

TEXTRON

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February 26, 2007

Mr. Joseph T. Martella II
Senior Engineer
State of Rhode Island
Office of Waste Management
Department of Environmental Management
235 Promenade Street
Providence, RI 02908-5767

**RE: Response to Comments
Former Slag Pile Area Supplemental Removal Action Work Plan
Former Gorham Manufacturing Site
333 Adelaide Avenue
Providence, Rhode Island**

Dear Mr. Martella:

Textron Inc. (Textron) is submitting the attached response to comments on the Supplemental Removal Action for the former Slag Pile at the Former Gorham Manufacturing Site located at 333 Adelaide Avenue, Providence, Rhode Island. The Supplemental Removal Action Work Plan was submitted to the Rhode Island Department of Environmental Management (RIDEM) on January 16, 2007 in response to our meeting of January 10, 2007. RIDEM provided comments on this work plan to Textron on February 2, 2007.

Consistent with our commitment to cleanup the former Gorham site, we have proposed additional work at the former slag pile area to resolve outstanding questions regarding this part of the site. This work will include the removal of soil at two locations in the excavation area and conducting test pits at the remaining locations where lead concentrations exceed the industrial/commercial direct exposure criteria (ICDEC). Confirmatory soil sampling will be conducted at both the newly excavated areas and within each of the test pits for total lead and synthetic precipitation leaching procedure (SPLP) for metals. The soils from the two excavated areas will be disposed of off site at a permitted facility. The former slag pile excavation area will remain open, but secured, until the analytical results can be incorporated into an addendum to the Supplemental Site Investigation Report. Textron will prepare and submit a revised Remedial Action Work Plan to RIDEM for review prior to conducting this proposed field work.

In order to support your review and the execution of this supplemental soil removal and sampling in an expedited manner, we are available to meet with RIDEM at your earliest convenience. Please contact me at (401) 457-2635 if you have any questions regarding the proposed work. We look forward to receiving your approval and proceeding with the activities discussed within.

Sincerely,

Textron Inc.



Gregory L. Simpson
Project Manager

Enclosures: Response to Comments: Former Slag Pile Area Supplemental Remedial Action Work Plan - Three hard copies and one electronic on CD

Cc: Senator Juan M. Pichardo, District 2 (One hard copy)
Representative Thomas Slater (One hard copy)
Repository - Knight Memorial Library (One hard copy)
Thomas Dellar, City of Providence (One hard copy)
Peter Grivers, EA Engineering (One electronic copy)
David McCabe, Textron (One electronic copy)
David Heislein, Mactec (One electronic copy)

RESPONSE TO COMMENTS

**Former Slag Pile Area Supplemental Removal Action Work Plan
Former Gorham Manufacturing Site
333 Adelaide Avenue
Providence, Rhode Island
January 16, 2007**

**Comments Provided By: Rhode Island Department of Environmental Protection
Case No. 2005-059 (Associated with Case No. 97-030)
Dated February 2, 2007**

Comment 1) As the record of correspondence concerning the remediation of the slag-pile area clearly indicates, there have been a number of disagreements between Textron and the Department, which have significantly stalled this portion of the project. Items in dispute include a) the extent to which slag-pile related contamination should be removed; b) what the remedial objective compliance standard should be; c) how compliance should be measured and demonstrated; d) what the appropriate sampling method and protocol should be; and e) whether the remaining lead poses a significant threat to leach into Mashapaug Cove surface water and sediments in the future. The Superior Court Consent Order for the "Park Parcel" requiring the excavation of the slag-pile was issued on March 29, 2006. While the Department would prefer to resolve these outstanding issues without resorting to further Superior Court action, the Department will be forced to take that action if Textron again fails to submit a remedial action work plan that satisfactorily addresses all of these concerns and results in a prompt and complete remediation of the remainder of the slag-pile.

Response: *While Textron is of the opinion that the slag pile removal requirement of the Consent Order was completed in August 2006 by the excavation and offsite disposal of 1,300 cubic yards of slag material, we are nonetheless committed to doing additional work at the former slag pile to bring this area of the site to closure. This work will include the removal of soil at two locations in the former slag pile area and conducting test pits at the remaining locations where lead concentrations exceed the industrial/commercial direct exposure criteria (I/CDEC). Confirmatory soil sampling will be conducted at both the newly excavated areas and within each of the test pits for total lead and Synthetic Precipitation Leaching Procedure (SPLP) for metals. The soil from the two excavation areas will be disposed of off site at a permitted facility. The former slag pile excavation area will remain open, but secured, until the analytical results can be incorporated into the amended Supplemental Site Investigation Report (SSIR). Textron will prepare and submit a revised work plan to RIDEM for their review prior to conducting this field work.*

Comment 2) As Textron is aware, the Toxicity Characteristic Leaching Procedure (TCLP) analysis was performed on three samples from the slag-pile prior to the start of excavation activities, and all three samples exceeded the EPA's leachable lead toxicity standards for characteristically hazardous waste. The Department requested that the TCLP analysis be included in the compliance sampling for the slag-pile excavation. Textron declined, despite the detection of significant lead contamination in the sediments of Mashapaug Cove at the foot of the slag-pile, citing as its reason the levels of lead detected in groundwater

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collected and analyzed from monitoring well GZA-5 (formerly located within the slag-pile area). Textron indicated in its letter dated October 3, 2006, that it believes that “*Groundwater analytical results from this well dating back to 1998 did not exhibit any elevated lead concentrations that would indicate the slag material was a source of leaching contaminants into the environment.*” Textron has consistently presented the groundwater data from this single well as its justification for its absolute refusal to date to include the TCLP analysis in its soil compliance sampling for the slag-pile excavation. In an effort to move the stalled project forward in a manner that was fair to Textron, but still assured an environmentally sound and protective remedy, the Department proposed the use of the Synthetic Precipitation Leaching Procedure (SPLP), which is recognized as representing a somewhat more realistic means to measure the potential for a contaminant to leach. In its recently submitted Supplemental RAWP, Textron agrees to perform the SPLP analysis, but proposes to include only four (4) of the 19 locations which exceed the Department’s Industrial/Commercial Direct Exposure Criteria (ICDEC) for lead. It remains the Department’s position that the leaching potential of the remaining material at the limits of the excavation must be measured by either the TCLP or SPLP method for the following reasons:

- a) Based upon recent conversations with EPA, it is important to characterize the leaching potential of soils at the horizontal and vertical limits of the slag-pile excavation because any remaining soil which exceeds the toxicity characteristic for lead (or any other constituent) would need to be managed as a hazardous waste should it ever be disturbed or moved in the future. Therefore the proper characterization of the remaining soil is a necessary step in the preparation of Soil Management Plan (SMP) for the Site; and
- b) Textron has not conclusively demonstrated to the Department’s satisfaction that the lead contaminated slag has not historically leached to the surface water and sediments of Mashapaug Cove, and that the remaining lead contaminated soil at the current limits of the excavation will not contribute to future surface water and sediment contamination. Therefore accurate measurement of the leaching potential of the remaining soil is necessary to properly evaluate and design an appropriate long-term monitoring plan.

Response: *As discussed in our response to Comment No. 1, Textron will conduct additional soil sampling that will include the use of total lead and SPLP in areas where lead concentrations exceeded I/CDEC. Textron also agrees that additional groundwater monitoring wells are required in the North Bank area of Mashapaug Cove to better define the site conceptual groundwater flow model, potential migration of volatile organic compounds (VOCs) and potential leaching of metals into the groundwater. The design and location of these monitoring wells will be presented to RIDEM in the Supplemental Site Investigation Work Plan at a future date following RIDEM’s review of the February 1, 2007 response to comments.*

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It should be noted that Textron has collected and evaluated a significant amount of actual site inorganics data from groundwater, surface water and sediment samples. These data were collected when the slag pile was still present (worst case condition for leaching). Together these data confirm that surface water has not been significantly impacted by leaching of lead. The leachate conceptual site model and associated site data are summarized in Attachment A of this Response to Comments.

Comment 3) In an effort to fairly evaluate Textron's persistent assertions that the slag-pile material was not actively leaching lead, the Department reexamined the SSIR surface water data. Following a more extensive Quality Assurance/Quality Control (QA/QC) review of the submitted surface water data, it became apparent that the laboratory Method Reporting Limits (MRLs) for many of the constituents of concern exceeded their respective Ambient Water Quality Criteria (AWQC), as listed in Appendix B of the Department's Water Quality Regulations. In some cases the MRL was as high as four orders of magnitude greater than the corresponding AWQC. Clearly a hazardous substance cannot be demonstrated to be compliant with its respective regulatory criteria, if the minimum concentration that can be reliably detected is orders of magnitude above the maximum allowable concentration. Therefore, the rationale for excluding these constituents from consideration in the Human Health Risk Assessment (HHRA), the Screening Level Ecological Risk Assessment (SLERA), as well as further evaluation for compliance with the Water Quality Regulations is flawed. In addition, since lead and copper (primary constituents of the slag) were among the inorganic constituents with a calculated AWQC lower than their respective surface water MRLs, the provided data does not support the argument that the slag has not leached and that remaining material will not leach at concentrations exceeding applicable regulatory criteria. A non-exhaustive review of the laboratory data sheets indicated that the MRLs of the following constituents exceeded one or more of their respective AWQC; dissolved metals – arsenic, cadmium, chromium VI, copper, lead, mercury, and silver; total metals – beryllium, selenium, and thallium; polynuclear aromatic hydrocarbons (PAHs) – benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene; organochlorine pesticides – 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, aldrin, alpha-BHC, chlordane, dieldrin, endrin, heptachlor, heptachlor epoxide, and toxaphene; volatile organic compounds (VOCs) – vinyl chloride. A complete review of the laboratory data sheets should be conducted to determine if there are other high MRLs not noted above.

Response: *We have fully evaluated the analytical data provided by ESS Laboratory of Cranston, RI. We found specific to the lead and copper analyses that the method reporting limits (MRL) listed on the laboratory reports were 5 µg/L and 20 µg/L, respectively, above the AWQC. However, ESS also reported in the electronic data deliverable method detection limits (MDL) for lead and copper of 0.4 µg/L and 2 µg/L, respectively, that apply to the surface water samples and that are well below the published AWQC. The laboratory reports for the June 2006 surface water samples contain all of the information concerning these samples, including the information about detections and estimated concentrations below the MRLs. That*

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information shows the following: 1) in 13 of the 15 samples, no dissolved lead was detected (Method Detection Limit of 0.4 µg/l); 2) in 2 of 15 surface water samples, dissolved lead was detected above the MDL but below the MRL. The estimated concentrations in those two samples were 2 µg/l and 1.2 µg/l. The 2 µg/l concentration was reported for sample SW-11, which is far removed from the slag pile (outside Mashapaug Cove) and that sampling location is unlikely to be impacted by any leaching mechanism at the slag pile. Neither of the estimated detected concentrations is above the AWQC of 2.3 µg/l; 3) in 13 of the 15 surface water samples, no dissolved copper was detected (MDL of 2 µg/l); 4) in 2 of 15 samples, dissolved copper was detected at estimated concentrations between the MDL (2 µg/l) and the MRL (20 µg/l). The estimated concentrations (5 µg/l and 7 µg/l) are below the applicable surface water standard (calculated AWQC for aquatic life of 7.6 µg/l – the AWQC for “Water and Organisms” (1300 µg/l) does not apply since the surface water is not a source of drinking water). Therefore, the available surface water data indicate that surface water is not significantly impacted by leaching of lead or copper (based on surface water standards). With the recent removal of the slag pile, conditions would be expected to improve (potential for leaching would be decreased).

