.0711	0.003	0.097	0.005	11:08:29
3	0.0696	0.0696	0.003	0.097	0.006	11:08:31
Mean:	0.0718	0.0718	0.003			
SD :	0.0025	0.0025	0.000			
%RSD:	3.52	3.52	3.52			

Appendix E – 3

Laboratory QA/QC Data for Stack Testing Samples

Element: Ni Seq. No.: 366 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0184	0.0184	0.001	0.095	0.005	11:08:45
2	0.0153	0.0153	0.001	0.095	0.005	11:08:47
3	0.0148	0.0148	0.001	0.095	0.005	11:08:49
Mean:	0.0162	0.0162	0.001			
SD :	0.0020	0.0020	0.000			
%RSD:	12.16	12.16	12.16			

Element: Ni Seq. No.: 367 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0151	-0.0151	-0.001	0.094	0.006	11:16:25
2	-0.0018	-0.0018	0.000	0.094	0.005	11:16:27
3	-0.0086	-0.0086	0.000	0.094	0.005	11:16:30
Mean:	-0.0085	-0.0085	0.000			
SD :	0.0067	0.0067	0.000			
%RSD:	78.22	78.22	78.22			

Element: Ni Seq. No.: 368 AS Loc.: --- Date: 02/02/2006
Sample ID: ccv-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.056	2.056	0.075	0.170	0.005	11:16:45
2	2.089	2.089	0.077	0.171	0.005	11:16:48
3	2.071	2.071	0.076	0.170	0.005	11:16:50
Mean:	2.072	2.072	0.076			
SD :	0.0169	0.0169	0.001			
%RSD:	0.82	0.82	0.82			

Element: Ni Seq. No.: 369 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0109	-0.0109	0.000	0.094	0.006	11:18:32
2	-0.0421	-0.0421	-0.002	0.093	0.006	11:18:35
3	-0.0002	-0.0002	0.000	0.094	0.005	11:18:37
Mean:	-0.0177	-0.0177	-0.001			
SD :	0.0218	0.0218	0.001			
%RSD:	122.7	122.7	122.73			

Element: Ni Seq. No.: 370 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-17

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0671	0.0671	0.002	0.097	0.006	11:18:50
2	0.1088	0.1088	0.004	0.098	0.004	11:18:52
3	0.0665	0.0665	0.002	0.097	0.006	11:18:54
Mean:	0.0808	0.0808	0.003			
SD :	0.0243	0.0243	0.001			
%RSD:	30.02	30.02	30.02			

Element: Ni Seq. No.: 371 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0162	-0.0162	-0.001	0.094	0.006	11:19:23
2	0.0117	0.0117	0.000	0.095	0.005	11:19:26
3	-0.0215	-0.0215	-0.001	0.094	0.006	11:19:28
Mean:	-0.0087	-0.0087	0.000			
SD :	0.0178	0.0178	0.001			
%RSD:	205.1	205.1	205.15			

Element: Ni Seq. No.: 372 AS Loc.: --- Date: 02/02/2006
Sample ID: 324-20

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0558	0.0558	0.002	0.096	0.005	11:19:50
2	0.0667	0.0667	0.002	0.097	0.006	11:19:52
3	0.0483	0.0483	0.002	0.096	0.006	11:19:55
Mean:	0.0569	0.0569	0.002			
SD :	0.0093	0.0093	0.000			
%RSD:	16.26	16.26	16.26			

Element: Ni Seq. No.: 373 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0170	0.0170	0.001	0.095	0.005	11:20:15
2	0.0133	0.0133	0.000	0.095	0.005	11:20:17
3	-0.0108	-0.0108	0.000	0.094	0.005	11:20:19
Mean:	0.0065	0.0065	0.000			
SD :	0.0151	0.0151	0.001			
%RSD:	231.6	231.6	231.56			

Element: Ni Seq. No.: 374 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0944	0.0944	0.003	0.098	0.005	11:20:45
2	0.0740	0.0740	0.003	0.097	0.005	11:20:48
3	0.0636	0.0636	0.002	0.097	0.006	11:20:50
Mean:	0.0774	0.0774	0.003			
SD :	0.0157	0.0157	0.001			
%RSD:	20.26	20.26	20.26			

Element: Ni Seq. No.: 375 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0175	-0.0175	-0.001	0.094	0.006	11:21:08
2	-0.0277	-0.0277	-0.001	0.093	0.006	11:21:10
3	-0.0071	-0.0071	0.000	0.094	0.005	11:21:12
Mean:	-0.0174	-0.0174	-0.001			
SD :	0.0103	0.0103	0.000			
%RSD:	59.06	59.06	59.06			

Element: Ni Seq. No.: 376 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0350	0.0350	0.001	0.096	0.007	11:21:24
2	0.0607	0.0607	0.002	0.097	0.006	11:21:26
3	0.0507	0.0507	0.002	0.096	0.006	11:21:28
Mean:	0.0488	0.0488	0.002			
SD :	0.0130	0.0130	0.000			
%RSD:	26.55	26.55	26.55			

Element: Ni Seq. No.: 377 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0007	-0.0007	0.000	0.094	0.005	11:21:42
2	0.0168	0.0168	0.001	0.095	0.004	11:21:44
3	-0.0026	-0.0026	0.000	0.094	0.005	11:21:46
Mean:	0.0045	0.0045	0.000			
SD :	0.0107	0.0107	0.000			
%RSD:	237.3	237.3	237.27			

Element: Ni Seq. No.: 378 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-8

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0496	0.0496	0.002	0.096	0.006	11:22:02
2	0.0645	0.0645	0.002	0.097	0.006	11:22:04
3	0.0667	0.0667	0.002	0.097	0.006	11:22:06
Mean:	0.0603	0.0603	0.002			
SD :	0.0093	0.0093	0.000			
%RSD:	15.47	15.47	15.47			

Element: Ni Seq. No.: 379 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0166	-0.0166	-0.001	0.094	0.005	11:22:21
2	0.0035	0.0035	0.000	0.095	0.005	11:22:23
3	0.0007	0.0007	0.000	0.094	0.005	11:22:25
Mean:	-0.0041	-0.0041	0.000			
SD :	0.0109	0.0109	0.000			
%RSD:	263.2	263.2	263.17			

Element: Ni Seq. No.: 380 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0357	-0.0357	-0.001	0.093	0.006	11:22:52
2	-0.0454	-0.0454	-0.002	0.093	0.006	11:22:54
3	-0.0529	-0.0529	-0.002	0.092	0.006	11:22:56
Mean:	-0.0447	-0.0447	-0.002			
SD :	0.0086	0.0086	0.000			
%RSD:	19.24	19.24	19.24			

Element: Ni Seq. No.: 381 AS Loc.: --- Date: 02/02/2006
Sample ID: ccv-0.5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.4736	0.4736	0.017	0.112	0.006	11:23:12
2	0.4539	0.4539	0.017	0.111	0.007	11:23:15
3	0.4856	0.4856	0.018	0.112	0.005	11:23:17
Mean:	0.4711	0.4711	0.017			
SD :	0.0160	0.0160	0.001			
%RSD:	3.40	3.40	3.40			

Element: Ni Seq. No.: 382 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0689	-0.0689	-0.003	0.092	0.007	11:23:35
2	-0.0290	-0.0290	-0.001	0.093	0.005	11:23:37
3	-0.0518	-0.0518	-0.002	0.092	0.006	11:23:39
Mean:	-0.0499	-0.0499	-0.002			
SD :	0.0200	0.0200	0.001			
%RSD:	40.15	40.15	40.15			

Element: Ni Seq. No.: 383 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-11

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0427	0.0427	0.002	0.096	0.005	11:23:50
2	-0.0027	-0.0027	0.000	0.094	0.007	11:23:53
3	0.0252	0.0252	0.001	0.095	0.006	11:23:55
Mean:	0.0217	0.0217	0.001			
SD :	0.0229	0.0229	0.001			
%RSD:	105.5	105.5	105.53			

Element: Ni Seq. No.: 384 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0250	-0.0250	-0.001	0.093	0.005	11:24:12
2	-0.0233	-0.0233	-0.001	0.094	0.005	11:24:14
3	-0.0556	-0.0556	-0.002	0.092	0.006	11:24:16
Mean:	-0.0346	-0.0346	-0.001			
SD :	0.0182	0.0182	0.001			
%RSD:	52.47	52.47	52.47			

Element: Ni Seq. No.: 385 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-14

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0527	0.0527	0.002	0.096	0.006	11:24:32
2	0.0811	0.0811	0.003	0.097	0.004	11:24:34
3	0.0117	0.0117	0.000	0.095	0.007	11:24:36
Mean:	0.0485	0.0485	0.002			
SD :	0.0349	0.0349	0.001			
%RSD:	72.01	72.01	72.01			

Element: Ni Seq. No.: 386 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0221	-0.0221	-0.001	0.094	0.005	11:24:48
2	-0.0341	-0.0341	-0.001	0.093	0.006	11:24:50
3	-0.0146	-0.0146	-0.001	0.094	0.006	11:24:52
Mean:	-0.0236	-0.0236	-0.001			
SD :	0.0098	0.0098	0.000			
%RSD:	41.74	41.74	41.74			

Element: Ni Seq. No.: 387 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-17

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0279	0.0279	0.001	0.095	0.006	11:25:10
2	0.0335	0.0335	0.001	0.096	0.006	11:25:12
3	0.0403	0.0403	0.001	0.096	0.006	11:25:14
Mean:	0.0339	0.0339	0.001			
SD :	0.0062	0.0062	0.000			
%RSD:	18.30	18.30	18.30			

Element: Ni Seq. No.: 388 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0292	-0.0292	-0.001	0.093	0.006	11:25:26
2	-0.0518	-0.0518	-0.002	0.092	0.006	11:25:28
3	-0.0345	-0.0345	-0.001	0.093	0.006	11:25:30
Mean:	-0.0385	-0.0385	-0.001			
SD :	0.0118	0.0118	0.000			
%RSD:	30.74	30.74	30.74			

Element: Ni Seq. No.: 389 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-20

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0434	0.0434	0.002	0.096	0.006	11:25:43
2	0.0731	0.0731	0.003	0.097	0.005	11:25:45
3	0.0804	0.0804	0.003	0.097	0.005	11:25:48
Mean:	0.0656	0.0656	0.002			
SD :	0.0196	0.0196	0.001			
%RSD:	29.87	29.87	29.87			

Element: Ni Seq. No.: 390 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0388	-0.0388	-0.001	0.093	0.006	11:26:01
2	-0.0224	-0.0224	-0.001	0.094	0.005	11:26:03
3	-0.0520	-0.0520	-0.002	0.092	0.007	11:26:05
Mean:	-0.0377	-0.0377	-0.001			
SD :	0.0148	0.0148	0.001			
%RSD:	39.21	39.21	39.21			

Element: Ni Seq. No.: 391 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0237	-0.0237	-0.001	0.094	0.005	11:26:14
2	-0.0707	-0.0707	-0.003	0.092	0.007	11:26:16
3	-0.0569	-0.0569	-0.002	0.092	0.006	11:26:18
Mean:	-0.0504	-0.0504	-0.002			
SD :	0.0242	0.0242	0.001			
%RSD:	47.92	47.92	47.92			

Element: Ni Seq. No.: 392 AS Loc.: --- Date: 02/02/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0350	-0.0350	-0.001	0.093	0.006	11:26:22

Auto-zero performed.

Element: Ni Seq. No.: 393 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0053	0.0053	0.000	0.093	0.006	11:26:29
2	-0.0071	-0.0071	0.000	0.093	0.006	11:26:31
3	-0.0106	-0.0106	0.000	0.093	0.006	11:26:34
Mean:	-0.0041	-0.0041	0.000			
SD :	0.0083	0.0083	0.000			
%RSD:	201.8	201.8	201.80			

Element: Ni Seq. No.: 394 AS Loc.: --- Date: 02/02/2006
Sample ID: 214-11 dup

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1052	0.1052	0.004	0.097	0.005	11:26:51
2	0.1077	0.1077	0.004	0.097	0.005	11:26:53
3	0.0995	0.0995	0.004	0.097	0.005	11:26:56
Mean:	0.1042	0.1042	0.004			
SD :	0.0042	0.0042	0.000			
%RSD:	4.03	4.03	4.03			

Element: Ni Seq. No.: 395 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0224	0.0224	0.001	0.094	0.005	11:27:11
2	0.0073	0.0073	0.000	0.093	0.006	11:27:13
3	0.0044	0.0044	0.000	0.093	0.006	11:27:15
Mean:	0.0114	0.0114	0.000			
SD :	0.0097	0.0097	0.000			
%RSD:	85.26	85.26	85.26			

Element: Ni Seq. No.: 396 AS Loc.: --- Date: 02/02/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0029	0.0029	0.000	0.093	0.005	11:27:35
2	0.0277	0.0277	0.001	0.094	0.005	11:27:38
3	-0.0031	-0.0031	0.000	0.093	0.006	11:27:40
Mean:	0.0092	0.0092	0.000			
SD :	0.0163	0.0163	0.001			
%RSD:	178.0	178.0	177.97			

Element: Ni Seq. No.: 397 AS Loc.: --- Date: 02/02/2006
Sample ID: ccv-0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2425	0.2425	0.009	0.102	0.006	11:28:01
2	0.2233	0.2233	0.008	0.101	0.006	11:28:03
3	0.2335	0.2335	0.009	0.102	0.006	11:28:05
Mean:	0.2331	0.2331	0.009			
SD :	0.0096	0.0096	0.000			
%RSD:	4.11	4.11	4.11			

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

Filters

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	4/20	8A.			LFB				0
						LRB				2
1				110324	3		1 Filter			3
					6	~~LFMDUP~~	↓			4
					9	LFM	↓			5
2					12		↓			6
3					15		↓			7
4					18		↓			8
5					21		↓			9
6				010214	3		1 Filter			10
7					6		↓			11
8					9		↓			12
9					12		↓			13
10					15		↓			14
11					18		↓			15
12					21		↓			16

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	0.5H0627
QC-7		
P		
Sn		
OTHER		

0.5

Analyst: _____

Start Date: _____

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:

Front half + Filter

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	1/23	12 noon			LFB		100		2
						Labeled LRB Actual				10
1	pH	<2.0	1103243	1		100 mls 97				15
		<2.0	b	4		~~LFM DUP~~ 95				11
		<2.0	9	7		~~LFM~~ 96				14
2		<2.0	12	10		100				12
3		<2.0	15	13		96				3
4		<2.0	18	16		95				13
5		<2.0	21	19		98				8
6		<2.0	0102143	1		100 98				7
7		<2.0	6	4		99				5
8		<2.0	9	7		98				16
9		<2.0	12	10		100				6
10		<2.0	15	13		96				4
11		<2.0	18	16		99				9
12		<2.0	21	19		98				0

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	5H062
QC-7		
P		
Sn		
OTHER		

0.5 mls

Analyst:

Start Date:

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

Back half Impingers

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	1/30				LFB		50		15
		2/1				Label LRB Actual				13
1	pH < 2.0			110324	2	314 314				8
					5	319 ~~LFM DUP~~ 318				6
					8	320 ~~LFM~~ 320				0
2					11	300 302				10
3					14	306 303				7
4					17	303 299				9
5					20	311 308				5
6				010214	2	304 308			solids?! But clear, with Digestate	3
7					5	317 316				12
8					8	309 309				16
9					11	300 304				4
10					14	308 312				14
11					17	311 312				11
12			↓		20	309 314		↓		2
									2/1 4:45pm.	

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05H0162
QC-7		
P		
Sn		
OTHER		

0.5

Analyst: _____

Start Date: _____

PROJECT # 2005110201: METHOD 306A FOR NICKEL

1	2	3	4	5	6	7	8
SA #	SAMPLE DESCRPTION	PH	Sample Fraction	REAGENTS FOR DIG.	Analytical Fraction	NI mg/L	TOTAL MG NI (OR IN INITIAL SAMPLE)
1	ABQC - CONDITION #15 - RUN #1	<2.0	385.0	HNO3	50.0	0.612	0.031
2	ABQC - CONDITION #15 - RUN #2	<2.0	371.0	HNO3	50.0	0.400	0.020
3	ABQC - CONDITION #15 - RUN #3	<2.0	390.0	HNO3	50.0	0.547	0.027
4	ABQC - CONDITION #15 - BLANK	<2.0	322.0	HNO3	50.0	0.074	0.004
*	MDL	<2.0		HNO3	50.0	0.075	0.004

Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. The final DL shall use the actual MDL, so that these affected samples should result as "< DL".

#8 Is the amount of NI in the 50 ml aliquot, or the 355 ml original sample, whichever you prefer, because they are the MG value will not change. (The volumes have been negated in the calculation.)

QA/QC WORK SHEET for NICKEL

F' AA METHOD SOP MET-040
5100 AA

Date: 1/5/2006
Analyst: LK

(Mg/L)
IDL= 0.027
MDL= 0.075
RL = 0.10
LDR = 0.10 to 8.0

1 CURRENT COPY OF METHOD AVAILABLE IN WINLAB.
2 INSTRUMENT SET-UP:
(For Specific instrument settings, see current copy of method.)

3 CALIBRATION:

Cal Curve:	Conc	Result	% Rec.	
	0.25	0.226	90.5	
	0.50	0.488	97.6	
	1.00	1.022	102.2	
	2.00	2.072	103.6	
	5.00	4.968	99.4	
Corr. Coef:	xxxxxxxxx	0.9998		(> 0.995)

4 STANDARD TRACEABILITY

QC STANDARD	Standard Name, Company, & Lot #
Calibration	CPI QC-21 41M044
CCV, CRA, AAT	CPI QC-21 41M044
QCS, LFM	CPI 05F011

5 SAMPLE ANALYTICAL RUN

MAT-RIX	SAMPLE	STD CONC	READING Mg/L	BLK	RESULT	DIL 1	DIL 2	QC RESULTS	Mg/L	REP'T mg/L	ICP	
	CCV	5.00	4.975		4.975			100				(95-105%R)
	QCS	2.00	2.080		2.080			104				(95-105%R)
	CCV	10.00	9.137		9.137			91				(90-110%R)
	CCB		-0.051	-0.061	0.010			0.010				(< MDL)
	CRA	0.05	0.025	-0.004	0.028			57				(70-130%R)
	CRA	0.10	0.082	-0.028	0.110			110				(70-130%R)
	CRA	0.25	0.229	-0.021	0.250			100				(70-130%R)
	LRB		-0.023	-0.043	0.020			0.020				(< MDL)
	LFB	1.00	1.067	-0.006	1.073			107				(80-120%R)
	201-1		0.617	0.004	0.612	1.0	1.0		0.612	**0.612**		
	DUP		0.624	0.048	0.576	1.0	1.0	6.1				(<10 RPD, IF SA > 20X MDL)
306	SPK	1.00	1.509	0.009	1.500	1.0	1.0	89				(80-120%R)
306	SER DIL	2/10	0.336	0.043	0.293	1.0	1.0	2.4				(<10%DIFF)
306	201-2		0.400	-0.001	0.400	1.0	1.0		0.400	**0.400**		
306	201-3		0.547	0.000	0.547	1.0	1.0		0.547	**0.547**		
306	201-4		0.051	0.036	0.015	1.0	1.0		0.015	**0.074**		
	CCB		0.036		0.036			0.036				(< MDL)
	CCV	0.50	0.584	0.036	0.548			110				(90-110%R)
	LRB		-0.030	0.031	-0.062			-0.062			-.002	(< MDL)
	LFB	0.80	0.762	-0.005	0.766			96			.747	(80-120%R)
121	325-1		0.036	-0.001	0.038	1.0	1.0		0.038	**0.074**	**0.064**	
121	DUP		0.045	0.009	0.036	1.0	1.0	3.2				(<10 RPD, IF SA > 20X MDL)
121	SPK	1.00	1.033	0.029	1.004	1.0	1.0	97				(80-120%R)
121	SER DIL	2/10	0.226	0.005	0.221	1.0	1.0	10.0				(<10%DIFF)
121	325-2		0.271	0.006	0.265	1.0	1.0		0.265	**0.265**	0.288	
121	325-3		-0.014	0.008	-0.023	1.0	1.0		-0.023	**0.074**	-0.002	
121	325-4		0.054	0.029	0.024	1.0	1.0		0.024	**0.074**	0.049	
121	325-5		0.083	0.032	0.051	1.0	1.0		0.051	**0.074**	0.066	
121	034-1		0.158	0.008	0.150	1.0	1.0		0.150	**0.150**	0.174	
121	034-2		0.155	0.010	0.146	1.0	1.0		0.146	**0.146**	0.176	
121	034-3		-0.020	0.005	-0.025	1.0	1.0		-0.025	**0.074**	0.001	
	CCV	2.00	2.173	0.000	2.173			109				(90-110%R)
	CCB		0.004		0.004			0.004				(< MDL)

Ref. only.

Method Name: NI
Method Description: Nickel

Element: Ni

Date: 01/05/2006
Technique: Flame
Wavelength: 232.0 nm
Lamp Current: 15
Sample Info File: Untitled

Calibration Equation: Zero Intercept: Linear
Slit Width: 0.20 nm
Energy: 70
Results Data Set:

Element: Ni Seq. No.: 1 AS Loc.: --- Date: 01/05/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.056	-0.056	0.143	11:29:20
2			-0.056	-0.056	0.143	11:29:22
3			-0.056	-0.056	0.143	11:29:24
Mean:			-0.056			
SD :			0.000			
%RSD:			0.14			

Auto-zero performed.

Element: Ni Seq. No.: 2 AS Loc.: --- Date: 01/05/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.069	-0.124	0.200	11:36:48
2			-0.076	-0.131	0.208	11:36:50
3			0.083	0.028	0.050	11:36:52
Mean:			-0.020			
SD :			0.090			
%RSD:			439.78			

Auto-zero performed.

Element: Ni Seq. No.: 3 AS Loc.: --- Date: 01/05/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.155	0.079	0.000	11:36:55
2			0.155	0.079	0.000	11:36:58
3			0.155	0.079	0.000	11:37:00
Mean:			0.155			
SD :			0.000			
%RSD:			0.03			

Auto-zero performed.

Element: Ni Seq. No.: 4 AS Loc.: --- Date: 01/05/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.000	0.079	0.000	11:37:05
2			0.000	0.078	0.000	11:37:09
3			0.000	0.079	0.000	11:37:11
Mean:			0.000			
SD :			0.000			
%RSD:			769.44			

Auto-zero performed.

Element: Ni Seq. No.: 5 AS Loc.: --- Date: 01/05/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.000	0.079	0.000	11:37:16
2			0.000	0.078	0.000	11:37:18
3			0.000	0.078	0.000	11:37:20
Mean:			0.000			
SD :			0.000			
%RSD:			446.30			

Auto-zero performed.

Element: Ni Seq. No.: 6 AS Loc.: --- Date: 01/05/2006
Sample ID: CAL STD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.160	-0.081	0.168	11:37:55
2			-0.161	-0.083	0.170	11:37:57
3			-0.162	-0.084	0.171	11:38:00
Mean:			-0.161			
SD :			0.001			
%RSD:			0.67			

No calibration because standard abs. and conc. values are not in the same order.
Standard number 1 not applied. [-------]

Element: Ni Seq. No.: 7 AS Loc.: --- Date: 01/05/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.172	-0.093	0.170	11:38:17
2			-0.172	-0.093	0.170	11:38:19
3			-0.172	-0.093	0.169	11:38:21
Mean:			-0.172			
SD :			0.000			
%RSD:			0.04			

Auto-zero performed.

Element: Ni Seq. No.: 8 AS Loc.: --- Date: 01/05/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.000	-0.093	0.169	11:38:30
2			0.000	-0.093	0.169	11:38:32
3			0.000	-0.094	0.170	11:38:34
Mean:			0.000			
SD :			0.000			
%RSD:			91.65			

Auto-zero performed.

Element: Ni Seq. No.: 9 AS Loc.: --- Date: 01/05/2006
Sample ID: CAL STD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.009	-0.085	0.172	11:38:50
2			0.009	-0.085	0.172	11:38:52
3			0.009	-0.085	0.172	11:38:54
Mean:			0.009			
SD :			0.000			
%RSD:			1.45			

Standard number 1 applied. [0.25]
Correlation Coefficient: 1.0000 Slope: 0.0349

Element: Ni Seq. No.: 10 AS Loc.: --- Date: 01/05/2006
Sample ID: cal std 2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.019	-0.075	0.173	11:39:28
2			0.019	-0.075	0.172	11:39:30
3			0.019	-0.075	0.172	11:39:32
Mean:			0.019			
SD :			0.000			
%RSD:			0.23			

Standard number 2 applied. [0.50]
Correlation Coefficient: 0.9957 Slope: 0.0371

Element: Ni Seq. No.: 11 AS Loc.: --- Date: 01/05/2006
Sample ID: cal std 3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.039	-0.054	0.173	11:40:01
2			0.039	-0.054	0.173	11:40:03
3			0.039	-0.054	0.173	11:40:05
Mean:			0.039			
SD :			0.000			
%RSD:			0.30			

Standard number 3 applied. [1.00]
Correlation Coefficient: 0.9981 Slope: 0.0388

Element: Ni Seq. No.: 12 AS Loc.: --- Date: 01/05/2006
Sample ID: cal std 4

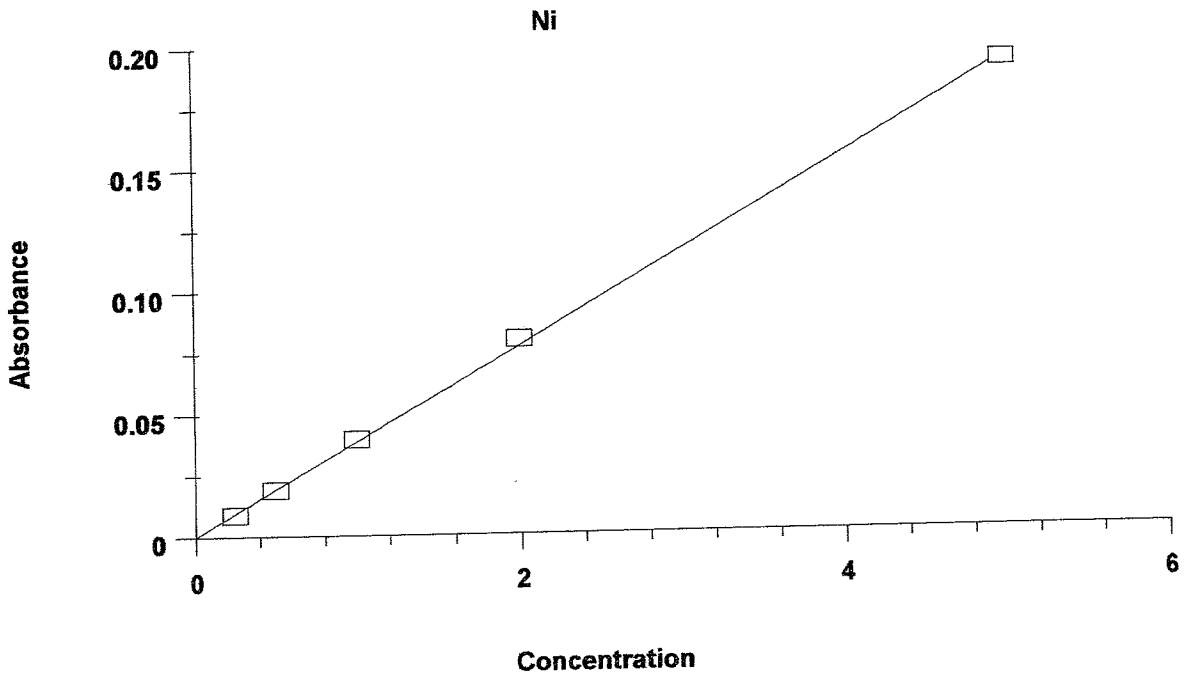
Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.080	-0.013	0.173	11:40:32
2			0.080	-0.014	0.173	11:40:35
3			0.079	-0.014	0.173	11:40:37
Mean:			0.080			
SD :			0.000			
%RSD:			0.58			

Standard number 4 applied. [2.00]
Correlation Coefficient: 0.9995 Slope: 0.0396

Element: Ni Seq. No.: 13 AS Loc.: --- Date: 01/05/2006
Sample ID: cal std 5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.190	0.097	0.175	11:41:03
2			0.193	0.100	0.175	11:41:05
3			0.191	0.097	0.175	11:41:07
Mean:			0.191			
SD :			0.002			
%RSD:			0.82			

Standard number 5 applied. [5.00]
Correlation Coefficient: 0.9998 Slope: 0.0385



Calibration data for Ni

Standard ID	Mean Signal (Absorbance)	Entered Concentration (mg/L)	Calculated Concentration (mg/L)	Standard Deviation	%RSD
Calib Blank	0.000	----	0.000	0.0001	91.6515
CAL STD	0.009	0.25	0.2263	0.0001	1.4487
cal std 2	0.019	0.50	0.4880	0.0000	0.2288
cal std 3	0.039	1.00	1.022	0.0001	0.2985
cal std 4	0.080	2.00	2.072	0.0005	0.5762
cal std 5	0.191	5.00	4.968	0.0016	0.8188

Correlation Coefficient: 0.99976 Slope: 0.03850

Element: Ni Seq. No.: 14 AS Loc.: --- Date: 01/05/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.993	4.993	0.192	0.099	0.175	11:41:21
2	4.941	4.941	0.190	0.097	0.175	11:41:23
3	4.991	4.991	0.192	0.099	0.174	11:41:25
Mean:	4.975	4.975	0.192			
SD :	0.0293	0.0293	0.001			
%RSD:	0.59	0.59	0.59			

Element: Ni Seq. No.: 15 AS Loc.: --- Date: 01/05/2006
Sample ID: qcs

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.084	2.084	0.080	-0.013	0.173	11:41:47
2	2.074	2.074	0.080	-0.014	0.173	11:41:49
3	2.083	2.083	0.080	-0.013	0.174	11:41:51
Mean:	2.080	2.080	0.080			
SD :	0.0057	0.0057	0.000			
%RSD:	0.27	0.27	0.27			

Element: Ni Seq. No.: 16 AS Loc.: --- Date: 01/05/2006
Sample ID: 10 ppm

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	9.064	9.064	0.349	0.256	0.176	11:42:13
Sample absorbance is greater than that of the highest standard.						
2	9.159	9.159	0.353	0.259	0.176	11:42:15
Sample absorbance is greater than that of the highest standard.						
3	9.187	9.187	0.354	0.260	0.177	11:42:17
Sample absorbance is greater than that of the highest standard.						
Mean:	9.137	9.137	0.352			
SD :	0.0644	0.0644	0.002			
%RSD:	0.71	0.71	0.71			

Sample absorbance is greater than that of the highest standard.

Element: Ni Seq. No.: 17 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0624	-0.0624	-0.002	-0.096	0.171	11:43:44
2	-0.0536	-0.0536	-0.002	-0.095	0.171	11:43:46
3	-0.0673	-0.0673	-0.003	-0.096	0.172	11:43:48
Mean:	-0.0611	-0.0611	-0.002			
SD :	0.0070	0.0070	0.000			
%RSD:	11.39	11.39	11.39			

Element: Ni Seq. No.: 18 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0525	-0.0525	-0.002	-0.095	0.171	11:45:51
2	-0.0570	-0.0570	-0.002	-0.096	0.171	11:45:53
3	-0.0445	-0.0445	-0.002	-0.095	0.170	11:45:55
Mean:	-0.0514	-0.0514	-0.002			
SD :	0.0063	0.0063	0.000			
%RSD:	12.33	12.33	12.33			

Element: Ni Seq. No.: 19 AS Loc.: --- Date: 01/05/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0485	-0.0485	-0.002	-0.095	0.170	11:46:00

Auto-zero performed.

Element: Ni Seq. No.: 20 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0030	-0.0030	0.000	-0.095	0.171	11:46:12
2	-0.0078	-0.0078	0.000	-0.096	0.171	11:46:14
3	0.0000	0.0000	0.000	-0.095	0.171	11:46:16
Mean:	-0.0036	-0.0036	0.000			
SD :	0.0039	0.0039	0.000			
%RSD:	109.9	109.9	109.95			

Element: Ni Seq. No.: 21 AS Loc.: --- Date: 01/05/2006
Sample ID: 0.05 ppm

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0273	0.0273	0.001	-0.094	0.172	11:46:43
2	0.0198	0.0198	0.001	-0.095	0.172	11:46:45
3	0.0271	0.0271	0.001	-0.094	0.172	11:46:47
Mean:	0.0247	0.0247	0.001			
SD :	0.0043	0.0043	0.000			
%RSD:	17.24	17.24	17.24			

Element: Ni Seq. No.: 22 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0356	-0.0356	-0.001	-0.097	0.171	11:47:05
2	-0.0158	-0.0158	-0.001	-0.096	0.171	11:47:07
3	-0.0321	-0.0321	-0.001	-0.097	0.171	11:47:09
Mean:	-0.0279	-0.0279	-0.001			
SD :	0.0106	0.0106	0.000			
%RSD:	37.97	37.97	37.97			

Element: Ni Seq. No.: 23 AS Loc.: --- Date: 01/05/2006
Sample ID: 0.10 ppm

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0813	0.0813	0.003	-0.092	0.171	11:47:35
2	0.0829	0.0829	0.003	-0.092	0.171	11:47:38
3	0.0829	0.0829	0.003	-0.092	0.171	11:47:40
Mean:	0.0823	0.0823	0.003			
SD :	0.0009	0.0009	0.000			
%RSD:	1.10	1.10	1.10			

Element: Ni Seq. No.: 24 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0186	-0.0186	-0.001	-0.096	0.170	11:48:09
2	-0.0233	-0.0233	-0.001	-0.096	0.170	11:48:11
3	-0.0207	-0.0207	-0.001	-0.096	0.170	11:48:13
Mean:	-0.0208	-0.0208	-0.001			
SD :	0.0023	0.0023	0.000			
%RSD:	11.27	11.27	11.27			

Element: Ni Seq. No.: 25 AS Loc.: --- Date: 01/05/2006
Sample ID: 0.25 ppm

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2329	0.2329	0.009	-0.086	0.170	11:50:20
2	0.2267	0.2267	0.009	-0.087	0.170	11:50:22
3	0.2269	0.2269	0.009	-0.087	0.170	11:50:24
Mean:	0.2288	0.2288	0.009			
SD :	0.0036	0.0036	0.000			
%RSD:	1.56	1.56	1.56			

Element: Ni Seq. No.: 26 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0408	-0.0408	-0.002	-0.097	0.169	11:50:50
2	-0.0439	-0.0439	-0.002	-0.097	0.169	11:50:52
3	-0.0443	-0.0443	-0.002	-0.097	0.169	11:50:54
Mean:	-0.0430	-0.0430	-0.002			
SD :	0.0019	0.0019	0.000			
%RSD:	4.45	4.45	4.45			

Element: Ni Seq. No.: 27 AS Loc.: --- Date: 01/05/2006
Sample ID: lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0273	-0.0273	-0.001	-0.096	0.170	11:51:41
2	-0.0226	-0.0226	-0.001	-0.096	0.170	11:51:44
3	-0.0198	-0.0198	-0.001	-0.096	0.169	11:51:46
Mean:	-0.0232	-0.0232	-0.001			
SD :	0.0038	0.0038	0.000			
%RSD:	16.26	16.26	16.26			

Element: Ni Seq. No.: 28 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0071	-0.0071	0.000	-0.096	0.167	11:52:23
2	-0.0078	-0.0078	0.000	-0.096	0.167	11:52:25
3	-0.0021	-0.0021	0.000	-0.095	0.167	11:52:27
Mean:	-0.0057	-0.0057	0.000			
SD :	0.0031	0.0031	0.000			
%RSD:	55.13	55.13	55.13			

Element: Ni Seq. No.: 29 AS Loc.: --- Date: 01/05/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.073	1.073	0.041	-0.054	0.169	11:52:49
2	1.073	1.073	0.041	-0.054	0.170	11:52:51
3	1.054	1.054	0.041	-0.055	0.170	11:52:53
Mean:	1.067	1.067	0.041			
SD :	0.0110	0.0110	0.000			
%RSD:	1.03	1.03	1.03			

Element: Ni Seq. No.: 30 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0330	-0.0330	-0.001	-0.097	0.168	11:53:11
2	-0.0349	-0.0349	-0.001	-0.097	0.169	11:53:13
3	-0.0403	-0.0403	-0.002	-0.097	0.168	11:53:15
Mean:	-0.0361	-0.0361	-0.001			
SD :	0.0038	0.0038	0.000			
%RSD:	10.49	10.49	10.49			

Element: Ni Seq. No.: 31 AS Loc.: --- Date: 01/05/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0466	-0.0466	-0.002	-0.097	0.169	11:53:21

Auto-zero performed.

Element: Ni Seq. No.: 32 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0019	-0.0019	0.000	-0.097	0.169	11:53:29
2	0.0080	0.0080	0.000	-0.097	0.169	11:53:31
3	0.0068	0.0068	0.000	-0.097	0.168	11:53:33
Mean:	0.0043	0.0043	0.000			
SD :	0.0054	0.0054	0.000			
%RSD:	126.0	126.0	126.02			

Element: Ni Seq. No.: 33 AS Loc.: --- Date: 01/05/2006
Sample ID: 201-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.6106	0.6106	0.024	-0.074	0.172	11:54:02
2	0.6184	0.6184	0.024	-0.073	0.172	11:54:04
3	0.6210	0.6210	0.024	-0.073	0.171	11:54:06
Mean:	0.6167	0.6167	0.024			
SD :	0.0054	0.0054	0.000			
%RSD:	0.88	0.88	0.88			

Element: Ni Seq. No.: 34 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0512	0.0512	0.002	-0.095	0.166	11:56:01
2	0.0382	0.0382	0.001	-0.096	0.167	11:56:03
3	0.0533	0.0533	0.002	-0.095	0.166	11:56:05
Mean:	0.0476	0.0476	0.002			
SD :	0.0082	0.0082	0.000			
%RSD:	17.21	17.21	17.21			

Element: Ni Seq. No.: 35 AS Loc.: --- Date: 01/05/2006
Sample ID: d201-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.6243	0.6243	0.024	-0.073	0.170	11:56:34
2	0.6255	0.6255	0.024	-0.073	0.171	11:56:36
3	0.6219	0.6219	0.024	-0.073	0.171	11:56:38
Mean:	0.6239	0.6239	0.024			
SD :	0.0019	0.0019	0.000			
%RSD:	0.30	0.30	0.30			

Element: Ni Seq. No.: 36 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0109	0.0109	0.000	-0.097	0.167	11:58:31
2	0.0099	0.0099	0.000	-0.097	0.167	11:58:34
3	0.0075	0.0075	0.000	-0.097	0.167	11:58:36
Mean:	0.0094	0.0094	0.000			
SD :	0.0018	0.0018	0.000			
%RSD:	18.89	18.89	18.89			

Element: Ni Seq. No.: 37 AS Loc.: --- Date: 01/05/2006
Sample ID: s201-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.497	1.497	0.058	-0.039	0.170	11:58:55
2	1.517	1.517	0.058	-0.039	0.170	11:58:57
3	1.513	1.513	0.058	-0.039	0.169	11:58:59
Mean:	1.509	1.509	0.058			
SD :	0.0107	0.0107	0.000			
%RSD:	0.71	0.71	0.71			

Element: Ni Seq. No.: 38 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0422	0.0422	0.002	-0.095	0.167	12:00:03
2	0.0453	0.0453	0.002	-0.095	0.167	12:00:05
3	0.0412	0.0412	0.002	-0.096	0.167	12:00:07
Mean:	0.0429	0.0429	0.002			
SD :	0.0022	0.0022	0.000			
%RSD:	5.06	5.06	5.06			

Element: Ni Seq. No.: 39 AS Loc.: --- Date: 01/05/2006
Sample ID: ser201-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.3399	0.3399	0.013	-0.084	0.169	12:00:54
2	0.3356	0.3356	0.013	-0.084	0.168	12:00:56
3	0.3309	0.3309	0.013	-0.084	0.169	12:00:58
Mean:	0.3355	0.3355	0.013			
SD :	0.0045	0.0045	0.000			
%RSD:	1.35	1.35	1.35			

Element: Ni Seq. No.: 40 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0031	-0.0031	0.000	-0.097	0.168	12:02:05
2	0.0035	0.0035	0.000	-0.097	0.168	12:02:07
3	-0.0017	-0.0017	0.000	-0.097	0.168	12:02:09
Mean:	-0.0005	-0.0005	0.000			
SD :	0.0035	0.0035	0.000			
%RSD:	751.2	751.2	751.25			

Element: Ni Seq. No.: 41 AS Loc.: --- Date: 01/05/2006
Sample ID: 201-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.4000	0.4000	0.015	-0.082	0.171	12:02:30
2	0.3997	0.3997	0.015	-0.082	0.171	12:02:32
3	0.3999	0.3999	0.015	-0.082	0.171	12:02:34
Mean:	0.3999	0.3999	0.015			
SD :	0.0002	0.0002	0.000			
%RSD:	0.04	0.04	0.04			

Element: Ni Seq. No.: 42 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0023	0.0023	0.000	-0.097	0.169	12:02:56
2	0.0017	0.0017	0.000	-0.097	0.169	12:02:58
3	-0.0040	-0.0040	0.000	-0.097	0.169	12:03:01
Mean:	0.0000	0.0000	0.000			
SD :	0.0035	0.0035	0.000			
%RSD:	9.632E+14	9.632E+14	962646678436614.50			

Element: Ni Seq. No.: 43 AS Loc.: --- Date: 01/05/2006
Sample ID: 201-3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5461	0.5461	0.021	-0.076	0.171	12:03:20
2	0.5548	0.5548	0.021	-0.076	0.171	12:03:22
3	0.5406	0.5406	0.021	-0.076	0.171	12:03:24
Mean:	0.5472	0.5472	0.021			
SD :	0.0072	0.0072	0.000			
%RSD:	1.31	1.31	1.31			

Element: Ni Seq. No.: 44 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0109	0.0109	0.000	-0.097	0.168	12:03:43
2	0.0361	0.0361	0.001	-0.096	0.167	12:03:45
3	0.0606	0.0606	0.002	-0.095	0.166	12:03:47
Mean:	0.0359	0.0359	0.001			
SD :	0.0248	0.0248	0.001			
%RSD:	69.20	69.20	69.20			

Element: Ni Seq. No.: 45 AS Loc.: --- Date: 01/05/2006
Sample ID: 201-4

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0582	0.0582	0.002	-0.095	0.169	12:04:07
2	0.0493	0.0493	0.002	-0.095	0.169	12:04:09
3	0.0462	0.0462	0.002	-0.095	0.170	12:04:11
Mean:	0.0512	0.0512	0.002			
SD :	0.0062	0.0062	0.000			
%RSD:	12.13	12.13	12.13			

Element: Ni Seq. No.: 46 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0361	0.0361	0.001	-0.096	0.167	12:04:25
2	0.0340	0.0340	0.001	-0.096	0.167	12:04:28
3	0.0375	0.0375	0.001	-0.096	0.167	12:04:30
Mean:	0.0359	0.0359	0.001			
SD :	0.0017	0.0017	0.000			
%RSD:	4.87	4.87	4.87			

Element: Ni Seq. No.: 47 AS Loc.: --- Date: 01/05/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5743	0.5743	0.022	-0.075	0.167	12:04:54
2	0.5901	0.5901	0.023	-0.074	0.167	12:04:56
3	0.5878	0.5878	0.023	-0.074	0.167	12:04:58
Mean:	0.5841	0.5841	0.022			
SD :	0.0085	0.0085	0.000			
%RSD:	1.46	1.46	1.46			

Element: Ni Seq. No.: 48 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0549	0.0549	0.002	-0.095	0.165	12:05:30
2	0.0212	0.0212	0.001	-0.096	0.167	12:05:32
3	0.0181	0.0181	0.001	-0.096	0.167	12:05:34
Mean:	0.0314	0.0314	0.001			
SD :	0.0204	0.0204	0.001			
%RSD:	65.06	65.06	65.06			

Element: Ni Seq. No.: 49 AS Loc.: --- Date: 01/05/2006
Sample ID: lrb af

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0327	-0.0327	-0.001	-0.098	0.170	12:06:14
2	-0.0276	-0.0276	-0.001	-0.098	0.170	12:06:16
3	-0.0307	-0.0307	-0.001	-0.098	0.170	12:06:18
Mean:	-0.0303	-0.0303	-0.001			
SD :	0.0025	0.0025	0.000			
%RSD:	8.38	8.38	8.38			

Element: Ni Seq. No.: 50 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0033	-0.0033	0.000	-0.097	0.169	12:06:40
2	-0.0096	-0.0096	0.000	-0.097	0.169	12:06:42
3	-0.0007	-0.0007	0.000	-0.097	0.169	12:06:44
Mean:	-0.0045	-0.0045	0.000			
SD :	0.0046	0.0046	0.000			
%RSD:	100.8	100.8	100.81			

Element: Ni Seq. No.: 51 AS Loc.: --- Date: 01/05/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.7627	0.7627	0.029	-0.068	0.171	12:07:10
2	0.7591	0.7591	0.029	-0.068	0.171	12:07:13
3	0.7634	0.7634	0.029	-0.068	0.171	12:07:15
Mean:	0.7618	0.7618	0.029			
SD :	0.0023	0.0023	0.000			
%RSD:	0.31	0.31	0.31			

Element: Ni Seq. No.: 52 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0012	-0.0012	0.000	-0.097	0.168	12:07:55
2	-0.0033	-0.0033	0.000	-0.097	0.168	12:07:57
3	0.0002	0.0002	0.000	-0.097	0.168	12:07:59
Mean:	-0.0014	-0.0014	0.000			
SD :	0.0017	0.0017	0.000			
%RSD:	120.8	120.8	120.80			

Element: Ni Seq. No.: 53 AS Loc.: --- Date: 01/05/2006
Sample ID: 325-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0351	0.0351	0.001	-0.096	0.171	12:08:17
2	0.0389	0.0389	0.001	-0.096	0.171	12:08:19
3	0.0346	0.0346	0.001	-0.096	0.171	12:08:21
Mean:	0.0362	0.0362	0.001			
SD :	0.0024	0.0024	0.000			
%RSD:	6.55	6.55	6.55			

Element: Ni Seq. No.: 54 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0118	0.0118	0.000	-0.097	0.169	12:08:37
2	0.0047	0.0047	0.000	-0.097	0.169	12:08:39
3	0.0101	0.0101	0.000	-0.097	0.169	12:08:41
Mean:	0.0089	0.0089	0.000			
SD :	0.0037	0.0037	0.000			
%RSD:	41.92	41.92	41.92			

Element: Ni Seq. No.: 55 AS Loc.: --- Date: 01/05/2006
Sample ID: d325-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0386	0.0386	0.001	-0.096	0.171	12:08:57
2	0.0519	0.0519	0.002	-0.095	0.171	12:08:59
3	0.0455	0.0455	0.002	-0.095	0.172	12:09:01
Mean:	0.0453	0.0453	0.002			
SD :	0.0067	0.0067	0.000			
%RSD:	14.75	14.75	14.75			

Element: Ni Seq. No.: 56 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0281	0.0281	0.001	-0.096	0.168	12:09:38
2	0.0316	0.0316	0.001	-0.096	0.168	12:09:40
3	0.0278	0.0278	0.001	-0.096	0.168	12:09:42
Mean:	0.0292	0.0292	0.001			
SD :	0.0021	0.0021	0.000			
%RSD:	7.24	7.24	7.24			

Element: Ni Seq. No.: 57 AS Loc.: --- Date: 01/05/2006
Sample ID: s325-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.033	1.033	0.040	-0.057	0.170	12:10:53
2	1.041	1.041	0.040	-0.057	0.170	12:10:56
3	1.025	1.025	0.039	-0.058	0.170	12:10:58
Mean:	1.033	1.033	0.040			
SD :	0.0081	0.0081	0.000			
%RSD:	0.78	0.78	0.78			

Element: Ni Seq. No.: 58 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0054	0.0054	0.000	-0.097	0.169	12:12:25
2	0.0047	0.0047	0.000	-0.097	0.169	12:12:27
3	0.0063	0.0063	0.000	-0.097	0.169	12:12:30
Mean:	0.0054	0.0054	0.000			
SD :	0.0008	0.0008	0.000			
%RSD:	14.39	14.39	14.39			

Element: Ni Seq. No.: 59 AS Loc.: --- Date: 01/05/2006
Sample ID: ser325-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2262	0.2262	0.009	-0.088	0.169	12:12:51
2	0.2286	0.2286	0.009	-0.088	0.169	12:12:54
3	0.2296	0.2296	0.009	-0.088	0.169	12:12:56
Mean:	0.2281	0.2281	0.009			
SD :	0.0018	0.0018	0.000			
%RSD:	0.78	0.78	0.78			

Element: Ni Seq. No.: 60 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0069	0.0069	0.000	-0.097	0.169	12:13:50
2	0.0033	0.0033	0.000	-0.097	0.169	12:13:52
3	0.0078	0.0078	0.000	-0.097	0.169	12:13:54
Mean:	0.0060	0.0060	0.000			
SD :	0.0024	0.0024	0.000			
%RSD:	39.80	39.80	39.80			

Element: Ni Seq. No.: 61 AS Loc.: --- Date: 01/05/2006
Sample ID: 325-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2673	0.2673	0.010	-0.087	0.171	12:14:08
2	0.2708	0.2708	0.010	-0.087	0.171	12:14:10
3	0.2734	0.2734	0.011	-0.087	0.171	12:14:12
Mean:	0.2705	0.2705	0.010			
SD :	0.0031	0.0031	0.000			
%RSD:	1.13	1.13	1.13			

Element: Ni Seq. No.: 62 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0111	0.0111	0.000	-0.097	0.169	12:14:53
2	0.0080	0.0080	0.000	-0.097	0.169	12:14:56
3	0.0054	0.0054	0.000	-0.097	0.168	12:14:58
Mean:	0.0082	0.0082	0.000			
SD :	0.0029	0.0029	0.000			
%RSD:	35.15	35.15	35.15			

Element: Ni Seq. No.: 63 AS Loc.: --- Date: 01/05/2006
Sample ID: 325-3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0162	-0.0162	-0.001	-0.098	0.171	12:15:13
2	-0.0134	-0.0134	-0.001	-0.098	0.171	12:15:15
3	-0.0134	-0.0134	-0.001	-0.098	0.171	12:15:17
Mean:	-0.0143	-0.0143	-0.001			
SD :	0.0016	0.0016	0.000			
%RSD:	11.22	11.22	11.22			

Element: Ni Seq. No.: 64 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0281	0.0281	0.001	-0.096	0.167	12:15:41
2	0.0311	0.0311	0.001	-0.096	0.167	12:15:44
3	0.0288	0.0288	0.001	-0.096	0.167	12:15:46
Mean:	0.0294	0.0294	0.001			
SD :	0.0015	0.0015	0.000			
%RSD:	5.26	5.26	5.26			

Element: Ni Seq. No.: 65 AS Loc.: --- Date: 01/05/2006
Sample ID: 325-4

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0566	0.0566	0.002	-0.095	0.170	12:16:07
2	0.0500	0.0500	0.002	-0.095	0.170	12:16:09
3	0.0540	0.0540	0.002	-0.095	0.170	12:16:11
Mean:	0.0536	0.0536	0.002			
SD :	0.0033	0.0033	0.000			
%RSD:	6.21	6.21	6.21			

Element: Ni Seq. No.: 66 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0301	0.0301	0.001	-0.096	0.168	12:16:29
2	0.0262	0.0262	0.001	-0.096	0.167	12:16:32
3	0.0396	0.0396	0.002	-0.096	0.167	12:16:34
Mean:	0.0320	0.0320	0.001			
SD :	0.0069	0.0069	0.000			
%RSD:	21.55	21.55	21.55			

Element: Ni Seq. No.: 67 AS Loc.: --- Date: 01/05/2006
Sample ID: 325-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0832	0.0832	0.003	-0.094	0.169	12:16:51
2	0.0862	0.0862	0.003	-0.094	0.169	12:16:53
3	0.0794	0.0794	0.003	-0.094	0.169	12:16:55
Mean:	0.0829	0.0829	0.003			
SD :	0.0034	0.0034	0.000			
%RSD:	4.10	4.10	4.10			

Element: Ni Seq. No.: 68 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0104	0.0104	0.000	-0.097	0.168	12:17:17
2	0.0061	0.0061	0.000	-0.097	0.168	12:17:19
3	0.0075	0.0075	0.000	-0.097	0.168	12:17:21
Mean:	0.0080	0.0080	0.000			
SD :	0.0022	0.0022	0.000			
%RSD:	27.75	27.75	27.75			

Element: Ni Seq. No.: 69 AS Loc.: --- Date: 01/05/2006
Sample ID: 034-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1549	0.1549	0.006	-0.091	0.170	12:17:53
2	0.1577	0.1577	0.006	-0.091	0.170	12:17:56
3	0.1624	0.1624	0.006	-0.091	0.170	12:17:58
Mean:	0.1584	0.1584	0.006			
SD :	0.0038	0.0038	0.000			
%RSD:	2.38	2.38	2.38			

Element: Ni Seq. No.: 70 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0099	0.0099	0.000	-0.097	0.168	12:18:17
2	0.0061	0.0061	0.000	-0.097	0.168	12:18:20
3	0.0127	0.0127	0.000	-0.097	0.167	12:18:22
Mean:	0.0096	0.0096	0.000			
SD :	0.0033	0.0033	0.000			
%RSD:	34.69	34.69	34.69			

Element: Ni Seq. No.: 71 AS Loc.: --- Date: 01/05/2006
Sample ID: 034-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1518	0.1518	0.006	-0.091	0.170	12:18:41
2	0.1539	0.1539	0.006	-0.091	0.170	12:18:44
3	0.1603	0.1603	0.006	-0.091	0.170	12:18:46
Mean:	0.1553	0.1553	0.006			
SD :	0.0044	0.0044	0.000			
%RSD:	2.86	2.86	2.86			

Element: Ni Seq. No.: 72 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0122	0.0122	0.000	-0.097	0.167	12:19:08
2	0.0061	0.0061	0.000	-0.097	0.167	12:19:11
3	-0.0026	-0.0026	0.000	-0.097	0.167	12:19:13
Mean:	0.0052	0.0052	0.000			
SD :	0.0074	0.0074	0.000			
%RSD:	142.4	142.4	142.40			

Element: Ni Seq. No.: 73 AS Loc.: --- Date: 01/05/2006
Sample ID: 034-3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0182	-0.0182	-0.001	-0.098	0.170	12:19:28
2	-0.0141	-0.0141	-0.001	-0.098	0.169	12:19:30
3	-0.0268	-0.0268	-0.001	-0.098	0.170	12:19:32
Mean:	-0.0197	-0.0197	-0.001			
SD :	0.0065	0.0065	0.000			
%RSD:	32.83	32.83	32.83			

Element: Ni Seq. No.: 74 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0012	-0.0012	0.000	-0.097	0.167	12:19:51
2	-0.0023	-0.0023	0.000	-0.097	0.167	12:19:53
3	0.0026	0.0026	0.000	-0.097	0.167	12:19:55
Mean:	-0.0003	-0.0003	0.000			
SD :	0.0026	0.0026	0.000			
%RSD:	884.5	884.5	884.53			

Element: Ni Seq. No.: 75 AS Loc.: --- Date: 01/05/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.165	2.165	0.083	-0.014	0.169	12:20:13
2	2.182	2.182	0.084	-0.013	0.169	12:20:15
3	2.172	2.172	0.084	-0.013	0.168	12:20:17
Mean:	2.173	2.173	0.084			
SD :	0.0088	0.0088	0.000			
%RSD:	0.41	0.41	0.41			

Element: Ni Seq. No.: 76 AS Loc.: --- Date: 01/05/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0082	0.0082	0.000	-0.097	0.166	12:20:34
2	0.0024	0.0024	0.000	-0.097	0.167	12:20:36
3	-0.0002	-0.0002	0.000	-0.097	0.167	12:20:38
Mean:	0.0035	0.0035	0.000			
SD :	0.0043	0.0043	0.000			
%RSD:	122.8	122.8	122.78			

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [X] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	11/16	1130A	+ on hot plate.		LFB		50		
						LRB				
1			<2.0	110201	1	385				
			<2.0		2	~~LFM DUP~~ 371			*Hnty around sp 1	
			<2.0		3	~~LFM~~ 390				
2			<2.0		4	322				
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05F011
QC-7		
P		
Sn		
OTHER		

0.5

Analyst: _____

Start Date: _____

PROJECT # 2005100014: METHOD 29 FOR NICKEL

1	2	3	4	5	6	7	8	9	10	11	12
SA #	SAMPLE DESCRPTION	RUN ID	PH	Sample Fraction ($SF = SF_A$)	EVAP. TO	REAGENTS FOR DIG.	MICRO-Dig. BY	Analytical Fraction ($AF = AF_A$)	NI mg/L (C_{a1} or C_{a2})	MG NI IN INITIAL SAMPLE	TOTAL MG PER RUN
2	impinger	BLANK	< 2.0	296	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	< 0.011
3	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	< 0.074	0.007	
1	probe rinse		< 2.0	97.5	20	HF + HNO3	8.3.1.2				
5	impinger	Cond. 18: Test # 1	< 2.0	305	20	HNO3 + H2O2	8.3.4.2	50	0.109	0.005	0.028
6	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.224	0.022	
4	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
8	impinger	Cond. 18: Test # 2	< 2.0	311	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	< 0.011
9	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	< 0.074	0.007	
7	probe rinse		< 2.0	99.0	20	HF + HNO3	8.3.1.2				
11	impinger	Cond. 18: Test # 3	< 2.0	334	20	HNO3 + H2O2	8.3.4.2	50	0.245	0.012	0.050
12	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.380	0.038	
10	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
14	impinger	Cond. 19: Test # 1	< 2.0	315	20	HNO3 + H2O2	8.3.4.2	50	0.378	0.019	0.102
15	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.829	0.083	
13	probe rinse		< 2.0	101.0	20	HF + HNO3	8.3.1.2				
17	impinger	Cond. 19: Test # 2	< 2.0	320	20	HNO3 + H2O2	8.3.4.2	50	0.229	0.011	0.032
18	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.210	0.021	
16	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
20	impinger	Cond. 19: Test # 3	< 2.0	313	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.362
21	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	3.580	0.358	
19	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
23	impinger	Cond. 20: Test # 1	< 2.0	301	20	HNO3 + H2O2	8.3.4.2	50	0.172	0.009	0.029
24	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.205	0.021	
22	probe rinse		< 2.0	96.0	20	HF + HNO3	8.3.1.2				
26	impinger	Cond. 20: Test # 2	< 2.0	301	20	HNO3 + H2O2	8.3.4.2	50	0.080	0.004	0.011
27	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	< 0.074	0.007	
25	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
29	impinger	Cond. 20: Test # 3	< 2.0	297	20	HNO3 + H2O2	8.3.4.2	50	0.100	0.005	0.036
30	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.312	0.031	
28	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
32	impinger	Cond. 21: Test # 1	< 2.0	299	20	HNO3 + H2O2	8.3.4.2	50	0.170	0.009	0.038
33	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.299	0.030	
31	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
35	impinger	Cond. 21: Test # 2	< 2.0	303	20	HNO3 + H2O2	8.3.4.2	50	0.083	0.004	0.012
36	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	< 0.074	0.007	
34	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
38	impinger	Cond. 21: Test # 3	< 2.0	298	20	HNO3 + H2O2	8.3.4.2	50	0.127	0.006	0.014
39	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	< 0.074	0.007	
37	probe rinse		< 2.0	99.0	20	HF + HNO3	8.3.1.2				
	impinger	MDL		300	20	HNO3 + H2O2	8.3.4.2	50	0.075	0.004	0.011
	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.075	0.008	
	probe rinse			100.0	20	HF + HNO3	8.3.1.2				

10 Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. Readings that read less than the MDL were qualified with "<", which may or may not carry over to the final result.

11 **mg Ni** = "Rdg" in mg/L **X** Analytical Fraction (mls) **X** "INITIAL SAMPLE VOL" in mls / "SF 2A" in mls **X** 1 L / 1000 mls
Initial sample volume is "Sample Fraction", as **all sample was used.** (There were no "splits")
So, "INITIAL SAMPLE VOL" in mls / "SF 2A" in mls = 1 (per Eq 29-2, & -3)

12 According to RUN ID, the filter+probe rinse were added to impinger results: as "mg of Nickel".

PROJECT # 2005100306: METHOD 306A FOR NICKEL

1	2	3	4	5	6	7	8
SA #	SAMPLE DESCRPTION	PH	Sample Fraction	REAGENTS FOR DIG.	Analytical Fraction	NI mg/L	TOTAL MG NI (OR IN INITIAL SAMPLE)
1	Condition 29; Run 1	<2.0	355.0	HNO3	50.0	15.9	0.795
2	Condition 29; Run 2	<2.0	356.0	HNO3	50.0	6.51	0.326
3	Condition 29; Run 3	<2.0	378.0	HNO3	50.0	7.83	0.392
4	Field Blank 0.1N HNO3	<2.0	332.0	HNO3	50.0	0.074	0.004
5	Field Blank 5% HNO3 & 10% H202	<2.0	288.0	HNO3	50.0	0.222	0.011
*	MDL	<2.0	288.0	HNO3	50.0	0.075	0.004

Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. The final DL shall use the actual MDL, so that these affected samples should result as "< DL"

#8 Is the amount of NI in the 50 ml aliquot, or the 355 ml original sample, whichever you prefer, because they are the MG value will not change. (The volumes have been negated in the calculation.)

QC

QA/QC WORK SHEET for NICKEL

FLAA METHOD SOP MET-040
PE 5100 AA

Date: 11/8/2005
Analyst: LK

(Mg/L)
IDL= 0.027
MDL= 0.075
RL = 0.10
LDR = 0.10 to 8.0

1 CURRENT COPY OF METHOD AVAILABLE IN WINLAB.

2 INSTRUMENT SET-UP:
(For Specific instrument settings, see current copy of method.)

3 CALIBRATION:

Cal Curve:	Conc	Result	% Rec.	
	0.25	0.287	114.8	
	0.50	0.568	113.6	
	1.00	1.161	116.1	
	2.00	2.151	107.6	
	5.00	4.885	97.7	
Corr. Coef:	xxxxxxxxx	0.9977		(> 0.995)

4 STANDARD TRACEABILITY

QC STANDARD	Standard Name, Company, & Lot #
Calibration	CPI QC-21 41M044
CCV, CRA, AAT	CPI QC-21 41M044
QCS, LFM	CPI 05F011

5 SAMPLE ANALYTICAL RUN

MAT-RIX	SAMPLE	STD CONC	READING Mg/L	BLK	RESULT	DIL 1	DIL 2	QC RESULTS	Mg/L	REP'T mg/L	ICP	
	CCV	5.00	4.875		4.875			98				(95-105%R)
	QCS	2.00	2.014	-0.005	2.019			101				(95-105%R)
	CCB		-0.005		-0.005			-0.005				(< MDL)
	CRA	0.10	0.098	0.044	0.054			54				(70-130%R)
	014-1+3		-0.138	0.100	-0.239	1.0	1.0		-0.239			
	014-1+3		-0.130	-0.100	-0.030	2.0	1.0		-0.059	**<0.150**		
	SPK	0.75	0.612	0.009	0.603	1.0	1.0	112				(80-120%R)
	DUP		0.532	-0.055	0.588	1.0	1.0	2.6				(<10 RPD, IF SA > 20X MDL)
	SER DIL	2/10	0.121	0.025	0.096	1.0	1.0	20.2	(Apparently, cannot expect much better)			(<10%DIFF??)
	014-25+27		-0.117	-0.072	-0.045	1.0	1.0		-0.045	**<0.100**	2.075*	
	014-31+33		-0.245	-0.033	-0.212	1.0	1.0		-0.212			
	014-31+33		-0.171	-0.062	-0.109	2.0	1.0		-0.218			
	014-31+33		-0.104	0.073	-0.177	2.0	1.0		-0.354			
	014-31+33		-0.120	-0.045	-0.075	4.0	1.0		-0.301	**<0.300**		
	014-2		0.081	0.026	0.055	1.0	1.0		0.055	**<0.100**		
	SPK	1.00	1.048	0.015	1.033	1.0	1.0	111				(80-120%R)
	DUP		0.999	-0.014	1.013	1.0	1.0	2.0				(<10 RPD, IF SA > 20X MDL)
	SER DIL	2/10	0.312	0.075	0.237	1.0	1.0	14.6	(Apparently, cannot expect much better)			(<10%DIFF??)
	306-1		29.570		29.570	1.0	1.0		29.570			
	306-1		11.960	0.025	11.936	10.0	1.0		119.355			
	306-1		5.818	0.121	5.697	25.0	1.0		142.423			
	306-1		3.046	0.008	3.038	50.0	1.0		151.900			
	306-1		1.688	0.101	1.587	100.0	1.0		158.670	**159**		
	CCV	5.00	4.766	0.056	4.710			94				(90-110%R)
	CCB		0.056		0.056			0.056				(< MDL)

Element: Ni Seq. No.: 142 AS Loc.: --- Date: 11/08/2005
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.001	-0.132	0.162	07:54:36
2			0.001	-0.132	0.162	07:54:38
3			0.000	-0.133	0.163	07:54:40
Mean:			0.000			
SD :			0.001			
%RSD:			110.91			

Auto-zero performed.

Element: Ni Seq. No.: 143 AS Loc.: --- Date: 11/08/2005
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.004	-0.136	0.166	07:55:17
2			-0.005	-0.137	0.167	07:55:20
3			-0.004	-0.137	0.167	07:55:22
Mean:			-0.004			
SD :			0.000			
%RSD:			2.03			

Auto-zero performed.

Element: Ni Seq. No.: 144 AS Loc.: --- Date: 11/08/2005
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.001	-0.136	0.165	08:12:50
2			0.001	-0.135	0.165	08:12:52
3			0.001	-0.136	0.165	08:12:54
Mean:			0.001			
SD :			0.000			
%RSD:			26.84			

Auto-zero performed.

Element: Ni Seq. No.: 145 AS Loc.: --- Date: 11/08/2005
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.001	-0.135	0.163	08:19:40
2			0.001	-0.135	0.163	08:19:42
3			0.001	-0.135	0.163	08:19:44
Mean:			0.001			
SD :			0.000			
%RSD:			11.87			

Auto-zero performed.

Element: Ni Seq. No.: 146 AS Loc.: --- Date: 11/08/2005
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.000	-0.135	0.162	08:20:03
2			0.000	-0.135	0.162	08:20:05
3			0.000	-0.135	0.162	08:20:07
Mean:			0.000			
SD :			0.000			
%RSD:			444.45			

Auto-zero performed.

Element: Ni Seq. No.: 147 AS Loc.: --- Date: 11/08/2005
Sample ID: CAL STD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.009	-0.126	0.162	08:20:28
2			0.010	-0.125	0.162	08:20:30
3			0.009	-0.126	0.161	08:20:32
Mean:			0.009			
SD :			0.000			
%RSD:			4.29			

Standard number 1 applied. [0.25]
Correlation Coefficient: 0.9983 Slope: 0.0352

Element: Ni Seq. No.: 148 AS Loc.: --- Date: 11/08/2005
Sample ID: cal std 2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.019	-0.116	0.161	08:20:46
2			0.018	-0.116	0.161	08:20:48
3			0.019	-0.116	0.161	08:20:50
Mean:			0.019			
SD :			0.000			
%RSD:			0.51			

Standard number 2 applied. [0.50]
Correlation Coefficient: 0.9986 Slope: 0.0351

Element: Ni Seq. No.: 149 AS Loc.: --- Date: 11/08/2005
Sample ID: cal std 3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.037	-0.098	0.160	08:21:02
2			0.038	-0.097	0.159	08:21:04
3			0.038	-0.097	0.159	08:21:06
Mean:			0.038			
SD :			0.001			
%RSD:			1.72			

Standard number 3 applied. [1.00]
Correlation Coefficient: 0.9987 Slope: 0.0351

Element: Ni Seq. No.: 150 AS Loc.: --- Date: 11/08/2005
Sample ID: cal std 4

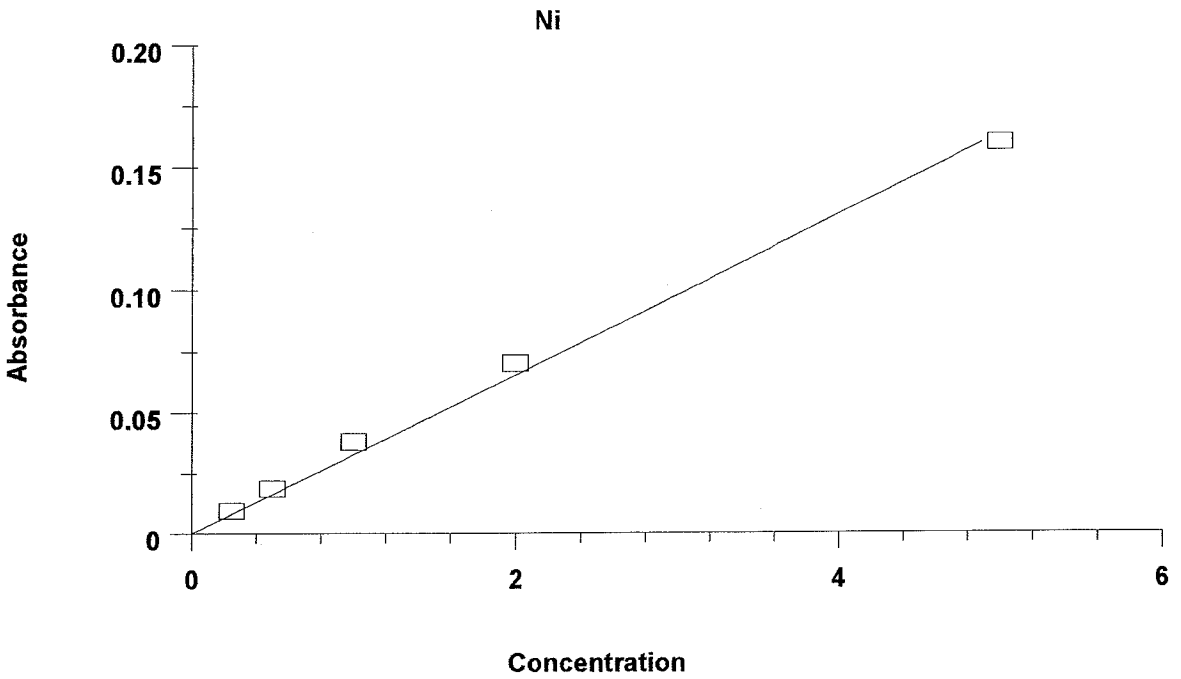
Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.070	-0.065	0.159	08:21:25
2			0.070	-0.065	0.160	08:21:27
3			0.070	-0.065	0.160	08:21:29
Mean:			0.070			
SD :			0.000			
%RSD:			0.64			

Standard number 4 applied. [2.00]
Correlation Coefficient: 0.9996 Slope: 0.0347

Element: Ni Seq. No.: 151 AS Loc.: --- Date: 11/08/2005
Sample ID: cal std 5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.159	0.024	0.161	08:21:44
2			0.159	0.024	0.161	08:21:47
3			0.159	0.025	0.161	08:21:49
Mean:			0.159			
SD :			0.000			
%RSD:			0.11			

The calibration curve may not be linear.
Standard number 5 applied. [5.00]
Correlation Coefficient: 0.9977 Slope: 0.0326



Calibration data for Ni

Standard ID	Mean Signal (Absorbance)	Entered Concentration (mg/L)	Calculated Concentration (mg/L)	Standard Deviation	%RSD
Calib Blank	0.000	----	0.000	0.0002	444.4487
CAL STD	0.009	0.25	0.2870	0.0004	4.2884
cal std 2	0.019	0.50	0.5682	0.0001	0.5070
cal std 3	0.038	1.00	1.161	0.0007	1.7235
cal std 4	0.070	2.00	2.151	0.0004	0.6363
cal std 5	0.159	5.00	4.885	0.0002	0.1080

Correlation Coefficient: 0.99773 Slope: 0.03261

Element: Ni Seq. No.: 152 AS Loc.: --- Date: 11/08/2005
Sample ID: CCV

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.857	4.857	0.158	0.023	0.161	08:22:02
2	4.888	4.888	0.159	0.024	0.161	08:22:04
3	4.879	4.879	0.159	0.024	0.160	08:22:06
Mean:	4.875	4.875	0.159			
SD :	0.0158	0.0158	0.001			
%RSD:	0.32	0.32	0.32			

Element: Ni Seq. No.: 153 AS Loc.: --- Date: 11/08/2005
Sample ID: QCS

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.015	2.015	0.066	-0.069	0.163	08:22:19
2	2.016	2.016	0.066	-0.069	0.163	08:22:21
3	2.010	2.010	0.066	-0.069	0.163	08:22:23
Mean:	2.014	2.014	0.066			
SD :	0.0033	0.0033	0.000			
%RSD:	0.16	0.16	0.16			

Element: Ni Seq. No.: 154 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0025	0.0025	0.000	-0.135	0.162	08:22:39
2	0.0019	0.0019	0.000	-0.135	0.162	08:22:41
3	-0.0194	-0.0194	-0.001	-0.136	0.162	08:22:43
Mean:	-0.0050	-0.0050	0.000			
SD :	0.0125	0.0125	0.000			
%RSD:	250.4	250.4	250.39			

Element: Ni Seq. No.: 155 AS Loc.: --- Date: 11/08/2005
Sample ID: CRA-0.1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0936	0.0936	0.003	-0.132	0.162	08:23:10
2	0.1051	0.1051	0.003	-0.132	0.161	08:23:13
3	0.0958	0.0958	0.003	-0.132	0.161	08:23:15
Mean:	0.0982	0.0982	0.003			
SD :	0.0061	0.0061	0.000			
%RSD:	6.20	6.20	6.20			

Element: Ni Seq. No.: 156 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0382	0.0382	0.001	-0.134	0.161	08:23:32
2	0.0384	0.0384	0.001	-0.134	0.161	08:23:34
3	0.0548	0.0548	0.002	-0.133	0.161	08:23:36
Mean:	0.0438	0.0438	0.001			
SD :	0.0095	0.0095	0.000			
%RSD:	21.75	21.75	21.75			

Element: Ni Seq. No.: 157 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1622	-0.1622	-0.005	-0.140	0.182	08:24:09
2	-0.1306	-0.1306	-0.004	-0.139	0.181	08:24:12
3	-0.1218	-0.1218	-0.004	-0.139	0.181	08:24:14
Mean:	-0.1382	-0.1382	-0.005			
SD :	0.0212	0.0212	0.001			
%RSD:	15.38	15.38	15.38			

Element: Ni Seq. No.: 158 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0960	0.0960	0.003	-0.132	0.159	08:24:30
2	0.1061	0.1061	0.003	-0.131	0.159	08:24:32
3	0.0989	0.0989	0.003	-0.132	0.159	08:24:34
Mean:	0.1004	0.1004	0.003			
SD :	0.0052	0.0052	0.000			
%RSD:	5.16	5.16	5.16			

Element: Ni Seq. No.: 159 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0983	0.0983	0.003	-0.132	0.158	08:27:22
2	0.1120	0.1120	0.004	-0.131	0.158	08:27:24
3	0.1223	0.1223	0.004	-0.131	0.158	08:27:26
Mean:	0.1109	0.1109	0.004			
SD :	0.0120	0.0120	0.000			
%RSD:	10.86	10.86	10.86			

Element: Ni Seq. No.: 160 AS Loc.: --- Date: 11/08/2005
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1004	0.1004	0.003	-0.132	0.158	08:27:29

Auto-zero performed.