The laboratory has re-issued the laboratory Certificates of Analysis for the June 2006 dissolved metals surface water samples to provide the additional information with respect to non-detects and detections of lead and copper with respect to the MDLs. The re-issued Certificates of Analysis reports detects above the MRL, reports estimated concentrations for detects above the MDL but below the MRL, and non-detects (below the MDL). The re-issued certificates clarify, but do not change, any of the original analytical data or raw instrument data.

A more detailed discussion of the surface water data is provided in Attachment A and ESS’ revised laboratory Certificates of Analysis identifying the MDLs are provided as Attachment B of this Response to Comments. These attachments address the potential leaching of lead and copper with respect to the slag material removal.

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The comments related to reporting limits and detection limits as they apply to the Human Health Risk Assessment (HHRA), the Screening Level Ecological Risk Assessment (SLERA), as well as further evaluations for compliance with the Water Quality Regulations will be specifically addressed, at a later date, in the Work Plans for additional data collection and revisions to the risk assessments (Supplemental SIR Work Plan).

Comment 4) Please be reminded that in order to generate useful data of sufficient quality, all samples submitted to the laboratory for analysis (whether for investigation or remedial compliance purposes), must utilize detection limits that are below the Department's applicable criteria for all substances analyzed. In situations where the laboratory detection or reporting limits are greater than the Department's applicable criteria, and no detections are reported, the reported detection limit shall be construed to represent the detected contaminant concentration for compliance comparison and risk assessment purposes, until such time as new analytical data, utilizing the correct detection or reporting limits, is presented.

Response: *Comment noted. In upcoming activities for the human health and ecological risk assessments, both laboratory detection limits and laboratory reporting limits will be carefully reviewed, and the information will be incorporated into the risk assessments. Future requests for analysis will comply with the contents of RIDEM's comment to the extent possible. In particular, the laboratory will be requested to provide, in a clearer format, the MDL in addition to the MRL and to provide additional information (including estimated concentrations) concerning detections above the MDL and the MRL. This type of data reporting will more clearly document the adequacy of the data with respect to applicable regulatory criteria.*

For example, for future surface water samples, the laboratory will be requested to incorporate MRLs of 2 µg/l for lead and 7 µg/l for copper. In some cases, such as for some of the pesticides (such as toxaphene, heptachlor, and chlordane) with AWQC that are in the part per trillion range or lower, if the compound has not been identified as an issue in soil or sediment at the site, it would not be expected in surface water and a time-consuming and expensive effort to obtain very low detection limits for surface water does not appear to be warranted or practical.

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As a point of clarification, the AWQC for “Water and Aquatic Organisms” are not considered applicable to Mashapaug Cove because those criteria are based on the assumption that the water is used as a drinking water source and people also consume organisms from the water body. Since Mashapaug Cove is not a drinking water source (2 liters per day consumption rate assumed in the criterion), those criteria do not apply.

Comment 5) Regarding the section entitled “Site Preparation Activities” sub-section “Temporary Access Road Grading and Loading Pad” on page 3 of the Supplemental RAWP:

- a) This section indicates “*Site soil and/or existing stone fill will be used to construct a new loading pad for excavation equipment and trucks transporting the soil off site for disposal.*” Textron must completely document the source (i.e., original location) of any “*Site soil*” moved at the site for any purpose including construction of a new loading pad.
- b) Documentation must include aerial extent of “*site soil*” and depth of material applied.
- c) Please be advised that Department approval of the road or loading pad is temporary and is not intended to approve the permanent installation of these structures. In addition, the area where the road and pad are proposed may be subject to future investigation and remedial actions requiring the removal of the road or pad.

Response: *Textron will utilize the existing stockpile of stone for site grading during the soil excavation and test pit activities and does not plan to relocate or grade the site using existing site soils. Comment noted regarding potential investigation and remediation in the area of the temporary access road.*

Comment 6) Regarding the section entitled “Excavation and Test Pitting Activities” on page 3 of the Supplemental RAWP:

- a) The Department concurs with the additional excavation activities proposed for the two remaining lead contaminated hot spot locations (SS-SI41B1 and SS-SI51S100), however it does not concur with conditionally limiting SPLP compliance sampling based upon the results of total lead analysis. Compliance sampling at the horizontal and vertical limits of the excavation and analysis for both total and SPLP lead must be conducted.
- b) Test pits must be excavated in all of the remaining locations where exceedances of the I/CDEC for lead have been reported in compliance samples.

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- c) The Department appreciates and accepts Textron's invitation to have a Department staff representative on-site to observe the test pitting activities.

Response: *Textron has agreed to conduct soil sampling at the excavation and test pit areas for both total lead and SPLP analyses. Test pits will be conducted at each of the locations exceeding I/CDEC not including the proposed excavation areas. Textron looks forward to having a RIDEM representative on site to observe these activities.*

Comment 7) Regarding the section entitled "Confirmation Soil Sampling" on page 4 of the Supplemental RAWP:

- a) Each confirmatory sampling location should be submitted for both total and SPLP lead analysis.
- b) Appropriate sampling protocols must be implemented to insure that the samples are collected from the bottom or side of the actual excavation, and not from an area that was prematurely backfilled. Documentation of the proposed sampling protocols must be submitted to the Department prior to the initiation of fieldwork.

Response: *Textron agrees with these comments and will work with the RIDEM representative in the field to ensure that these procedures are followed and documented.*

Comment 8) Regarding the section entitled "Site Restoration" on page 5 of the Supplemental RAWP:

- a) Since the leaching potential of the residual contamination at the limits of the slag-pile excavation has not been completely characterized, and because the aerial extent of the slag-pile has been revealed to be much greater than originally represented in earlier environmental assessment reports, the Department will require the installation and long-term monitoring of several downgradient groundwater monitoring wells in addition to the proposed reinstallation of GZA-5.
- b) The exact number and location of these additional monitoring wells will likely be determined during the Park Parcel Remedial Action Work Plan (Park Parcel RAWP) portion of the project.

Response: *As discussed in our response to Comment No. 2, Textron agrees that additional groundwater monitoring wells are required in the North Bank area of Mashapaug Cove, including the replacement of GZA-5, to better define the conceptual site groundwater flow model, potential migration of VOCs and potential leaching of lead into the groundwater with potential subsequent migration to surface water and/or sediment.*

ATTACHMENT A

CONCEPTUAL SITE MODEL

**CONSIDERATION OF POTENTIAL MIGRATION OF INORGANIC
SUBSTANCES FROM THE ADELAIDE AVENUE SITE TO
MASHAPAUG COVE**

Conceptual Site Model

The conceptual site model (CSM) identifies potential source areas from which substances may have been released, the migration pathways through which chemicals may have been transported and/or translocated to other environmental media, and where possible exposure may occur. The CSM provides a framework for understanding sources of chemicals, migration pathways, identification of potential receptors, and development of exposure profiles. The CSM is also used in developing the scope of activities for investigation and remedial activities.

The following text describes the CSM with respect to one specific source area, which is the now removed slag pile and the area of waste fill and soils along the southern shore of Mashapaug Cove. The area along the southern shore of the cove has also been referred to as the North Bank area. The slag pile was the location of an accumulation of a slag material that is a dense, solid, rock-like material that was produced as a by-product of historical smelting activities in Building V. The slag material was present primarily in chunks or pieces ranging in approximate diameter from 2 inches to as much as 12 inches. The slag pile was removed from the site for recycling and the investigation of the boundaries of the former slag pile is on-going.

Based on sampling conducted by Fuss & O'Neil on behalf of Rhode Island Department of Environmental Management (RIDEM) in December 2005 the slag material is comprised primarily of metals, with lead (1.4%), copper (0.22%) and zinc (0.21%) being the largest components of the slag material among the metals tested. No volatiles, pesticides, or polychlorinated biphenyls (PCBs) were reported in that slag sample. Only one dioxin/furan homolog group was reported for the sample, with a very low concentration, well below the Residential Direct Exposure Criteria (RDEC). Low levels of polycyclic aromatic hydrocarbons (PAHs) were reported for the slag sample. Analytical data for the slag sample collected by Fuss & O'Neill are shown in Table 2 of the March 2006 Fuss & O'Neill report.

The potential migration of slag material and the slag material constituents in the environment would most likely occur by the following mechanisms:

- Physical placement of the material at or near the shore of Mashapaug Cove;
- Potential leaching of chemicals from the slag material by precipitation, storm water, or groundwater with potential transport via storm water runoff or groundwater flow into Mashapaug Cove. Leaching is the process whereby the chemicals are removed from the material and become dissolved in the rain or snow or the groundwater;

- Dissolved material transported into the surface water by precipitation (rain and melting snow) or storm water would enter the cove directly by flowing into surface water. Dissolved material in groundwater would likely move upwards through the sediments of the cove and subsequently flow into the surface water. There might be some potential for dissolved chemicals to be deposited in the sediments beneath the cove;
- Potential erosion of smaller particles (finely ground slag material) and or soil particles suspended in storm water runoff into surface water of Mashapaug Cove;
- Particulate material (not dissolved) carried by storm water into the surface water of the pond would likely settle to the bottom of the cove and become part of the surficial sediments of the cove; and/or
- Dissolved substances in storm water might also fall out of solution and be deposited on the surface of the cove sediments.

The North Bank area (including the former slag pile footprint) is proposed to be capped to eliminate potential exposure to soils with concentrations of one or more chemicals that are above the Industrial/Commercial DEC. That capping will prevent any further erosion of slag residuals, soil, or waste fill from the area into the cove.

The available data suggest that erosion and overland flow of soil and waste fill particles are the major mechanisms of transport of metals and PAHs into the sediments of Mashapaug Cove.