Element: Ni Seq. No.: 161 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0244	0.0244	0.001	-0.131	0.159	08:27:37
2	0.0047	0.0047	0.000	-0.132	0.159	08:27:39
3	0.0111	0.0111	0.000	-0.131	0.158	08:27:41
Mean:	0.0134	0.0134	0.000			
SD :	0.0100	0.0100	0.000			
%RSD:	74.99	74.99	74.99			

Element: Ni Seq. No.: 162 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-1+3 X2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1064	-0.1064	-0.003	-0.135	0.170	08:28:09
2	-0.1345	-0.1345	-0.004	-0.136	0.171	08:28:11
3	-0.1479	-0.1479	-0.005	-0.136	0.171	08:28:13
Mean:	-0.1296	-0.1296	-0.004			
SD :	0.0211	0.0211	0.001			
%RSD:	16.32	16.32	16.32			

Element: Ni Seq. No.: 163 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0958	-0.0958	-0.003	-0.135	0.161	08:28:49
2	-0.1025	-0.1025	-0.003	-0.135	0.161	08:28:51
3	-0.1017	-0.1017	-0.003	-0.135	0.161	08:28:53
Mean:	-0.1000	-0.1000	-0.003			
SD :	0.0037	0.0037	0.000			
%RSD:	3.69	3.69	3.69			

Element: Ni Seq. No.: 164 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-1+3 X2 SPK 1.5 mL 5ppm /10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.6075	0.6075	0.020	-0.112	0.170	08:30:39
2	0.6089	0.6089	0.020	-0.112	0.170	08:30:42
3	0.6208	0.6208	0.020	-0.111	0.170	08:30:44
Mean:	0.6124	0.6124	0.020			
SD :	0.0073	0.0073	0.000			
%RSD:	1.19	1.19	1.19			

Element: Ni Seq. No.: 165 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0160	0.0160	0.001	-0.131	0.158	08:31:00
2	0.0096	0.0096	0.000	-0.131	0.158	08:31:02
3	0.0016	0.0016	0.000	-0.132	0.158	08:31:04
Mean:	0.0091	0.0091	0.000			
SD :	0.0072	0.0072	0.000			
%RSD:	79.12	79.12	79.12			

Element: Ni Seq. No.: 166 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-1+3 X2 SD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5500	0.5500	0.018	-0.114	0.173	08:31:59
2	0.5316	0.5316	0.017	-0.114	0.173	08:32:01
3	0.5154	0.5154	0.017	-0.115	0.172	08:32:04
Mean:	0.5323	0.5323	0.017			
SD :	0.0173	0.0173	0.001			
%RSD:	3.26	3.26	3.26			

Element: Ni Seq. No.: 167 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0515	-0.0515	-0.002	-0.133	0.160	08:32:24
2	-0.0562	-0.0562	-0.002	-0.133	0.160	08:32:26
3	-0.0584	-0.0584	-0.002	-0.134	0.160	08:32:28
Mean:	-0.0554	-0.0554	-0.002			
SD :	0.0036	0.0036	0.000			
%RSD:	6.43	6.43	6.43			

Element: Ni Seq. No.: 168 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-1+3 SER

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1159	0.1159	0.004	-0.128	0.162	08:33:02
2	0.1103	0.1103	0.004	-0.128	0.163	08:33:05
3	0.1368	0.1368	0.004	-0.127	0.162	08:33:07
Mean:	0.1210	0.1210	0.004			
SD :	0.0140	0.0140	0.000			
%RSD:	11.53	11.53	11.53			

Element: Ni Seq. No.: 169 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-1+3 SER

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1571	0.1571	0.005	-0.127	0.160	08:33:31
2	0.1952	0.1952	0.006	-0.125	0.160	08:33:34
3	0.2223	0.2223	0.007	-0.124	0.159	08:33:36
Mean:	0.1915	0.1915	0.006			
SD :	0.0328	0.0328	0.001			
%RSD:	17.11	17.11	17.11			

Element: Ni Seq. No.: 170 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0246	0.0246	0.001	-0.131	0.157	08:33:54
2	0.0260	0.0260	0.001	-0.131	0.157	08:33:56
3	0.0236	0.0236	0.001	-0.131	0.158	08:33:59
Mean:	0.0247	0.0247	0.001			
SD :	0.0012	0.0012	0.000			
%RSD:	5.00	5.00	5.00			

Element: Ni Seq. No.: 171 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-25+27

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1021	-0.1021	-0.003	-0.135	0.179	08:34:35
2	-0.1148	-0.1148	-0.004	-0.135	0.179	08:34:37
3	-0.1325	-0.1325	-0.004	-0.136	0.179	08:34:39
Mean:	-0.1165	-0.1165	-0.004			
SD :	0.0152	0.0152	0.000			
%RSD:	13.09	13.09	13.09			

Element: Ni Seq. No.: 172 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0724	-0.0724	-0.002	-0.134	0.161	08:34:54
2	-0.0595	-0.0595	-0.002	-0.134	0.160	08:34:56
3	-0.0826	-0.0826	-0.003	-0.134	0.160	08:34:58
Mean:	-0.0715	-0.0715	-0.002			
SD :	0.0116	0.0116	0.000			
%RSD:	16.24	16.24	16.24			

Element: Ni Seq. No.: 173 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-31+33

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.2463	-0.2463	-0.008	-0.140	0.186	08:35:31
2	-0.2430	-0.2430	-0.008	-0.140	0.186	08:35:34
3	-0.2453	-0.2453	-0.008	-0.140	0.186	08:35:36
Mean:	-0.2449	-0.2449	-0.008			
SD :	0.0017	0.0017	0.000			
%RSD:	0.69	0.69	0.69			

Element: Ni Seq. No.: 174 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0502	-0.0502	-0.002	-0.133	0.160	08:35:48
2	-0.0314	-0.0314	-0.001	-0.133	0.160	08:35:51
3	-0.0168	-0.0168	-0.001	-0.132	0.159	08:35:53
Mean:	-0.0328	-0.0328	-0.001			
SD :	0.0168	0.0168	0.001			
%RSD:	51.08	51.08	51.08			

Element: Ni Seq. No.: 175 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-31+33 X2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1678	-0.1678	-0.005	-0.137	0.175	08:38:21
2	-0.1850	-0.1850	-0.006	-0.138	0.175	08:38:23
3	-0.1593	-0.1593	-0.005	-0.137	0.176	08:38:26
Mean:	-0.1707	-0.1707	-0.006			
SD :	0.0131	0.0131	0.000			
%RSD:	7.66	7.66	7.66			

Element: Ni Seq. No.: 176 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0769	-0.0769	-0.003	-0.134	0.160	08:38:43
2	-0.0449	-0.0449	-0.001	-0.133	0.160	08:38:46
3	-0.0636	-0.0636	-0.002	-0.134	0.160	08:38:48
Mean:	-0.0618	-0.0618	-0.002			
SD :	0.0161	0.0161	0.001			
%RSD:	26.00	26.00	26.00			

Element: Ni Seq. No.: 177 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-31+33 2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0972	-0.0972	-0.003	-0.135	0.172	08:39:36
2	-0.1185	-0.1185	-0.004	-0.136	0.172	08:39:38
3	-0.0970	-0.0970	-0.003	-0.135	0.172	08:39:40
Mean:	-0.1043	-0.1043	-0.003			
SD :	0.0124	0.0124	0.000			
%RSD:	11.87	11.87	11.87			

Element: Ni Seq. No.: 178 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1019	0.1019	0.003	-0.128	0.155	08:39:59
2	0.0765	0.0765	0.002	-0.129	0.156	08:40:01
3	0.0392	0.0392	0.001	-0.130	0.156	08:40:03
Mean:	0.0725	0.0725	0.002			
SD :	0.0316	0.0316	0.001			
%RSD:	43.52	43.52	43.52			

Element: Ni Seq. No.: 179 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0500	0.0500	0.002	-0.130	0.156	08:40:18
2	0.0556	0.0556	0.002	-0.130	0.157	08:40:20
3	0.0474	0.0474	0.002	-0.130	0.157	08:40:23
Mean:	0.0510	0.0510	0.002			
SD :	0.0042	0.0042	0.000			
%RSD:	8.21	8.21	8.21			

Element: Ni Seq. No.: 180 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-31+33 X4

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1290	-0.1290	-0.004	-0.136	0.169	08:41:32
2	-0.1157	-0.1157	-0.004	-0.135	0.168	08:41:34
3	-0.1181	-0.1181	-0.004	-0.136	0.168	08:41:36
Mean:	-0.1209	-0.1209	-0.004			
SD :	0.0071	0.0071	0.000			
%RSD:	5.87	5.87	5.87			

Element: Ni Seq. No.: 181 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0509	-0.0509	-0.002	-0.133	0.159	08:41:55
2	-0.0330	-0.0330	-0.001	-0.133	0.159	08:41:57
3	-0.0507	-0.0507	-0.002	-0.133	0.159	08:41:59
Mean:	-0.0448	-0.0448	-0.001			
SD :	0.0102	0.0102	0.000			
%RSD:	22.84	22.84	22.84			

Element: Ni Seq. No.: 182 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0806	0.0806	0.003	-0.129	0.160	08:42:29
2	0.0822	0.0822	0.003	-0.129	0.160	08:42:31
3	0.0785	0.0785	0.003	-0.129	0.160	08:42:34
Mean:	0.0805	0.0805	0.003			
SD :	0.0018	0.0018	0.000			
%RSD:	2.30	2.30	2.30			

Element: Ni Seq. No.: 183 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0049	0.0049	0.000	-0.131	0.158	08:42:55
2	0.0234	0.0234	0.001	-0.131	0.157	08:42:57
3	0.0498	0.0498	0.002	-0.130	0.157	08:43:00
Mean:	0.0260	0.0260	0.001			
SD :	0.0226	0.0226	0.001			
%RSD:	86.67	86.67	86.67			

Element: Ni Seq. No.: 184 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-2 S

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.9949	0.9949	0.032	-0.099	0.162	08:44:53
2	1.005	1.005	0.033	-0.099	0.162	08:44:55
3	0.9961	0.9961	0.032	-0.099	0.162	08:44:57
Mean:	0.9986	0.9986	0.033			
SD :	0.0054	0.0054	0.000			
%RSD:	0.54	0.54	0.54			

Element: Ni Seq. No.: 185 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0117	-0.0117	0.000	-0.132	0.159	08:45:09
2	0.0016	0.0016	0.000	-0.132	0.160	08:45:11
3	-0.0326	-0.0326	-0.001	-0.133	0.160	08:45:13
Mean:	-0.0142	-0.0142	0.000			
SD :	0.0173	0.0173	0.001			
%RSD:	121.4	121.4	121.41			

Element: Ni Seq. No.: 186 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-2 SD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.057	1.057	0.034	-0.097	0.161	08:45:35
2	1.044	1.044	0.034	-0.098	0.161	08:45:37
3	1.043	1.043	0.034	-0.098	0.161	08:45:39
Mean:	1.048	1.048	0.034			
SD :	0.0080	0.0080	0.000			
%RSD:	0.76	0.76	0.76			

Element: Ni Seq. No.: 187 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0287	0.0287	0.001	-0.131	0.159	08:45:57
2	0.0121	0.0121	0.000	-0.131	0.159	08:45:59
3	0.0035	0.0035	0.000	-0.132	0.159	08:46:02
Mean:	0.0148	0.0148	0.000			
SD :	0.0128	0.0128	0.000			
%RSD:	86.84	86.84	86.84			

Element: Ni Seq. No.: 188 AS Loc.: --- Date: 11/08/2005
Sample ID: 014-2 SER

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.3187	0.3187	0.010	-0.121	0.156	08:46:59
2	0.3136	0.3136	0.010	-0.121	0.157	08:47:02
3	0.3029	0.3029	0.010	-0.122	0.156	08:47:04
Mean:	0.3117	0.3117	0.010			
SD :	0.0081	0.0081	0.000			
%RSD:	2.58	2.58	2.58			

Element: Ni Seq. No.: 189 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0742	0.0742	0.002	-0.129	0.157	08:47:18
2	0.0781	0.0781	0.003	-0.129	0.156	08:47:20
3	0.0722	0.0722	0.002	-0.129	0.157	08:47:22
Mean:	0.0749	0.0749	0.002			
SD :	0.0030	0.0030	0.000			
%RSD:	4.04	4.04	4.04			

Element: Ni Seq. No.: 190 AS Loc.: --- Date: 11/08/2005
Sample ID: 306-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	29.56	29.56	0.964	0.832	0.177	08:48:30
Sample absorbance is greater than that of the highest standard.						
2	29.58	29.58	0.965	0.833	0.177	08:48:32
Sample absorbance is greater than that of the highest standard.						
3	29.58	29.58	0.965	0.833	0.177	08:48:34
Sample absorbance is greater than that of the highest standard.						
Mean:	29.57	29.57	0.964			
SD :	0.0111	0.0111	0.000			
%RSD:	0.04	0.04	0.04			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 191 AS Loc.: --- Date: 11/08/2005
Sample ID: 306-1 X10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	11.93	11.93	0.389	0.257	0.164	08:55:00
Sample absorbance is greater than that of the highest standard.						
2	12.02	12.02	0.392	0.260	0.164	08:55:02
Sample absorbance is greater than that of the highest standard.						
3	11.94	11.94	0.389	0.258	0.164	08:55:04
Sample absorbance is greater than that of the highest standard.						
Mean:	11.96	11.96	0.390			
SD :	0.0531	0.0531	0.002			
%RSD:	0.44	0.44	0.44			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 192 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0254	0.0254	0.001	-0.131	0.157	08:56:26
2	0.0119	0.0119	0.000	-0.131	0.158	08:56:28
3	0.0361	0.0361	0.001	-0.130	0.158	08:56:30
Mean:	0.0245	0.0245	0.001			
SD :	0.0121	0.0121	0.000			
%RSD:	49.56	49.56	49.56			

Element: Ni Seq. No.: 193 AS Loc.: --- Date: 11/08/2005
Sample ID: 306-1 X25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	5.781	5.781	0.189	0.057	0.160	08:56:48
Sample absorbance is greater than that of the highest standard.						
2	5.852	5.852	0.191	0.059	0.159	08:56:50
Sample absorbance is greater than that of the highest standard.						
3	5.823	5.823	0.190	0.058	0.159	08:56:52
Sample absorbance is greater than that of the highest standard.						
Mean:	5.818	5.818	0.190			
SD :	0.0357	0.0357	0.001			
%RSD:	0.61	0.61	0.61			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 194 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1366	0.1366	0.004	-0.127	0.154	08:57:06
2	0.1337	0.1337	0.004	-0.127	0.153	08:57:08
3	0.0929	0.0929	0.003	-0.129	0.155	08:57:10
Mean:	0.1211	0.1211	0.004			
SD :	0.0244	0.0244	0.001			
%RSD:	20.18	20.18	20.18			

Element: Ni Seq. No.: 195 AS Loc.: --- Date: 11/08/2005
Sample ID: 306-1 X50

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	3.035	3.035	0.099	-0.033	0.160	08:58:18
2	3.055	3.055	0.100	-0.032	0.159	08:58:20
3	3.049	3.049	0.099	-0.032	0.160	08:58:22
Mean:	3.046	3.046	0.099			
SD :	0.0104	0.0104	0.000			
%RSD:	0.34	0.34	0.34			

Element: Ni Seq. No.: 196 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0006	0.0006	0.000	-0.132	0.159	08:58:35
2	0.0160	0.0160	0.001	-0.131	0.159	08:58:37
3	0.0074	0.0074	0.000	-0.131	0.158	08:58:39
Mean:	0.0080	0.0080	0.000			
SD :	0.0077	0.0077	0.000			
%RSD:	96.38	96.38	96.38			

Element: Ni Seq. No.: 197 AS Loc.: --- Date: 11/08/2005
Sample ID: 306-1 X100

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.687	1.687	0.055	-0.077	0.157	09:00:56
2	1.676	1.676	0.055	-0.077	0.157	09:00:58
3	1.701	1.701	0.055	-0.076	0.157	09:01:00
Mean:	1.688	1.688	0.055			
SD :	0.0123	0.0123	0.000			
%RSD:	0.73	0.73	0.73			

Element: Ni Seq. No.: 198 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1130	0.1130	0.004	-0.128	0.155	09:01:13
2	0.1169	0.1169	0.004	-0.128	0.155	09:01:15
3	0.0740	0.0740	0.002	-0.129	0.155	09:01:17
Mean:	0.1013	0.1013	0.003			
SD :	0.0237	0.0237	0.001			
%RSD:	23.40	23.40	23.40			

Element: Ni Seq. No.: 199 AS Loc.: --- Date: 11/08/2005
Sample ID: CCV

Wrong Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.036	2.036	0.066	-0.065	0.160	09:02:00
2	2.862	2.862	0.093	-0.038	0.133	09:02:02
3	2.033	2.033	0.066	-0.065	0.160	09:02:04
Mean:	2.311	2.311	0.075			
SD :	0.4776	0.4776	0.016			
%RSD:	20.67	20.67	20.67			

Element: Ni Seq. No.: 200 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-1.265	-1.265	-0.041	-0.173	0.172	09:02:21
2	0.0057	0.0057	0.000	-0.131	0.158	09:02:23
3	0.0287	0.0287	0.001	-0.131	0.159	09:02:25
Mean:	-0.4100	-0.4100	-0.013			
SD :	0.7401	0.7401	0.024			
%RSD:	180.5	180.5	180.50			

Element: Ni Seq. No.: 201 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0267	0.0267	0.001	-0.131	0.158	09:02:42
2	0.0281	0.0281	0.001	-0.131	0.158	09:02:44
3	0.0090	0.0090	0.000	-0.131	0.158	09:02:46
Mean:	0.0213	0.0213	0.001			
SD :	0.0106	0.0106	0.000			
%RSD:	49.96	49.96	49.96			

Element: Ni Seq. No.: 202 AS Loc.: --- Date: 11/08/2005
Sample ID: CCV

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.763	4.763	0.155	0.024	0.160	09:03:03
2	4.753	4.753	0.155	0.023	0.160	09:03:05
3	4.782	4.782	0.156	0.024	0.160	09:03:07
Mean:	4.766	4.766	0.155			
SD :	0.0145	0.0145	0.000			
%RSD:	0.30	0.30	0.30			

Element: Ni Seq. No.: 203 AS Loc.: --- Date: 11/08/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0533	0.0533	0.002	-0.130	0.157	09:03:24
2	0.0708	0.0708	0.002	-0.129	0.156	09:03:26
3	0.0429	0.0429	0.001	-0.130	0.156	09:03:29
Mean:	0.0556	0.0556	0.002			
SD :	0.0141	0.0141	0.000			
%RSD:	25.32	25.32	25.32			

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

Blanks

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

pH Vol

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	11/4				LFB				
						LRB				
1			<20°/00306		1	~~8~~355			Test Run 1	
						~~LFM DUP~~				
						~~LFM~~				
2				<2.0	2	356			Test Run 2	
3					3	~~35~~ 378				
4				<2.0	4	332			FB 0.1N HNO_3	
5				<2.0	5	288			FB HNO_3 + H_2O_2	
6		9:40 A	— on hot plate to evaporate down.							
7										
8										
9										
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05F011
QC-7		
P		
Sn		
OTHER		

0.5 mls

Used all Rinsed Bottles & added to beakers

Analyst: _____

Start Date: _____

DC

QA/QC WORK SHEET for NICKEL

Nickel Stack Tests

FLAA METHOD SOP MET-040
PE 5100 AA

Date: 11/7/2005
Analyst: LK

(Mg/L)
IDL= 0.027
MDL= 0.075
RL = 0.10
LDR = 0.10 to 8.0

1 CURRENT COPY OF METHOD AVAILABLE IN WINLAB.

2 INSTRUMENT SET-UP:

(For Specific instrument settings, see current copy of method.)

3 CALIBRATION:

Cal Curve:	Conc	Result	% Rec.	
	0.25	0.324	129.6	
	0.50	0.601	120.2	
	1.00	1.102	110.2	
	2.00	2.144	107.2	
	5.00	4.897	97.9	
Corr. Coef:	xxxxxxxxx	0.9981		(> 0.995)

4 STANDARD TRACEABILITY

QC STANDARD	Standard Name, Company, & Lot #
Calibration	CPI QC-21 41M044
CCV, CRA, AAT	CPI QC-21 41M044
QCS, LFM	CPI 41M044

5 SAMPLE ANALYTICAL RUN

MAT-RIX	SAMPLE	STD CONC	READING Mg/L	BLK	RESULT	DIL 1	DIL 2	QC RESULTS	Mg/L	REP'T mg/L	ICP	
	CCV	5.00	4.958	0.050	4.909			98				(95-105%R)
	QCS	2.00	2.125	0.050	2.076			104				(95-105%R)
	CCB		0.050		0.050			0.050				(< MDL)
	CRA	0.25	0.323	0.039	0.284			114				(70-130%R)
	CRA	0.10	0.178	0.090	0.088			88				(70-130%R)
	LRB		0.043	0.018	0.025			0.025				(< MDL)
	LFB	3.50	3.337	0.017	3.320			95				(80-120%R)
	014-1+3		-0.162	0.013	-0.175	1.0	1.0		-0.175	<0.100		
	SPK	3.5	3.418	0.104	3.314	1.0	1.0	100				(80-120%R)
	DUP		3.469	-0.014	3.483	1.0	1.0	5.0	-.059	<0.150	See p2	(<10 RPD, IF SA >
	SER DIL	3/10	1.082	0.111	0.971	1.0	1.0	2.4				(<10%DIFF)
	CCB		0.010	-0.049	0.059			0.010				(< MDL)
	CCV	1.00	0.921	-0.049	0.969			97				(90-110%R)
	014-4+6		0.241	0.017	0.224	1.0	1.0		0.224	**0.224**	✓	
	014-7+9		-0.066	-0.045	-0.021	1.0	1.0		-0.021	**<0.100**		
	014-10+12		0.398	0.018	0.380	1.0	1.0		0.380	**0.380**		
	014-13+15		0.772	-0.058	0.829	1.0	1.0		0.829	**0.829**		
	014-16+18		0.247	0.038	0.210	1.0	1.0		0.210	**0.210**		
	014-19+21		3.526	-0.054	3.580	1.0	1.0		3.580	**3.580**		
	CCB		-0.054	0.029	-0.083			-0.054				(< MDL)
	CCV	0.50	0.465	0.029	0.436			87	See explanation below			(90-110%R)
	014-22+24		0.133	-0.072	0.205	1.0	1.0		0.205	**0.205**		
	014-25+27		-0.168	0.028	-0.196	1.0	1.0		-0.196	**<0.100**	-.045	<0.100
	014-28+30		0.272	-0.040	0.312	1.0	1.0		0.312	**0.312**		
	014-31+33		-0.168	0.011	-0.180	1.0	1.0		-0.180	**<0.100**	-.301	<0.300
	014-34+36		-0.057	-0.037	-0.019	1.0	1.0		-0.019	**<0.100**		
	014-37+39		-0.124	-0.077	-0.046	1.0	1.0		-0.046	**<0.100**		
	CCB		0.015	-0.062	0.077			0.015				(< MDL)
	CCV	2.00	2.004	-0.062	2.066			103				(90-110%R)
	LRB		0.080	0.026	0.054			0.054				(< MDL)
	LFB	2.00	1.876	0.026	1.850			93				(80-120%R)
	014-2		0.018	0.012	0.007	1.0	1.0		0.007	**<0.100**	.055	<0.100
	SPK	4.0	4.178	-0.047	4.225	1.0	1.0	105				(80-120%R)
	DUP		4.239	-0.085	4.324	1.0	1.0	2.3				(<10 RPD, IF SA >
	SER DIL	5/10	2.494	-0.074	2.568	1.0	1.0	21.6				(<10%DIFF)
	CCB		-0.075	-0.074	-0.001			-0.075				(< MDL)
	CCV	5.00	4.693	0.033	4.660			93				(90-110%R)

The CCV at 0.50 ppm was low for indicated limits which is from SM 3111B. The previous CCV and following CCV were within limits. The limits for EPA is +/- 20%, for which this would be acceptable. In view of these observations, the CCV being out of limits appears to be an isolated occurrance and does not reflect on the degradation of the curve. Therefore, no corrective action was taken at this point.

RERUN:

014-1+3	
014-25+27	
014-31+33	
014-2	Due to failed SER
306-1	Due to failed SER (see p2)

See 11/8

QA/QC WORK SHEET for NICKEL p2

FLAA METHOD SOP MET-040
PE 5100 AA

Date: 11/7/2005
Analyst: LK

(Mg/L)
IDL= 0.027
MDL= 0.075
RL = 0.10
LDR = 0.10 to 8.0

1 CURRENT COPY OF METHOD AVAILABLE IN WINLAB.
INSTRUMENT SET-UP:
(For Specific instrument settings, see current copy of method.)

5 SAMPLE ANALYTICAL RUN

MAT-RIX	SAMPLE	STD CONC	READING Mg/L	BLK	RESULT	DIL 1	DIL 2	QC RESULTS	Mg/L	REP'T mg/L	ICP	
	014-5		0.061	-0.048	0.109	1.0	1.0		0.109	**0.109**		
	014-8		0.028	0.046	-0.018	1.0	1.0		-0.018	**<0.100**		
	014-11		0.183	-0.062	0.245	1.0	1.0		0.245	**0.245**		
	014-14		0.349	-0.029	0.378	1.0	1.0		0.378	**0.378**		
	014-17		0.185	-0.044	0.229	1.0	1.0		0.229	**0.229**		
	014-20		-0.034	0.019	-0.053	1.0	1.0		-0.053	**<0.100**		
	CCB		0.045	0.019	0.026			0.045				(< MDL)
	CCV	0.25	0.198	-0.050	0.248			99				(90-110%R)
	014-23		0.136	-0.036	0.172	1.0	1.0		0.172	**0.172**		
	014-26		0.119	0.039	0.080	1.0	1.0		0.080	**<0.100**		
	014-29		0.069	-0.031	0.100	1.0	1.0		0.100	**0.100**		
	014-32		0.127	-0.044	0.170	1.0	1.0		0.170	**0.170**		
	014-35		0.069	-0.014	0.083	1.0	1.0		0.083	**<0.100**		
	014-38		0.143	0.015	0.127	1.0	1.0		0.127	**0.127**		
	CCB		-0.041	0.051	-0.092			-0.041				(< MDL)
	CCV	1.00	1.006	0.051	0.955			95				(90-110%R)
	LRB		-0.018	-0.013	-0.004			-0.004				(< MDL)
	LFB	1.00	0.894	0.061	0.832			83				(80-120%R)
	306-1		28.900	-0.096	28.996	1.0	1.0		28.996			
	SPK	1.5	27.710	0.146	27.565	1.0	1.0	88				(80-120%R)
	DUP		27.870	0.008	27.862	1.0	1.0	1.1				(<10 RPD, IF SA >
	SER DIL	5/10	16.270	-0.008	16.278	1.0	1.0	18.1				(<10%DIFF)
	306-1		11.630	0.078	11.552	10.0	1.0		115.516			
	306-1		5.725	-0.030	5.755	25.0	1.0		143.875	144	159 *	
	CCB		-0.030	0.062	-0.092			-0.030				(< MDL)
	CCV	0.50	0.494	-0.022	0.515			103				(90-110%R)
	306-2		6.587	0.075	6.513	1.0	1.0		6.513	**6.51**		
	306-3		24.450	0.022	24.428	1.0	1.0		24.428			
	306-3		3.069	-0.064	3.133	25.0	1.0		78.335	**78.335**		
	306-4		-0.012	0.086	-0.098	1.0	1.0		-0.098	**<0.100**		
	306-5		0.145	-0.076	0.222	1.0	1.0		0.222	**0.222**		
	CCB		-0.076		-0.076			0.076	(So close, and last CCB, so accepted)			(< MDL)
	CCV	10.00	10.090		10.090			101				(90-110%R)

Method Name: NI
Method Description: Nickel

Element: Ni

Date: 11/07/2005
Technique: Flame
Wavelength: 232.0 nm
Lamp Current: 20
Sample Info File: Untitled

Calibration Equation: Zero Intercept: Linear
Slit Width: 0.20 nm
Energy: 64
Results Data Set:

Element: Ni Seq. No.: 1 AS Loc.: --- Date: 11/07/2005
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.139	-0.139	0.167	14:41:59
2			-0.138	-0.138	0.166	14:42:01
3			-0.138	-0.138	0.166	14:42:03
Mean:			-0.138			
SD :			0.000			
%RSD:			0.14			

Auto-zero performed.

Element: Ni Seq. No.: 2 AS Loc.: --- Date: 11/07/2005
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.001	-0.138	0.166	14:42:08
2			0.000	-0.138	0.166	14:42:10
3			0.001	-0.138	0.165	14:42:12
Mean:			0.001			
SD :			0.000			
%RSD:			39.86			

Auto-zero performed.

Element: Ni Seq. No.: 3 AS Loc.: --- Date: 11/07/2005
Sample ID: CAL STD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.011	-0.127	0.164	14:42:53
2			0.012	-0.126	0.165	14:42:55
3			0.011	-0.126	0.164	14:42:58
Mean:			0.011			
SD :			0.000			
%RSD:			2.32			

Standard number 1 applied. [0.25]
Correlation Coefficient: 1.0000 Slope: 0.0456

Element: Ni Seq. No.: 4 AS Loc.: --- Date: 11/07/2005
Sample ID: cal std 2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.019	-0.119	0.166	14:43:31
2			0.019	-0.119	0.166	14:43:33
3			0.020	-0.118	0.166	14:43:35
Mean:			0.019			
SD :			0.000			
%RSD:			1.94			

Standard number 2 applied. [0.50]
Correlation Coefficient: 0.9717 Slope: 0.0399

Element: Ni Seq. No.: 5 AS Loc.: --- Date: 11/07/2005
Sample ID: cal std 2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.021	-0.117	0.164	14:44:27
2			0.021	-0.117	0.164	14:44:29
3			0.021	-0.117	0.164	14:44:32
Mean:			0.021			
SD :			0.000			
%RSD:			0.83			

Standard number 2 applied. [0.50]
Correlation Coefficient: 0.9952 Slope: 0.0430

Element: Ni Seq. No.: 6 AS Loc.: --- Date: 11/07/2005
Sample ID: cal std 3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.040	-0.098	0.165	14:44:51
2			0.039	-0.099	0.166	14:44:53
3			0.038	-0.100	0.166	14:44:55
Mean:			0.039			
SD :			0.001			
%RSD:			2.58			

Standard number 3 applied. [1.00]
Correlation Coefficient: 0.9948 Slope: 0.0398

Element: Ni Seq. No.: 7 AS Loc.: --- Date: 11/07/2005
Sample ID: cal std 4

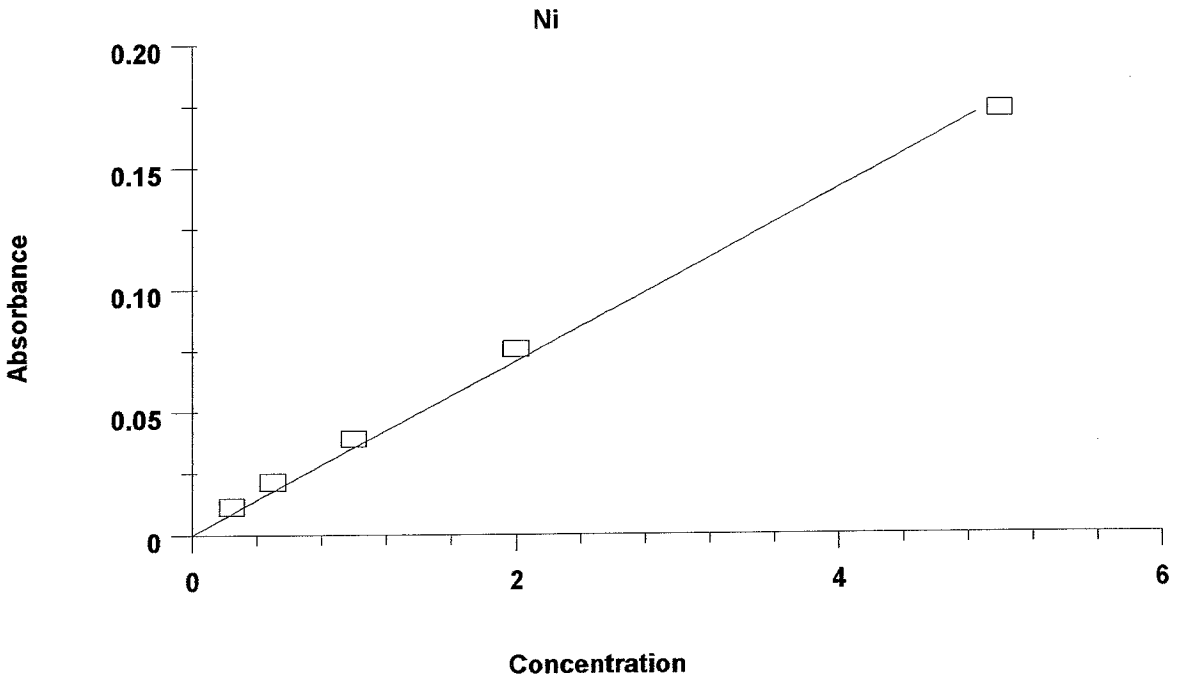
Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.075	-0.063	0.166	14:45:13
2			0.076	-0.062	0.166	14:45:15
3			0.076	-0.062	0.166	14:45:17
Mean:			0.075			
SD :			0.001			
%RSD:			0.94			

Standard number 4 applied. [2.00]
Correlation Coefficient: 0.9983 Slope: 0.0383

Element: Ni Seq. No.: 8 AS Loc.: --- Date: 11/07/2005
Sample ID: cal std 5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.171	0.033	0.167	14:45:42
2			0.173	0.036	0.168	14:45:44
3			0.173	0.035	0.168	14:45:46
Mean:			0.172			
SD :			0.001			
%RSD:			0.77			

The calibration curve may not be linear.
Standard number 5 applied. [5.00]
Correlation Coefficient: 0.9981 Slope: 0.0352



Calibration data for Ni

Standard ID	Mean Signal (Absorbance)	Entered Concentration (mg/L)	Calculated Concentration (mg/L)	Standard Deviation	%RSD
Calib Blank	0.000	----	0.000	0.0003	39.8601
CAL STD	0.011	0.25	0.3241	0.0003	2.3187
cal std 2	0.021	0.50	0.6010	0.0002	0.8347
cal std 3	0.039	1.00	1.102	0.0010	2.5761
cal std 4	0.075	2.00	2.144	0.0007	0.9419
cal std 5	0.172	5.00	4.897	0.0013	0.7710

Correlation Coefficient: 0.99808 Slope: 0.03518

Element: Ni Seq. No.: 9 AS Loc.: --- Date: 11/07/2005
Sample ID: CCV

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	5.024	5.024	0.177	0.039	0.165	14:46:00
2	4.946	4.946	0.174	0.036	0.165	14:46:02
3	4.904	4.904	0.173	0.035	0.165	14:46:04
Mean:	4.958	4.958	0.174			
SD :	0.0609	0.0609	0.002			
%RSD:	1.23	1.23	1.23			

Element: Ni Seq. No.: 10 AS Loc.: --- Date: 11/07/2005
Sample ID: QCS

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.113	2.113	0.074	-0.063	0.164	14:46:24
2	2.123	2.123	0.075	-0.063	0.164	14:46:26
3	2.140	2.140	0.075	-0.063	0.165	14:46:29
Mean:	2.125	2.125	0.075			
SD :	0.0133	0.0133	0.000			
%RSD:	0.63	0.63	0.63			

Element: Ni Seq. No.: 11 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0549	0.0549	0.002	-0.136	0.165	14:46:51
2	0.0540	0.0540	0.002	-0.136	0.164	14:46:53
3	0.0395	0.0395	0.001	-0.136	0.165	14:46:55
Mean:	0.0495	0.0495	0.002			
SD :	0.0086	0.0086	0.000			
%RSD:	17.44	17.44	17.44			

Element: Ni Seq. No.: 12 AS Loc.: --- Date: 11/07/2005
Sample ID: CCV-0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.3323	0.3323	0.012	-0.126	0.164	14:47:14
2	0.3154	0.3154	0.011	-0.127	0.165	14:47:16
3	0.3213	0.3213	0.011	-0.126	0.164	14:47:18
Mean:	0.3230	0.3230	0.011			
SD :	0.0086	0.0086	0.000			
%RSD:	2.66	2.66	2.66			

Element: Ni Seq. No.: 13 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0433	0.0433	0.002	-0.136	0.164	14:47:32
2	0.0283	0.0283	0.001	-0.137	0.165	14:47:34
3	0.0458	0.0458	0.002	-0.136	0.165	14:47:36
Mean:	0.0392	0.0392	0.001			
SD :	0.0095	0.0095	0.000			
%RSD:	24.17	24.17	24.17			

Element: Ni Seq. No.: 14 AS Loc.: --- Date: 11/07/2005
Sample ID: CRA-0.1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1648	0.1648	0.006	-0.132	0.163	14:47:58
2	0.1816	0.1816	0.006	-0.131	0.163	14:48:00
3	0.1869	0.1869	0.007	-0.131	0.162	14:48:02
Mean:	0.1778	0.1778	0.006			
SD :	0.0115	0.0115	0.000			
%RSD:	6.47	6.47	6.47			

Element: Ni Seq. No.: 15 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0821	0.0821	0.003	-0.135	0.163	14:48:14
2	0.0848	0.0848	0.003	-0.135	0.163	14:48:16
3	0.1040	0.1040	0.004	-0.134	0.163	14:48:18
Mean:	0.0903	0.0903	0.003			
SD :	0.0119	0.0119	0.000			
%RSD:	13.21	13.21	13.21			

Element: Ni Seq. No.: 16 AS Loc.: --- Date: 11/07/2005
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0477	0.0477	0.002	-0.136	0.165	14:48:37

Auto-zero performed.

Element: Ni Seq. No.: 17 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0023	-0.0023	0.000	-0.136	0.165	14:48:52
2	-0.0196	-0.0196	-0.001	-0.137	0.165	14:48:54
3	-0.0019	-0.0019	0.000	-0.136	0.165	14:48:56
Mean:	-0.0079	-0.0079	0.000			
SD :	0.0101	0.0101	0.000			
%RSD:	127.5	127.5	127.50			

Element: Ni Seq. No.: 18 AS Loc.: --- Date: 11/07/2005
Sample ID: LRB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0414	0.0414	0.001	-0.135	0.165	14:49:09
2	0.0342	0.0342	0.001	-0.135	0.166	14:49:11
3	0.0534	0.0534	0.002	-0.134	0.166	14:49:13
Mean:	0.0430	0.0430	0.002			
SD :	0.0097	0.0097	0.000			
%RSD:	22.54	22.54	22.54			

Element: Ni Seq. No.: 19 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0017	-0.0017	0.000	-0.136	0.165	14:49:32
2	0.0110	0.0110	0.000	-0.136	0.165	14:49:35
3	0.0443	0.0443	0.002	-0.135	0.163	14:49:37
Mean:	0.0179	0.0179	0.001			
SD :	0.0238	0.0238	0.001			
%RSD:	132.9	132.9	132.93			

Element: Ni Seq. No.: 20 AS Loc.: --- Date: 11/07/2005
Sample ID: LFB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	3.326	3.326	0.117	-0.019	0.166	14:49:52
2	3.343	3.343	0.118	-0.018	0.165	14:49:54
3	3.340	3.340	0.118	-0.019	0.165	14:49:56
Mean:	3.337	3.337	0.117			
SD :	0.0091	0.0091	0.000			
%RSD:	0.27	0.27	0.27			

Element: Ni Seq. No.: 21 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0154	0.0154	0.001	-0.136	0.164	14:50:16
2	0.0272	0.0272	0.001	-0.135	0.164	14:50:18
3	0.0097	0.0097	0.000	-0.136	0.164	14:50:20
Mean:	0.0174	0.0174	0.001			
SD :	0.0089	0.0089	0.000			
%RSD:	51.18	51.18	51.18			

Element: Ni Seq. No.: 22 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1686	-0.1686	-0.006	-0.142	0.188	14:50:39
2	-0.1597	-0.1597	-0.006	-0.142	0.188	14:50:41
3	-0.1589	-0.1589	-0.006	-0.142	0.188	14:50:43
Mean:	-0.1624	-0.1624	-0.006			
SD :	0.0054	0.0054	0.000			
%RSD:	3.32	3.32	3.32			

Element: Ni Seq. No.: 23 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0108	0.0108	0.000	-0.136	0.164	14:51:01
2	0.0139	0.0139	0.000	-0.136	0.164	14:51:03
3	0.0131	0.0131	0.000	-0.136	0.164	14:51:05
Mean:	0.0126	0.0126	0.000			
SD :	0.0016	0.0016	0.000			
%RSD:	12.55	12.55	12.55			

Element: Ni Seq. No.: 24 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-1+3 SPK .35 x 100 / 10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	3.407	3.407	0.120	-0.016	0.186	14:53:06
2	3.437	3.437	0.121	-0.015	0.186	14:53:08
3	3.410	3.410	0.120	-0.016	0.185	14:53:10
Mean:	3.418	3.418	0.120			
SD :	0.0166	0.0166	0.001			
%RSD:	0.48	0.48	0.48			

Element: Ni Seq. No.: 25 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1036	0.1036	0.004	-0.132	0.161	14:53:40
2	0.1021	0.1021	0.004	-0.133	0.161	14:53:42
3	0.1076	0.1076	0.004	-0.132	0.161	14:53:44
Mean:	0.1044	0.1044	0.004			
SD :	0.0028	0.0028	0.000			
%RSD:	2.73	2.73	2.73			

Element: Ni Seq. No.: 26 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-1+3 SD Contaminated glassware

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	10.35	10.35	0.364	0.228	0.190	14:54:16
Sample absorbance is greater than that of the highest standard.						
2	10.47	10.47	0.368	0.232	0.190	14:54:18
Sample absorbance is greater than that of the highest standard.						
3	10.41	10.41	0.366	0.230	0.191	14:54:21
Sample absorbance is greater than that of the highest standard.						
Mean:	10.41	10.41	0.366			
SD :	0.0629	0.0629	0.002			
%RSD:	0.60	0.60	0.60			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 27 AS Loc.: --- Date: 11/07/2005
Sample ID: SD RE-SET

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	3.471	3.471	0.122	-0.014	0.183	14:55:21
2	3.497	3.497	0.123	-0.013	0.183	14:55:23
3	3.439	3.439	0.121	-0.015	0.183	14:55:25
Mean:	3.469	3.469	0.122			
SD :	0.0287	0.0287	0.001			
%RSD:	0.83	0.83	0.83			

Element: Ni Seq. No.: 28 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0065	-0.0065	0.000	-0.136	0.164	14:55:41
2	-0.0413	-0.0413	-0.001	-0.138	0.165	14:55:43
3	0.0070	0.0070	0.000	-0.136	0.164	14:55:45
Mean:	-0.0136	-0.0136	0.000			
SD :	0.0249	0.0249	0.001			
%RSD:	183.7	183.7	183.72			

Element: Ni Seq. No.: 29 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-1+3SER

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.175	1.175	0.041	-0.095	0.171	14:57:13
2	1.021	1.021	0.036	-0.100	0.176	14:57:15
3	1.050	1.050	0.037	-0.099	0.175	14:57:17
Mean:	1.082	1.082	0.038			
SD :	0.0822	0.0822	0.003			
%RSD:	7.60	7.60	7.60			

Element: Ni Seq. No.: 30 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1131	0.1131	0.004	-0.132	0.162	14:57:56
2	0.1209	0.1209	0.004	-0.132	0.161	14:57:58
3	0.0989	0.0989	0.003	-0.133	0.162	14:58:01
Mean:	0.1110	0.1110	0.004			
SD :	0.0112	0.0112	0.000			
%RSD:	10.08	10.08	10.08			

Element: Ni Seq. No.: 31 AS Loc.: --- Date: 11/07/2005
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0797	0.0797	0.003	-0.133	0.162	14:59:25

Auto-zero performed.

Element: Ni Seq. No.: 32 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0247	0.0247	0.001	-0.132	0.162	14:59:31
2	0.0190	0.0190	0.001	-0.133	0.162	14:59:34
3	-0.0125	-0.0125	0.000	-0.134	0.162	14:59:36
Mean:	0.0104	0.0104	0.000			
SD :	0.0201	0.0201	0.001			
%RSD:	193.1	193.1	193.12			

Element: Ni Seq. No.: 33 AS Loc.: --- Date: 11/07/2005
Sample ID: CCV

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.9477	0.9477	0.033	-0.100	0.166	14:59:50
2	0.9422	0.9422	0.033	-0.100	0.167	14:59:52
3	0.8717	0.8717	0.031	-0.103	0.169	14:59:54
Mean:	0.9205	0.9205	0.032			
SD :	0.0424	0.0424	0.001			
%RSD:	4.61	4.61	4.61			

Element: Ni Seq. No.: 34 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0603	-0.0603	-0.002	-0.135	0.164	15:00:09
2	-0.0416	-0.0416	-0.001	-0.135	0.164	15:00:11
3	-0.0449	-0.0449	-0.002	-0.135	0.164	15:00:14
Mean:	-0.0489	-0.0489	-0.002			
SD :	0.0100	0.0100	0.000			
%RSD:	20.35	20.35	20.35			

Element: Ni Seq. No.: 35 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-4+6

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2426	0.2426	0.009	-0.125	0.188	15:00:36
2	0.2456	0.2456	0.009	-0.125	0.188	15:00:38
3	0.2346	0.2346	0.008	-0.125	0.188	15:00:40
Mean:	0.2409	0.2409	0.008			
SD :	0.0057	0.0057	0.000			
%RSD:	2.36	2.36	2.36			

Element: Ni Seq. No.: 36 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0070	0.0070	0.000	-0.133	0.163	15:00:55
2	0.0215	0.0215	0.001	-0.133	0.162	15:00:57
3	0.0221	0.0221	0.001	-0.133	0.163	15:00:59
Mean:	0.0169	0.0169	0.001			
SD :	0.0085	0.0085	0.000			
%RSD:	50.49	50.49	50.49			

Element: Ni Seq. No.: 37 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-7+9

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0728	-0.0728	-0.003	-0.136	0.186	15:01:17
2	-0.0462	-0.0462	-0.002	-0.135	0.186	15:01:19
3	-0.0791	-0.0791	-0.003	-0.136	0.186	15:01:21
Mean:	-0.0660	-0.0660	-0.002			
SD :	0.0175	0.0175	0.001			
%RSD:	26.44	26.44	26.44			

Element: Ni Seq. No.: 38 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0502	-0.0502	-0.002	-0.135	0.165	15:01:31
2	-0.0378	-0.0378	-0.001	-0.135	0.165	15:01:34
3	-0.0466	-0.0466	-0.002	-0.135	0.165	15:01:36
Mean:	-0.0449	-0.0449	-0.002			
SD :	0.0064	0.0064	0.000			
%RSD:	14.16	14.16	14.16			

Element: Ni Seq. No.: 39 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-10+12

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.3958	0.3958	0.014	-0.119	0.186	15:02:03
2	0.4095	0.4095	0.014	-0.119	0.185	15:02:05
3	0.3897	0.3897	0.014	-0.120	0.185	15:02:07
Mean:	0.3984	0.3984	0.014			
SD :	0.0101	0.0101	0.000			
%RSD:	2.54	2.54	2.54			

Element: Ni Seq. No.: 40 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0245	0.0245	0.001	-0.132	0.162	15:02:19
2	0.0040	0.0040	0.000	-0.133	0.162	15:02:21
3	0.0260	0.0260	0.001	-0.132	0.162	15:02:23
Mean:	0.0182	0.0182	0.001			
SD :	0.0123	0.0123	0.000			
%RSD:	67.72	67.72	67.72			

Element: Ni Seq. No.: 41 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-13+15

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.7715	0.7715	0.027	-0.106	0.189	15:02:44
2	0.7641	0.7641	0.027	-0.106	0.189	15:02:46
3	0.7791	0.7791	0.027	-0.106	0.190	15:02:48
Mean:	0.7715	0.7715	0.027			
SD :	0.0075	0.0075	0.000			
%RSD:	0.97	0.97	0.97			

Element: Ni Seq. No.: 42 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0760	-0.0760	-0.003	-0.136	0.165	15:03:02
2	-0.0504	-0.0504	-0.002	-0.135	0.165	15:03:05
3	-0.0460	-0.0460	-0.002	-0.135	0.165	15:03:07
Mean:	-0.0575	-0.0575	-0.002			
SD :	0.0162	0.0162	0.001			
%RSD:	28.23	28.23	28.23			

Element: Ni Seq. No.: 43 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-16+18

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2519	0.2519	0.009	-0.124	0.188	15:03:32
2	0.2513	0.2513	0.009	-0.124	0.188	15:03:35
3	0.2384	0.2384	0.008	-0.125	0.189	15:03:37
Mean:	0.2472	0.2472	0.009			
SD :	0.0076	0.0076	0.000			
%RSD:	3.09	3.09	3.09			

Element: Ni Seq. No.: 44 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0272	0.0272	0.001	-0.132	0.162	15:03:54
2	0.0500	0.0500	0.002	-0.132	0.162	15:03:56
3	0.0352	0.0352	0.001	-0.132	0.162	15:03:58
Mean:	0.0375	0.0375	0.001			
SD :	0.0116	0.0116	0.000			
%RSD:	30.91	30.91	30.91			

Element: Ni Seq. No.: 45 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-19+21

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	3.520	3.520	0.124	-0.009	0.190	15:04:22
2	3.569	3.569	0.126	-0.008	0.191	15:04:24
3	3.488	3.488	0.123	-0.011	0.190	15:04:27
Mean:	3.526	3.526	0.124			
SD :	0.0409	0.0409	0.001			
%RSD:	1.16	1.16	1.16			

Element: Ni Seq. No.: 46 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0612	-0.0612	-0.002	-0.135	0.164	15:04:41
2	-0.0538	-0.0538	-0.002	-0.135	0.164	15:04:43
3	-0.0454	-0.0454	-0.002	-0.135	0.164	15:04:45
Mean:	-0.0535	-0.0535	-0.002			
SD :	0.0079	0.0079	0.000			
%RSD:	14.76	14.76	14.76			

Element: Ni Seq. No.: 47 AS Loc.: --- Date: 11/07/2005
Sample ID: CCV

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.4529	0.4529	0.016	-0.117	0.164	15:05:05
2	0.4721	0.4721	0.017	-0.117	0.165	15:05:07
3	0.4709	0.4709	0.017	-0.117	0.164	15:05:09
Mean:	0.4653	0.4653	0.016			
SD :	0.0108	0.0108	0.000			
%RSD:	2.32	2.32	2.32			

Element: Ni Seq. No.: 48 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0200	0.0200	0.001	-0.133	0.161	15:05:25
2	0.0430	0.0430	0.002	-0.132	0.162	15:05:27
3	0.0241	0.0241	0.001	-0.132	0.161	15:05:29
Mean:	0.0290	0.0290	0.001			
SD :	0.0123	0.0123	0.000			
%RSD:	42.22	42.22	42.22			

Element: Ni Seq. No.: 49 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-22+24

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1449	0.1449	0.005	-0.128	0.190	15:05:45
2	0.1479	0.1479	0.005	-0.128	0.190	15:05:47
3	0.1068	0.1068	0.004	-0.130	0.191	15:05:49
Mean:	0.1332	0.1332	0.005			
SD :	0.0229	0.0229	0.001			
%RSD:	17.18	17.18	17.18			

Element: Ni Seq. No.: 50 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0688	-0.0688	-0.002	-0.136	0.165	15:06:04
2	-0.0789	-0.0789	-0.003	-0.136	0.166	15:06:07
3	-0.0688	-0.0688	-0.002	-0.136	0.165	15:06:09
Mean:	-0.0722	-0.0722	-0.003			
SD :	0.0058	0.0058	0.000			
%RSD:	8.06	8.06	8.06			

Element: Ni Seq. No.: 51 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-25+27

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1614	-0.1614	-0.006	-0.139	0.186	15:06:26
2	-0.1827	-0.1827	-0.006	-0.140	0.187	15:06:28
3	-0.1612	-0.1612	-0.006	-0.139	0.187	15:06:30
Mean:	-0.1684	-0.1684	-0.006			
SD :	0.0123	0.0123	0.000			
%RSD:	7.33	7.33	7.33			

Element: Ni Seq. No.: 52 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0308	0.0308	0.001	-0.132	0.161	15:06:47
2	0.0253	0.0253	0.001	-0.132	0.161	15:06:49
3	0.0264	0.0264	0.001	-0.132	0.162	15:06:51
Mean:	0.0275	0.0275	0.001			
SD :	0.0029	0.0029	0.000			
%RSD:	10.58	10.58	10.58			

Element: Ni Seq. No.: 53 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-28+30

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2789	0.2789	0.010	-0.123	0.189	15:07:14
2	0.2498	0.2498	0.009	-0.125	0.190	15:07:16
3	0.2873	0.2873	0.010	-0.123	0.190	15:07:18
Mean:	0.2720	0.2720	0.010			
SD :	0.0197	0.0197	0.001			
%RSD:	7.23	7.23	7.23			

Element: Ni Seq. No.: 54 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0433	-0.0433	-0.002	-0.135	0.165	15:07:35
2	-0.0335	-0.0335	-0.001	-0.134	0.165	15:07:37
3	-0.0441	-0.0441	-0.002	-0.135	0.165	15:07:39
Mean:	-0.0403	-0.0403	-0.001			
SD :	0.0059	0.0059	0.000			
%RSD:	14.74	14.74	14.74			

Element: Ni Seq. No.: 55 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-31+33

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1722	-0.1722	-0.006	-0.139	0.190	15:07:57
2	-0.1656	-0.1656	-0.006	-0.139	0.191	15:07:59
3	-0.1673	-0.1673	-0.006	-0.139	0.192	15:08:01
Mean:	-0.1684	-0.1684	-0.006			
SD :	0.0035	0.0035	0.000			
%RSD:	2.05	2.05	2.05			

Element: Ni Seq. No.: 56 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0352	-0.0352	-0.001	-0.135	0.164	15:08:14
2	0.0508	0.0508	0.002	-0.132	0.162	15:08:16
3	0.0186	0.0186	0.001	-0.133	0.161	15:08:18
Mean:	0.0114	0.0114	0.000			
SD :	0.0434	0.0434	0.002			
%RSD:	380.6	380.6	380.64			

Element: Ni Seq. No.: 57 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-34+36

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0567	-0.0567	-0.002	-0.135	0.186	15:08:33
2	-0.0580	-0.0580	-0.002	-0.135	0.186	15:08:36
3	-0.0551	-0.0551	-0.002	-0.135	0.187	15:08:38
Mean:	-0.0566	-0.0566	-0.002			
SD :	0.0014	0.0014	0.000			
%RSD:	2.52	2.52	2.52			

Element: Ni Seq. No.: 58 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0251	-0.0251	-0.001	-0.134	0.164	15:08:54
2	-0.0335	-0.0335	-0.001	-0.134	0.165	15:08:56
3	-0.0536	-0.0536	-0.002	-0.135	0.165	15:08:58
Mean:	-0.0374	-0.0374	-0.001			
SD :	0.0147	0.0147	0.001			
%RSD:	39.21	39.21	39.21			

Element: Ni Seq. No.: 59 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-37+39

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1196	-0.1196	-0.004	-0.138	0.189	15:09:13
2	-0.1373	-0.1373	-0.005	-0.138	0.189	15:09:15
3	-0.1137	-0.1137	-0.004	-0.137	0.189	15:09:17
Mean:	-0.1235	-0.1235	-0.004			
SD :	0.0123	0.0123	0.000			
%RSD:	9.93	9.93	9.93			

Element: Ni Seq. No.: 60 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0715	-0.0715	-0.003	-0.136	0.165	15:09:33
2	-0.0823	-0.0823	-0.003	-0.136	0.166	15:09:36
3	-0.0776	-0.0776	-0.003	-0.136	0.166	15:09:38
Mean:	-0.0771	-0.0771	-0.003			
SD :	0.0054	0.0054	0.000			
%RSD:	7.04	7.04	7.04			

Element: Ni Seq. No.: 61 AS Loc.: --- Date: 11/07/2005
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0217	0.0217	0.001	-0.133	0.161	15:09:50

Auto-zero performed.

Element: Ni Seq. No.: 62 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0013	-0.0013	0.000	-0.133	0.162	15:10:00
2	0.0207	0.0207	0.001	-0.132	0.162	15:10:02
3	0.0243	0.0243	0.001	-0.132	0.162	15:10:04
Mean:	0.0146	0.0146	0.001			
SD :	0.0139	0.0139	0.000			
%RSD:	95.32	95.32	95.32			

Element: Ni Seq. No.: 63 AS Loc.: --- Date: 11/07/2005
Sample ID: CCV

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.019	2.019	0.071	-0.062	0.165	15:10:18
2	2.012	2.012	0.071	-0.062	0.165	15:10:20
3	1.981	1.981	0.070	-0.063	0.166	15:10:22
Mean:	2.004	2.004	0.070			
SD :	0.0201	0.0201	0.001			
%RSD:	1.00	1.00	1.00			

Appendix E - 4

Laboratory QA/QC Data for Stack Testing Samples

Element: Ni Seq. No.: 64 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0909	-0.0909	-0.003	-0.136	0.165	15:10:33
2	-0.0401	-0.0401	-0.001	-0.134	0.165	15:10:35
3	-0.0555	-0.0555	-0.002	-0.134	0.164	15:10:37
Mean:	-0.0622	-0.0622	-0.002			
SD :	0.0260	0.0260	0.001			
%RSD:	41.86	41.86	41.86			

Element: Ni Seq. No.: 65 AS Loc.: --- Date: 11/07/2005
Sample ID: I LRB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.860	1.860	0.065	-0.067	0.168	15:11:01
2	1.878	1.878	0.066	-0.066	0.168	15:11:03
3	1.891	1.891	0.067	-0.066	0.167	15:11:05
Mean:	1.876	1.876	0.066			
SD :	0.0153	0.0153	0.001			
%RSD:	0.82	0.82	0.82			

Element: Ni Seq. No.: 66 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0137	0.0137	0.000	-0.132	0.162	15:11:18
2	0.0388	0.0388	0.001	-0.131	0.161	15:11:20
3	0.0247	0.0247	0.001	-0.132	0.162	15:11:22
Mean:	0.0257	0.0257	0.001			
SD :	0.0126	0.0126	0.000			
%RSD:	48.89	48.89	48.89			

Element: Ni Seq. No.: 67 AS Loc.: --- Date: 11/07/2005
Sample ID: I LFB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1021	0.1021	0.004	-0.129	0.165	15:11:40
2	0.0962	0.0962	0.003	-0.129	0.166	15:11:42
3	0.0405	0.0405	0.001	-0.131	0.167	15:11:45
Mean:	0.0796	0.0796	0.003			
SD :	0.0340	0.0340	0.001			
%RSD:	42.70	42.70	42.70			

Element: Ni Seq. No.: 68 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0658	-0.0658	-0.002	-0.135	0.164	15:11:59
2	-0.0394	-0.0394	-0.001	-0.134	0.164	15:12:01
3	-0.0432	-0.0432	-0.002	-0.134	0.165	15:12:03
Mean:	-0.0494	-0.0494	-0.002			
SD :	0.0143	0.0143	0.001			
%RSD:	28.90	28.90	28.90			

Element: Ni Seq. No.: 69 AS Loc.: --- Date: 11/07/2005
Sample ID: I 014-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0110	0.0110	0.000	-0.132	0.167	15:12:21
2	0.0314	0.0314	0.001	-0.131	0.167	15:12:23
3	0.0120	0.0120	0.000	-0.132	0.168	15:12:25
Mean:	0.0181	0.0181	0.001			
SD :	0.0115	0.0115	0.000			
%RSD:	63.34	63.34	63.34			

Element: Ni Seq. No.: 70 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0270	0.0270	0.001	-0.132	0.162	15:12:48
2	0.0129	0.0129	0.000	-0.132	0.162	15:12:50
3	-0.0053	-0.0053	0.000	-0.133	0.162	15:12:52
Mean:	0.0115	0.0115	0.000			
SD :	0.0162	0.0162	0.001			
%RSD:	140.5	140.5	140.50			

Element: Ni Seq. No.: 71 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-2 S Contaminated pipet

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	7.178	7.178	0.253	0.120	0.167	15:14:04
Sample absorbance is greater than that of the highest standard.						
2	7.190	7.190	0.253	0.120	0.166	15:14:06
Sample absorbance is greater than that of the highest standard.						
3	7.198	7.198	0.253	0.121	0.166	15:14:08
Sample absorbance is greater than that of the highest standard.						
Mean:	7.189	7.189	0.253			
SD :	0.0098	0.0098	0.000			
%RSD:	0.14	0.14	0.14			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 72 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-2 S

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.198	4.198	0.148	0.015	0.168	15:14:29
2	4.177	4.177	0.147	0.014	0.169	15:14:31
3	4.159	4.159	0.146	0.014	0.169	15:14:33
Mean:	4.178	4.178	0.147			
SD :	0.0196	0.0196	0.001			
%RSD:	0.47	0.47	0.47			

Element: Ni Seq. No.: 73 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0373	-0.0373	-0.001	-0.134	0.164	15:15:00
2	-0.0555	-0.0555	-0.002	-0.134	0.164	15:15:02
3	-0.0489	-0.0489	-0.002	-0.134	0.164	15:15:05
Mean:	-0.0472	-0.0472	-0.002			
SD :	0.0092	0.0092	0.000			
%RSD:	19.56	19.56	19.56			

Element: Ni Seq. No.: 74 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-2 SD CCB1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0888	-0.0888	-0.003	-0.136	0.165	15:15:13
2	-0.0080	-0.0080	0.000	-0.133	0.163	15:15:16
3	0.0017	0.0017	0.000	-0.132	0.161	15:15:18
Mean:	-0.0317	-0.0317	-0.001			
SD :	0.0497	0.0497	0.002			
%RSD:	156.8	156.8	156.81			

Element: Ni Seq. No.: 75 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-2 SD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.240	4.240	0.149	0.017	0.165	15:15:33
2	4.225	4.225	0.149	0.016	0.165	15:15:35
3	4.251	4.251	0.150	0.017	0.165	15:15:37
Mean:	4.239	4.239	0.149			
SD :	0.0129	0.0129	0.000			
%RSD:	0.30	0.30	0.30			

Element: Ni Seq. No.: 76 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1029	-0.1029	-0.004	-0.136	0.165	15:16:38
2	-0.0865	-0.0865	-0.003	-0.136	0.165	15:16:40
3	-0.0652	-0.0652	-0.002	-0.135	0.165	15:16:43
Mean:	-0.0849	-0.0849	-0.003			
SD :	0.0189	0.0189	0.001			
%RSD:	22.24	22.24	22.24			

Element: Ni Seq. No.: 77 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-2 SER

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.493	2.493	0.088	-0.045	0.163	15:17:00
2	2.469	2.469	0.087	-0.046	0.163	15:17:02
3	2.521	2.521	0.089	-0.044	0.164	15:17:04
Mean:	2.494	2.494	0.088			
SD :	0.0256	0.0256	0.001			
%RSD:	1.03	1.03	1.03			

Element: Ni Seq. No.: 78 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0857	-0.0857	-0.003	-0.136	0.165	15:17:55
2	-0.0614	-0.0614	-0.002	-0.135	0.166	15:17:57
3	-0.0745	-0.0745	-0.003	-0.135	0.165	15:17:59
Mean:	-0.0739	-0.0739	-0.003			
SD :	0.0122	0.0122	0.000			
%RSD:	16.48	16.48	16.48			

Element: Ni Seq. No.: 79 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0797	-0.0797	-0.003	-0.135	0.165	15:18:46
2	-0.0751	-0.0751	-0.003	-0.135	0.166	15:18:48
3	-0.0700	-0.0700	-0.002	-0.135	0.165	15:18:50
Mean:	-0.0749	-0.0749	-0.003			
SD :	0.0049	0.0049	0.000			
%RSD:	6.48	6.48	6.48			

Element: Ni Seq. No.: 80 AS Loc.: --- Date: 11/07/2005
Sample ID: CCV

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.699	4.699	0.165	0.033	0.167	15:19:13
2	4.681	4.681	0.165	0.032	0.168	15:19:15
3	4.700	4.700	0.165	0.033	0.168	15:19:17
Mean:	4.693	4.693	0.165			
SD :	0.0103	0.0103	0.000			
%RSD:	0.22	0.22	0.22			

Element: Ni Seq. No.: 81 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0392	0.0392	0.001	-0.131	0.161	15:19:32
2	0.0342	0.0342	0.001	-0.131	0.161	15:19:34
3	0.0255	0.0255	0.001	-0.132	0.161	15:19:36
Mean:	0.0330	0.0330	0.001			
SD :	0.0069	0.0069	0.000			
%RSD:	21.03	21.03	21.03			

Element: Ni Seq. No.: 82 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0892	0.0892	0.003	-0.129	0.164	15:20:02
2	0.0570	0.0570	0.002	-0.131	0.165	15:20:04
3	0.0376	0.0376	0.001	-0.131	0.165	15:20:06
Mean:	0.0613	0.0613	0.002			
SD :	0.0260	0.0260	0.001			
%RSD:	42.46	42.46	42.46			

Element: Ni Seq. No.: 83 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0635	-0.0635	-0.002	-0.135	0.165	15:20:16
2	-0.0458	-0.0458	-0.002	-0.134	0.165	15:20:18
3	-0.0338	-0.0338	-0.001	-0.134	0.165	15:20:20
Mean:	-0.0477	-0.0477	-0.002			
SD :	0.0149	0.0149	0.001			
%RSD:	31.27	31.27	31.27			

Element: Ni Seq. No.: 84 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-8

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0468	0.0468	0.002	-0.131	0.166	15:20:41
2	0.0270	0.0270	0.001	-0.132	0.166	15:20:43
3	0.0108	0.0108	0.000	-0.132	0.166	15:20:45
Mean:	0.0282	0.0282	0.001			
SD :	0.0180	0.0180	0.001			
%RSD:	63.82	63.82	63.82			

Element: Ni Seq. No.: 85 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0565	0.0565	0.002	-0.131	0.161	15:20:58
2	0.0451	0.0451	0.002	-0.131	0.161	15:21:01
3	0.0365	0.0365	0.001	-0.131	0.161	15:21:03
Mean:	0.0460	0.0460	0.002			
SD :	0.0100	0.0100	0.000			
%RSD:	21.77	21.77	21.77			

Element: Ni Seq. No.: 86 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-11

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1795	0.1795	0.006	-0.126	0.164	15:21:19
2	0.1981	0.1981	0.007	-0.126	0.166	15:21:22
3	0.1713	0.1713	0.006	-0.127	0.166	15:21:24
Mean:	0.1830	0.1830	0.006			
SD :	0.0137	0.0137	0.000			
%RSD:	7.51	7.51	7.51			

Element: Ni Seq. No.: 87 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0734	-0.0734	-0.003	-0.135	0.165	15:21:35
2	-0.0470	-0.0470	-0.002	-0.134	0.165	15:21:37
3	-0.0650	-0.0650	-0.002	-0.135	0.165	15:21:39
Mean:	-0.0618	-0.0618	-0.002			
SD :	0.0135	0.0135	0.000			
%RSD:	21.86	21.86	21.86			

Element: Ni Seq. No.: 88 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-14

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.3378	0.3378	0.012	-0.121	0.166	15:21:53
2	0.3445	0.3445	0.012	-0.120	0.167	15:21:55
3	0.3650	0.3650	0.013	-0.120	0.167	15:21:57
Mean:	0.3491	0.3491	0.012			
SD :	0.0142	0.0142	0.000			
%RSD:	4.06	4.06	4.06			

Element: Ni Seq. No.: 89 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0776	-0.0776	-0.003	-0.135	0.165	15:22:11
2	-0.0563	-0.0563	-0.002	-0.135	0.165	15:22:13
3	0.0473	0.0473	0.002	-0.131	0.162	15:22:15
Mean:	-0.0288	-0.0288	-0.001			
SD :	0.0668	0.0668	0.002			
%RSD:	231.7	231.7	231.74			

Element: Ni Seq. No.: 90 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-17

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1774	0.1774	0.006	-0.126	0.164	15:22:33
2	0.2074	0.2074	0.007	-0.125	0.164	15:22:35
3	0.1690	0.1690	0.006	-0.127	0.164	15:22:37
Mean:	0.1846	0.1846	0.006			
SD :	0.0202	0.0202	0.001			
%RSD:	10.94	10.94	10.94			

Element: Ni Seq. No.: 91 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0156	-0.0156	-0.001	-0.133	0.164	15:22:50
2	-0.0352	-0.0352	-0.001	-0.134	0.164	15:22:53
3	-0.0812	-0.0812	-0.003	-0.135	0.165	15:22:55
Mean:	-0.0440	-0.0440	-0.002			
SD :	0.0337	0.0337	0.001			
%RSD:	76.56	76.56	76.56			

Element: Ni Seq. No.: 92 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-20

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0354	-0.0354	-0.001	-0.134	0.165	15:23:09
2	-0.0403	-0.0403	-0.001	-0.134	0.166	15:23:11
3	-0.0264	-0.0264	-0.001	-0.133	0.166	15:23:14
Mean:	-0.0340	-0.0340	-0.001			
SD :	0.0070	0.0070	0.000			
%RSD:	20.67	20.67	20.67			

Element: Ni Seq. No.: 93 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0544	-0.0544	-0.002	-0.134	0.165	15:23:31
2	0.0494	0.0494	0.002	-0.131	0.162	15:23:34
3	0.0612	0.0612	0.002	-0.130	0.162	15:23:36
Mean:	0.0188	0.0188	0.001			
SD :	0.0636	0.0636	0.002			
%RSD:	339.1	339.1	339.09			

Element: Ni Seq. No.: 94 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0502	0.0502	0.002	-0.131	0.162	15:23:46
2	0.0401	0.0401	0.001	-0.131	0.162	15:23:48
3	0.0439	0.0439	0.002	-0.131	0.162	15:23:50
Mean:	0.0447	0.0447	0.002			
SD :	0.0051	0.0051	0.000			
%RSD:	11.37	11.37	11.37			

Element: Ni Seq. No.: 95 AS Loc.: --- Date: 11/07/2005
Sample ID: CCV

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1977	0.1977	0.007	-0.126	0.165	15:24:23
2	0.2030	0.2030	0.007	-0.125	0.165	15:24:26
3	0.1928	0.1928	0.007	-0.126	0.165	15:24:28
Mean:	0.1978	0.1978	0.007			
SD :	0.0051	0.0051	0.000			
%RSD:	2.60	2.60	2.60			

Element: Ni Seq. No.: 96 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0768	-0.0768	-0.003	-0.135	0.165	15:24:44
2	-0.0709	-0.0709	-0.002	-0.135	0.165	15:24:46
3	-0.0030	-0.0030	0.000	-0.133	0.163	15:24:48
Mean:	-0.0503	-0.0503	-0.002			
SD :	0.0410	0.0410	0.001			
%RSD:	81.57	81.57	81.57			

Element: Ni Seq. No.: 97 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-23

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1498	0.1498	0.005	-0.127	0.164	15:25:11
2	0.1394	0.1394	0.005	-0.128	0.165	15:25:13
3	0.1192	0.1192	0.004	-0.128	0.165	15:25:15
Mean:	0.1361	0.1361	0.005			
SD :	0.0156	0.0156	0.001			
%RSD:	11.43	11.43	11.43			

Element: Ni Seq. No.: 98 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0489	-0.0489	-0.002	-0.134	0.164	15:25:41
2	-0.0384	-0.0384	-0.001	-0.134	0.164	15:25:43
3	-0.0211	-0.0211	-0.001	-0.133	0.164	15:25:46
Mean:	-0.0361	-0.0361	-0.001			
SD :	0.0140	0.0140	0.000			
%RSD:	38.81	38.81	38.81			

Element: Ni Seq. No.: 99 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-26

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1247	0.1247	0.004	-0.128	0.164	15:26:31
2	0.1160	0.1160	0.004	-0.128	0.165	15:26:33
3	0.1160	0.1160	0.004	-0.128	0.164	15:26:35
Mean:	0.1189	0.1189	0.004			
SD :	0.0050	0.0050	0.000			
%RSD:	4.25	4.25	4.25			

Element: Ni Seq. No.: 100 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0388	0.0388	0.001	-0.131	0.162	15:27:51
2	0.0382	0.0382	0.001	-0.131	0.162	15:27:53
3	0.0407	0.0407	0.001	-0.131	0.162	15:27:55
Mean:	0.0392	0.0392	0.001			
SD :	0.0013	0.0013	0.000			
%RSD:	3.30	3.30	3.30			

Element: Ni Seq. No.: 101 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-29

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0734	0.0734	0.003	-0.130	0.167	15:28:14
2	0.0475	0.0475	0.002	-0.131	0.168	15:28:16
3	0.0856	0.0856	0.003	-0.130	0.168	15:28:18
Mean:	0.0688	0.0688	0.002			
SD :	0.0194	0.0194	0.001			
%RSD:	28.21	28.21	28.21			

Element: Ni Seq. No.: 102 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0407	-0.0407	-0.001	-0.134	0.164	15:28:35
2	-0.0106	-0.0106	0.000	-0.133	0.164	15:28:37
3	-0.0424	-0.0424	-0.001	-0.134	0.164	15:28:39
Mean:	-0.0312	-0.0312	-0.001			
SD :	0.0179	0.0179	0.001			
%RSD:	57.16	57.16	57.16			

Element: Ni Seq. No.: 103 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-32

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1148	0.1148	0.004	-0.129	0.165	15:29:26
2	0.1278	0.1278	0.004	-0.128	0.165	15:29:29
3	0.1373	0.1373	0.005	-0.128	0.165	15:29:31
Mean:	0.1266	0.1266	0.004			
SD :	0.0113	0.0113	0.000			
%RSD:	8.89	8.89	8.89			

Element: Ni Seq. No.: 104 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0719	-0.0719	-0.003	-0.135	0.165	15:29:45
2	-0.0338	-0.0338	-0.001	-0.134	0.165	15:29:47
3	-0.0251	-0.0251	-0.001	-0.133	0.165	15:29:49
Mean:	-0.0436	-0.0436	-0.002			
SD :	0.0249	0.0249	0.001			
%RSD:	57.03	57.03	57.03			

Element: Ni Seq. No.: 105 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-35

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0622	0.0622	0.002	-0.130	0.166	15:30:08
2	0.0694	0.0694	0.002	-0.130	0.166	15:30:10
3	0.0749	0.0749	0.003	-0.130	0.166	15:30:12
Mean:	0.0688	0.0688	0.002			
SD :	0.0064	0.0064	0.000			
%RSD:	9.28	9.28	9.28			

Element: Ni Seq. No.: 106 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0548	-0.0548	-0.002	-0.134	0.165	15:30:23
2	-0.0452	-0.0452	-0.002	-0.134	0.166	15:30:25
3	0.0568	0.0568	0.002	-0.131	0.162	15:30:28
Mean:	-0.0144	-0.0144	-0.001			
SD :	0.0619	0.0619	0.002			
%RSD:	430.1	430.1	430.09			

Element: Ni Seq. No.: 107 AS Loc.: --- Date: 11/07/2005
Sample ID: 014-38

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1420	0.1420	0.005	-0.128	0.163	15:30:43
2	0.1298	0.1298	0.005	-0.128	0.163	15:30:45
3	0.1555	0.1555	0.005	-0.127	0.163	15:30:47
Mean:	0.1425	0.1425	0.005			
SD :	0.0128	0.0128	0.000			
%RSD:	9.01	9.01	9.01			

Element: Ni Seq. No.: 108 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0059	0.0059	0.000	-0.132	0.162	15:30:59
2	0.0234	0.0234	0.001	-0.132	0.162	15:31:02
3	0.0160	0.0160	0.001	-0.132	0.163	15:31:04
Mean:	0.0151	0.0151	0.001			
SD :	0.0088	0.0088	0.000			
%RSD:	58.21	58.21	58.21			

Element: Ni Seq. No.: 109 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0183	-0.0183	-0.001	-0.133	0.164	15:31:16
2	-0.0532	-0.0532	-0.002	-0.134	0.165	15:31:18
3	-0.0515	-0.0515	-0.002	-0.134	0.165	15:31:20
Mean:	-0.0410	-0.0410	-0.001			
SD :	0.0197	0.0197	0.001			
%RSD:	48.10	48.10	48.10			

Element: Ni Seq. No.: 110 AS Loc.: --- Date: 11/07/2005
Sample ID: CCV

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.9857	0.9857	0.035	-0.098	0.166	15:31:52
2	0.9861	0.9861	0.035	-0.098	0.166	15:31:54
3	1.046	1.046	0.037	-0.096	0.163	15:31:56
Mean:	1.006	1.006	0.035			
SD :	0.0346	0.0346	0.001			
%RSD:	3.44	3.44	3.44			

Element: Ni Seq. No.: 111 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0574	0.0574	0.002	-0.131	0.161	15:32:11
2	0.0521	0.0521	0.002	-0.131	0.161	15:32:14
3	0.0441	0.0441	0.002	-0.131	0.162	15:32:16
Mean:	0.0512	0.0512	0.002			
SD :	0.0067	0.0067	0.000			
%RSD:	13.08	13.08	13.08			

Element: Ni Seq. No.: 112 AS Loc.: --- Date: 11/07/2005
Sample ID: B-LRB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0027	0.0027	0.000	-0.132	0.165	15:32:30
2	-0.0093	-0.0093	0.000	-0.133	0.166	15:32:32
3	-0.0462	-0.0462	-0.002	-0.134	0.166	15:32:34
Mean:	-0.0176	-0.0176	-0.001			
SD :	0.0255	0.0255	0.001			
%RSD:	144.5	144.5	144.55			

Element: Ni Seq. No.: 113 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0175	-0.0175	-0.001	-0.133	0.164	15:32:55
2	-0.0048	-0.0048	0.000	-0.133	0.164	15:32:57
3	-0.0173	-0.0173	-0.001	-0.133	0.164	15:32:59
Mean:	-0.0132	-0.0132	0.000			
SD :	0.0073	0.0073	0.000			
%RSD:	55.38	55.38	55.38			

Element: Ni Seq. No.: 114 AS Loc.: --- Date: 11/07/2005
Sample ID: B-LFB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.9021	0.9021	0.032	-0.101	0.167	15:33:11
2	0.9004	0.9004	0.032	-0.101	0.167	15:33:13
3	0.8781	0.8781	0.031	-0.102	0.168	15:33:15
Mean:	0.8935	0.8935	0.031			
SD :	0.0134	0.0134	0.000			
%RSD:	1.50	1.50	1.50			

Element: Ni Seq. No.: 115 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0549	0.0549	0.002	-0.131	0.161	15:33:32
2	0.0614	0.0614	0.002	-0.130	0.161	15:33:34
3	0.0671	0.0671	0.002	-0.130	0.161	15:33:37
Mean:	0.0612	0.0612	0.002			
SD :	0.0061	0.0061	0.000			
%RSD:	9.95	9.95	9.95			

Element: Ni Seq. No.: 116 AS Loc.: --- Date: 11/07/2005
Sample ID: 306-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	28.91	28.91	1.017	0.885	0.182	15:34:13
Sample absorbance is greater than that of the highest standard.						
2	28.88	28.88	1.016	0.884	0.182	15:34:15
Sample absorbance is greater than that of the highest standard.						
3	28.93	28.93	1.018	0.885	0.182	15:34:17
Sample absorbance is greater than that of the highest standard.						
Mean:	28.91	28.91	1.017			
SD :	0.0244	0.0244	0.001			
%RSD:	0.08	0.08	0.08			

Sample absorbance is greater than that of the highest standard.

Element: Ni Seq. No.: 117 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0257	-0.0257	-0.001	-0.133	0.166	15:35:25
2	-0.1198	-0.1198	-0.004	-0.137	0.168	15:35:27
3	-0.1413	-0.1413	-0.005	-0.138	0.170	15:35:30
Mean:	-0.0956	-0.0956	-0.003			
SD :	0.0615	0.0615	0.002			
%RSD:	64.33	64.33	64.33			

Element: Ni Seq. No.: 118 AS Loc.: --- Date: 11/07/2005
Sample ID: 306-1 S

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	27.67	27.67	0.974	0.841	0.181	15:35:45
Sample absorbance is greater than that of the highest standard.						
2	27.74	27.74	0.976	0.843	0.181	15:35:48
Sample absorbance is greater than that of the highest standard.						
3	27.70	27.70	0.975	0.842	0.181	15:35:50
Sample absorbance is greater than that of the highest standard.						
Mean:	27.71	27.71	0.975			
SD :	0.0319	0.0319	0.001			
%RSD:	0.12	0.12	0.12			

Sample absorbance is greater than that of the highest standard.

Element: Ni Seq. No.: 119 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1546	0.1546	0.005	-0.127	0.162	15:36:12
2	0.1441	0.1441	0.005	-0.127	0.162	15:36:14
3	0.1378	0.1378	0.005	-0.128	0.162	15:36:16
Mean:	0.1455	0.1455	0.005			
SD :	0.0085	0.0085	0.000			
%RSD:	5.81	5.81	5.81			

Element: Ni Seq. No.: 120 AS Loc.: --- Date: 11/07/2005
Sample ID: 306-1 SD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	27.91	27.91	0.982	0.849	0.179	15:36:32
Sample absorbance is greater than that of the highest standard.						
2	27.82	27.82	0.979	0.846	0.179	15:36:34
Sample absorbance is greater than that of the highest standard.						
3	27.88	27.88	0.981	0.848	0.180	15:36:36
Sample absorbance is greater than that of the highest standard.						
Mean:	27.87	27.87	0.980			
SD :	0.0433	0.0433	0.002			
%RSD:	0.16	0.16	0.16			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 121 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0025	0.0025	0.000	-0.132	0.166	15:37:17
2	0.0061	0.0061	0.000	-0.132	0.166	15:37:19
3	0.0167	0.0167	0.001	-0.132	0.166	15:37:21
Mean:	0.0084	0.0084	0.000			
SD :	0.0074	0.0074	0.000			
%RSD:	87.95	87.95	87.95			

Element: Ni Seq. No.: 122 AS Loc.: --- Date: 11/07/2005
Sample ID: 306-1 SER

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	16.24	16.24	0.571	0.439	0.170	15:37:59
Sample absorbance is greater than that of the highest standard.						
2	16.28	16.28	0.573	0.440	0.171	15:38:01
Sample absorbance is greater than that of the highest standard.						
3	16.29	16.29	0.573	0.440	0.171	15:38:03
Sample absorbance is greater than that of the highest standard.						
Mean:	16.27	16.27	0.572			
SD :	0.0272	0.0272	0.001			
%RSD:	0.17	0.17	0.17			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 123 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0215	0.0215	0.001	-0.132	0.165	15:38:22
2	-0.0321	-0.0321	-0.001	-0.134	0.165	15:38:24
3	-0.0131	-0.0131	0.000	-0.133	0.165	15:38:26
Mean:	-0.0079	-0.0079	0.000			
SD :	0.0272	0.0272	0.001			
%RSD:	343.1	343.1	343.14			

Element: Ni Seq. No.: 124 AS Loc.: --- Date: 11/07/2005
Sample ID: 306-1 X10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	11.65	11.65	0.410	0.277	0.166	15:39:05
Sample absorbance is greater than that of the highest standard.						
2	11.61	11.61	0.408	0.276	0.167	15:39:08
Sample absorbance is greater than that of the highest standard.						
3	11.63	11.63	0.409	0.277	0.168	15:39:10
Sample absorbance is greater than that of the highest standard.						
Mean:	11.63	11.63	0.409			
SD :	0.0227	0.0227	0.001			
%RSD:	0.20	0.20	0.20			

Sample absorbance is greater than that of the highest standard.

Element: Ni Seq. No.: 125 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0823	0.0823	0.003	-0.130	0.161	15:40:11
2	0.0703	0.0703	0.002	-0.130	0.161	15:40:13
3	0.0825	0.0825	0.003	-0.130	0.161	15:40:15
Mean:	0.0784	0.0784	0.003			
SD :	0.0070	0.0070	0.000			
%RSD:	8.89	8.89	8.89			

Element: Ni Seq. No.: 126 AS Loc.: --- Date: 11/07/2005
Sample ID: 306-1 X25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	5.726	5.726	0.201	0.069	0.166	15:40:37
Sample absorbance is greater than that of the highest standard.						
2	5.741	5.741	0.202	0.069	0.166	15:40:39
Sample absorbance is greater than that of the highest standard.						
3	5.708	5.708	0.201	0.068	0.167	15:40:41
Sample absorbance is greater than that of the highest standard.						
Mean:	5.725	5.725	0.201			
SD :	0.0165	0.0165	0.001			
%RSD:	0.29	0.29	0.29			

Sample absorbance is greater than that of the highest standard.

Element: Ni Seq. No.: 127 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0570	-0.0570	-0.002	-0.135	0.165	15:40:55
2	-0.0257	-0.0257	-0.001	-0.133	0.164	15:40:57
3	-0.0072	-0.0072	0.000	-0.133	0.164	15:40:59
Mean:	-0.0300	-0.0300	-0.001			
SD :	0.0252	0.0252	0.001			
%RSD:	84.01	84.01	84.01			

Element: Ni Seq. No.: 128 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0635	0.0635	0.002	-0.130	0.161	15:41:39
2	0.0660	0.0660	0.002	-0.130	0.161	15:41:41
3	0.0576	0.0576	0.002	-0.131	0.161	15:41:43
Mean:	0.0624	0.0624	0.002			
SD :	0.0043	0.0043	0.000			
%RSD:	6.89	6.89	6.89			

Element: Ni Seq. No.: 129 AS Loc.: --- Date: 11/07/2005
Sample ID: CCV

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5086	0.5086	0.018	-0.115	0.163	15:42:01
2	0.4838	0.4838	0.017	-0.116	0.164	15:42:03
3	0.4892	0.4892	0.017	-0.115	0.164	15:42:05
Mean:	0.4939	0.4939	0.017			
SD :	0.0130	0.0130	0.000			
%RSD:	2.63	2.63	2.63			

Element: Ni Seq. No.: 130 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0150	-0.0150	-0.001	-0.133	0.164	15:42:22
2	-0.0110	-0.0110	0.000	-0.133	0.163	15:42:24
3	-0.0386	-0.0386	-0.001	-0.134	0.164	15:42:26
Mean:	-0.0215	-0.0215	-0.001			
SD :	0.0149	0.0149	0.001			
%RSD:	69.14	69.14	69.14			

Element: Ni Seq. No.: 131 AS Loc.: --- Date: 11/07/2005
Sample ID: 306-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	6.557	6.557	0.231	0.098	0.171	15:42:39
Sample absorbance is greater than that of the highest standard.						
2	6.589	6.589	0.232	0.099	0.171	15:42:42
Sample absorbance is greater than that of the highest standard.						
3	6.615	6.615	0.233	0.100	0.171	15:42:44
Sample absorbance is greater than that of the highest standard.						
Mean:	6.587	6.587	0.232			
SD :	0.0288	0.0288	0.001			
%RSD:	0.44	0.44	0.44			

Sample absorbance is greater than that of the highest standard.

Element: Ni Seq. No.: 132 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0793	0.0793	0.003	-0.130	0.161	15:42:56
2	0.0751	0.0751	0.003	-0.130	0.162	15:42:58
3	0.0692	0.0692	0.002	-0.130	0.161	15:43:00
Mean:	0.0745	0.0745	0.003			
SD :	0.0051	0.0051	0.000			
%RSD:	6.79	6.79	6.79			

Element: Ni Seq. No.: 133 AS Loc.: --- Date: 11/07/2005
Sample ID: 306-3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	24.44	24.44	0.860	0.727	0.176	15:43:18
Sample absorbance is greater than that of the highest standard.						
2	24.47	24.47	0.861	0.728	0.176	15:43:20
Sample absorbance is greater than that of the highest standard.						
3	24.45	24.45	0.860	0.728	0.176	15:43:22
Sample absorbance is greater than that of the highest standard.						
Mean:	24.45	24.45	0.860			
SD :	0.0189	0.0189	0.001			
%RSD:	0.08	0.08	0.08			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 134 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0384	0.0384	0.001	-0.131	0.164	15:43:43
2	0.0240	0.0240	0.001	-0.132	0.164	15:43:45
3	0.0046	0.0046	0.000	-0.132	0.165	15:43:48
Mean:	0.0223	0.0223	0.001			
SD :	0.0170	0.0170	0.001			
%RSD:	76.12	76.12	76.12			

Element: Ni Seq. No.: 135 AS Loc.: --- Date: 11/07/2005
Sample ID: 306-3 X25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	3.083	3.083	0.108	-0.024	0.164	15:44:42
2	3.065	3.065	0.108	-0.025	0.165	15:44:45
3	3.059	3.059	0.108	-0.025	0.165	15:44:47
Mean:	3.069	3.069	0.108			
SD :	0.0124	0.0124	0.000			
%RSD:	0.40	0.40	0.40			

Element: Ni Seq. No.: 136 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1093	-0.1093	-0.004	-0.136	0.168	15:44:59
2	-0.0679	-0.0679	-0.002	-0.135	0.166	15:45:01
3	-0.0162	-0.0162	-0.001	-0.133	0.165	15:45:04
Mean:	-0.0644	-0.0644	-0.002			
SD :	0.0467	0.0467	0.002			
%RSD:	72.42	72.42	72.42			

Element: Ni Seq. No.: 137 AS Loc.: --- Date: 11/07/2005
Sample ID: 306-4

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0127	0.0127	0.000	-0.132	0.167	15:45:18
2	-0.0183	-0.0183	-0.001	-0.133	0.167	15:45:21
3	-0.0289	-0.0289	-0.001	-0.134	0.168	15:45:23
Mean:	-0.0115	-0.0115	0.000			
SD :	0.0216	0.0216	0.001			
%RSD:	188.6	188.6	188.57			

Element: Ni Seq. No.: 138 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0835	0.0835	0.003	-0.130	0.161	15:45:38
2	0.0926	0.0926	0.003	-0.129	0.161	15:45:40
3	0.0821	0.0821	0.003	-0.130	0.161	15:45:42
Mean:	0.0861	0.0861	0.003			
SD :	0.0057	0.0057	0.000			
%RSD:	6.61	6.61	6.61			

Element: Ni Seq. No.: 139 AS Loc.: --- Date: 11/07/2005
Sample ID: 306-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1306	0.1306	0.005	-0.128	0.164	15:45:57
2	0.1487	0.1487	0.005	-0.127	0.165	15:46:00
3	0.1567	0.1567	0.006	-0.127	0.165	15:46:02
Mean:	0.1453	0.1453	0.005			
SD :	0.0133	0.0133	0.000			
%RSD:	9.18	9.18	9.18			

Element: Ni Seq. No.: 140 AS Loc.: --- Date: 11/07/2005
Sample ID: CCB

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0432	-0.0432	-0.002	-0.134	0.165	15:46:12
2	-0.0378	-0.0378	-0.001	-0.134	0.165	15:46:14
3	-0.1481	-0.1481	-0.005	-0.138	0.169	15:46:16
Mean:	-0.0764	-0.0764	-0.003			
SD :	0.0622	0.0622	0.002			
%RSD:	81.43	81.43	81.43			

Element: Ni Seq. No.: 141 AS Loc.: --- Date: 11/07/2005
Sample ID: CCV

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	10.04	10.04	0.353	0.221	0.169	15:46:38
Sample absorbance is greater than that of the highest standard.						
2	10.00	10.00	0.352	0.219	0.169	15:46:40
Sample absorbance is greater than that of the highest standard.						
3	10.22	10.22	0.360	0.227	0.170	15:46:42
Sample absorbance is greater than that of the highest standard.						
Mean:	10.09	10.09	0.355			
SD :	0.1181	0.1181	0.004			
%RSD:	1.17	1.17	1.17			
Sample absorbance is greater than that of the highest standard.						

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

filters

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	10/20		100014		LFB			6 mls HNO_3 4 mls HF	0
						LRB				2
1					3		1 filter →		mixed with P.R.	3
					6	LFM DUP				4
					9	LFM				5
2					12					6
3					15					7
4					18					8
5					21					9
6					24					10
7										11
8					27					12
9					30					13
10					33					14
11					36					15
12					39					16

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05F011
QC-7		
P		
Sn		
OTHER		

Analyst: _____

Start Date: _____

METALS PREP FORM

METHOD 29 sec 8.3.3

Set # [ ]

Prep Method: (check only one per page)

100014

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

Probe Rinse

* Add to Filter

100ml

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS mls
- [X] OTHER:_____

ORIG VOL

	Set Init'l	Set date	Set time	~~Lab#~~	Smp #	~~Company~~	~~Aliquot (mls)~~	~~Final (mls)~~		Mcr Vsl #	
	LK/JC	10/17		AH paper titrates:		LFB 3mls 100 ppm			on hot plate	10A.	2
						LRB			off @	4:30	0
1				<2.0	1	97.5			on: 10/18 @	7:30	3
12				<2.0	4	~~LFM DUP~~ 100			done 2pm		4
13				<2.0	7	~~LFM~~ 99					5
2				<2.0	10	97					6
3				<2.0	13	101					7
4				<2.0	16	100					8
5				<2.0	19	98					9
6				<2.0	22	96					10
7				<2.0	25	100					12
8				<2.0	28	100					13
9				<2.0	31	98					14
10				<2.0	34	97					15
11				<2.0	37	99					16
12											

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	0ST-01
QC-7		
P		
Sn		
OTHER		

Analyst: LK + JC.

Start Date: _____

METALS PREP FORM

Set # [ ]

100014

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

Impingers 1-3

EVAP down 10/20 - 21.

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

Vol 10/24

	Set Init'l	Set date	Set time	Lab #	Smp #	~~Company~~	Aliquot (mls)	Final (mls)	10 mls 3% H_2O_2	Mcr Vsl #
	LK	10/24				LFB		50	10 mls 50% HNO_3 MICROWAVE	0*
		10/25		RIT		LRB		↓	Pour into Beaker ~~Hot plate~~ dilute ~ 50 mls Cook till hot 5-10 min	2
1				<2.0	2	296 (300)				3
12				<2.0	5	305 ~~LFM DUP~~ (307)				4
13				<2.0	8	311 ~~LFM~~ (312)				5
2				<2.0	11	334				6
3				<2.0	14	315 (317)				7
4				<2.0	17	320 (319)				8
5				<2.0	20	313 (315)				9*
6				<2.0	23	301 (305)				10
7				<2.0	26	301 (304)				16
8				<2.0	29	297 (302)				12
9				<2.0	32	299 (309)				13
10				<2.0	35	303 (307)				14
11				<2.0	38	298 (303)		↓		15
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05F011
QC-7		
P		
Sn		
OTHER		

* may have mixed up.

Analyst: _____

Start Date: _____

PROJECT # 2005110203: METHOD 29 FOR NICKEL

1	2	3	4	5	6	7	8	9	10	11	12
SA #	SAMPLE DESCRPTION	RUN ID	PH	Sample Fraction (SF = SF_A)	EVAP. TO	REAGENTS FOR DIG.	MICRO-Dig. BY	Analytical Fraction (AF = AF_A)	NI mg/L (C_{a1} or C_{a2})	MG NI IN INITIAL SAMPLE	TOTAL MG PER RUN
2	impinger	Cond. 14: TEST #1	< 2.0	313	20	HNO3 + H2O2	8.3.4.2	50	0.135	0.007	0.033
3	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.265	0.027	
1	probe rinse		< 2.0	92.0	20	HF + HNO3	8.3.1.2				
5	impinger	Cond. 14: TEST #2	< 2.0	315	20	HNO3 + H2O2	8.3.4.2	50	0.101	0.005	0.037
6	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.319	0.032	
4	probe rinse		< 2.0	94.0	20	HF + HNO3	8.3.1.2				
8	impinger	Cond. 14: TEST #3	< 2.0	312	20	HNO3 + H2O2	8.3.4.2	50	0.111	0.006	0.031
9	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.256	0.026	
7	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
11	impinger	BLANK	< 2.0	298	20	HNO3 + H2O2	8.3.4.2	50	0.080	0.004	0.020
12	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.159	0.016	
10	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
14	impinger	Cond. 7: TEST #1	< 2.0	296	20	HNO3 + H2O2	8.3.4.2	50	0.101	0.005	0.248
15	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	2.434	0.243	
13	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
17	impinger	Cond. 7: TEST #2	< 2.0	296	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.280
18	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	2.763	0.276	
16	probe rinse		< 2.0	98.0	20	HF + HNO3	8.3.1.2				
20	impinger	Cond. 7: TEST #3	< 2.0	297	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.620
21	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	6.164	0.616	
19	probe rinse		< 2.0	96.0	20	HF + HNO3	8.3.1.2				
23	impinger	BLANK	< 2.0	299	20	HNO3 + H2O2	8.3.4.2	50	0.084	0.004	0.023
24	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.183	0.018	
22	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
26	impinger	Cond. 24: TEST #1	< 2.0	298	20	HNO3 + H2O2	8.3.4.2	50	0.095	0.005	0.152
27	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	1.472	0.147	
25	probe rinse		< 2.0	99.0	20	HF + HNO3	8.3.1.2				
29	impinger	Cond. 24: TEST #2	< 2.0	300	20	HNO3 + H2O2	8.3.4.2	50	0.084	0.004	0.232
30	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	2.277	0.228	
28	probe rinse		< 2.0	100.0	20	HF + HNO3	8.3.1.2				
32	impinger	Cond. 24: RUN #3	< 2.0	295	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.216
33	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	2.123	0.212	
31	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
	impinger	MDL		300	20	HNO3 + H2O2	8.3.4.2	50	0.075	0.004	0.011
	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.075	0.008	
	probe rinse			100.0	20	HF + HNO3	8.3.1.2				

10 Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. Readings that read less than the MDL were qualified with "<", which may or may not carry over to the final result.

11 **mg Ni** = "Rdg" in mg/L **X** Analytical Fraction (mls) **X** "INITIAL SAMPLE VOL" in mls / "SF 2A" in mls **X** 1 L / 1000 mls
Initial sample volume is "Sample Fraction", as **all sample was used.** (There were no "splits")
So, "INITIAL SAMPLE VOL" in mls / "SF 2A" in mls = 1 (per Eq 29-2, & -3)

12 According to RUN ID, the filter+probe rinse were added to impinger results: as "mg of Nickel".

(8)

PROJECT # 2005120032: METHOD 306A FOR NICKEL

1	2	3	4	5	6	7	8
SA #	SAMPLE DESCRPTION	PH	Sample Fraction	REAGENTS FOR DIG.	Analytical Fraction	NI mg/L	TOTAL MG NI (OR IN INITIAL SAMPLE)
1	12/01/2005 - CONDITION #26 - RUN #1	<2.0	397.0	HNO3	50.0	1.324	0.066
2	12/01/2005 - CONDITION #26 - RUN #2	<2.0	395.0	HNO3	50.0	2.388	0.119
3	12/01/2005 - CONDITION #26 - RUN #3	<2.0	388.0	HNO3	50.0	2.139	0.107
4	12/01/2005 - BLANK	<2.0	360.0	HNO3	50.0	0.101	0.005
*	MDL	<2.0		HNO3	50.0	0.075	0.004

Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations.
The final DL shall use the actual MDL, so that these affected samples should result as "< DL"

#8 Is the amount of NI in the 50 ml aliquot, or the 355 ml original sample, whichever you prefer, because they are the MG value will not change. (The volumes have been negated in the calculation.)

QA/QC WORK SHEET for NICKEL

FLAA METHOD SOP MET-040
5100 AA

Date: 2/1/2006
Analyst: LK

(Mg/L)
IDL= 0.027
MDL= 0.075
RL = 0.10
LDR = 0.10 to 8.0

1 CURRENT COPY OF METHOD AVAILABLE IN WINLAB.
2 INSTRUMENT SET-UP:
(For Specific instrument settings, see current copy of method.)

3 CALIBRATION:

Cal Curve:	Conc	Abs	Result	% Rec.	
	0.25	0.012	0.315	126.0	
	0.50	0.022	0.592	118.4	
	1.00	0.041	1.111	111.1	
	2.00	0.079	2.121	106.1	
	5.00	0.182	4.908	98.2	
Corr. Coef:	xxxxxxxxx		0.9984		(> 0.995)

4 STANDARD TRACEABILITY

QC STANDARD	Standard Name, Company, & Lot #
Calibration	CPI QC-21 Lot # 05H062
CCV, CRA, AAT	CPI QC-21 Lot # 05H062
QCS, LFM	CPI QC-19 Lot # 05FO11

5 SAMPLE ANALYTICAL RUN

MAT-RIX	SAMPLE	STD CONC	READING Mg/L	BLK	RESULT	DIL 1	DIL 2	QC RESULTS	Mg/L	REP'T mg/L	~~DSR~~	
	CCV	5.00	4.934		4.934			99				(95-105%R)
	QCS	2.00	2.134		2.134			107				(95-105%R)
	CCV	10.00	8.959		8.959			90				
	CCB		0.000		0.000			0.000				(< MDL)
	CRA	0.05	0.095	0.000	0.095			189				(70-130%R)
	CRA	0.10	0.141	0.019	0.122			122				(70-130%R)
	LRB		0.096	0.003	0.093			0.093				(< MDL)
	LFB	1.00	1.086	0.024	1.062			106				(80-120%R)
M29	*038-1		1.356	0.032	1.324	1.0	1.0		1.324	**1.324**	1.355	
	SPK	1.0	2.237	0.025	2.212	1.0	1.0	89				(80-120%R)
	DUP	1.0	2.168	0.033	2.135	1.0	1.0	3.5				(<10 RPD, IF SA > 20X MDL)
	SER DIL	2/10	0.509	0.044	0.465	1.0	1.0	5.1				(<10%DIFF)
	CCB		0.001	0.011	-0.010			-0.010				(< MDL)
	CCV	1.00	0.984	0.001	0.983			98				(90-110%R)
M29	038-2		2.387	-0.001	2.388	1.0	1.0		2.388	**2.388**	2.431	
M29	038-3		2.150	0.011	2.139	1.0	1.0		2.139	**2.139**	2.223	
M29	038-4		0.122	0.021	0.101	1.0	1.0		0.101	**0.101**	0.114	
	LRB		0.114	0.024	0.090			0.090			0.074	(< MDL)
	LFB	1.00	1.121	0.015	1.106			111			1.113	(80-120%R)
	CCB		0.023	0.036	-0.013			-0.013				(< MDL)
	CCV	0.50	0.573	0.023	0.551			110				(90-110%R)
M29	*203-1+3		0.301	0.035	0.265	1.0	1.0		0.265	**0.265**	0.315	
	SPK	1.0	1.320	-0.019	1.339	1.0	1.0	107				(80-120%R)
	DUP	1.0	1.343	-0.011	1.354	1.0	1.0	1.1				(<10 RPD, IF SA > 20X MDL)
	SER DIL	2/10	0.298	0.012	0.285	1.0	1.0	6.6				(<10%DIFF)
M29	203-4+6		0.330	0.010	0.319	1.0	1.0		0.319	**0.319**		
M29	203-7+9		0.255	-0.001	0.256	1.0	1.0		0.256	**0.256**		
	CCB		0.014	-0.021	0.035			0.035				(< MDL)
	CCV	0.25	0.263	0.014	0.249			100				(90-110%R)
M29	203-10+12		0.144	-0.015	0.159	1.0	1.0		0.159	**0.159**		
M29	203-13+15		2.438	0.004	2.434	1.0	1.0		2.434	**2.434**	1.124	
M29	203-16+18		2.755	-0.008	2.763	1.0	1.0		2.763	**2.763**		
M29	203-10+12 DUP		0.152	-0.003	0.155	1.0	1.0	2.7	0.155	**0.155**		
M29	203-19+21		6.148	-0.016	6.164	1.0	1.0		6.164	**6.164**		
	203-22+24		2.117	-0.006	2.123	1.0	1.0		2.123	**2.123**	2.171	2/2
	CCB		-0.039	-0.006	-0.033			-0.033				(< MDL)
	CCV	2.00	2.010	-0.039	2.049			102				(90-110%R)
M29	203-25+27		1.467	-0.005	1.472	1.0	1.0		1.472	**1.472**		
M29	203-28+30		2.295	0.018	2.277	1.0	1.0		2.277	**2.277**		

QA/QC WORK SHEET for NICKEL P2

FLAA METHOD SOP MET-040
5100 AA

Date: 2/1/2006
Analyst: LK

5 SAMPLE ANALYTICAL RUN

MAT-RIX	SAMPLE	STD CONC	READING Mg/L	BLK	RESULT	DIL 1	DIL 2	QC RESULTS	Mg/L	REP'T mg/L	ISR	
M29	203-31+33		0.219	0.035	0.183	1.0	1.0		0.183	**0.183**	0.166	
	LRB		0.112	0.035	0.077			0.077			0.074	(< MDL)
	LFB	1.00	1.084	0.022	1.062			106			1.12	(80-120%R)
	CCB		0.024	0.010	0.014			0.014				(< MDL)
	CCV	0.50	0.542	0.024	0.518			104				(90-110%R)
M29	*203-2		0.153	0.018	0.135	1.0	1.0		0.135	**0.135**	0.105	
	SPK	1.0	1.119	0.025	1.094	1.0	1.0	96				(80-120%R)
	DUP	1.0	1.094	0.035	1.059	1.0	1.0	3.3				(<10 RPD, IF SA > 20X MDL)
	SER DIL	2/10	0.281	-0.004	0.285	1.0	1.0	30.4				(<10%DIFF)
M29	203-5		0.133	0.032	0.101	1.0	1.0		0.101	**0.101**		
M29	203-8		0.128	0.017	0.111	1.0	1.0		0.111	**0.111**		
	CCB		0.019	0.035	-0.016			-0.016				(< MDL)
	CCV	0.25	0.281	0.019	0.262			105				(90-110%R)
M29	203-11		0.118	0.039	0.080	1.0	1.0		0.080	**0.080**	.074	
M29	203-14		0.122	0.021	0.101	1.0	1.0		0.101	**0.101**		
M29	203-17		0.073	0.007	0.067	1.0	1.0		0.067	**0.074**		
M29	203-20		0.069	0.000	0.069	1.0	1.0		0.069	**0.074**		
	CCB		0.004	-0.004	0.009			0.009				(< MDL)
	CCV	0.50	0.490	0.004	0.485			97				(90-110%R)
M29	203-23		0.069	-0.015	0.084	1.0	1.0		0.084	**0.084**	.076 x1/2	
	203-26		0.093	-0.002	0.095	1.0	1.0		0.095	**0.095**		
	DUP		0.100	-0.011	0.112			16.3				
M29	203-29		0.083	-0.001	0.084	1.0	1.0		0.084	**0.084**		
M29	203-32		0.071	0.004	0.066	1.0	1.0		0.066	**0.074**	0.086	
	CCB		0.003	0.010	-0.007			-0.007				(< MDL)
	CCV	1.00	0.940	0.003	0.937			94				(90-110%R)

Method Name: NI
Method Description: Nickel

Element: Ni

Date: 02/01/2006
Technique: Flame
Wavelength: 232.0 nm
Lamp Current: 20
Sample Info File: Untitled

Calibration Equation: Zero Intercept: Linear
Slit Width: 0.20 nm
Energy: 71
Results Data Set:

Element: Ni Seq. No.: 115 AS Loc.: --- Date: 02/01/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.000	0.097	0.006	15:02:30
2			0.000	0.097	0.006	15:02:32
3			0.000	0.098	0.006	15:02:34
Mean:			0.000			
SD :			0.000			
%RSD:			232.33			

Auto-zero performed.

Element: Ni Seq. No.: 116 AS Loc.: --- Date: 02/01/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.001	0.096	0.007	15:02:39
2			0.000	0.098	0.006	15:02:41
3			0.000	0.098	0.006	15:02:43
Mean:			0.000			
SD :			0.001			
%RSD:			347.18			

Auto-zero performed.

Element: Ni Seq. No.: 117 AS Loc.: --- Date: 02/01/2006
Sample ID: CAL STD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.012	0.109	0.005	15:03:16
2			0.012	0.109	0.005	15:03:18
3			0.012	0.109	0.005	15:03:20
Mean:			0.012			
SD :			0.000			
%RSD:			1.65			

Standard number 1 applied. [0.25]
Correlation Coefficient: 0.9991 Slope: 0.0358

Element: Ni Seq. No.: 118 AS Loc.: --- Date: 02/01/2006
Sample ID: cal std 2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.022	0.119	0.005	15:03:35
2			0.023	0.120	0.004	15:03:37
3			0.022	0.119	0.005	15:03:39
Mean:			0.022			
SD :			0.000			
%RSD:			2.16			

Standard number 2 applied. [0.50]
Correlation Coefficient: 0.9987 Slope: 0.0359

Element: Ni Seq. No.: 119 AS Loc.: --- Date: 02/01/2006
Sample ID: cal std 3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.041	0.138	0.006	15:04:04
2			0.042	0.139	0.005	15:04:06
3			0.041	0.139	0.005	15:04:08
Mean:			0.041			
SD :			0.001			
%RSD:			1.44			

Standard number 3 applied. [1.00]
Correlation Coefficient: 0.9982 Slope: 0.0359

Element: Ni Seq. No.: 120 AS Loc.: --- Date: 02/01/2006
Sample ID: cal std 4

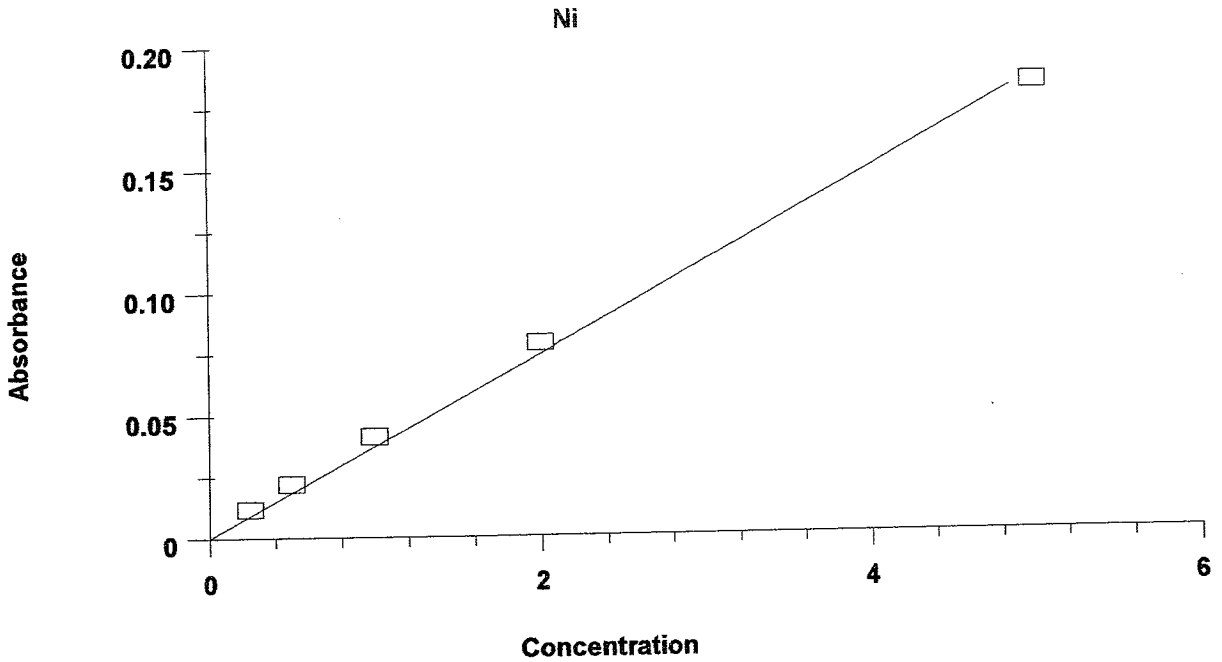
Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.079	0.176	0.005	15:04:33
2			0.078	0.175	0.006	15:04:35
3			0.079	0.177	0.005	15:04:37
Mean:			0.079			
SD :			0.001			
%RSD:			1.09			

Standard number 4 applied. [2.00]
Correlation Coefficient: 0.9973 Slope: 0.0362

Element: Ni Seq. No.: 121 AS Loc.: --- Date: 02/01/2006
Sample ID: cal std 5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.182	0.279	0.005	15:04:56
2			0.182	0.279	0.004	15:04:59
3			0.183	0.280	0.005	15:05:01
Mean:			0.182			
SD :			0.001			
%RSD:			0.41			

The calibration curve may not be linear.
Standard number 5 applied. [5.00]
Correlation Coefficient: 0.9984 Slope: 0.0371



Calibration data for Ni

Standard ID	Mean Signal (Absorbance)	Entered Concentration (mg/L)	Calculated Concentration (mg/L)	Standard Deviation	%RSD
Calib Blank	0.000	----	0.000	0.0009	347.1791
CAL STD	0.012	0.25	0.3151	0.0002	1.6548
cal std 2	0.022	0.50	0.5922	0.0005	2.1610
cal std 3	0.041	1.00	1.111	0.0006	1.4366
cal std 4	0.079	2.00	2.121	0.0009	1.0851
cal std 5	0.182	5.00	4.908	0.0007	0.4110

Correlation Coefficient: 0.99840 Slope: 0.03712

Element: Ni Seq. No.: 122 AS Loc.: --- Date: 02/01/2006
Sample ID: ccv-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.920	4.920	0.183	0.280	0.006	15:05:13
2	4.914	4.914	0.182	0.280	0.006	15:05:15
3	4.968	4.968	0.184	0.282	0.005	15:05:18
Mean:	4.934	4.934	0.183			
SD :	0.0296	0.0296	0.001			
%RSD:	0.60	0.60	0.60			

Element: Ni Seq. No.: 123 AS Loc.: --- Date: 02/01/2006
Sample ID: qcs-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.148	2.148	0.080	0.177	0.006	15:05:44
2	2.118	2.118	0.079	0.176	0.005	15:05:46
3	2.137	2.137	0.079	0.177	0.005	15:05:48
Mean:	2.134	2.134	0.079			
SD :	0.0154	0.0154	0.001			
%RSD:	0.72	0.72	0.72			

Element: Ni Seq. No.: 124 AS Loc.: --- Date: 02/01/2006
Sample ID: std-10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	8.988	8.988	0.334	0.431	0.006	15:06:19
Sample absorbance is greater than that of the highest standard.						
2	8.885	8.885	0.330	0.427	0.006	15:06:21
Sample absorbance is greater than that of the highest standard.						
3	9.003	9.003	0.334	0.431	0.005	15:06:23
Sample absorbance is greater than that of the highest standard.						
Mean:	8.959	8.959	0.333			
SD :	0.0641	0.0641	0.002			
%RSD:	0.72	0.72	0.72			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 125 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0065	-0.0065	0.000	0.097	0.006	15:09:53
2	0.0023	0.0023	0.000	0.097	0.006	15:09:55
3	0.0043	0.0043	0.000	0.097	0.006	15:09:57
Mean:	0.0001	0.0001	0.000			
SD :	0.0058	0.0058	0.000			
%RSD:	9583	9583	9582.80			

Element: Ni Seq. No.: 126 AS Loc.: --- Date: 02/01/2006
Sample ID: cra-0.05

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0991	0.0991	0.004	0.101	0.005	15:10:19
2	0.0852	0.0852	0.003	0.100	0.006	15:10:21
3	0.0998	0.0998	0.004	0.101	0.005	15:10:23
Mean:	0.0947	0.0947	0.004			
SD :	0.0082	0.0082	0.000			
%RSD:	8.69	8.69	8.69			

Element: Ni Seq. No.: 127 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0187	0.0187	0.001	0.098	0.006	15:10:39
2	0.0294	0.0294	0.001	0.098	0.005	15:10:42
3	0.0086	0.0086	0.000	0.098	0.006	15:10:44
Mean:	0.0189	0.0189	0.001			
SD :	0.0104	0.0104	0.000			
%RSD:	54.77	54.77	54.77			

Element: Ni Seq. No.: 128 AS Loc.: --- Date: 02/01/2006
Sample ID: cra-0.1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1378	0.1378	0.005	0.102	0.006	15:11:04
2	0.1557	0.1557	0.006	0.103	0.005	15:11:06
3	0.1283	0.1283	0.005	0.102	0.006	15:11:08
Mean:	0.1406	0.1406	0.005			
SD :	0.0139	0.0139	0.001			
%RSD:	9.89	9.89	9.89			

Element: Ni Seq. No.: 129 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0418	0.0418	0.002	0.099	0.005	15:11:21
2	0.0314	0.0314	0.001	0.098	0.005	15:11:23
3	0.0124	0.0124	0.000	0.098	0.006	15:11:25
Mean:	0.0285	0.0285	0.001			
SD :	0.0149	0.0149	0.001			
%RSD:	52.18	52.18	52.18			

Element: Ni Seq. No.: 130 AS Loc.: --- Date: 02/01/2006
Sample ID: cra-0.1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1277	0.1277	0.005	0.102	0.006	15:11:59
2	0.1313	0.1313	0.005	0.102	0.006	15:12:01
3	0.1104	0.1104	0.004	0.101	0.006	15:12:03
Mean:	0.1232	0.1232	0.005			
SD :	0.0112	0.0112	0.000			
%RSD:	9.07	9.07	9.07			

Element: Ni Seq. No.: 131 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0068	0.0068	0.000	0.097	0.006	15:12:19
2	0.0050	0.0050	0.000	0.097	0.006	15:12:21
3	-0.0031	-0.0031	0.000	0.097	0.006	15:12:24
Mean:	0.0029	0.0029	0.000			
SD :	0.0053	0.0053	0.000			
%RSD:	179.4	179.4	179.37			

Element: Ni Seq. No.: 132 AS Loc.: --- Date: 02/01/2006
Sample ID: lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1121	0.1121	0.004	0.101	0.005	15:12:40
2	0.1043	0.1043	0.004	0.101	0.005	15:12:42
3	0.0726	0.0726	0.003	0.100	0.006	15:12:45
Mean:	0.0963	0.0963	0.004			
SD :	0.0209	0.0209	0.001			
%RSD:	21.70	21.70	21.70			

Element: Ni Seq. No.: 133 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0236	0.0236	0.001	0.098	0.006	15:12:59
2	0.0335	0.0335	0.001	0.098	0.006	15:13:01
3	0.0150	0.0150	0.001	0.098	0.006	15:13:03
Mean:	0.0240	0.0240	0.001			
SD :	0.0093	0.0093	0.000			
%RSD:	38.65	38.65	38.65			

Element: Ni Seq. No.: 134 AS Loc.: --- Date: 02/01/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.110	1.110	0.041	0.138	0.005	15:13:27
2	1.082	1.082	0.040	0.137	0.005	15:13:29
3	1.065	1.065	0.040	0.137	0.006	15:13:31
Mean:	1.086	1.086	0.040			
SD :	0.0227	0.0227	0.001			
%RSD:	2.09	2.09	2.09			

Element: Ni Seq. No.: 135 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0294	0.0294	0.001	0.098	0.006	15:13:43
2	0.0375	0.0375	0.001	0.099	0.005	15:13:45
3	0.0290	0.0290	0.001	0.098	0.006	15:13:47
Mean:	0.0320	0.0320	0.001			
SD :	0.0048	0.0048	0.000			
%RSD:	14.99	14.99	14.99			

Element: Ni Seq. No.: 136 AS Loc.: --- Date: 02/01/2006
Sample ID: *038-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.353	1.353	0.050	0.147	0.005	15:14:06
2	1.355	1.355	0.050	0.148	0.005	15:14:09
3	1.361	1.361	0.051	0.148	0.005	15:14:11
Mean:	1.356	1.356	0.050			
SD :	0.0042	0.0042	0.000			
%RSD:	0.31	0.31	0.31			

Element: Ni Seq. No.: 137 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0155	0.0155	0.001	0.098	0.006	15:14:23
2	0.0348	0.0348	0.001	0.099	0.005	15:14:26
3	0.0254	0.0254	0.001	0.098	0.005	15:14:28
Mean:	0.0252	0.0252	0.001			
SD :	0.0096	0.0096	0.000			
%RSD:	38.22	38.22	38.22			

Element: Ni Seq. No.: 138 AS Loc.: --- Date: 02/01/2006
Sample ID: s038-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.234	2.234	0.083	0.180	0.005	15:14:50
2	2.194	2.194	0.081	0.179	0.006	15:14:52
3	2.237	2.237	0.083	0.180	0.005	15:14:54
Mean:	2.222	2.222	0.082			
SD :	0.0238	0.0238	0.001			
%RSD:	1.07	1.07	1.07			

Element: Ni Seq. No.: 139 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0481	0.0481	0.002	0.099	0.005	15:15:08
2	0.0263	0.0263	0.001	0.098	0.005	15:15:10
3	0.0234	0.0234	0.001	0.098	0.005	15:15:12
Mean:	0.0326	0.0326	0.001			
SD :	0.0135	0.0135	0.001			
%RSD:	41.38	41.38	41.38			

Element: Ni Seq. No.: 140 AS Loc.: --- Date: 02/01/2006
Sample ID: sd038-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.149	2.149	0.080	0.177	0.005	15:15:37
2	2.170	2.170	0.081	0.178	0.005	15:15:39
3	2.185	2.185	0.081	0.178	0.005	15:15:41
Mean:	2.168	2.168	0.080			
SD :	0.0183	0.0183	0.001			
%RSD:	0.84	0.84	0.84			

Element: Ni Seq. No.: 141 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0452	0.0452	0.002	0.099	0.005	15:16:01
2	0.0465	0.0465	0.002	0.099	0.005	15:16:03
3	0.0396	0.0396	0.001	0.099	0.005	15:16:05
Mean:	0.0438	0.0438	0.002			
SD :	0.0036	0.0036	0.000			
%RSD:	8.32	8.32	8.32			

Element: Ni Seq. No.: 142 AS Loc.: --- Date: 02/01/2006
Sample ID: ser038-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5142	0.5142	0.019	0.116	0.005	15:16:33
2	0.5086	0.5086	0.019	0.116	0.005	15:16:35
3	0.5290	0.5290	0.020	0.117	0.005	15:16:38
Mean:	0.5173	0.5173	0.019			
SD :	0.0105	0.0105	0.000			
%RSD:	2.03	2.03	2.03			

Element: Ni Seq. No.: 143 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0339	0.0339	0.001	0.098	0.005	15:17:03
2	0.0202	0.0202	0.001	0.098	0.005	15:17:05
3	-0.0227	-0.0227	-0.001	0.096	0.007	15:17:07
Mean:	0.0105	0.0105	0.000			
SD :	0.0295	0.0295	0.001			
%RSD:	282.4	282.4	282.44			

Element: Ni Seq. No.: 144 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0025	-0.0025	0.000	0.097	0.007	15:17:21
2	0.0141	0.0141	0.001	0.098	0.006	15:17:23
3	-0.0097	-0.0097	0.000	0.097	0.007	15:17:25
Mean:	0.0006	0.0006	0.000			
SD :	0.0122	0.0122	0.000			
%RSD:	2031	2031	2030.57			

Element: Ni Seq. No.: 145 AS Loc.: --- Date: 02/01/2006
Sample ID: ccv-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.113	1.113	0.041	0.139	0.006	15:17:50
2	1.109	1.109	0.041	0.138	0.005	15:17:52
3	1.089	1.089	0.040	0.138	0.006	15:17:54
Mean:	1.104	1.104	0.041			
SD :	0.0129	0.0129	0.000			
%RSD:	1.17	1.17	1.17			

Element: Ni Seq. No.: 146 AS Loc.: --- Date: 02/01/2006
Sample ID: ccv-1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.9836	0.9836	0.037	0.134	0.006	15:18:19
2	0.9625	0.9625	0.036	0.133	0.006	15:18:21
3	1.004	1.004	0.037	0.135	0.005	15:18:23
Mean:	0.9835	0.9835	0.037			
SD :	0.0209	0.0209	0.001			
%RSD:	2.13	2.13	2.13			

Element: Ni Seq. No.: 147 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0002	0.0002	0.000	0.097	0.006	15:18:45
2	-0.0004	-0.0004	0.000	0.097	0.006	15:18:47
3	-0.0027	-0.0027	0.000	0.097	0.006	15:18:49
Mean:	-0.0010	-0.0010	0.000			
SD :	0.0015	0.0015	0.000			
%RSD:	159.5	159.5	159.47			

Element: Ni Seq. No.: 148 AS Loc.: --- Date: 02/01/2006
Sample ID: 038-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.404	2.404	0.089	0.186	0.005	15:19:11
2	2.397	2.397	0.089	0.186	0.005	15:19:14
3	2.360	2.360	0.088	0.185	0.006	15:19:16
Mean:	2.387	2.387	0.089			
SD :	0.0239	0.0239	0.001			
%RSD:	1.00	1.00	1.00			

Element: Ni Seq. No.: 149 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0045	-0.0045	0.000	0.097	0.006	15:19:42
2	0.0196	0.0196	0.001	0.098	0.006	15:19:44
3	0.0186	0.0186	0.001	0.098	0.006	15:19:46
Mean:	0.0112	0.0112	0.000			
SD :	0.0136	0.0136	0.001			
%RSD:	121.4	121.4	121.43			

Element: Ni Seq. No.: 150 AS Loc.: --- Date: 02/01/2006
Sample ID: 038-3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.161	2.161	0.080	0.177	0.005	15:20:03
2	2.145	2.145	0.080	0.177	0.005	15:20:05
3	2.144	2.144	0.080	0.177	0.006	15:20:07
Mean:	2.150	2.150	0.080			
SD :	0.0098	0.0098	0.000			
%RSD:	0.46	0.46	0.46			

Element: Ni Seq. No.: 151 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0243	0.0243	0.001	0.098	0.005	15:20:21
2	0.0160	0.0160	0.001	0.098	0.006	15:20:24
3	0.0213	0.0213	0.001	0.098	0.005	15:20:26
Mean:	0.0205	0.0205	0.001			
SD :	0.0042	0.0042	0.000			
%RSD:	20.40	20.40	20.40			

Element: Ni Seq. No.: 152 AS Loc.: --- Date: 02/01/2006
Sample ID: 038-4

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1126	0.1126	0.004	0.101	0.005	15:20:40
2	0.1211	0.1211	0.004	0.102	0.005	15:20:42
3	0.1312	0.1312	0.005	0.102	0.005	15:20:44
Mean:	0.1216	0.1216	0.005			
SD :	0.0093	0.0093	0.000			
%RSD:	7.64	7.64	7.64			

Element: Ni Seq. No.: 153 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0191	0.0191	0.001	0.098	0.006	15:21:03
2	0.0137	0.0137	0.001	0.098	0.005	15:21:05
3	0.0393	0.0393	0.001	0.099	0.005	15:21:07
Mean:	0.0240	0.0240	0.001			
SD :	0.0135	0.0135	0.001			
%RSD:	56.13	56.13	56.13			

Element: Ni Seq. No.: 154 AS Loc.: --- Date: 02/01/2006
Sample ID: Sample115

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0694	0.0694	0.003	0.100	0.005	15:21:23
2	0.0843	0.0843	0.003	0.100	0.005	15:21:25
3	0.0807	0.0807	0.003	0.100	0.005	15:21:31
Mean:	0.0781	0.0781	0.003			
SD :	0.0078	0.0078	0.000			
%RSD:	9.99	9.99	9.99			

Element: Ni Seq. No.: 155 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-f+pr lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0899	0.0899	0.003	0.101	0.005	15:21:52
2	0.1382	0.1382	0.005	0.102	0.004	15:21:54
3	0.1137	0.1137	0.004	0.101	0.005	15:21:56
Mean:	0.1139	0.1139	0.004			
SD :	0.0241	0.0241	0.001			
%RSD:	21.19	21.19	21.19			

Element: Ni Seq. No.: 156 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0105	0.0105	0.000	0.098	0.005	15:22:12
2	0.0256	0.0256	0.001	0.098	0.005	15:22:14
3	0.0086	0.0086	0.000	0.098	0.005	15:22:16
Mean:	0.0149	0.0149	0.001			
SD :	0.0093	0.0093	0.000			
%RSD:	62.45	62.45	62.45			

Element: Ni Seq. No.: 157 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-f+pr lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.109	1.109	0.041	0.138	0.005	15:22:40
2	1.130	1.130	0.042	0.139	0.005	15:22:42
3	1.124	1.124	0.042	0.139	0.006	15:22:44
Mean:	1.121	1.121	0.042			
SD :	0.0109	0.0109	0.000			
%RSD:	0.97	0.97	0.97			

Element: Ni Seq. No.: 158 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0105	0.0105	0.000	0.098	0.005	15:23:01
2	0.0353	0.0353	0.001	0.099	0.004	15:23:03
3	0.0076	0.0076	0.000	0.098	0.005	15:23:05
Mean:	0.0178	0.0178	0.001			
SD :	0.0153	0.0153	0.001			
%RSD:	85.82	85.82	85.82			

Element: Ni Seq. No.: 159 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0189	0.0189	0.001	0.098	0.005	15:24:35
2	0.0423	0.0423	0.002	0.099	0.005	15:24:37
3	0.0472	0.0472	0.002	0.099	0.005	15:24:39
Mean:	0.0362	0.0362	0.001			
SD :	0.0151	0.0151	0.001			
%RSD:	41.83	41.83	41.83			

Element: Ni Seq. No.: 160 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0238	0.0238	0.001	0.098	0.005	15:24:54
2	0.0216	0.0216	0.001	0.098	0.005	15:24:56
3	0.0229	0.0229	0.001	0.098	0.005	15:24:58
Mean:	0.0228	0.0228	0.001			
SD :	0.0011	0.0011	0.000			
%RSD:	4.77	4.77	4.77			

Element: Ni Seq. No.: 161 AS Loc.: --- Date: 02/01/2006
Sample ID: ccv-0.5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5731	0.5731	0.021	0.119	0.004	15:25:24
2	0.5796	0.5796	0.022	0.119	0.004	15:25:26
3	0.5672	0.5672	0.021	0.118	0.005	15:25:28
Mean:	0.5733	0.5733	0.021			
SD :	0.0062	0.0062	0.000			
%RSD:	1.08	1.08	1.08			

Element: Ni Seq. No.: 162 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0447	0.0447	0.002	0.099	0.004	15:25:54
2	0.0335	0.0335	0.001	0.098	0.005	15:25:56
3	0.0281	0.0281	0.001	0.098	0.004	15:25:59
Mean:	0.0354	0.0354	0.001			
SD :	0.0085	0.0085	0.000			
%RSD:	23.86	23.86	23.86			

Element: Ni Seq. No.: 163 AS Loc.: --- Date: 02/01/2006
Sample ID: *203-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2977	0.2977	0.011	0.108	0.006	15:28:11
2	0.3029	0.3029	0.011	0.108	0.006	15:28:13
3	0.3013	0.3013	0.011	0.108	0.006	15:28:15
Mean:	0.3006	0.3006	0.011			
SD :	0.0027	0.0027	0.000			
%RSD:	0.89	0.89	0.89			

Element: Ni Seq. No.: 164 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0061	-0.0061	0.000	0.097	0.006	15:28:39
2	-0.0292	-0.0292	-0.001	0.096	0.007	15:28:42
3	-0.0218	-0.0218	-0.001	0.096	0.007	15:28:44
Mean:	-0.0190	-0.0190	-0.001			
SD :	0.0118	0.0118	0.000			
%RSD:	61.86	61.86	61.86			

Element: Ni Seq. No.: 165 AS Loc.: --- Date: 02/01/2006
Sample ID: s203-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.303	1.303	0.048	0.146	0.006	15:29:18
2	1.310	1.310	0.049	0.146	0.005	15:29:21
3	1.346	1.346	0.050	0.147	0.005	15:29:23
Mean:	1.320	1.320	0.049			
SD :	0.0229	0.0229	0.001			
%RSD:	1.73	1.73	1.73			

Element: Ni Seq. No.: 166 AS Loc.: --- Date: 02/01/2006
Sample ID: s203-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.314	1.314	0.049	0.146	0.006	15:29:41
2	1.262	1.262	0.047	0.144	0.007	15:29:44
3	1.250	1.250	0.046	0.144	0.007	15:29:46
Mean:	1.275	1.275	0.047			
SD :	0.0341	0.0341	0.001			
%RSD:	2.67	2.67	2.67			

Element: Ni Seq. No.: 167 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0034	0.0034	0.000	0.097	0.006	15:30:12
2	-11.33	-11.33	-0.421	-0.323	0.431	15:30:15
3	-6.319	-6.319	-0.235	-0.137	0.237	15:30:17
Mean:	-5.882	-5.882	-0.218			
SD :	5.679	5.679	0.211			
%RSD:	96.55	96.55	96.55			

Element: Ni Seq. No.: 168 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0114	-0.0114	0.000	0.097	0.006	15:30:44
2	-0.0067	-0.0067	0.000	0.097	0.006	15:30:46
3	-0.0157	-0.0157	-0.001	0.097	0.006	15:30:48
Mean:	-0.0112	-0.0112	0.000			
SD :	0.0045	0.0045	0.000			
%RSD:	40.12	40.12	40.12			

Element: Ni Seq. No.: 169 AS Loc.: --- Date: 02/01/2006
Sample ID: sd203-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.336	1.336	0.050	0.147	0.005	15:31:12
2	1.350	1.350	0.050	0.147	0.005	15:31:14
3	1.342	1.342	0.050	0.147	0.005	15:31:16
Mean:	1.343	1.343	0.050			
SD :	0.0072	0.0072	0.000			
%RSD:	0.53	0.53	0.53			

Element: Ni Seq. No.: 170 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0236	0.0236	0.001	0.098	0.005	15:31:42
2	0.0146	0.0146	0.001	0.098	0.005	15:31:45
3	-0.0020	-0.0020	0.000	0.097	0.006	15:31:47
Mean:	0.0121	0.0121	0.000			
SD :	0.0130	0.0130	0.000			
%RSD:	107.5	107.5	107.50			

Element: Ni Seq. No.: 171 AS Loc.: --- Date: 02/01/2006
Sample ID: ser203-1+3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2894	0.2894	0.011	0.108	0.005	15:32:09
2	0.3029	0.3029	0.011	0.108	0.005	15:32:11
3	0.3002	0.3002	0.011	0.108	0.005	15:32:13
Mean:	0.2975	0.2975	0.011			
SD :	0.0072	0.0072	0.000			
%RSD:	2.40	2.40	2.40			

Element: Ni Seq. No.: 172 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0117	0.0117	0.000	0.098	0.005	15:32:58
2	0.0086	0.0086	0.000	0.098	0.005	15:33:00
3	0.0108	0.0108	0.000	0.098	0.005	15:33:02
Mean:	0.0104	0.0104	0.000			
SD :	0.0016	0.0016	0.000			
%RSD:	15.15	15.15	15.15			

Element: Ni Seq. No.: 173 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-4+6

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.3360	0.3360	0.012	0.110	0.005	15:33:34
2	0.3290	0.3290	0.012	0.109	0.005	15:33:36
3	0.3241	0.3241	0.012	0.109	0.005	15:33:38
Mean:	0.3297	0.3297	0.012			
SD :	0.0060	0.0060	0.000			
%RSD:	1.81	1.81	1.81			

Element: Ni Seq. No.: 174 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.3804	-0.3804	-0.014	0.083	0.018	15:34:01
2	0.0018	0.0018	0.000	0.097	0.005	15:34:03
3	-0.0148	-0.0148	-0.001	0.097	0.005	15:34:05
Mean:	-0.1311	-0.1311	-0.005			
SD :	0.2160	0.2160	0.008			
%RSD:	164.8	164.8	164.76			

Element: Ni Seq. No.: 175 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0029	-0.0029	0.000	0.097	0.005	15:34:14
2	-0.0150	-0.0150	-0.001	0.097	0.005	15:34:16
3	0.0157	0.0157	0.001	0.098	0.004	15:34:18
Mean:	-0.0007	-0.0007	0.000			
SD :	0.0154	0.0154	0.001			
%RSD:	2141	2141	2140.82			

Element: Ni Seq. No.: 176 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-7+9

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2816	0.2816	0.010	0.108	0.005	15:34:40
2	0.2468	0.2468	0.009	0.106	0.006	15:34:42
3	0.2377	0.2377	0.009	0.106	0.006	15:34:44
Mean:	0.2554	0.2554	0.009			
SD :	0.0232	0.0232	0.001			
%RSD:	9.08	9.08	9.08			

Element: Ni Seq. No.: 177 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0047	-0.0047	0.000	0.097	0.005	15:35:02
2	0.0085	0.0085	0.000	0.098	0.005	15:35:04
3	0.0377	0.0377	0.001	0.099	0.004	15:35:06
Mean:	0.0138	0.0138	0.001			
SD :	0.0217	0.0217	0.001			
%RSD:	156.9	156.9	156.88			

Element: Ni Seq. No.: 178 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0052	-0.0052	0.000	0.097	0.006	15:35:13
2	-0.0330	-0.0330	-0.001	0.096	0.007	15:35:15
3	-0.0232	-0.0232	-0.001	0.096	0.006	15:35:17
Mean:	-0.0205	-0.0205	-0.001			
SD :	0.0141	0.0141	0.001			
%RSD:	68.74	68.74	68.74			

Element: Ni Seq. No.: 179 AS Loc.: --- Date: 02/01/2006
Sample ID: ccv-0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2530	0.2530	0.009	0.107	0.006	15:35:40
2	0.2688	0.2688	0.010	0.107	0.005	15:35:42
3	0.2681	0.2681	0.010	0.107	0.005	15:35:44
Mean:	0.2633	0.2633	0.010			
SD :	0.0090	0.0090	0.000			
%RSD:	3.40	3.40	3.40			

Element: Ni Seq. No.: 180 AS Loc.: --- Date: 02/01/2006
Sample ID: ccv-0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2733	0.2733	0.010	0.107	0.005	15:36:14
2	0.2549	0.2549	0.009	0.107	0.006	15:36:16
3	0.2530	0.2530	0.009	0.107	0.006	15:36:18
Mean:	0.2604	0.2604	0.010			
SD :	0.0112	0.0112	0.000			
%RSD:	4.31	4.31	4.31			

Element: Ni Seq. No.: 181 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0231	-0.0231	-0.001	0.096	0.006	15:36:38
2	0.0007	0.0007	0.000	0.097	0.005	15:36:40
3	-0.0220	-0.0220	-0.001	0.096	0.006	15:36:42
Mean:	-0.0148	-0.0148	-0.001			
SD :	0.0134	0.0134	0.000			
%RSD:	90.90	90.90	90.90			

Element: Ni Seq. No.: 182 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-10+12

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1472	0.1472	0.005	0.103	0.006	15:37:04
2	0.1243	0.1243	0.005	0.102	0.007	15:37:06
3	0.1614	0.1614	0.006	0.103	0.005	15:37:09
Mean:	0.1443	0.1443	0.005			
SD :	0.0187	0.0187	0.001			
%RSD:	12.97	12.97	12.97			

Element: Ni Seq. No.: 183 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0184	-0.0184	-0.001	0.097	0.006	15:37:22
2	0.0027	0.0027	0.000	0.097	0.005	15:37:24
3	0.0268	0.0268	0.001	0.098	0.005	15:37:27
Mean:	0.0037	0.0037	0.000			
SD :	0.0226	0.0226	0.001			
%RSD:	607.7	607.7	607.72			

Element: Ni Seq. No.: 184 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-13+15

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.428	2.428	0.090	0.187	0.006	15:37:50
2	2.459	2.459	0.091	0.189	0.005	15:37:52
3	2.428	2.428	0.090	0.187	0.005	15:37:54
Mean:	2.438	2.438	0.091			
SD :	0.0177	0.0177	0.001			
%RSD:	0.73	0.73	0.73			

Element: Ni Seq. No.: 185 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0038	-0.0038	0.000	0.097	0.005	15:38:12
2	-0.0072	-0.0072	0.000	0.097	0.005	15:38:14
3	-0.0121	-0.0121	0.000	0.097	0.005	15:38:17
Mean:	-0.0077	-0.0077	0.000			
SD :	0.0042	0.0042	0.000			
%RSD:	54.18	54.18	54.18			

Element: Ni Seq. No.: 186 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-16+18

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.768	2.768	0.103	0.200	0.005	15:38:40
2	2.739	2.739	0.102	0.199	0.005	15:38:42
3	2.760	2.760	0.102	0.200	0.005	15:38:44
Mean:	2.755	2.755	0.102			
SD :	0.0151	0.0151	0.001			
%RSD:	0.55	0.55	0.55			

Element: Ni Seq. No.: 187 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0074	-0.0074	0.000	0.097	0.006	15:39:09
2	0.0014	0.0014	0.000	0.097	0.005	15:39:11
3	-0.0036	-0.0036	0.000	0.097	0.005	15:39:13
Mean:	-0.0032	-0.0032	0.000			
SD :	0.0044	0.0044	0.000			
%RSD:	139.2	139.2	139.15			

Element: Ni Seq. No.: 188 AS Loc.: --- Date: 02/01/2006
Sample ID: d203-10+12

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1492	0.1492	0.006	0.103	0.006	15:39:39
2	0.1512	0.1512	0.006	0.103	0.006	15:39:42
3	0.1548	0.1548	0.006	0.103	0.006	15:39:44
Mean:	0.1517	0.1517	0.006			
SD :	0.0028	0.0028	0.000			
%RSD:	1.87	1.87	1.87			

Element: Ni Seq. No.: 189 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0112	-0.0112	0.000	0.097	0.005	15:40:06
2	-0.0153	-0.0153	-0.001	0.097	0.005	15:40:08
3	-0.0225	-0.0225	-0.001	0.096	0.005	15:40:10
Mean:	-0.0163	-0.0163	-0.001			
SD :	0.0057	0.0057	0.000			
%RSD:	35.16	35.16	35.16			

Element: Ni Seq. No.: 190 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-19+21

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	6.157	6.157	0.229	0.326	0.007	15:40:31
Sample absorbance is greater than that of the highest standard.						
2	6.100	6.100	0.226	0.324	0.006	15:40:33
Sample absorbance is greater than that of the highest standard.						
3	6.187	6.187	0.230	0.327	0.005	15:40:35
Sample absorbance is greater than that of the highest standard.						
Mean:	6.148	6.148	0.228			
SD :	0.0443	0.0443	0.002			
%RSD:	0.72	0.72	0.72			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 191 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0032	-0.0032	0.000	0.097	0.005	15:40:55
2	0.0027	0.0027	0.000	0.097	0.005	15:40:57
3	-0.0159	-0.0159	-0.001	0.097	0.005	15:41:00
Mean:	-0.0055	-0.0055	0.000			
SD :	0.0095	0.0095	0.000			
%RSD:	173.4	173.4	173.39			

Element: Ni Seq. No.: 192 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-22+24

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.115	2.115	0.079	0.176	0.006	15:41:24
2	2.106	2.106	0.078	0.175	0.006	15:41:27
3	2.129	2.129	0.079	0.176	0.006	15:41:29
Mean:	2.117	2.117	0.079			
SD :	0.0117	0.0117	0.000			
%RSD:	0.55	0.55	0.55			

Element: Ni Seq. No.: 193 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0036	0.0036	0.000	0.097	0.005	15:41:49
2	-0.0056	-0.0056	0.000	0.097	0.005	15:41:51
3	-0.0159	-0.0159	-0.001	0.097	0.005	15:41:53
Mean:	-0.0059	-0.0059	0.000			
SD :	0.0097	0.0097	0.000			
%RSD:	163.7	163.7	163.72			

Element: Ni Seq. No.: 194 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0126	-0.0126	0.000	0.097	0.005	15:42:24
2	-0.0301	-0.0301	-0.001	0.096	0.005	15:42:26
3	-0.0730	-0.0730	-0.003	0.095	0.007	15:42:28
Mean:	-0.0386	-0.0386	-0.001			
SD :	0.0311	0.0311	0.001			
%RSD:	80.55	80.55	80.55			

Element: Ni Seq. No.: 195 AS Loc.: --- Date: 02/01/2006
Sample ID: ccv-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.999	1.999	0.074	0.171	0.006	15:42:46
2	2.017	2.017	0.075	0.172	0.006	15:42:49
3	2.015	2.015	0.075	0.172	0.006	15:42:51
Mean:	2.010	2.010	0.075			
SD :	0.0101	0.0101	0.000			
%RSD:	0.50	0.50	0.50			

Element: Ni Seq. No.: 196 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0575	-0.0575	-0.002	0.095	0.006	15:43:09
2	-0.0445	-0.0445	-0.002	0.096	0.006	15:43:11
3	-0.0090	-0.0090	0.000	0.097	0.005	15:43:13
Mean:	-0.0370	-0.0370	-0.001			
SD :	0.0251	0.0251	0.001			
%RSD:	67.82	67.82	67.82			

Element: Ni Seq. No.: 197 AS Loc.: --- Date: 02/01/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0259	-0.0259	-0.001	0.096	0.005	15:43:43

Auto-zero performed.

Element: Ni Seq. No.: 198 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0013	-0.0013	0.000	0.096	0.005	15:43:53
2	0.0000	0.0000	0.000	0.096	0.005	15:43:56
3	-0.0126	-0.0126	0.000	0.096	0.006	15:43:58
Mean:	-0.0046	-0.0046	0.000			
SD :	0.0069	0.0069	0.000			
%RSD:	150.2	150.2	150.21			

Element: Ni Seq. No.: 199 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-25+27

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.486	1.486	0.055	0.151	0.005	15:44:19
2	1.476	1.476	0.055	0.151	0.005	15:44:21
3	1.441	1.441	0.053	0.150	0.007	15:44:23
Mean:	1.467	1.467	0.054			
SD :	0.0239	0.0239	0.001			
%RSD:	1.63	1.63	1.63			

Element: Ni Seq. No.: 200 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0279	-0.0279	-0.001	0.095	0.006	15:45:01
2	-0.0268	-0.0268	-0.001	0.095	0.006	15:45:03
3	-0.0243	-0.0243	-0.001	0.095	0.006	15:45:05
Mean:	-0.0264	-0.0264	-0.001			
SD :	0.0018	0.0018	0.000			
%RSD:	7.01	7.01	7.01			

Element: Ni Seq. No.: 201 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0218	-0.0218	-0.001	0.095	0.006	15:45:20
2	-0.0207	-0.0207	-0.001	0.095	0.006	15:45:22
3	-0.0378	-0.0378	-0.001	0.095	0.006	15:45:24
Mean:	-0.0268	-0.0268	-0.001			
SD :	0.0096	0.0096	0.000			
%RSD:	35.79	35.79	35.79			

Element: Ni Seq. No.: 202 AS Loc.: --- Date: 02/01/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0562	-0.0562	-0.002	0.094	0.007	15:45:37

Auto-zero performed.

Element: Ni Seq. No.: 203 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0279	0.0279	0.001	0.095	0.006	15:45:49
2	0.0077	0.0077	0.000	0.094	0.007	15:45:51
3	0.0189	0.0189	0.001	0.095	0.006	15:45:53
Mean:	0.0182	0.0182	0.001			
SD :	0.0101	0.0101	0.000			
%RSD:	55.55	55.55	55.55			

Element: Ni Seq. No.: 204 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-28+30

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.298	2.298	0.085	0.179	0.005	15:46:17
2	2.303	2.303	0.085	0.180	0.006	15:46:19
3	2.285	2.285	0.085	0.179	0.006	15:46:21
Mean:	2.295	2.295	0.085			
SD :	0.0091	0.0091	0.000			
%RSD:	0.40	0.40	0.40			

Element: Ni Seq. No.: 205 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0596	0.0596	0.002	0.096	0.005	15:46:47
2	0.0236	0.0236	0.001	0.095	0.007	15:46:49
3	0.0231	0.0231	0.001	0.095	0.006	15:46:51
Mean:	0.0354	0.0354	0.001			
SD :	0.0210	0.0210	0.001			
%RSD:	59.16	59.16	59.16			

Element: Ni Seq. No.: 206 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-31+33

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2052	0.2052	0.008	0.102	0.006	15:47:29
2	0.2222	0.2222	0.008	0.102	0.005	15:47:31
3	0.2281	0.2281	0.008	0.103	0.006	15:47:34
Mean:	0.2185	0.2185	0.008			
SD :	0.0119	0.0119	0.000			
%RSD:	5.43	5.43	5.43			

Element: Ni Seq. No.: 207 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0241	0.0241	0.001	0.095	0.006	15:47:59
2	0.0497	0.0497	0.002	0.096	0.006	15:48:01
3	0.0306	0.0306	0.001	0.095	0.006	15:48:03
Mean:	0.0348	0.0348	0.001			
SD :	0.0133	0.0133	0.000			
%RSD:	38.18	38.18	38.18			

Element: Ni Seq. No.: 208 AS Loc.: --- Date: 02/01/2006
Sample ID: 203 i lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1036	0.1036	0.004	0.098	0.007	15:48:24
2	0.1022	0.1022	0.004	0.098	0.006	15:48:26
3	0.1308	0.1308	0.005	0.099	0.006	15:48:28
Mean:	0.1122	0.1122	0.004			
SD :	0.0161	0.0161	0.001			
%RSD:	14.39	14.39	14.39			

Element: Ni Seq. No.: 209 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.3672	-0.3672	-0.014	0.081	0.021	15:48:42
2	0.0299	0.0299	0.001	0.095	0.006	15:48:44
3	0.0431	0.0431	0.002	0.096	0.005	15:48:46
Mean:	-0.0981	-0.0981	-0.004			
SD :	0.2332	0.2332	0.009			
%RSD:	237.7	237.7	237.73			

Element: Ni Seq. No.: 210 AS Loc.: --- Date: 02/01/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0220	0.0220	0.001	0.095	0.006	15:48:52

Auto-zero performed.