A substantial amount of investigation data have been collected that can be used to assess the potential transport and migration mechanisms both before and after the removal of 1,300 cubic yards of slag material from the area. Groundwater, surface water, and sediment data all provide information about the extent to which these migration mechanisms may have transported materials from the former slag pile and to assess the magnitude or importance of each mechanism with respect to potential impacts on the cove surface water and sediments. **The available data, collected prior to the removal from the site of 1300 cubic yards of slag material, indicate that surface water quality of Mashapaug Cove was not adversely impacted by leaching of chemicals (lead and copper in particular) from the slag pile or the associated residual slag material while the slag material was in place.**

Groundwater Data

Monitoring well GZA-5 was located within the slag pile and was screened across the water table. The available groundwater data for lead and copper in groundwater samples from GZA-5 are shown in Table 1. The analytical data from this monitoring well are considered to be worst-case data for the potential for leaching of lead and copper from the slag to groundwater (immediately below the slag pile). The mean lead concentration in GZA-5 groundwater samples was 9 µg/l

(ranges from 5 µg/l to 13.9 µg/l) and copper was not detected in the two groundwater samples (reporting limit or Method Reporting Limit (MRL) of 20 µg/l). For the June 2006 sample, the copper Method Detection Limit (MDL) was 2 µg/l and the copper result was less than that MDL. The lead concentrations are below the GA Groundwater Standard (drinking water standard), but that standard is not really applicable to this GB groundwater. There is no published GB groundwater standard for lead or copper. Groundwater discharging to the cove would be diluted by the surface water of the cove. The groundwater data indicate that groundwater from that area would be unlikely to have any substantial impact on surface water or sediment quality for lead and copper.

Surface Water Data

The 2006 surface water sampling program was designed to evaluate surface water quality in Mashapaug Cove and especially to investigate potential impacts to surface water quality that might be associated with potential groundwater discharge into the cove. Surface water samples were collected at 15 locations and all samples were collected from within one foot of the surface water/sediment interface. Both total metals (unfiltered samples) and dissolved metals (filtered samples) data were collected at each location. The dissolved metals data would be particularly suited to the evaluation of potential impacts of potential transport of dissolved metals in groundwater with subsequent discharge into the lower portion of the surface water column.

The February 2, 2007 RIDEM comments suggested that the 2006 dissolved metals data were not adequate to conduct a comparison to applicable Ambient Water Quality Criteria (AWQC) because reporting limits and detection limits were higher than the corresponding criteria. However, the laboratory data are sufficient to conduct a meaningful comparison to AWQC. MACTEC asked ESS Laboratory to report additional information from the June 2006 analyses (Method Detection Limits) and to report dissolved metals estimated concentrations above the MDL and below the MRL. The MDL is determined by the laboratory for the analytical method and instrumentation used by the laboratory. This reporting procedure is consistent with data reporting procedures for the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (used in the Superfund program). The re-issued Certificates of Analysis are presented in Attachment B.

Lead and Copper and Surface Water

Consistent with the RIDEM *Ambient Water Quality Criteria and Guidelines for Toxic Pollutants* (July 2006), calculated AWQC (aquatic life protection) for lead and copper are 2.3 µg/l and 7.6 µg/l respectively. These values are based on a measured Mashapaug Cove surface water hardness of 78 mg/l.

For lead, there are no human health AWQC that are applicable at this site (the surface water is not drinking water). Lead does not accumulate substantially in biological tissue, and therefore, there is no lead AWQC to address consumption of biota.

For copper there is a human health criteria for “Water and Aquatic Organisms” (1300 µg/l) that is based on a drinking water scenario, but not for “Aquatic Organisms Only” (copper in water does not accumulate in aquatic organisms to any significant degree). The MRL and MDL for copper are well below the copper human health AWQC for “Water and Organisms” (which is not applicable to this site, because the pond is not a source of drinking water).

Fifteen surface water samples collected in June 2006 from the Mashapaug Cove area were analyzed by graphite furnace AA and ICP for dissolved lead and dissolved copper, respectively. The original laboratory report reported lead and copper as “non-detected” in all samples based on the MRLs of 0.005 mg/l (5 µg/l) and 0.020 mg/l (20 µg/l). In this method of reporting, the lab identifies any results above the MRL as a detection and any results below the MRL as a non-detect. However, the raw data for the analyses provides a considerable amount of additional information concerning the presence and concentrations of lead and copper in the surface water samples.

ESS laboratory reported the MDLs for the lead and copper analyses as 0.4 µg/l and 2 µg/l, respectively. The MDLs were determined by the laboratory for the analytical method and instrumentation used by the laboratory. The MDL represents the lowest concentration at which the analyte can be identified with a high level of certainty, based on the analytical method and the laboratory’s instruments. ESS has re-issued the laboratory report in a format consistent with USEPA Contract Laboratory Program procedures. As was done previously, the laboratory has reported all results above the MRLs as detected concentrations. In addition, the laboratory has reported all results that are above the MDL but below the MRL as detections with the reported

concentrations identified as estimated concentrations (“J” qualifier). Further, results that were below the MDL have been reported as “not detected”, with the detection limit identified as the MDL. Table 2 shown below presents a summary of the analytical data for the dissolved lead and dissolved copper in the fifteen surface water samples (re-issued report).

As seen in Table 2, lead was not detected above the MRL of 5 µg/l in any sample. Lead was detected in two samples at estimated concentrations above the MDL but below the MRL (at 2 µg/l in sample SW-11 and at 1.2 µg/l in sample SW-19), and lead was not detected above the MDL of 0.4 µg/l in 13 of the 15 samples.

Also, as shown in Table 2, dissolved copper was not detected above the MRL of 20 µg/l in any of the fifteen samples. Dissolved copper was detected above the MDL in two of fifteen samples at estimated concentrations of 5 µg/l and 7 µg/l. Dissolved copper was not detected above the MDL of 2 µg/l in thirteen of the fifteen samples.

No concentrations of lead or copper in the fifteen surface water samples are greater than the respective AWQC (2.3 µg/l for lead and 7.6 µg/l for copper). The surface water sample that has an estimated lead concentration of 2 µg/l is located outside the Mashapaug Cove, far removed from the former slag pile and the waste fill material in the area of the former slag pile. With the highest dissolved lead concentration in surface water being far removed from the potential former source area under consideration (and not in close proximity to the potential source), it appears that the dissolved lead at that sample location is not related to the former slag pile. The surface water samples were all collected near the surface water/sediment interface (within one foot of the sediment/surface water interface) in order to assess potential groundwater impacts on surface water quality. **Therefore, the fifteen surface water samples document that surface water quality was not adversely impacted (based on comparison to AWQC) by lead or copper via a potential leaching mechanism associated with the former slag pile and the waste fill material in the area of the former slag pile. These data were collected prior to the removal of 1300 cubic yards of slag material. With the removal of the slag pile, potential for leaching to groundwater and surface water would be substantially reduced. This further supports the conclusion stated above.**

Sediment Data

If groundwater beneath the slag pile and associated residual materials were impacted by leaching of lead and/or copper, the groundwater would presumably flow beneath the cove sediment and then flow upward through the sediments into the surface water. Under this scenario, it might be expected that as the groundwater flows through the sediment it might impact (deposit metals) the deeper organic sediments initially and also the surficial sediments as the groundwater flowed into the surface water column.

The sediment data for lead and copper do not show a vertical distribution that would be consistent with that type of flow mechanism and sediment impact. Rather, the data for lead and copper strongly suggest that sediments have been impacted by deposition of metals in surficial sediments rather than in the deeper organic sediments (approximately 2-3 feet below the sediment surface). Table 3 summarizes the lead and copper data for surficial and deeper sediment samples from Mashapaug Cove. The mean surficial sediment lead concentration is 389 mg/kg while the mean “subsurface” sediment lead concentration is 23 mg/kg. The mean surficial sediment copper concentration is 1004 mg/kg while the mean “subsurface” sediment copper concentration is 49 mg/kg. This information indicates that sediments have been impacted by lead and copper most at the surface and to a lesser extent at depth. This suggests a surface deposition transport mechanism rather than a groundwater transport (upward gradient) mechanism with sediment deposition.

Table 1. Analytical Data for Lead and Copper in Groundwater Samples from Monitoring Well GZA-5

Adelaide Avenue Site
Providence, Rhode Island

Chemical	Frequency of Detection	Range of Reporting Limits for Non Detects	Range of Detected Concentrations	Average of Samples	GA Groundwater Standard	GZA-5 GMGZAX5X XX01XX 9/21/1994	GZA-5 GZA-5 12/9/1998	GZA-5 GZA-5 6/6/2006
Inorganics (mg/L)								
Copper	0 / 2	0.02 : 0.02		0.01		< 0.02		< 0.02
Lead	3 / 3		0.005 - 0.0139	0.009	0.015	0.008	0.005	0.0139

Table 2. Concentrations of Lead and Copper in Surface Water Samples - June 2006 - Mashapaug Cove

Adelaide Avenue Site
Providence, Rhode Island

Sample Location	Type	LAB ID	Reported Results (ug/l)				Reported Results (ug/l)			
			Lead				Copper			
			MDL	MRL	Result	Qualifier	MDL	MRL	Result	Qualifier
SW-10	FILTERED	0606346-01	0.4	5	ND		2	20	ND	
SW-11	FILTERED	0606346-02	0.4	5	2	J	2	20	ND	
SW-12	FILTERED	0606346-05	0.4	5	ND		2	20	ND	
SW-14	FILTERED	0606346-15	0.4	5	ND		2	20	ND	
SW-16	FILTERED	0606346-06	0.4	5	ND		2	20	ND	
SW-18	FILTERED	0606346-07	0.4	5	ND		2	20	ND	
SW-19	FILTERED	0606346-03	0.4	5	1.2	J	2	20	ND	
SW-20	FILTERED	0606346-14	0.4	5	ND		2	20	ND	
SW-21	FILTERED	0606346-08	0.4	5	ND		2	20	ND	
SW-22	FILTERED	0606346-09	0.4	5	ND		2	20	ND	
SW-23	FILTERED	0606346-10	0.4	5	ND		2	20	ND	
SW-24	FILTERED	0606346-11	0.4	5	ND		2	20	ND	
SW-25	FILTERED	606372-01	0.4	5	ND		2	20	5	J
SW-26	FILTERED	0606346-13	0.4	5	ND		2	20	ND	
SW-27	FILTERED	0606372-03	0.4	5	ND		2	20	7	J
AWQC					2.3				7.6	

MDL = Method Detection Limit

MRL = Method Reporting Limit

samples 0606346-04 and 0606346-12 were cancelled and replaced by 0606372-01 and 0606372-03.