Element: Ni Seq. No.: 211 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0315	0.0315	0.001	0.096	0.005	15:49:01
2	-0.3883	-0.3883	-0.014	0.081	0.020	15:49:03
3	0.0005	0.0005	0.000	0.095	0.006	15:49:05
Mean:	-0.1187	-0.1187	-0.004			
SD :	0.2339	0.2339	0.009			
%RSD:	197.0	197.0	197.03			

Element: Ni Seq. No.: 212 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0186	0.0186	0.001	0.096	0.006	15:49:13
2	-0.0452	-0.0452	-0.002	0.093	0.008	15:49:15
3	0.0290	0.0290	0.001	0.096	0.005	15:49:17
Mean:	0.0008	0.0008	0.000			
SD :	0.0402	0.0402	0.001			
%RSD:	5147	5147	5146.59			

Element: Ni Seq. No.: 213 AS Loc.: --- Date: 02/01/2006
Sample ID: lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1254	0.1254	0.005	0.100	0.005	15:49:31
2	0.1479	0.1479	0.005	0.100	0.005	15:49:33
3	0.1250	0.1250	0.005	0.100	0.005	15:49:35
Mean:	0.1328	0.1328	0.005			
SD :	0.0131	0.0131	0.000			
%RSD:	9.87	9.87	9.87			

Element: Ni Seq. No.: 214 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0177	0.0177	0.001	0.096	0.005	15:49:56
2	0.0234	0.0234	0.001	0.096	0.005	15:49:59
3	0.0252	0.0252	0.001	0.096	0.005	15:50:01
Mean:	0.0221	0.0221	0.001			
SD :	0.0040	0.0040	0.000			
%RSD:	17.89	17.89	17.89			

Element: Ni Seq. No.: 215 AS Loc.: --- Date: 02/01/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.102	1.102	0.041	0.136	0.005	15:50:15
2	1.092	1.092	0.041	0.136	0.005	15:50:17
3	1.059	1.059	0.039	0.134	0.007	15:50:19
Mean:	1.084	1.084	0.040			
SD :	0.0223	0.0223	0.001			
%RSD:	2.05	2.05	2.05			

Element: Ni Seq. No.: 216 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.6658	-0.6658	-0.025	0.070	0.031	15:50:35
2	-0.8584	-0.8584	-0.032	0.063	0.038	15:50:38
3	-1.004	-1.004	-0.037	0.058	0.044	15:50:40
Mean:	-0.8428	-0.8428	-0.031			
SD :	0.1698	0.1698	0.006			
%RSD:	20.15	20.15	20.15			

Element: Ni Seq. No.: 217 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0029	0.0029	0.000	0.095	0.006	15:50:47
2	0.0034	0.0034	0.000	0.095	0.006	15:50:49
3	0.0227	0.0227	0.001	0.096	0.006	15:50:51
Mean:	0.0097	0.0097	0.000			
SD :	0.0113	0.0113	0.000			
%RSD:	116.8	116.8	116.76			

Element: Ni Seq. No.: 218 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0220	0.0220	0.001	0.096	0.005	15:50:59
2	0.0135	0.0135	0.001	0.095	0.006	15:51:01
3	0.0360	0.0360	0.001	0.096	0.005	15:51:04
Mean:	0.0238	0.0238	0.001			
SD :	0.0114	0.0114	0.000			
%RSD:	47.71	47.71	47.71			

Element: Ni Seq. No.: 219 AS Loc.: --- Date: 02/01/2006
Sample ID: ccv-0.5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5416	0.5416	0.020	0.115	0.005	15:51:37
2	0.5722	0.5722	0.021	0.116	0.005	15:51:40
3	-0.3573	-0.3573	-0.013	0.082	0.039	15:51:42
Mean:	0.2522	0.2522	0.009			
SD :	0.5280	0.5280	0.020			
%RSD:	209.4	209.4	209.39			

Asp. Came out of sample

Element: Ni Seq. No.: 220 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0050	0.0050	0.000	0.095	0.005	15:51:57
2	0.0182	0.0182	0.001	0.096	0.005	15:51:59
3	0.0317	0.0317	0.001	0.096	0.005	15:52:02
Mean:	0.0183	0.0183	0.001			
SD :	0.0133	0.0133	0.000			
%RSD:	72.79	72.79	72.79			

Element: Ni Seq. No.: 221 AS Loc.: --- Date: 02/01/2006
Sample ID: *203-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1458	0.1458	0.005	0.100	0.005	15:52:18
2	0.1602	0.1602	0.006	0.101	0.005	15:52:20
3	0.1526	0.1526	0.006	0.101	0.005	15:52:22
Mean:	0.1528	0.1528	0.006			
SD :	0.0072	0.0072	0.000			
%RSD:	4.72	4.72	4.72			

Element: Ni Seq. No.: 222 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0247	0.0247	0.001	0.096	0.005	15:52:38
2	0.0568	0.0568	0.002	0.097	0.004	15:52:40
3	0.0514	0.0514	0.002	0.097	0.004	15:52:42
Mean:	0.0443	0.0443	0.002			
SD :	0.0172	0.0172	0.001			
%RSD:	38.79	38.79	38.79			

Element: Ni Seq. No.: 223 AS Loc.: --- Date: 02/01/2006
Sample ID: s203-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.098	1.098	0.041	0.136	0.005	15:53:01
2	1.119	1.119	0.042	0.137	0.005	15:53:04
3	1.105	1.105	0.041	0.136	0.005	15:53:06
Mean:	1.107	1.107	0.041			
SD :	0.0107	0.0107	0.000			
%RSD:	0.97	0.97	0.97			

Element: Ni Seq. No.: 224 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0359	0.0359	0.001	0.096	0.005	15:53:24
2	0.0420	0.0420	0.002	0.097	0.005	15:53:26
3	0.0279	0.0279	0.001	0.096	0.005	15:53:28
Mean:	0.0353	0.0353	0.001			
SD :	0.0070	0.0070	0.000			
%RSD:	19.99	19.99	19.99			

Element: Ni Seq. No.: 225 AS Loc.: --- Date: 02/01/2006
Sample ID: sd203-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.115	1.115	0.041	0.136	0.006	15:53:55
2	1.102	1.102	0.041	0.136	0.006	15:53:57
3	1.065	1.065	0.040	0.135	0.007	15:53:59
Mean:	1.094	1.094	0.041			
SD :	0.0258	0.0258	0.001			
%RSD:	2.36	2.36	2.36			

Element: Ni Seq. No.: 226 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0133	-0.0133	0.000	0.095	0.006	15:54:22
2	0.0043	0.0043	0.000	0.095	0.006	15:54:24
3	-0.0036	-0.0036	0.000	0.095	0.006	15:54:27
Mean:	-0.0042	-0.0042	0.000			
SD :	0.0088	0.0088	0.000			
%RSD:	210.4	210.4	210.36			

Element: Ni Seq. No.: 227 AS Loc.: --- Date: 02/01/2006
Sample ID: ser203-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2895	0.2895	0.011	0.106	0.004	15:55:11
2	0.2758	0.2758	0.010	0.105	0.005	15:55:13
3	0.2780	0.2780	0.010	0.105	0.005	15:55:16
Mean:	0.2811	0.2811	0.010			
SD :	0.0074	0.0074	0.000			
%RSD:	2.62	2.62	2.62			

error in dilution LK

Element: Ni Seq. No.: 228 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0575	0.0575	0.002	0.097	0.004	15:55:35
2	0.0301	0.0301	0.001	0.096	0.005	15:55:37
3	0.0094	0.0094	0.000	0.095	0.005	15:55:39
Mean:	0.0323	0.0323	0.001			
SD :	0.0241	0.0241	0.001			
%RSD:	74.68	74.68	74.68			

Element: Ni Seq. No.: 229 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1223	0.1223	0.005	0.100	0.005	15:56:06
2	0.1510	0.1510	0.006	0.101	0.005	15:56:08
3	0.1268	0.1268	0.005	0.100	0.005	15:56:10
Mean:	0.1334	0.1334	0.005			
SD :	0.0154	0.0154	0.001			
%RSD:	11.55	11.55	11.55			

Element: Ni Seq. No.: 230 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0382	0.0382	0.001	0.096	0.005	15:56:24
2	0.0022	0.0022	0.000	0.095	0.006	15:56:26
3	0.0115	0.0115	0.000	0.095	0.006	15:56:28
Mean:	0.0173	0.0173	0.001			
SD :	0.0187	0.0187	0.001			
%RSD:	108.1	108.1	108.09			

Element: Ni Seq. No.: 231 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-8

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1243	0.1243	0.005	0.100	0.005	15:56:49
2	0.1459	0.1459	0.005	0.100	0.005	15:56:51
3	0.1148	0.1148	0.004	0.099	0.006	15:56:53
Mean:	0.1283	0.1283	0.005			
SD :	0.0160	0.0160	0.001			
%RSD:	12.44	12.44	12.44			

Element: Ni Seq. No.: 232 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0346	0.0346	0.001	0.096	0.005	15:57:07
2	0.0227	0.0227	0.001	0.096	0.006	15:57:10
3	0.0470	0.0470	0.002	0.097	0.005	15:57:12
Mean:	0.0348	0.0348	0.001			
SD :	0.0122	0.0122	0.000			
%RSD:	34.98	34.98	34.98			

Element: Ni Seq. No.: 233 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0202	0.0202	0.001	0.096	0.005	15:57:51
2	0.0180	0.0180	0.001	0.096	0.005	15:57:53
3	0.0193	0.0193	0.001	0.096	0.005	15:57:56
Mean:	0.0192	0.0192	0.001			
SD :	0.0011	0.0011	0.000			
%RSD:	5.67	5.67	5.67			

Element: Ni Seq. No.: 234 AS Loc.: --- Date: 02/01/2006
Sample ID: ccv-0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2703	0.2703	0.010	0.105	0.005	15:59:07
2	0.2840	0.2840	0.011	0.106	0.004	15:59:10
3	0.2892	0.2892	0.011	0.106	0.004	15:59:12
Mean:	0.2811	0.2811	0.010			
SD :	0.0098	0.0098	0.000			
%RSD:	3.48	3.48	3.48			

Element: Ni Seq. No.: 235 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0416	0.0416	0.002	0.097	0.005	15:59:28
2	0.0479	0.0479	0.002	0.097	0.004	15:59:30
3	0.0267	0.0267	0.001	0.096	0.005	15:59:32
Mean:	0.0387	0.0387	0.001			
SD :	0.0109	0.0109	0.000			
%RSD:	28.19	28.19	28.19			

Element: Ni Seq. No.: 236 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-11

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1218	0.1218	0.005	0.100	0.004	15:59:52
2	0.1103	0.1103	0.004	0.099	0.005	15:59:54
3	0.1227	0.1227	0.005	0.100	0.004	15:59:57
Mean:	0.1183	0.1183	0.004			
SD :	0.0069	0.0069	0.000			
%RSD:	5.86	5.86	5.86			

Element: Ni Seq. No.: 237 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0076	0.0076	0.000	0.095	0.006	16:00:10
2	0.0268	0.0268	0.001	0.096	0.005	16:00:12
3	0.0295	0.0295	0.001	0.096	0.005	16:00:14
Mean:	0.0213	0.0213	0.001			
SD :	0.0120	0.0120	0.000			
%RSD:	56.22	56.22	56.22			

Element: Ni Seq. No.: 238 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-14

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1391	0.1391	0.005	0.100	0.004	16:00:27
2	0.1090	0.1090	0.004	0.099	0.005	16:00:29
3	0.1175	0.1175	0.004	0.099	0.005	16:00:31
Mean:	0.1219	0.1219	0.005			
SD :	0.0155	0.0155	0.001			
%RSD:	12.73	12.73	12.73			

Element: Ni Seq. No.: 239 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0159	0.0159	0.001	0.096	0.006	16:00:53
2	0.0099	0.0099	0.000	0.095	0.006	16:00:55
3	-0.0054	-0.0054	0.000	0.095	0.006	16:00:57
Mean:	0.0068	0.0068	0.000			
SD :	0.0110	0.0110	0.000			
%RSD:	161.6	161.6	161.63			

Element: Ni Seq. No.: 240 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-17

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0939	0.0939	0.003	0.098	0.005	16:01:19
2	0.0755	0.0755	0.003	0.098	0.006	16:01:21
3	0.0508	0.0508	0.002	0.097	0.007	16:01:23
Mean:	0.0734	0.0734	0.003			
SD :	0.0216	0.0216	0.001			
%RSD:	29.44	29.44	29.44			

Element: Ni Seq. No.: 241 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0175	-0.0175	-0.001	0.094	0.007	16:01:40
2	-0.0079	-0.0079	0.000	0.095	0.006	16:01:42
3	0.0247	0.0247	0.001	0.096	0.005	16:01:44
Mean:	-0.0002	-0.0002	0.000			
SD :	0.0221	0.0221	0.001			
%RSD:	9202	9202	9202.21			

Element: Ni Seq. No.: 242 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-20

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0850	0.0850	0.003	0.098	0.006	16:01:59
2	0.0746	0.0746	0.003	0.098	0.006	16:02:01
3	0.0477	0.0477	0.002	0.097	0.007	16:02:03
Mean:	0.0691	0.0691	0.003			
SD :	0.0192	0.0192	0.001			
%RSD:	27.83	27.83	27.83			

Element: Ni Seq. No.: 243 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0121	-0.0121	0.000	0.095	0.006	16:02:31
2	-0.0232	-0.0232	-0.001	0.094	0.007	16:02:33
3	0.0225	0.0225	0.001	0.096	0.005	16:02:35
Mean:	-0.0043	-0.0043	0.000			
SD :	0.0239	0.0239	0.001			
%RSD:	559.6	559.6	559.56			

Element: Ni Seq. No.: 244 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0092	-0.0092	0.000	0.095	0.006	16:02:45
2	0.0077	0.0077	0.000	0.095	0.005	16:02:47
3	0.0142	0.0142	0.001	0.096	0.005	16:02:49
Mean:	0.0043	0.0043	0.000			
SD :	0.0121	0.0121	0.000			
%RSD:	283.6	283.6	283.61			

Element: Ni Seq. No.: 245 AS Loc.: --- Date: 02/01/2006
Sample ID: ccv-0.5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.4584	0.4584	0.017	0.112	0.007	16:03:21
2	0.5065	0.5065	0.019	0.114	0.006	16:03:23
3	0.5040	0.5040	0.019	0.114	0.006	16:03:26
Mean:	0.4896	0.4896	0.018			
SD :	0.0271	0.0271	0.001			
%RSD:	5.53	5.53	5.53			

Element: Ni Seq. No.: 246 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0166	-0.0166	-0.001	0.094	0.006	16:03:44
2	-0.0092	-0.0092	0.000	0.095	0.005	16:03:47
3	-0.0191	-0.0191	-0.001	0.094	0.006	16:03:49
Mean:	-0.0150	-0.0150	-0.001			
SD :	0.0052	0.0052	0.000			
%RSD:	34.44	34.44	34.44			

Element: Ni Seq. No.: 247 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-23

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0658	0.0658	0.002	0.097	0.006	16:04:06
2	0.0690	0.0690	0.003	0.098	0.005	16:04:08
3	0.0717	0.0717	0.003	0.098	0.005	16:04:10
Mean:	0.0688	0.0688	0.003			
SD :	0.0030	0.0030	0.000			
%RSD:	4.33	4.33	4.33			

Element: Ni Seq. No.: 248 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0014	-0.0014	0.000	0.095	0.005	16:04:23
2	-0.0079	-0.0079	0.000	0.095	0.005	16:04:25
3	0.0049	0.0049	0.000	0.095	0.005	16:04:27
Mean:	-0.0015	-0.0015	0.000			
SD :	0.0064	0.0064	0.000			
%RSD:	426.0	426.0	426.01			

Element: Ni Seq. No.: 249 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-26

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1004	0.1004	0.004	0.099	0.005	16:04:46
2	0.0901	0.0901	0.003	0.098	0.006	16:04:48
3	0.0894	0.0894	0.003	0.098	0.005	16:04:50
Mean:	0.0933	0.0933	0.003			
SD :	0.0061	0.0061	0.000			
%RSD:	6.59	6.59	6.59			

Element: Ni Seq. No.: 250 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0043	-0.0043	0.000	0.095	0.005	16:05:06
2	0.0002	0.0002	0.000	0.095	0.005	16:05:08
3	0.0014	0.0014	0.000	0.095	0.005	16:05:10
Mean:	-0.0009	-0.0009	0.000			
SD :	0.0030	0.0030	0.000			
%RSD:	336.5	336.5	336.45			

Element: Ni Seq. No.: 251 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-29

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0755	0.0755	0.003	0.098	0.005	16:05:26
2	0.0899	0.0899	0.003	0.098	0.005	16:05:28
3	0.0829	0.0829	0.003	0.098	0.005	16:05:30
Mean:	0.0828	0.0828	0.003			
SD :	0.0072	0.0072	0.000			
%RSD:	8.71	8.71	8.71			

Element: Ni Seq. No.: 252 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0023	-0.0023	0.000	0.095	0.005	16:05:45
2	0.0090	0.0090	0.000	0.095	0.005	16:05:47
3	0.0065	0.0065	0.000	0.095	0.005	16:05:49
Mean:	0.0044	0.0044	0.000			
SD :	0.0060	0.0060	0.000			
%RSD:	135.9	135.9	135.95			

Element: Ni Seq. No.: 253 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-32

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0598	0.0598	0.002	0.097	0.005	16:06:03
2	0.0787	0.0787	0.003	0.098	0.005	16:06:05
3	0.0735	0.0735	0.003	0.098	0.005	16:06:07
Mean:	0.0707	0.0707	0.003			
SD :	0.0098	0.0098	0.000			
%RSD:	13.82	13.82	13.82			

Element: Ni Seq. No.: 254 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0124	-0.0124	0.000	0.095	0.005	16:06:40
2	-0.0007	-0.0007	0.000	0.095	0.005	16:06:42
3	-0.0204	-0.0204	-0.001	0.094	0.006	16:06:44
Mean:	-0.0112	-0.0112	0.000			
SD :	0.0099	0.0099	0.000			
%RSD:	88.45	88.45	88.45			

Element: Ni Seq. No.: 255 AS Loc.: --- Date: 02/01/2006
Sample ID: 203-26 dup

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1023	0.1023	0.004	0.099	0.005	16:07:02
2	0.1104	0.1104	0.004	0.099	0.005	16:07:04
3	0.0885	0.0885	0.003	0.098	0.005	16:07:07
Mean:	0.1004	0.1004	0.004			
SD :	0.0111	0.0111	0.000			
%RSD:	11.07	11.07	11.07			

Element: Ni Seq. No.: 256 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0050	-0.0050	0.000	0.095	0.005	16:07:21
2	0.0166	0.0166	0.001	0.096	0.005	16:07:23
3	0.0182	0.0182	0.001	0.096	0.005	16:07:25
Mean:	0.0099	0.0099	0.000			
SD :	0.0130	0.0130	0.000			
%RSD:	130.9	130.9	130.95			

Element: Ni Seq. No.: 257 AS Loc.: --- Date: 02/01/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0061	-0.0061	0.000	0.095	0.005	16:07:53
2	0.0117	0.0117	0.000	0.095	0.005	16:07:55
3	0.0038	0.0038	0.000	0.095	0.005	16:07:57
Mean:	0.0031	0.0031	0.000			
SD :	0.0089	0.0089	0.000			
%RSD:	286.2	286.2	286.16			

CCV = 0.9396/1.0

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

Add to Probe Rinse

Filters

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	11/17	1145			LFB				4
						LRB				5
1				110203	3		1 Filter			3
					6	~~LFM-DUP~~				6
					9	~~LFM~~				9
2					12					12
3					15					15
4					18					0
5					21					7
6					24				11	8
7					27				11/17 LK	2
8					30					10
9					33 LK		↓		8	11
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05F011
QC-7		
P		
Sn		
OTHER		

0.5

Analyst: _____

Start Date: _____

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:

Add to Filters
Front half
Probe Rinse

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	1/19	2330	(1/20)		LFB	All	100		13
						Label Act LRB				7
1	ph	<2	110203		1	100 92				6
		<2			4	100 ~~LFM DUP~~ 94				2
		<2			7	~~LFM~~ 97				10
2		<2			10	98				8
3		<2			13	97				12
4		<2			16	98				9
5		<2			19	96				5
6		<2			22	97			3	11
7		<2			25	99				0
8		<2			28	100				14
9		<2			31	100			11	8
10										
11				Mixed up	Bottles:		203	24+22		(1/19)
12					as actually			33+31.		LK

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05H062
QC-7		
P		
Sn		
OTHER		

0.5

Analyst:

Start Date:

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

Back half Impingers

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	1/19	4PM	(1/20)		LFB		50		2
		AH				Lab Add LRB				13
1		<2.0	110203	2	319	313				0
		<2.0		5	321 LFM DUP	315				9
		<2.0		8	317 LFM	312				11
2		<2.0		11	300	298				5
3		<2.0		14	302	296				10
4		<2.0		17	302	296				8
5		<2.0		20	305	297				7
6		<2.0		23	306	299				3
7		<2.0		26	302	298				12
8		<2.0		29	306	300				6
9		<2.0		32	300	295		↓		14
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05H062 0.5
QC-7		
P		
Sn		
OTHER		

Analyst: _____

Start Date: _____

METALS PREP FORM

Set #

306A

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	1/23	930A			LFB		50		
						LRB				
1	AH	< 2.0	120038	1		397 mls				
						~~LFM DUP~~				
						~~LFM~~				
2		< 2.0			2	395				
3		< 2.0			3	388				
4		< 2.0			4	360				
5										
6										
7										
8										
9										
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	SN	050462
QC-7		
P		
Sn		
OTHER		

Analyst: _____

Start Date: _____

PROJECT # 2005100307: METHOD 29 FOR NICKEL

1	2	3	4	5	6	7	8	9	10	11	12
SA #	SAMPLE DESCRPTION	RUN ID	PH	Sample Fraction ($SF = SF_A$)	EVAP. TO	REAGENTS FOR DIG.	MICRO-Dig. BY	Analytical Fraction ($AF = AF_A$)	NI mg/L (C_{a1} or C_{a2})	MG NI IN INITIAL SAMPLE	TOTAL MG PER RUN
3	impinger	Cond. 27: BLANK	< 2.0	302	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.014
2	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.100	0.010	
1	probe rinse		< 2.0	99.0	20	HF + HNO3	8.3.1.2				
6	impinger	Cond. 27: Test # 1	< 2.0	305	20	HNO3 + H2O2	8.3.4.2	50	0.192	0.010	1.687
5	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	16.772	1.677	
4	probe rinse		< 2.0	99.5	20	HF + HNO3	8.3.1.2				
9	impinger	Cond. 27: Test # 2	< 2.0	312	20	HNO3 + H2O2	8.3.4.2	50	0.123	0.006	0.769
8	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	7.629	0.763	
7	probe rinse		< 2.0	95.0	20	HF + HNO3	8.3.1.2				
12	impinger	Cond. 27: Test # 3	< 2.0	319	20	HNO3 + H2O2	8.3.4.2	50	0.084	0.004	1.407
11	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	14.025	1.403	
10	probe rinse		< 2.0	97.5	20	HF + HNO3	8.3.1.2				
15	impinger	Cond. 22: BLANK	< 2.0	302	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.014
14	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.100	0.010	
13	probe rinse		< 2.0	99.5	20	HF + HNO3	8.3.1.2				
18	impinger	Cond. 22: Test # 1	< 2.0	300	20	HNO3 + H2O2	8.3.4.2	50	0.149	0.007	0.079
17	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.717	0.072	
16	probe rinse		< 2.0	96.5	20	HF + HNO3	8.3.1.2				
21	impinger	Cond. 22: Test # 2	< 2.0	303	20	HNO3 + H2O2	8.3.4.2	50	0.120	0.006	0.048
20	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.418	0.042	
19	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
24	impinger	Cond. 22: Test # 3	< 2.0	306	20	HNO3 + H2O2	8.3.4.2	50	0.098	0.005	0.042
23	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.375	0.038	
22	probe rinse		< 2.0	99.0	20	HF + HNO3	8.3.1.2				
27	impinger	Cond. 28: Test # 1	< 2.0	309	20	HNO3 + H2O2	8.3.4.2	50	0.157	0.008	0.361
26	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	3.529	0.353	
25	probe rinse		< 2.0	96.5	20	HF + HNO3	8.3.1.2				
30	impinger	Cond. 28: Test # 2	< 2.0	302	20	HNO3 + H2O2	8.3.4.2	50	0.111	0.006	0.459
29	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	4.538	0.454	
28	probe rinse		< 2.0	98.5	20	HF + HNO3	8.3.1.2				
33	impinger	Cond. 28: Test # 3	< 2.0	307	20	HNO3 + H2O2	8.3.4.2	50	< 0.074	0.004	0.709
32	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	7.053	0.705	
31	probe rinse		< 2.0	97.0	20	HF + HNO3	8.3.1.2				
	impinger	MDL		300	20	HNO3 + H2O2	8.3.4.2	50	0.075	0.004	0.011
	filter			1 filter	NA	HF + HNO3	8.3.1.2	100	0.075	0.008	
	probe rinse			100.0	20	HF + HNO3	8.3.1.2				

10 Samples that read <MDL were assigned a value of one count less than the MDL to facilitate further calculations. Readings that read less than the MDL were qualified with "<", which may or may not carry over to the final result.

11 **mg Ni** = "Rdg" in mg/L **X** Analytical Fraction (mls) **X** "INITIAL SAMPLE VOL" in mls / "SF 2A" in mls **X** 1 L / 1000 mls
Initial sample volume is "Sample Fraction", as **all sample was used.** (There were no "splits")
So, "INITIAL SAMPLE VOL" in mls / "SF 2A" in mls = 1 (per Eq 29-2, & -3)

12 According to RUN ID, the filter+probe rinse were added to impinger results: as "mg of Nickel".

QA/QC WORK SHEET for NICKEL

FLAA METHOD SOP MET-040
5100 AA

Date: 1/6/2006
Analyst: LK

(Mg/L)
IDL= 0.027
MDL= 0.075
RL = 0.10
LDR = 0.10 to 8.0

1 CURRENT COPY OF METHOD AVAILABLE IN WINLAB.

2 INSTRUMENT SET-UP:

(For Specific instrument settings, see current copy of method.)

3 CALIBRATION:

Cal Curve:	Conc	Result	% Rec.	
	0.25	0.275	110.0	
	0.50	0.543	108.6	
	1.00	1.066	106.6	
	2.00	2.096	104.8	
	5.00	4.939	98.8	
Corr. Coef:	xxxxxxxxx	0.9993		(> 0.995)

4 STANDARD TRACEABILITY

QC STANDARD	Standard Name, Company, & Lot #
Calibration	CPI QC-21 41M044
CCV, CRA, AAT	CPI QC-21 41M044
QCS, LFM	CPI 05F011

5 SAMPLE ANALYTICAL RUN

MAT-RIX	SAMPLE	STD CONC	READING Mg/L	BLK	RESULT	DIL 1	DIL 2	QC RESULTS	Mg/L	REP'T mg/L	ICP	
	CCV	5.00	4.943		4.943			99				(95-105%R)
	QCS	2.00	2.043		2.043			102				(95-105%R)
	CCB		-0.023		-0.023			-0.023				(< MDL)
	CRA	0.05	0.068	0.016	0.051			103				(70-130%R)
	CRA	0.10	0.105	-0.003	0.107			107				(70-130%R)
	CRA	0.25	0.284	0.018	0.266			106				(70-130%R)
	LRB		0.052	0.028	0.024			0.024				(< MDL)
	LFB	1.00	0.906	-0.011	0.917			92				(80-120%R)
M29	307-1+2		0.059	-0.042	0.100	1.0	1.0		0.100	**0.100**		
M29	DUP		0.092	-0.016	0.108	1.0	1.0	7.1				(<10 RPD, IF SA > 20X MDL)
M29	SPK	1.00	1.155	0.010	1.145	1.0	1.0	105				(80-120%R)
M29	SER DIL	2/10	0.262	0.026	0.236	1.0	1.0	3.1				(<10%DIFF)
	307-4+5		12.290	0.036	12.254	1.0	1.0		12.254			
	307-4+5		1.721	0.044	1.677	10.0	1.0		16.772	**16.772**		
M29	307-7+8		6.627	0.036	6.591	1.0	1.0		6.591			
M29	307-7+8		0.803	0.040	0.763	10.0	1.0		7.629	**7.629**		
M29	307-10+11		10.710	-0.027	10.737	1.0	1.0		10.737			
M29	307-10+11		1.409	0.007	1.403	10.0	1.0		14.025	**14.025**		
	CCB		-0.026	-0.018	-0.008			-0.026				(< MDL)
	CCV	10.00	8.779	-0.018	8.797			88	(OVER LDR)			(90-110%R)
	CCV	1.00	1.034	-0.024	1.058			106				(90-110%R)
M29	307-13+14		0.070	-0.030	0.100	1.0	1.0		0.100	**0.100**		
M29	307-16+17		0.682	-0.034	0.717	1.0	1.0		0.717	**0.717**		
M29	307-19+20		0.386	-0.032	0.418	1.0	1.0		0.418	**0.418**		
M29	307-22+23		0.340	-0.034	0.375	1.0	1.0		0.375	**0.375**		
M29	307-25+26		3.514	-0.015	3.529	1.0	1.0		3.529	**3.529**		
M29	307-28+29		4.572	0.034	4.538	1.0	1.0		4.538	**4.538**		
M29	307-31+32		5.990	0.021	5.969	1.0	1.0		5.969			
M29	307-31+32		0.705	-0.001	0.705	10.0	1.0		7.053	**7.053**		
	CCB		0.005	0.004	0.001			0.005				(< MDL)
	CCV	0.50	0.537	0.005	0.533			107				(90-110%R)
	LRB		-0.003	-0.002	-0.001			-0.001				(< MDL)
	LFB	1.00	1.023	-0.010	1.033			103				(80-120%R)
M29	307-3		0.055	-0.009	0.064	1.0	1.0		0.064	**0.074**		
M29	DUP		0.065	0.002	0.063	1.0	1.0	1.9				(<10 RPD, IF SA > 20X MDL)
M29	SPK	1.00	1.020	0.031	0.989	1.0	1.0	93				(80-120%R)
M29	SER DIL	2/10	0.225	0.020	0.206	1.0	1.0	3.9				(<10%DIFF)
M29	307-6		0.224	0.032	0.192	1.0	1.0		0.192	**0.192**		
M29	307-9		0.182	0.059	0.123	1.0	1.0		0.123	**0.123**		
M29	307-12		0.117	0.033	0.084	1.0	1.0		0.084	**0.084**		
M29	307-15		0.091	0.027	0.065	1.0	1.0		0.065	**0.074**		
	CCB		0.026	0.028	-0.002			0.026				(< MDL)
	CCV	0.25	0.286	0.026	0.260			104				(90-110%R)
M29	307-18		0.171	0.022	0.149	1.0	1.0		0.149	**0.149**		
	307-21		0.134	0.014	0.120	1.0	1.0		0.120	**0.120**		
	307-24		0.128	0.030	0.098	1.0	1.0		0.098	**0.098**		
M29	307-27		0.206	0.050	0.157	1.0	1.0		0.157	**0.157**		
M29	307-30		0.164	0.053	0.111	1.0	1.0		0.111	**0.111**		
M29	307-33		0.121	0.053	0.068	1.0	1.0		0.068	**0.074**		
	CCV	0.50	0.572	0.053	0.519			104				(90-110%R)
	CCB		0.061	0.056	0.005			0.061				(< MDL)

Element: Ni Seq. No.: 77 AS Loc.: --- Date: 01/06/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.169	0.072	0.003	12:20:17
2			0.170	0.072	0.003	12:20:19
3			0.170	0.072	0.002	12:20:21
Mean:			0.170			
SD :			0.000			
%RSD:			0.03			

Auto-zero performed.

Element: Ni Seq. No.: 78 AS Loc.: --- Date: 01/06/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.004	0.069	0.002	12:24:55
2			-0.004	0.069	0.002	12:24:57
3			-0.004	0.068	0.003	12:24:59
Mean:			-0.004			
SD :			0.000			
%RSD:			9.68			

Auto-zero performed.

Element: Ni Seq. No.: 79 AS Loc.: --- Date: 01/06/2006
Sample ID: Calib Blank

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			-0.001	0.067	0.003	12:26:19
2			0.000	0.068	0.003	12:26:22
3			-0.001	0.067	0.004	12:26:24
Mean:			-0.001			
SD :			0.000			
%RSD:			49.09			

Auto-zero performed.

Element: Ni Seq. No.: 80 AS Loc.: --- Date: 01/06/2006
Sample ID: CAL STD

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.011	0.078	0.003	12:27:25
2			0.012	0.079	0.002	12:27:27
3			0.011	0.079	0.002	12:27:29
Mean:			0.011			
SD :			0.001			
%RSD:			5.05			

Standard number 1 applied. [0.25]
Correlation Coefficient: 0.9997 Slope: 0.0385

Element: Ni Seq. No.: 81 AS Loc.: --- Date: 01/06/2006
Sample ID: cal std 2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.022	0.090	0.002	12:27:50
2			0.023	0.091	0.001	12:27:52
3			0.021	0.089	0.003	12:27:54
Mean:			0.022			
SD :			0.001			
%RSD:			3.88			

Standard number 2 applied. [0.50]
Correlation Coefficient: 0.9995 Slope: 0.0386

Element: Ni Seq. No.: 82 AS Loc.: --- Date: 01/06/2006
Sample ID: cal std 3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.043	0.111	0.002	12:28:20
2			0.043	0.111	0.002	12:28:22
3			0.044	0.111	0.002	12:28:24
Mean:			0.043			
SD :			0.000			
%RSD:			1.05			

Standard number 3 applied. [1.00]
Correlation Coefficient: 0.9990 Slope: 0.0387

Element: Ni Seq. No.: 83 AS Loc.: --- Date: 01/06/2006
Sample ID: cal std 4

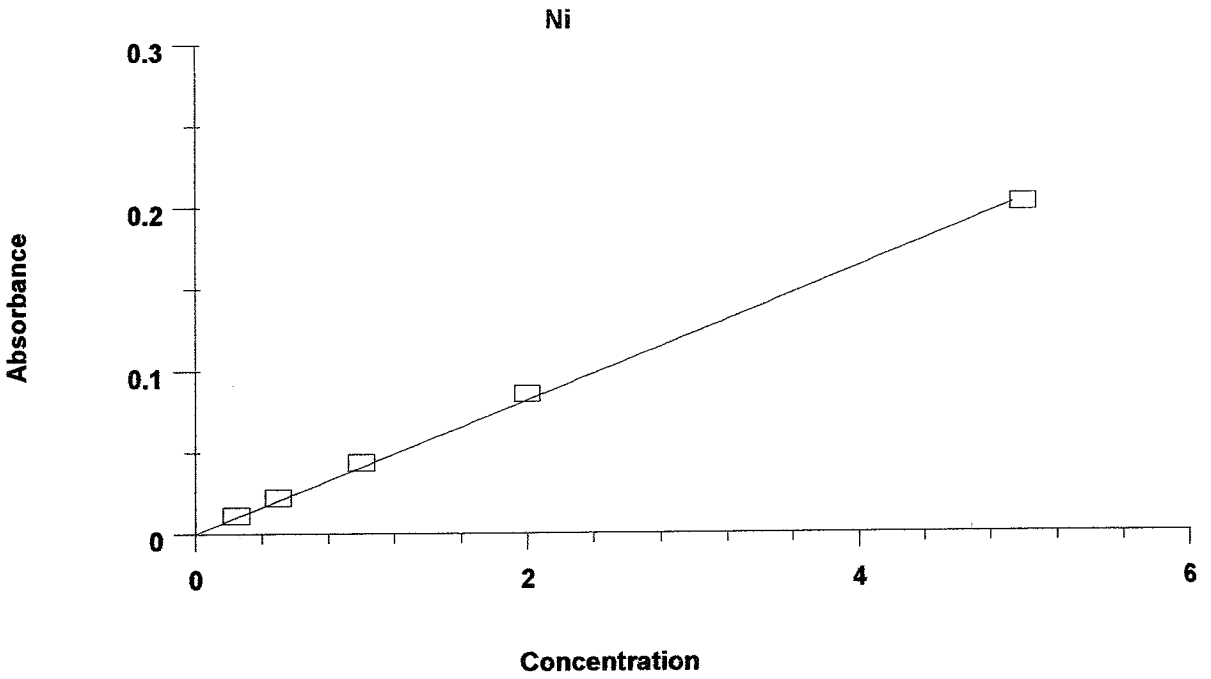
Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.085	0.153	0.002	12:28:45
2			0.086	0.153	0.001	12:28:47
3			0.085	0.153	0.002	12:28:49
Mean:			0.085			
SD :			0.000			
%RSD:			0.54			

Standard number 4 applied. [2.00]
Correlation Coefficient: 0.9979 Slope: 0.0392

Element: Ni Seq. No.: 84 AS Loc.: --- Date: 01/06/2006
Sample ID: cal std 5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1			0.200	0.267	0.002	12:29:07
2			0.203	0.270	0.001	12:29:09
3			0.201	0.269	0.001	12:29:11
Mean:			0.201			
SD :			0.002			
%RSD:			0.77			

The calibration curve may not be linear.
Standard number 5 applied. [5.00]
Correlation Coefficient: 0.9993 Slope: 0.0408



Calibration data for Ni

Standard ID	Mean Signal (Absorbance)	Entered Concentration (mg/L)	Calculated Concentration (mg/L)	Standard Deviation	%RSD
Calib Blank	0.000	----	0.000	0.0005	49.0898
CAL STD	0.011	0.25	0.2750	0.0006	5.0484
cal std 2	0.022	0.50	0.5432	0.0009	3.8830
cal std 3	0.043	1.00	1.066	0.0005	1.0492
cal std 4	0.085	2.00	2.096	0.0005	0.5382
cal std 5	0.201	5.00	4.939	0.0016	0.7728

Correlation Coefficient: 0.99934 Slope: 0.04075

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Element: Ni Seq. No.: 85 AS Loc.: --- Date: 01/06/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.958	4.958	0.202	0.270	0.002	12:29:22
2	4.943	4.943	0.201	0.269	0.002	12:29:25
3	4.929	4.929	0.201	0.268	0.001	12:29:27
Mean:	4.943	4.943	0.201			
SD :	0.0143	0.0143	0.001			
%RSD:	0.29	0.29	0.29			

Element: Ni Seq. No.: 86 AS Loc.: --- Date: 01/06/2006
Sample ID: qcs

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	2.075	2.075	0.085	0.152	0.003	12:29:49
2	2.063	2.063	0.084	0.152	0.003	12:29:51
3	1.990	1.990	0.081	0.149	0.005	12:29:54
Mean:	2.043	2.043	0.083			
SD :	0.0458	0.0458	0.002			
%RSD:	2.24	2.24	2.24			

Element: Ni Seq. No.: 87 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.1128	-0.1128	-0.005	0.063	0.005	12:30:22
2	-0.1237	-0.1237	-0.005	0.062	0.005	12:30:24
3	-0.1301	-0.1301	-0.005	0.062	0.006	12:30:26
Mean:	-0.1222	-0.1222	-0.005			
SD :	0.0088	0.0088	0.000			
%RSD:	7.20	7.20	7.20			

Element: Ni Seq. No.: 88 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0497	-0.0497	-0.002	0.066	0.002	12:31:11
2	-0.0711	-0.0711	-0.003	0.065	0.003	12:31:13
3	-0.0784	-0.0784	-0.003	0.064	0.004	12:31:16
Mean:	-0.0664	-0.0664	-0.003			
SD :	0.0149	0.0149	0.001			
%RSD:	22.46	22.46	22.46			

Element: Ni Seq. No.: 89 AS Loc.: --- Date: 01/06/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0661	-0.0661	-0.003	0.065	0.003	12:31:42

Auto-zero performed.

Element: Ni Seq. No.: 90 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0258	-0.0258	-0.001	0.064	0.003	12:31:51
2	-0.0318	-0.0318	-0.001	0.064	0.004	12:31:53
3	-0.0102	-0.0102	0.000	0.064	0.003	12:31:55
Mean:	-0.0226	-0.0226	-0.001			
SD :	0.0112	0.0112	0.000			
%RSD:	49.46	49.46	49.46			

Element: Ni Seq. No.: 91 AS Loc.: --- Date: 01/06/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0084	0.0084	0.000	0.065	0.002	12:31:58

Auto-zero performed.

Element: Ni Seq. No.: 92 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0204	-0.0204	-0.001	0.064	0.003	12:32:07
2	-0.0235	-0.0235	-0.001	0.064	0.003	12:32:09
3	-0.0095	-0.0095	0.000	0.065	0.003	12:32:12
Mean:	-0.0178	-0.0178	-0.001			
SD :	0.0073	0.0073	0.000			
%RSD:	41.18	41.18	41.18			

Element: Ni Seq. No.: 93 AS Loc.: --- Date: 01/06/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0338	-0.0338	-0.001	0.064	0.003	12:32:27

Auto-zero performed.

Element: Ni Seq. No.: 94 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0230	0.0230	0.001	0.065	0.003	12:32:40
2	0.0213	0.0213	0.001	0.065	0.003	12:32:42
3	0.0043	0.0043	0.000	0.064	0.003	12:32:44
Mean:	0.0162	0.0162	0.001			
SD :	0.0104	0.0104	0.000			
%RSD:	63.98	63.98	63.98			

Element: Ni Seq. No.: 95 AS Loc.: --- Date: 01/06/2006
Sample ID: cra 0.05

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0745	0.0745	0.003	0.067	0.003	12:33:14
2	0.0573	0.0573	0.002	0.066	0.003	12:33:16
3	0.0707	0.0707	0.003	0.067	0.002	12:33:18
Mean:	0.0675	0.0675	0.003			
SD :	0.0091	0.0091	0.000			
%RSD:	13.42	13.42	13.42			

Element: Ni Seq. No.: 96 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0007	-0.0007	0.000	0.064	0.003	12:33:36
2	-0.0028	-0.0028	0.000	0.064	0.003	12:33:39
3	-0.0044	-0.0044	0.000	0.064	0.003	12:33:41
Mean:	-0.0026	-0.0026	0.000			
SD :	0.0019	0.0019	0.000			
%RSD:	72.08	72.08	72.08			

Element: Ni Seq. No.: 97 AS Loc.: --- Date: 01/06/2006
Sample ID: cra 0.1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1200	0.1200	0.005	0.069	0.003	12:34:03
2	0.1026	0.1026	0.004	0.068	0.004	12:34:05
3	0.0922	0.0922	0.004	0.068	0.004	12:34:07
Mean:	0.1049	0.1049	0.004			
SD :	0.0140	0.0140	0.001			
%RSD:	13.36	13.36	13.36			

Element: Ni Seq. No.: 98 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0010	-0.0010	0.000	0.064	0.003	12:34:31
2	0.0097	0.0097	0.000	0.064	0.003	12:34:33
3	0.0184	0.0184	0.001	0.065	0.003	12:34:35
Mean:	0.0090	0.0090	0.000			
SD :	0.0097	0.0097	0.000			
%RSD:	107.5	107.5	107.46			

Element: Ni Seq. No.: 99 AS Loc.: --- Date: 01/06/2006
Sample ID: cra 0.25

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2762	0.2762	0.011	0.075	0.003	12:34:49
2	0.2831	0.2831	0.012	0.075	0.003	12:34:52
3	0.2925	0.2925	0.012	0.076	0.003	12:34:54
Mean:	0.2839	0.2839	0.012			
SD :	0.0082	0.0082	0.000			
%RSD:	2.87	2.87	2.87			

Element: Ni Seq. No.: 100 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0241	0.0241	0.001	0.065	0.003	12:35:07
2	0.0207	0.0207	0.001	0.065	0.003	12:35:09
3	0.0387	0.0387	0.002	0.065	0.003	12:35:11
Mean:	0.0278	0.0278	0.001			
SD :	0.0096	0.0096	0.000			
%RSD:	34.42	34.42	34.42			

Element: Ni Seq. No.: 101 AS Loc.: --- Date: 01/06/2006
Sample ID: lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0405	0.0405	0.002	0.065	0.003	12:35:45
2	0.0678	0.0678	0.003	0.067	0.002	12:35:47
3	0.0473	0.0473	0.002	0.066	0.003	12:35:50
Mean:	0.0519	0.0519	0.002			
SD :	0.0142	0.0142	0.001			
%RSD:	27.36	27.36	27.36			

Element: Ni Seq. No.: 102 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0834	0.0834	0.003	0.067	0.002	12:36:09
2	0.0569	0.0569	0.002	0.066	0.003	12:36:11
3	0.0684	0.0684	0.003	0.067	0.002	12:36:13
Mean:	0.0696	0.0696	0.003			
SD :	0.0132	0.0132	0.001			
%RSD:	19.04	19.04	19.04			

Element: Ni Seq. No.: 103 AS Loc.: --- Date: 01/06/2006
Sample ID: Sample

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0673	0.0673	0.003	0.067	0.002	12:36:20

Auto-zero performed.

Element: Ni Seq. No.: 104 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0038	0.0038	0.000	0.067	0.002	12:36:27
2	-0.0075	-0.0075	0.000	0.066	0.002	12:36:30
3	-0.0299	-0.0299	-0.001	0.065	0.003	12:36:32
Mean:	-0.0112	-0.0112	0.000			
SD :	0.0171	0.0171	0.001			
%RSD:	152.6	152.6	152.65			

Element: Ni Seq. No.: 105 AS Loc.: --- Date: 01/06/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.9120	0.9120	0.037	0.104	0.002	12:36:45
2	0.9023	0.9023	0.037	0.103	0.003	12:36:48
3	0.9030	0.9030	0.037	0.103	0.003	12:36:50
Mean:	0.9058	0.9058	0.037			
SD :	0.0054	0.0054	0.000			
%RSD:	0.60	0.60	0.60			

Element: Ni Seq. No.: 106 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0478	-0.0478	-0.002	0.065	0.004	12:37:07
2	-0.0440	-0.0440	-0.002	0.065	0.004	12:37:09
3	-0.0328	-0.0328	-0.001	0.065	0.004	12:37:11
Mean:	-0.0415	-0.0415	-0.002			
SD :	0.0078	0.0078	0.000			
%RSD:	18.70	18.70	18.70			

Element: Ni Seq. No.: 107 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-1-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0604	0.0604	0.002	0.069	0.003	12:37:35
2	0.0573	0.0573	0.002	0.069	0.003	12:37:37
3	0.0581	0.0581	0.002	0.069	0.003	12:37:39
Mean:	0.0586	0.0586	0.002			
SD :	0.0016	0.0016	0.000			
%RSD:	2.76	2.76	2.76			

Element: Ni Seq. No.: 108 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0123	-0.0123	-0.001	0.066	0.003	12:38:00
2	-0.0179	-0.0179	-0.001	0.066	0.003	12:38:02
3	-0.0176	-0.0176	-0.001	0.066	0.003	12:38:05
Mean:	-0.0159	-0.0159	-0.001			
SD :	0.0031	0.0031	0.000			
%RSD:	19.67	19.67	19.67			

Element: Ni Seq. No.: 109 AS Loc.: --- Date: 01/06/2006
Sample ID: d307-1-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0965	0.0965	0.004	0.070	0.003	12:38:40
2	0.0908	0.0908	0.004	0.070	0.003	12:38:42
3	0.0876	0.0876	0.004	0.070	0.003	12:38:44
Mean:	0.0916	0.0916	0.004			
SD :	0.0045	0.0045	0.000			
%RSD:	4.91	4.91	4.91			

Element: Ni Seq. No.: 110 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0077	0.0077	0.000	0.067	0.003	12:38:59
2	0.0148	0.0148	0.001	0.067	0.003	12:39:02
3	0.0072	0.0072	0.000	0.067	0.003	12:39:04
Mean:	0.0099	0.0099	0.000			
SD :	0.0042	0.0042	0.000			
%RSD:	42.66	42.66	42.66			

Element: Ni Seq. No.: 111 AS Loc.: --- Date: 01/06/2006
Sample ID: s307-1-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.147	1.147	0.047	0.113	0.003	12:39:37
2	1.162	1.162	0.047	0.114	0.003	12:39:39
3	1.154	1.154	0.047	0.114	0.003	12:39:41
Mean:	1.155	1.155	0.047			
SD :	0.0076	0.0076	0.000			
%RSD:	0.65	0.65	0.65			

Element: Ni Seq. No.: 112 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0330	0.0330	0.001	0.068	0.002	12:40:33
2	0.0233	0.0233	0.001	0.068	0.002	12:40:36
3	0.0202	0.0202	0.001	0.067	0.002	12:40:38
Mean:	0.0255	0.0255	0.001			
SD :	0.0067	0.0067	0.000			
%RSD:	26.18	26.18	26.18			

Element: Ni Seq. No.: 113 AS Loc.: --- Date: 01/06/2006
Sample ID: ser307-1-2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2770	0.2770	0.011	0.078	0.001	12:41:10
2	0.2595	0.2595	0.011	0.077	0.002	12:41:12
3	0.2486	0.2486	0.010	0.077	0.002	12:41:14
Mean:	0.2617	0.2617	0.011			
SD :	0.0143	0.0143	0.001			
%RSD:	5.47	5.47	5.47			

Element: Ni Seq. No.: 114 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0336	0.0336	0.001	0.068	0.002	12:42:02
2	0.0396	0.0396	0.002	0.068	0.002	12:42:04
3	0.0354	0.0354	0.001	0.068	0.002	12:42:06
Mean:	0.0362	0.0362	0.001			
SD :	0.0030	0.0030	0.000			
%RSD:	8.36	8.36	8.36			

Element: Ni Seq. No.: 115 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-4-5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	12.27	12.27	0.500	0.566	0.002	12:42:25
Sample absorbance is greater than that of the highest standard.						
2	12.29	12.29	0.501	0.567	0.001	12:42:27
Sample absorbance is greater than that of the highest standard.						
3	12.32	12.32	0.502	0.569	0.001	12:42:29
Sample absorbance is greater than that of the highest standard.						
Mean:	12.29	12.29	0.501			
SD :	0.0270	0.0270	0.001			
%RSD:	0.22	0.22	0.22			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 116 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0415	0.0415	0.002	0.068	0.002	12:42:59
2	0.0478	0.0478	0.002	0.068	0.002	12:43:01
3	0.0420	0.0420	0.002	0.068	0.002	12:43:04
Mean:	0.0438	0.0438	0.002			
SD :	0.0035	0.0035	0.000			
%RSD:	7.92	7.92	7.92			

Element: Ni Seq. No.: 117 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-4-5 x10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.723	1.723	0.070	0.137	0.002	12:44:18
2	1.733	1.733	0.071	0.137	0.002	12:44:20
3	1.708	1.708	0.070	0.136	0.003	12:44:23
Mean:	1.721	1.721	0.070			
SD :	0.0126	0.0126	0.001			
%RSD:	0.73	0.73	0.73			

Element: Ni Seq. No.: 118 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0405	0.0405	0.002	0.068	0.002	12:45:05
2	0.0336	0.0336	0.001	0.068	0.002	12:45:08
3	0.0343	0.0343	0.001	0.068	0.002	12:45:10
Mean:	0.0362	0.0362	0.001			
SD :	0.0038	0.0038	0.000			
%RSD:	10.52	10.52	10.52			

Element: Ni Seq. No.: 119 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-7-8

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	6.577	6.577	0.268	0.335	0.002	12:45:30
Sample absorbance is greater than that of the highest standard.						
2	6.615	6.615	0.270	0.336	0.002	12:45:32
Sample absorbance is greater than that of the highest standard.						
3	6.688	6.688	0.273	0.339	0.001	12:45:34
Sample absorbance is greater than that of the highest standard.						
Mean:	6.627	6.627	0.270			
SD :	0.0561	0.0561	0.002			
%RSD:	0.85	0.85	0.85			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 120 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0304	0.0304	0.001	0.068	0.002	12:45:59
2	0.0366	0.0366	0.001	0.068	0.002	12:46:01
3	0.0540	0.0540	0.002	0.069	0.001	12:46:03
Mean:	0.0403	0.0403	0.002			
SD :	0.0122	0.0122	0.000			
%RSD:	30.38	30.38	30.38			

Element: Ni Seq. No.: 121 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-7-8 x10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.7891	0.7891	0.032	0.099	0.003	12:47:10
2	0.8236	0.8236	0.034	0.100	0.002	12:47:12
3	0.7970	0.7970	0.032	0.099	0.003	12:47:14
Mean:	0.8032	0.8032	0.033			
SD :	0.0181	0.0181	0.001			
%RSD:	2.25	2.25	2.25			

Element: Ni Seq. No.: 122 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0712	-0.0712	-0.003	0.064	0.005	12:47:34
2	0.0059	0.0059	0.000	0.067	0.002	12:47:36
3	-0.0151	-0.0151	-0.001	0.066	0.003	12:47:38
Mean:	-0.0268	-0.0268	-0.001			
SD :	0.0399	0.0399	0.002			
%RSD:	148.8	148.8	148.77			

Element: Ni Seq. No.: 123 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-10-11

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	10.67	10.67	0.435	0.501	0.002	12:48:27
Sample absorbance is greater than that of the highest standard.						
2	10.74	10.74	0.438	0.504	0.002	12:48:29
Sample absorbance is greater than that of the highest standard.						
3	10.73	10.73	0.437	0.504	0.003	12:48:31
Sample absorbance is greater than that of the highest standard.						
Mean:	10.71	10.71	0.437			
SD :	0.0385	0.0385	0.002			
%RSD:	0.36	0.36	0.36			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 124 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0038	-0.0038	0.000	0.066	0.002	12:49:03
2	0.0085	0.0085	0.000	0.067	0.002	12:49:05
3	0.0146	0.0146	0.001	0.067	0.002	12:49:08
Mean:	0.0065	0.0065	0.000			
SD :	0.0094	0.0094	0.000			
%RSD:	145.1	145.1	145.08			

Element: Ni Seq. No.: 125 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-10-11 x10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.408	1.408	0.057	0.124	0.002	12:50:19
2	1.393	1.393	0.057	0.123	0.002	12:50:21
3	1.424	1.424	0.058	0.125	0.002	12:50:24
Mean:	1.409	1.409	0.057			
SD :	0.0156	0.0156	0.001			
%RSD:	1.11	1.11	1.11			

Element: Ni Seq. No.: 126 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0218	-0.0218	-0.001	0.066	0.003	12:50:55
2	-0.0213	-0.0213	-0.001	0.066	0.003	12:50:57
3	-0.0346	-0.0346	-0.001	0.065	0.003	12:50:59
Mean:	-0.0259	-0.0259	-0.001			
SD :	0.0075	0.0075	0.000			
%RSD:	29.07	29.07	29.07			

Element: Ni Seq. No.: 127 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0200	-0.0200	-0.001	0.066	0.003	12:51:21
2	-0.0028	-0.0028	0.000	0.066	0.003	12:51:23
3	-0.0310	-0.0310	-0.001	0.065	0.003	12:51:25
Mean:	-0.0179	-0.0179	-0.001			
SD :	0.0142	0.0142	0.001			
%RSD:	79.30	79.30	79.30			

Element: Ni Seq. No.: 128 AS Loc.: --- Date: 01/06/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	8.796	8.796	0.358	0.425	0.004	12:51:41
Sample absorbance is greater than that of the highest standard.						
2	8.692	8.692	0.354	0.421	0.004	12:51:43
Sample absorbance is greater than that of the highest standard.						
3	8.850	8.850	0.361	0.427	0.003	12:51:45
Sample absorbance is greater than that of the highest standard.						
Mean:	8.779	8.779	0.358			
SD :	0.0802	0.0802	0.003			
%RSD:	0.91	0.91	0.91			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 129 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0159	-0.0159	-0.001	0.066	0.003	12:52:06
2	-0.0292	-0.0292	-0.001	0.065	0.003	12:52:09
3	-0.0256	-0.0256	-0.001	0.066	0.003	12:52:11
Mean:	-0.0236	-0.0236	-0.001			
SD :	0.0069	0.0069	0.000			
%RSD:	29.15	29.15	29.15			

Element: Ni Seq. No.: 130 AS Loc.: --- Date: 01/06/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.042	1.042	0.042	0.109	0.004	12:52:33
2	1.038	1.038	0.042	0.109	0.004	12:52:35
3	1.023	1.023	0.042	0.108	0.004	12:52:37
Mean:	1.034	1.034	0.042			
SD :	0.0102	0.0102	0.000			
%RSD:	0.99	0.99	0.99			

Element: Ni Seq. No.: 131 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0256	-0.0256	-0.001	0.066	0.004	12:53:03
2	-0.0340	-0.0340	-0.001	0.065	0.004	12:53:05
3	-0.0295	-0.0295	-0.001	0.065	0.004	12:53:07
Mean:	-0.0297	-0.0297	-0.001			
SD :	0.0042	0.0042	0.000			
%RSD:	14.10	14.10	14.10			

Element: Ni Seq. No.: 132 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-13-14

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0630	0.0630	0.003	0.069	0.004	12:53:28
2	0.0711	0.0711	0.003	0.069	0.004	12:53:30
3	0.0770	0.0770	0.003	0.070	0.003	12:53:32
Mean:	0.0704	0.0704	0.003			
SD :	0.0070	0.0070	0.000			
%RSD:	9.95	9.95	9.95			

Element: Ni Seq. No.: 133 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0428	-0.0428	-0.002	0.065	0.004	12:54:57
2	-0.0327	-0.0327	-0.001	0.065	0.004	12:54:59
3	-0.0268	-0.0268	-0.001	0.065	0.004	12:55:01
Mean:	-0.0341	-0.0341	-0.001			
SD :	0.0081	0.0081	0.000			
%RSD:	23.87	23.87	23.87			

Element: Ni Seq. No.: 134 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-16-17

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.6813	0.6813	0.028	0.094	0.004	12:55:18
2	0.6868	0.6868	0.028	0.095	0.004	12:55:20
3	0.6790	0.6790	0.028	0.094	0.004	12:55:22
Mean:	0.6824	0.6824	0.028			
SD :	0.0041	0.0041	0.000			
%RSD:	0.59	0.59	0.59			

Element: Ni Seq. No.: 135 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0295	-0.0295	-0.001	0.065	0.004	12:55:38
2	-0.0358	-0.0358	-0.001	0.065	0.004	12:55:40
3	-0.0292	-0.0292	-0.001	0.065	0.003	12:55:42
Mean:	-0.0315	-0.0315	-0.001			
SD :	0.0037	0.0037	0.000			
%RSD:	11.74	11.74	11.74			

Element: Ni Seq. No.: 136 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-19-20

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.3796	0.3796	0.015	0.082	0.004	12:56:03
2	0.3901	0.3901	0.016	0.082	0.003	12:56:05
3	0.3895	0.3895	0.016	0.082	0.003	12:56:07
Mean:	0.3864	0.3864	0.016			
SD :	0.0059	0.0059	0.000			
%RSD:	1.52	1.52	1.52			

Element: Ni Seq. No.: 137 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0377	-0.0377	-0.002	0.065	0.004	12:56:31
2	-0.0402	-0.0402	-0.002	0.065	0.004	12:56:33
3	-0.0251	-0.0251	-0.001	0.066	0.004	12:56:35
Mean:	-0.0344	-0.0344	-0.001			
SD :	0.0081	0.0081	0.000			
%RSD:	23.58	23.58	23.58			

Element: Ni Seq. No.: 138 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-22-23

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.3391	0.3391	0.014	0.080	0.004	12:56:57
2	0.3337	0.3337	0.014	0.080	0.004	12:56:59
3	0.3481	0.3481	0.014	0.081	0.004	12:57:01
Mean:	0.3403	0.3403	0.014			
SD :	0.0073	0.0073	0.000			
%RSD:	2.14	2.14	2.14			

Element: Ni Seq. No.: 139 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0051	-0.0051	0.000	0.066	0.003	12:57:20
2	-0.0117	-0.0117	0.000	0.066	0.003	12:57:22
3	-0.0271	-0.0271	-0.001	0.065	0.003	12:57:24
Mean:	-0.0146	-0.0146	-0.001			
SD :	0.0113	0.0113	0.000			
%RSD:	77.29	77.29	77.29			

Element: Ni Seq. No.: 140 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-25-26

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	3.506	3.506	0.143	0.209	0.004	12:57:43
2	3.515	3.515	0.143	0.210	0.003	12:57:45
3	3.521	3.521	0.143	0.210	0.003	12:57:47
Mean:	3.514	3.514	0.143			
SD :	0.0072	0.0072	0.000			
%RSD:	0.20	0.20	0.20			

Element: Ni Seq. No.: 141 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0297	0.0297	0.001	0.068	0.002	12:59:40
2	0.0412	0.0412	0.002	0.068	0.001	12:59:42
3	0.0323	0.0323	0.001	0.068	0.002	12:59:44
Mean:	0.0344	0.0344	0.001			
SD :	0.0060	0.0060	0.000			
%RSD:	17.49	17.49	17.49			

Element: Ni Seq. No.: 142 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-28-29

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	4.542	4.542	0.185	0.252	0.002	13:01:03
2	4.562	4.562	0.186	0.252	0.002	13:01:05
3	4.612	4.612	0.188	0.254	0.002	13:01:07
Mean:	4.572	4.572	0.186			
SD :	0.0359	0.0359	0.001			
%RSD:	0.78	0.78	0.78			

Element: Ni Seq. No.: 143 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0189	0.0189	0.001	0.067	0.002	13:01:31
2	0.0256	0.0256	0.001	0.068	0.002	13:01:33
3	0.0195	0.0195	0.001	0.067	0.002	13:01:35
Mean:	0.0213	0.0213	0.001			
SD :	0.0037	0.0037	0.000			
%RSD:	17.39	17.39	17.39			

Element: Ni Seq. No.: 144 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-31-32

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	5.948	5.948	0.242	0.309	0.003	13:01:54
Sample absorbance is greater than that of the highest standard.						
2	6.011	6.011	0.245	0.311	0.002	13:01:56
Sample absorbance is greater than that of the highest standard.						
3	6.011	6.011	0.245	0.312	0.003	13:01:58
Sample absorbance is greater than that of the highest standard.						
Mean:	5.990	5.990	0.244			
SD :	0.0362	0.0362	0.001			
%RSD:	0.61	0.61	0.61			
Sample absorbance is greater than that of the highest standard.						

Element: Ni Seq. No.: 145 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0054	-0.0054	0.000	0.066	0.003	13:02:46
2	-0.0107	-0.0107	0.000	0.066	0.003	13:02:48
3	0.0140	0.0140	0.001	0.067	0.002	13:02:50
Mean:	-0.0007	-0.0007	0.000			
SD :	0.0130	0.0130	0.001			
%RSD:	1823	1823	1823.13			

Element: Ni Seq. No.: 146 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-31-32 x10

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.6944	0.6944	0.028	0.095	0.003	13:03:22
2	0.7131	0.7131	0.029	0.096	0.003	13:03:25
3	0.7062	0.7062	0.029	0.095	0.003	13:03:27
Mean:	0.7046	0.7046	0.029			
SD :	0.0095	0.0095	0.000			
%RSD:	1.34	1.34	1.34			

Element: Ni Seq. No.: 147 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0062	0.0062	0.000	0.067	0.003	13:03:43
2	-0.0023	-0.0023	0.000	0.066	0.003	13:03:46
3	0.0071	0.0071	0.000	0.067	0.002	13:03:48
Mean:	0.0037	0.0037	0.000			
SD :	0.0052	0.0052	0.000			
%RSD:	141.3	141.3	141.33			

Element: Ni Seq. No.: 148 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0143	0.0143	0.001	0.067	0.003	13:04:16
2	0.0039	0.0039	0.000	0.067	0.003	13:04:19
3	-0.0048	-0.0048	0.000	0.066	0.003	13:04:21
Mean:	0.0045	0.0045	0.000			
SD :	0.0095	0.0095	0.000			
%RSD:	212.5	212.5	212.46			

Element: Ni Seq. No.: 149 AS Loc.: --- Date: 01/06/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5242	0.5242	0.021	0.088	0.004	13:04:34
2	0.5521	0.5521	0.022	0.089	0.003	13:04:36
3	0.5354	0.5354	0.022	0.088	0.003	13:04:38
Mean:	0.5372	0.5372	0.022			
SD :	0.0140	0.0140	0.001			
%RSD:	2.61	2.61	2.61			

Element: Ni Seq. No.: 150 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0123	-0.0123	-0.001	0.066	0.003	13:04:55
2	0.0131	0.0131	0.001	0.067	0.002	13:04:57
3	-0.0069	-0.0069	0.000	0.066	0.003	13:04:59
Mean:	-0.0020	-0.0020	0.000			
SD :	0.0134	0.0134	0.001			
%RSD:	662.0	662.0	662.01			

Element: Ni Seq. No.: 151 AS Loc.: --- Date: 01/06/2006
Sample ID: lrb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0061	-0.0061	0.000	0.066	0.003	13:05:15
2	-0.0005	-0.0005	0.000	0.067	0.003	13:05:17
3	-0.0023	-0.0023	0.000	0.066	0.003	13:05:19
Mean:	-0.0030	-0.0030	0.000			
SD :	0.0028	0.0028	0.000			
%RSD:	96.39	96.39	96.39			

Element: Ni Seq. No.: 152 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0103	-0.0103	0.000	0.066	0.003	13:05:35
2	-0.0007	-0.0007	0.000	0.067	0.003	13:05:37
3	-0.0177	-0.0177	-0.001	0.066	0.003	13:05:39
Mean:	-0.0096	-0.0096	0.000			
SD :	0.0086	0.0086	0.000			
%RSD:	89.41	89.41	89.41			

Element: Ni Seq. No.: 153 AS Loc.: --- Date: 01/06/2006
Sample ID: lfb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.023	1.023	0.042	0.108	0.003	13:05:55
2	1.020	1.020	0.042	0.108	0.004	13:05:58
3	1.025	1.025	0.042	0.108	0.004	13:06:00
Mean:	1.023	1.023	0.042			
SD :	0.0027	0.0027	0.000			
%RSD:	0.26	0.26	0.26			

Element: Ni Seq. No.: 154 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	-0.0103	-0.0103	0.000	0.066	0.003	13:06:18
2	-0.0084	-0.0084	0.000	0.066	0.003	13:06:20
3	-0.0072	-0.0072	0.000	0.066	0.003	13:06:23
Mean:	-0.0086	-0.0086	0.000			
SD :	0.0016	0.0016	0.000			
%RSD:	18.24	18.24	18.24			

Element: Ni Seq. No.: 155 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0679	0.0679	0.003	0.069	0.003	13:06:48
2	0.0637	0.0637	0.003	0.069	0.003	13:06:50
3	0.0553	0.0553	0.002	0.069	0.003	13:06:52
Mean:	0.0623	0.0623	0.003			
SD :	0.0064	0.0064	0.000			
%RSD:	10.32	10.32	10.32			

Element: Ni Seq. No.: 156 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0304	0.0304	0.001	0.068	0.002	13:07:09
2	0.0159	0.0159	0.001	0.067	0.002	13:07:11
3	0.0346	0.0346	0.001	0.068	0.002	13:07:14
Mean:	0.0270	0.0270	0.001			
SD :	0.0098	0.0098	0.000			
%RSD:	36.36	36.36	36.36			

Element: Ni Seq. No.: 157 AS Loc.: --- Date: 01/06/2006
Sample ID: d307-3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0020	0.0020	0.000	0.067	0.005	13:08:34
2	0.0583	0.0583	0.002	0.069	0.003	13:08:36
3	0.0647	0.0647	0.003	0.069	0.002	13:08:38
Mean:	0.0416	0.0416	0.002			
SD :	0.0345	0.0345	0.001			
%RSD:	82.86	82.86	82.86			

Element: Ni Seq. No.: 158 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0309	0.0309	0.001	0.068	0.001	13:09:06
2	0.0327	0.0327	0.001	0.068	0.001	13:09:08
3	0.0284	0.0284	0.001	0.068	0.001	13:09:10
Mean:	0.0306	0.0306	0.001			
SD :	0.0021	0.0021	0.000			
%RSD:	6.99	6.99	6.99			

Element: Ni Seq. No.: 159 AS Loc.: --- Date: 01/06/2006
Sample ID: s307-3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	1.011	1.011	0.041	0.108	0.002	13:09:41
2	1.033	1.033	0.042	0.109	0.002	13:09:43
3	1.016	1.016	0.041	0.108	0.002	13:09:45
Mean:	1.020	1.020	0.042			
SD :	0.0113	0.0113	0.000			
%RSD:	1.11	1.11	1.11			

Element: Ni Seq. No.: 160 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0166	0.0166	0.001	0.067	0.003	13:09:59
2	0.0261	0.0261	0.001	0.068	0.003	13:10:01
3	0.0171	0.0171	0.001	0.067	0.003	13:10:03
Mean:	0.0199	0.0199	0.001			
SD :	0.0054	0.0054	0.000			
%RSD:	26.91	26.91	26.91			

Element: Ni Seq. No.: 161 AS Loc.: --- Date: 01/06/2006
Sample ID: ser307-3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2258	0.2258	0.009	0.076	0.003	13:10:59
2	0.2224	0.2224	0.009	0.076	0.004	13:11:01
3	0.2281	0.2281	0.009	0.076	0.003	13:11:03
Mean:	0.2254	0.2254	0.009			
SD :	0.0029	0.0029	0.000			
%RSD:	1.28	1.28	1.28			

Element: Ni Seq. No.: 162 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0174	0.0174	0.001	0.067	0.003	13:11:54
2	0.0458	0.0458	0.002	0.068	0.002	13:11:56
3	0.0338	0.0338	0.001	0.068	0.002	13:11:58
Mean:	0.0323	0.0323	0.001			
SD :	0.0143	0.0143	0.001			
%RSD:	44.09	44.09	44.09			

Element: Ni Seq. No.: 163 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-6

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2232	0.2232	0.009	0.076	0.003	13:12:19
2	0.2288	0.2288	0.009	0.076	0.002	13:12:21
3	0.2196	0.2196	0.009	0.076	0.002	13:12:23
Mean:	0.2239	0.2239	0.009			
SD :	0.0046	0.0046	0.000			
%RSD:	2.07	2.07	2.07			

Element: Ni Seq. No.: 164 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0604	0.0604	0.002	0.069	0.001	13:12:38
2	0.0532	0.0532	0.002	0.069	0.002	13:12:40
3	0.0619	0.0619	0.003	0.069	0.002	13:12:43
Mean:	0.0585	0.0585	0.002			
SD :	0.0047	0.0047	0.000			
%RSD:	7.96	7.96	7.96			

Element: Ni Seq. No.: 165 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-9

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1782	0.1782	0.007	0.074	0.002	13:12:59
2	0.1789	0.1789	0.007	0.074	0.002	13:13:01
3	0.1879	0.1879	0.008	0.074	0.002	13:13:03
Mean:	0.1817	0.1817	0.007			
SD :	0.0054	0.0054	0.000			
%RSD:	2.98	2.98	2.98			

Element: Ni Seq. No.: 166 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0302	0.0302	0.001	0.068	0.002	13:13:23
2	0.0313	0.0313	0.001	0.068	0.002	13:13:25
3	0.0377	0.0377	0.002	0.068	0.002	13:13:27
Mean:	0.0331	0.0331	0.001			
SD :	0.0041	0.0041	0.000			
%RSD:	12.29	12.29	12.29			

Element: Ni Seq. No.: 167 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-12

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1213	0.1213	0.005	0.071	0.003	13:13:43
2	0.1155	0.1155	0.005	0.071	0.003	13:13:45
3	0.1131	0.1131	0.005	0.071	0.003	13:13:47
Mean:	0.1166	0.1166	0.005			
SD :	0.0042	0.0042	0.000			
%RSD:	3.61	3.61	3.61			

Element: Ni Seq. No.: 168 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0141	0.0141	0.001	0.067	0.003	13:14:05
2	0.0240	0.0240	0.001	0.068	0.003	13:14:08
3	0.0419	0.0419	0.002	0.068	0.002	13:14:10
Mean:	0.0266	0.0266	0.001			
SD :	0.0141	0.0141	0.001			
%RSD:	52.78	52.78	52.78			

Element: Ni Seq. No.: 169 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-15

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0888	0.0888	0.004	0.070	0.003	13:14:24
2	0.0926	0.0926	0.004	0.070	0.003	13:14:26
3	0.0924	0.0924	0.004	0.070	0.003	13:14:29
Mean:	0.0913	0.0913	0.004			
SD :	0.0021	0.0021	0.000			
%RSD:	2.34	2.34	2.34			

Element: Ni Seq. No.: 170 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0499	0.0499	0.002	0.069	0.002	13:14:48
2	0.0231	0.0231	0.001	0.067	0.003	13:14:51
3	0.0097	0.0097	0.000	0.067	0.003	13:14:53
Mean:	0.0276	0.0276	0.001			
SD :	0.0205	0.0205	0.001			
%RSD:	74.23	74.23	74.23			

Element: Ni Seq. No.: 171 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0414	0.0414	0.002	0.068	0.002	13:15:00
2	0.0159	0.0159	0.001	0.067	0.003	13:15:02
3	0.0208	0.0208	0.001	0.067	0.003	13:15:04
Mean:	0.0260	0.0260	0.001			
SD :	0.0135	0.0135	0.001			
%RSD:	51.81	51.81	51.81			

Element: Ni Seq. No.: 172 AS Loc.: --- Date: 01/06/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2846	0.2846	0.012	0.078	0.003	13:15:18
2	0.2928	0.2928	0.012	0.078	0.003	13:15:20
3	0.2808	0.2808	0.011	0.078	0.003	13:15:22
Mean:	0.2861	0.2861	0.012			
SD :	0.0061	0.0061	0.000			
%RSD:	2.14	2.14	2.14			

Element: Ni Seq. No.: 173 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0300	0.0300	0.001	0.068	0.003	13:15:41
2	0.0241	0.0241	0.001	0.068	0.003	13:15:43
3	0.0118	0.0118	0.000	0.067	0.003	13:15:45
Mean:	0.0220	0.0220	0.001			
SD :	0.0093	0.0093	0.000			
%RSD:	42.26	42.26	42.26			

Element: Ni Seq. No.: 174 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-18

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1567	0.1567	0.006	0.073	0.003	13:16:00
2	0.1776	0.1776	0.007	0.074	0.003	13:16:03
3	0.1781	0.1781	0.007	0.074	0.003	13:16:05
Mean:	0.1708	0.1708	0.007			
SD :	0.0122	0.0122	0.000			
%RSD:	7.13	7.13	7.13			

Element: Ni Seq. No.: 175 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0110	0.0110	0.000	0.067	0.004	13:16:24
2	0.0171	0.0171	0.001	0.067	0.003	13:16:26
3	0.0146	0.0146	0.001	0.067	0.003	13:16:28
Mean:	0.0142	0.0142	0.001			
SD :	0.0031	0.0031	0.000			
%RSD:	21.47	21.47	21.47			

Element: Ni Seq. No.: 176 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-21

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1193	0.1193	0.005	0.071	0.004	13:16:59
2	0.1469	0.1469	0.006	0.073	0.003	13:17:01
3	0.1362	0.1362	0.006	0.072	0.003	13:17:03
Mean:	0.1341	0.1341	0.005			
SD :	0.0139	0.0139	0.001			
%RSD:	10.36	10.36	10.36			

Element: Ni Seq. No.: 177 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0348	0.0348	0.001	0.068	0.003	13:17:25
2	0.0236	0.0236	0.001	0.068	0.003	13:17:27
3	0.0317	0.0317	0.001	0.068	0.003	13:17:29
Mean:	0.0300	0.0300	0.001			
SD :	0.0058	0.0058	0.000			
%RSD:	19.17	19.17	19.17			

Element: Ni Seq. No.: 178 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-24

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1328	0.1328	0.005	0.072	0.002	13:18:03
2	0.1147	0.1147	0.005	0.071	0.002	13:18:06
3	0.1367	0.1367	0.006	0.072	0.002	13:18:08
Mean:	0.1281	0.1281	0.005			
SD :	0.0117	0.0117	0.000			
%RSD:	9.16	9.16	9.16			

Element: Ni Seq. No.: 179 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0420	0.0420	0.002	0.068	0.002	13:18:28
2	0.0497	0.0497	0.002	0.069	0.002	13:18:30
3	0.0568	0.0568	0.002	0.069	0.001	13:18:32
Mean:	0.0495	0.0495	0.002			
SD :	0.0074	0.0074	0.000			
%RSD:	14.92	14.92	14.92			

Element: Ni Seq. No.: 180 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-27

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.2056	0.2056	0.008	0.075	0.002	13:19:12
2	0.2175	0.2175	0.009	0.075	0.002	13:19:14
3	0.1960	0.1960	0.008	0.075	0.003	13:19:16
Mean:	0.2064	0.2064	0.008			
SD :	0.0108	0.0108	0.000			
%RSD:	5.22	5.22	5.22			

Element: Ni Seq. No.: 181 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0519	0.0519	0.002	0.069	0.002	13:19:34
2	0.0484	0.0484	0.002	0.069	0.002	13:19:36
3	0.0596	0.0596	0.002	0.069	0.002	13:19:38
Mean:	0.0533	0.0533	0.002			
SD :	0.0057	0.0057	0.000			
%RSD:	10.72	10.72	10.72			

Element: Ni Seq. No.: 182 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-30

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1743	0.1743	0.007	0.074	0.001	13:20:11
2	0.1605	0.1605	0.007	0.073	0.002	13:20:14
3	0.1585	0.1585	0.006	0.073	0.002	13:20:16
Mean:	0.1644	0.1644	0.007			
SD :	0.0086	0.0086	0.000			
%RSD:	5.22	5.22	5.22			

Element: Ni Seq. No.: 183 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0405	0.0405	0.002	0.068	0.002	13:20:44
2	0.0655	0.0655	0.003	0.069	0.001	13:20:46
3	0.0517	0.0517	0.002	0.069	0.001	13:20:48
Mean:	0.0526	0.0526	0.002			
SD :	0.0125	0.0125	0.001			
%RSD:	23.77	23.77	23.77			

Element: Ni Seq. No.: 184 AS Loc.: --- Date: 01/06/2006
Sample ID: 307-33

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.1170	0.1170	0.005	0.071	0.002	13:21:09
2	0.1124	0.1124	0.005	0.071	0.002	13:21:11
3	0.1321	0.1321	0.005	0.072	0.002	13:21:13
Mean:	0.1205	0.1205	0.005			
SD :	0.0103	0.0103	0.000			
%RSD:	8.55	8.55	8.55			

Element: Ni Seq. No.: 185 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0502	0.0502	0.002	0.069	0.002	13:21:33
2	0.0606	0.0606	0.002	0.069	0.001	13:21:36
3	0.0579	0.0579	0.002	0.069	0.001	13:21:38
Mean:	0.0562	0.0562	0.002			
SD :	0.0054	0.0054	0.000			
%RSD:	9.56	9.56	9.56			

Element: Ni Seq. No.: 186 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0533	0.0533	0.002	0.069	0.002	13:21:46
2	0.0560	0.0560	0.002	0.069	0.001	13:21:48
3	0.0740	0.0740	0.003	0.070	0.001	13:21:51
Mean:	0.0611	0.0611	0.002			
SD :	0.0113	0.0113	0.000			
%RSD:	18.42	18.42	18.42			

Element: Ni Seq. No.: 187 AS Loc.: --- Date: 01/06/2006
Sample ID: ccb

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.0533	0.0533	0.002	0.069	0.002	13:22:07
2	0.0494	0.0494	0.002	0.069	0.002	13:22:10
3	0.0553	0.0553	0.002	0.069	0.001	13:22:12
Mean:	0.0527	0.0527	0.002			
SD :	0.0030	0.0030	0.000			
%RSD:	5.71	5.71	5.71			

Element: Ni Seq. No.: 188 AS Loc.: --- Date: 01/06/2006
Sample ID: ccv

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Bkgnd Area	Time
1	0.5464	0.5464	0.022	0.089	0.003	13:22:27
2	0.5782	0.5782	0.024	0.090	0.002	13:22:29
3	0.5912	0.5912	0.024	0.091	0.002	13:22:31
Mean:	0.5719	0.5719	0.023			
SD :	0.0231	0.0231	0.001			
%RSD:	4.03	4.03	4.03			

METALS PREP FORM

Set # [ ]

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

Filters

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	11/4	1115			LFB				0
						LRB				2
1				100307	2		✓			3
					5	~~LFM DUP~~	✓			4
					8	~~LFM~~	✓			5
2					11		✓			6
3					14		✓			7
4					17		✓			8
5					20		✓			9
6					23		✓			10
7					26		✓			11
8					29		✓			12
9					32		✓	1 Filter		13
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21		
QC-7		
P		
Sn		
OTHER		

Analyst: _____

Start Date: _____

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

~~1 mL Digest~~ LK
Probe Rinse

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	9AM	evaporate down			LFB		100	+LFB	5
	11-16					mls LRB			+LRB	2
1			<2.0	100 307	1	100 99			+2	8
			<2.0		4	100 ~~LFM DUP~~ 99			+5	9
			<2.0		7	100 ~~LFM~~ 95			+8	13
2			<2.0		10	97			+11	4
3			<2.0		13	99			+14	6
4			<2.0		16	96			+17	12
5			<2.0		19	97			+20	10
6			<2.0		22	99			+23	7
7			<2.0		25	96			+26	11
8			<2.0		28	98			+29	3
9			<2.0		31	97			+32	0
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05F011
QC-7		
P		
Sn		
OTHER		

0.5.

Analyst: _____

Start Date: _____

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [x] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	11/14	930			LFB		50		7
						LRB				10
1			<2.0	100307	3	300 302				8
			<2.0		6	306 ~~LFM=DUP~~ 305				2
			<2.0		9	311 ~~LFMT~~ 312				9
2			<2.0		12	320 319				13
3			<2.0		15	300 302				3
4			<2.0		18	306 300				5
5			<2.0		21	307 303				11
6			<2.0		24	309 306				4
7			<2.0		27	309 309				12
8			<2.0		30	305 302				6
9			<2.0		33	310 307				0
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	605F011
QC-7		
P		
Sn		
OTHER		

*Still made Spk alone

Analyst: _____

Start Date: _____

FLAME AA
SET-UP

Identification

Method Name: NI
Technique: Flame
Method Desc: Nickel

Element: Ni
Instrument Model: 5100

Remarks:

Instrument

Wavelength (nm): 232.0
Slit Width: 0.2

Read Time (sec): 1.0
Read Delay (sec): 0.0

Signal Type: AA-BG
Signal Measurement: Time Average

Flame Type: Air/C2H2
Oxidant Flow (L/min): 10.0
Fuel Flow (L/min): 2.0

Modified Spectrometer Settings: No

Modified Flame Settings: No

Calibration

Equations, Units, and Replicates:

Element	Calibration Equation	Calibration Units	Sample Units	Max Decimal Places	Max Significant Figures
Ni	Linear, Zero Intercept	mg/L	mg/L	4	4

Replicates: Fixed : 3

		ID	Conc. (mg/L)	A/S Loc
Calib.Std.	1	CAL STD	0.25	
Calib.Std.	2	cal std 2	0.50	
Calib.Std.	3	cal std 3	1.00	
Calib.Std.	4	cal std 4	2.00	
Calib.Std.	5	cal std 5	5.00	

Autosampler Setup
Tray Type: Tray F

Wash
Frequency: Never
Duration: 1

Location of Wash Solution: 0

Checks

Check correlation coefficient? .....No

Recalibrate instrument periodically? .....No

Analyze standards at end of run? .....No

Check Precision? .....No

Reanalyze samples beyond calibration range? ....No

Perform matrix check calculations? .....No

Quality Control

Concentration Units: Calibration (mg/L)

Periodic Timing of Analyses

Count: Samples **Interrupt sample to analyze QC:** No
Frequency: Same for all QC's, 1

Maximum Retries After QC Failure

Maximum allowed reanalyses: 1 **Action when maximum exceeded:** Continue

Options

Results Display/Printed Log - Modified Settings: Yes

Method Header

Method Name Element Method Description

Date Technique Wavelength Lamp Current Sample Info File Name Calibration Equation
Slit Width Energy Results Data Set Name

Results Header

Element Sequence Number Autosampler Location Date

Sample ID

Column Headings

Concentration Data: Conc. - Sample Units Conc. - Calibration Units
Absorbance Data: Blank Corrected Signal Peak Area Bkgnd. Peak Area
Additional Parameters: Time

Data Categories

Data: Replicate Data Mean Data Statistics
Peaks: Last Replicates
Summary: Calibration Curve Calibration Summary

Peaks to Save: None

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METHOD PERFORMANCE STUDIES

Analyte: NICKEL (W/BG)
Method / Revision: SM 3111B / SW 846 7760A / EPA 249.1
Instrument: PE 5100ZL AA (LAMP B)

IDL

Analyst(s):	Jason Carlson / LAK
CAL Standard:	CPI QC-21 Lot # 05F011
QCS Standard:	CPI QC-21 Lot # 41M044

*Standards prepared on the day of use.

	Date of Analysis	Measured Value
Replicate 1:	10/31/05	-0.009
Replicate 2:	10/31/05	0.007
Replicate 3:	10/31/05	-0.009
Replicate 4:	10/31/05	-0.013
Replicate 5:	10/31/05	0.005
Replicate 6:	10/31/05	0.007
Replicate 7:	10/31/05	0.010
Replicate 8:	10/31/05	0.012
Replicate 9:	10/31/05	0.008
Replicate 10:	10/31/05	-0.003

Mean Value:	0.0014	
Standard Deviation:	0.0091	
Calculated IDL (3x Stdev):	0.027	mg/L

MDL

Analyst(s):	Jason Carlson / LAK		
CAL Standard:	CPI QC-21 Lot # 05F011	Date Prep'd:	daily
QCS Standard:	CPI QC-21 Lot # 41M044	Date Prep'd:	daily
True Conc:	0.100 mg/L		

	Prep Date	Date of Analysis	Measured Value (MV)	% Recovery (50-150%)	MDL OK?
Replicate 1:	10/31/05	10/31/05	0.074	73.9	Y
Replicate 2:	10/31/05	10/31/05	0.072	72.0	Y
Replicate 3:	10/31/05	10/31/05	0.103	103.2	Y
Replicate 4:	10/31/05	10/31/05	0.098	98.3	Y
Replicate 5:	10/31/05	10/31/05	0.069	69.2	Y
Replicate 6:	10/31/05	10/31/05	0.133	133.2	Y
Replicate 7:	10/31/05	10/31/05	0.110	110.3	Y
		Mean :	0.0943	94.3	

Standard Deviation (S):	0.0238	
Variance (S^2):	16.9500	
T-Value Used at the 99% Confidence Level:	3.143	
Calculated MDL (3.143S):	**0.075**	**mg/L**
MDL Upper Confidence Limit (2.20MDL):	0.165	mg/L
MDL Lower Confidence Limit (0.64MDL):	0.048	mg/L

	YES	NO
Were MDL stds prepped according to the method?	X	
Has the accuracy (% Rec) criteria been met?	X	
The calculated MDL is greater than "0"?	X	
The calculated MDL > 1/3 x std conc.	X	
DOES THE MDL MAKE SENSE?	X	

EXPLAIN:

LDR

Analyst(s):	Jason Carlson / LAK		
CAL Standard:	CPI QC-21 Lot # 05F011	Date Prep'd:	daily
QCS Standard:	CPI QC-21 Lot # 41M044	Date Prep'd:	daily

	Date of Analysis	True Value (TV)	Measured Value (MV)	% Recovery (90-110%)
Standard 1:	10/31/05	0.050	0.064	127.8
Standard 2:	10/31/05	0.100	0.099	99.4
Standard 3:	10/31/05	0.250		0.0
Standard 4:	10/31/05	1.000		0.0
Standard 5:	10/31/05	5.000	4.945	98.9
Standard 6:	10/31/05	8.000	7.285	91.1
Standard 7:	10/31/05	10.000	8.673	86.7
Standard 8:	10/31/05	12.000		0.0
Standard 9:	10/31/05	15.000		0.0
Standard 10:	10/31/05	20.00		0.0

Units:	mg/L
Determined Linear Dynamic Range:	0.10 to 10.0
Correlation Coefficient of curve:	0.9986

	YES	NO
Has the accuracy (% Rec) criteria been met?	X	
For the LDR, are at least six standards analyzed?	X	
For the LDR is the curve linear and acceptable?	X	

QCS

Analyst(s):	Jason Carlson / LAK		
CAL Standard:	CPI QC-21 Lot # 05F011	Date Prep'd:	daily
QCS Standard:	CPI QC-21 Lot # 41M044	Date Prep'd:	daily

	Date of Analysis	True Value (TV)	Measured Value (MV)	% Recovery (90-110%)
Replicate 1:	10/31/05	5.00		0.0
Replicate 2:	10/31/05	5.00		0.0
Replicate 3:	10/31/05	5.00		0.0
Replicate 4:	10/31/05	5.00		0.0
		Mean:	#DIV/0!	0.0

	YES	NO
Has the accuracy (% Rec) criteria been met?	X	
The QCS is from a different source than the CAL Stds?	X	

IDL =	(noise) =	**0.027**
LOD = (aka "LLD")	(2 x IDL ; or 1/2 x MDL)	0.055
MDL =	(~ 4 x IDL) =	**0.075**
LOQ =	(10 x IDL ; or 2.5 x MDL)	0.187
PQL =	(20 x IDL ; or 5 x MDL)	0.375
RL =	(PQL or LOQ, per SCL)	**0.10**

PROJECT # 080033: METHOD 29 FOR NICKEL

date: 11/01/05

1 Method Detection Limit for Flame AA of Nickel: **0.075 mg/L**

This MDL is calculated as per 40CFR Part 136, Appendix B.

2 Detection for Impinger sample: **0.004 mg Ni**

0.075 mg/L **X** "AF 2A" mls **X** "Initial Sample Volume" mls **/** "SF 2A" mls **X** 1 L / 1000 mls

MDL	FINAL MLS (AF 2A)	MLS OF ORIGINAL SAMPLE	MLS USED	CONVERSION TO "MG NI"	
0.075	50	300	300	0.001	**0.0038**

Although the actual mls of "original sample" varied, the volume used is that which will yield the highest value for the MDL.

2 Detection for filter & probe rinse sample: **0.007 mg Ni**

0.075 mg/L **X** "AF 1A" mls **X** "Sample Volume" mls **/** "SF 1" mls **X** 1 L / 1000 mls

MDL	FINAL MLS (AF 1A)	MLS OF ORIGINAL SAMPLE	MLS USED	CONVERSION TO "MG NI"	
0.075	100	100 (+ 1 filter)	100	0.001	**0.0075**

3 Detection for TOTAL RUN sample: **0.011 mg Ni**

= Impinger + filter & probe rinse

Appendix F

Laboratory QA/QC Data for Ambient Air Samples

PROJECT # 100016: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	**IDL =**	0.004	**LOQ =**	0.017
Digestion on 10/4/05	**LOD =**	0.008	**RL =**	0.050
BY ICP ON 10/5/05	**MDL =**	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading	
LRB	25	0.211	>MDL of 0.007 mg/L & > RL of 0.05 mg/L
LFB	25	4.01	= 100 x 4.01/4.0 = 100% Recovery, so okay
100016-1	25	0.092	= FLAG "B" 18 N
100016-2	25	0.107	= FLAG "B" 18 S
100016-3	25	0.012	19 N
100016-4	25	0.012	19 S
100016-5	25	0.044	20 N
100016-6	25	0.029	20 S
100016-7	25	0.017	21 N
100016-8	25	0.015	21 S
100016-9	25	0.001	**=0.006**

EXPLANATIONS:

LRB =	Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.
LFB =	Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.
DILUTION =	25 ml class A volumetric flask was used to measure the final volume.
READING =	mg/L as determined by average of three replicates on ICP.
FLAG "B" =	The result is over the detection limits as quantified for nickel. Therefore the result may be significant and must be "flagged" to indicate that it may be a false positive "hit", as occurred in the LRB.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

Laboratory Work Order Report

LIMS No. 2005100016 **Date Rec'd** 10/03/2005 02:37:49 **Date Due** 10/03/2005 12:00:00 AM
Project Code .NULL. **Customer No.** SCICON **Client Type:** **REGULAR**
Client Name SCIENTIFIC CONTROL LABS
3158 S. KOLIN AVE.
CHICAGO IL 60623

Phone 254-2406 **Fax** 254-6661 **Contact** MR. FRANK ALTMAYER
Matrix Engineering **Po No.** -0- **e-mail**
Quoted Price: .NULL.

Client Notes: -0-

Order Comments: .NULL.
.NULL.

Sample No.	*Comments*	*Test Code*	*Description*	*Date Received*	*Result*
.NULL.					
1	09/27/2005	WATTS NICKEL	BARREL - ARTISTIC PLATING - NORTH	10/03/2005 08:30:00 AM	
		NI	NICKEL		
2	09/27/2005	WATTS NICKEL	BARREL - ARTISTIC PLATING - SOUTH	10/03/2005 08:30:00 AM	
		NI	NICKEL		
3	09/28/2005	WATTS NICKEL	BARREL - ARTISTIC PLATING - NORTH	10/03/2005 08:30:00 AM	
		NI	NICKEL		
4	09/28/2005	WATTS NICKEL	BARREL - ARTISTIC PLATING - SOUTH	10/03/2005 08:30:00 AM	
		NI	NICKEL		
5	09/29/2005	WATTS NICKEL	BARREL - ARTISTIC PLATING - NORTH	10/03/2005 08:30:00 AM	
		NI	NICKEL		
6	09/29/2005	WATTS NICKEL	BARREL - ARTISTIC PLATING - SOUTH	10/03/2005 08:30:00 AM	
		NI	NICKEL		
7	09/30/2005	WATTS NICKEL	BARREL - ARTISTIC PLATING - NORTH	10/03/2005 08:30:00 AM	
		NI	NICKEL		
8	09/30/2005	WATTS NICKEL	BARREL - ARTISTIC PLATING - SOUTH	10/03/2005 08:30:00 AM	
		NI	NICKEL		
9	09/30/2005	WATTS NICKEL	BARREL - ARTISTIC PLATING - BLANK	10/03/2005 08:30:00 AM	
		NI	NICKEL		

done 11/9/05 LK.

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER: OSHA ID 121
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER: _____

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [x] OTHER: Air Filters

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	10/4	930A			LFB		25	No	
						LRB				
1				100016	1		1 filter			
						~~LFM DUP~~ NA				
						~~LFM~~ NA				
2					2					
3					3					
4					4					
5					5					
6					6					
7					7					
8					8					
9					9		↓	↓		
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	Spectro	3503074
QC-7		
P		
Sn		
OTHER		

Analyst: LK

Start Date: _____

Sample Information Detail Report
Document Name: 100505-2

Air Filter LRB ~ 0.2 Need to Run Over. w/ good LRB.?

File Description
Default Sample Information File

Parameters Common to All Samples

Batch ID	100505-2
Volume Units	mL
Weight Units	g

Parameters That Vary By Sample

Sample No	A/S Location	Sample ID	Initial Sample Wt.
1	9	ccv 0.50	
2	10	ccb	
3	11	lfb	
4	12	lrb	
5	13	100016-1	
6	14	100016-2	
7	15	100016-3	
8	16	100016-4	
9	17	100016-5	
10	18	ccv 1.00	
11	19	ccb	
12	20	100016-6	
13	21	100016-7	
14	22	100016-8	
15	23	100016-9	
16	24	ccv 2	
17	25	ccb	

Sample No	Sample Prep. Vol.	Aliquot Volume	Diluted To Vol.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

Analysis Begun

Start Time: 10/5/2005 1:42:39 PM
Logged In Analyst: sammy
Spectrometer Model: Optima 3000 DV, S/N 069N5083001
Plasma On Time: 10/5/2005 10:43:51 AM
Technique: ICP Continuous
Autosampler Model: AS-91

Sample Information File: C:\pe\sammy\Sample Information\100505-2.sif
Batch ID: 100505-2
Results Data Set: 100505-2
Results Library: C:\pe\sammy\Results\Results.mdb

Sequence No.: 1
Sample ID: Calib Blank 1
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 0
Date Collected: 10/5/2005 1:42:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Yb 328.937	2712250.8	12408.72	0.46%	10.0	mg/L
Ni 231.604†	-114.0	1.31	1.15%	[0.00]	mg/L

Sequence No.: 2
Sample ID: Cal 21+7 1.00
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 1
Date Collected: 10/5/2005 1:46:19 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Cal 21+7 1.00

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Yb 328.937	2688576.1	311.76	0.01%	9.91	mg/L
Ni 231.604†	7346.8	26.28	0.36%	[1.00]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ni 231.604	1	Lin Thru 0	0.0	7347	0.00000	1.000000	

OK.

Sequence No.: 3
Sample ID: ccv 0.50
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 9
Date Collected: 10/5/2005 1:49:40 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

101% Rec. OK

Mean Data: ccv 0.50

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Sample Std.Dev.	Conc.	Units	Std.Dev.	RSD
Yb 328.937	2709630.5	9.99	mg/L	0.019				0.19%
Ni 231.604†	3704.2	0.504	mg/L	0.0047	0.504	mg/L	0.0047	0.93%

Sequence No.: 4
Sample ID: ccb
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 10
Date Collected: 10/5/2005 1:53:01 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb

< .007 so OK.

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2721073.2	10.0	mg/L	0.03				0.25%
Ni 231.604†	-3.3	0.000	mg/L	0.0008	0.000	mg/L	0.0008	186.43%

Sequence No.: 5
Sample ID: lfb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 11
Date Collected: 10/5/2005 1:56:52 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

100% Recovery so OK.

Mean Data: lfb

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2595058.7	9.57	mg/L	0.059				0.61%
Ni 231.604†	29476.3	4.01	mg/L	0.016	4.01	mg/L	0.016	0.39%

Sequence No.: 6
Sample ID: lrb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 12
Date Collected: 10/5/2005 2:00:15 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

> .007, so May be problem if sample > LRB.

Mean Data: lrb

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2609297.3	9.62	mg/L	0.069				0.72%
Ni 231.604†	1551.6	0.211	mg/L	0.0019	0.211	mg/L	0.0019	0.88%

Sequence No.: 7
Sample ID: 100016-1
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 13
Date Collected: 10/5/2005 2:04:07 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100016-1

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2685211.6	9.90	mg/L	0.041				0.42%
Ni 231.604†	676.2	0.092	mg/L	0.0013	0.092	mg/L	0.0013	1.38%

Sequence No.: 8
Sample ID: 100016-2
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 14
Date Collected: 10/5/2005 2:07:59 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100016-2

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2655450.5	9.79	mg/L	0.093				0.95%
Ni 231.604†	786.3	0.107	mg/L	0.0003	0.107	mg/L	0.0003	0.25%

Sequence No.: 9
Sample ID: 100016-3
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 15
Date Collected: 10/5/2005 2:11:52 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100016-3

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2667898.3	9.84	mg/L	0.056				0.57%
Ni 231.604†	84.9	0.012	mg/L	0.0003	0.012	mg/L	0.0003	2.63%

Sequence No.: 10
Sample ID: 100016-4
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 16
Date Collected: 10/5/2005 2:15:45 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100016-4

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2619714.8	9.66	mg/L	0.072				0.74%
Ni 231.604†	85.0	0.012	mg/L	0.0001	0.012	mg/L	0.0001	1.14%

Sequence No.: 11
Sample ID: 100016-5
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 10/5/2005 2:19:40 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100016-5

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2719215.1	10.0	mg/L	0.05				0.52%
Ni 231.604†	321.2	0.044	mg/L	0.0004	0.044	mg/L	0.0004	1.00%

Sequence No.: 12
Sample ID: ccv 1.00
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 18
Date Collected: 10/5/2005 2:23:34 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccv 1.00

100% Rec, so OK

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2720862.6	10.0	mg/L	0.04				0.40%
Ni 231.604†	7350.6	1.00	mg/L	0.001	1.00	mg/L	0.001	0.14%

Sequence No.: 13
Sample ID: ccb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 19
Date Collected: 10/5/2005 2:26:59 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb

< .007 (mdl) so okay

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2724914.3	10.0	mg/L	0.05				0.55%
Ni 231.604†	-4.8	-0.001	mg/L	0.0008	-0.001	mg/L	0.0008	125.52%

Sequence No.: 14
Sample ID: 100016-6
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 20
Date Collected: 10/5/2005 2:30:54 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100016-6

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2712916.9	10.0	mg/L	0.04				0.41%
Ni 231.604†	213.9	0.029	mg/L	0.0011	0.029	mg/L	0.0011	3.67%

Sequence No.: 15
Sample ID: 100016-7
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 21
Date Collected: 10/5/2005 2:34:51 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100016-7

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2622246.1	9.67	mg/L	0.036				0.37%
Ni 231.604†	122.8	0.017	mg/L	0.0012	0.017	mg/L	0.0012	7.27%

Sequence No.: 16
Sample ID: 100016-8
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 22
Date Collected: 10/5/2005 2:38:47 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100016-8

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2639329.6	9.73	mg/L	0.054				0.55%
Ni 231.604†	112.5	0.015	mg/L	0.0012	0.015	mg/L	0.0012	7.68%

Sequence No.: 17
Sample ID: 100016-9
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 23
Date Collected: 10/5/2005 2:42:44 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100016-9

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2657105.1	9.80	mg/L	0.031				0.32%
Ni 231.604†	4.1	0.001	mg/L	0.0007	0.001	mg/L	0.0007	133.70%

Sequence No.: 18
Sample ID: cri
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 24
Date Collected: 10/5/2005 2:46:41 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: cri @ 0.25 mg/L 104% Rec SD OK.

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2760845.2	10.2	mg/L	0.04				0.40%
Ni 231.604†	189.4	0.026	mg/L	0.0005	0.026	mg/L	0.0005	1.98%

Sequence No.: 19
Sample ID: ccv 2
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 25
Date Collected: 10/5/2005 2:50:32 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccv 2

100% Rec.

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2690135.1	9.92	mg/L	0.018				0.18%
Ni 231.604†	14725.9	2.00	mg/L	0.013	2.00	mg/L	0.013	0.65%

Sequence No.: 20
Sample ID: ccb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 26
Date Collected: 10/5/2005 2:53:52 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb

< mdl < .007 so okay

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2710743.7	9.99	mg/L	0.053				0.53%
Ni 231.604†	-0.8	0.000	mg/L	0.0006	0.000	mg/L	0.0006	565.02%

10/31/05
LK

PROJECT # 100305: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES

Digestion on 11/7/05

BY ICP ON 11/9/05

IDL =	0.004	**LOQ =**	0.017
LOD =	0.008	**RL =**	0.050
MDL =	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading		
LRB	25	-0.005	<MDL of 0.007 mg/L	**= 0.006**
LFB	25	1.00	= 100 x 1.00/1.00 = 100% Recovery, (80-120%)	
100305-1	25	7.28		
100305-2	25	0.914		
100305-3	25	0.085		
100305-4	25	0.16		
100305-5	25	-0.005	**= 0.006**	
100305-6	25	5.83		
100305-7	25	0.174		
100305-8	25	6.90		
100305-9	25	0.433		
100305-10	25	-0.005	**= 0.006**	

EXPLANATIONS:

LRB = Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.

LFB = Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.

DILUTION = 25 ml class A volumetric flask was used to measure the final volume.

READING = mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

Laboratory Work Order Report

LIMS No. 2005100305 **Date Rec'd** 10/21/2005 01:55:38 **Date Due** 10/21/2005 12:00:00 AM
Project Code .NULL. **Customer No.** SCICON **Client Type:** **REGULAR**
Client Name SCIENTIFIC CONTROL LABS
3158 S. KOLIN AVE.
CHICAGO IL 60623

Ques cc: J Zak

Phone 254-2406 **Fax** 254-6661 **Contact** MR. FRANK ALTMAYER
Matrix Engineering **Po No.** -0- **e-mail**
Quoted Price: .NULL.

Client Notes: -0-

Order Comments: .NULL.
.NULL.

Sample No.	*Comments*	*Test Code*	*Description*	*Date Received*	*Result*
.NULL.					
1	10/17/2005	10/17/05	ARTISTIC WOODS EAST #27	10/21/2005 04:30:00 PM	
		NI	NICKEL		
2	10/17/2005	10/17/05	ARTISTIC WOODS WEST #27	10/21/2005 04:30:00 PM	
		NI	NICKEL		
3	10/18/2005	10/18/05	ELITE SULFAMATE NORTH #22	10/21/2005 04:30:00 PM	
		NI	NICKEL		
4	10/18/2005	10/18/05	ELITE SULFAMATE SOUTH #22	10/21/2005 04:30:00 PM	
		NI	NICKEL		
5	10/18/2005	10/18/05	ELITE - BLANK	10/21/2005 04:30:00 PM	
		NI	NICKEL		
6	10/19/2005	10/19/05	ARTISTIC WOODS EAST #28	10/21/2005 04:30:00 PM	
		NI	NICKEL		
7	10/19/2005	10/19/05	ARTISTIC WOODS WEST #28	10/21/2005 04:30:00 PM	
		NI	NICKEL		
8	10/20/2005	10/20/05	ARTISTIC WOODS EAST #29	10/21/2005 04:30:00 PM	
		NI	NICKEL		
9	10/20/2005	10/20/05	ARTISTIC WOODS WEST #29	10/21/2005 04:30:00 PM	
		NI	NICKEL		
10	10/20/2005	10/20/05	ARTISTIC - BLANK	10/21/2005 04:30:00 PM	
		NI	NICKEL		

OSHA 10-12-1

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

Air Filters by ICP

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [X] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	11/7	10A			LFB			0.25 mls QC21	
						LRB				
1				100305	1		1 Filter	25		
					2	~~LFM DUP~~				
					3	~~LFM~~				
2					4					
3					5					
4					6					
5					7					
6					8					
7					9					
8					10					
9										
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05F011
QC-7		
P		
Sn		
OTHER		

Analyst: LK

Start Date: 11/7

Sample Information Detail Report
Document Name: 110905-1

File Description
Default Sample Information File

Parameters Common to All Samples

Batch ID	110905-1
Volume Units	mL
Weight Units	g

Parameters That Vary By Sample

Sample No	A/S Location	Sample ID	Initial Sample Wt.
1	9	cri	
2	10	icsab	
3	11	ccv 1.00	
4	12	ccb	
5	13	lfb	
6	14	lrb	
7	15	100305-1	
8	16	100305-2	
9	17	100305-3	
10	18	100305-4	
11	19	ccv 0.50	
12	20	ccb	
13	21	100305-5	
14	22	100305-6	
15	23	100305-7	
16	24	100305-8	
17	25	100305-9	
18	26	100305-10	
19	27	cri	
20	28	icsab	
21	29	ccv 2.00	
22	30	ccb	

Sample No	Sample Prep. Vol.	Aliquot Volume	Diluted To Vol.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			

Analysis Begun

Start Time: 11/9/2005 4:45:12 PM
Plasma On Time: 11/9/2005 4:03:48 PM
Logged In Analyst: sammy
Technique: ICP Continuous
Spectrometer Model: Optima 3000 DV, S/N 069N5083001Autosampler Model: AS-91

Sample Information File: C:\pe\sammy\Sample Information\Untitled.SIF
Batch ID: 110905-1
Results Data Set:
Results Library:

Method Loaded
Method Name: Pt-MnBEC
Method Last Saved: 10/14/2005 11:13:33 AM
IEC File:
MSF File:
Method Description: Axial Performance Test

Sequence No.: 1
Autosampler Location:
Sample ID: Calib Blank 1
Date Collected: 11/9/2005 4:45:12 PM
Analyst:
Data Type: Original
Initial Sample Wt:
Initial Sample Vol:
Dilution:
Sample Prep Vol:

Replicate Data: Calib Blank 1

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc.	Calib. Units	Analysis Time
1	Mn 257.610	-175.3	-175.3	[0.00]	mg/L	16:46:37
1	Cu 324.752	2107.5	2107.5	[0.00]	mg/L	16:46:37
2	Mn 257.610	-178.1	-178.1	[0.00]	mg/L	16:46:47
2	Cu 324.752	2077.8	2077.8	[0.00]	mg/L	16:46:47
3	Mn 257.610	-207.6	-207.6	[0.00]	mg/L	16:46:57
3	Cu 324.752	2099.3	2099.3	[0.00]	mg/L	16:46:57

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Mn 257.610	-187.0	17.86	9.55%	[0.00]	mg/L
Cu 324.752	2094.8	15.33	0.73%	[0.00]	mg/L

Sequence No.: 2
Autosampler Location:
Sample ID: Calb Std1
Date Collected: 11/9/2005 4:47:36 PM
Analyst:
Data Type: Original
Initial Sample Wt:
Initial Sample Vol:
Dilution:
Sample Prep Vol:

Replicate Data: Calb Std1

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc.	Calib. Units	Analysis Time
1	Mn 257.610	592478.6	592665.6	[5.00]	mg/L	16:48:47
1	Cu 324.752	201806.3	199711.5	[5.00]	mg/L	16:48:47
2	Mn 257.610	592218.1	592405.1	[5.00]	mg/L	16:48:58
2	Cu 324.752	201681.9	199587.0	[5.00]	mg/L	16:48:58
3	Mn 257.610	595484.1	595671.1	[5.00]	mg/L	16:49:10
3	Cu 324.752	202609.0	200514.1	[5.00]	mg/L	16:49:10

Mean Data: Calb Std1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Mn 257.610	593580.6	1815.10	0.31%	[5.00]	mg/L
Cu 324.752	199937.6	503.20	0.25%	[5.00]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Mn 257.610	1	Lin Thru 0	0.0	118700	0.00000	1.000000	
Cu 324.752	1	Lin Thru 0	0.0	39990	0.00000	1.000000	

Sequence No.: 3
Sample ID: bec
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location:
Date Collected: 11/9/2005 4:49:49 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Replicate Data: bec

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Mn 257.610	0.3	187.3	0.002	mg/L	0.002	mg/L	16:50:48
1	Cu 324.752	0.7	-2094.2	-0.052	mg/L	-0.052	mg/L	16:50:48
2	Mn 257.610	-0.1	186.9	0.002	mg/L	0.002	mg/L	16:51:08
2	Cu 324.752	0.0	-2094.8	-0.052	mg/L	-0.052	mg/L	16:51:08
3	Mn 257.610	-0.6	186.4	0.002	mg/L	0.002	mg/L	16:51:28
3	Cu 324.752	-0.3	-2095.1	-0.052	mg/L	-0.052	mg/L	16:51:28

Mean Data: bec

OK < 0.05

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Mn 257.610	186.9	0.002	mg/L	0.0000	0.002	mg/L	0.0000	0.26%
Cu 324.752	-2094.7	-0.052	mg/L	0.0000	-0.052	mg/L	0.0000	0.02%

Method Loaded
Method Name: Pt-MnBEC
IEC File:
Method Description: Axial Performance Test

Method Last Saved: 10/14/2005 11:13:33 AM
MSF File:

Sequence No.: 4
Sample ID: cv
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location:
Date Collected: 11/9/2005 4:52:12 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Replicate Data: cv

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Mn 257.610	598424.2	598611.2	5.04	mg/L	5.04	mg/L	16:53:23
1	Cu 324.752	204294.3	202199.5	5.06	mg/L	5.06	mg/L	16:53:23
2	Mn 257.610	604424.9	604611.9	5.09	mg/L	5.09	mg/L	16:53:34
2	Cu 324.752	206239.9	204145.1	5.11	mg/L	5.11	mg/L	16:53:34
3	Mn 257.610	599957.0	600144.0	5.06	mg/L	5.06	mg/L	16:53:46
3	Cu 324.752	204630.5	202535.7	5.06	mg/L	5.06	mg/L	16:53:46
4	Mn 257.610	598337.2	598524.2	5.04	mg/L	5.04	mg/L	16:53:57
4	Cu 324.752	203877.4	201782.5	5.05	mg/L	5.05	mg/L	16:53:57
5	Mn 257.610	598531.9	598718.9	5.04	mg/L	5.04	mg/L	16:54:09
5	Cu 324.752	203915.2	201820.3	5.05	mg/L	5.05	mg/L	16:54:09
6	Mn 257.610	602386.3	602573.3	5.08	mg/L	5.08	mg/L	16:54:20
6	Cu 324.752	205170.2	203075.4	5.08	mg/L	5.08	mg/L	16:54:20
7	Mn 257.610	605520.2	605707.2	5.10	mg/L	5.10	mg/L	16:54:32
7	Cu 324.752	206320.2	204225.4	5.11	mg/L	5.11	mg/L	16:54:32
8	Mn 257.610	602017.7	602204.7	5.07	mg/L	5.07	mg/L	16:54:44
8	Cu 324.752	205280.4	203185.5	5.08	mg/L	5.08	mg/L	16:54:44
9	Mn 257.610	604689.8	604876.8	5.10	mg/L	5.10	mg/L	16:54:55
9	Cu 324.752	205928.7	203833.9	5.10	mg/L	5.10	mg/L	16:54:55
10	Mn 257.610	603873.9	604060.9	5.09	mg/L	5.09	mg/L	16:55:07
10	Cu 324.752	206148.4	204053.5	5.10	mg/L	5.10	mg/L	16:55:07

Mean Data: cv

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	Sample RSD
Mn 257.610	602003.3	5.07	mg/L	0.024	5.07	mg/L	0.024	0.47%
Cu 324.752	203085.7	5.08	mg/L	0.024	5.08	mg/L	0.024	0.47%

< 1.50 OK

Analysis Begun

Start Time: 11/9/2005 5:01:10 PM
Logged In Analyst: sammy
Spectrometer Model: Optima 3000 DV, S/N 069N5083001
Plasma On Time: 11/9/2005 4:03:48 PM
Technique: ICP Continuous
Autosampler Model: AS-91

Sample Information File: C:\pe\sammy\Sample Information\110905-1.sif
Batch ID: 110905-1
Results Data Set: 110905-1
Results Library: C:\pe\sammy\Results\Results.mdb

Method Loaded
Method Name: Air Filter Ni
IEC File:
Method Description: AIR FILTER Ni
Method Last Saved: 10/5/2005 1:33:13 PM
MSF File:

Sequence No.: 1
Sample ID: Calib Blank 1
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 0
Date Collected: 11/9/2005 5:01:10 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Yb 328.937	2065904.8	452.16	0.02%	10.0	mg/L
Ni 231.604†	-156.0	9.33	5.98%	[0.00]	mg/L

Sequence No.: 2
Sample ID: Cal 21+7 1.00
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 1
Date Collected: 11/9/2005 5:04:19 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Cal 21+7 1.00

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Yb 328.937	2033238.9	6742.11	0.33%	9.84	mg/L
Ni 231.604†	6243.7	22.77	0.36%	[1.00]	mg/L

Calibration Summary

≥ .995

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ni 231.604	1	Lin Thru 0	0.0	6244	0.00000	1.000000 ✓ OK	

Sequence No.: 3
Sample ID: cri
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 9
Date Collected: 11/9/2005 5:07:40 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: cri

100% Rec.

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2096613.2	10.1	mg/L ✓	0.02				0.21%
Ni 231.604†	153.3	0.025	mg/L	0.0028	0.025	mg/L	0.0028	11.36%

Sequence No.: 4
Sample ID: icsab
Autosampler Location: 10
Date Collected: 11/9/2005 5:11:01 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: icsab 99% Rec. OK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2022975.1	9.79	mg/L	0.076				0.78%
Ni 231.604†	6186.9	0.991	mg/L	0.0114	0.991	mg/L	0.0114	1.15%

Sequence No.: 5
Sample ID: ccv 1.00
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 11
Date Collected: 11/9/2005 5:14:22 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccv 1.00 100% Rec OK.

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2126757.0	10.3	mg/L	0.10				0.94%
Ni 231.604†	6260.5	1.00	mg/L	0.006	1.00	mg/L	0.006	0.57%

Sequence No.: 6
Sample ID: ccb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 12
Date Collected: 11/9/2005 5:17:43 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb < .001 OK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2263307.5	11.0	mg/L	0.67				6.10%
Ni 231.604†	10.9	0.002	mg/L	0.0035	0.002	mg/L	0.0035	202.41%

Sequence No.: 7
Sample ID: lfb @ 1.0 ppm
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 13
Date Collected: 11/9/2005 5:21:06 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: lfb 100% Rec OK.

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1812066.7	8.77	mg/L	0.072				0.82%
Ni 231.604†	6268.5	1.00	mg/L	0.009	1.00	mg/L	0.009	0.90%

Sequence No.: 8
Sample ID: lrb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 14
Date Collected: 11/9/2005 5:24:28 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: lrb < .001 OK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1839953.4	8.91	mg/L	0.042				0.47%
Ni 231.604†	-31.0	-0.005	mg/L	0.0025	-0.005	mg/L	0.0025	50.97%

Sequence No.: 9
Sample ID: 100305-1

Autosampler Location: 15
Date Collected: 11/9/2005 5:27:51 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100305-1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1693201.9	8.20	mg/L	0.128				1.56%
Ni 231.604†	45484.1	7.28	mg/L	0.069	7.28	mg/L	0.069	0.95%

Sequence No.: 10
Sample ID: 100305-2
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 16
Date Collected: 11/9/2005 5:31:15 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100305-2

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1688961.9	8.18	mg/L	0.049				0.60%
Ni 231.604†	5709.8	0.914	mg/L	0.0080	0.914	mg/L	0.0080	0.88%

Sequence No.: 11
Sample ID: 100305-3
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 11/9/2005 5:34:40 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100305-3

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1719600.3	8.32	mg/L	0.161				1.94%
Ni 231.604†	529.0	0.085	mg/L	0.0037	0.085	mg/L	0.0037	4.41%

Sequence No.: 12
Sample ID: 100305-4
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 18
Date Collected: 11/9/2005 5:38:04 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100305-4

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1691084.4	8.19	mg/L	0.086				1.05%
Ni 231.604†	998.8	0.160	mg/L	0.0020	0.160	mg/L	0.0020	1.27%

Sequence No.: 13
Sample ID: ccv 0.50
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 19
Date Collected: 11/9/2005 5:41:29 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

98.6 % Rec. OK

Mean Data: ccv 0.50

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2116675.9	10.2	mg/L	0.27				2.61%
Ni 231.604†	3077.4	0.493	mg/L	0.0191	0.493	mg/L	0.0191	3.88%

Sequence No.: 14
Sample ID: ccb

Autosampler Location: 20
Date Collected: 11/9/2005 5:44:54 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2098447.8	10.2	mg/L	0.02				0.24%
Ni 231.604†	-6.2	-0.001	mg/L	0.0021	-0.001	mg/L	0.0021	212.48%

1.001 OK

Sequence No.: 15
Sample ID: 100305-5
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 21
Date Collected: 11/9/2005 5:48:21 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100305-5

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	1638936.0	7.93	mg/L	0.214				2.70%
Ni 231.604†	-32.8	-0.005	mg/L	0.0025	-0.005	mg/L	0.0025	47.86%

Sequence No.: 16
Sample ID: 100305-6
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 22
Date Collected: 11/9/2005 5:51:47 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100305-6

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	1741355.7	8.43	mg/L	0.028				0.34%
Ni 231.604†	36394.1	5.83	mg/L	0.029	5.83	mg/L	0.029	0.50%

Sequence No.: 17
Sample ID: 100305-7
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 23
Date Collected: 11/9/2005 5:55:12 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100305-7

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	1765855.6	8.55	mg/L	0.040				0.47%
Ni 231.604†	1089.0	0.174	mg/L	0.0005	0.174	mg/L	0.0005	0.28%

Sequence No.: 18
Sample ID: 100305-8
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 24
Date Collected: 11/9/2005 5:58:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100305-8

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	1733854.3	8.39	mg/L	0.018				0.21%
Ni 231.604†	43087.6	6.90	mg/L	0.041	6.90	mg/L	0.041	0.59%

Sequence No.: 19
ample ID: 100305-9

Autosampler Location: 25
Date Collected: 11/9/2005 6:01:59 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100305-9

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1721520.7	8.33	mg/L	0.199				2.39%
Ni 231.604†	2701.4	0.433	mg/L	0.0113	0.433	mg/L	0.0113	2.62%

Sequence No.: 20
Sample ID: 100305-10
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 26
Date Collected: 11/9/2005 6:05:17 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 100305-10

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1709132.1	8.27	mg/L	0.175				2.12%
Ni 231.604†	-28.7	-0.005	mg/L	0.0018	-0.005	mg/L	0.0018	40.10%

Sequence No.: 21
Sample ID: ~~cri~~ CCV 2.00
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 27
Date Collected: 11/9/2005 6:09:06 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: cri

100.5% Rec. OK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2342720.9	11.3	mg/L	0.05				0.42%
Ni 231.604†	12526.7	2.01	mg/L	0.002	2.01	mg/L	0.002	0.12%

Sequence No.: 22
Sample ID: ~~icsab~~ CCB
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 28
Date Collected: 11/9/2005 6:12:27 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: icsab

1.001 OK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2101020.0	10.2	mg/L	0.05				0.46%
Ni 231.604†	8.7	0.001	mg/L	0.0023	0.001	mg/L	0.0023	165.21%

End of Run.

Sequence No.: 23
Sample ID: ccv 2.00
Analyst:
Initial Sample Wt:
Dilution:

No Sample
BLK?

Autosampler Location: 29
Date Collected: 11/9/2005 6:15:49 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ~~ccv 2.00~~

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2533364.6	12.3	mg/L	0.18				1.44%
Ni 231.604†	24.1	0.004	mg/L	0.0018	0.004	mg/L	0.0018	46.07%

Sequence No.: 24
Sample ID: ccb

Autosampler Location: 30
Date Collected: 11/9/2005 6:19:11 PM

PROJECT # 110200: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES

Digestion on 11/14/05

BY ICP ON 11/15/05

IDL =	0.004	**LOQ =**	0.017
LOD =	0.008	**RL =**	0.050
MDL =	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading		
LRB	25	-0.001	<MDL of 0.007 mg/L	**= 0.006**
LFB	25	1.80	= 100 x 1.00/1.00 = 90% Recovery, (80-120%)	
110200-1	25	0.202		
110200-2	25	0.144		
110200-3	25	0.000		**= 0.006**
110200-4	25	0.130		
110200-5	25	0.042		
110200-6	25	4.06		
110200-7	25	0.448		
110200-8	25	0.002		**= 0.006**
110200-9	25	2.11		
110200-10	25	0.382		

EXPLANATIONS:

LRB = Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.

LFB = Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.

DILUTION = 25 ml class A volumetric flask was used to measure the final volume.

READING = mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

Laboratory Work Order Report

LIMS No. 2005110200 **Date Rec'd** 11/11/2005 03:40:03 **Date Due** 11/11/2005 12:00:00 AM
Project Code .NULL. **Customer No.** SCICON **Client Type:** **REGULAR**
Client Name SCIENTIFIC CONTROL LABS
3158 S. KOLIN AVE.
CHICAGO IL 60623

Phone 254-2406 **Fax** 254-6661 **Contact** MR. FRANK ALTMAYER
Matrix Engineering **Po No.** -0- **e-mail**
Quoted Price: .NULL.

Client Notes: -0-

Order Comments: .NULL.
.NULL.

Sample No.	Comments	Test Code	Description	Date Received	Result
per OSHA 10-121					
1	11/07/2005	11/07/05 - ABQC - #14 EAST		11/11/2005 11:30:00 AM	
		NI	NICKEL		
.NULL.					
2	11/07/2005	11/07/05 - ABQC - #14 WEST		11/11/2005 11:30:00 AM	
		NI	NICKEL		
3	11/07/2005	11/07/05 - ABQC - BLANK		11/11/2005 11:30:00 AM	
		NI	NICKEL		
4	11/08/2005	11/08/05 - ABQC - #15 EAST		11/11/2005 11:30:00 AM	
		NI	NICKEL		
5	11/08/2005	11/08/05 - ABQC - #15 WEST		11/11/2005 11:30:00 AM	
		NI	NICKEL		
6	11/09/2005	11/09/05 - ARTISTIC - #7 EAST		11/11/2005 11:30:00 AM	
		NI	NICKEL		
7	11/09/2005	11/09/05 - ARTISTIC - #7 WEST		11/11/2005 11:30:00 AM	
		NI	NICKEL		
8	11/09/2005	11/09/05 - ARTISTIC - BLANK		11/11/2005 11:30:00 AM	
		NI	NICKEL		
9	11/10/2005	11/10/05 - ARTISTIC - #24 - EAST		11/11/2005 11:30:00 AM	
		NI	NICKEL		
10	11/10/2005	11/10/05 - ARTISTIC - #24 - WEST		11/11/2005 11:30:00 AM	
		NI	NICKEL		

PROJECT # 110077: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES
Digestion on 11/11/05
BY ICP ON 11/15/05

IDL =	0.004	**LOQ =**	0.017
LOD =	0.008	**RL =**	0.050
MDL =	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading	
LRB	25	-0.004	<MDL of 0.007 mg/L **= 0.006**
LFB	25	0.716	= 100 x 0.716/0.8 = 89.5% Recovery, (80-120%)
110077-1	25	0.206	#3 East
110077-2	25	0.180	#3 West
110077-3	25	0.505	#6 East
110077-4	25	0.404	#6 West
110077-5	25	0.209	#5 East
110077-6	25	0.185	#5 West
110077-7	25	0.180	#4 East
110077-8	25	0.156	#4 West
110077-9	25	-0.003	**= 0.006**

EXPLANATIONS:

LRB = Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.

LFB = Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.

DILUTION = 25 ml class A volumetric flask was used to measure the final volume.

READING = mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

Laboratory Work Order Report

LIMS No. 2005110077 **Date Rec'd** 11/03/2005 03:59:05 **Date Due** 11/03/2005 12:00:00 AM
Project Code .NULL. **Customer No.** SCICON **Client Type:** **REGULAR**
Client Name SCIENTIFIC CONTROL LABS
3158 S. KOLIN AVE.
CHICAGO IL 60623

Phone 254-2406 **Fax** 254-6661 **Contact** MR. FRANK ALTMAYER
Matrix Engineering **Po No.** -0- **e-mail**
Quoted Price: .NULL.

Client Notes: -0-

Order Comments: .NULL.
.NULL.

Sample No.	*Comments*	*Test Code*	*Description*	*Date Received*	*Result*
.NULL.					
1	10/31/2005	10/31/05 - RELIABLE - CONDITION #3 - EAST		11/03/2005 03:50:00 PM	
		NI	NICKEL		
2	10/31/2005	10/31/05 - RELIABLE - CONDITION #3 - WEST		11/03/2005 03:50:00 PM	
		NI	NICKEL		
3	11/01/2005	11/01/05 - RELIABLE - CONDITION #6 - EAST		11/03/2005 03:50:00 PM	
		NI	NICKEL		
4	11/01/2005	11/01/05 - RELIABLE - CONDITION #6 - WEST		11/03/2005 03:50:00 PM	
		NI	NICKEL		
5	11/02/2005	11/02/05 - RELIABLE - CONDITION #5 - EAST		11/03/2005 03:50:00 PM	
		NI	NICKEL		
6	11/02/2005	11/02/05 - RELIABLE - CONDITION #5 - WEST		11/03/2005 03:50:00 PM	
		NI	NICKEL		
7	11/03/2005	11/03/05 - RELIABLE - CONDITION #4 - EAST		11/03/2005 03:50:00 PM	
		NI	NICKEL		
8	11/03/2005	11/03/05 - RELIABLE - CONDITION #4 - WEST		11/03/2005 03:50:00 PM	
		NI	NICKEL		
9	10/31/2005	10/31/05 - RELIABLE - BLANK		11/03/2005 03:50:00 PM	
		NI	NICKEL		

Raw data with 110200!

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [x] OTHER: _____

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER: _____

Method 121

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [x] OTHER: Air Filters

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	11/14	1115 P			LFB		25 mls		
						LRB				
1				110200	1		1 Filter			
					2	~~LFM DUP~~				
					3	~~LFM~~				
2					4					
3					5					
4					6					
5					7					
6					8					
7					9					
8					10					
9										
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05E041
QC-7		
P		
Sn		
OTHER		

0.5 mls

Analyst: _____

Start Date: _____

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:

AIR Filter cassettes

Method 12

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [X] OTHER:

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	11/11	2PM			LFB 0.2 mls of 100ppm		25	10mls HNO_3	
						LRB				
1				110077	1	Reliable	filter			
					2	~~LFM DUP~~				
					3	~~LFM~~				
2					4					
3					5					
4					6					
5					7					
6					8					
7		done 4pm.			9					
8										
9										
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05F011
QC-7		
P		
Sn		
OTHER		

Analyst: _____

Start Date: _____

Sample Information Detail Report
Document Name: 111505-1

File Description
Default Sample Information File

Air Filter Ni

Parameters Common to All Samples

Batch ID	111505-1
Volume Units	mL
Weight Units	g

Parameters That Vary By Sample

Sample No	A/S Location	Sample ID	Initial Sample Wt.
1	9	ccv ~~0.50~~ 1.00 OK	
2	10	ccb	
3	11	0.716 – lfb	
4	12	lrb	
5	13	110077-1	
6	14	110077-2	
7	15	110077-3	
8	16	110077-4	
9	17	110077-5	
10	18	110077-6	
11	19	ccv 0.50 OK	
12	20	ccb	
13	21	110077-7	
14	22	110077-8	
15	23	110077-9	
16	24	1.80 – lfb 2	
17	25	lrb	
18	26	110200-1	
19	27	110200-2	
20	28	110200-3	
21	29	ccv ~~0.50~~ 1.00 OK	
22	30	ccb	
23	31	110200-4	
24	32	110200-5	
25	33	110200-6	
26	34	110200-7	
27	35	110200-8	
28	36	110200-9	
29	37	110200-10	
30	38	ccv 0.50 OK	
31	39	ccb	

Sample No	Sample Prep. Vol.	Aliquot Volume	Diluted To Vol.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

Analysis Begun

Start Time: 11/15/2005 1:45:50 PM
Logged In Analyst: sammy
Plasma On Time: 11/15/2005 11:32:42 AM
Technique: ICP Continuous
Spectrometer Model: Optima 3000 DV, S/N 069N5083001 Autosampler Model: AS-91

Sample Information File: C:\pe\sammy\Sample Information\111505-1.sif
Batch ID: 111505-1
Results Data Set: 111505-1
Results Library: C:\pe\sammy\Results\Results.mdb

Method Loaded
Method Name: Air Filter Ni
IEC File:
Method Description: AIR FILTER Ni
Method Last Saved: 10/5/2005 1:33:13 PM
MSF File:

Sequence No.: 1
Sample ID: Calib Blank 1
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 0
Date Collected: 11/15/2005 1:45:50 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Yb 328.937	2071926.8	10795.50	0.52%	10.0	mg/L
Ni 231.604†	-171.4	11.69	6.82%	[0.00]	mg/L

Sequence No.: 2
Sample ID: Cal 21+7 1.00
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 1
Date Collected: 11/15/2005 1:49:30 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Cal 21+7 1.00

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Yb 328.937	2041837.0	2473.23	0.12%	9.85	mg/L
Ni 231.604†	6318.1	44.95	0.71%	[1.00]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ni 231.604	1	Lin Thru 0	0.0	6318	0.00000	1.000000	

Sequence No.: 3
Sample ID: ccv ~~0.50~~ 1.00
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 9
Date Collected: 11/15/2005 1:52:51 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccv ~~0.50~~ 1.00

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2035221.7	9.82	mg/L	0.019				0.19%
Ni 231.604†	6209.1	0.983	mg/L	0.0078	0.983	mg/L	0.0078	0.79%

Sequence No.: 4
Sample ID: ccb
Autosampler Location: 10
Date Collected: 11/15/2005 1:56:12 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2101187.5	10.1	mg/L	0.01				0.07%
Ni 231.604†	0.6	0.000	mg/L	0.0012	0.000	mg/L	0.0012	>999.9%

Sequence No.: 5
Sample ID: lfb
Analyst:
Initial Sample Wt:
Dilution:

89.5% R.

Autosampler Location: 11
Date Collected: 11/15/2005 2:00:03 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

So OK.

Mean Data: lfb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1819824.8	8.78	mg/L	0.032				0.36%
Ni 231.604†	4525.5	0.716	mg/L	0.0023	0.716	mg/L	0.0023	0.32%

Sequence No.: 6
Sample ID: lrb
Analyst:
Initial Sample Wt:
Dilution:

OK

Autosampler Location: 12
Date Collected: 11/15/2005 2:03:24 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: lrb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1854597.7	8.95	mg/L	0.038				0.42%
Ni 231.604†	-26.4	-0.004	mg/L	0.0009	-0.004	mg/L	0.0009	20.66%

Sequence No.: 7
Sample ID: 110077-1
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 13
Date Collected: 11/15/2005 2:07:17 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110077-1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1958688.2	9.45	mg/L	0.039				0.41%
Ni 231.604†	1298.5	0.206	mg/L	0.0014	0.206	mg/L	0.0014	0.68%

Sequence No.: 8
Sample ID: 110077-2
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 14
Date Collected: 11/15/2005 2:10:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110077-2

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1920935.5	9.27	mg/L	0.024				0.25%
Ni 231.604†	1135.8	0.180	mg/L	0.0034	0.180	mg/L	0.0034	1.88%

Sequence No.: 9
Sample ID: 110077-3

Autosampler Location: 15
Date Collected: 11/15/2005 2:14:02 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110077-3

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1964896.6	9.48	mg/L	0.035				0.37%
Ni 231.604†	3193.2	0.505	mg/L	0.0033	0.505	mg/L	0.0033	0.65%

==========

Sequence No.: 10
Sample ID: 110077-4
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 16
Date Collected: 11/15/2005 2:17:25 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110077-4

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1873635.9	9.04	mg/L	0.063				0.70%
Ni 231.604†	2551.6	0.404	mg/L	0.0024	0.404	mg/L	0.0024	0.60%

==========

Sequence No.: 11
Sample ID: 110077-5
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 11/15/2005 2:20:50 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110077-5

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1908129.0	9.21	mg/L	0.049				0.53%
Ni 231.604†	1317.5	0.209	mg/L	0.0028	0.209	mg/L	0.0028	1.35%

==========

Sequence No.: 12
Sample ID: 110077-6
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 18
Date Collected: 11/15/2005 2:24:14 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110077-6

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1902617.6	9.18	mg/L	0.025				0.27%
Ni 231.604†	1171.3	0.185	mg/L	0.0014	0.185	mg/L	0.0014	0.75%

==========

Sequence No.: 13
Sample ID: ~~ccv 1~~ 0.50
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 19
Date Collected: 11/15/2005 2:27:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

OK

Mean Data: ~~ccv 1~~ 0.50

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2134130.5	10.3	mg/L	0.05				0.51%
Ni 231.604†	3080.9	0.488	mg/L	0.0009	0.488	mg/L	0.0009	0.18%

==========

Sequence No.: 14
Sample ID: ccb

Autosampler Location: 20
Date Collected: 11/15/2005 2:31:04 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2160257.8	10.4	mg/L	0.05				0.43%
Ni 231.604†	5.8	0.001	mg/L	0.0007	0.001	mg/L	0.0007	80.29%

Sequence No.: 15
Sample ID: 110077-7
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 21
Date Collected: 11/15/2005 2:35:01 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110077-7

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1944328.8	9.38	mg/L	0.059				0.63%
Ni 231.604†	1136.5	0.180	mg/L	0.0030	0.180	mg/L	0.0030	1.66%

Sequence No.: 16
Sample ID: 110077-8
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 22
Date Collected: 11/15/2005 2:38:27 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110077-8

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1860708.2	8.98	mg/L	0.094				1.04%
Ni 231.604†	987.3	0.156	mg/L	0.0022	0.156	mg/L	0.0022	1.44%

Sequence No.: 17
Sample ID: 110077-9
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 23
Date Collected: 11/15/2005 2:41:54 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110077-9

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1872395.3	9.04	mg/L	0.057				0.63%
Ni 231.604†	-19.5	-0.003	mg/L	0.0002	-0.003	mg/L	0.0002	6.21%

Sequence No.: 18
Sample ID: lfb 2
Analyst:
Initial Sample Wt:
Dilution:

90% OK

Autosampler Location: 24
Date Collected: 11/15/2005 2:45:51 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: lfb 2

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1959673.2	9.46	mg/L	0.038				0.40%
Ni 231.604†	11404.0	1.80	mg/L	0.006	1.80	mg/L	0.006	0.31%

Sequence No.: 19
Sample ID: lrb

Autosampler Location: 25
Date Collected: 11/15/2005 2:49:12 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

OK

Mean Data: lrb

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	1979881.9	9.56	mg/L	0.044				0.46%
Ni 231.604†	-8.7	-0.001	mg/L	0.0011	-0.001	mg/L	0.0011	76.99%

Sequence No.: 20
Sample ID: 110200-1
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 26
Date Collected: 11/15/2005 2:53:04 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110200-1

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2039521.7	9.84	mg/L	0.020				0.20%
Ni 231.604†	1275.1	0.202	mg/L	0.0022	0.202	mg/L	0.0022	1.07%

Sequence No.: 21
Sample ID: 110200-2
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 27
Date Collected: 11/15/2005 2:56:25 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110200-2

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2015561.4	9.73	mg/L	0.196				2.02%
Ni 231.604†	907.3	0.144	mg/L	0.0018	0.144	mg/L	0.0018	1.28%

Sequence No.: 22
Sample ID: 110200-3
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 28
Date Collected: 11/15/2005 2:59:46 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110200-3

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2123863.3	10.3	mg/L	0.16				1.54%
Ni 231.604†	2.7	0.000	mg/L	0.0006	0.000	mg/L	0.0006	147.39%

Sequence No.: 23
Sample ID: ccv ~~0.50~~ 1.00
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 29
Date Collected: 11/15/2005 3:03:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

OK

Mean Data: ccv ~~0.50~~ 1.00

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2111662.9	10.2	mg/L	0.05				0.51%
Ni 231.604†	6105.8	0.966	mg/L	0.0058	0.966	mg/L	0.0058	0.60%

Sequence No.: 24
Sample ID: ccb

Autosampler Location: 30
Date Collected: 11/15/2005 3:07:01 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2150000.9	10.4	mg/L	0.04				0.40%
Ni 231.604†	2.6	0.000	mg/L	0.0005	0.000	mg/L	0.0005	129.71%

Sequence No.: 25
Sample ID: 110200-4
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 31
Date Collected: 11/15/2005 3:10:54 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110200-4

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	1987561.7	9.59	mg/L	0.045				0.46%
Ni 231.604†	818.7	0.130	mg/L	0.0019	0.130	mg/L	0.0019	1.43%

Sequence No.: 26
Sample ID: 110200-5
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 32
Date Collected: 11/15/2005 3:14:17 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110200-5

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2111561.9	10.2	mg/L	0.01				0.14%
Ni 231.604†	265.5	0.042	mg/L	0.0022	0.042	mg/L	0.0022	5.19%

Sequence No.: 27
Sample ID: 110200-6
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 33
Date Collected: 11/15/2005 3:17:41 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110200-6

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2110801.2	10.2	mg/L	0.03				0.34%
Ni 231.604†	25654.4	4.06	mg/L	0.023	4.06	mg/L	0.023	0.58%

Sequence No.: 28
Sample ID: 110200-7
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 34
Date Collected: 11/15/2005 3:21:06 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110200-7

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	1927741.6	9.30	mg/L	0.016				0.17%
Ni 231.604†	2828.9	0.448	mg/L	0.0019	0.448	mg/L	0.0019	0.43%

Sequence No.: 29
Sample ID: 110200-8

Autosampler Location: 35
Date Collected: 11/15/2005 3:24:30 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110200-8

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2130417.1	10.3	mg/L	0.06				0.56%
Ni 231.604†	14.2	0.002	mg/L	0.0009	0.002	mg/L	0.0009	41.69%

Sequence No.: 30
Sample ID: 110200-9
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 36
Date Collected: 11/15/2005 3:28:25 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110200-9

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	1982644.9	9.57	mg/L	0.091				0.95%
Ni 231.604†	13308.9	2.11	mg/L	0.015	2.11	mg/L	0.015	0.70%

Sequence No.: 31
Sample ID: 110200-10
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 37
Date Collected: 11/15/2005 3:31:51 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110200-10

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2088025.1	10.1	mg/L	0.06				0.61%
Ni 231.604†	2411.1	0.382	mg/L	0.0010	0.382	mg/L	0.0010	0.27%

Sequence No.: 32
Sample ID: ccv + 0.50
Analyst:
Initial Sample Wt:
Dilution:

OK

Autosampler Location: 38
Date Collected: 11/15/2005 3:35:17 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccv + 0.50

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2101174.1	10.1	mg/L	0.05				0.49%
Ni 231.604†	3097.6	0.490	mg/L	0.0024	0.490	mg/L	0.0024	0.48%

Sequence No.: 33
Sample ID: ccb
Analyst:
Initial Sample Wt:
Dilution:

OK

Autosampler Location: 39
Date Collected: 11/15/2005 3:38:43 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2154568.9	10.4	mg/L	0.06				0.57%
Ni 231.604†	-1.7	0.000	mg/L	0.0005	0.000	mg/L	0.0005	196.44%

PROJECT # 020072: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES

Digestion on 02/06/06

BY ICP ON 02/09/06

IDL =	0.004	**LOQ =**	0.017
LOD =	0.008	**RL =**	0.050
MDL =	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading		
LRB	25	-0.002	<MDL of 0.007 mg/L	**= 0.006**
LFB	25	2.16	= 100 x 2.16/2.0 = 108% Recovery, (80-120%)	
020072-1	25	0.002	**= 0.006**	
020072-2	25	0.209		
020072-3	25	0.036		
020072-4	25	2.310		
020072-5	25	0.149		

EXPLANATIONS:

LRB = Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.

LFB = Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.

DILUTION = 25 ml class A volumetric flask was used to measure the final volume.

READING = mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

Laboratory Work Order Report

LIMS No. 2006020072 **Date Rec'd** 02/03/2006 03:58:26 **Date Due** 02/03/2006 12:00:00 AM
Project Code .NULL. **Customer No.** SCICON **Client Type:** **REGULAR**
Client Name SCIENTIFIC CONTROL LABS
3158 S. KOLIN AVE.
CHICAGO IL 60623

Phone 254-2406 **Fax** 254-6661 **Contact** MR. FRANK ALTMAYER
Matrix Engineering **Po No.** -0- **e-mail**
Quoted Price: .NULL.

Client Notes: -0-

Order Comments: .NULL.
.NULL.

Sample No.	Comments	Test Code	Description	Date Received	Result
OSHA-ID-121					
1	02/01/2006	ABQC - 02/01/06 - BLANK		02/03/2006 03:00:00 PM	
		NI	NICKEL		
2	02/01/2006	ABQC - 02/01/06 - COND#10 - EAST SERIAL #25082359		02/03/2006 03:00:00 PM	
		NI	NICKEL		
3	02/01/2006	ABQC - 02/01/06 - COND#10 - WEST SERIAL #25093158		02/03/2006 03:00:00 PM	
		NI	NICKEL		
4	02/02/2006	ABQC - 02/02/06 - COND#13 - EAST SERIAL #25082349		02/03/2006 03:00:00 PM	
		NI	NICKEL		
5	02/02/2006	ABQC - 02/02/06 - COND#13 - WEST SERIAL #25082370		02/03/2006 03:00:00 PM	
		NI	NICKEL		

METALS PREP FORM

Set #

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____
- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

OSHA ID-121

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER:_____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	2/6	9A			LFB				
						LRB				
1				020672	1		1 Filter			
					2	LFM DUP				
					3	LFM				
2					4				Blue Stripe on Filter	
3					5					
4										
5										
6										
7										
8										
9										
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05H062
QC-7		
P		
Sn		
OTHER		

Analyst: _____

Start Date: _____

Sample Information Detail Report
Document Name: 020906-1

File Description
Default Sample Information File

Parameters Common to All Samples

Batch ID	020906-1
Volume Units	mL
Weight Units	g

Parameters That Vary By Sample

Sample No	A/S Location	Sample ID	Initial Sample Wt.
1	9	cri	
2	10	icsab	
3	11	ccv 0.50	
4	12	ccb	
5	13	lfb	
6	14	lrb	
7	15	020072-1	
8	16	020072-2	
9	17	020072-3	
10	18	020072-4	
11	19	020072-5	
12	20	ccv 1	
13	21	ccb	

Sample No	Sample Prep. Vol.	Aliquot Volume	Diluted To Vol.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Analysis Begun

Start Time: 2/9/2006 4:32:26 PM
Logged In Analyst: sammy
Spectrometer Model: Optima 3000 DV, S/N 069N5083001
Plasma On Time: 2/9/2006 3:02:06 PM
Technique: ICP Continuous
Autosampler Model: AS-91

Sample Information File: C:\pe\sammy\Sample Information\020906-1.sif
Batch ID: 020906-1
Results Data Set: 020906-1
Results Library: C:\pe\sammy\Results\Results.mdb

Method Loaded
Method Name: Air Filter Ni
IEC File:
Method Description: AIR FILTER Ni
Method Last Saved: 10/5/2005 1:33:13 PM
MSF File:

Sequence No.: 1
Sample ID: Calib Blank 1
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 0
Date Collected: 2/9/2006 4:32:26 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Yb 328.937	4114830.8	15776.58	0.38%	10.0	mg/L
Ni 231.604†	-130.9	3.97	3.03%	[0.00]	mg/L

Sequence No.: 2
Sample ID: Cal 21+7 1.00
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 1
Date Collected: 2/9/2006 4:36:07 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Cal 21+7 1.00

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Yb 328.937	4095641.1	50232.78	1.23%	9.95	mg/L
Ni 231.604†	9671.8	108.72	1.12%	[1.00]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ni 231.604	1	Lin Thru 0	0.0	9672	0.00000	1.000000	

Sequence No.: 3
Sample ID: cri
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 9
Date Collected: 2/9/2006 4:39:27 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: cri

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	4081070.0	9.92	mg/L	0.027				0.27%
Ni 231.604†	242.6	0.025	mg/L	0.0005	0.025	mg/L	0.0005	2.06%

Sequence No.: 4
Sample ID: icsab
Autosampler Location: 10
Date Collected: 2/9/2006 4:43:20 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: icsab

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	3855502.9	9.37	mg/L	0.068				0.73%
Ni 231.604†	9704.0	1.00	mg/L	0.002	1.00	mg/L	0.002	0.20%

==========

Sequence No.: 5
Sample ID: ccv 0.50
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 11
Date Collected: 2/9/2006 4:46:40 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccv 0.50

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	4097861.2	9.96	mg/L	0.064				0.65%
Ni 231.604†	4766.0	0.493	mg/L	0.0015	0.493	mg/L	0.0015	0.30%

==========

Sequence No.: 6
Sample ID: ccb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 12
Date Collected: 2/9/2006 4:50:01 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	4079669.8	9.91	mg/L	0.046				0.47%
Ni 231.604†	-5.4	-0.001	mg/L	0.0006	-0.001	mg/L	0.0006	114.59%

==========

Sequence No.: 7
Sample ID: lfb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 13
Date Collected: 2/9/2006 4:53:53 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: lfb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	3773785.3	9.17	mg/L	0.046				0.50%
Ni 231.604†	20877.5	2.16	mg/L	0.012	2.16	mg/L	0.012	0.58%

==========

Sequence No.: 8
Sample ID: lrb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 14
Date Collected: 2/9/2006 4:57:15 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: lrb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	3846235.8	9.35	mg/L	0.147				1.57%
Ni 231.604†	-21.5	-0.002	mg/L	0.0007	-0.002	mg/L	0.0007	31.72%

==========

Sequence No.: 9
Sample ID: 020072-1

Autosampler Location: 15
Date Collected: 2/9/2006 5:01:07 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 020072-1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	3834509.7	9.32	mg/L	0.084				0.90%
Ni 231.604†	16.0	0.002	mg/L	0.0008	0.002	mg/L	0.0008	50.28%

==========

Sequence No.: 10
Sample ID: 020072-2
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 16
Date Collected: 2/9/2006 5:05:00 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 020072-2

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	3817011.8	9.28	mg/L	0.085				0.91%
Ni 231.604†	2026.2	0.209	mg/L	0.0038	0.209	mg/L	0.0038	1.80%

==========

Sequence No.: 11
Sample ID: 020072-3
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 2/9/2006 5:08:24 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 020072-3

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	3873178.7	9.41	mg/L	0.075				0.80%
Ni 231.604†	347.7	0.036	mg/L	0.0005	0.036	mg/L	0.0005	1.47%

==========

Sequence No.: 12
Sample ID: 020072-4
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 18
Date Collected: 2/9/2006 5:12:17 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 020072-4

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	4118867.8	10.0	mg/L	0.07				0.67%
Ni 231.604†	22338.0	2.31	mg/L	0.033	2.31	mg/L	0.033	1.44%

==========

Sequence No.: 13
Sample ID: 020072-5
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 19
Date Collected: 2/9/2006 5:15:44 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 020072-5

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	3793834.3	9.22	mg/L	0.137				1.49%
Ni 231.604†	1445.2	0.149	mg/L	0.0016	0.149	mg/L	0.0016	1.07%

==========

Sequence No.: 14
Sample ID: ccv 1

Autosampler Location: 20
Date Collected: 2/9/2006 5:19:38 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccv 1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	4126299.4	10.0	mg/L	0.07				0.68%
Ni 231.604†	9429.0	0.975	mg/L	0.0089	0.975	mg/L	0.0089	0.92%

Sequence No.: 15
Sample ID: ccb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 21
Date Collected: 2/9/2006 5:23:04 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	4027115.6	9.79	mg/L	0.057				0.58%
Ni 231.604†	-13.0	-0.001	mg/L	0.0002	-0.001	mg/L	0.0002	11.76%

PROJECT # 010218: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	**IDL =**	0.004	**LOQ =**	0.017
Digestion on 01/24/06	**LOD =**	0.008	**RL =**	0.050
BY ICP ON 01/27/06	**MDL =**	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading		
LRB	25	-0.001	<MDL of 0.007 mg/L	**= 0.006**
LFB	25	1.98	= 100 x 1.98/2.0 = 99% Recovery, (80-120%)	
010218-1	25	2.16		
010218-2	25	0.238		
010218-3	25	-0.001	**= 0.006**	
010218-4	25	0.622		
010218-5	25	0.087		

EXPLANATIONS:

LRB = Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.

LFB = Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.

DILUTION = 25 ml class A volumetric flask was used to measure the final volume.

READING = mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

Laboratory Work Order Report

LIMS No. 2006010218 **Date Rec'd** 01/13/2006 03:01:36 **Date Due** 01/13/2006 12:00:00 AM
Project Code .NULL. **Customer No.** SCICON **Client Type:** **REGULAR**
Client Name SCIENTIFIC CONTROL LABS
3158 S. KOLIN AVE.
CHICAGO IL 60623

Phone 254-2406 **Fax** 254-6661 **Contact** MR. FRANK ALTMAYER
Matrix Engineering **Po No.** -0- **e-mail**
Quoted Price: .NULL.

Client Notes: -0- Method OSHA 10-72

Order Comments: .NULL.
.NULL.