ND = not detected (below both Method Reporting Limit and Method Detection Limit)

AWQC = Ambient Water Quality Criterion

Prepared By:	MJM
Checked By:	AMR

Table 3.
Lead and Copper Concentrations - 2006 Sediment Samples

Adelaide Avenue Site
Providence, Rhode Island

		Copper (mg/kg)		Lead (mg/kg)	
		Surficial	Subsurface	Surficial	Subsurface
SED10	6/22/2006	4.1	4	<6.5	<7.4
SED11	6/22/2006	423	1.7	590	<6.8
SED12	6/22/2006	12.5	5.1	20.7	<7.2
SED13	6/22/2006	5.3	5.3	<6.7	<6.9
SED14	6/22/2006	215	2.1	250	<7.8
SED15	6/22/2006	5.8	4.2	<6.6	<6.3
SED16	6/22/2006	2050	3.7	763	<7.1
SED17	6/22/2006	34.8	3.2	20.9	<6.3
SED18	6/22/2006	2590	13	961	<32.3
SED19	6/22/2006	1880	33	927	<47.4
SED20	6/22/2006	14.6	5.9	34.1	<24.4
SED21	6/22/2006	20.1	2.3	12.2	<6.8
SED22	6/22/2006	1970	46	426	<27.6
SED23	6/22/2006	8.6	4.7	<7.4	<6.6
SED24	6/22/2006	1930	200	520	76.4
SED25	6/22/2006	1890	51.8	672	<46.3
SED26	6/22/2006	180	144	219	182
SED27	6/22/2006	892	454	507	<7.2
SED28	6/21/2006	1930	48.4	659	101
SED29	6/21/2006	1260	57.9	772	<21.7
SED30	6/21/2006	1320	33.6	159	23
SED31	6/21/2006	1790	2.8	1120	<7.2
SED32	6/21/2006	2670	8.5	304	<7.1
Mean:		1004	49	389	23

Surficial samples are within the top foot of sediment

Subsurface samples collected in the at one foot intervals between 1.5 ft and 4 ft below surface

ATTACHMENT B

REVISED LABORATORY CERTIFICATES OF ANALYSIS

DISSOLVED METALS IN JUNE 2006 SURFACE WATER SAMPLES

AND

ADDITIONAL DOCUMENTATION OF RAW DATA

ADDITIONAL LABORATORY RAW DATA DOCUMENTATION

The following pages are raw data for dissolved metals (thallium and arsenic) for June 2006 surface water samples that were not previously submitted in hardcopy format by the laboratory.

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

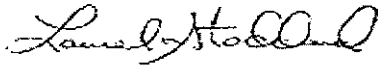
PROJECT NARRATIVE

Page One of Two

Chris Ricardi
MACTEC Engineering & Consulting, Inc.
32 Daniel Webster Highway Ste 25
Merrimack, NH 03054

RE: Providence Gorham Site
ESS Laboratory Work Order Number: 0606346

This signed Certificate of Analysis is our approved release of your analytical results. Beginning with this Project Narrative, the entire report has been paginated. The ESS Laboratory Certifications sheet is the final report page. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been mailed. If you have any questions or concerns, please feel free to call our Customer Service Department.



Laurel Stoddard
Laboratory Director

Date: July 24, 2006

Sample Receipt

15 Aqueous samples were received on June 21, 2006 for the analyses specified on the enclosed Chain of Custody Record. Samples 0606346-04 and 0606346-12 were canceled.

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration may be used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC, except where noted within this project narrative.

Metals Analysis

ESS Laboratory utilized the established linear dynamic range to determine acceptable analytical results.

The Relative Percent Difference for the Blank Spike/Blank Spike Duplicate was outside of the recommended range for Dissolved Antimony.

The batch duplicate was outside of the recommended range for Total Cadmium, however, was within \pm MRL.

The Relative Percent Difference for the Blank Spike/Blank Spike Duplicate was outside of the recommended range for Total Antimony.

Pesticides Analysis

Blank Spike was outside of the recommended range for gamma-Chlordane. This analyte exceeds the upper control limit, however, samples were non detect for this analyte.

The Relative Percent Difference for the Blank Spike/Blank Spike Duplicate was outside of the recommended range for gamma-Chlordane.

Continued

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

PROJECT NARRATIVE

Page Two of Two

Chris Ricardi
MACTEC Engineering & Consulting, Inc.
32 Daniel Webster Highway Ste 25 ,
Merrimack, NH 03054

RE: Providence Gorham Site
ESS Laboratory Work Order Number: 0606346

Volatile Organics Analysis

The Relative Percent Difference for the Blank Spike/Blank Spike Duplicate was outside of the recommended range for 1,4-Dioxane - Screen.

The batch Matrix Spike/Matrix Spike Duplicate was outside of the recommended ranges for 1,4-Dioxane - Screen due to matrix interferences. This analyte was below the lower control limit.

The Relative Percent Difference for the Matrix Spike/Matrix Spike Duplicate was outside of the recommended range for 1,4-Dioxane - Screen.

Blank Spike was outside of the recommended range for 1,4-Dioxane - Screen. This analyte exceeds the upper control limit, however, samples were non detect for this analyte.

Semivolatile Organics Analysis SIMS

The Relative Percent Difference for the Blank Spike/Blank Spike Duplicate was outside of the recommended range for Benzo(a)pyrene, Benzo(b)fluoranthene and Benzo(k)fluoranthene.

Surrogate recovery was outside of the recommended range for sample 0606346-10.

Internal standard recoveries were outside of the recommended ranges for samples 0606346-02 and 0606346-07 due to matrix interferences.

REVISION: Client requested to have the Dissolved Metals reports reissued with 'J' flag designations evaluated to the MDL. Many %RSDs between replicate runs was greater than 20%.

No other observations noted.

End of Project Narrative.

mlp

Revised on 2/23/07. Enclosed are the revised report pages for the samples previously submitted to you. These pages have been re-paginated, beginning with this Project Narrative. Please discard the corresponding Certificate of Analysis pages.

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CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW10
Date Sampled: 06/21/06 11:45
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-01
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony	J	0.0020	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0003	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.017	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium		ND	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver		ND	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.017	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW11
Date Sampled: 06/21/06 12:53
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-02
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0006	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.033	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium		ND	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead	J	0.0020	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver		ND	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium	J	0.0005	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.009	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW19
Date Sampled: 06/21/06 13:30
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-03
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0007	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.026	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium		ND	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead	J	0.0012	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium	J	0.01	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver	J	0.0008	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.026	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW12
Date Sampled: 06/21/06 14:16
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-05
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0003	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.017	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium		ND	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/28/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver		ND	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.020	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW16
Date Sampled: 06/21/06 14:29
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-06
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony	J	0.0036	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0007	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.029	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium		ND	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/28/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver		ND	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.010	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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FEB 23 2007

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW18
Date Sampled: 06/21/06 14:44
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-07
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony	J	0.0044	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0007	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.033	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium		ND	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver		ND	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium	J	0.0003	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.010	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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FEB 23 2007

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW21
Date Sampled: 06/21/06 14:54
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-08
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0007	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.033	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium		ND	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver		ND	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc		ND	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW22
Date Sampled: 06/21/06 15:05
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-09
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0009	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.033	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium	J	0.0003	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium	J	0.01	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver		ND	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium	J	0.0004	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.012	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW23
Date Sampled: 06/21/06 15:15
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-10
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0006	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.031	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium		ND	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver		ND	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.009	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW24
Date Sampled: 06/21/06 15:25
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-11
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0007	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.032	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium		ND	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver	J	0.0007	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.009	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW26
Date Sampled: 06/21/06 15:48
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-13
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0006	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.028	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium		ND	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver		ND	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.017	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW20
Date Sampled: 06/21/06 16:09
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-14
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic		ND	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.023	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium		ND	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver		ND	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.017	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW17
Date Sampled: 06/21/06 16:18
Percent Solids: N/A

ESS Laboratory Work Order: 0606346
ESS Laboratory Sample ID: 0606346-15
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0009	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.025	mg/L	0.050	0.002	6010B	1	JP	06/22/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/22/06	50	50
Cadmium	J	0.0003	mg/L	0.005	0.0003	6010B	1	JP	06/22/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Copper		ND	mg/L	0.020	0.002	6010B	1	JP	06/22/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/22/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/22/06	50	50
Silver		ND	mg/L	0.005	0.0007	6010B	1	JP	06/22/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.016	mg/L	0.050	0.009	6010B	1	JP	06/22/06	50	50

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Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.

Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0606346

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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3005A/6000/7000 Dissolved Metals

Batch BF62207 - 3005A

Blank

Antimony	ND	0.0050	mg/L							
Arsenic	ND	0.0050	mg/L							
Barium	ND	0.050	mg/L							
Beryllium	ND	0.001	mg/L							
Cadmium	ND	0.005	mg/L							
Chromium	ND	0.020	mg/L							
Copper	ND	0.020	mg/L							
Lead	ND	0.0050	mg/L							
Nickel	ND	0.050	mg/L							
Selenium	ND	0.05	mg/L							
Silver	ND	0.005	mg/L							
Thallium	ND	0.0020	mg/L							
Zinc	ND	0.050	mg/L							

LCS

Barium	0.508	0.050	mg/L	0.500		102	80-120			
Beryllium	0.053	0.001	mg/L	0.0500		106	80-120			
Cadmium	0.259	0.005	mg/L	0.250		104	80-120			
Chromium	0.519	0.020	mg/L	0.500		104	80-120			
Copper	0.509	0.020	mg/L	0.500		102	80-120			
Nickel	0.520	0.050	mg/L	0.500		104	80-120			
Selenium	1.06	0.05	mg/L	1.00		106	80-120			
Silver	0.261	0.005	mg/L	0.250		104	80-120			
Zinc	0.517	0.050	mg/L	0.500		103	80-120			

LCS

Antimony	0.0183	0.0050	mg/L	0.0200		92	80-120			
Arsenic	0.0191	0.0050	mg/L	0.0200		96	80-120			
Lead	0.0199	0.0050	mg/L	0.0200		100	80-120			
Thallium	0.0200	0.0020	mg/L	0.0200		100	80-120			

LCS Dup

Barium	0.509	0.050	mg/L	0.500		102	80-120	0	20	
Beryllium	0.053	0.001	mg/L	0.0500		106	80-120	0	20	
Cadmium	0.259	0.005	mg/L	0.250		104	80-120	0	20	
Chromium	0.520	0.020	mg/L	0.500		104	80-120	0	20	
Copper	0.510	0.020	mg/L	0.500		102	80-120	0	20	
Nickel	0.520	0.050	mg/L	0.500		104	80-120	0	20	
Selenium	1.06	0.05	mg/L	1.00		106	80-120	0	20	
Silver	0.261	0.005	mg/L	0.250		104	80-120	0	20	
Zinc	0.517	0.050	mg/L	0.500		103	80-120	0	20	