Sample No.	Comments	Test Code	Description	Date Received	Result
ABQC					
1	01/11/2006	01/11/06 CONDITION #12 EAST - SERIAL #25093149		01/13/2006 01:30:00 PM	
		NI	NICKEL		
2	01/11/2006	01/11/06 CONDITION #12 WEST - SERIAL #25093112		01/13/2006 01:30:00 PM	
		NI	NICKEL		
3	01/11/2006	01/11/06 BLANK SERIAL #25093138		01/13/2006 01:30:00 PM	
		NI	NICKEL		
4	01/11/2006	01/11/06 CONDITION #11 EAST - SERIAL #25093115		01/13/2006 01:30:00 PM	
		NI	NICKEL		
5	01/11/2006	01/11/06 CONDITION #11 WEST - SERIAL #25093146		01/13/2006 01:30:00 PM	
		NI	NICKEL		

diluted to 25 mls.

METALS PREP FORM

Set # H

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [X] OTHER: OSHA 121

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER: _____

MATRIX: (check only one per page)

Air Filters

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [ ] OTHER: _____

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	1/24	8AM			LFB				
						LRB				
1				010218	1	SCL Ni Proj.			Ni	
						~~LFM DUP~~			↓	
						~~LFM~~				
2					2					
3					3					
4					4					
5					5	↓			↓	
6				010302	1				Cd, Cr, Pb	
7					2				↓	
8					3					
9										
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05H062
QC-7		
P		
Sn		
OTHER		

0.5 mls

Analyst: _____

Start Date: _____

Sample Information Detail Report
Document Name: 012706-1

File Description
Default Sample Information File

Parameters Common to All Samples

Batch ID	012706-1
Volume Units	mL
Weight Units	g

Parameters That Vary By Sample

Sample No	A/S Location	Sample ID	Initial Sample Wt.
1	9	cri	
2	10	icb	
3	11	icv	
4	12	icsab	
5	13	lfb	
6	14	lrb	
7	15	010302-1	
8	16	010302-2	
9	17	010302-3	
10	18	010218-1	
11	19	010218-2	
12	20	010218-3	
13	21	010218-4	
14	22	010218-5	
15	23	ccv ~~1.00~~ 2.00	
16	24	ccb	

Sample No	Sample Prep. Vol.	Aliquot Volume	Diluted To Vol.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Reviewed 1-31-06 LK

Analysis Begun

Start Time: 1/27/2006 2:28:40 PM
Logged In Analyst: sammy
Spectrometer Model: Optima 3000 DV, S/N 069N5083001
Plasma On Time: 1/27/2006 2:02:19 PM
Technique: ICP Continuous
Autosampler Model: AS-91

Sample Information File:
Batch ID:
Results Data Set:
Results Library:

Method Loaded
Method Name: Pt-MnBEC
IEC File:
Method Description: Axial Performance Test
Method Last Saved: 11/29/2005 2:09:00 PM
MSF File:

Sequence No.: 1
Sample ID: Calib Blank 1
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location:
Date Collected: 1/27/2006 2:28:40 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Replicate Data: Calib Blank 1

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc.	Calib. Units	Analysis Time
1	Mn 257.610	2926.8	2926.8	[0.00]	mg/L	14:30:06
1	Cu 324.752	9474.4	9474.4	[0.00]	mg/L	14:30:06
2	Mn 257.610	2799.0	2799.0	[0.00]	mg/L	14:30:16
2	Cu 324.752	9431.8	9431.8	[0.00]	mg/L	14:30:16
3	Mn 257.610	2789.6	2789.6	[0.00]	mg/L	14:30:26
3	Cu 324.752	9436.9	9436.9	[0.00]	mg/L	14:30:26

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Mn 257.610	2838.5	76.62	2.70%	[0.00]	mg/L
Cu 324.752	9447.7	23.26	0.25%	[0.00]	mg/L

Sequence No.: 2
Sample ID: Calb Std1
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location:
Date Collected: 1/27/2006 2:31:19 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Replicate Data: Calb Std1

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc.	Calib. Units	Analysis Time
1	Mn 257.610	1868576.8	1865738.3	[5.00]	mg/L	14:32:31
1	Cu 324.752	494782.4	485334.7	[5.00]	mg/L	14:32:31
2	Mn 257.610	1874239.8	1871401.4	[5.00]	mg/L	14:32:44
2	Cu 324.752	496392.3	486944.6	[5.00]	mg/L	14:32:44
3	Mn 257.610	1862604.1	1859765.6	[5.00]	mg/L	14:32:57
3	Cu 324.752	492560.1	483112.4	[5.00]	mg/L	14:32:57

Mean Data: Calb Std1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Mn 257.610	1865635.1	5818.57	0.31%	[5.00]	mg/L

Cu 324.752	485130.6	1924.25	0.40%	[5.00] mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Mn 257.610	1	Lin Thru 0	0.0	373100	0.00000	1.000000	
Cu 324.752	1	Lin Thru 0	0.0	97030	0.00000	1.000000	

Sequence No.: 3
Sample ID: bec
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location:
Date Collected: 1/27/2006 2:33:19 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Replicate Data: bec

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Mn 257.610	0.3	-2838.2	-0.008	mg/L	-0.008	mg/L	14:34:18
1	Cu 324.752	1.2	-9446.5	-0.097	mg/L	-0.097	mg/L	14:34:18
2	Mn 257.610	0.2	-2838.3	-0.008	mg/L	-0.008	mg/L	14:34:38
2	Cu 324.752	0.1	-9447.6	-0.097	mg/L	-0.097	mg/L	14:34:38
3	Mn 257.610	-0.8	-2839.3	-0.008	mg/L	-0.008	mg/L	14:34:58
3	Cu 324.752	0.1	-9447.6	-0.097	mg/L	-0.097	mg/L	14:34:58

Mean Data: bec

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Mn 257.610	-2838.6	-0.008	mg/L	0.0000	-0.008	mg/L	0.0000	0.02%
Cu 324.752	-9447.2	-0.097	mg/L	0.0000	-0.097	mg/L	0.0000	0.01%

Method Loaded
Method Name: Pt-MnBEC
IEC File:
Method Description: Axial Performance Test

Method Last Saved: 11/29/2005 2:09:00 PM
MSF File:

Sequence No.: 4
Sample ID: cv
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location:
Date Collected: 1/27/2006 2:35:25 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Replicate Data: cv

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc.	Calib. Units	Sample Conc.	Sample Units	Analysis Time
1	Mn 257.610	1873085.6	1870247.1	5.01	mg/L	5.01	mg/L	14:36:37
1	Cu 324.752	496646.8	487199.1	5.02	mg/L	5.02	mg/L	14:36:37
2	Mn 257.610	1867976.6	1865138.1	5.00	mg/L	5.00	mg/L	14:36:50
2	Cu 324.752	494873.3	485425.6	5.00	mg/L	5.00	mg/L	14:36:50
3	Mn 257.610	1863508.5	1860670.1	4.99	mg/L	4.99	mg/L	14:37:03
3	Cu 324.752	493612.2	484164.5	4.99	mg/L	4.99	mg/L	14:37:03
4	Mn 257.610	1864524.6	1861686.1	4.99	mg/L	4.99	mg/L	14:37:16
4	Cu 324.752	493197.1	483749.4	4.99	mg/L	4.99	mg/L	14:37:16
5	Mn 257.610	1858358.5	1855520.0	4.97	mg/L	4.97	mg/L	14:37:29
5	Cu 324.752	492295.2	482847.6	4.98	mg/L	4.98	mg/L	14:37:29
6	Mn 257.610	1877872.2	1875033.7	5.03	mg/L	5.03	mg/L	14:37:42
6	Cu 324.752	497735.9	488288.2	5.03	mg/L	5.03	mg/L	14:37:42
7	Mn 257.610	1870403.1	1867564.7	5.01	mg/L	5.01	mg/L	14:37:55
7	Cu 324.752	495019.6	485571.9	5.00	mg/L	5.00	mg/L	14:37:55
8	Mn 257.610	1871306.3	1868467.8	5.01	mg/L	5.01	mg/L	14:38:07
8	Cu 324.752	496395.8	486948.1	5.02	mg/L	5.02	mg/L	14:38:07

9	Mn 257.610	1873916.8	1871078.4	5.01 mg/L	5.01 mg/L	14:38:20
9	Cu 324.752	497158.3	487710.6	5.03 mg/L	5.03 mg/L	14:38:20
10	Mn 257.610	1872973.8	1870135.3	5.01 mg/L	5.01 mg/L	14:38:33
10	Cu 324.752	496581.7	487134.0	5.02 mg/L	5.02 mg/L	14:38:33

Mean Data: cv

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Mn 257.610	1866554.1	5.00	mg/L	0.016	5.00	mg/L	0.016	0.31%
Cu 324.752	485903.9	5.01	mg/L	0.019	5.01	mg/L	0.019	0.38%

Analysis Begun

Start Time: 1/27/2006 2:46:25 PM
Logged In Analyst: sammy
Spectrometer Model: Optima 3000 DV, S/N 069N5083001
Plasma On Time: 1/27/2006 2:02:19 PM
Technique: ICP Continuous
Autosampler Model: AS-91

Sample Information File: C:\pe\sammy\Sample Information\012706-1.sif
Batch ID: 012706-1
Results Data Set: 012706-1
Results Library: C:\pe\sammy\Results\Results.mdb

Method Loaded
Method Name: NEW A1 ROUTINE
IEC File: iec 1.iec
Method Description: NEW A1 ROUTINE
Method Last Saved: 1/24/2006 10:55:40 AM
MSF File:

Sequence No.: 1
Sample ID: Calib Blank 1
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 0
Date Collected: 1/27/2006 2:46:25 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Yb	4117890.7	27189.58	0.66%	10.00	mg/L
Ag†	256.5	19.65	7.66%	[0.00]	mg/L
Cd†	-73.2	9.40	12.85%	[0.00]	mg/L
Cr†	63.9	6.58	10.30%	[0.00]	mg/L
Cu†	4642.6	27.57	0.59%	[0.00]	mg/L
Fe†	548.4	27.19	4.96%	[0.00]	mg/L
Ni†	-65.7	4.43	6.73%	[0.00]	mg/L
Pb†	-8.6	3.22	37.39%	[0.00]	mg/L
Zn†	-70.6	2.15	3.05%	[0.00]	mg/L
Al†	1756.5	24.00	1.37%	[0.00]	mg/L
As†	10.2	5.93	58.24%	[0.00]	mg/L
B†	123.1	6.84	5.56%	[0.00]	mg/L
Ba†	-174.8	9.61	5.50%	[0.00]	mg/L
Be†	-122.2	87.84	71.91%	[0.00]	mg/L
Ca 315.887†	429.6	5.01	1.17%	[0.00]	mg/L
Ca 422.673†	10364.6	41.92	0.40%	[0.00]	mg/L
Co†	-4.1	6.49	158.89%	[0.00]	mg/L
K 10†	2907.0	37.66	1.30%	[0.00]	mg/L
K 766.490 20†	2765.5	25.67	0.93%	[0.00]	mg/L
Li†	4195.9	176.09	4.20%	[0.00]	mg/L
Mg†	134.1	10.54	7.86%	[0.00]	mg/L
Mn†	277.6	26.22	9.44%	[0.00]	mg/L
Na 330.237†	394.1	18.57	4.71%	[0.00]	mg/L
Na 589.592†	18928.2	81.30	0.43%	[0.00]	mg/L
P†	16.7	1.82	10.85%	[0.00]	mg/L
Sb†	40.3	1.75	4.34%	[0.00]	mg/L
Se†	7.9	1.78	22.54%	[0.00]	mg/L
Si†	157.4	9.00	5.72%	[0.00]	mg/L
Sn†	-10.0	4.25	42.57%	[0.00]	mg/L
Sr†	1428.1	651.59	45.63%	[0.00]	mg/L
Ti†	2921.4	214.16	7.33%	[0.00]	mg/L
Tl†	2.9	3.78	129.71%	[0.00]	mg/L
V†	-1615.5	16.04	0.99%	[0.00]	mg/L
As 193.696†	10.2	5.93	58.24%	[0.00]	mg/L
Se 196.026†	-4.6	7.90	172.06%	[0.00]	mg/L
Mo 202.031†	249.5	45.56	18.26%	[0.00]	mg/L

Sequence No.: 2
Sample ID: CAL 21+7 1.00
Autosampler Location: 1
Date Collected: 1/27/2006 2:50:42 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: CAL 21+7 1.00

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Yb	4046403.1	19302.97	0.48%	9.83	mg/L
Ag†	95041.2	754.08	0.79%	[1.00]	mg/L
Cd†	40166.2	305.59	0.76%	[1.00]	mg/L
Cr†	49380.5	424.61	0.86%	[1.00]	mg/L
Cu†	106667.8	914.57	0.86%	[1.00]	mg/L
Fe†	42506.0	397.76	0.94%	[1.00]	mg/L
Ni†	9279.3	81.42	0.88%	[1.00]	mg/L
Pb†	2736.1	17.39	0.64%	[1.00]	mg/L
Zn†	16726.1	127.73	0.76%	[1.00]	mg/L
Al†	4728.1	53.03	1.12%	[1.00]	mg/L
As†	367.8	4.76	1.29%	[1.00]	mg/L
B†	38002.0	173.95	0.46%	[1.00]	mg/L
Ba†	28299.1	261.94	0.93%	[1.00]	mg/L
Be†	1010496.8	2177.09	0.22%	[1.00]	mg/L
Ca 422.673†	268864.8	1567.12	0.58%	[1.00]	mg/L
Co†	11407.1	112.61	0.99%	[1.00]	mg/L
K 10†	715080.7	3900.11	0.55%	[10.00]	mg/L
Li†	4208209.8	48673.94	1.16%	[1.00]	mg/L
Mg†	3897.5	40.60	1.04%	[1.00]	mg/L
Mn†	198907.3	271.43	0.14%	[1.00]	mg/L
Na 589.592†	251031.5	1113.18	0.44%	[1.00]	mg/L
Sb†	490.7	47.51	9.68%	[1.00]	mg/L
Se†	353.1	16.13	4.57%	[1.00]	mg/L
Sr†	8487507.9	67457.88	0.79%	[1.00]	mg/L
Ti†	306680.8	751.19	0.24%	[1.00]	mg/L
Tl†	203.0	2.44	1.20%	[1.00]	mg/L
V†	78517.9	667.58	0.85%	[1.00]	mg/L
As 193.696†	367.8	4.76	1.29%	[1.00]	mg/L
Se 196.026†	510.2	12.45	2.44%	[1.00]	mg/L
Mo 202.031†	1948.8	61.74	3.17%	[1.00]	mg/L

Sequence No.: 3
Sample ID: CAL MIX 2A
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 2
Date Collected: 1/27/2006 2:56:07 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: CAL MIX 2A

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Yb	4067094.8	35459.93	0.87%	9.88	mg/L
Na 330.237†	2241.8	44.33	1.98%	[10.00]	mg/L
Na 589.592†	3034250.4	2758.62	0.09%	[10.00]	mg/L

Sequence No.: 4
Sample ID: CAL MIX 3A
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 1/27/2006 2:59:36 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: CAL MIX 3A

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Yb	4147958.0	14777.51	0.36%	10.1	mg/L
Co†	23079.7	44.33	0.19%	[2.00]	mg/L
P†	2202.1	4.06	0.18%	[10.00]	mg/L

Sequence No.: 5
Sample ID: CAL MIX 4A
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 1/27/2006 3:03:29 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: CAL MIX 4A

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Yb	4060531.2	35403.43	0.87%	9.86	mg/L
Cr†	259057.1	638.80	0.25%	[5.00]	mg/L
Zn†	88216.4	161.26	0.18%	[5.00]	mg/L
Al†	49318.9	834.86	1.69%	[10.00]	mg/L
Sn†	6487.2	95.49	1.47%	[4.00]	mg/L

Sequence No.: 6
Sample ID: CAL MIX 5A
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 1/27/2006 3:07:04 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: CAL MIX 5A

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Yb	4055412.3	30403.69	0.75%	9.85	mg/L
Fe†	427832.5	608.40	0.14%	[10.00]	mg/L
Ni†	18761.0	37.44	0.20%	[2.00]	mg/L
Pb†	27855.7	60.95	0.22%	[10.00]	mg/L
Mg†	40359.3	110.86	0.27%	[10.00]	mg/L

Sequence No.: 7
Sample ID: CAL MIX 1A
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 1/27/2006 3:10:30 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: CAL MIX 1A

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Yb	4012478.8	29415.92	0.73%	9.74	mg/L
Cd†	161962.3	529.89	0.33%	[4.00]	mg/L
Cu†	432307.1	1619.51	0.37%	[4.00]	mg/L
B†	159042.5	333.28	0.21%	[4.00]	mg/L
Ba†	57081.8	147.73	0.26%	[2.00]	mg/L
Ca 315.887†	483590.2	1813.89	0.38%	[20.00]	mg/L
Ca 422.673†	5166298.1	51964.63	1.01%	[20.00]	mg/L
Mn†	825127.9	5614.58	0.68%	[4.00]	mg/L

Sequence No.: 8
Sample ID: Ca+Na 50 ppm K 20ppm
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 7
Date Collected: 1/27/2006 3:14:46 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Ca+Na 50 ppm K 20ppm

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Yb	3966352.4	40190.91	1.01%	9.63	mg/L
Ca 315.887†	1199498.4	2112.16	0.18%	[50.00]	mg/L
K 766.490 20†	2047997.8	4664.99	0.23%	[20.00]	mg/L
Na 330.237†	12293.0	166.10	1.35%	[50.00]	mg/L

Sequence No.: 9
Sample ID: AsSbSeMo4ppmSi2ppm
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 8
Date Collected: 1/27/2006 3:18:22 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: AsSbSeMo4ppmSi2ppm

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Yb	3967665.8	6272.18	0.16%	9.64	mg/L
As†	1560.2	26.48	1.70%	[4.00]	mg/L
Sb†	2816.7	23.72	0.84%	[4.00]	mg/L
Se†	1506.2	44.21	2.94%	[4.00]	mg/L
Si†	22373.5	116.69	0.52%	[2.00]	mg/L
Tl†	805.4	8.13	1.01%	[4.00]	mg/L
Mo 202.031†	8421.5	380.05	4.51%	[4.00]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag	1	Lin Thru 0	0.0	95040	0.00000	1.000000	
Cd	2	Lin Thru 0	0.0	40470	0.00000	0.999998	
Cr	2	Lin Thru 0	0.0	51720	0.00000	0.999959	
Cu	2	Lin Thru 0	0.0	108000	0.00000	0.999995	
Fe	2	Lin Thru 0	0.0	42780	0.00000	1.000000	
Ni	2	Lin Thru 0	0.0	9360	0.00000	0.999991	
Pb	2	Lin Thru 0	0.0	2785	0.00000	0.999998	
Zn	2	Lin Thru 0	0.0	17610	0.00000	0.999950	
Al	2	Lin Thru 0	0.0	4930	0.00000	0.999992	
As	2	Lin Thru 0	0.0	388.7	0.00000	0.999909	
B	2	Lin Thru 0	0.0	39660	0.00000	0.999946	
Ba	2	Lin Thru 0	0.0	28490	0.00000	0.999994	
Be	1	Lin Thru 0	0.0	1010000	0.00000	1.000000	
Ca 315.887	2	Lin Thru 0	0.0	24020	0.00000	0.999996	
Ca 422.673	2	Lin Thru 0	0.0	258300	0.00000	0.999998	
Co	2	Lin Thru 0	0.0	11510	0.00000	0.999989	
K 10	1	Lin Thru 0	0.0	71510	0.00000	1.000000	
K 766.490 20	1	Lin Thru 0	0.0	102400	0.00000	1.000000	
Li	1	Lin Thru 0	0.0	4208000	0.00000	1.000000	
Mg	2	Lin Thru 0	0.0	4035	0.00000	0.999994	
Mn	2	Lin Thru 0	0.0	205800	0.00000	0.999964	
Na 330.237	2	Lin Thru 0	0.0	245.0	0.00000	0.999855	
Na 589.592	2	Lin Thru 0	0.0	302900	0.00000	0.999853	
P	1	Lin Thru 0	0.0	220.2	0.00000	1.000000	
Sb	2	Lin Thru 0	0.0	691.6	0.00000	0.997374	
Se	2	Lin Thru 0	0.0	375.2	0.00000	0.999892	
Si	1	Lin Thru 0	0.0	11190	0.00000	1.000000	
Sn	1	Lin Thru 0	0.0	1622	0.00000	1.000000	
Sr	1	Lin Thru 0	0.0	8488000	0.00000	1.000000	
Ti	1	Lin Thru 0	0.0	306700	0.00000	1.000000	
Tl	2	Lin Thru 0	0.0	201.4	0.00000	0.999998	
V	1	Lin Thru 0	0.0	78520	0.00000	1.000000	
As 193.696	1	Lin Thru 0	0.0	367.8	0.00000	1.000000	
Se 196.026	1	Lin Thru 0	0.0	510.2	0.00000	1.000000	
Mo 202.031	2	Lin Thru 0	0.0	2096	0.00000	0.999846	

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Sequence No.: 10
Sample ID: cri
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 9
Date Collected: 1/27/2006 3:22:21 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: cri

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb	4006585.0	9.73	mg/L	0.032				0.33%

Ag†	2367.5	0.025 mg/L	0.0004	0.025 mg/L	0.0004	1.46%
Cd†	999.6	0.025 mg/L	0.0001	0.025 mg/L	0.0001	0.48%
Cr†	1200.6	0.023 mg/L	0.0006	0.023 mg/L	0.0006	2.48%
Cu†	2747.6	0.025 mg/L	0.0008	0.025 mg/L	0.0008	3.25%
Fe†	1117.6	0.026 mg/L	0.0012	0.026 mg/L	0.0012	4.73%
Ni†	226.9	0.024 mg/L .025	0.0005	0.024 mg/L	0.0005	1.94%
Pb†	50.7	0.018 mg/L	0.0041	0.018 mg/L	0.0041	22.55%
Zn†	478.1	0.027 mg/L	0.0002	0.027 mg/L	0.0002	0.92%
Al†	560.2	0.114 mg/L	0.0044	0.114 mg/L	0.0044	3.91%
As†	36.5	0.094 mg/L	0.0198	0.094 mg/L	0.0198	21.06%
B†	4683.2	0.118 mg/L	0.0113	0.118 mg/L	0.0113	9.58%
Ba†	710.0	0.025 mg/L	0.0002	0.025 mg/L	0.0002	0.95%
Be†	25176.9	0.025 mg/L	0.0002	0.025 mg/L	0.0002	0.89%
Ca 315.887†	2711.8	0.113 mg/L	0.0005	0.113 mg/L	0.0005	0.40%
Ca 422.673†	29300.0	0.113 mg/L	0.0008	0.113 mg/L	0.0008	0.69%
Co†	279.5	0.024 mg/L	0.0003	0.024 mg/L	0.0003	1.19%
K 10†	16630.4	0.233 mg/L	0.0030	0.233 mg/L	0.0030	1.30%
K 766.490 20†	16116.6	0.157 mg/L	0.0021	0.157 mg/L	0.0021	1.34%
Li†	86212.8	0.020 mg/L	0.0003	0.020 mg/L	0.0003	1.23%
Mg†	475.4	0.118 mg/L	0.0009	0.118 mg/L	0.0009	0.80%
Mn†	4929.6	0.024 mg/L	0.0002	0.024 mg/L	0.0002	0.73%
Na 330.237†	40.0	0.163 mg/L	0.0103	0.163 mg/L	0.0103	6.32%
Na 589.592†	54616.9	0.180 mg/L	0.0010	0.180 mg/L	0.0010	0.57%
P†	28.6	0.130 mg/L	0.0085	0.130 mg/L	0.0085	6.57%
Sb†	72.1	0.104 mg/L	0.0069	0.104 mg/L	0.0069	6.63%
Se†	28.9	0.077 mg/L	0.0041	0.077 mg/L	0.0041	5.28%
Si†	257.2	0.023 mg/L	0.0023	0.023 mg/L	0.0023	10.10%
Sn†	82.9	0.051 mg/L	0.0015	0.051 mg/L	0.0015	2.95%
Sr†	212445.7	0.025 mg/L	0.0002	0.025 mg/L	0.0002	0.60%
Ti†	7662.2	0.025 mg/L	0.0016	0.025 mg/L	0.0016	6.31%
Tl†	16.3	0.081 mg/L	0.0160	0.081 mg/L	0.0160	19.75%
V†	1884.4	0.024 mg/L	0.0003	0.024 mg/L	0.0003	1.34%
As 193.696†	36.5	0.099 mg/L	0.0209	0.099 mg/L	0.0209	21.06%
Se 196.026†	44.4	0.087 mg/L	0.0042	0.087 mg/L	0.0042	4.87%
Mo 202.031†	139.1	0.066 mg/L	0.0235	0.066 mg/L	0.0235	35.42%

Sequence No.: 11
Sample ID: icb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 10
Date Collected: 1/27/2006 3:26:53 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: icb

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb	3974270.8	9.65	mg/L	0.055				0.57%
Ag†	10.1	0.000	mg/L	0.0006	0.000	mg/L	0.0006	545.83%
Cd†	-16.3	0.000	mg/L	0.0002	0.000	mg/L	0.0002	46.08%
Cr†	-6.5	0.000	mg/L	0.0002	0.000	mg/L	0.0002	177.02%
Cu†	231.6	0.002	mg/L	0.0005	0.002	mg/L	0.0005	23.44%
Fe†	-61.6	-0.001	mg/L	0.0002	-0.001	mg/L	0.0002	13.68%
Ni†	-15.8	-0.002	mg/L	0.0007	-0.002	mg/L	0.0007	38.97%
Pb†	-3.1	-0.001	mg/L	0.0013	-0.001	mg/L	0.0013	121.27%
Zn†	4.6	0.000	mg/L	0.0000	0.000	mg/L	0.0000	9.17%
Al†	-113.5	-0.023	mg/L	0.0035	-0.023	mg/L	0.0035	15.23%
As†	-9.8	-0.025	mg/L	0.0012	-0.025	mg/L	0.0012	4.62%
B†	1845.6	0.047	mg/L	0.0049	0.047	mg/L	0.0049	10.56%
Ba†	-7.7	0.000	mg/L	0.0000	0.000	mg/L	0.0000	8.72%
Be†	-229.8	0.000	mg/L	0.0000	0.000	mg/L	0.0000	18.10%
Ca 315.887†	-290.9	-0.012	mg/L	0.0003	-0.012	mg/L	0.0003	2.82%
Ca 422.673†	-3733.9	-0.014	mg/L	0.0001	-0.014	mg/L	0.0001	0.98%
Co†	-3.8	0.000	mg/L	0.0004	0.000	mg/L	0.0004	121.79%
K 10†	-17.9	0.000	mg/L	0.0004	0.000	mg/L	0.0004	142.86%
K 766.490 20†	-30.0	0.000	mg/L	0.0001	0.000	mg/L	0.0001	31.17%
Li†	-1619.6	0.000	mg/L	0.0000	0.000	mg/L	0.0000	7.93%
Mg†	-19.1	-0.005	mg/L	0.0039	-0.005	mg/L	0.0039	83.41%
Mn†	-130.4	-0.001	mg/L	0.0000	-0.001	mg/L	0.0000	7.13%
Na 330.237†	-9.1	-0.037	mg/L	0.0333	-0.037	mg/L	0.0333	89.40%

Na 589.592†	634.9	0.002 mg/L	0.0008	0.002 mg/L	0.0008	39.05%
P†	-1.8	-0.008 mg/L	0.0024	-0.008 mg/L	0.0024	30.24%
Sb†	16.1	0.023 mg/L	0.0025	0.023 mg/L	0.0025	10.63%
Se†	-14.2	-0.038 mg/L	0.0208	-0.038 mg/L	0.0208	55.14%
Si†	12.2	0.001 mg/L	0.0008	0.001 mg/L	0.0008	73.54%
Sn†	-1.7	-0.001 mg/L	0.0041	-0.001 mg/L	0.0041	405.87%
Sr†	-2473.5	0.000 mg/L	0.0000	0.000 mg/L	0.0000	5.00%
Ti†	-1562.0	-0.005 mg/L	0.0001	-0.005 mg/L	0.0001	2.33%
Tl†	-1.0	-0.005 mg/L	0.0073	-0.005 mg/L	0.0073	155.12%
V†	-48.4	-0.001 mg/L	0.0003	-0.001 mg/L	0.0003	51.67%
As 193.696†	-9.8	-0.027 mg/L	0.0012	-0.027 mg/L	0.0012	4.62%
Se 196.026†	-17.6	-0.035 mg/L	0.0113	-0.035 mg/L	0.0113	32.81%
Mo 202.031†	-167.6	-0.080 mg/L	0.0035	-0.080 mg/L	0.0035	4.39%

Sequence No.: 12
Sample ID: icv
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 11
Date Collected: 1/27/2006 3:31:22 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: icv

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb	3968670.3	9.64	mg/L	0.037				0.39%
Ag†	46370.3	0.488	mg/L	0.0046	0.488	mg/L	0.0046	0.95%
Cd†	19458.3	0.481	mg/L	0.0048	0.481	mg/L	0.0048	0.99%
Cr†	23894.8	0.462	mg/L	0.0051	0.462	mg/L	0.0051	1.11%
Cu†	51634.5	0.478	mg/L	0.0061	0.478	mg/L	0.0061	1.27%
Fe†	22145.2	0.518	mg/L	0.0052	0.518	mg/L	0.0052	1.01%
Ni†	4549.4	0.486	mg/L	0.0022	0.486	mg/L	0.0022	0.46%
Pb†	1319.2	0.474	mg/L	0.0032	0.474	mg/L	0.0032	0.68%
Zn†	8262.2	0.469	mg/L	0.0048	0.469	mg/L	0.0048	1.01%
Al†	13555.6	2.75	mg/L	0.037	2.75	mg/L	0.037	1.35%
As†	168.8	0.434	mg/L	0.0030	0.434	mg/L	0.0030	0.69%
B†	19392.1	0.489	mg/L	0.0057	0.489	mg/L	0.0057	1.16%
Ba†	13804.8	0.485	mg/L	0.0051	0.485	mg/L	0.0051	1.05%
Be†	505254.6	0.500	mg/L	0.0008	0.500	mg/L	0.0008	0.16%
Ca 315.887†	74714.7	3.11	mg/L	0.032	3.11	mg/L	0.032	1.04%
Ca 422.673†	855588.5	3.31	mg/L	0.012	3.31	mg/L	0.012	0.36%
Co†	5535.6	0.481	mg/L	0.0021	0.481	mg/L	0.0021	0.43%
K 10†	356006.0	4.98	mg/L	0.012	4.98	mg/L	0.012	0.24%
K 766.490 20†	345117.4	3.370	mg/L	0.0080	3.370	mg/L	0.0080	0.24%
Li†	1974038.9	0.469	mg/L	0.0007	0.469	mg/L	0.0007	0.16%
Mg†	11922.6	2.96	mg/L	0.036	2.96	mg/L	0.036	1.22%
Mn†	98678.0	0.479	mg/L	0.0050	0.479	mg/L	0.0050	1.04%
Na 330.237†	284.5	1.16	mg/L	0.047	1.16	mg/L	0.047	4.04%
Na 589.592†	820990.8	2.71	mg/L	0.007	2.71	mg/L	0.007	0.27%
P†	231.8	1.05	mg/L	0.031	1.05	mg/L	0.031	2.99%
Sb†	244.1	0.353	mg/L	0.0082	0.353	mg/L	0.0082	2.32%
Se†	164.1	0.437	mg/L	0.0276	0.437	mg/L	0.0276	6.30%
Si†	3140.0	0.281	mg/L	0.0015	0.281	mg/L	0.0015	0.52%
Sn†	1656.5	1.02	mg/L	0.007	1.02	mg/L	0.007	0.69%
Sr†	4164500.8	0.491	mg/L	0.0008	0.491	mg/L	0.0008	0.17%
Ti†	147722.7	0.482	mg/L	0.0038	0.482	mg/L	0.0038	0.78%
Tl†	93.9	0.466	mg/L	0.0174	0.466	mg/L	0.0174	3.72%
V†	38170.4	0.486	mg/L	0.0044	0.486	mg/L	0.0044	0.91%
As 193.696†	168.8	0.459	mg/L	0.0032	0.459	mg/L	0.0032	0.69%
Se 196.026†	238.5	0.467	mg/L	0.0220	0.467	mg/L	0.0220	4.71%
Mo 202.031†	732.4	0.349	mg/L	0.0261	0.349	mg/L	0.0261	7.46%

Sequence No.: 13
Sample ID: icsab
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 12
Date Collected: 1/27/2006 3:36:13 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: icsab

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb	3792405.4	9.21	mg/L	0.020				0.22%
Ag†	96283.5	1.01	mg/L	0.006	1.01	mg/L	0.006	0.61%
Cd†	39115.5	0.966	mg/L	0.0060	0.966	mg/L	0.0060	0.63%
Cr†	47954.0	0.927	mg/L	0.0047	0.927	mg/L	0.0047	0.51%
Cu†	108463.4	1.00	mg/L	0.005	1.00	mg/L	0.005	0.52%
Fe†	7678013.6	179	mg/L	1.9	179	mg/L	1.9	1.09%
Ni†	9040.4	0.966	mg/L	0.0090	0.966	mg/L	0.0090	0.93%
Pb†	2656.7	0.954	mg/L	0.0123	0.954	mg/L	0.0123	1.29%
Zn†	17956.2	1.02	mg/L	0.003	1.02	mg/L	0.003	0.30%
Al†	238317.6	48.3	mg/L	0.29	48.3	mg/L	0.29	0.61%
As†	362.0	0.931	mg/L	0.0107	0.931	mg/L	0.0107	1.14%
B†	69836.6	1.76	mg/L	0.017	1.76	mg/L	0.017	0.98%
Ba†	26896.7	0.944	mg/L	0.0045	0.944	mg/L	0.0045	0.47%
Be†	1019583.2	1.01	mg/L	0.000	1.01	mg/L	0.000	0.03%
Ca 315.887†	5492568.1	229	mg/L	2.6	229	mg/L	2.6	1.13%
Ca 422.673†	Saturated2							
Co†	10788.5	0.937	mg/L	0.0074	0.937	mg/L	0.0074	0.79%
K 10†	1193681.7	16.7	mg/L	0.03	16.7	mg/L	0.03	0.20%
K 766.490 20†	1158775.9	11.32	mg/L	0.022	11.32	mg/L	0.022	0.19%
Li†	5864783.1	1.39	mg/L	0.019	1.39	mg/L	0.019	1.35%
Mg†	478370.2	119	mg/L	0.0	119	mg/L	0.0	0.03%
Mn†	195541.6	0.950	mg/L	0.0055	0.950	mg/L	0.0055	0.58%
Na 330.237†	8859.1	36.2	mg/L	0.17	36.2	mg/L	0.17	0.47%
Na 589.592†	Saturated2							
P†	469.7	2.13	mg/L	0.050	2.13	mg/L	0.050	2.34%
Sb†	660.5	0.955	mg/L	0.0043	0.955	mg/L	0.0043	0.45%
Se†	333.1	0.888	mg/L	0.0212	0.888	mg/L	0.0212	2.39%
Si†	5938.7	0.531	mg/L	0.0065	0.531	mg/L	0.0065	1.23%
Sn†	3261.0	2.01	mg/L	0.021	2.01	mg/L	0.021	1.03%
Sr†	8407451.4	0.991	mg/L	0.0030	0.991	mg/L	0.0030	0.30%
Ti†	360682.8	1.18	mg/L	0.008	1.18	mg/L	0.008	0.68%
Tl†	198.5	0.985	mg/L	0.0415	0.985	mg/L	0.0415	4.21%
V†	76386.6	0.973	mg/L	0.0053	0.973	mg/L	0.0053	0.55%
As 193.696†	362.0	0.984	mg/L	0.0113	0.984	mg/L	0.0113	1.14%
Se 196.026†	470.3	0.922	mg/L	0.0352	0.922	mg/L	0.0352	3.82%
Mo 202.031†	1962.3	0.936	mg/L	0.0396	0.936	mg/L	0.0396	4.23%

Sequence No.: 14
Sample ID: lfb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 13
Date Collected: 1/27/2006 3:42:24 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: lfb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb	3691064.0	8.96	mg/L	0.154				1.72%
Ag†	-122.1	-0.001	mg/L	0.0006	-0.001	mg/L	0.0006	43.49%
Cd†	76124.4	1.88	mg/L	0.018	1.88	mg/L	0.018	0.95%
Cr†	98518.2	1.90	mg/L	0.016	1.90	mg/L	0.016	0.83%
Cu†	215406.0	1.99	mg/L	0.005	1.99	mg/L	0.005	0.27%
Fe†	86747.5	2.03	mg/L	0.035	2.03	mg/L	0.035	1.72%
Ni†	18525.0	1.98	mg/L	0.016	1.98	mg/L	0.016	0.80%
Pb†	5369.7	1.93	mg/L	0.013	1.93	mg/L	0.013	0.69%
Zn†	31608.0	1.80	mg/L	0.015	1.80	mg/L	0.015	0.82%
Al†	207.9	0.042	mg/L	0.0121	0.042	mg/L	0.0121	28.77%
As†	698.4	1.80	mg/L	0.020	1.80	mg/L	0.020	1.11%
B†	2361.7	0.060	mg/L	0.0143	0.060	mg/L	0.0143	23.98%
Ba†	-33.5	-0.001	mg/L	0.0005	-0.001	mg/L	0.0005	41.64%
Be†	1968453.9	1.95	mg/L	0.005	1.95	mg/L	0.005	0.24%
Ca 315.887†	50567.5	2.11	mg/L	0.027	2.11	mg/L	0.027	1.26%
Ca 422.673†	528805.5	2.05	mg/L	0.022	2.05	mg/L	0.022	1.07%
Co†	22535.1	1.96	mg/L	0.017	1.96	mg/L	0.017	0.87%
K 10†	1019.0	0.014	mg/L	0.0018	0.014	mg/L	0.0018	12.32%
K 766.490 20†	809.2	0.008	mg/L	0.0013	0.008	mg/L	0.0013	16.35%

Li†	7933601.0	1.89 mg/L	0.016	1.89 mg/L	0.016	0.84%
Mg†	7801.0	1.93 mg/L	0.024	1.93 mg/L	0.024	1.26%
Mn†	401402.8	1.95 mg/L	0.003	1.95 mg/L	0.003	0.14%
Na 330.237†	-902.1	-3.68 mg/L	0.083	-3.68 mg/L	0.083	2.26%
Na 589.592†	21207.1	0.070 mg/L	0.0025	0.070 mg/L	0.0025	3.56%
P†	-1.3	-0.006 mg/L	0.0037	-0.006 mg/L	0.0037	60.17%
Sb†	1063.9	1.54 mg/L	0.012	1.54 mg/L	0.012	0.79%
Se†	578.2	1.54 mg/L	0.016	1.54 mg/L	0.016	1.01%
Si†	2369.6	0.212 mg/L	0.0218	0.212 mg/L	0.0218	10.28%
Sn†	-7.6	-0.005 mg/L	0.0018	-0.005 mg/L	0.0018	38.12%
Sr†	Saturated2					
Ti†	635172.5	2.07 mg/L	0.003	2.07 mg/L	0.003	0.13%
Tl†	388.9	1.93 mg/L	0.015	1.93 mg/L	0.015	0.76%
V†	160302.6	2.04 mg/L	0.015	2.04 mg/L	0.015	0.74%
As 193.696†	698.4	1.899 mg/L	0.0211	1.899 mg/L	0.0211	1.11%
Se 196.026†	839.3	1.645 mg/L	0.0085	1.645 mg/L	0.0085	0.52%
Mo 202.031†	4462.8	2.129 mg/L	0.0104	2.129 mg/L	0.0104	0.49%

Sequence No.: 15
Sample ID: lrb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 14
Date Collected: 1/27/2006 3:48:21 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: lrb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb	3779385.1	9.18	mg/L	0.070				0.76%
Ag†	-56.7	-0.001	mg/L	0.0004	-0.001	mg/L	0.0004	62.32%
Cd†	-36.0	-0.001	mg/L	0.0004	-0.001	mg/L	0.0004	39.78%
Cr†	120.7	0.002	mg/L	0.0002	0.002	mg/L	0.0002	10.58%
Cu†	403.6	0.004	mg/L	0.0001	0.004	mg/L	0.0001	2.56%
Fe†	1110.8	0.026	mg/L	0.0003	0.026	mg/L	0.0003	1.21%
Ni†	-13.1	-0.001	mg/L	0.0012	-0.001	mg/L	0.0012	85.84%
Pb†	-9.2	-0.003	mg/L	0.0028	-0.003	mg/L	0.0028	83.69%
Zn†	151.4	0.009	mg/L	0.0003	0.009	mg/L	0.0003	3.11%
Al†	-42.7	-0.009	mg/L	0.0055	-0.009	mg/L	0.0055	62.94%
As†	-15.8	-0.041	mg/L	0.0115	-0.041	mg/L	0.0115	28.33%
B†	833.5	0.021	mg/L	0.0012	0.021	mg/L	0.0012	5.76%
Ba†	-11.7	0.000	mg/L	0.0001	0.000	mg/L	0.0001	29.92%
Be†	-51.7	0.000	mg/L	0.0001	0.000	mg/L	0.0001	154.11%
Ca 315.887†	10701.2	0.446	mg/L	0.0042	0.446	mg/L	0.0042	0.94%
Ca 422.673†	105569.2	0.409	mg/L	0.0030	0.409	mg/L	0.0030	0.74%
Co†	-14.1	-0.001	mg/L	0.0006	-0.001	mg/L	0.0006	46.19%
K 10†	2769.2	0.039	mg/L	0.0009	0.039	mg/L	0.0009	2.44%
K 766.490 20†	2653.1	0.026	mg/L	0.0005	0.026	mg/L	0.0005	1.77%
Li†	-1134.1	0.000	mg/L	0.0001	0.000	mg/L	0.0001	22.96%
Mg†	263.6	0.065	mg/L	0.0036	0.065	mg/L	0.0036	5.45%
Mn†	102.6	0.000	mg/L	0.0000	0.000	mg/L	0.0000	5.54%
Na 330.237†	279.4	1.14	mg/L	0.086	1.14	mg/L	0.086	7.57%
Na 589.592†	25716.8	0.085	mg/L	0.0015	0.085	mg/L	0.0015	1.78%
P†	1.9	0.009	mg/L	0.0070	0.009	mg/L	0.0070	79.67%
Sb†	37.1	0.054	mg/L	0.0095	0.054	mg/L	0.0095	17.74%
Se†	-10.7	-0.028	mg/L	0.0013	-0.028	mg/L	0.0013	4.69%
Si†	386.0	0.035	mg/L	0.0000	0.035	mg/L	0.0000	0.11%
Sn†	-1.5	-0.001	mg/L	0.0031	-0.001	mg/L	0.0031	339.92%
Sr†	6111.4	0.001	mg/L	0.0001	0.001	mg/L	0.0001	8.18%
Ti†	-731.9	-0.002	mg/L	0.0009	-0.002	mg/L	0.0009	39.36%
Tl†	-0.8	-0.004	mg/L	0.0054	-0.004	mg/L	0.0054	141.49%
V†	48.3	0.001	mg/L	0.0003	0.001	mg/L	0.0003	42.31%
As 193.696†	-15.8	-0.043	mg/L	0.0121	-0.043	mg/L	0.0121	28.33%
Se 196.026†	-5.3	-0.010	mg/L	0.0101	-0.010	mg/L	0.0101	96.42%
Mo 202.031†	-110.5	-0.053	mg/L	0.0161	-0.053	mg/L	0.0161	30.48%

Sequence No.: 16
Sample ID: 010302-1
Analyst:

Autosampler Location: 15
Date Collected: 1/27/2006 3:52:54 PM
Data Type: Original

Initial Sample Wt:
Dilution:

Initial Sample Vol:
Sample Prep Vol:

Mean Data: 010302-1

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb	3805515.1	9.24	mg/L	0.041				0.44%
Ag†	-139.6	-0.001	mg/L	0.0004	-0.001	mg/L	0.0004	26.52%
Cd†	-42.3	-0.001	mg/L	0.0002	-0.001	mg/L	0.0002	14.45%
Cr†	283.0	0.005	mg/L	0.0004	0.005	mg/L	0.0004	6.82%
Cu†	482.1	0.004	mg/L	0.0001	0.004	mg/L	0.0001	3.32%
Fe†	1908.1	0.045	mg/L	0.0007	0.045	mg/L	0.0007	1.67%
Ni†	3.5	0.000	mg/L	0.0017	0.000	mg/L	0.0017	444.97%
Pb†	-12.3	-0.004	mg/L	0.0015	-0.004	mg/L	0.0015	33.07%
Zn†	152.9	0.009	mg/L	0.0003	0.009	mg/L	0.0003	3.84%
Al†	-172.1	-0.035	mg/L	0.0021	-0.035	mg/L	0.0021	5.92%
As†	-23.1	-0.059	mg/L	0.0057	-0.059	mg/L	0.0057	9.60%
B†	167.9	0.004	mg/L	0.0007	0.004	mg/L	0.0007	15.46%
Ba†	3.2	0.000	mg/L	0.0004	0.000	mg/L	0.0004	396.98%
Be†	-257.2	0.000	mg/L	0.0000	0.000	mg/L	0.0000	7.48%
Ca 315.887†	6201.9	0.258	mg/L	0.0028	0.258	mg/L	0.0028	1.07%
Ca 422.673†	61910.1	0.240	mg/L	0.0016	0.240	mg/L	0.0016	0.68%
Co†	-11.3	-0.001	mg/L	0.0007	-0.001	mg/L	0.0007	73.67%
K 10†	3395.4	0.047	mg/L	0.0010	0.047	mg/L	0.0010	2.07%
K 766.490 20†	3265.6	0.032	mg/L	0.0007	0.032	mg/L	0.0007	2.32%
Li†	-1999.0	0.000	mg/L	0.0000	0.000	mg/L	0.0000	0.75%
Mg†	321.0	0.080	mg/L	0.0010	0.080	mg/L	0.0010	1.29%
Mn†	86.8	0.000	mg/L	0.0001	0.000	mg/L	0.0001	18.67%
Na 330.237†	299.0	1.22	mg/L	0.121	1.22	mg/L	0.121	9.93%
Na 589.592†	98724.1	0.326	mg/L	0.0027	0.326	mg/L	0.0027	0.83%
P†	-0.2	-0.001	mg/L	0.0161	-0.001	mg/L	0.0161	>999.9%
Sb†	11.0	0.016	mg/L	0.0052	0.016	mg/L	0.0052	32.50%
Se†	-11.7	-0.031	mg/L	0.0017	-0.031	mg/L	0.0017	5.44%
Si†	925.4	0.083	mg/L	0.0024	0.083	mg/L	0.0024	2.88%
Sn†	-0.9	-0.001	mg/L	0.0004	-0.001	mg/L	0.0004	77.65%
Sr†	4107.3	0.000	mg/L	0.0000	0.000	mg/L	0.0000	2.53%
Ti†	-1439.4	-0.005	mg/L	0.0001	-0.005	mg/L	0.0001	2.10%
Tl†	-3.7	-0.018	mg/L	0.0060	-0.018	mg/L	0.0060	33.23%
V†	12.0	0.000	mg/L	0.0004	0.000	mg/L	0.0004	248.08%
As 193.696†	-23.1	-0.063	mg/L	0.0060	-0.063	mg/L	0.0060	9.60%
Se 196.026†	-5.4	-0.011	mg/L	0.0040	-0.011	mg/L	0.0040	37.45%
Mo 202.031†	-199.9	-0.095	mg/L	0.0034	-0.095	mg/L	0.0034	3.57%

Sequence No.: 17
Sample ID: 010302-2
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 16
Date Collected: 1/27/2006 3:57:28 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 010302-2

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb	3705993.1	9.00	mg/L	0.091				1.01%
Ag†	-125.1	-0.001	mg/L	0.0004	-0.001	mg/L	0.0004	33.56%
Cd†	-53.2	-0.001	mg/L	0.0001	-0.001	mg/L	0.0001	5.96%
Cr†	599.2	0.012	mg/L	0.0005	0.012	mg/L	0.0005	4.33%
Cu†	695.2	0.006	mg/L	0.0011	0.006	mg/L	0.0011	16.36%
Fe†	1273.6	0.030	mg/L	0.0003	0.030	mg/L	0.0003	1.17%
Ni†	-7.4	-0.001	mg/L	0.0006	-0.001	mg/L	0.0006	78.45%
Pb†	-11.5	-0.004	mg/L	0.0030	-0.004	mg/L	0.0030	73.77%
Zn†	137.1	0.008	mg/L	0.0003	0.008	mg/L	0.0003	3.40%
Al†	852.7	0.173	mg/L	0.0044	0.173	mg/L	0.0044	2.53%
As†	-31.0	-0.080	mg/L	0.0031	-0.080	mg/L	0.0031	3.95%
B†	104.1	0.003	mg/L	0.0004	0.003	mg/L	0.0004	15.64%
Ba†	-6.8	0.000	mg/L	0.0003	0.000	mg/L	0.0003	126.44%
Be†	-254.9	0.000	mg/L	0.0000	0.000	mg/L	0.0000	15.22%
Ca 315.887†	5591.7	0.233	mg/L	0.0014	0.233	mg/L	0.0014	0.61%

Ca 422.673†	53745.4	0.208 mg/L	0.0012	0.208 mg/L	0.0012	0.60%
Co†	-18.1	-0.002 mg/L	0.0007	-0.002 mg/L	0.0007	44.15%
K 10†	3072.1	0.043 mg/L	0.0007	0.043 mg/L	0.0007	1.66%
K 766.490 20†	2946.5	0.029 mg/L	0.0002	0.029 mg/L	0.0002	0.57%
Li†	-1982.3	0.000 mg/L	0.0000	0.000 mg/L	0.0000	0.98%
Mg†	321.9	0.080 mg/L	0.0052	0.080 mg/L	0.0052	6.55%
Mn†	184.7	0.001 mg/L	0.0001	0.001 mg/L	0.0001	6.10%
Na 330.237†	402.0	1.64 mg/L	0.056	1.64 mg/L	0.056	3.42%
Na 589.592†	107939.0	0.356 mg/L	0.0017	0.356 mg/L	0.0017	0.48%
P†	1.8	0.008 mg/L	0.0049	0.008 mg/L	0.0049	59.10%
Sb†	12.7	0.018 mg/L	0.0090	0.018 mg/L	0.0090	48.72%
Se†	-17.1	-0.045 mg/L	0.0177	-0.045 mg/L	0.0177	38.88%
Si†	1485.6	0.133 mg/L	0.0028	0.133 mg/L	0.0028	2.09%
Sn†	-1.6	-0.001 mg/L	0.0003	-0.001 mg/L	0.0003	30.67%
Sr†	3935.6	0.000 mg/L	0.0000	0.000 mg/L	0.0000	1.55%
Ti†	-1537.7	-0.005 mg/L	0.0001	-0.005 mg/L	0.0001	1.70%
Tl†	-0.1	0.000 mg/L	0.0095	0.000 mg/L	0.0095	>999.9%
V†	29.6	0.000 mg/L	0.0002	0.000 mg/L	0.0002	58.12%
As 193.696†	-31.0	-0.084 mg/L	0.0033	-0.084 mg/L	0.0033	3.95%
Se 196.026†	-9.5	-0.019 mg/L	0.0063	-0.019 mg/L	0.0063	33.63%
Mo 202.031†	-221.8	-0.106 mg/L	0.0009	-0.106 mg/L	0.0009	0.81%

Sequence No.: 18
Sample ID: 010302-3
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 1/27/2006 4:02:02 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 010302-3

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb	3745097.8	9.09	mg/L	0.097				1.07%
Ag†	-84.1	-0.001	mg/L	0.0007	-0.001	mg/L	0.0007	80.59%
Cd†	-53.1	-0.001	mg/L	0.0001	-0.001	mg/L	0.0001	6.69%
Cr†	984.0	0.019	mg/L	0.0021	0.019	mg/L	0.0021	10.89%
Cu†	601.9	0.006	mg/L	0.0007	0.006	mg/L	0.0007	13.02%
Fe†	2858.9	0.067	mg/L	0.0003	0.067	mg/L	0.0003	0.41%
Ni†	-11.6	-0.001	mg/L	0.0002	-0.001	mg/L	0.0002	19.21%
Pb†	-6.9	-0.002	mg/L	0.0035	-0.002	mg/L	0.0035	143.31%
Zn†	182.8	0.010	mg/L	0.0004	0.010	mg/L	0.0004	3.52%
Al†	19.7	0.004	mg/L	0.0030	0.004	mg/L	0.0030	74.90%
As†	-32.0	-0.082	mg/L	0.0033	-0.082	mg/L	0.0033	3.97%
B†	160.7	0.004	mg/L	0.0003	0.004	mg/L	0.0003	8.02%
Ba†	1.5	0.000	mg/L	0.0002	0.000	mg/L	0.0002	465.93%
Be†	-276.2	0.000	mg/L	0.0000	0.000	mg/L	0.0000	6.36%
Ca 315.887†	6074.6	0.253	mg/L	0.0009	0.253	mg/L	0.0009	0.37%
Ca 422.673†	59058.4	0.229	mg/L	0.0016	0.229	mg/L	0.0016	0.70%
Co†	-12.2	-0.001	mg/L	0.0008	-0.001	mg/L	0.0008	80.06%
K 10†	4115.7	0.058	mg/L	0.0020	0.058	mg/L	0.0020	3.43%
K 766.490 20†	3812.5	0.037	mg/L	0.0014	0.037	mg/L	0.0014	3.80%
Li†	-1716.3	0.000	mg/L	0.0000	0.000	mg/L	0.0000	8.37%
Mg†	313.9	0.078	mg/L	0.0041	0.078	mg/L	0.0041	5.23%
Mn†	67.6	0.000	mg/L	0.0001	0.000	mg/L	0.0001	23.60%
Na 330.237†	387.3	1.58	mg/L	0.085	1.58	mg/L	0.085	5.37%
Na 589.592†	98728.7	0.326	mg/L	0.0047	0.326	mg/L	0.0047	1.45%
P†	6.0	0.027	mg/L	0.0077	0.027	mg/L	0.0077	28.31%
Sb†	4.6	0.007	mg/L	0.0026	0.007	mg/L	0.0026	38.88%
Se†	-15.0	-0.040	mg/L	0.0144	-0.040	mg/L	0.0144	36.01%
Si†	1086.9	0.097	mg/L	0.0010	0.097	mg/L	0.0010	1.04%
Sn†	-3.2	-0.002	mg/L	0.0022	-0.002	mg/L	0.0022	113.23%
Sr†	4237.1	0.000	mg/L	0.0000	0.000	mg/L	0.0000	1.98%
Ti†	-1562.0	-0.005	mg/L	0.0001	-0.005	mg/L	0.0001	2.83%
Tl†	-0.2	-0.001	mg/L	0.0138	-0.001	mg/L	0.0138	>999.9%
V†	39.8	0.001	mg/L	0.0004	0.001	mg/L	0.0004	81.69%
As 193.696†	-32.0	-0.087	mg/L	0.0035	-0.087	mg/L	0.0035	3.97%
Se 196.026†	-14.2	-0.028	mg/L	0.0086	-0.028	mg/L	0.0086	30.94%
Mo 202.031†	-228.6	-0.109	mg/L	0.0023	-0.109	mg/L	0.0023	2.14%

Sequence No.: 19
Sample ID: 010218-1
\nalyst:
.nitial Sample Wt:
Dilution:

Autosampler Location: 18
Date Collected: 1/27/2006 4:06:46 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 010218-1

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb	3783771.6	9.19	mg/L	0.004				0.04%
Agt	-102.9	-0.001	mg/L	0.0004	-0.001	mg/L	0.0004	37.41%
Cdt	-57.7	-0.001	mg/L	0.0003	-0.001	mg/L	0.0003	19.14%
Crt	527.3	0.010	mg/L	0.0002	0.010	mg/L	0.0002	1.97%
Cut	750.1	0.007	mg/L	0.0004	0.007	mg/L	0.0004	6.09%
Fet	2639.8	0.062	mg/L	0.0007	0.062	mg/L	0.0007	1.14%
Nit	20206.5	2.16	mg/L	0.011	2.16	mg/L	0.011	0.50%
Pbt	-11.7	-0.004	mg/L	0.0036	-0.004	mg/L	0.0036	85.37%
Znt	429.5	0.024	mg/L	0.0004	0.024	mg/L	0.0004	1.46%
Alt	-193.4	-0.039	mg/L	0.0031	-0.039	mg/L	0.0031	7.86%
Ast	-36.0	-0.093	mg/L	0.0088	-0.093	mg/L	0.0088	9.54%
Bt	3303.1	0.083	mg/L	0.0014	0.083	mg/L	0.0014	1.72%
Bat	152.4	0.005	mg/L	0.0003	0.005	mg/L	0.0003	5.20%
Bet	-239.3	0.000	mg/L	0.0000	0.000	mg/L	0.0000	13.81%
Ca 315.887t	5783.6	0.241	mg/L	0.0018	0.241	mg/L	0.0018	0.77%
Ca 422.673t	56533.3	0.219	mg/L	0.0011	0.219	mg/L	0.0011	0.48%
Cot	-5.0	0.000	mg/L	0.0008	0.000	mg/L	0.0008	184.44%
K 10t	4867.4	0.068	mg/L	0.0005	0.068	mg/L	0.0005	0.72%
K 766.490 20t	4684.2	0.046	mg/L	0.0004	0.046	mg/L	0.0004	0.77%
Lit	-1460.0	0.000	mg/L	0.0000	0.000	mg/L	0.0000	5.27%
Mgt	301.0	0.075	mg/L	0.0007	0.075	mg/L	0.0007	0.96%
Mnt	1174.7	0.006	mg/L	0.0000	0.006	mg/L	0.0000	0.84%
Na 330.237t	348.1	1.42	mg/L	0.035	1.42	mg/L	0.035	2.44%
Na 589.592t	108021.6	0.357	mg/L	0.0011	0.357	mg/L	0.0011	0.32%
Pt	4.3	0.020	mg/L	0.0115	0.020	mg/L	0.0115	58.58%
Sbt	-0.6	-0.001	mg/L	0.0057	-0.001	mg/L	0.0057	629.25%
Set	-10.7	-0.029	mg/L	0.0081	-0.029	mg/L	0.0081	28.37%
Sit	813.8	0.073	mg/L	0.0007	0.073	mg/L	0.0007	0.98%
Snt	0.7	0.000	mg/L	0.0016	0.000	mg/L	0.0016	354.30%
Srt	4130.0	0.000	mg/L	0.0000	0.000	mg/L	0.0000	0.66%
Tit	-2110.9	-0.007	mg/L	0.0002	-0.007	mg/L	0.0002	2.24%
Tlt	-2.9	-0.014	mg/L	0.0114	-0.014	mg/L	0.0114	79.38%
Vt	54.0	0.001	mg/L	0.0003	0.001	mg/L	0.0003	42.88%
As 193.696t	-36.0	-0.098	mg/L	0.0093	-0.098	mg/L	0.0093	9.54%
Se 196.026t	-9.9	-0.019	mg/L	0.0108	-0.019	mg/L	0.0108	55.64%
Mo 202.031t	-243.2	-0.116	mg/L	0.0013	-0.116	mg/L	0.0013	1.14%

Sequence No.: 20
Sample ID: 010218-2
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 19
Date Collected: 1/27/2006 4:11:21 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 010218-2

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb	3746908.9	9.10	mg/L	0.088				0.97%
Agt	-111.3	-0.001	mg/L	0.0005	-0.001	mg/L	0.0005	38.53%
Cdt	-34.7	-0.001	mg/L	0.0003	-0.001	mg/L	0.0003	36.02%
Crt	602.5	0.012	mg/L	0.0005	0.012	mg/L	0.0005	4.53%
Cut	974.9	0.009	mg/L	0.0002	0.009	mg/L	0.0002	1.70%
Fet	2777.3	0.065	mg/L	0.0008	0.065	mg/L	0.0008	1.29%
Nit	2223.5	0.238	mg/L	0.0023	0.238	mg/L	0.0023	0.96%
Pbt	-17.2	-0.006	mg/L	0.0016	-0.006	mg/L	0.0016	26.07%
Znt	514.0	0.029	mg/L	0.0004	0.029	mg/L	0.0004	1.39%
Alt	-208.5	-0.042	mg/L	0.0003	-0.042	mg/L	0.0003	0.63%
\st	-31.3	-0.080	mg/L	0.0102	-0.080	mg/L	0.0102	12.66%

Bt	726.2	0.018 mg/L	0.0002	0.018 mg/L	0.0002	0.90%
Bat	1.4	0.000 mg/L	0.0001	0.000 mg/L	0.0001	279.87%
Bet	-230.1	0.000 mg/L	0.0000	0.000 mg/L	0.0000	15.04%
Ca 315.887t	5208.5	0.217 mg/L	0.0007	0.217 mg/L	0.0007	0.30%
Ca 422.673t	50741.0	0.196 mg/L	0.0006	0.196 mg/L	0.0006	0.30%
Cot	-8.4	-0.001 mg/L	0.0002	-0.001 mg/L	0.0002	22.03%
K 10t	6338.3	0.089 mg/L	0.0023	0.089 mg/L	0.0023	2.56%
K 766.490 20t	6126.4	0.060 mg/L	0.0014	0.060 mg/L	0.0014	2.42%
Lit	-2186.3	-0.001 mg/L	0.0000	-0.001 mg/L	0.0000	3.75%
Mgt	284.0	0.070 mg/L	0.0009	0.070 mg/L	0.0009	1.26%
Mnt	495.0	0.002 mg/L	0.0000	0.002 mg/L	0.0000	1.47%
Na 330.237t	373.1	1.52 mg/L	0.040	1.52 mg/L	0.040	2.65%
Na 589.592t	133504.3	0.441 mg/L	0.0022	0.441 mg/L	0.0022	0.50%
Pt	3.1	0.014 mg/L	0.0126	0.014 mg/L	0.0126	89.01%
Sbt	-4.4	-0.006 mg/L	0.0055	-0.006 mg/L	0.0055	87.59%
Set	-16.2	-0.043 mg/L	0.0068	-0.043 mg/L	0.0068	15.73%
Sit	701.9	0.063 mg/L	0.0024	0.063 mg/L	0.0024	3.77%
Snt	3.1	0.002 mg/L	0.0019	0.002 mg/L	0.0019	99.73%
Srt	4569.9	0.001 mg/L	0.0000	0.001 mg/L	0.0000	3.77%
Tit	-2126.3	-0.007 mg/L	0.0001	-0.007 mg/L	0.0001	1.41%
Tlt	-4.5	-0.022 mg/L	0.0078	-0.022 mg/L	0.0078	34.83%
Vt	32.1	0.000 mg/L	0.0004	0.000 mg/L	0.0004	105.95%
As 193.696t	-31.3	-0.085 mg/L	0.0108	-0.085 mg/L	0.0108	12.66%
Se 196.026t	-14.4	-0.028 mg/L	0.0113	-0.028 mg/L	0.0113	40.06%
Mo 202.031t	-246.6	-0.118 mg/L	0.0025	-0.118 mg/L	0.0025	2.12%

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Sequence No.: 21
Sample ID: 010218-3
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 20
Date Collected: 1/27/2006 4:15:56 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 010218-3

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ab	3627157.0	8.81	mg/L	0.151				1.71%
Agt	-109.2	-0.001	mg/L	0.0004	-0.001	mg/L	0.0004	37.22%
Cdt	-56.1	-0.001	mg/L	0.0003	-0.001	mg/L	0.0003	21.62%
Crt	403.4	0.008	mg/L	0.0005	0.008	mg/L	0.0005	6.14%
Cut	367.9	0.003	mg/L	0.0011	0.003	mg/L	0.0011	32.17%
Fet	924.3	0.022	mg/L	0.0003	0.022	mg/L	0.0003	1.26%
Nit	-8.5	-0.001	mg/L	0.0014	-0.001	mg/L	0.0014	152.01%
Pbt	-14.7	-0.005	mg/L	0.0012	-0.005	mg/L	0.0012	23.17%
Znt	88.0	0.005	mg/L	0.0002	0.005	mg/L	0.0002	4.64%
Alt	-171.8	-0.035	mg/L	0.0073	-0.035	mg/L	0.0073	21.06%
Ast	-35.2	-0.090	mg/L	0.0076	-0.090	mg/L	0.0076	8.42%
Bt	39.4	0.001	mg/L	0.0003	0.001	mg/L	0.0003	27.81%
Bat	-26.3	-0.001	mg/L	0.0001	-0.001	mg/L	0.0001	7.43%
Bet	-248.2	0.000	mg/L	0.0000	0.000	mg/L	0.0000	18.29%
Ca 315.887t	5398.7	0.225	mg/L	0.0036	0.225	mg/L	0.0036	1.62%
Ca 422.673t	50852.5	0.197	mg/L	0.0015	0.197	mg/L	0.0015	0.76%
Cot	-22.0	-0.002	mg/L	0.0000	-0.002	mg/L	0.0000	0.79%
K 10t	3181.9	0.044	mg/L	0.0014	0.044	mg/L	0.0014	3.06%
K 766.490 20t	3040.6	0.030	mg/L	0.0010	0.030	mg/L	0.0010	3.29%
Lit	-2052.4	0.000	mg/L	0.0000	0.000	mg/L	0.0000	1.02%
Mgt	286.5	0.071	mg/L	0.0008	0.071	mg/L	0.0008	1.17%
Mnt	4.0	0.000	mg/L	0.0001	0.000	mg/L	0.0001	525.17%
Na 330.237t	404.0	1.65	mg/L	0.062	1.65	mg/L	0.062	3.75%
Na 589.592t	83499.3	0.276	mg/L	0.0013	0.276	mg/L	0.0013	0.49%
Pt	0.8	0.004	mg/L	0.0104	0.004	mg/L	0.0104	294.26%
Sbt	-3.1	-0.004	mg/L	0.0090	-0.004	mg/L	0.0090	201.97%
Set	-16.9	-0.045	mg/L	0.0156	-0.045	mg/L	0.0156	34.57%
Sit	855.2	0.076	mg/L	0.0008	0.076	mg/L	0.0008	1.06%
Snt	-4.7	-0.003	mg/L	0.0016	-0.003	mg/L	0.0016	54.27%
Srt	3901.3	0.000	mg/L	0.0000	0.000	mg/L	0.0000	1.56%
Tit	-1820.3	-0.006	mg/L	0.0002	-0.006	mg/L	0.0002	2.62%
Tlt	-3.2	-0.016	mg/L	0.0205	-0.016	mg/L	0.0205	128.66%
Vt	57.9	0.001	mg/L	0.0007	0.001	mg/L	0.0007	91.10%

As 193.696†	-35.2	-0.096 mg/L	0.0080	-0.096 mg/L	0.0080	8.42%
Se 196.026†	-9.1	-0.018 mg/L	0.0051	-0.018 mg/L	0.0051	28.75%
Mo 202.031†	-250.0	-0.119 mg/L	0.0011	-0.119 mg/L	0.0011	0.91%

Sequence No.: 22
Sample ID: 010218-4
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 21
Date Collected: 1/27/2006 4:20:32 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 010218-4

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb	3681821.8	8.94	mg/L	0.070				0.78%
Ag†	-122.8	-0.001	mg/L	0.0005	-0.001	mg/L	0.0005	39.64%
Cd†	-53.6	-0.001	mg/L	0.0001	-0.001	mg/L	0.0001	6.12%
Cr†	1075.7	0.021	mg/L	0.0009	0.021	mg/L	0.0009	4.56%
Cu†	990.6	0.009	mg/L	0.0005	0.009	mg/L	0.0005	5.10%
Fe†	2680.5	0.063	mg/L	0.0001	0.063	mg/L	0.0001	0.22%
Ni†	5824.0	0.622	mg/L	0.0008	0.622	mg/L	0.0008	0.13%
Pb†	-9.4	-0.003	mg/L	0.0014	-0.003	mg/L	0.0014	41.44%
Zn†	1591.3	0.090	mg/L	0.0003	0.090	mg/L	0.0003	0.30%
Al†	-38.1	-0.008	mg/L	0.0042	-0.008	mg/L	0.0042	54.50%
As†	-31.9	-0.082	mg/L	0.0130	-0.082	mg/L	0.0130	15.82%
B†	1527.5	0.039	mg/L	0.0009	0.039	mg/L	0.0009	2.28%
Ba†	64.3	0.002	mg/L	0.0002	0.002	mg/L	0.0002	10.86%
Be†	-247.7	0.000	mg/L	0.0000	0.000	mg/L	0.0000	3.33%
Ca 315.887†	9757.9	0.406	mg/L	0.0004	0.406	mg/L	0.0004	0.09%
Ca 422.673†	94029.6	0.364	mg/L	0.0020	0.364	mg/L	0.0020	0.54%
Co†	-12.1	-0.001	mg/L	0.0002	-0.001	mg/L	0.0002	23.37%
K 10†	9868.7	0.138	mg/L	0.0005	0.138	mg/L	0.0005	0.37%
K 766.490 20†	9549.9	0.093	mg/L	0.0003	0.093	mg/L	0.0003	0.32%
Li†	-2188.2	-0.001	mg/L	0.0000	-0.001	mg/L	0.0000	1.51%
Mg†	431.5	0.107	mg/L	0.0035	0.107	mg/L	0.0035	3.27%
Mn†	1513.6	0.007	mg/L	0.0001	0.007	mg/L	0.0001	0.98%
Na 330.237†	374.0	1.53	mg/L	0.008	1.53	mg/L	0.008	0.52%
Na 589.592†	127085.3	0.420	mg/L	0.0029	0.420	mg/L	0.0029	0.70%
P†	11.0	0.050	mg/L	0.0062	0.050	mg/L	0.0062	12.38%
Sb†	-2.3	-0.003	mg/L	0.0072	-0.003	mg/L	0.0072	212.22%
Se†	-17.1	-0.045	mg/L	0.0058	-0.045	mg/L	0.0058	12.71%
Si†	1110.8	0.099	mg/L	0.0015	0.099	mg/L	0.0015	1.47%
Sn†	1590.4	0.981	mg/L	0.0164	0.981	mg/L	0.0164	1.67%
Sr†	9542.5	0.001	mg/L	0.0000	0.001	mg/L	0.0000	0.54%
Ti†	-1775.3	-0.006	mg/L	0.0001	-0.006	mg/L	0.0001	2.19%
Tl†	-1.7	-0.008	mg/L	0.0118	-0.008	mg/L	0.0118	140.88%
V†	34.9	0.000	mg/L	0.0002	0.000	mg/L	0.0002	43.93%
As 193.696†	-31.9	-0.087	mg/L	0.0137	-0.087	mg/L	0.0137	15.82%
Se 196.026†	-16.7	-0.033	mg/L	0.0060	-0.033	mg/L	0.0060	18.22%
Mo 202.031†	-250.2	-0.119	mg/L	0.0022	-0.119	mg/L	0.0022	1.84%

Sequence No.: 23
Sample ID: 010218-5
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 22
Date Collected: 1/27/2006 4:25:08 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 010218-5

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb	3730727.8	9.06	mg/L	0.043				0.48%
Ag†	-92.6	-0.001	mg/L	0.0005	-0.001	mg/L	0.0005	54.39%
Cd†	-41.7	-0.001	mg/L	0.0003	-0.001	mg/L	0.0003	29.88%
Cr†	574.5	0.011	mg/L	0.0007	0.011	mg/L	0.0007	5.99%
Cu†	669.3	0.006	mg/L	0.0002	0.006	mg/L	0.0002	3.06%
Fe†	2270.4	0.053	mg/L	0.0011	0.053	mg/L	0.0011	1.99%
Ni†	816.6	0.087	mg/L	0.0014	0.087	mg/L	0.0014	1.60%

Pb†	-9.2	-0.003 mg/L	0.0028	-0.003 mg/L	0.0028	84.97%
Zn†	805.6	0.046 mg/L	0.0003	0.046 mg/L	0.0003	0.65%
Al†	-171.8	-0.035 mg/L	0.0021	-0.035 mg/L	0.0021	6.09%
As†	-33.5	-0.086 mg/L	0.0080	-0.086 mg/L	0.0080	9.27%
B†	476.3	0.012 mg/L	0.0003	0.012 mg/L	0.0003	2.27%
Ba†	55.7	0.002 mg/L	0.0001	0.002 mg/L	0.0001	5.95%
Be†	-273.6	0.000 mg/L	0.0000	0.000 mg/L	0.0000	4.30%
Ca 315.887†	5833.3	0.243 mg/L	0.0028	0.243 mg/L	0.0028	1.16%
Ca 422.673†	56862.7	0.220 mg/L	0.0023	0.220 mg/L	0.0023	1.03%
Co†	-8.6	-0.001 mg/L	0.0004	-0.001 mg/L	0.0004	51.69%
K 10†	4979.5	0.070 mg/L	0.0014	0.070 mg/L	0.0014	1.97%
K 766.490 20†	4802.2	0.047 mg/L	0.0010	0.047 mg/L	0.0010	2.13%
Li†	-1504.5	0.000 mg/L	0.0003	0.000 mg/L	0.0003	69.98%
Mg†	321.0	0.080 mg/L	0.0017	0.080 mg/L	0.0017	2.18%
Mn†	2039.3	0.010 mg/L	0.0002	0.010 mg/L	0.0002	1.59%
Na 330.237†	328.0	1.34 mg/L	0.121	1.34 mg/L	0.121	9.04%
Na 589.592†	114040.5	0.376 mg/L	0.0046	0.376 mg/L	0.0046	1.22%
P†	4.9	0.022 mg/L	0.0130	0.022 mg/L	0.0130	58.41%
Sb†	-3.0	-0.004 mg/L	0.0029	-0.004 mg/L	0.0029	68.71%
Se†	-16.8	-0.045 mg/L	0.0030	-0.045 mg/L	0.0030	6.75%
Si†	991.2	0.089 mg/L	0.0025	0.089 mg/L	0.0025	2.81%
Sn†	24.4	0.015 mg/L	0.0047	0.015 mg/L	0.0047	30.87%
Sr†	6536.4	0.001 mg/L	0.0000	0.001 mg/L	0.0000	0.83%
Ti†	-2081.1	-0.007 mg/L	0.0002	-0.007 mg/L	0.0002	2.30%
Tl†	-1.0	-0.005 mg/L	0.0202	-0.005 mg/L	0.0202	424.64%
V†	0.1	0.000 mg/L	0.0001	0.000 mg/L	0.0001	>999.9%
As 193.696†	-33.5	-0.091 mg/L	0.0085	-0.091 mg/L	0.0085	9.27%
Se 196.026†	-18.9	-0.037 mg/L	0.0100	-0.037 mg/L	0.0100	27.06%
Mo 202.031†	-251.6	-0.120 mg/L	0.0012	-0.120 mg/L	0.0012	1.02%

Sequence No.: 24
Sample ID: ccv 1.00 2.0
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 23
Date Collected: 1/27/2006 4:29:44 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccv 1.00

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb	3977408.4	9.66	mg/L	0.021				0.21%
Ag†	191687.2	2.02	mg/L	0.014	2.02	mg/L	0.014	0.72%
Cd†	79572.4	1.97	mg/L	0.010	1.97	mg/L	0.010	0.48%
Cr†	98707.5	1.91	mg/L	0.012	1.91	mg/L	0.012	0.63%
Cu†	213710.3	1.98	mg/L	0.016	1.98	mg/L	0.016	0.82%
Fe†	88800.6	2.08	mg/L	0.013	2.08	mg/L	0.013	0.63%
Ni†	18940.1	2.02	mg/L	0.011	2.02	mg/L	0.011	0.55%
Pb†	5421.9	1.95	mg/L	0.037	1.95	mg/L	0.037	1.92%
Zn†	35268.4	2.00	mg/L	0.017	2.00	mg/L	0.017	0.82%
Al†	34245.1	6.95	mg/L	0.090	6.95	mg/L	0.090	1.30%
As†	748.1	1.92	mg/L	0.006	1.92	mg/L	0.006	0.32%
B†	75838.1	1.91	mg/L	0.012	1.91	mg/L	0.012	0.64%
Ba†	56839.2	1.99	mg/L	0.011	1.99	mg/L	0.011	0.57%
Be†	2109175.4	2.09	mg/L	0.005	2.09	mg/L	0.005	0.24%
Ca 315.887†	174365.5	7.26	mg/L	0.044	7.26	mg/L	0.044	0.61%
Ca 422.673†	2110837.0	8.17	mg/L	0.026	8.17	mg/L	0.026	0.31%
Co†	22809.0	1.98	mg/L	0.012	1.98	mg/L	0.012	0.60%
K 10†	1736262.0	24.3	mg/L	0.04	24.3	mg/L	0.04	0.17%
K 766.490 20†	1685152.7	16.46	mg/L	0.028	16.46	mg/L	0.028	0.17%
Li†	Saturated2							
Mg†	28420.9	7.04	mg/L	0.038	7.04	mg/L	0.038	0.54%
Mn†	417483.3	2.03	mg/L	0.013	2.03	mg/L	0.013	0.64%
Na 330.237†	148.9	0.608	mg/L	0.0692	0.608	mg/L	0.0692	11.40%
Na 589.592†	2227111.6	7.35	mg/L	0.015	7.35	mg/L	0.015	0.21%
P†	853.6	3.88	mg/L	0.061	3.88	mg/L	0.061	1.58%
Sb†	1137.1	1.64	mg/L	0.006	1.64	mg/L	0.006	0.38%
Se†	725.3	1.93	mg/L	0.045	1.93	mg/L	0.045	2.31%
Si†	12025.2	1.07	mg/L	0.011	1.07	mg/L	0.011	1.04%
Sn†	6372.5	3.93	mg/L	0.065	3.93	mg/L	0.065	1.66%

Sr†	Saturated2					
Ti†	623268.3	2.03 mg/L	0.005	2.03 mg/L	0.005	0.27%
Tl†	396.3	1.97 mg/L	0.015	1.97 mg/L	0.015	0.75%
V†	158610.7	2.02 mg/L	0.013	2.02 mg/L	0.013	0.62%
As 193.696†	748.1	2.034 mg/L	0.0065	2.034 mg/L	0.0065	0.32%
Se 196.026†	1056.9	2.071 mg/L	0.0390	2.071 mg/L	0.0390	1.88%
Mo 202.031†	3933.7	1.877 mg/L	0.0792	1.877 mg/L	0.0792	4.22%

Sequence No.: 25
Sample ID: ccb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 24
Date Collected: 1/27/2006 4:34:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb	3913552.4	9.50	mg/L	0.047				0.50%
Ag†	55.2	0.001	mg/L	0.0004	0.001	mg/L	0.0004	76.75%
Cd†	-6.6	0.000	mg/L	0.0000	0.000	mg/L	0.0000	27.80%
Cr†	2.8	0.000	mg/L	0.0003	0.000	mg/L	0.0003	607.41%
Cu†	291.2	0.003	mg/L	0.0001	0.003	mg/L	0.0001	2.38%
Fe†	25.7	0.001	mg/L	0.0000	0.001	mg/L	0.0000	4.70%
Ni†	-16.5	-0.002	mg/L	0.0013	-0.002	mg/L	0.0013	76.13%
Pb†	-4.1	-0.001	mg/L	0.0039	-0.001	mg/L	0.0039	262.32%
Zn†	10.2	0.001	mg/L	0.0003	0.001	mg/L	0.0003	53.44%
Al†	-161.1	-0.033	mg/L	0.0069	-0.033	mg/L	0.0069	21.19%
As†	-10.9	-0.028	mg/L	0.0054	-0.028	mg/L	0.0054	19.38%
B†	1352.2	0.034	mg/L	0.0049	0.034	mg/L	0.0049	14.38%
Ba†	-3.1	0.000	mg/L	0.0004	0.000	mg/L	0.0004	367.33%
Be†	-74.0	0.000	mg/L	0.0000	0.000	mg/L	0.0000	64.86%
Ca 315.887†	-245.2	-0.010	mg/L	0.0010	-0.010	mg/L	0.0010	9.47%
Ca 422.673†	-3365.2	-0.013	mg/L	0.0002	-0.013	mg/L	0.0002	1.42%
Co†	-0.9	0.000	mg/L	0.0003	0.000	mg/L	0.0003	337.15%
K 10†	54.9	0.001	mg/L	0.0012	0.001	mg/L	0.0012	150.90%
K 766.490 20†	23.6	0.000	mg/L	0.0006	0.000	mg/L	0.0006	278.20%
Li†	-1043.7	0.000	mg/L	0.0001	0.000	mg/L	0.0001	28.55%
Mg†	-1.8	0.000	mg/L	0.0009	0.000	mg/L	0.0009	195.18%
Mn†	-102.5	0.000	mg/L	0.0001	0.000	mg/L	0.0001	17.46%
Na 330.237†	5.0	0.020	mg/L	0.0680	0.020	mg/L	0.0680	332.78%
Na 589.592†	-176.3	-0.001	mg/L	0.0004	-0.001	mg/L	0.0004	67.70%
P†	-2.8	-0.013	mg/L	0.0068	-0.013	mg/L	0.0068	54.00%
Sb†	33.4	0.048	mg/L	0.0084	0.048	mg/L	0.0084	17.28%
Se†	-1.0	-0.003	mg/L	0.0034	-0.003	mg/L	0.0034	132.41%
Si†	-10.1	-0.001	mg/L	0.0011	-0.001	mg/L	0.0011	119.98%
Sn†	4.4	0.003	mg/L	0.0028	0.003	mg/L	0.0028	102.30%
Sr†	-411.4	0.000	mg/L	0.0001	0.000	mg/L	0.0001	152.54%
Ti†	-683.1	-0.002	mg/L	0.0009	-0.002	mg/L	0.0009	39.98%
Tl†	0.2	0.001	mg/L	0.0302	0.001	mg/L	0.0302	>999.9%
V†	-52.5	-0.001	mg/L	0.0001	-0.001	mg/L	0.0001	22.24%
As 193.696†	-10.9	-0.030	mg/L	0.0057	-0.030	mg/L	0.0057	19.38%
Se 196.026†	3.3	0.006	mg/L	0.0213	0.006	mg/L	0.0213	333.55%
Mo 202.031†	-68.2	-0.033	mg/L	0.0205	-0.033	mg/L	0.0205	63.09%

PROJECT # 110325: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES

Digestion on 12/20/05

BY ICP ON 12/30/05

IDL =	0.004	**LOQ =**	0.017
LOD =	0.008	**RL =**	0.050
MDL =	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading		
LRB	25	-0.002	<MDL of 0.007 mg/L	**= 0.006**
LFB	25	0.75	= 100 x 0.749/0.80 = 96% Recovery, (80-120%)	
110325-1	25	0.064		
110325-2	25	0.288		
110325-3	25	0.006	**= 0.006**	
110325-4	25	0.049		
110325-5	25	0.060		

EXPLANATIONS:

LRB = Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.

LFB = Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.

DILUTION = 25 ml class A volumetric flask was used to measure the final volume.

READING = mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

Laboratory Work Order Report

LIMS No. 2005110325 **Date Rec'd** 11/18/2005 03:03:23 **Date Due** 11/18/2005 12:00:00 AM
Project Code .NULL. **Customer No.** SCICON **Client Type:** **REGULAR**
Client Name SCIENTIFIC CONTROL LABS
3158 S. KOLIN AVE.
CHICAGO IL 60623

Phone 254-2406 **Fax** 254-6661 **Contact** MR. FRANK ALTMAYER
Matrix Engineering **Po No.** -0- **e-mail**
Quoted Price: .NULL.

Client Notes: -0-

Order Comments: .NULL.
.NULL.

Sample No.	*Comments*	*Test Code*	*Description*	*Date Received*	*Result*
ELITE FINISHING					
1	11/15/2005	11/15/05	CONDITION #23 - NORTH	11/18/2005 02:00:00 PM	
		NI	NICKEL		
2	11/15/2005	11/15/05	CONDITION #23 - SOUTH	11/18/2005 02:00:00 PM	
		NI	NICKEL		
3	11/15/2005	11/15/05	BLANK	11/18/2005 02:00:00 PM	
		NI	NICKEL		
4	11/16/2005	11/16/05	CONDITION #25 - NORTH	11/18/2005 02:00:00 PM	
		NI	NICKEL		
5	11/16/2005	11/16/05	CONDITION #25 - SOUTH	11/18/2005 02:00:00 PM	
		NI	NICKEL		

PROJECT # 120034: METHOD 121 FOR NICKEL

AIR FILTER CASSETTES	**IDL =**	0.004	**LOQ =**	0.017
Digestion on 12/20/05	**LOD =**	0.008	**RL =**	0.050
BY ICP ON 12/30/05	**MDL =**	0.007		(All DL in mg/L)

DATA:

Sample #	Dilution	Reading		
LRB	25	-0.002	<MDL of 0.007 mg/L	**= 0.006**
LFB	25	0.75	= 100 x 0.749/0.80 = 96% Recovery, (80-120%)	
120034-1	25	0.174		
120034-2	25	0.176		
120034-3	25	0.001	**= 0.006**	

EXPLANATIONS:

LRB = Laboratory Reagent Blank, where a beaker containing reagents used during the digestion process were added, no filter.

LFB = Laboratory Fortified Blank, where LRB is essentially spiked with nickel and carried the digestion process, again, no filter.

DILUTION = 25 ml class A volumetric flask was used to measure the final volume.

READING = mg/L as determined by average of three replicates on ICP.

IN ORDER TO FACILITATE FURTHER CALCULATIONS, IF A READING IS <MDL, THEN 0.006 IS USED.

Laboratory Work Order Report

LIMS No. 2005120034 **Date Rec'd** 12/05/2005 12:00:40 **Date Due** 12/05/2005 12:00:00 AM
Project Code .NULL. **Customer No.** SCICON **Client Type:** **REGULAR**
Client Name SCIENTIFIC CONTROL LABS
3158 S. KOLIN AVE.
CHICAGO IL 60623

Phone 254-2406 **Fax** 254-6661 **Contact** MR. FRANK ALTMAYER
Matrix Engineering **Po No.** -0- **e-mail**
Quoted Price: .NULL.

Client Notes: -

Order Comments: METHOD ID-121

Sample No.	*Comments*	*Test Code*	*Description*	*Date Received*	*Result*
ELITE					
1	12/01/2005	12/01/05	CONDITION #26 - NORTH (25082360)	12/05/2005 10:00:00 AM	
		NI	NICKEL		
2	12/01/2005	12/01/05	CONDITION #26 - SOUTH (25082350)	12/05/2005 10:00:00 AM	
		NI	NICKEL		
3	12/01/2005	12/01/05	BLANK - (25082353)	12/05/2005 10:00:00 AM	
		NI	NICKEL		

See project # 110325
for ICP run data.

METALS PREP FORM

Set # [ ]

Prep Method: (check only one per page)

- [ ] ICP/FLAA: SM 3030 F, EPA 200.7 '82
- [ ] ICP/FLAA: EPA 200's, SW-846 3010A
- [ ] ICP/FLAA: EPA 200.7 r4.4
- [ ] ICP/FLAA: SW-846 3005A
- [ ] ICP/FLAA: SW-846 3015A MICROWAVE
- [ ] OTHER:_____

- [ ] GFAA: SM 3030 E
- [ ] GFAA: EPA 200's, SW-846 3020A
- [ ] GFAA: EPA 200.9
- [ ] GFAA: SW-846 3015A (NoHCL) MICROWAVE
- [ ] OTHER:_____

MATRIX: (check only one per page)

- [ ] DRINKING WATER
- [ ] AQUEOUS
- [X] OTHER: AIR FILTERS FOR Ni

	Set Init'l	Set date	Set time	Lab #	Smp #	Company	Aliquot (mls)	Final (mls)		Mcr Vsl #
	LK	12/20	8:30 A			LFB				
						LRB				
1				110325	1					
				"	2	~~LFM-DUP~~				
				"	3	~~LFM~~				
2				"	4					
3				↓	5					
4				120034	1					
5				"	2					
6				↓	3					
7										
8										
9										
10										
11										
12										

SPIKING STDS	PROVIDER	LOT #
QC-21	CPI	05-FO-11
QC-7		
P		
Sn		
OTHER		

.2 mls

Analyst: _____

Start Date: _____

Sample Information Detail Report
Document Name: 123005-1

File Description
Default Sample Information File

Parameters Common to All Samples

Batch ID	123005-1
Volume Units	mL
Weight Units	g

Parameters That Vary By Sample

Sample No	A/S Location	Sample ID	Initial Sample Wt.
1	9	cri	
2	10	icb	
3	11	icv	
4	12	icsab	
5	13	lfb Ni	
6	14	lrb	
7	15	110325-1	
8	16	110325-2	
9	17	110325-3	
10	18	110325-4	
11	19	110325-5	
12	20	120034-1	
13	21	120034-2	
14	22	120034-3	
15	23	ccv 0.50	
16	24	ccb	

Sample No	Sample Prep. Vol.	Aliquot Volume	Diluted To Vol.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Analysis Begun

Start Time: 12/30/2005 11:58:14 AM
Logged In Analyst: sammy
Spectrometer Model: Optima 3000 DV, S/N 069N5083001
Plasma On Time: 12/30/2005 11:12:33 AM
Technique: ICP Continuous
Autosampler Model: AS-91

Sample Information File: C:\pe\sammy\Sample Information\123005-1.sif
Batch ID: 123005-1
Results Data Set: 123005-1
Results Library: C:\pe\sammy\Results\Results.mdb

Method Loaded
Method Name: Air Filter Ni
IEC File:
Method Description: AIR FILTER Ni
Method Last Saved: 10/5/2005 1:33:13 PM
MSF File:

Sequence No.: 1
Sample ID: Calib Blank 1
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 0
Date Collected: 12/30/2005 11:58:14 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Calib Units
Yb 328.937	2135095.0	11709.27	0.55%	10.0	mg/L
Ni 231.604†	-114.1	2.73	2.39%	[0.00]	mg/L

Sequence No.: 2
Sample ID: Cal 21+7 1.00
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 1
Date Collected: 12/30/2005 12:01:53 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: Cal 21+7 1.00

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Calib Units
Yb 328.937	2104392.6	2502.46	0.12%	9.86	mg/L
Ni 231.604†	6036.7	22.96	0.38%	[1.00]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ni 231.604	1	Lin Thru 0	0.0	6037	0.00000	1.000000	

OK

Sequence No.: 3
Sample ID: cri
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 9
Date Collected: 12/30/2005 12:05:14 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: cri

104%

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2102349.6	9.85	mg/L	0.010				0.10%
Ni 231.604†	157.1	0.026	mg/L	0.0005	0.026	mg/L	0.0005	1.86%

.025

Sequence No.: 4
Sample ID: icb
Autosampler Location: 10
Date Collected: 12/30/2005 12:09:05 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: icb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2120464.3	9.93	mg/L	0.040				0.40%
Ni 231.604†	-6.2	-0.001	mg/L	0.0013	-0.001	mg/L	0.0013	127.18%

ml 2.007
RL 2.05

Sequence No.: 5
Sample ID: icv
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 11
Date Collected: 12/30/2005 12:12:56 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: icv

102% R

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2080725.7	9.75	mg/L	0.032				0.32%
Ni 231.604†	6166.2	1.02	mg/L	0.005	1.02	mg/L	0.005	0.50%

Sequence No.: 6
Sample ID: icsab
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 12
Date Collected: 12/30/2005 12:16:18 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: icsab

98% R

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2022525.0	9.47	mg/L	0.048				0.51%
Ni 231.604†	5917.7	0.980	mg/L	0.0073	0.980	mg/L	0.0073	0.75%

Sequence No.: 7
Sample ID: lfb Ni
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 13
Date Collected: 12/30/2005 12:19:40 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: lfb Ni

93.6%

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1955004.8	9.16	mg/L	0.142				1.55%
Ni 231.604†	4523.1	0.749	mg/L	0.0049	0.749	mg/L	0.0049	0.66%

Sequence No.: 8
Sample ID: lrb
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 14
Date Collected: 12/30/2005 12:23:02 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: lrb

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	1969448.6	9.22	mg/L	0.149				1.61%
Ni 231.604†	-11.1	-0.002	mg/L	0.0013	-0.002	mg/L	0.0013	71.21%

L.05

Sequence No.: 9
Sample ID: 110325-1

Autosampler Location: 15
Date Collected: 12/30/2005 12:26:55 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110325-1

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2003331.9	9.38	mg/L	0.114				1.21%
Ni 231.604†	386.8	0.064	mg/L	0.0015	0.064	mg/L	0.0015	2.26%

Sequence No.: 10
Sample ID: 110325-2
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 16
Date Collected: 12/30/2005 12:30:48 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110325-2

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2009889.4	9.41	mg/L	0.111				1.18%
Ni 231.604†	1736.7	0.288	mg/L	0.0003	0.288	mg/L	0.0003	0.10%

Sequence No.: 11
Sample ID: 110325-3
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 12/30/2005 12:34:43 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110325-3

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2010062.0	9.41	mg/L	0.122				1.30%
Ni 231.604†	-14.2	-0.002	mg/L	0.0011	-0.002	mg/L	0.0011	47.51%

Sequence No.: 12
Sample ID: 110325-4
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 18
Date Collected: 12/30/2005 12:38:37 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110325-4

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	2003577.7	9.38	mg/L	0.178				1.90%
Ni 231.604†	297.5	0.049	mg/L	0.0014	0.049	mg/L	0.0014	2.83%

Sequence No.: 13
Sample ID: 110325-5
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 19
Date Collected: 12/30/2005 12:42:32 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 110325-5

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Yb 328.937	1997531.7	9.36	mg/L	0.149				1.59%
Ni 231.604†	361.3	0.060	mg/L	0.0015	0.060	mg/L	0.0015	2.56%

Sequence No.: 14
Sample ID: 120034-1

Autosampler Location: 20
Date Collected: 12/30/2005 12:46:54 PM

Analyst:
Initial Sample Wt:
Dilution:
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 120034-1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2005116.7	9.39	mg/L	0.167				1.78%
Ni 231.604†	1050.5	0.174	mg/L	0.0009	0.174	mg/L	0.0009	0.53%

Sequence No.: 15
Sample ID: 120034-2
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 21
Date Collected: 12/30/2005 12:51:06 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 120034-2

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2005263.4	9.39	mg/L	0.109				1.16%
Ni 231.604†	1063.0	0.176	mg/L	0.0004	0.176	mg/L	0.0004	0.24%

Sequence No.: 16
Sample ID: 120034-3
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 22
Date Collected: 12/30/2005 12:55:02 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 120034-3

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2003607.7	9.38	mg/L	0.107				1.14%
Ni 231.604†	3.4	0.001	mg/L	0.0010	0.001	mg/L	0.0010	178.89%

Sequence No.: 17
Sample ID: ccv 0.50
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 23
Date Collected: 12/30/2005 12:58:58 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccv 0.50 103%

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2175552.9	10.2	mg/L	0.02				0.15%
Ni 231.604†	3098.7	0.513	mg/L	0.0022	0.513	mg/L	0.0022	0.42%

Sequence No.: 18
Sample ID: ccb
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 24
Date Collected: 12/30/2005 1:02:25 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Mean Data: ccb 2.007

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Yb 328.937	2163765.3	10.1	mg/L	0.07				0.67%
Ni 231.604†	0.4	0.000	mg/L	0.0015	0.000	mg/L	0.0015	>999.9%

Appendix G

Plating Solution Laboratory Reports

SCIENTIFIC CONTROL LABS
CompuFAX

November 11, 2005

Jeff's Project

Lab No: 110076

ELECTROLESS NI Dated: 11-1-05	**Conditions 3/4/5/6 RELIABLE**	
Metallic Nickel	0.81	
Sodium Hypophosphite	3.42	
pH	4.99	
Surface Tension (dynes/cm) Room Temp	75.0/ 75.2 / 75.3	68.6/ 68.7/68.8 (190 F.)

Results in ounces per gallon

A.G.

AUDREY GLIVA

SCIENTIFIC CONTROL LABS
CompuFAX

February 8, 2006

Jeff's Project

Lab No: 020075

Nickel Solution	Condition 10 No Wetter ABQC (02-01-06)		
Metallic Nickel	9.38		
Nickel Sulfate	32.74		
Nickel Chloride	8.34		
Boric Acid	5.33		
pH	3.92		
Specific Gravity	1.200		
Surface Tension (dynes/cm) Room Temp	'68.0/ 68.0/ 68.2	(140F)	58.0/ 58.1/ 58.2
Iron (mg/L)	37.7		

Nickel Solutions	Condition 13 Wetter ABQC (02-02-06)		
Metallic Nickel	9.55		
Nickel Sulfate	33.36		
Nickel Chloride	8.46		
Boric Acid	5.17		
pH	4.18		
Specific Gravity	1.200		
Surface Tension (dynes/cm) Room Temp	43.1/ 43.2/ 43.4	(140F)	42.1/ 42.0/ 42.1
Iron (mg/L)	14.9		

A.G.

AUDREY GLIVA

SCIENTIFIC CONTROL LABS
CompuFAX

January 20, 2006

Jeff's Project

Lab No: 010217

Nickel Solution	**ABQC Condition 11/12 NO WETTER 1-11-06**		
Metallic Nickel	8.22		
Nickel Sulfate	28.52		
Nickel Chloride	7.46		
Boric Acid	4.51		
pH	4.6		
Specific Gravity	1.175		
Surface Tension (dynes/cm) Room Temp	58.2/ 58.4/ 58.7	(140F)	57.3/ 57.4/ 57.4

A.G.

AUDREY GLIVA

SCIENTIFIC CONTROL LABS
CompuFAX

November 17, 2005

Jeff's Project

Lab No: 110199

Nickel Solution	ABQC Condition 14/15 WETTER 11-7-05		
Metallic Nickel	11.40		
Nickel Sulfate	42.96		
Nickel Chloride	7.30		
Boric Acid	8.00		
pH	3.88		
Specific Gravity	1.245		
Surface Tension (dynes/cm) Room Temp	37.6/ 37.8/ 37.8	(140F)	37.0/ 37.1/ 37.1

Nickel Solutions	Condition 7 Artistic Woods Strike No Wetter 11-09-05	Condition 24 Artistic Woods Strike Wetter 11-10-05
Metallic Nickel	3.17	3.34
Nickel Chloride	12.70	13.35
Hydrochloric Acid	34.61	33.97
Surface Tension (dynes/cm) Room Temp	60.3/ 60.3/ 60.5	50.9/ 50.8/ 50.7
Specific Gravity	1.105	1.105

A.G.

AUDREY GLIVA

SCIENTIFIC CONTROL LABS
CompuFAX

October 4, 2005

Artistic Plating Co. Inc.
405 W. Cherry St.
Milwaukee, WI. 53212

Attention: Mr. John Tinder

Lab No: 100012

Gentlemen:

The solution samples submitted to us on October 3, 2005 have been analyzed and are reported in ounces per gallon (unless otherwise noted) as follows:

	Conditions 18/19	**Conditions 20/21**
	NO WETTER	**WETTER**
NICKEL SOLNS	**9/27-28**	**9/28-29**
Metallic Nickel	8.34	8.42
Nickel Sulfate	30.49	31.34
Nickel Chloride	6.14	5.71
Boric Acid	5.70	6.11
pH	3.5	3.8
Specific Gravity	1.175	1.165
Surface Tension **(dynes/cm)**		
Room Temp	72.3	32.4
140 F	67.7	30.5

Surface tension measurements were conducted using a tensionmeter.

Please contact us at once if you should have any questions.

Yours very truly,

AG/FAX

AUDREY GLIVA

SCIENTIFIC CONTROL LABS
CompuFAX

November 23, 2005

Jeff's Project

Lab No: 110323

Nickel Solutions	**Conditions 23/25 ELITE 11-16-05**
Metallic Nickel	7.73
Nickel Sulfamate	33.16
Nickel Chloride	0.68
Boric Acid	4.72
pH	3.3
Specific Gravity	1.220
Surface Tension (dynes/cm)	
Room Temp	46.1
135f	44.5

Results in ounces per gallon.

A.G.

AUDREY GLIVA

SCIENTIFIC CONTROL LABS
CompuFAX

December 8, 2005

Jeff's Project

Lab No: 120033

Nickel Solutions	**Condition 26 ELITE 12-01-05**
Metallic Nickel	8.51
Nickel Sulfamate	36.54
Nickel Chloride	0.72
Boric Acid	5.41
pH	4.0
Specific Gravity	1.215
Surface Tension (dynes/cm)	
Room Temp	36.1
135f	35.0

Results in ounces per gallon.

A.G.

AUDREY GLIVA

SCIENTIFIC CONTROL LABS
CompuFAX

October 27, 2005

Jeff's Project Lab No: 100304

Nickel Solution	No Wetter Condition 22 Elite (10-18-05)
Metallic Nickel	8.59
Nickel Sulfamate	36.75
Nickel Chloride	0.84
Boric Acid	5.62
pH	3.65
Specific Gravity	1.220
Surface Tension (dynes/cm) 135F Room Temp	39.0/39.1/39.2

Nickel Solutions	Condition 27 Artistic Woods Strike No Wetter 10-17-05	Condition 28-29 Artistic Woods Strike Wetter 10-20-05
Metallic Nickel	2.43	1.62
Nickel Chloride	9.72	6.48
Hydrochloric Acid	40.70	42.95
Surface Tension (dynes/cm) Room Temp	72.9/73.0/73.0	58.6/58.5/58.7*

* Acidic solution destroys wetting agent over time.
Surface tension of this solution measured in field at 38 dynes/cm (w/stalagmometer).

A.G. AUDREY GLIVA

Appendix H

Sample Chain of Custodies

COMP: Reliable Plating

SAMPLING ADDRESS: USEPA Project

110076

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-5661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USEPA Nickel Emission Study

SAMPLER (SIGNATURE):

Station No.	DATE	TIME	COMP.	GRAB	pH	Station Location / Sample ID	No. of containers	EN Analysis	CONTAINER / PRESERVATIVE
	11/1/05					EN Solution	1	X	P-4-A

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ. (2) 4 OZ. (3) 1/2 Pint (4) Pint (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

EN Analysis includes
Nickel Content
Hypophosphite Content
Surface Tension (Room)
pH

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Relinquished by: (Signature)

Date/Time: 11/3/05 3:50pm

Received for Laboratory by:

Remarks:

Relinquished by: (Signature)

Date/Time: 11-3-5 3:50p

Received by: (Signature)

Temperature of Samples

Shipping No.:

COMPANY USBQC

SAMPLING ADDRESS USTPA Nickel Project

020075

Scientific CONTROL LABORATORIES, INC.
TESTING — CONSULTING
3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No. | Project Name: USTPA Nickel Project

SAMPLER (SIGNATURE):

Station No.	DATE	TIME	COMP.	GRAB	pH	Station Location / Sample ID	No. of containers	Nickel Analysis	Surface Tension (WDF)	Surface Tension (Rawn)	Specific Gravity	CONTAINER	PRESERVATIVE
	2/1/06	Condition ID		USBQC		Nickel Solution working	1	X	X	X	X	P-1 4-A	
	2/2/06	Condition B		USBQC		Nickel Solution working	1	X	X	X	X	P-4-A	

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ, (2) 4 OZ., (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	2/3/06				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
			2-3-06 3:00p		

Remarks:

COMP: USTPP Nickel Project

SAMPLING ADDRESS

ABQC

010217

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-5661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USTPP Nickel Project

SAMPLER (SIGNATURE):

Station No.	DATE	TIME	COMP.	GRAB	pH	Station Location / Sample ID	No. of containers	Nickel Analysis	Specific Gravity	Surface Tension 140	Surface Tension Room Temp	CONTAINER	PRESERVATIVE
	1/11/06	ABQC				With Nickel Tank Solution	1	X	X	X	X	P-4-A	

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ, (2) 4 OZ, (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal, (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	1/13/06 0:00				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
			1.13.6		

Remarks:

1:30 pm

COMP / USTPP Nickel Emission Study

SAMPLING ADDRESS
District / ABOC

110199

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
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TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No. | Project Name: USTPP Nickel Emission Study

SAMPLER (SIGNATURE)

Station No.	DATE	TIME	COMP.	GRAB	~~pH~~	~~Station~~ Location	No. of containers	Nickel Solution Analysis (1)	Nickel Solution Analysis (2)	Surface Tension (Room)	Surface Tension (40°F)	Specific Gravity
			Sample ID									
1	11/7/11	ABOC	Walls	Nickel Rack		(Welter)	1	X	X	X	X	X
2	11/9/11	District	Woods	Nickel Starter		(No Welter)	1	X	X	X	X	X
3	11/10/11	District	Woods	Nickel Starter		(Welter)	1	X	X	X	X	X

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ. (2) 4 OZ. (3) 1/2 Pint (4) Pint (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

(1) (2)

Relinquished by: (Signature) | Date/Time 11/11/11 | Received by: (Signature)

Relinquished by: (Signature) | Date/Time | Received for Laboratory by:

Relinquished by: (Signature) | Date/Time | Received by: (Signature)

Date/Time 11-11-11 | Temperature of Samples ROOM | Shipping No.:

Remarks:

11:30

SAMPLING ADDRESS: Acustic Plating Company
Wells Nickel Spread

Scientific CONTROL LABORATORIES, INC.
TESTING — CONSULTING
3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No. | Project Name: USEPA Nickel Emission Study

SAMPLER (SIGNATURE): [signature], SCL

Station No.	DATE	TIME	COMP.	GRAB	pH	Station Location / Sample ID	No. of containers	Nickel per OSHA ID-125	Specific Gravity	Surface Tension @ 140°F	Nickel Analyses *	CONTAINER / PRESERVATIVE
	9/27/05					North	1	X				Cassette
	9/27/05					South	1	X				
	9/28/05					North	1	X				
	9/28/05					South	1	X				
	9/29/05					North	1	X				
	9/29/05					South	1	X				
	9/30/05					North	1	X				
	9/30/05					South	1	X				
	9/30/05					BLANK	1	X				
	9/27/05	Wells	Nickel	Plated	Tank	no Wells	1		X	X	X	P-4-A
	9/28/05	Wells	Nickel	Plated	Tank	w/Wells	1		X	X	X	P-4-A

P-Plastic, G-Glass, M-Metal: (1) 2 OZ, (2) 4 OZ, (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal, (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other
A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

* Includes Nickel Content, Boric Acid Content, Nickel Chloride, pH, Nickel Sulfate

Linda Lucas
Original

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	10/3/05 8:50 AM				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
[signature]		[signature]	10/3/05 8:30 AM		

Remarks:

COMPANY 1st FPA Project

SAMPLING ADDRESS ELITE Finishing

110323

Scientific CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USEPA Nickel Emissions Study

SAMPLER (SIGNATURE)

Station No.	DATE	~~TIME~~ Sample ID	~~COMP.~~ ~~GRAB~~	~~pH~~	Station Location	No. of containers	Nickel Soluble Analysis	Specific Gravity	Surface Tension (Room)	Surface Tension (135°F)			CONTAINER / PRESERVATIVE
	11/15/05	Nickel Sulfamate			Solution	1	X	X	X	X			P-4-A
	11/16/05	Nickel Sulfamate			Solution	1	X	X	X	X			P-4-A

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ., (2) 4 OZ., (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time 11-18-5	Temperature of Samples	Shipping No.:

Remarks: 2:00p.

120033

COMPANY USEPA Nickel

SAMPLING ADDRESS

ELITE

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
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TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USEPA Nickel Emission Study

SAMPLER (SIGNATURE)

Station No.	DATE	~~TIME~~	~~COMP.~~ Sample ID	~~GRAB~~	~~pH~~	Station Location	No. of containers	Nickel Analysis Filter	Surface Tension (Ring)	Surface Tension (135F)	Specific Gravity			
	10/1/05	Nickel	Sulfamate	Tank			1	X	X	X	X			

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ., (2) 4 OZ., (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time: 12.5.5	Temperature of Samples: Rec'd	Shipping No.:

Remarks: 10.00a

COMPANY_ USEPA Project

SAMPLING ADDRESS
Artistic PLATING Company (10/17, 10/19 10/20)

ELITE Finishy (10/18/05

100304

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
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TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.	Project Name: USEPA Nickel Emission Study						No. of containers	Specific Gravity	Surface Tension @ RT	Surface tension Room	Nickel Analyses (1)	Nickel Analyses (2)	CONTAINER	PRESERVATIVE
SAMPLER (SIGNATURE): [signature], SCL													P-Plastic, G-Glass, M-Metal	A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other
Station No.	DATE	TIME	COMP. Sample	GRAB ID	pH	Station Location							(1) 2 OZ. (2) 4 OZ. (3) 1/2 Pint (4) Pint (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other	
	10/17/05	Artistic	Woods Nickel Strike (NO wetter)				1	X		X	X			P - 4 - A
	10/18/05	ELITE	Nickel Sulfamate	(No wetter)			1	X	X	X		X		P - 4 - A
	10/20/05	Artistic	Woods Nickel Strike (wetter)				1	X		X	X			P - 4 - A

(2) includes Nickel Content, Nickel Sulfamate, Boric Acid, Nickel Chloride, pH

(1) includes Nickel Content, Chloride

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature] SCL	10/21/05 4:30 PM				

Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
		[signature]	10.21.5	[signature]	

Remarks: 4'30p

COMPANY Reliable / USEPA Nickel Project

SAMPLING ADDRESS Reliable

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USEPA Nickel Emissions Project

SAMPLER (SIGNATURE): [signature], ETE

Station No.	DATE	TIME	COMP.	GRAB	pH	Station Location	No. of containers	Nickel (Method 29)	CONTAINER / PRESERVATIVE
			Sample ID						
	10/31/05	Condition	#3	Run #1		(Front 1/2, Back 1/2, Filter	3	X	G-5-A (Front 1/2, Back 1/2) P-10-A (F. Hn.)
	10/31/05	Condition	#3	Run #2				X	
	10/31/05	Condition	#3	Run #3				X	
	10/31/05	BLANK						X	
	11/1/05	Condition	#6	Run #1				X	
	11/1/05	Condition	#6	Run #2				X	
	11/1/05	Condition	#6	Run #3				X	
	11/2/05	Condition	#5	Run #1				X	
	11/2/05	Condition	#5	Run #2				X	
	11/2/05	Condition	#5	Run #3				X	
		(Cont)							

(1) 2 OZ. (2) 4 OZ. (3) 1/2 Pint (4) Pint (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other

P-Plastic G-Glass M-Metal

A- None B- HNO3 C- H2SO4 D- NaOH E- Ascorbic F- Na2S2O3 G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	11/11 9AM	[signature]			
[signature]	11/11/05 11:05	[signature]	Date/Time 11-11-5	Temperature of Samples	Shipping No.:

Remarks: 11.30a

COMPANY USEPA Nickel Project

SAMPLING ADDRESS Reliable

Scientific CONTROL LABORATORIES, INC.
TESTING — CONSULTING

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FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name USEPA Nickel Emission Project

SAMPLER (SIGNATURE) , ETE

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ., (2) 4 OZ., (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Station No.	DATE	TIME	COMP. Sample	GRAB ID	pH	Station Location	No. of containers	Nickel (Method 29)	CONTAINER	PRESERVATIVE
		(Cont)								
	11/3/05	Condition	#4	RUN #1		(Front 1/2, Back 1/2, Train Blk)	3	X	G-5-A (Front 1/2, Back 1/2) P-10-A (Train Blk)	
	11/3/05	Condition	#4	RUN #2		↓	↓	X	↓	↓
	11/3/05	Condition	#4	RUN #3		↓	↓	X	↓	↓

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	11/11 9AM				

Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
	11/11/05 1135		11-11-5		

Remarks: 11:30a.

Environmental Technology &
Engineering Corp.
13000 W. Bluemound Road
Elm Grove, Wisconsin 53122

ETE Contact: MICHAEL HUENINK
Phone: 262-784-2434
Fax: 262-784-2436

ETE Project No. 3273

To: SCL

Attn: JEFF ZAK

Sample Media: 0.1 HNO_3

Analyze for: NICKEL

Requested Analytical Methods: EPA 29 — COMBINE WITH FILTERS FOR ANALYSIS AS DIRECTED IN EPA 29 PROCEDURES

Remarks Re: Conditions/Interferences/Other: ABDC

Desired Report Date 2/28/06 Submitted Date 2/3/06 Rush (Normal)

LIQUID ---------- ANALYTES ----------

Lab ID for Sample	ETE ID for Sample	Sample Date	~~Sample~~ Volume	Ni				
	FH BLANK	2/1	100 ml					
	10-1 FH	2/1						
	10-2 FH	↓						
	10-3 FH							
	13-1 FH	2/2						
	14-4 FH							
	14-5 FH	↓						

Special Instructions

Relinquished by: [signature] Date: 2/3/06 Time: 12:00 NOON
Received by: [signature] Date: 2/3/06 Time: 12:00 NOON

Relinquished by: [signature] Date: 2/3/06 Time: 3:00 PM
Received by: [signature] Date: 2/3/06 Time: 3:00 PM

Environmental Technology &
Engineering Corp.
13000 W. Bluemound Road
Elm Grove, Wisconsin 53122

ETE Contact: MICHAEL HUENINK
Phone: 262-784-2434
Fax: 262-784-2436

ETE Project No. 3273

To: SCL

Attn: JEFF ZAK

Sample Media: 5% HNO_3/10% H_2O_2 SOLUTION

Analyze for: NICKEL

Requested Analytical Methods: EPA 29 – ANALYZE SEPARATELY FROM OTHER SAMPLE FRACTIONS (FILTERS & FH SOLUTIONS) AS DIRECTED IN EPA 29

Remarks Re: Conditions/Interferences/Other: DBQC

Desired Report Date 2/28/06 Submitted Date 2/3/06 Rush (Normal)

---------- ANALYTES ----------

Lab ID for Sample	ETE ID for Sample	Sample Date	Sample Volume	Ni				
	BLANK BH	2/1/06	300 ml					
	COND 10-1 BH	2/1	303 ml					
	10-2 BH	↓	309 ml					
	10-3 BH	↓	315 ml					
	COND 13-1 BH	2/2	308 ml					
	14-4 BH	↓	310 ml					
	14-5 BH	↓	311 ml					

Special Instructions

Relinquished by: [signature] Date: 2/3/06 Time: 12:00 NOON
Received by: [signature] Date: 2/3/06 Time: 12:00 NOON

Relinquished by: [signature] Date: 2/3/06 Time: 3:00
Received by: [signature] Date: 2/3/06 Time: 3:00 P

Environmental Technology &
Engineering Corp.
13000 W. Bluemound Road
Elm Grove, Wisconsin 53122

ETE Contact: MICHAEL HUENINK
Phone: 262-784-2434
Fax: 262-784-2436

ETE Project No. 3273

To: SCL

Attn: JEFF ZAK

Sample Media: QUARTZ FILTERS

Analyze for: NICKEL

Requested Analytical Methods: EPA 29 (40 CFR PART 60 APPENDIX A)
- COMBINE WITH FRONT ½ SOLUTION AS DIRECTED IN EPA 29 PROCEDURES

Remarks Re: Conditions/Interferences/Other: ABQC

Desired Report Date 2/28/06

Submitted Date 2/3/06

Rush (Normal)

---------- ANALYTES ----------

Lab ID for Sample	ETE ID for Sample	Sample Date	Sample Volume	Ni				
	BLANK FH	2/1	—	↓				
	COND 10 - TEST 1 FH	2/1						
	- TEST 2 FH	↓						
	- TEST 3 FH	↓						
	COND 13 - TEST 1 FH	2/2						
	COND 14 - TEST 4 FH	↓						
	- TEST 5 FH	↓						

Special Instructions

Relinquished by: [signature] Date: 2/3/06 Time: 12:00 NOON
Received by: [signature] Date: 2/3/06 Time: 12:00 NOON

Relinquished by: [signature] Date: 2/3/06 Time: 3:00
Received by: [signature] Date: 2/3/06 Time: 3:00 p

COMP, USEPA

SAMPLING ADDRESS, Nickel Project

ABQC

Scientific CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No. | Project Name: USEPA Nickel Project

SAMPLER (SIGNATURE): Michael J. Hahn, ETE

Station No.	DATE	~~TIME~~	COMP. Sample ID	GRAB	~~pH~~	~~Station~~ Location	No. of containers	Nickel per Method 29	CONTAINER / PRESERVATIVE
	1/11/06	ABQC	Condition #12	Run 1		Front 1/2, Back 1/2, Filter	3	X	G-5-A (Front 1/2, Back 1/2), Cassette (Filter) P-10-A
	1/11/06	ABQC	Condition #12	Run 2			3	X	
	1/11/06	ABQC	Condition #12	Run 3			3	X	
	1/11/06	ABQC		BLANK			3	X	
	1/12/06	ABQC	Condition #11	Run 1			3	X	
	1/12/06	ABQC	Condition #11	Run 2			3	X	
	1/12/06	ABQC	Condition #11	Run 3			3	X	

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ, (2) 4 OZ, (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Michael J. Hahn	1/13/06 9AM				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
	1/13/06 1:30		1-13-6		

Remarks: 1:30 p

COMP. : USTPA Nickel Emission Study

SAMPLING ADDRESS
ABQC

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-5661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USTPA Nickel Emission Study

SAMPLER (SIGNATURE)

Station No.	DATE	TIME	COMP.	GRAB	pH	Station Location	No. of containers	Nickel (ABQA)	CONTAINER / PRESERVATIVE
	11/8/05	ABQC	Sample ID Condition	#1	Wipe	Run #1	1	X	G-5-A
	11/8/05	ABQC	Condition	#1	Wipe	Run #2	1	X	G-5-A
	11/8/05	ABQC	Condition	#1	Wipe	Run #3	1	X	G-5-A
	11/8/05	ABQC	Condition	#5	Wipe	BLANK	1	X	G-5-A

CONTAINER: (1) 2 OZ. (2) 4 OZ. P-Plastic (3) 1/2 Pint G-Glass (4) Pint M-Metal (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other

PRESERVATIVE: A- None B- HNO3 C- H2SO4 D- NaOH E- Ascorbic F- Na2S2O3 G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	11/11/05 11:55 AM				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
			11-11-5		

Remarks:

11:30a.

COMP / USEPA Project

SAMPLING ADDRESS
Artistic Plating Company

Walls Nickel Barrel (9/27-9/30-05)

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USEPA Nickel Emissions Study

SAMPLER (SIGNATURE): , ETE

Station No.	DATE	TIME	COMP.	GRAB	pH	Station Location	No. of containers	Method 29 (Nickel Only)	CONTAINER / PRESERVATIVE
			Sample ID						
	9/26/05	Condition	18	Run #1		Front ½, Filter, Back ½	3	X	G-5-A (Front ½, Back ½) P-10-A (Filter)
	9/27/05	Condition	18	Run #2			3	X	
	9/27/05	Condition	18	Run #3			3	X	
	9/28/05	Condition	19	Run #1			3	X	
	9/28/05	Condition	19	Run #2			3	X	
	9/28/05	Condition	19	Run #3			3	X	
	9/29/05	Condition	20	Run #1			3	X	
	9/29/05	Condition	20	Run #2			3	X	
	9/29/05	Condition	20	Run #3			3	X	
[redacted]									
	9/30/05	Condition	21	Run #1		Front ½, Filter, Back ½	3	X	G-5-A (Front ½, Back ½) P-10-A (Filter)
(cont)									

(1) 2 OZ. (2) 4 OZ. (3) 1/2 Pint (4) Pint (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other
P-Plastic G-Glass M-Metal
A- None B- HNO3 C- H2SO4 D- NaOH E- Ascorbic F- Na2S2O3 G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	9/30/05 14:45				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
	10/3/05 9:30am		10/3/05	9.0°C	

Remarks:

COMP: USEPA Project

SAMPLING ADDRESS: Detroit Plating Company
Watts Nickel Barrel

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
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TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USEPA Nickel Emissions Study

SAMPLER (SIGNATURE): [signature], FTE

Station No.	DATE	TIME	COMP. Sample	GRAB ID	pH	Station Location	No. of containers	Method 29 (Nickel Only)	CONTAINER / PRESERVATIVE
	9/30/05	Condition 2	Run #2			Front 1/2, Filter, Back 1/2	3	X	G-5-A (Front 1/2, Back 1/2) P-10-A (Filter)
	9/30/05	Condition 2	Run #3			Front 1/2, Filter, Back 1/2	3	X	↓ ↓
gg	9/27/05	Field Blank	(Filter)			Filter	1	X	P-10-A
	9/27/05	Field Blank				Front 1/2, Back 1/2	2	X	G-5-A

P-Plastic, G-Glass, M-Metal
(1) 2 OZ. (2) 4 OZ. (3) 1/2 Pint (4) Pint (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other
A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	9/30/05	[signature] SCL			
Relinquished by: (Signature) [signature] SCL	Date/Time 10/3/05 8:30 AM	Received for Laboratory by: [signature]	Date/Time 10/3/05 8:37 AM	Temperature of Samples	Shipping No.:

Remarks:

COMPANY EPA

SAMPLING ADDRESS ELITE

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TESTING — CONSULTING

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CHAIN OF CUSTODY RECORD

Project No.

Project Name: USEPA Nickel Emissions Study

SAMPLER (SIGNATURE): , ETC

Station No.	DATE	~~TIME~~ Sample ID	COMP.	~~GRAB~~	pH	~~Station Location~~	No. of containers	Nickel per Method 29						
	11/15/05	Condition	23	Test 1		Front 1/2, Back 1/2 Filter	3	X						
	11/15/05	Condition	23	Test 2			3	X						
	11/15/05	Condition	23	Test 3			3	X						
	11/15/05	BLANK					3	X						
	11/16/05	Condition	25	Test 1			3	X						
	11/16/05	Condition	25	Test 2			3	X						
	11/16/05	Condition	25	Test 3			3	X						

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ., (2) 4 OZ., (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

G-5-A (Front 1/2, Back 1/2) P-10-A (Filters)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	11/17 4:30 PM				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
	11/18/05 2:00 PM		11-18-5		

Remarks: 2:00 P.

COMPANY USEPA Nickel Study

SAMPLING ADDRESS

ELITE

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CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
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FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.	Project Name	No. of containers	Nickel (3060A)	CONTAINER / PRESERVATIVE
	USEPA Nickel Study			
SAMPLER (SIGNATURE)				

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ., (2) 4 OZ., (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Station No.	DATE	TIME / Sample ID	COMP.	GRAB	~~pH~~	Station Location	No. of containers	Nickel (3060A)	
	12/1/05	ELITE	Condition	#26		RUN #1	1	X	6-J-A
	12/1/05	ELITE	Condition	#26		RUN #2	1	X	6-5-A
	12/1/05	ELITE	Condition	#26		RUN #3	1	X	6-5-A
	12/1/05	ELITE BLK				BLANK	1	X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
			12.5.5		

Remarks: 10:00a.

COMPANY USEPA Nickel Project

SAMPLING ADDRESS NSQC / Refinery

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name USEPA Nickel Emissions Project

SAMPLER (SIGNATURE) , ETE

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ., (2) 4 OZ., (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Station No.	DATE	~~TIME~~	~~COMP.~~ Sample ID	~~GRAB~~	~~pH~~	~~Station Location~~	No. of containers	Nickel (Method 29)							
	11/7/05	Condition	#14	NSQC	Test 1	(Front 1/2, Back 1/2, Filter)	3	X							6-5-A (Front 1/2, Back 1/2) RINSE (Filter)
	11/7/05	Condition	#14	NSQC	Test 2			X							
	11/7/05	Condition	#14	NSQC	Test 3			X							
	11/7/05	BLANK		NSQC				X							
	11/9/05	Condition	#7	Refinery	Test 1			X							
	11/9/05	Condition	#7	Refinery	Test 2			X							
	11/9/05	Condition	#7	Refinery	Test 3			X							
	11/9/05	BLANK		Refinery				X							
	11/10/05	Condition	#24	Refinery	Test 1			X							
	11/10/05	Condition	#24	Refinery	Test 2			X							
	11/10/05	Condition	#24	Refinery	Test 3			X							

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	11/10 9:07				

Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
	11/10/05 1105		11-11-5 11:30a.		

Remarks:

COMPANY EPA Project

SAMPLING ADDRESS
Artistic Plating Company (10/17, 10/19)
Elite Finishing (10/18)

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
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TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USEPA Nickel Emissions Study

SAMPLER (SIGNATURE): , ETE

Station No.	DATE	~~TIME~~ Sample ID	~~COMP~~ ~~GRAB~~	pH	Station Location	No. of containers	Method 29 (Nickel Only)	CONTAINER / PRESERVATIVE
	10/17/05	Condition 27	Run #1	Artistic	Front ½, Filter, Back ½	3	X	G-5-A (Front ½, Back ½) P-10-A (Filter)
	10/17/05	Condition 27	Run #2	Artistic		3	X	
	10/17/05	Condition 27	Run #3	Artistic		3	X	
	10/18/05	Condition 22	Run #1	Elite		3	X	
	10/18/05	Condition 22	Run #2	Elite		3	X	
	10/18/05	Condition 22	Run #3	Elite		3	X	
	10/19/05	Condition 28	Run #1	Artistic		3	X	
	10/19/05	Condition 28	Run #2	Artistic		3	X	
	10/19/05	Condition 28	Run #3	Artistic		3	X	
	10/18/05	Field Blank		Elite		3	X	
	10/17/05	Field Blank		Artistic		3	X	

CONTAINER: (1) 2 OZ. (2) 4 OZ. P-Plastic (3) 1/2 Pint G-Glass (4) Pint M-Metal (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other

PRESERVATIVE: A- None B- HNO3 C- H2SO4 D- NaOH E- Ascorbic F- Na2S2O3 G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	10/20/05 16:50				

Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
	10/21/05 4:35		10.21.5		

Remarks: 4:30 p

COMPANY L "A Project

SAMPLING ADDRESS
Artistic Plating Company (10/20/05)

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
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TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USEPA Nickel Emission Study

SAMPLER (SIGNATURE): JCL

Station No.	DATE	TIME ~~COMP.~~ Sample	~~GRAB~~ ID	pH	Station Location	No. of containers	* Nickel (Method 306A Analysis)	CONTAINER / PRESERVATIVE
	10/20/05	Condition 2	Run #1		Artistic Woods	1	X	G-5-A
	10/20/05	Condition 2	Run #2		Artistic Woods	1	X	G-5-A
	10/20/05	Condition 2	Run #3		Artistic Woods	1	X	G-5-A
	10/20/05	Field Blank	0.1N HNO3		Artistic	1	X	G-5-A
	10/20/05	Field Blank	5% HNO3 / 10% HCl		Artistic	1	X	G-5-A

CONTAINER: P-Plastic, G-Glass, M-Metal — (1) 2 OZ., (2) 4 OZ., (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

* USE Method 306A Analysis Procedure, Test For Nickel Instead of Chromium

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
JCL	10/21/05 4:30 PM				

Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
			10/21-5		

Remarks: 4:30p

COMPANY Reliable Plating

SAMPLING ADDRESS USEPA Project

Scientific CONTROL LABORATORIES, INC.
TESTING — CONSULTING
3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No. | Project Name: USEPA Nickel Emission Study

SAMPLER (SIGNATURE): [signature] Mr, SCL

Station No.	DATE	TIME	COMP.	GRAB	pH	Station Location	No. of containers	Nickel per TO-12
			Sample ID					
	10/31/05	Reliable	EN	10/31/05	Condition	#3 East	1	X
	10/31/05	Reliable	EN	10/31/05	Condition	#3 West	1	X
	11/1/05	Reliable	EN	11/1/05	Condition	#6 East	1	X
	11/1/05	Reliable	EN	11/1/05	Condition	#6 West	1	X
	11/2/05	Reliable	EN	11/2/05	Condition	#5 East	1	X
	11/2/05	Reliable	EN	11/2/05	Condition	#5 West	1	X
	11/3/05	Reliable	EN	11/3/05	Condition	#4 East	1	X
	11/3/05	Reliable	EN	11/3/05	Condition	#4 West	1	X
	10/31/05	Reliable	EN	10/31/05		BLANK	1	X

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ, (2) 4 OZ, (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

* Cassettes

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]					
Relinquished by: (Signature)	Date/Time 11/2/05 JSD	Received for Laboratory by: [signature]	Date/Time 11-3-5	Temperature of Samples	Shipping No.:

Remarks:

3:50p

COMPANY USEPA

SAMPLE ADDRESS Nickel Project

ABQC

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

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CHICAGO IL 60623-4889
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TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USEPA Nickel Project

SAMPLER (SIGNATURE)

Station No.	DATE	TIME	COMP. Sample ID	GRAB	pH	Station Location	No. of containers	Nickel per USEPA 10-Tal						CONTAINER / PRESERVATIVE
	1/11/06	ABQC	Condition 12	East		25093149	1	X						C2SSchles
	1/11/06	ABQC	Condition 12	West		25093112	1	X						
	1/11/06	ABQC	BLANK			25093138	1	X						
	1/12/06	ABQC	Condition 11	East		25093115	1	X						
	1/12/06	ABQC	Condition 11	West		25093146	1	X						

CONTAINER: P-Plastic, G-Glass, M-Metal; (1) 2 OZ, (2) 4 OZ, (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	1/13/06 3:00 PM				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
			1-13-6 1:30 P		

Remarks:

COMPA. ABQC / USEPA

SAMPLING ADDRESS
USEPA Nickel Emission Project

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

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CHICAGO IL 60623-4889
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CHAIN OF CUSTODY RECORD

Project No.	Project Name
	USEPA Nickel Emission Project

SAMPLER (SIGNATURE)

Station No.	DATE	TIME	COMP.	GRAB	pH	Station Location	No. of containers	Nickel per OSHA ID-121	CONTAINER / PRESERVATIVE
	2/1/06	BLANK	Sample ID ABQC						
	2/1/06	ABQC	Condition ID		East	25D82359	1	X	Cassettes
	2/1/06	ABQC	Condition ID		West	25D93158	1	X	"
	2/2/06	ABQC	Condition B		East	25D82349	1	X	"
	2/2/06	ABQC	Condition B		West	25D82370	1	X	"

P-Plastic, G-Glass, M-Metal
(1) 2 OZ, (2) 4 OZ, (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other
A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: CH	Date/Time 2-3-6	Temperature of Samples	Shipping No.:

Remarks:

3:00p.

COMP. : Nickel Emissions Study USEPA

SAMPLING ADDRESS: Detistic / ABQC

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CHAIN OF CUSTODY RECORD

Project No. | Project Name: USEPA Nickel Emissions Study

SAMPLER (SIGNATURE):

Station No.	DATE	TIME	COMP.	GRAB	pH	~~Station~~ Location	No. of containers	Nickel per OSHA 10-121
			Sample ID					
	11/7/05	ABQC	Wells	Nickel	#14	East	1	X
	11/7/05	ABQC	Wells	Nickel	#14	West	1	X
	11/7/05	ABQC	BLANK				1	X
	11/8/05	ABQC	Wells	Nickel	#15	East	1	X
	11/8/05	ABQC	Wells	Nickel	#15	West	1	X
	11/9/05	Detistic	Woods		#7	East	1	X
	11/9/05	Detistic	Woods		#7	West	1	X
	11/9/05	Detistic	BLANK				1	X
	11/10/05	Detistic	Woods		#24	East	1	X
	11/10/05	Detistic	Woody.		#24	West	1	X

CONTAINER / PRESERVATIVE

P-Plastic, G-Glass, M-Metal
(1) 2 OZ. (2) 4 OZ. (3) 1/2 Pint (4) Pint (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other
A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Cassettes

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	11/11/05				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
		C. Manuel	11-11-5		

Remarks:

11:30 a

COMPANY SCL / USEPA

SAMPLING ADDRESS Artistic Plating Company
Wells Nickel Barrel

Scientific
CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
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FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No. | Project Name: USEPA Nickel Emission Study

SAMPLER (SIGNATURE): [signature], SCL

Station No.	DATE	TIME	COMP	GRAB	pH	Station Location / Sample ID	No. of containers	Nickel per OSHA ID-101	Specific Gravity	Surface Tension @ 140°F	Nickel Analysis *	CONTAINER / PRESERVATIVE
	9/27/05					North	1	X				Cassette
	9/27/05					South	1	X				
	9/28/05					North	1	X				
	9/28/05					South	1	X				
	9/29/05					North	1	X				
	9/29/05					South	1	X				
	9/30/05					North	1	X				
	9/30/05					South	1	X				
	9/27/05					BLANK	1	X				
	9/27/05	Wells Nickel Barrel Tank				no Wells	1		X	X	X	P-4-A
	9/29/05	Wells Nickel Barrel Tank				w/ Wells	1		X	X	X	P-4-A

P-Plastic, G-Glass, M-Metal
(1) 2 OZ. (2) 4 OZ. (3) 1/2 Pint (4) Pint (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other
A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

* Includes Nickel Content, Boric Acid Content, Nickel Chloride, pH

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	10/3/05 8:50 AM				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: [signature]	Date/Time 10/3/05 5:30pm	Temperature of Samples	Shipping No.:

Remarks:

COMPANY USEPA Nickel

SAMPLING ADDRESS ELITE Finishing

Scientific CONTROL LABORATORIES, INC.
TESTING — CONSULTING

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CHICAGO IL 60623-4889
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FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name USEPA Nickel Emission Study

SAMPLER (SIGNATURE) JMS

CONTAINER: P-Plastic, G-Glass, M-Metal — (1) 2 OZ., (2) 4 OZ., (3) 1/2 Pint, (4) Pint, (5) Quart, (6) 1/2 Gal., (7) Gallon, (8) VOC Vial, (9) Vials, (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Station No.	DATE	TIME	COMP Sample ID	GRAB ID	pH	Station Location	No. of containers	Nickel per 10-1a)
—	11/15/05		ELITE	Condition	23	North (2508 2348)	1	X
—	11/15/05		ELITE	Condition	23	South (2508 2354)	1	X
—	11/15/05		Elite Field			BLANK (2508 2360)	1	X
—	11/16/05		ELITE	Condition	23	North ([redacted])	1	X
—	11/16/05		ELITE	Condition	23	South (2508 2353)	1	X

cassettes

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
JMS	11/16/05 3:45 pm				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
		CM Miranda	11-18-5		

Remarks: 200p

COMPANY Ustra Nickel

SAMPLING ADDRESS

ELITE

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TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
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FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: Ustra Nickel Emission Study

SAMPLER (SIGNATURE)

CONTAINER: P-Plastic, G-Glass, M-Metal
(1) 2 OZ. (2) 4 OZ. (3) 1/2 Pint (4) Pint (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other

PRESERVATIVE: A- None, B- HNO3, C- H2SO4, D- NaOH, E- Ascorbic, F- Na2S2O3, G- Other

Station No.	DATE	TIME	COMP. / Sample ID	GRAB	pH	Station Location	No. of containers	Nickel 10-121
	12/1/05	ELITE	(condition 26			North (2JD82360)	1	X
	12/1/05	ELITE	(condition 26			South (2JD82350)	1	X
	12/1/05	ELITE				BLANK (2JD82353)	1	X

Cassette ↓

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
		C. Hurcello	12-5-5		

Remarks: 10:00 a.

COMPANY EPA Project

SAMPLING ADDRESS
Artistic Plating Co (10/17, 10/19, 10/20)
ELITE Finishing (10/18)

Scientific CONTROL LABORATORIES, INC.
TESTING — CONSULTING

3158 S. KOLIN AVENUE
CHICAGO IL 60623-4889
www.sclweb.com
TEL (773)254-2406
FAX (773)254-6661

CHAIN OF CUSTODY RECORD

Project No.

Project Name: USEPA Nickel Emission Study

SAMPLER (SIGNATURE): [signature], SCL

CONTAINER: P-Plastic, G-Glass, M-Metal
(1) 2 OZ. (2) 4 OZ. (3) 1/2 Pint (4) Pint (5) Quart (6) 1/2 Gal. (7) Gallon (8) VOC Vial (9) Vials (10) Other

PRESERVATIVE
A- None
B- HNO3
C- H2SO4
D- NaOH
E- Ascorbic
F- Na2S2O3
G- Other

Station No.	DATE	~~TIME~~	~~COMP~~ Sample ID	~~GRAB~~	~~pH~~	Station Location	No. of containers	Nickel per OSHA 10-121	
	10/17/05	Artistic	Woods	#27		EAST	1	X	Ezsolte
	10/17/05	Artistic	Woods	#27		West	1	X	
	10/18/05	ELITE	Solfamate	#22		North	1	X	
	10/18/05	ELITE	Solfamate	#22		South	1	X	
	10/18/05	ELITE		—		BLANK	1	X	
	10/19/05	Artistic	Woods	#28		EAST	1	X	
	10/19/05	Artistic	Woods	#28		West	1	X	
	10/20/05	Artistic	Woods	#29		EAST	1	X	
	10/20/05	Artistic	Woods	#29		West	1	X	
	10/20/05	Artistic				BLANK	1	X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature] SCL	10/21/05 4:30				
Relinquished by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time	Temperature of Samples	Shipping No.:
[signature]		[signature]	10.21.5 4:30p.		

Remarks:

Appendix I

Process Data Sheets

10/31/05

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Condition #3
Air Mesh Rods

Company Name Reliable Plating

Tank Identification EN Tank (West)

Plating Type: Electroless Nickel

Tank Dimensions: L 67 W 26 H 34 (31) (Units in) tank (Soln)

Rectifier Rated Capacity: NA

Run# 1 9:20 - 10:25 5min Readings ahead
10:26 - 11:27

Operating Conditions Recorded During Testing:

Freeboard Height:	3(8)	Inches Tank (to Exhaust)
Plating Solution Temperature	190	F
Plating Solution Nickel Conc.	____	oz/gal
Plating Solution Boric Acid Conc.	____	oz/gal
Plating Solution pH	____	pH
Plating Solution Surface Tension	____	dynes/cm
Plating Solution Specific Gravity	____	SG
Plating Voltage	NA	Volts
Average Amperage Applied	NA	Amperes
Calculated Ampere-Hr Usage	NA	A-hr
Calculated Current Density	NA	A/ft²
Number of Dummy Parts	____	pcs.
Total Surface Area of Plated Parts	____	ft²
Plating Period Within Test Run	115	min/test run ~~115~~
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate	____	acfm
Air Agitation Rate	____	scfm
Solution Circulation Rate (estimated)	____	gpm

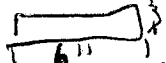
See Lab Report

See Below

See Below

9:25 - 10:09

72 parts



s:\engineer\air\stack test process data wksht.wpd

72 x 18 x 2 / 144 = 18 ft²

10:20 - 10:50

312 parts

~ 21n² each

312 x 2 / 144 = 4.3 ft²

11:10 - 11:27

416 parts

~ 2in² each

416 x 2 / 144 = 5.78 ft²

10/31/05

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Condition #3
- Air
- Mesh Pads

Company Name Reliable Plating

Tank Identification EN Tank (West)

Plating Type: Electroless Nickel

Tank Dimensions: L 68 W 26 H 34 (31) (Units in) (tank) (Solution)

Rectifier Rated Capacity: NA

Run# 2 11:55 - 12:55
12:57 - 1:57

Operating Conditions Recorded During Testing:

Freeboard Height:	3"(8)"	Inches tank (to Exhaust)
Plating Solution Temperature	190	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	NA	Volts
Average Amperage Applied	NA	Amperes
Calculated Ampere-Hr Usage	NA	A-hr
Calculated Current Density	NA	A/ft²
Number of Dummy Parts		pcs.
Total Surface Area of Plated Parts		ft²
Plating Period Within Test Run	15	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate		scfm
Solution Circulation Rate (estimated)		gpm

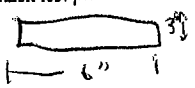
See Lab Report

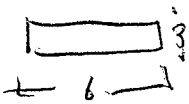
See Below

11:55 - 1:05 1:10 - 1:57

126 parts 108 parts

s:\engineer\air\stack test process data wksht.wpd





$\frac{18" \times 2 \times 126}{144} = 31.5\ ft^2$ $\frac{18 \times 2 \times 108}{144} = 27\ ft^2$

10/31/05

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Condition #3
- D.I.
- Fresh Parts

Company Name Reliable Plating

Tank Identification EN Tank (West)

Plating Type: Electroless Nickel

Tank Dimensions: L 68 W 26 H 34 (31) (Units in) tank (Solution)

Rectifier Rated Capacity: NA

Run# 3 12:24 - 3:20
3:21 - 4:26

Operating Conditions Recorded During Testing:

Freeboard Height:	3' (8")	Inches (to Exhaust)
Plating Solution Temperature	190	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	NA	Volts
Average Amperage Applied	NA	Amperes
Calculated Ampere-Hr Usage	NA	A-hr
Calculated Current Density	NA	A/ft²
Number of Dummy Parts		pcs.
Total Surface Area of Plated Parts		ft²
Plating Period Within Test Run	1DT	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate		scfm
Solution Circulation Rate (estimated)		gpm

See Lab Report

See Below

12:24 - 3:20
12 parts
13

3:35 - 4:26
1
Big Dummy Part

s:\engineer\air\stack test process data wksht.wpd

12 x 18" x 2 / 144 = 31.5 ft²

32"

dry ?