LCS Dup

Antimony	0.0240	0.0050	mg/L	0.0200		120	80-120	26	20	+
Arsenic	0.0190	0.0050	mg/L	0.0200		95	80-120	0.5	20	
Lead	0.0202	0.0050	mg/L	0.0200		101	80-120	1	20	
Thallium	0.0202	0.0020	mg/L	0.0200		101	80-120	1	20	

Duplicate Source: 0606346-06

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0606346

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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3005A/6000/7000 Dissolved Metals

Batch BF62207 - 3005A

Antimony	ND	0.0050	mg/L		0.0036			200	20	
Arsenic	0.0006	0.0050	mg/L		0.0007			15	20	J
Barium	0.029	0.050	mg/L		0.029			0	20	J
Beryllium	ND	0.001	mg/L		ND				20	
Cadmium	ND	0.005	mg/L		ND				20	
Chromium	ND	0.020	mg/L		ND				20	
Copper	ND	0.020	mg/L		ND				20	
Lead	ND	0.0050	mg/L		ND				20	
Nickel	ND	0.050	mg/L		ND				20	
Selenium	ND	0.05	mg/L		ND				20	
Silver	0.0007	0.005	mg/L		ND				20	J
Thallium	ND	0.0020	mg/L		ND				20	
Zinc	ND	0.050	mg/L		0.010			11	20	J

Duplicate Source: 0606346-15

Antimony	ND	0.0050	mg/L		ND				20	
Arsenic	0.0007	0.0050	mg/L		0.0009			25	20	J
Barium	0.024	0.050	mg/L		0.025			4	20	J
Beryllium	ND	0.001	mg/L		ND				20	
Cadmium	ND	0.005	mg/L		0.0003			200	20	
Chromium	ND	0.020	mg/L		ND				20	
Copper	ND	0.020	mg/L		ND				20	
Lead	ND	0.0050	mg/L		ND				20	
Nickel	ND	0.050	mg/L		ND				20	
Selenium	ND	0.05	mg/L		ND				20	
Silver	ND	0.005	mg/L		ND				20	
Thallium	0.0003	0.0020	mg/L		ND				20	J
Zinc	0.016	0.050	mg/L		0.016			0	20	J

Matrix Spike Source: 0606346-06

Barium	0.535	0.050	mg/L	0.500	0.029	101	75-125			
Beryllium	0.053	0.001	mg/L	0.0500	ND	106	75-125			
Cadmium	0.258	0.005	mg/L	0.250	ND	103	75-125			
Chromium	0.518	0.020	mg/L	0.500	ND	104	75-125			
Copper	0.524	0.020	mg/L	0.500	ND	105	75-125			
Nickel	0.516	0.050	mg/L	0.500	ND	103	75-125			
Selenium	1.06	0.05	mg/L	1.00	ND	106	75-125			
Silver	0.263	0.005	mg/L	0.250	ND	105	75-125			
Zinc	0.522	0.050	mg/L	0.500	0.010	102	75-125			

Matrix Spike Source: 0606346-15

Barium	0.538	0.050	mg/L	0.500	0.025	103	75-125			
Beryllium	0.054	0.001	mg/L	0.0500	ND	108	75-125			
Cadmium	0.261	0.005	mg/L	0.250	0.0003	104	75-125			
Chromium	0.527	0.020	mg/L	0.500	ND	105	75-125			
Copper	0.532	0.020	mg/L	0.500	ND	106	75-125			
Nickel	0.525	0.050	mg/L	0.500	ND	105	75-125			
Selenium	1.07	0.05	mg/L	1.00	ND	107	75-125			
Silver	0.266	0.005	mg/L	0.250	ND	106	75-125			

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Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.

Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0606346

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3005A/6000/7000 Dissolved Metals										
Batch BF62207 - 3005A										
Zinc	0.534	0.050	mg/L	0.500	0.016	104	75-125			
Matrix Spike	Source: 0606346-06									
Antimony	0.0197	0.0050	mg/L	0.0200	0.0036	80	75-125			
Arsenic	0.0211	0.0050	mg/L	0.0200	0.0007	102	75-125			
Lead	0.0208	0.0050	mg/L	0.0200	ND	104	75-125			
Thallium	0.0188	0.0020	mg/L	0.0200	ND	94	75-125			
Matrix Spike	Source: 0606346-15									
Antimony	0.0194	0.0050	mg/L	0.0200	ND	97	75-125			
Arsenic	0.0215	0.0050	mg/L	0.0200	0.0009	103	75-125			
Lead	0.0207	0.0050	mg/L	0.0200	ND	104	75-125			
Thallium	0.0197	0.0020	mg/L	0.0200	ND	98	75-125			
Batch BF62211 - 245.1/7470A										
Blank										
Mercury	ND	0.00050	mg/L							
LCS										
Mercury	0.00594	0.00050	mg/L	0.00600		99	80-120			
LCS Dup										
Mercury	0.00592	0.00050	mg/L	0.00600		99	80-120	0	20	
Duplicate										
Source: 0606346-05										
Mercury	ND	0.00050	mg/L		ND				20	
Duplicate										
Source: 0606346-15										
Mercury	ND	0.00050	mg/L		ND				20	
Matrix Spike										
Source: 0606346-05										
Mercury	0.00625	0.00050	mg/L	0.00600	ND	104	75-125			
Matrix Spike										
Source: 0606346-15										
Mercury	0.00631	0.00050	mg/L	0.00600	ND	105	75-125			
Matrix Spike Dup										
Source: 0606346-05										
Mercury	0.00637	0.00050	mg/L	0.00600	ND	106	75-125	2	20	
Matrix Spike Dup										
Source: 0606346-15										
Mercury	0.00632	0.00050	mg/L	0.00600	ND	105	75-125	0	20	

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Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.

Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0606346

Notes and Definitions

- U Analyte included in the analysis, but not detected
- J Reported between MDL and MRL; Estimated value.
- + Outside QC Limits.
- ND Analyte NOT DETECTED above the detection limit
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- mg/kg Results reported as wet weight
- TCLP Toxicity Characteristic Leachate Procedure
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- TIC A forward library search of the NBS Mass Spectral Library was performed on this sample using the McLafferty Probability Base Matching (PBM) Algorithm. An estimated concentration of non-TCL compounds tentatively identified is quantified by the internal standard method. The nearest internal standard free of interferences was used to quantify. A response factor of one was assumed. This search was inclusive of the ten largest peaks greater than ten percent of the nearest internal standard.
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- ¶ The state of RI does not grant certification for this method for non-potables.

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0606346

ESS LABORATORY CERTIFICATIONS

U.S. Army Corps of Engineers
Soil and Water

Navy Installation Restoration QA Program
Soil and Water

Rhode Island: A-179

Connecticut: PH-0750

Maine: RI002

Massachusetts: M-RI002

New Hampshire (NELAP accredited): 242405
Potable Water
Non Potable Water

New York (NELAP accredited): 11313
Potable Water
Non Potable Water
Solid and Hazardous Waste

United States Department of Agriculture
Soil Permit: S-54210

New Jersey (NELAP accredited): RI002
Potable Water
Non Potable Water
Soil and Hazardous Waste

Maryland: 301
Potable Water

ESS Laboratory

CHAIN OF CUSTODY

Division of Thielisch Engineering, Inc.
 185 Frances Avenue, Cranston, RI 02910-2211
 Tel. (401) 461-7181 Fax (401) 461-4486
 www.esslaboratory.com

Turn Time Standard Other _____
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from:
 MA CT NH NJ NY ME Other _____
 Is this project for any of the following: USACE Other _____
 MA-MCP Navy

Reporting Limits _____
 Electronic Deliverable _____ Yes No
 Format: Excel Access PDF Other _____
 ESS LAB PROJECT ID 0606346

Co. Name MACTEC		Project #		Project Name (20 Char. or less) Gorham		Circle and/or Write Required Analysis	
Contact Person Chris Ricardi		Address		City		State	
Telephone # 207 775 5401		Fax #		Email Address		Zip	
ESS LAB Sample #		Date		Collection Time		COMP	
GRAB		MATRIX		Sample Identification (20 Char. or less)		Pres Code	
Number of Containers		Type of Containers		8260 VOA		624	
8015 GRO w/targets		8015 DR0		8100 TPH		EPH w/PAHs	
EPH 4 Diesel		608 PCB		8081 Pesticides		8082 PCB	
8270 SVOA		625		PAH 8270		RCRA5	
RCRA8		PP13		TAL23		TCLP-RCRA	
NBC7		MCP-METALS (13)		MCP-METALS (13)		VOA (#1)	
PAH		Pesticides		PCB		PP13 Metals (HNO3)	
Diss. PP13 Metals (f.f.)		HNO3		Dioxins/Furans			

Container Type	P-Poly	G-Glass	S-Sterile	V-VOA	Matrix:	S-Soil	SD-Solid	D-Sludge	WW-Waste Water	GW-Ground Water	SW-Surface Water	DW-Drinking Water	O-Oil	W-Wipes	F-Filters
1	6-21-06	1145	X	SW	SW10										
2	"	1253	X	SW	SW11										
3	"	1330	X	SW	SW19										
4	"	1350	X	SW	SW27										
5	"	1416	X	SW	SW12										
6	"	1429	X	SW	SW16										
7	"	1444	X	SW	SW18										
8	"	1454	X	SW	SW21										
9	"	1505	X	SW	SW22										
10	"	1515	X	SW	SW23										

Container Present Yes No Inernal Use Only
 Seals Intact Yes No No NA: [] Pickup
 Cooler Temp: 5.5 [] Technicians _____
 Comments: **Mark Padover**

Relinquished by: (Signature) <i>Mark Padover</i>	Date/Time 6-21-06 1824	Received by: (Signature) <i>Chris Ricardi</i>	Date/Time 6-21-06 1824	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
---	---------------------------	--	---------------------------	------------------------------	-----------	--------------------------	-----------

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A
 Please fax all changes to Chain of Custody in writing.
 1 (White) Lab Copy 2 (Yellow) Client Receipt
 10/28/04 A

ESS Laboratory

CHAIN OF CUSTODY

Page 2 of 3

Division of Thielisch Engineering, Inc.
 185 Frances Avenue, Cranston, RI 02910-2211
 Tel. (401) 461-7181 Fax (401) 461-4486
 www.esslaboratory.com

Turn Time Standard Other _____
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from:
 MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following: USACE Navy Other _____

Reporting Limits _____
 Electronic Deliverable _____
 Format: Excel Access PDF Other
 ESS LAB PROJECT ID: 0606346

Co. Name MacTel	Project #	Project Name (20 Char. or less) Gerhan Ste	Circle and/or Write Required Analysis	
Contact Person Chris Riccardi	Address	Address		
City	State	Zip		
Telephone # 207 775 5401	Fax #	PO #		
ESS LAB Sample #	Date	Collection Time	COMP	GRAB
				MATRIX
			Sample Identification (20 Char. or less)	
			Pres Code	Number of Containers
				Type of Containers
				8100 TPH EPH w/o PAHs 8081 Pesticides 8270 SVOA RCRA5 TCLP-RCRA8 MCP-METALS (13) METALS (13)
				8015 DRO EPH w/PAHs 8082 PCB 625 RCRA8 MCP-METALS (13) HardWESS
				VPH w/targets 608 Pesticides 608 PCB PAH 8270 PP13 TAL23 NBC7 VOA (HCl) PAH Pesticides PCB PP13 Metals (HNO3)
				Diss. PP13 Metals (f.f.) HNO3 Dioxins/Furans

Container Type	P-Poly	G-Glass	S-Sterile	V-VOA	Matrix:	S-Soil	SD-Solid	D-Sludge	WW-Waste Water	GW-Ground Water	SW-Surface Water	DW-Drinking Water	O-Oil	W-Wipes	F-Filters
Cooler Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Internal Use Only										
Seals Intact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No NA: <input type="checkbox"/>	<input type="checkbox"/>	Pickup								
Cooler Temp:	<u>55</u>				<input type="checkbox"/>	Technicians									
Reinquished by: (Signature)	<u>[Signature]</u>	Date/Time	<u>6-21-06</u>	<u>1024</u>	Received by: (Signature)	<u>[Signature]</u>	Date/Time	<u>6/20/1824</u>	Reinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time
Reinquished by: (Signature)	<u>[Signature]</u>	Date/Time			Received by: (Signature)	<u>[Signature]</u>	Date/Time		Reinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time

*By circling MA-MCP client acknowledges samples were collected in accordance with MADEP CAM VII A
 Please fax all changes to Chain of Custody in writing.
 1 (White) Lab Copy 2 (Yellow) Client Receipt
 10/26/04 A

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

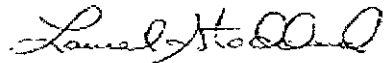
PROJECT NARRATIVE

Cris Ricardi
MACTEC Engineering & Consulting, Inc.
32 Daniel Webster Highway Ste 25
Merrimack, NH 03054

RE: Providence Gorham Site

ESS Laboratory Work Order Number: 0606372

This signed Certificate of Analysis is our approved release of your analytical results. Beginning with this Project Narrative, the entire report has been paginated. The ESS Laboratory Certifications sheet is the final report page. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been mailed. If you have any questions or concerns, please feel free to call our Customer Service Department.



Laurel Stoddard
Laboratory Director

Date: July 25, 2006

Sample Receipt

3 Soil samples were received on June 22, 2006 for the analyses specified on the enclosed Chain of Custody Record.

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration may be used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC, except where noted within this project narrative.

Metals Analysis

ESS Laboratory utilized the established linear dynamic range to determine acceptable analytical results.

The Method Blank for Dissolved Cadmium was present at a level of 0.0004 mg/L, for Dissolved Copper at a level of 0.004 mg/L and for Dissolved Silver at a level of 0.0007 mg/L.

Volatile Organics Analysis

Blank Spike was outside of the recommended range for 1,2,3-Trichlorobenzene and 1,4-Dioxane - Screen. These analytes exceed the upper control limit, however, samples were non detect for these analytes.

The Relative Percent Difference for the Blank Spike/Blank Spike Duplicate was outside of the recommended range for 1,4-Dioxane - Screen.

Semivolatile Organics Analysis SIM

The Relative Percent Difference for the Blank Spike/Blank Spike Duplicate was outside of the recommended range for Benzo(a)pyrene, Benzo(b)fluoranthene and Benzo(k)fluoranthene.

Surrogate recovery was outside of the recommended range for samples 0606372-01, 0606372-02 and 0606372-03.

REVISION: Client requested to have the Dissolved Metals reports reissued with 'J' flag designations evaluated to the MDL. Many %RSDs between replicate runs was greater than 20%.

No other observations noted.

End of Project Narrative.

mlp

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FEB 23 2007

Revised on 10/7/99. Enclosed are the revised report pages for the samples previously submitted to you. These pages have been re-paginated, beginning with this Project Narrative. Please discard the corresponding Certificate of Analysis pages.

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW25
Date Sampled: 06/22/06 12:20
Percent Solids: N/A

ESS Laboratory Work Order: 0606372
ESS Laboratory Sample ID: 0606372-01
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0007	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.031	mg/L	0.050	0.002	6010B	1	JP	06/23/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/23/06	50	50
Cadmium	B, J	0.0005	mg/L	0.005	0.0003	6010B	1	JP	06/23/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/23/06	50	50
Copper	B, J	0.005	mg/L	0.020	0.002	6010B	1	JP	06/23/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/23/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/23/06	50	50
Silver	B, J	0.001	mg/L	0.005	0.0007	6010B	1	JP	06/23/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.017	mg/L	0.050	0.009	6010B	1	JP	06/23/06	50	50

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FEB 23 2007

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW25 D
Date Sampled: 06/22/06 12:20
Percent Solids: N/A

ESS Laboratory Work Order: 0606372
ESS Laboratory Sample ID: 0606372-02
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony		ND	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0005	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.030	mg/L	0.050	0.002	6010B	1	JP	06/23/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/23/06	50	50
Cadmium	B, J	0.0004	mg/L	0.005	0.0003	6010B	1	JP	06/23/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/23/06	50	50
Copper	B, J	0.004	mg/L	0.020	0.002	6010B	1	JP	06/23/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel		ND	mg/L	0.050	0.001	6010B	1	JP	06/23/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/23/06	50	50
Silver	B, J	0.0009	mg/L	0.005	0.0007	6010B	1	JP	06/23/06	50	50
Thallium		ND	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.012	mg/L	0.050	0.009	6010B	1	JP	06/23/06	50	50

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FEB 23 2007

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: SW27
Date Sampled: 06/22/06 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 0606372
ESS Laboratory Sample ID: 0606372-03
Sample Matrix: Surface Water

3005A/6000/7000 Dissolved Metals

<u>Analyte</u>		<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Antimony	J	0.0013	mg/L	0.0050	0.0006	7041	1	JP	06/28/06	50	50
Arsenic	J	0.0008	mg/L	0.0050	0.0003	7060A	1	JP	06/27/06	50	50
Barium	J	0.029	mg/L	0.050	0.002	6010B	1	JP	06/23/06	50	50
Beryllium		ND	mg/L	0.001	0.0002	6010B	1	JP	06/23/06	50	50
Cadmium	B, J	0.0004	mg/L	0.005	0.0003	6010B	1	JP	06/23/06	50	50
Chromium		ND	mg/L	0.020	0.002	6010B	1	JP	06/23/06	50	50
Copper	B, J	0.007	mg/L	0.020	0.002	6010B	1	JP	06/23/06	50	50
Lead		ND	mg/L	0.0050	0.0004	7421	1	JP	06/27/06	50	50
Mercury		ND	mg/L	0.00050	0.00004	7470A	1	EEM	06/23/06	20	40
Nickel	J	0.001	mg/L	0.050	0.001	6010B	1	JP	06/23/06	50	50
Selenium		ND	mg/L	0.05	0.01	6010B	1	JP	06/23/06	50	50
Silver	B, J	0.0008	mg/L	0.005	0.0007	6010B	1	JP	06/23/06	50	50
Thallium	J	0.0004	mg/L	0.0020	0.0003	7841	1	JP	06/26/06	50	50
Zinc	J	0.011	mg/L	0.050	0.009	6010B	1	JP	06/23/06	50	50

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FEB 23 2007

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0606372

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

3005A/6000/7000 Dissolved Metals

Batch BF62302 - 3005A

Blank

Antimony	ND	0.0050	mg/L							
Arsenic	ND	0.0050	mg/L							
Barium	ND	0.050	mg/L							
Beryllium	ND	0.001	mg/L							
Cadmium	0.0004	0.005	mg/L							J
Chromium	ND	0.020	mg/L							
Copper	0.004	0.020	mg/L							J
Lead	ND	0.0050	mg/L							
Nickel	ND	0.050	mg/L							
Selenium	ND	0.05	mg/L							
Silver	0.0007	0.005	mg/L							J
Thallium	ND	0.0020	mg/L							
Zinc	ND	0.050	mg/L							

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FEB 23 2007

LCS

Barium	0.508	0.050	mg/L	0.500		102	80-120			
Beryllium	0.053	0.001	mg/L	0.0500		106	80-120			
Cadmium	0.259	0.005	mg/L	0.250		104	80-120			
Chromium	0.519	0.020	mg/L	0.500		104	80-120			
Copper	0.514	0.020	mg/L	0.500		103	80-120			
Nickel	0.521	0.050	mg/L	0.500		104	80-120			
Selenium	1.05	0.05	mg/L	1.00		105	80-120			
Silver	0.259	0.005	mg/L	0.250		104	80-120			
Zinc	0.520	0.050	mg/L	0.500		104	80-120			

LCS

Antimony	0.0195	0.0050	mg/L	0.0200		98	80-120			
Arsenic	0.0186	0.0050	mg/L	0.0200		93	80-120			
Lead	0.0194	0.0050	mg/L	0.0200		97	80-120			
Thallium	0.0210	0.0020	mg/L	0.0200		105	80-120			

LCS Dup

Barium	0.503	0.050	mg/L	0.500		101	80-120	1	20	
Beryllium	0.052	0.001	mg/L	0.0500		104	80-120	2	20	
Cadmium	0.256	0.005	mg/L	0.250		102	80-120	2	20	
Chromium	0.514	0.020	mg/L	0.500		103	80-120	1	20	
Copper	0.513	0.020	mg/L	0.500		103	80-120	0	20	
Nickel	0.518	0.050	mg/L	0.500		104	80-120	0	20	
Selenium	1.04	0.05	mg/L	1.00		104	80-120	1	20	
Silver	0.257	0.005	mg/L	0.250		103	80-120	0.8	20	
Zinc	0.514	0.050	mg/L	0.500		103	80-120	1	20	

LCS Dup

Antimony	0.0185	0.0050	mg/L	0.0200		92	80-120	6	20	
Arsenic	0.0192	0.0050	mg/L	0.0200		96	80-120	3	20	
Lead	0.0199	0.0050	mg/L	0.0200		100	80-120	3	20	
Thallium	0.0207	0.0020	mg/L	0.0200		104	80-120	1	20	

Batch BF62303 - 245.1/7470A

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0606372

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3005A/6000/7000 Dissolved Metals										
Batch BF62303 - 245.1/7470A										
Blank										
Mercury	ND	0.00050	mg/L							
LCS										
Mercury	0.00598	0.00050	mg/L	0.00600		100	80-120			
LCS Dup										
Mercury	0.00606	0.00050	mg/L	0.00600		101	80-120	1	20	

REVISED
FEB 23 2007

ESS Laboratory

Division of Thielsch Engineering, Inc.