2' x 3' x 2 = 12 ft²

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Reliable Plating Condition #4 11/3/05

Tank Identification EN Tank Eductors Mesh PADS

Plating Type: ELECTROLESS Nickel

Tank Dimensions: L 68 W 26 H 34 (31) (Units in) Tank (Solution)

Rectifier Rated Capacity: NA

Run# 1 8:20-9:20

9:22 - 10:22

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (8") Inches	(to EXHAUST)
Plating Solution Temperature	190 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	NA Volts	
Average Amperage Applied	NA Amperes	
Calculated Ampere-Hr Usage	NA A-hr	
Calculated Current Density	NA A/ft²	See Below
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	120 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	____ %	
Ventilation Rate	____ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

8:20 - 9:40
2 BARRELS
small 9.25"

9:25-9:50
1 little Barrel
small, small necklaces pieces

9:40-10:22
2 Barrels

s:\engineer\air\stack test process data wksht.wpd

~1200 pieces in Barrel

2.0 x 2 $\frac{\pi D^2}{4} \times 1$

$\pi(.25) \times 1 + \frac{\pi(.22)^2}{4} \times 2 \times 1.25$ (for edges)

3.14 1.06 in² 1271 in² ↑ 8.8 ft²

1 ft² = 144 in² x1200 = 1728 in²

Condition #4 11/3/05

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Reliable Plating

Tank Identification EN Tank

Plating Type: ELECTROLESS Nickel

Tank Dimensions: L 68 W 26 H 34 (31) (Units in) Tank (Solution)

Rectifier Rated Capacity: NA

Run# 2 10:39 - 1639
11:40 - 12:40

Operating Conditions Recorded During Testing:

Freeboard Height:	3 (8")	Inches (to Exhaust)
Plating Solution Temperature	190	F
Plating Solution Nickel Conc.	____	oz/gal
Plating Solution Boric Acid Conc.	____	oz/gal
Plating Solution pH	____	pH
Plating Solution Surface Tension	____	dynes/cm
Plating Solution Specific Gravity	____	SG
Plating Voltage	NA	Volts
Average Amperage Applied	NA	Amperes
Calculated Ampere-Hr Usage	NA	A-hr
Calculated Current Density	NA	A/ft^2
Number of Dummy Parts	____	pcs.
Total Surface Area of Plated Parts	____	ft^2
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate	____	acfm
Air Agitation Rate	____	scfm
Solution Circulation Rate (estimated)	____	gpm

See Log Report

See Below

10:39 - 11:10 — 2 Barrels — inch — 3 inch steps

11:05 - 11:30 — 2 Racks — 6" — inch — Rings

11:20 - 12:50 — 2 Barrels — in

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See Run #1

Condition #4 11/3/05

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Reliable Plating

Tank Identification EN Tank

Plating Type: ELECTROLESS Nickel

Tank Dimensions: L 68 W 26 H 34 (31) (Units in)

Rectifier Rated Capacity: NA

Run# 3 12:58 – 1:58
1:58 – 2:58

Eductors
Mesh Pass
Tank (Solution)

Operating Conditions Recorded During Testing:

Freeboard Height:	3 (8")	Inches (to exhaust)
Plating Solution Temperature	120	F
Plating Solution Nickel Conc.	____	oz/gal
Plating Solution Boric Acid Conc.	____	oz/gal
Plating Solution pH	____	pH
Plating Solution Surface Tension	____	dynes/cm
Plating Solution Specific Gravity	____	SG (See Lab Report)
Plating Voltage	NA	Volts
Average Amperage Applied	NA	Amperes
Calculated Ampere-Hr Usage	NA	A-hr
Calculated Current Density	NA	A/ft²
Number of Dummy Parts	____	pcs.
Total Surface Area of Plated Parts	____	ft² (See Below)
Plating Period Within Test Run	60	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate	____	acfm
Air Agitation Rate	____	scfm
Solution Circulation Rate (estimated)	____	gpm

12:58 – 2:25
2 Barrells

2:25 – 2:58
1 Barrel

Hinds
same
Hinds

See Run #1

#5 11/2/05

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Edwelins
NO mesh pad

Company Name Reliable Plating

Tank Identification EN Tank

Plating Type: ELECTROLESS Nickel

Tank Dimensions: L 68 W 26 H 34 (31) (Units in) tank (Solution)

Rectifier Rated Capacity: NP

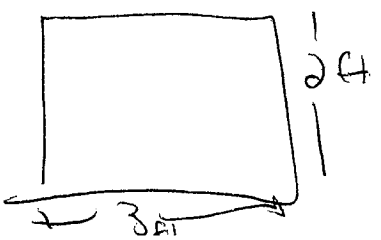
Run# 1 8:32 - 9:32
9:35 - 10:35

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (8") Inches	to Exhaust
Plating Solution Temperature	190 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	NA Volts	
Average Amperage Applied	NA Amperes	
Calculated Ampere-Hr Usage	NA A-hr	
Calculated Current Density	NA A/ft²	
Number of Dummy Parts	1 pcs.	See Below
Total Surface Area of Plated Parts	12 ft²	
Plating Period Within Test Run	120 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	____ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

8:32 - 10:35
1
Dummy

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2 x 3 x 2 = 12.0 ft²

#5 11/2/05
Eductors
No mesh pad

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Reliable Plating

Tank Identification EN Tank

Plating Type: Electroless Nickel

Tank Dimensions: L 68 W 26 H 34 (31) (Units in) tank (Solution)

Rectifier Rated Capacity: NA

Run# 2 10:55 - 11:55
11:58 - 12:58

Operating Conditions Recorded During Testing:

Freeboard Height:	3"(8)	Inches tank (to Exhaust)
Plating Solution Temperature	190	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	NA	Volts
Average Amperage Applied	NA	Amperes
Calculated Ampere-Hr Usage	NA	A-hr
Calculated Current Density	NA	A/ft²
Number of Dummy Parts	1	pcs.
Total Surface Area of Plated Parts	12	ft²
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate		scfm
Solution Circulation Rate (estimated)		gpm

See Lab Report

See Below

10:55 - 12:58

1 Dummy

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See RW #1

#5 11/2/05

Electro
NO Mesh Pad

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Reliable Plating

Tank Identification EN Tank

Plating Type: ELECTROLESS Nickel

Tank Dimensions: L 68 W 26 H 34 (31) (Units in) tank (Solution)

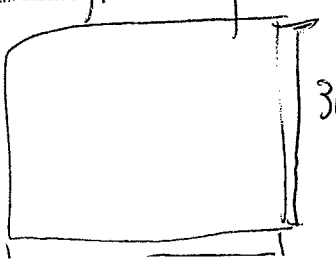
Rectifier Rated Capacity: NA

Run# 3 1:15 - 2:15
2:17 - 3:17

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (8") Inches	tank (Exhaust)
Plating Solution Temperature	190 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	NA Volts	
Average Amperage Applied	NA Amperes	
Calculated Ampere-Hr Usage	NA A-hr	
Calculated Current Density	NA A/ft²	
Number of Dummy Parts	1 pcs.	See Below
Total Surface Area of Plated Parts	12 ft²	
Plating Period Within Test Run	120 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	____ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

1:15 — 3:17
1 Dummy part



3ft x 2ft x 2 = 12ft²

#6 11/1/05

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Reliable Plating Dia ND Mesh Rod

Tank Identification EN Tank

Plating Type: ELECTROLESS Nickel

Tank Dimensions: L 68 W 26 H 34 (31) (Units in) Tank (Solution)

Rectifier Rated Capacity: NA

Run# 1 8:48 - 9:48
9:50 - 10:50

Operating Conditions Recorded During Testing:

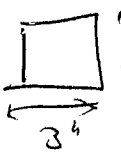
Freeboard Height:	3"(8") Inches	(& Exhaust)
Plating Solution Temperature	190 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	NA Volts	
Average Amperage Applied	NA Amperes	
Calculated Ampere-Hr Usage	NA A-hr	
Calculated Current Density	NA A/ft²	
Number of Dummy Parts	____ pcs	See Below
Total Surface Area of Plated Parts	____ ft²	See Below
Plating Period Within Test Run	114 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	____ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

8:54 - ~~10~~ 9:14 — 100 parts

9:14 - 9:32 — 32 parts

9:33 - 9:37 — 55 parts

9:40 - 9:48 — 30 parts



9:48 - 10:50 — 1 part

9:58 - 10:06 — 30 parts



10:18 - 10:26 — 15 parts



$\frac{3 \times 3 \times 2}{144} = \frac{30}{144}$

3.75 ft²

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

#6 11/1/05

Company Name Reliable Plating

Tank Identification EN Tank

Plating Type: ELECTROLESS Nickel

Tank Dimensions: L 68 W 26 H 34 (31) (Units In) tank (Solution)

Rectifier Rated Capacity: NA

Run# 2 11:12 - 13:12
13:14 - 1:14

Operating Conditions Recorded During Testing:

Freeboard Height:	3"(8")	Inches (to Exhaust)
Plating Solution Temperature	190	F
Plating Solution Nickel Conc.	____	oz/gal
Plating Solution Boric Acid Conc.	____	oz/gal
Plating Solution pH	____	pH
Plating Solution Surface Tension	____	dynes/cm
Plating Solution Specific Gravity	____	SG (See lab report)
Plating Voltage	NA	Volts
Average Amperage Applied	NA	Amperes
Calculated Ampere-Hr Usage	NA	A-hr
Calculated Current Density	NA	A/ft²
Number of Dummy Parts	1	pcs.
Total Surface Area of Plated Parts	12	ft² (See Below)
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate	____	acfm
Air Agitation Rate	____	scfm
Solution Circulation Rate (estimated)	____	gpm

11:12 — 1:14

1 dummy

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NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

#6 11/1/05
Air
NO Mesh RAD

Company Name Reliable Plating

Tank Identification EN Tank

Plating Type: ELECTROLESS Nickel

Tank Dimensions: L 68 W 26 H 34 (31) (Units In) tank (Solution)

Rectifier Rated Capacity: NA

Run# 3 1:30 - 2:30
2:35 - 5:35

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (8") Inches	(At Exhaust)
Plating Solution Temperature	190 F	
Plating Solution Nickel Conc.	____ oz/gal	See lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	NA Volts	
Average Amperage Applied	NA Amperes	
Calculated Ampere-Hr Usage	NA A-hr	
Calculated Current Density	NA A/ft²	
Number of Dummy Parts	1 pcs.	See Below
Total Surface Area of Plated Parts	12 ft²	
Plating Period Within Test Run	120 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	____ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

1:30 - 3:55

1 Dummy

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Condition #10 2/1/06 - Eductors - MeshRod - NO Nelly Agit

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ABAC

Tank Identification Rack Watts Nickel Tank

Plating Type: Rack Watts Nickel

Tank Dimensions: L 72" W 36 H 36 (33) (Units In) Tank (Solution)

Rectifier Rated Capacity: 12V

Run# 1 8:35 - 10:35

Operating Conditions Recorded During Testing:

Freeboard Height:	3 (9") Inches	(to Exhaust)
Plating Solution Temperature	140 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	88 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	- %	
Ventilation Rate	- acfm	
Air Agitation Rate	- scfm	
Solution Circulation Rate (estimated)	- gpm	

8:35 - 9:00
8,4 volts
210 Amps (Section)
72 parts (Section)
6 Racks (Section)

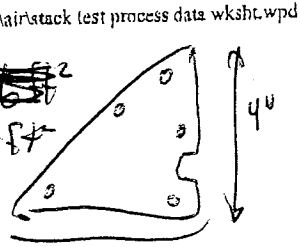
9:24 - 9:58
7.0 volts
210 Amps (Section)
144 parts (Section)
6 Racks (Section)

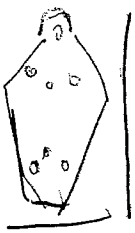
10:06 - 11:35

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4" x 0 x 72 / 144 = 8 ft²

210 Amp / 8 ft²





1.5 0 x 3.5 x 2 x 144 / 144 = 10.5 ft²

Conductor #10

Eductor
Mech Rod
NO Wetting Agent

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ABQC

Tank Identification Rack Watts Nickel Tank

Plating Type: Watts Nickel Rack

Tank Dimensions: L 72 W 36 H 36 (33) (Units In) Tank (Solution)

Rectifier Rated Capacity: 12V

Run# 2 10:57 - 12:57

Operating Conditions Recorded During Testing:

Freeboard Height:	3"(9")	Inches (to Fairwall)
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.	____	oz/gal
Plating Solution Boric Acid Conc.	____	oz/gal
Plating Solution pH	____	pH
Plating Solution Surface Tension	____	dynes/cm
Plating Solution Specific Gravity	____	SG
Plating Voltage	____	Volts
Average Amperage Applied	____	Amperes
Calculated Ampere-Hr Usage	____	A-hr
Calculated Current Density	____	A/ft²
Number of Dummy Parts	____	pcs.
Total Surface Area of Plated Parts	____	ft²
Plating Period Within Test Run	84	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	-	%
Ventilation Rate	-	acfm
Air Agitation Rate	-	scfm
Solution Circulation Rate (estimated)	-	gpm

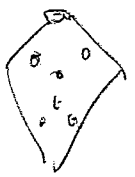
See Lab Report

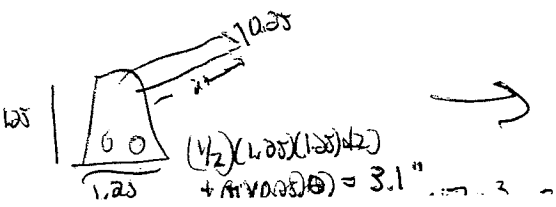
See Below

10:57 - 11:10	11:20 - 11:48	12:15 - 12:57
7.0 volts	5.0 volts	→
210 Amps (Section)	130 Amps (Section)	→
144 parts (Section)	~210 parts (Section)	→
6 Racks (Section)	6 Racks (Section)	→

See Run #1

$\frac{3.5 \times 1.5 \times 2 \times 144}{144} = 10.5\,ft^2$





Condit #10

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ABQC

Tank Identification Rack Walls Nickel Tank

Plating Type: Walls Nickel Tank

Tank Dimensions: L 72 W 36 H 38 (33") (Units in) Tank (Solution)

Rectifier Rated Capacity: 12V

Run# 3 1:15-2:15
2:16-3:16

Operating Conditions Recorded During Testing:

Freeboard Height:	3 (9") Inches	(to Extract)
Plating Solution Temperature	140 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	86 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	— acfm	
Air Agitation Rate	— scfm	
Solution Circulation Rate (estimated)	— gpm	

1:17 - 1:44 1:45 — 2:45

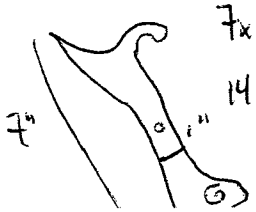
6.4 volts

210 amps (Section) →

72 parts (Section) →

6 racks (Section) →

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$7 \times 1 \times 2 = 14\ in^2$

$\frac{14\ in^2 \times 72}{144} = 7\ ft^2$ →

1/12/06 Condition #11

No Watts Mech PAD PAD

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ABOC

Tank Identification Watts Nickel (Rack) Tank

Plating Type: Watts Nickel (Rack

Tank Dimensions: L 72" W 36" H 36" (33") (Units In) Tank (Solution)

Rectifier Rated Capacity: 12V

8:20 - 11:20

Run# 1

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (9")	Inches (to Exhaust)
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage		Volts
Average Amperage Applied		Amperes
Calculated Ampere-Hr Usage		A-hr
Calculated Current Density		A/ft^2
Number of Dummy Parts		pcs.
Total Surface Area of Plated Parts		ft^2
Plating Period Within Test Run	100	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate	—	acfm
Air Agitation Rate	—	scfm
Solution Circulation Rate (estimated)	—	gpm

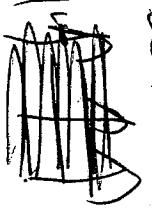
See Lab Report

See Below

8:20 - 8:55
8.4V
230 Amps (Section)
144 parts (Section)
6 Racks (Section

9:05 - 9:40
8.4
240 (Section)
168 parts
7 Racks

9:50 - 10:20
8.4
220 Amps (Section)
144 parts
6 Racks



$2" \times 2" \times 2 = 8 in^2$

$\frac{8 in^2 \times 144}{144} = 8 ft^2$

230 / 8 ft²



NICKEL AIR TEST PROJECT
PROCESS DATA SHEET #11 1/12/06

No Wetting Mesh Pads Air

Company Name ABQC

Tank Identification Watts Nickel Rack Tank

Plating Type: Watts Nickel Rack

Tank Dimensions: L 72" W 38" H 36"(33") (Units IN) Tank (Solution)

(AT 11:15 No Freeboard (36/36) operator filled tank very high)

Rectifier Rated Capacity: 12V

Run# 2 10:42 – 12:42

Operating Conditions Recorded During Testing:

Freeboard Height:	3"(9")	Inches (to Fr Board)
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage		Volts
Average Amperage Applied		Amperes
Calculated Ampere-Hr Usage		A-hr
Calculated Current Density		A/ft²
Number of Dummy Parts		pcs.
Total Surface Area of Plated Parts		ft²
Plating Period Within Test Run	100	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	–	%
Ventilation Rate	–	acfm
Air Agitation Rate	–	scfm
Solution Circulation Rate (estimated)	–	gpm

See Lab Report

See Below

10:42 – 11:05 11:15 – 11:45 11:55 – 12:42

8.4V

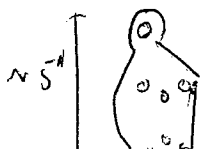
210 amp (Section)

144 Racks (Section)

6 Racks Section

1.5" x 3.5" x 2 = 10.5 in²

$\frac{10.5 in^2 \times 144}{144} = 10.5 ft^2$



No Health Mesh Pad Air

Condition #11 1/12/06

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name DBQC

Tank Identification Watts Nickel (Rack) Tank

Plating Type: Watts Nickel Rack

Tank Dimensions: L 72" W 36 H 36" (38") (Units in) Tank (Solution)

Rectifier Rated Capacity: 12V

Run# 3 1:00 - 3:10

Operating Conditions Recorded During Testing:

Freeboard Height:	0" 6"	Inches (to Exhaust)
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage		Volts
Average Amperage Applied		Amperes
Calculated Ampere-Hr Usage		A-hr
Calculated Current Density		A/ft²
Number of Dummy Parts		pcs.
Total Surface Area of Plated Parts		ft²
Plating Period Within Test Run	88	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate	—	acfm
Air Agitation Rate	—	scfm
Solution Circulation Rate (estimated)		gpm

See Lab Report

See Below

1:00 - 1:06
8.4V
210 Amps (Section)
144 parts (Section)
6 Racks (Section)

1:11 - 1:42
8.4V
210 Amps (Section)
72 parts (Section)
6 Racks (Section)

1:44 - 2:18
8.4V
210 Amps (Section)
72 parts (Section)
6 Racks (Section)

2:43 - 3:10
8.4 V
180 amps (Section)
6 parts
6 racks

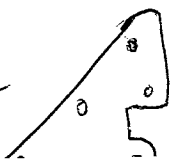
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10.5 ft²
20 Amps/ft²



Same part as

8ft²
26 Amp/ft



How Rept Resistn

1/11/06

No Mesh Bag
No Weld
Dir

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

#12

Company Name ABQC

Tank Identification Watts Nickel Tank (Rack)

Plating Type: Watts Nickel

Tank Dimensions: L 72" W 36 H 36 (33") (Units In) Tank (Solution)

Rectifier Rated Capacity: 12V

9:30 - 11:30

Run# 1

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (9")	Inches (to Exhaust)
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.	____	oz/gal
Plating Solution Boric Acid Conc.	____	oz/gal
Plating Solution pH	____	pH
Plating Solution Surface Tension	____	dynes/cm
Plating Solution Specific Gravity	____	SG
Plating Voltage	[redacted]	Volts
Average Amperage Applied	____	Amperes
Calculated Ampere-Hr Usage	____	A-hr
Calculated Current Density	____	A/ft²
Number of Dummy Parts	____	pcs.
Total Surface Area of Plated Parts	____	ft²
Plating Period Within Test Run	109	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate	—	acfm
Air Agitation Rate	____	scfm
Solution Circulation Rate (estimated)	____	gpm

See Lab Report

See Below

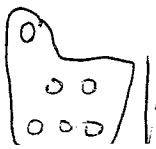
9:30 - 10:00 → 10:03 - 10:33 → 10:36 - 11:17 → 11:20 - 11:30

8.4 volts

240 [redacted] Amps (Secty)

168 parts (Secty)

7 Racks (Secty)



2"x2"x2 = 8in² 240/9.3 = 25.7 Amps/ft²

8in² x 168 / 144in² = 9.3 ft²

FROM :SCIENTIFIC CONTROL LABS   FAX NO. :17732546661   Oct. 31 2005 09:20AM P1

NICKEL AIR TEST PROJECT 1/11/06
PROCESS DATA SHEET

No Mesh Pads
No Mesh
Air

Company Name ABQL #12

Tank Identification Watts Nickel Tank (Rack)

Plating Type: Watts Nickel

Tank Dimensions: L 72 W 36 H 36 (33) (Units in) Tank (Sidewall)

Rectifier Rated Capacity: 12V

Run# 2 11:55 – 1:58

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (9")	Inches (to Exhaust)
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage		Volts
Average Amperage Applied		Amperes
Calculated Ampere-Hr Usage		A-hr
Calculated Current Density		A/ft²
Number of Dummy Parts		pcs.
Total Surface Area of Plated Parts		ft²
Plating Period Within Test Run	105	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	–	%
Ventilation Rate	–	acfm
Air Agitation Rate		scfm
Solution Circulation Rate (estimated)		gpm

(oz/gal through SG: See Lab Report; Volts through ft²: See Below)

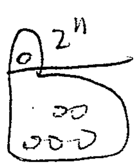
11:55 – 12:20
~~8.4v~~ 8.4v
240 ~~220~~ Amps (section)
168 parts (section)
7 Racks (section)

12:25 – ~~1:04~~ 12:58
8.4V →
210 Amps →
144 parts
(6 Racks) →

12:58 – 1:25

1:30 – 2:10

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≃ 20-25 Amps/ft²

2x2x2 = 8 in²

$\frac{8 in^2 \times 168}{144}$ = 9.33 ft²

22.7 Amps/ft²

1/11/07

No Mesh Pad
No Wetter
Air

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

#12

Company Name ASRL

Tank Identification Watts Nickel Fmk (Rack)

Plating Type: Watts Nickel Rack

Tank Dimensions: L 72 W 30 H 36 (33") (Units In) Tank (Solution)

Rectifier Rated Capacity: 12V

2:20 - 7:21

Run# 3

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (9") Inches	(to Exhaust)
Plating Solution Temperature	140 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	95 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	~ %	
Ventilation Rate	~ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

2:25 - ~~2:55~~ 3:15 ~~3:35~~ 4:21

8.4

180 Amps (Section) →

6 Racks (Section) →

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6 Racks (Section) →

Home Depot [redacted]

Condition #13

Mech Proc
Edwards
Welty Agent

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ABQC

Tank Identification Rack Watts Nickel Tank

Plating Type: Rack Watts Nickel

Tank Dimensions: L 72 W 36 H 36 (33") (Units in) (Tank) (Solution)

Rectifier Rated Capacity: 12V

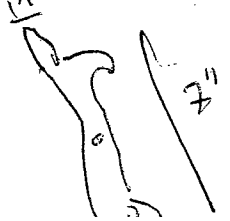
Run# 1 8:46 – 9:46
9:47 – 10:47

Operating Conditions Recorded During Testing:

Freeboard Height:	3 (9)	Inches (to Exhaust)
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG (See Lang Report)
Plating Voltage		Volts
Average Amperage Applied		Amperes
Calculated Ampere-Hr Usage		A-hr
Calculated Current Density		A/ft²
Number of Dummy Parts		pcs. (See Below)
Total Surface Area of Plated Parts		ft²
Plating Period Within Test Run	114	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	–	%
Ventilation Rate	–	acfm
Air Agitation Rate	–	scfm
Solution Circulation Rate (estimated)	–	gpm

8:46 – 10:38
5.0 volts
130 amps (Section)
22 parts (Section)
6 Racks (Section)

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7 x 1 x 2 = 14 in²
14 in² x 22 / 144 = 7 ft²

130/7ft² = 18.6 Amp/ft

Mesh Pads
Wetting Agent

(Condition #1) * Dir On Eductors (Same as Condition #1)

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ABQC

Tank Identification Rack Watts Nickel Tank

Plating Type: Rack Watts Nickel

Tank Dimensions: L 72 W 36 H 36(33) (Units In) Tank (Exhaust)

Rectifier Rated Capacity: 12V

Run# 2 11:21 – 1:21

Operating Conditions Recorded During Testing:

Freeboard Height:	3(9") Inches	(to Exhaust)
Plating Solution Temperature	140 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Rel'm
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	100 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	– %	
Ventilation Rate	– acfm	
Air Agitation Rate	– scfm	
Solution Circulation Rate (estimated)	– gpm	

11:21 – 11:57 | 11:58 – 12:25 | 12:35 – 1:01 | 1:05 – 1:21

5.0 volts
130 Amps (Section)
72 parts (Section)
6 Racks (Section)

See Run #1



#13

Mesh Rods
Wetting Agent
Air on
Eductor off
Bzne 2s Corrdnts 14)

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ABQC

Tank Identification Rack Walls Nickel Tank

Plating Type: Rack Walls Nickel

Tank Dimensions: L 72 W 36 H 36 (33") (Units IN) Tank (Existing)

Rectifier Rated Capacity: 12V

Run# 3 1:42 – 3:42

Operating Conditions Recorded During Testing:

Freeboard Height:	3(9") Inches	(to Forward)
Plating Solution Temperature	140 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	102 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	____ %	
Ventilation Rate	____ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

1:42 – 2:35
5.0 volts
180 amps (section)
72 parts (section)
6 Racks (section)

2:50 – 3:25
8.0 volts
180 amps →
6 parts →
6 racks →

3:30 – 3:42 →

Have Report →

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NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Cathode #14
- mesh pass Yes
- welly ground Yes
- air Yes

Company Name ASQC

Tank Identification Watts Nickel Tank

Plating Type: Rack Watts Nickel

Tank Dimensions: L 72" W 36" H 36" (33") (Units in) (tank) (Solution)
(testing Section)

Rectifier Rated Capacity: 18V

Run# 1 9:07 – 10:07
10:08 – 11:08

Operating Conditions Recorded During Testing:

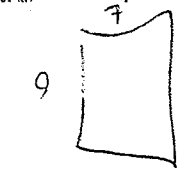
Freeboard Height:	3" (9")	Inches (to Exhaust)
Plating Solution Temperature	141	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG (See Lab Report)
Plating Voltage		Volts
Average Amperage Applied		Amperes
Calculated Ampere-Hr Usage		A-hr
Calculated Current Density		A/ft²
Number of Dummy Parts		pcs. (See Below)
Total Surface Area of Plated Parts		ft²
Plating Period Within Test Run	105	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate		scfm
Solution Circulation Rate (estimated)		gpm

9:07 – 9:50
7 volts (total)
350 amps (total) (126 amps)
5 parts (testing section)
14 parts (total)

10:02 – 10:35
7 volts (total)
200 amps (section) 420 amps (total)
70 parts (section)
192 parts (total)

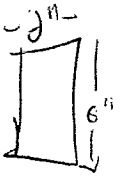
10:38 – 11:08
7 volts

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Complex
~1.5 ft²

(9×7)×2 + 1.5 = 189"



6×2×2 = 24"

11/7/05

Condition #4
- Mesh pad Yes
- Wetting agent Yes
- Air Yes

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ABEL

Tank Identification Watts Nickel Tank

Plating Type: Rack Watts Nickel

Tank Dimensions: L 72" W 36" H 36" (33") (Units In) tank (solution)

Rectifier Rated Capacity: 12V

Run# 2 11:29 – 12:29
12:31 – 1:41

Operating Conditions Recorded During Testing:

Freeboard Height:	3"(9") Inches	(to Exhaust)
Plating Solution Temperature	140 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	96 ~~100~~ min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	____ %	
Ventilation Rate	____ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

11:29 – 11:45
7 Volts
960 Amps (total)
200 Amps (Section)
80 parts (Section)
192 parts (total)

11:56 – 12:25

12:33 – 1:05

1:12 – 1:41
7 Volts
400 amps (total)
120 amps (Section)
36 parts (Section)
120 parts (total)

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11,67 ft²



120 amps / 6 = 20A/pc

11/7/05

Condition #14
- Mesh Pad Yes
- Welding Gant Yes
- Air Yes

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ABQC

Tank Identification Watts Nickel Tank

Plating Type: Rod Watts Nickel

Tank Dimensions: L 72" W 36" H 36" (33") (Units in) tank (Solution)

Rectifier Rated Capacity: 12V

Run# 3A 1:48 - 2:48
2:50 - 3:50

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (9") Inches	(to Exhaust)
Plating Solution Temperature	140 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	0 Volts	
Average Amperage Applied	0 Amperes	
Calculated Ampere-Hr Usage	0 A-hr	
Calculated Current Density	0 A/ft^2	
Number of Dummy Parts	0 pcs.	
Total Surface Area of Plated Parts	0 ft^2	
Plating Period Within Test Run	0 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	____ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

11/8/05

Condition #15
Mesh Pad (Yes)
Bin (Yes)
Heater (Yes)

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ABEL

Tank Identification ~~[redacted]~~ Rack Walls Nickel Tank

Plating Type: Rack Walls Nickel

Tank Dimensions: L 72 W 36 H 36" (33") (Units in) Tank (Solution)

Rectifier Rated Capacity: 12V

Run# 2 11:06 - 12:06
12:08 - 1:08

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (4")	Inches
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage		Volts
Average Amperage Applied		Amperes
Calculated Ampere-Hr Usage		A-hr
Calculated Current Density		A/ft²
Number of Dummy Parts		pcs.
Total Surface Area of Plated Parts		ft²
Plating Period Within Test Run	92 ~~[redacted]~~	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System		%
Ventilation Rate		acfm
Air Agitation Rate		scfm
Solution Circulation Rate (estimated)		gpm

See Lab Report

See Below

11:06 - 11:15
7 volts
200 amps (Section)
460 total
70 parts (Section)
192 amps (total)

11:20 - 11:55

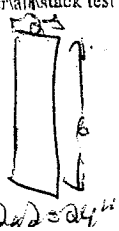
12:16 - [redacted]

Dock Door open

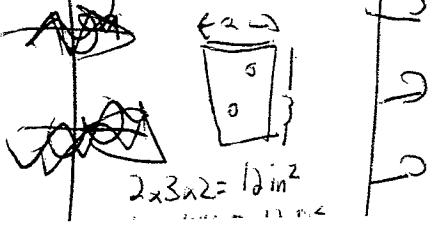
7 volts
280 amps (Section)
144 parts

1:20 - 1:08
220 amps (Section)
138 parts (Section)

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17 amps/ft²



11/8/05

Conditions #15
Mesh Pads Yes
Air Yes
Wetter Yes

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ABQC

Tank Identification Rack Walls Nickel Tank

Plating Type: Rack Watts Nickel

Tank Dimensions: L 92 W 36 H 36 (33") (Units in) Tank (Solution)

Rectifier Rated Capacity: 12V

Run# 3 1:37 — 2:37
2:40 — 3:40

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (9") Inches	(to Surface)
Plating Solution Temperature	145 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	96 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	____ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

1:37 — 2:13
7 volts
240 Amps (Section)
144 parts (Section)
480 amps (total)

2:26 — 2:50

3:05 — 3:40
7 volts
120 amps
48 parts

s:\engineer\air\stack test process data wksht.wpd



20 Amps/ft

$\frac{2 \times 3 \times 2 \times 48}{144} = 4.0 \text{ ft}^2$

$\frac{120 \text{ Amp}}{4.0 \text{ ft}^2} = 30 \text{ Amps/ft}^2$

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

(#18)

Company Name Artistic Plating Company - 9/27/05

Tank Identification Watts Nickel Barrel - Norwalk, Conn

Plating Type: Watts Nickel Barrel

Tank Dimensions: L 75 W 37 H 43 (45) (Units in) (solution) (with Barrel in) (TANK)
48

Rectifier Rated Capacity: 28v 1000 amps

(3")(8") with Barrel In
5"(10")

Run# 1 ~~9:38~~ 9:38 - 10:38
10:48 - 11:42

Operating Conditions Recorded During Testing:

Freeboard Height:	~~[redacted]~~ Inches	in Tank (to Exhaust)
Plating Solution Temperature	140 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	18(1) / 18(2) Volts	
Average Amperage Applied	300(1) / 400 Amperes	
Calculated Ampere-Hr Usage	601 / 653 A-hr	713 A-hr (total)
Calculated Current Density	7.46(1) / 5.28(2) A/ft²	
Number of Dummy Parts	1995(1) / 9825(2) pcs. (Barrel)	
Total Surface Area of Plated Parts	40.2(1) / 75.7(2) ft² (Barrel)	
Plating Period Within Test Run	110 min/test run	~~9:38~~ 9:38 - 9:50 (1) 9:57 - 10:53 (2)
Duration of Test Run	120 min/test run	10:55 - 11:30
Capture Efficiency of Ventilation System	— %	11:31 - 11:42
Ventilation Rate	____ acfm	
Air Agitation Rate	NA scfm	
Solution Circulation Rate (estimated)	25 gpm	

(1) production load Part # 206584
(2) dummy load (Billets)

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

#18

Company Name Artistic Plating Company - 9/27/05

Tank Identification W.N. Nickel Barrel - no weather, CMP

Plating Type: W.N. Nickel Barrel

Tank Dimensions: L 75 W 37 H 43 (45) (Units in) (Solution) (with Barrel In) (tank)
48

Rectifier Rated Capacity: 25V 1000 amp

Run# 2 12:06 - 1:06
1:08 - 2:08

Operating Conditions Recorded During Testing:

3" (6") with Barrel In
5" (10") Inches Tank (to exhaust)

Freeboard Height:		
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	18	Volts
Average Amperage Applied	400	Amperes
Calculated Ampere-Hr Usage	786	A-hr
Calculated Current Density	5.38	A/ft²
Number of Dummy Parts	9825	pcs. 1 Barrel
Total Surface Area of Plated Parts	74.7	ft² 1 Barrel
Plating Period Within Test Run	118	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	25	gpm

See Lab Report

12:06 - 12:45
12:46 - 1:38
1:39 - 2:08

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Artistic Plating Company 9/27/05 (#18)

Tank Identification Watts Nickel Barrel - no meltn, CM?

Plating Type: Watts Nickel Barrel

Tank Dimensions: L 75 W 37 H 43 (45) 48 (Units in) (Solutn) (with Barrel In) (tank)

Rectifier Rated Capacity: 25 V 1000 amps

Run# 3 2:29 - 3:29
3:31 - 4:31

3" (8") with Barrel In

5" (10") Inches Tank (to Exhaust)

Operating Conditions Recorded During Testing:

Freeboard Height:	143	F
Plating Solution Temperature		oz/gal
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		pH
Plating Solution pH		dynes/cm
Plating Solution Surface Tension		SG
Plating Solution Specific Gravity	18	Volts
Plating Voltage	400	Amperes
Average Amperage Applied	786	A-hr
Calculated Ampere-Hr Usage	5.28	A/ft²
Calculated Current Density	9825	pcs. (Barrel)
Number of Dummy Parts	75.7	ft² (Barrel)
Total Surface Area of Plated Parts	118	min/test run 2:29 - 2:45
Plating Period Within Test Run	120	min/test run 2:45 - 4:09
Duration of Test Run	—	% 4:10 - 4:31
Capture Efficiency of Ventilation System		acfm
Ventilation Rate	NA	scfm
Air Agitation Rate	25	gpm
Solution Circulation Rate (estimated)		

See Lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

(#19)

Company Name 9/28/05 Artistic Plating Company

Tank Identification Walls Nickel Barrel - no wells, no cmf, no transfer

Plating Type: Walls Nickel Barrel

Tank Dimensions: L 75 W 37 H 43 (45) 48 (Units in) (Solution) (with Barrel in tank)

Rectifier Rated Capacity: 25V 1000amp

Run# 1 12:00 ~~12:30~~ 12:30
~~12:31~~ 12:31 – 1:31

3" (8") → with Barrel in
5" (10") Inches Tank (to Exhaust)

Operating Conditions Recorded During Testing:

Freeboard Height:		Inches
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	18	Volts
Average Amperage Applied	400	Amperes
Calculated Ampere-Hr Usage	400	A-hr
Calculated Current Density	5.28	A/ft²
Number of Dummy Parts	9825	pcs. Barrel
Total Surface Area of Plated Parts	75.7	ft² /Barrel
Plating Period Within Test Run	60	min/test run – Dummy parts plating 2/3 time
Duration of Test Run	60	min/test run
Capture Efficiency of Ventilation System	–	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	25	gpm

See Lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name 1/2 of Artistic Plating (#19)

Tank Identification Walb Nickel Barrel - no wells, no CMP, no Fans

Plating Type: Walb Nickel Barrel

Tank Dimensions: L 75 W 37 H 43 (Units In) (Solution) (Tank)
48

Rectifier Rated Capacity: 25 v 1000 amp

Run# 2 1:38 - 2:08
2:09 - 2:39

3" (8") → with Barrel in Tank
5" (10") Inches Tank (to Exhaust)

Operating Conditions Recorded During Testing:

Freeboard Height:	140	F
Plating Solution Temperature		oz/gal
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		pH
Plating Solution pH		dynes/cm
Plating Solution Surface Tension		SG
Plating Solution Specific Gravity	18	Volts
Plating Voltage	400	Amperes
Average Amperage Applied	400	A-hr
Calculated Ampere-Hr Usage	5.28	A/ft²
Calculated Current Density	4825	pcs. 1 Barrel
Number of Dummy Parts	75.7	ft² 1 Barrel
Total Surface Area of Plated Parts	60	min/test run - Dummy Rods plated 2X this
Plating Period Within Test Run	60	min/test run
Duration of Test Run	—	%
Capture Efficiency of Ventilation System		acfm
Ventilation Rate	NA	scfm
Air Agitation Rate	25	gpm
Solution Circulation Rate (estimated)		

See LDS Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Artistic Plating Co 9/28/05

Tank Identification Walls Nickel Barrel - no rectifier, no CMP, no transfer

Plating Type: Walls Nickel Barrel

Tank Dimensions: L 75 W 37 H 43 (Units IN) Solution Tank
48

Rectifier Rated Capacity: 24V 1000 amp

Run# 3 3:29 - 3:59
4:00 - 4:30

3" (8") with Barrel In

Operating Conditions Recorded During Testing:

Freeboard Height:	5" (10")	Inches Tank (to Exhaust)
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	18	Volts
Average Amperage Applied	400	Amperes
Calculated Ampere-Hr Usage	400	A-hr
Calculated Current Density	5.28	A/ft²
Number of Dummy Parts	9825	pcs. Barrel
Total Surface Area of Plated Parts	75.7	ft² Barrel
Plating Period Within Test Run	60	min/test run Dummy parts plating
Duration of Test Run	60	min/test run 2M tank
Capture Efficiency of Ventilation System	-	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	25	gpm

See Lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Artistic Plating Co 9/29/05 #20

Tank Identification Watts Nickel Barrel - welton, CMP

Plating Type: Watts Nickel Barrel

Tank Dimensions: L 75 W 37 H 43 (45) 48 (Units In) Solution (with Barrel) Tank

Rectifier Rated Capacity: 25V 1000amps

Run# 1 8:57 - 9:57
9:58 - 10:58

Operating Conditions Recorded During Testing:

3" (8") with Barrel In
5" (10") Inches Tank (to Exhaust)

Freeboard Height:						
Plating Solution Temperature					140	F
Plating Solution Nickel Conc.						oz/gal
Plating Solution Boric Acid Conc.						oz/gal
Plating Solution pH						pH
Plating Solution Surface Tension						dynes/cm
Plating Solution Specific Gravity						SG
Plating Voltage	18	18	18	18		Volts
Average Amperage Applied	600	100	400	500	500	Amperes
Calculated Ampere-Hr Usage	70	33	100	92	91.7	A-hr (total) 587
Calculated Current Density	5.71	16.9	11.1	1.56	14.76	A/ft²
Number of Dummy Parts	21,587	3026	2000	[redacted]	21,587	pcs.
Total Surface Area of Plated Parts	105	5.9	36.0	322	105	ft²
Plating Period Within Test Run						88 min/test run
Duration of Test Run						120 min/test run
Capture Efficiency of Ventilation System						— %
Ventilation Rate						acfm
Air Agitation Rate						NA scfm
Solution Circulation Rate (estimated)						25 gpm

Fe Lbs Req'd

(1) 8:57 - 9:04
(2) 9:34 - 9:44
(3) 9:50 - 10:05
(4) 10:12 - 10:47
(5) 10:49 - 10:58

(1) X10558 (93 lbs/Barrel)
(2) 406906DD (4 lbs)
(3) 2-pads 5M?4 2355 33 lbs 600 pieces
(4) 301 - [redacted] [redacted] [redacted] Bag
(5) X11TTX (95 lbs/Barrel) 2500 pcs

06KG 82 lbs
1400 pcs
1 Nle

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Patriot Plating Co 9/20/05 H2O

Tank Identification WaHs Nickel Barrel - Wells, CMP

Plating Type: WaHs Nickel Barrel

Tank Dimensions: L 75 W 37 H 43 (45) (Units In) Solution (with Barrel in)
48 Tank

Rectifier Rated Capacity: 25V 1000 Amp

Run# 2 11:29 - 12:29
12:30 - 1:30

3" (8") with Barrel In
5" (10") Inches tank (No Barrel)

Operating Conditions Recorded During Testing:

Freeboard Height:			Inches	
Plating Solution Temperature		140	F	
Plating Solution Nickel Conc.			oz/gal	See Lab Report
Plating Solution Boric Acid Conc.			oz/gal	
Plating Solution pH			pH	
Plating Solution Surface Tension	(1) 12)		dynes/cm	
Plating Solution Specific Gravity			SG	
Plating Voltage	18 18		Volts	
Average Amperage Applied	400 400		Amperes	
Calculated Ampere-Hr Usage		706	A-hr total	
Calculated Current Density	5.29 5.28		A/ft²	
Number of Dummy Parts	16 10 9 8 7		pcs./Barrel	
Total Surface Area of Plated Parts	75.5 75.7		ft²	
Plating Period Within Test Run		106	min/test run	11:33 - 11:44 (1)
Duration of Test Run		120	min/test run	11:53 - 12:55 (2)
Capture Efficiency of Ventilation System		—	%	12:58 - 1:30 (3)
Ventilation Rate			acfm	
Air Agitation Rate		NA	scfm	
Solution Circulation Rate (estimated)		25	gpm	

= 379

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(1) 07 117.27 2 lbs 10,500 pcs (double) (0.52m²)(10,500)/144
(1) A42/64 - 266-03 32 lbs 5650 (Double) (0.96m²)(5650)/144 376 ft²
(2) Dummy Rods (Billets)

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Artistic Plating Co 9/29/05 #20

Tank Identification Walls Nickel Barrel Wells, CMP

Plating Type: Walls Nickel Barrel

Tank Dimensions: L 74 W 37 H 43 1/2 (Units in) Solution Cloth Barrel in Tank

Rectifier Rated Capacity: 25V 1000 Amp

Run# 3 1:58 - 2:58
2:58 - 3:58

Operating Conditions Recorded During Testing:

3" (8") with Barrel in

Freeboard Height:	5" (11")	Inches TANK (to Exhaust)
Plating Solution Temperature	140	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	18	Volts
Average Amperage Applied	400	Amperes
Calculated Ampere-Hr Usage	773. [redacted]	A-hr
Calculated Current Density	5.28	A/ft²
Number of Dummy Parts	0825	pcs. only dummy parts
Total Surface Area of Plated Parts	75.7	ft²
Plating Period Within Test Run	116	min/test run 1:58 - 3:10
Duration of Test Run	120	min/test run 3:12 - 5:40
Capture Efficiency of Ventilation System	—	% 3:42 - 3:59
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	25	gpm

See lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Artistic Plating Co. 9/30/15 #21

Tank Identification Wills Nickel Barrel Wells, no CMP, no Transfer

Plating Type: Wills Nickel Barrel

Tank Dimensions: L 75 W 37 H 43 (45) (Units In) Solution (with Barrel in)
48 Tank

Rectifier Rated Capacity: 25v 1000amp

Run# 1 10:03 - 10:38
10:34 - 11:04

(3") (18") with Barrel In
(5")(10") Inches Tank (to Exhaust)

Operating Conditions Recorded During Testing:

Freeboard Height:	140-145	F
Plating Solution Temperature		oz/gal
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		pH
Plating Solution pH		dynes/cm
Plating Solution Surface Tension		SG
Plating Solution Specific Gravity	18	Volts
Plating Voltage	400	Amperes
Average Amperage Applied	800	A-hr
Calculated Ampere-Hr Usage	528	A/ft²
Calculated Current Density	9527	pcs. per Barrel
Number of Dummy Parts	757	ft²
Total Surface Area of Plated Parts	60	min/test run
Plating Period Within Test Run	60	min/test run
Duration of Test Run	—	%
Capture Efficiency of Ventilation System		acfm
Ventilation Rate	ND	scfm
Air Agitation Rate	25	gpm
Solution Circulation Rate (estimated)		

See Log Report

Dummy Part

Haze noticed on parts

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Detroit Plating Co. 9/30/05 #21

Tank Identification Wells Nickel Barrel Nickel, no amps no Reverse

Plating Type: Watts Nickel Barrel

Tank Dimensions: L 75 W 37 H 43 (45) (Units in) Solution / with Barrels in Tank
48

Rectifier Rated Capacity: 25V 1000 amp

Run# 2 11:35 - 12:01
12:36 - 12:36

3 (18") with Barrel in Tank (to Fahrenheit)

Operating Conditions Recorded During Testing:

Freeboard Height:	5" 10"	Inches
Plating Solution Temperature	145-149 ~~140~~	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	18	Volts
Average Amperage Applied	400	Amperes
Calculated Ampere-Hr Usage	800	A-hr
Calculated Current Density	5.28	A/ft²
Number of Dummy Parts	9825	pcs. 1 Barrel
Total Surface Area of Plated Parts	75.7	ft²
Plating Period Within Test Run	60	min/test run
Duration of Test Run	60	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	No	scfm
Solution Circulation Rate (estimated)	25	gpm

See Lab Report

Dummy Parts

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Artistic Plating Co. 9/30/05 #21

Tank Identification Walls Nickel Barrel Wells, no AMP, no Trough

Plating Type: Watts Nickel Barrel

Tank Dimensions: L 75 W 37 H 43 (48) (Units in) Solution (with Barrel) 48

Rectifier Rated Capacity: 25V 1000 amps

Run# 3 1:05-1:35
1:36-2:06

Operating Conditions Recorded During Testing:

3' (8") with Barrel In Tank (to Cathode)

Freeboard Height:	5" (10")	Inches
Plating Solution Temperature	149-155 ~~150~~	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	18	Volts
Average Amperage Applied	400	Amperes
Calculated Ampere-Hr Usage	800	A-hr
Calculated Current Density	5.28	A/ft^2
Number of Dummy Parts	~~285~~	pcs.
Total Surface Area of Plated Parts	~~77.7~~	ft^2
Plating Period Within Test Run	60	min/test run
Duration of Test Run	60	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	29	gpm

See Lab Report

Dummy Panels

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

10/18/05 #22

Company Name ELITE

Tank Identification Rack Nickel Sulfamate

Plating Type: Rack Nickel Sulfamate

Tank Dimensions: L 96 W 36 H 61" (59)" (Units in) Tank (Solution)

Rectifier Rated Capacity: 9 volts

Run# 1 8:38-9:38
9:39-10:39

Operating Conditions Recorded During Testing:

Freeboard Height:	2"(8")	Inches Solution (to Exhaust)
Plating Solution Temperature	135	F.
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage		Volts
Average Amperage Applied		Amperes
Calculated Ampere-Hr Usage		A-hr
Calculated Current Density		A/ft^2
Number of Dummy Parts		pcs.
Total Surface Area of Plated Parts		ft^2
Plating Period Within Test Run	96	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	UNKNOWN	scfm
Solution Circulation Rate (estimated)	2000-3000 /	~~spm~~ sph

See Lab Report

See Below

See Below

	#30	#7	02	#5	#16
	7.2	7.2	7.2	7.2	7.2
	860	740	1080	1090	1040

Rack 30 8:38-8:42
Volts 7.2
Amps 860

07 8:44-8:52
7.2
740

02 8:54-9:02
7.2
1040
10
22.20
48.6

05 9:04-9:12
7.2
1090
10
22.0
48.5

16 9:14-9:22
7.2
1040
17
17.46
58.5

20 9:24-9:32
6.4
840
16
17.76
45.0

#30 10:39-10:58
8.2
1100
16
17.76
61.9

Parts 16
ft² 14.65
Amps/ft² 58.7 Amps/ft²

60
17.36
42.6

#31 9:34-9:42
8.4
1040
8

#28 9:44-9:52
8.2
1060
16

#23 9:54-10:00
8.2
1020
10

#38 10:04-10:12
8.2
1020
10

17 10:14-10:32
5.8
700
10

37 10:34-10:38
8.2
1060
10

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

10/18/05 #22

Company Name ELITE

Tank Identification Rack Nickel Sulfamate (Rack)

Plating Type: Rack Nickel Sulfamate

Tank Dimensions: L 96 W 36 H 61" (58") (Units in) Tank (Solution)

Rectifier Rated Capacity: 9V

Run# 2 11:36-12:36 / 12:37-1:37

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (9") Inches	(to Edges)
Plating Solution Temperature	135 F,	
Plating Solution Nickel Conc.	____ oz/gal	See Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	96 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	____ acfm	
Air Agitation Rate	unknown scfm	
Solution Circulation Rate (estimated)	2000-3000 ~~gpm~~ gph	

#36	#12	#25	#10	#09	#33
11:36-11:44	11:46-11:54	11:56-12:04	12:06-12:14	12:16-12:24	12:26-12:34
Volts 8.2	6.0	7.0	7.0	7.0	7.8
Amps 1060	800	420	880	880	900
# Racks 16	16	10	29	8	8
Ft²/Amps/Rack 14.76/59.7	14.33/55.9	22.26/42	12.0/73.3	26.04/36.9	24.0/37.5

#30	#15	#19	#05	02	#16
12:36-12:44	12:46-12:54	12:58-1:04	1:06-1:14	1:16-1:24	1:26-1:34
Volts 7.6	6.8	8.0	8.0	8.0	8.0
Amps 900	560	1000	1040	1040	940
# Racks 16	10	10	10	10	16
Ft²/Amps/Rack 14.65/61.4	10.99/70.9	22.26/44.9	22.20/46.8	22.20/46.8	17.76/52.9

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NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

#22 10/18/05

Company Name ELITE

Tank Identification Rack Nickel Sulfamate

Plating Type: Rack Nickel Sulfamate

Tank Dimensions: L 96 W 36 H 61" (58") (Units In.) Tank (Solution)

Rectifier Rated Capacity: 9V

Run# 3 1:57 ~ 2:57
2:58 - 3:58

Operating Conditions Recorded During Testing:

Freeboard Height:	3 (9")	Inches to tank (to solution)
Plating Solution Temperature	135	F.
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage		Volts
Average Amperage Applied		Amperes
Calculated Ampere-Hr Usage		A-hr
Calculated Current Density		A/ft^2
Number of Dummy Parts		pcs.
Total Surface Area of Plated Parts		ft^2
Plating Period Within Test Run	96	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	unknown	scfm
Solution Circulation Rate (estimated)	2000-300 ~~spm~~ sph	

See Lab Report

See Below

#20	#21	#34	#03	#38	#37	#32
3:56-3:58	1:57-[redacted] 2:02	2:04-2:12	2:14-2:22	2:24-2:32	2:34-2:42	2:44-2:52
8	8.2	5.8	8.2	8.2	8.2	8.0
960	1040	660	1040	1040	1040	1060
	8	184	10	10	10	16
36.0	36.64	24.0/27.5	22.2	22.2	22.2	17.76
36.0	39.1		46.9	45.9	46.8	50.7

#06	#03	#31	#20	#36	#17
2:54-3:02	3:04-3:12	3:14-3:24	3:26-3:34	3:36-3:44	3:46-3:54
8.0	7.8	7.6	8.0	7.8	6.0
[redacted] 1040	1140	960	940	980	800
10	64			16	16

#23
w/ Eductor
No mesh Bag

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ELITE Finishing

Tank Identification Nickel Sulfamate Tank

Plating Type: Nickel Sulfamate

Tank Dimensions: L 96" W 36" H 61" (58") (Units In) Tank (Solution)

Rectifier Rated Capacity: 7 volts

Run# 1 8:53 - 9:53
9:54 - 10:54

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (9")	Inches (to Exhaust)
Plating Solution Temperature	135	F
Plating Solution Nickel Conc.	____	oz/gal
Plating Solution Boric Acid Conc.	____	oz/gal
Plating Solution pH	____	pH
Plating Solution Surface Tension	____	dynes/cm
Plating Solution Specific Gravity	____	SG
Plating Voltage	____	Volts
Average Amperage Applied	____	Amperes
Calculated Ampere-Hr Usage	____	A-hr
Calculated Current Density	____	A/ft^2
Number of Dummy Parts	____	pcs.
Total Surface Area of Plated Parts	____	ft^2
Plating Period Within Test Run	98	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate	—	acfm
Air Agitation Rate	—	scfm
Solution Circulation Rate (estimated)	____	gpm

See Lab Report

See Below

	8:53 - 8:58	9:10 - 9:08	9:10 - 9:18	9:20 - 9:25	9:30 - 9:40	9:44 - 9:52
	#20	#21	#37	#6	#29	#11
Volts	6.8 volts	7.8 volts	7.6	8.2	8.2	8.2
Amp	840 amps	1250 amps	800 amps	1100 amps	1100	1100
# parts	36 parts	186 parts	2	10 parts	10	10
ft^2/Amps/ft^2	00.0 /42	24.00 /52	1875 /42.7	022 /49.5	02.2 /49.5	00.00 /49.

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	9:54 - 10:02	10:04 - 10:12	10:14 - 10:22	10:24 - 10:32	10:32 - 10:40	10:40 - 10:50	10:50 - 10:58
	#36	#2	#30	#38	#3	#28	#15
	8.2	8.2	8.2	8.2	8.2	8.2	7.8
	1060	1300	760	1100	1100	1100	330
	16	180 parts	40 parts	16	16	16	9.40 /21.1
		24.0	16.0	1278	17.76/	17.76 /61.9	

Condition #23

No Mech Agit Eductors

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ELITE Finishing

Tank Identification Nickel Sulfamate Tank

Plating Type: Nickel Sulfamate

Tank Dimensions: L 96 W 36 H 61" (58") (Units in) Tank (Solution)

Rectifier Rated Capacity: 9 volts

Run# 2 11:14 – 12:14
12:15 – 1:15

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (9") Inches	(to Exhaust)
Plating Solution Temperature	135 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	90 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	____ acfm	
Air Agitation Rate	NA scfm	
Solution Circulation Rate (estimated)	— gpm	

11:14 – 11:16
#34
6.3 volts
500 Amps
60 parts
23.2 / 34.8

11:30 – 11:38
#33
8.2
1100 amps
10 parts
22.2 / 49.5

11:40 – 11:48
#27
11.0
1200 amps
270
22.1 / 54.3

11:50 – 11:58
#5
8.2
1100 amps
10 parts
22.2 / 49.5

12:10 – 12:08
#30
8.2
1100
10 parts
22.2 / 49.5

volts
Amps
#parts
ft²/Amp/ft²

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12:10 – 12:20
#35
8.2
1100 amp
10 parts

12:22 – 12:30
#19
8.4
1140
24 parts

12:32 – 12:40
#12
8.2
1100
10 parts

12:42 – 1:42
#30
8.2
900
40 parts

1:02 – 1:07
#10
6.0 volts
760 amps
24 parts

1:02 –
#29
8.2
1100
10 parts

Cadtec #23 w/ Eductor
no mech pass

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ELITE Finishing

Tank Identification Nickel Sulfamate Tank

Plating Type: Nickel Sulfamate

Tank Dimensions: L 96" W 36" H 61" (58") (Units in) Tank (Solutex)

Rectifier Rated Capacity: 9 volts

Run# 3 1:35 - 2:35
2:36 - 3:36

Operating Conditions Recorded During Testing:

Freeboard Height:	3"(9") Inches	(to Exhaust)
Plating Solution Temperature	135 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	64 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	____ %	
Ventilation Rate	____ acfm	
Air Agitation Rate	~ scfm	
Solution Circulation Rate (estimated)	____ gpm	

1:34 - 1:42 1:42 - 1:50 1:52 - 2:00 2:02 - 2:10 2:10 - 2:16 2:18 - 2:26

#36 Ø #6 #11 Ø #38

Volts 8.2 8.2 8.2 8.2 8.2

Amps 1060 [redacted] Amps 1100 Amps 1100 1100 1100 Amps

of Parts 16 10 parts 10 parts 14 parts

ft²/Amp/Hr 17.96/58.7 22.2/49.1 22.5/49.5 17.96/62.9

2:26 - 2:32 2:34 - 2:42 2:41 - 2:52 2:54 - 3:02 3:02 - 3:10 3:10 - 3:18

Ø #03 #13 #28 Ø #33

8.3 8.2 8.2 8.0

1150 Amps 1150 Amps 1100 Amp 1100

(6 parts) 19.40/ (6 parts) 10 22.2/40.7

11/16/05 #27

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

resin plugs
Extractor

Company Name ELITE Finishing

Tank Identification Nickel Sulfamate Tank

Plating Type: Nickel Sulfamate

Tank Dimensions: L 90 W 36 H 61" (58") (Units in) Tank (Solution)

Rectifier Rated Capacity: 9V

Run# 1 9:00 - 10:10
10:12 - 11:02

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (9")	Inches (to Freeboard)
Plating Solution Temperature	137	F
Plating Solution Nickel Conc.	____	oz/gal
Plating Solution Boric Acid Conc.	____	oz/gal
Plating Solution pH	____	pH
Plating Solution Surface Tension	____	dynes/cm
Plating Solution Specific Gravity	____	SG (See Lab Report)
Plating Voltage	____	Volts
Average Amperage Applied	____	Amperes
Calculated Ampere-Hr Usage	____	A-hr
Calculated Current Density	____	A/ft²
Number of Dummy Parts	____	pcs. (See Below)
Total Surface Area of Plated Parts	____	ft²
Plating Period Within Test Run	75	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	____	%
Ventilation Rate	____	acfm
Air Agitation Rate	~	scfm
Solution Circulation Rate (estimated)	____	gpm

9:06 - 9:20
#27
7.0 volts
720 amps
16 parts 14.65/49.1

9:22 - 9:30
#12
7.0
600 amps
30 parts 20.70/26.4

9:32 - 9:40
#17
7.0
640 amps
30 parts 22.7/26.4

9:42 - 9:50
03
6.0 V
400 amps
21 parts 15.25/26.2

9:50 - 10:16

Volts
amps
#of Parts

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10:16 - 10:24
#04
8.2 volts
1150 amps
10 parts

10:26 - 10:32
#09
8.2
1060 amps
16 parts

10:32 - 10:40
#35
8.2
1060
16 parts

10:47 - 10:48
#04
8.2
1100
10 parts

10:50 - 10:56
#19
8.2
1100
10 parts 22.20/40.7

10:55-11:0
#15
7.8
340 amps
9.47/38.1

11/16/05 Condition #25 Mech Rods Eductrs)

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ELITE Finish

Tank Identification Nickel Sulfamate Tank

Plating Type: Nickel Sulfamate

Tank Dimensions: L 90 W 36 H 61" (58") (Units in) tank (Solution)

Rectifier Rated Capacity: 9 volts

Run# 2 11:21 - 12:21
12:21 - 1:22

Operating Conditions Recorded During Testing:

Freeboard Height:	3"(9") Inches	(to Exhaust)
Plating Solution Temperature	135 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	45 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	~ %	
Ventilation Rate	____ acfm	
Air Agitation Rate	~ scfm	
Solution Circulation Rate (estimated)	____ gpm	

	11:22 - 11:28	11:30 - 11:36	11:38 - 11:44	12:55 - 1:22 dummy
	#38	#33	#37	#05
Volts	8.2	8.2	8.0	8.0
Amps	1060	1060	260 amps	1020 Amps
# of Racks	10 racks	10 racks	1 rack	27 racks
sq ft	22.2	22.2	0.40	24 ft²
Amps/ft²	47.7	47.7	27.4	41.7

11/16/05 Condition #25

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ELITE Finishing

Tank Identification Nickel Sulfamate Tank

Plating Type: Nickel Sulfamate

Tank Dimensions: L 90 W 36 H 61 (58) (Units in) tank (Solution)

Rectifier Rated Capacity: 9 Volts

Run# 3 1:40 - 2:40
2:41 - 3:41

Mesh Pads Eductors

<u>Operating Conditions Recorded During Testing:</u>

Freeboard Height:	3" 0"	Inches (to Exhaust)
Plating Solution Temperature	135	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	8.0	Volts
Average Amperage Applied	1000	Amperes
Calculated Ampere-Hr Usage		A-hr
Calculated Current Density		A/ft²
Number of Dummy Parts	27	pcs.
Total Surface Area of Plated Parts	24	ft²
Plating Period Within Test Run	99 ~~120~~	min/test run 1:40 - 3:20
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	—	scfm
Solution Circulation Rate (estimated)		gpm

See Lab Report

Dummy Parts
1:40 - 3:20
8.0 volts
1000 Amps
24 parts
24 ft²
N/A

12/1/05 Condition 26 300A

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

- Width
- Dia
- No mesh Rods

Company Name CLITE Finishing

Tank Identification Nickel Sulfamate Tank

Plating Type: Nickel Sulfamate (looks Fourmile thru Condition 22)

Tank Dimensions: L 96" W 36" H 61" (58") (Units In) Tank (Solution

Rectifier Rated Capacity: 9 volts

Run# 1 10:12 - 10:14
11:15 - 12:12

Operating Conditions Recorded During Testing:

Freeboard Height:	3"/9" Inches	(In Exhaust
Plating Solution Temperature	137 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	88 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	____ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

10:12-10:25
#9
6V
1000 Amps
72 parts
18.0/55.6

10:25-10:48
9

10:48-11:10
#37
7.0V
900 Amps
16 parts
17.76/50.7

11:18-11:30
#33
7.0V
1300 amps
8 parts
48.9

10:22-11:30
#21
7.0V
1100 Amps
30 parts
22.2
44.0

volts
Amp
Adjust
Amp/Amp Ft

11:31-11:40
#05
7.0V
700 Amps
32 parts

11:42-12:10 - 12:12
#12
8.0 volts
1100 amps
16 parts

#27
8.0 volts
500 Amps

12/1/05 Condition #26 316A

Air
No Mesh Pads
wells

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name ELITE Finishing

Tank Identification Nickel Sulfamate Tank

Plating Type: Nickel Sulfamate

Tank Dimensions: L 96" W 38" H 61" (58") (Units In) tank (Solution)

Rectifier Rated Capacity: 9V

Run# 2 12:27 - 1:35
1:24 - 5:28

Operating Conditions Recorded During Testing:

Freeboard Height:	3" (9") Inches	(to Exhaust)
Plating Solution Temperature	135 F	
Plating Solution Nickel Conc.	____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	____ oz/gal	
Plating Solution pH	____ pH	
Plating Solution Surface Tension	____ dynes/cm	
Plating Solution Specific Gravity	____ SG	
Plating Voltage	____ Volts	See Below
Average Amperage Applied	____ Amperes	
Calculated Ampere-Hr Usage	____ A-hr	
Calculated Current Density	____ A/ft²	
Number of Dummy Parts	____ pcs.	
Total Surface Area of Plated Parts	____ ft²	
Plating Period Within Test Run	____ min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	____ acfm	
Air Agitation Rate	____ scfm	
Solution Circulation Rate (estimated)	____ gpm	

12:27 - 12:35
#36
7.0 volts
400 amps
1 part/9.4/46

12:37 - 12:45
#25
6.0
800 amps
180 part/24/383

12:47 - 12:55
#11
8.0 volts
1100 amps
10 part/20.2/495

12:57 - 1:15 -
#10
6V
580 amps
7 parts/15.8/384

1:15 - 1:24
Ø

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1:24 - 1:33
#24
4 volts
300 amps
50 parts/12.7/189

1:33 - 1:53
Ø

1:53 - 2:20
#19
8.0 volts
590 amps
2 parts/15.25/374

2:20 - 2:28
Ø

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

12/1/05 Conductor #216 3064

Company Name ELITE FINISH

Tank Identification Nickel Sulfamate Tank

Plating Type: Nickel Sulfamate

Tank Dimensions: L 96" W 36" H 61" (58") (Units in) tank Solution

Rectifier Rated Capacity: 9V

Run# 3 2:40 – 3:42
3:53 – 4:41

Operating Conditions Recorded During Testing:

Freeboard Height:	3"(9") Inches	(to Fairwood
Plating Solution Temperature	135 F	
Plating Solution Nickel Conc.	_____ oz/gal	See Lab Report
Plating Solution Boric Acid Conc.	_____ oz/gal	
Plating Solution pH	_____ pH	
Plating Solution Surface Tension	_____ dynes/cm	
Plating Solution Specific Gravity	_____ SG	
Plating Voltage	_____ Volts	See Below
Average Amperage Applied	_____ Amperes	
Calculated Ampere-Hr Usage	_____ A-hr	
Calculated Current Density	_____ A/ft²	
Number of Dummy Parts	_____ pcs.	
Total Surface Area of Plated Parts	_____ ft²	
Plating Period Within Test Run	1 min/test run	
Duration of Test Run	120 min/test run	
Capture Efficiency of Ventilation System	— %	
Ventilation Rate	_____ acfm	
Air Agitation Rate	_____ scfm	
Solution Circulation Rate (estimated)	_____ gpm	

2:40 – 2:47
#18
8.0 volts
1100 amp
120 parts/24/45.8

2:49 – 2:55
#33
8 volts
1800 amps
8 part/20.6/48.9

2:57 – 3:12
#21
7.0 volts
1000 amps
30 parts/20.0/50

3:14 – 3:27
Ø

3:25 – 3:40
#02
~~7.0~~ 4.0V
~~3.0~~ 60)
100 parts/24.0/28

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3:42 – 3:56
09
6.2 volts
1000 amps
72 parts/17.2/50

3:58 – 4:04
Ø

4:06 – 4:14
12
7.0
1080 amps
16 parts/17.1/50

4:16 – 4:24
27
8.0 volts
~~1100~~ 720 amps
6 parts

4:26 – 4:34
29
8V
900 amp
6 min

4:36 – 4:41
11
8V
1120 amp
16 part

11/9/05 Condition #7

No Wetter w/ Mesh Pad's

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Artistic Plating Co

Tank Identification Wood Nickel Strike Tank

Plating Type: Woods Nickel Strike

Tank Dimensions: L 50" W 32" H 36" (33.5) (Units in) Tank (Solution)

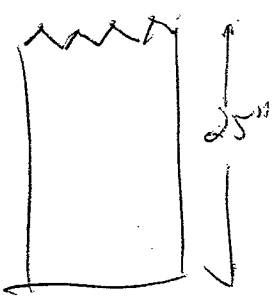
Rectifier Rated Capacity: 15v

Run# 1 9:10 - 10:00
10:00 - 11:12

Operating Conditions Recorded During Testing:

Freeboard Height:	2.5" (1.5")	Inches (Ck Estimate)
Plating Solution Temperature	(70) Room	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG (See Lab Report)
Plating Voltage	3.5	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.5	ft²
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	—	scfm
Solution Circulation Rate (estimated)	—	gpm

18



Condition #7 11/9/05
No melt
w/ Mesh Pass

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Acoustic Plating Company

Tank Identification Nickel Strike Tank

Plating Type: Nickel Strike

Tank Dimensions: L 60" W 32" H 36" (33.5") (Units in) Tank (solution)

Rectifier Rated Capacity: 15V

Run# 2 11:33 - 12:33
12:35 - 1:35

(& Exhaust)

Operating Conditions Recorded During Testing:

Freeboard Height:	(2.5")(8.5")	Inches
Plating Solution Temperature	(71°) Room	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	32.0	Amperes
Calculated Ampere-Hr Usage	64.0	A-hr
Calculated Current Density	27.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.7	ft²
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm - highest
Air Agitation Rate	—	scfm
Solution Circulation Rate (estimated)	—	gpm

(Le Lab Record)

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Conductor #7
mesh pass
no nickel

Company Name Dietrich Plating Co.

Tank Identification Woods Nickel Strike Tank

Plating Type: Woods Nickel Strike

Tank Dimensions: L 50 W 32 H 36 (33.5) (Units In) tank (Solution)

Rectifier Rated Capacity: 15V

Run# 3 2:06-3:06
3:08-4:08

Operating Conditions Recorded During Testing:

Freeboard Height:	(2.5)(8.5)	Inches tank (to Solution)
Plating Solution Temperature	Room	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.5	ft²
Plating Period Within Test Run	12.0	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	—	scfm
Solution Circulation Rate (estimated)	—	gpm

Ea. Log Reported

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

11/10/05

Company Name Dekstic Plating Company

Candida #24
Mesh Pads
w/ welder

Tank Identification Woods Nickel Strike Tank

Plating Type: Wood's Nickel Strike (+/welder)

Tank Dimensions: L 50 W 32 H 36 (33.5) (Units in) Tank Solution

Rectifier Rated Capacity: 15V

Run# 1 8:27 - 9:27
9:28 - 10:28

Operating Conditions Recorded During Testing:

(Hs Earliest)

Freeboard Height:	2.5 (8.5")	Inches
Plating Solution Temperature	Room 70	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.5	ft²
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	NA	gpm

See Lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

11/10/05

Company Name Artistic Plating Co

Tank Identification Woods Nickel Strike Tank

Plating Type: Woods Nickel Strike

Tank Dimensions: L 60 W 32 H 36 (33.5) (Units in) Tank (Solution)

Rectifier Rated Capacity: 15V

Run# 2 10:45 - 11:45
11:46 - 12:46

Conductor Hdy
Mesh Rods
W/ Wetting

Operating Conditions Recorded During Testing:

Freeboard Height:	2.5 (8.5")	Inches
Plating Solution Temperature	Room 72	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.5	ft²
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	NA	gpm

Ck Earlwood

See Lab Report

#24

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Anthistic Plzg Co.

Tank Identification Wood's Nickel Strike Tanks

Plating Type: Wood's Nickel Strike (1st / Watts)

Tank Dimensions: L 50 W 32 H 36 (33.5") (Units in) Tank (Solution)

Rectifier Rated Capacity: 15

Run# 3. 1:05 - 2:05
2:06 - 3:06

Operating Conditions Recorded During Testing:

Freeboard Height:	2.5 (8.5")	Inches (to Exhaust)
Plating Solution Temperature	From 73	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.5	ft²
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	—	scfm
Solution Circulation Rate (estimated)	—	gpm

See lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

#27
10/17/05

Company Name Artistic Plating

Tank Identification Wood's Nickel Strike

Plating Type: Wood's Nickel Strike (Rod)

Tank Dimensions: L 50" W 32" H 36 (33.5") (Units in) Tank (Solution)

Rectifier Rated Capacity: 15 volts

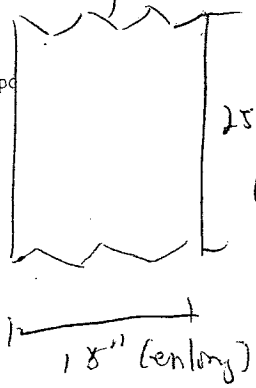
Run# 1 9:10-10:10
10:11-11:21

Operating Conditions Recorded During Testing:

Freeboard Height:	2.5" (8.5")	Inches (To Exhaust)
Plating Solution Temperature	(66°F) Room	F.
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	1.5/3.0	Volts / 3.0
Average Amperage Applied	150/250	Amperes / 320 amps
Calculated Ampere-Hr Usage	533	A-hr
Calculated Current Density	12/4.9/25.6	A/ft²
Number of Dummy Parts	(2)/(Barrel)/2	pcs. 3500
Total Surface Area of Plated Parts	12.5 / [redacted] / 12.5	ft² 51.3
Plating Period Within Test Run	119	min/test run 9:10-9:40 (1) 9:41-10:00 (2) 10:10-11:10 (3)
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	NA	gpm

See Lab Report

(1) Large tank
(2) Barrel tank
(3) Large tank



6.25 ft² x 2 = 12.50 ft²

12+39.24

$$\left[\frac{\pi D_o^2}{4} - \frac{\pi (D_i^2)}{4}\right] \times 2$$

$$+ \pi D(L) \times 2 + \pi D L \times 2$$

$$\left[\frac{(\pi)(0.755)^2}{4} - \frac{\pi (0.242)^2}{4}\right] \times 2$$

$$+ \pi (0.50)(0.263) + \pi (0.755)(0.10)$$

$$+ \pi (0.316)(0.349) =$$

$$\left(0.447 - 0.046\right) \times 2 = 0.802$$

$$0.802 + 0.412 + 0.237 + 0.401 = 1.85 \text{ in}^2$$

$$350 \times 1.85 = 647.5$$

$$= 45.0 \text{ ft}^2$$

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Artistic Plating Co

Tank Identification Wood's Nickel Stk

Plating Type: Wood's Nickel Strike

Tank Dimensions: L 50" W 32" H_

Rectifier Rated Capacity: 15 volts

Run# 2 11:45 - 12:45
12:46 - 1:46

Operating Conditions Recorded During Testing:

Freeboard Height:
Plating Solution Temperature
Plating Solution Nickel Conc.
Plating Solution Boric Acid Conc.
Plating Solution pH
Plating Solution Surface Tension
Plating Solution Specific Gravity
Plating Voltage
Average Amperage Applied
Calculated Ampere-Hr Usage
Calculated Current Density
Number of Dummy Parts
Total Surface Area of Plated Parts
Plating Period Within Test Run
Duration of Test Run
Capture Efficiency of Ventilation System
Ventilation Rate
Air Agitation Rate
Solution Circulation Rate (estimated)

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

#27 10/17/05

Company Name Artistic Plating Co.

Tank Identification Wood's Nickel Strike

Plating Type: Wood's Nickel Strike

Tank Dimensions: L 50" W 32" H 36" (33.5") (Units in.) Tank (Solution)

Rectifier Rated Capacity: 15 volts

Run# 2 11:45 - 12:45
12:46 - 1:46

Operating Conditions Recorded During Testing:

Freeboard Height:	2.5 (8.5")	Inches (+ Exhaust)
Plating Solution Temperature	66°	F. (Room)
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	256	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.5	ft²
Plating Period Within Test Run	120	min/test run 11:45 - 1:46
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	NA	gpm

See Lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Detroit Plating Co #27 10/17/07

Tank Identification Wood's Nickel Strike

Plating Type: Wood's Nickel Strike

Tank Dimensions: L 50" W 32" H 38" (33.5") (Units in) Tank (Solution)

Rectifier Rated Capacity: 15 volts

Run# 3 2:16 - 3:16
3:17 - 4:17

Operating Conditions Recorded During Testing:

Freeboard Height:	2.5" (8.5")	inches (to Exhaust)
Plating Solution Temperature	68°F	F (Room)
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.50	ft²
Plating Period Within Test Run	120	min/test run 2:16 - 4:17
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	NA	gpm

See lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Dotster Plating Company 10/10/05 #24

Tank Identification Wood's Nickel Strike (w/ melter)

Plating Type: Woods Nickel Strike (w/ melter)

Tank Dimensions: L 50" W 32" H 36" (33.5") (Units in) Tank (Solution)

Rectifier Rated Capacity: 15 volts

Run# 1 9:03 - 10:03
10:04 - 11:04

Operating Conditions Recorded During Testing:

Freeboard Height:	2.5 (8.5)	Inches
Plating Solution Temperature	80-90	F.
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.50	ft²
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	~	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	NA	gpm

Ctr Exhaust

See Lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Artistic Plating Company 10/19/05 #28

Tank Identification Woods Nickel Strike (w/ Wetting)

Plating Type: Woods Nickel Strike (w/ Wetting)

Tank Dimensions: L 50" W 32" H 36 (33.5") (Units In) Tank (Solution)

Rectifier Rated Capacity: 15 volts

Run# 2 11:30 - 12:30
12:31 - 1:31

Operating Conditions Recorded During Testing:

Freeboard Height:	2.5 (8.5)	Inches (To Exhaust)
Plating Solution Temperature	71-72	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.50	ft²
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	NA	gpm

See Lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Artistic Plating Company 10/19/05 #28

Tank Identification Wood's Nickel Strike (W/ Nickel)

Plating Type: Wood's Nickel Strike (W/ Nickel)

Tank Dimensions: L 50" W 32" H 34" (33.5)" (Units in) Tank (Solution)

Rectifier Rated Capacity: 15 volts

Run# 3 1:55 - 2:55
2:56 - 3:56

Operating Conditions Recorded During Testing:

Freeboard Height:	23 (8.5)	Inches (to Exhaust)
Plating Solution Temperature	71-74	F.
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.5	ft²
Plating Period Within Test Run	20	min/test run
Duration of Test Run	20	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	NA	gpm

See Lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

10/20/05 #2

Company Name Artistic Plating Company

Tank Identification Wood's Nickel Strike (w/ wetter) 306A

Plating Type: Wood's Nickel Strike w/ wetter) 306A

Tank Dimensions: L 50" W 32" H 36" (33.5") (Units in) Tank (Solution

Rectifier Rated Capacity: 15V

Run# 1 9:10 - 10:10
10:15 - 11:15

Operating Conditions Recorded During Testing:

Freeboard Height:	2.5 (8.5)	Inches (to Exhaust
Plating Solution Temperature	69-77	F.
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.50	ft²
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	NA	gpm

See Lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

10/20/05 #29

Company Name Artistic Plating Co.

Tank Identification Wood's Nickel Strike (w/ heater) 306D

Plating Type: Wood's Nickel Strike (w/ heater) 306A

Tank Dimensions: L 50" W 32" H 38" (33.5") (Units in) tank (Solution)

Rectifier Rated Capacity: 15V

Run# 2 11:36–12:36
12:41–1:41

Operating Conditions Recorded During Testing:

Freeboard Height:	2.5 (8.5)	Inches (to Exhaust)
Plating Solution Temperature	71–73	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.5	ft²
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	NA	gpm

See Lab Report

NICKEL AIR TEST PROJECT
PROCESS DATA SHEET

Company Name Artistic Plating Co #29 10/20/15

Tank Identification Wood's Nickel Strike

Plating Type: Wood's Nickel Strike

Tank Dimensions: L 50" W 30" H 36" (33.5") (Units in) tank (Solution)

Rectifier Rated Capacity: 15V

Run# 3 2:00 - 3:00
3:02 - 4:02

Operating Conditions Recorded During Testing:

Freeboard Height:	2.5 (8.5)	Inches (to Edge)
Plating Solution Temperature	73-74	F
Plating Solution Nickel Conc.		oz/gal
Plating Solution Boric Acid Conc.		oz/gal
Plating Solution pH		pH
Plating Solution Surface Tension		dynes/cm
Plating Solution Specific Gravity		SG
Plating Voltage	3.0	Volts
Average Amperage Applied	320	Amperes
Calculated Ampere-Hr Usage	640	A-hr
Calculated Current Density	25.6	A/ft²
Number of Dummy Parts	2	pcs.
Total Surface Area of Plated Parts	12.5	ft²
Plating Period Within Test Run	120	min/test run
Duration of Test Run	120	min/test run
Capture Efficiency of Ventilation System	—	%
Ventilation Rate		acfm
Air Agitation Rate	NA	scfm
Solution Circulation Rate (estimated)	NA	gpm

(See lab Report)

Appendix J

Stack Test Schematics

ARTISTIC PLATING - MILWAUKEE
CONDITIONS 18, 19, 20, & 21 STACK

FIGURE 1

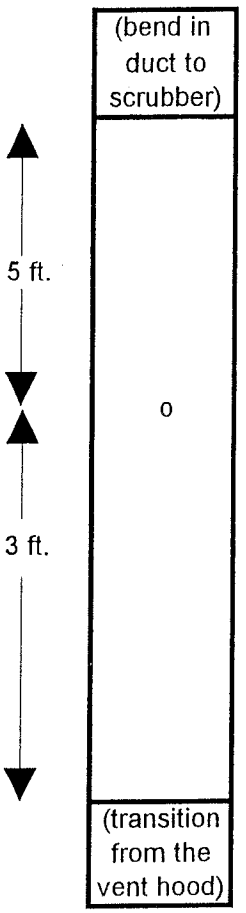
SAMPLE POINT LOCATIONS

Point	Distance (ft.)
1	0.5
2	0.8
3	1.4
4	2.1
5	3.0
6	4.3
7	7.7
8	9.0
9	9.9
10	10.6
11	11.2
12	11.5

Stack Diameter: 12 in.

Notes: 24 sampling points to be used on this round duct; 12 points along each of two perpendicular traverses.

SAMPLE PORT LOCATION



ARTISTIC PLATING - MILWAUKEE
CONDITIONS 7, 24, 27, & 28 STACK

FIGURE 2

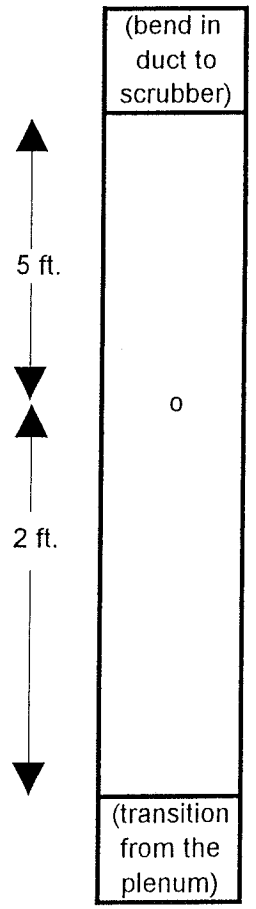
SAMPLE POINT LOCATIONS

Point	Distance (ft.)
1	0.5
2	0.7
3	1.2
4	1.8
5	2.5
6	3.6
7	6.4
8	7.5
9	8.2
10	8.8
11	9.3
12	9.5

Stack Diameter: 10 in.

Notes: 24 sampling points to be used on this round duct; 12 points along each of two perpendicular traverses.

SAMPLE PORT LOCATION



ABQC - MILWAUKEE
CONDITIONS 10, 11, 12, 13, & 14 STACK

FIGURE 3

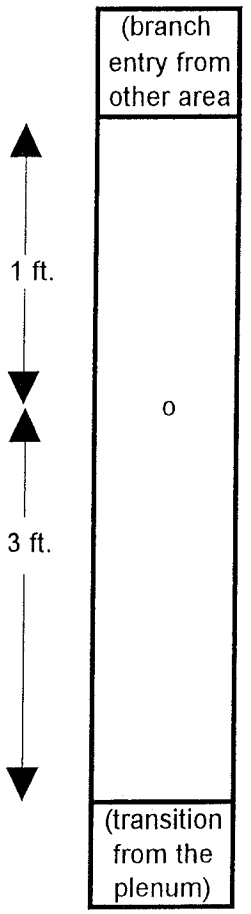
SAMPLE POINT LOCATIONS

Point	Distance (ft.)
1	0.5
2	0.8
3	1.4
4	2.1
5	3.0
6	4.3
7	7.7
8	9.0
9	9.9
10	10.6
11	11.2
12	11.5

Stack Diameter: 12 in.

Notes: 24 sampling points to be used on this round duct; 12 points along each of two perpendicular traverses.

SAMPLE PORT LOCATION



ELITE FINISHING - MILWAUKEE
CONDITIONS 22, 23, & 25 STACK

FIGURE 4

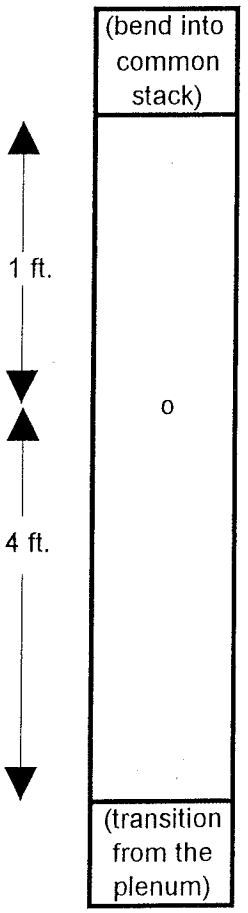
SAMPLE POINT LOCATIONS

Point	Distance (ft.)
1	0.5
2	0.8
3	1.4
4	2.1
5	3.0
6	4.3
7	7.7
8	9.0
9	9.9
10	10.6
11	11.2
12	11.5

Stack Diameter: 12 in.

Notes: 24 sampling points to be used on this round duct; 12 points along each of two perpendicular traverses.

SAMPLE PORT LOCATION



RELIABLE PLATING - CHICAGO
CONDITIONS 22, 23, & 25 STACK

FIGURE 5

SAMPLE POINT LOCATIONS

Point	Distance (ft.)
1	0.5
2	0.9
3	1.6
4	2.4
5	3.4
6	4.8
7	8.7
8	10.1
9	11.1
10	11.9
11	12.6
12	13.0

Stack Diameter: 13.5 in.

Notes: 24 sampling points to be used on this round duct; 12 points along each of two perpendicular traverses.

SAMPLE PORT LOCATION