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Client Name: MACTEC Engineering & Consulting, Inc.

Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0606372

Notes and Definitions

- U Analyte included in the analysis, but not detected
- J Reported between MDL and MRL; Estimated value.
- B Present in Blank.
- ND Analyte NOT DETECTED above the detection limit
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- mg/kg Results reported as wet weight
- TCLP Toxicity Characteristic Leachate Procedure
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- TIC A forward library search of the NBS Mass Spectral Library was performed on this sample using the McLafferty Probability Base Matching (PBM) Algorithm. An estimated concentration of non-TCL compounds tentatively identified is quantified by the internal standard method. The nearest internal standard free of interferences was used to quantify. A response factor of one was assumed. This search was inclusive of the ten largest peaks greater than ten percent of the nearest internal standard.
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- ¶ The state of RI does not grant certification for this method for non-potables.

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0606372

ESS LABORATORY CERTIFICATIONS

U.S. Army Corps of Engineers
Soil and Water

Navy Installation Restoration QA Program
Soil and Water

Rhode Island: A-179

Connecticut: PH-0750

Maine: RI002

Massachusetts: M-RI002

New Hampshire (NELAP accredited): 242405
Potable Water
Non Potable Water

New York (NELAP accredited): 11313
Potable Water
Non Potable Water
Solid and Hazardous Waste

United States Department of Agriculture
Soil Permit: S-54210

New Jersey (NELAP accredited): RI002
Potable Water
Non Potable Water
Soil and Hazardous Waste

Maryland: 301
Potable Water



ESS Laboratory
 Division of Thielsch Engineering, Inc.
 185 Frances Avenue, Cranston, RI 02910-2211
 Tel. (401) 461-7181 Fax (401) 461-4486
 www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time _____ Standard _____ Other _____
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from:
 MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following: USACE Other _____
 MA-MCP Navy USACE Other _____

Reporting Limits _____
 Electronic Deliverable Yes ___ No ___
 Format: Excel ___ Access ___ PDF ___ Other ___

ESS LAB PROJECT ID: **0606372**

Project # _____ Project Name (20 Char. or less) _____
 Address _____ Email Address _____
 City _____ State _____ Zip _____ PO # _____

Telephone # **207 775 5401** Fax # _____

ESS LAB Sample#	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers
1	6-22-06	1220	X	X	X	SWZ5		8	9/4m
2	6-22-06	1220	X	X	X	SWZ5 D		8	"
3	6-22-06	1200	X	X	X	SWZ7		14	"

Container Type: P-Poly Yes ___ No ___ G-Glass ___ S-Sterile ___ V-VOA ___ Matrix: S-Soil ___ SD-Solid ___ D-Sludge ___ WW-Waste Water ___ GW-Ground Water ___ SW-Surface Water ___ DW-Drinking Water ___ O-Oil ___ W-Wipes ___ F-Filters

Cooler Present Yes ___ No ___ Internal Use Only ___
 Seals Intact Yes ___ No ___ NA: ___ [] Pickup ___ [] Technicians ___
 Cooler Temp: **35**

Preservation Code: 1- NP, 2- HCl, 3- H₂SO₄, 4- HNO₃, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

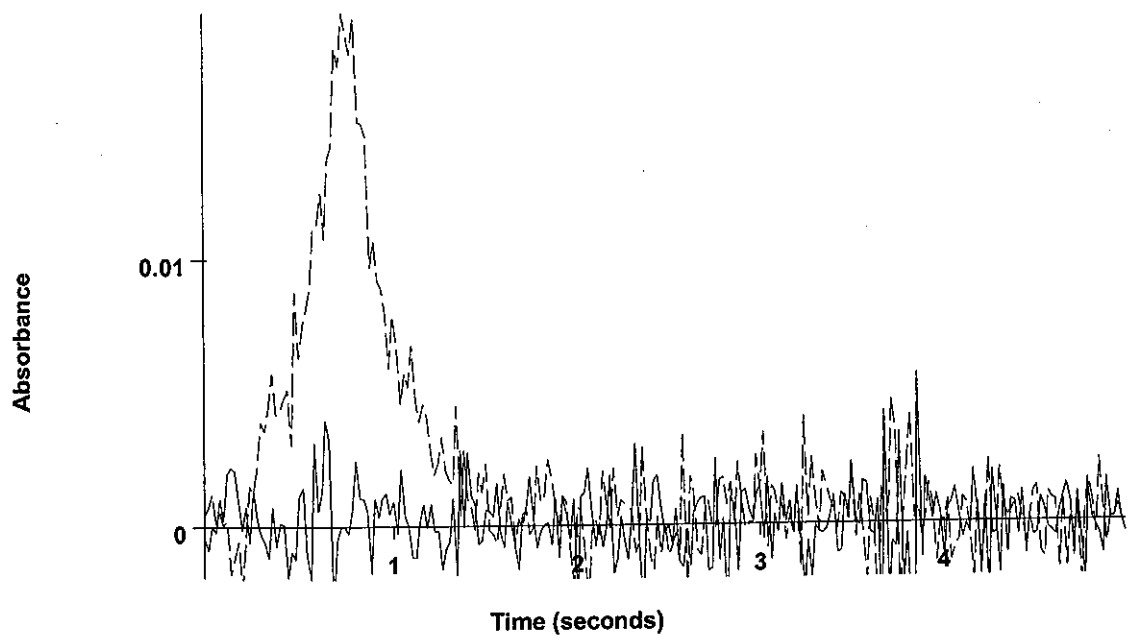
Sampled by: **Mark Padover**
 Comments: _____

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
<i>Mark Padover</i>	6-22-06 1042	<i>Chris Riardi</i>	6-22-06 1642

Circle and/or Write Required Analysis

8081 EPA w/o PAHs 4 Diesel	8082 EPA w/PAHs	8100 DRO	8015 VPH	8021 MTBE/BTEX GRO	8260 VOA	8270 PAH	8270 SVOA	8087 Pesticides PCB	8088 Pesticides PCB	RCA8 RCA8 PP13 TAL23	TCLP-RCA8 NBC7	MCP-METALS (13) HARDWARES	VOA (HCl)	PAH	pesticides	PCB	PP13 Metals (Amo ₃)
													X	X			X
													X	X			X
													X	X			X

Tl



 0606346-10 dis
 (Replicate 1)
 (AA)

 0606346-10 dis
 (Replicate 1)
 (BG)

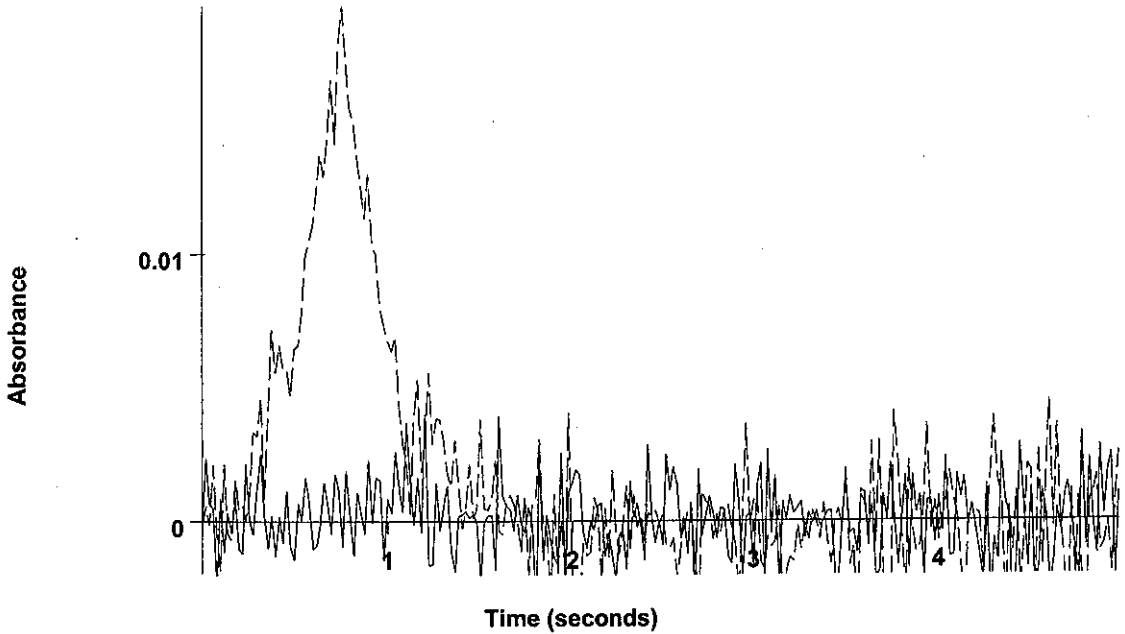
2	0.1	0.1	0.0005	0.0007	0.0034	0.0102	0.0183	06:26:38	Yes
Mean:	0.1	0.1	0.0005						
SD :	0.05	0.05	0.0001						
%RSD:	77.60	77.60	18.88						



=====
 Element: Tl Seq. No.: 64 AS Loc.: 36 Date: 06/26/2006
 Sample ID: 0606346-11 dis
 µL dispensed: 10 from 148, 5 from 147, 15 from 36
 =====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.0	0.0	0.0004	0.0006	0.0040	0.0083	0.0192	06:29:29	Yes

Tl



0606346-11 dis
(Replicate 1)
(AA)

0606346-11 dis
(Replicate 1)
(BG)

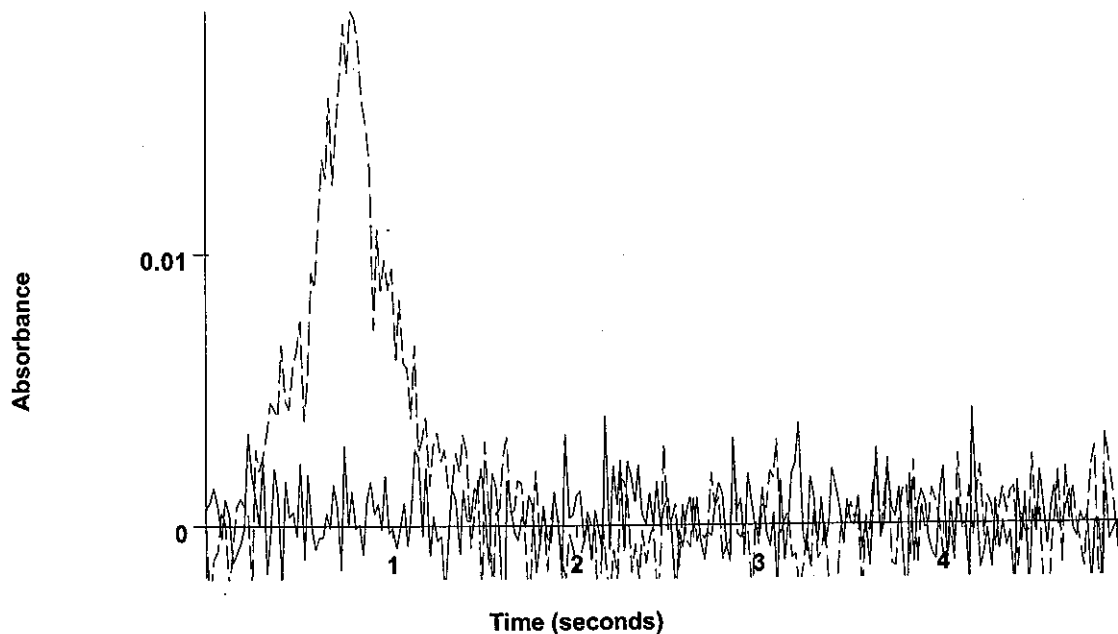
2	-0.2	-0.2	0.0001	0.0003	0.0060	0.0098	0.0211	06:32:19	Yes
Mean:	-0.1	-0.1	0.0002						
SD :	0.12	0.12	0.0002						
%RSD:	147.3	147.3	85.07						

Handwritten signature

=====
 Element: Tl Seq. No.: 65 AS Loc.: 37 Date: 06/26/2006
 Sample ID: 0606346-13 dis
 µL dispensed: 10 from 148, 5 from 147, 15 from 37
 =====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.4	0.4	0.0010	0.0012	0.0043	0.0085	0.0189	06:35:09	Yes

Tl



0606346-13 dis
(Replicate 1)
(AA)

0606346-13 dis
(Replicate 1)
(BG)

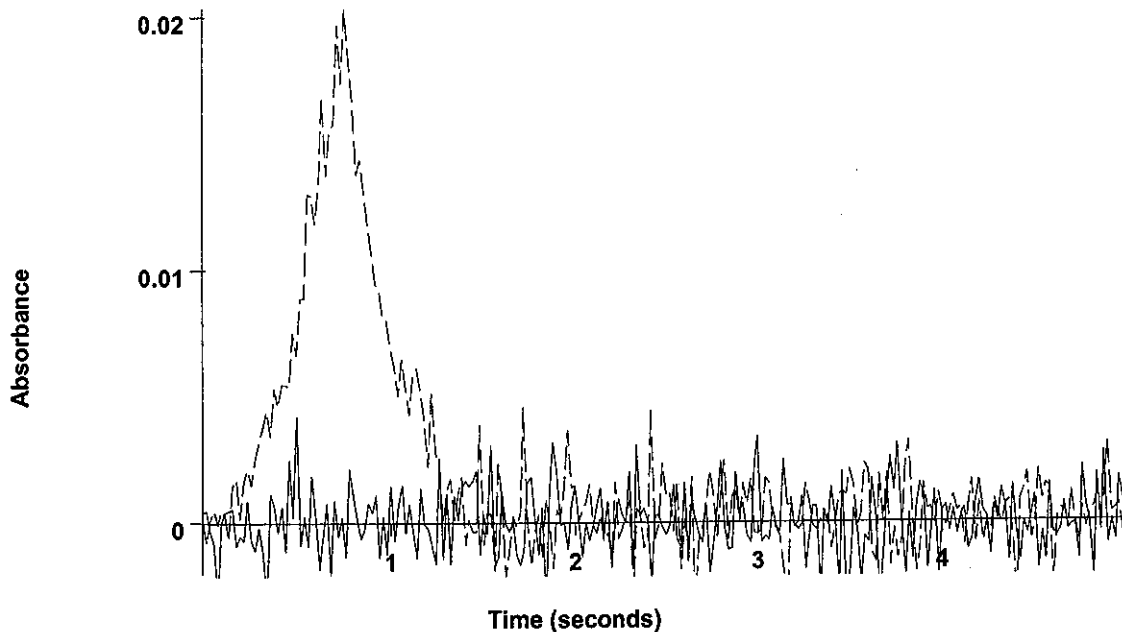
2	-0.5	-0.5	-0.0004	-0.0002	0.0034	0.0083	0.0199	06:37:59	Yes
Mean:	0.0	0.0	0.0003						
SD :	0.63	0.63	0.0010						
%RSD:	1523	1523	353.57						



=====
 Element: Tl Seq. No.: 66 AS Loc.: 38 Date: 06/26/2006
 Sample ID: 0606346-14 dis
 µL dispensed: 10 from 148, 5 from 147, 15 from 38
 =====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.2	-0.2	0.0001	0.0003	0.0042	0.0104	0.0204	06:40:50	Yes

Tl



0606346-14 dis
(Replicate 1)
(AA)

0606346-14 dis
(Replicate 1)
(BG)

2	0.6	0.6	0.0013	0.0015	0.0047	0.0090	0.0220	06:43:40	Yes
Mean:	0.2	0.2	0.0007						
SD :	0.51	0.51	0.0009						
%RSD:	266.5	266.5	124.86						

(Handwritten mark)

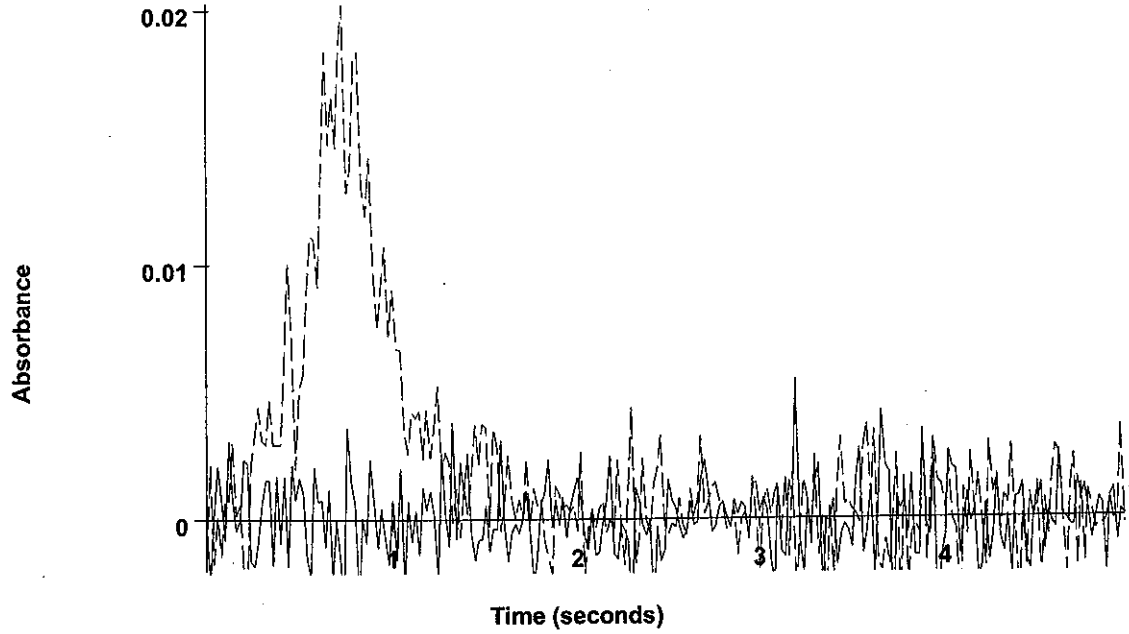
=====
Element: Tl Seq. No.: 67 AS Loc.: 39 Date: 06/26/2006

Sample ID: 0606346-15 dis

µL dispensed: 10 from 148, 5 from 147, 15 from 39

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.2	-0.2	0.0000	0.0002	0.0055	0.0102	0.0203	06:46:30	Yes

Tl



0606346-15 dis
(Replicate 1)
(AA)
0606346-15 dis
(Replicate 1)
(BG)

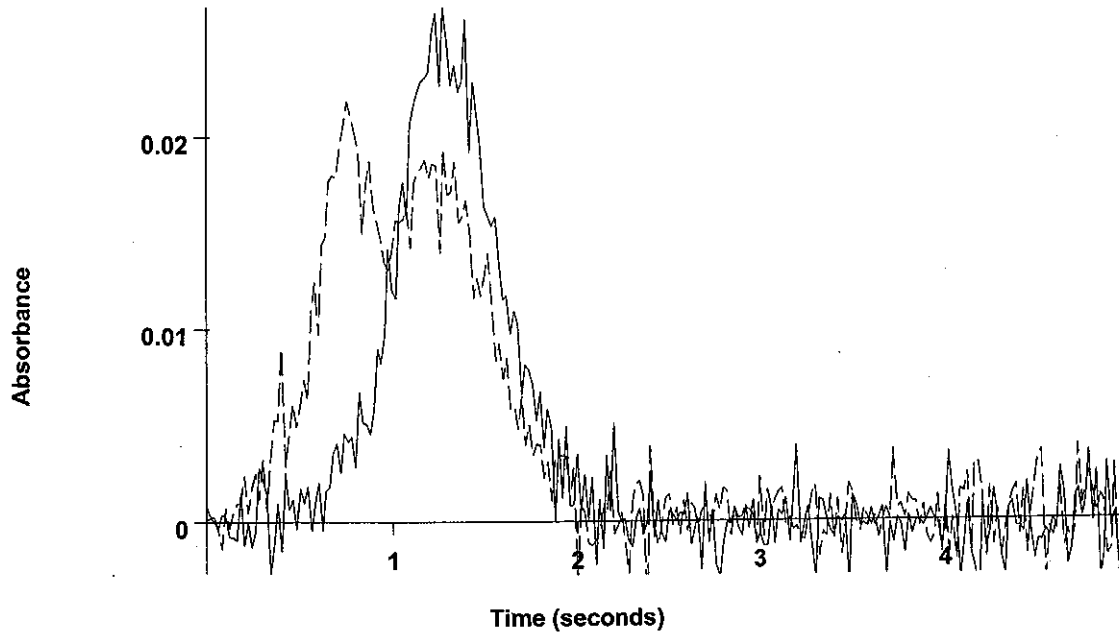
2	0.4	0.4	0.0010	0.0012	0.0038	0.0089	0.0222	06:49:20	Yes
Mean:	0.1	0.1	0.0005						
SD :	0.43	0.43	0.0007						
%RSD:	451.7	451.7	136.53						

Handwritten mark resembling a stylized 'A' or '1'.

=====
 Element: Tl Seq. No.: 68 AS Loc.: 39 Date: 06/26/2006
 Sample ID: 0606346-15 dis
 µL dispensed: 7 from 148, 5 from 147, 3 from 131, 15 from 39
 =====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	9.6	9.6	0.0164	0.0166	0.0267	0.0205	0.0219	06:52:20	Yes

Tl



0606346-15 dis
(Replicate 1)
(AA)

0606346-15 dis
(Replicate 1)
(BG)

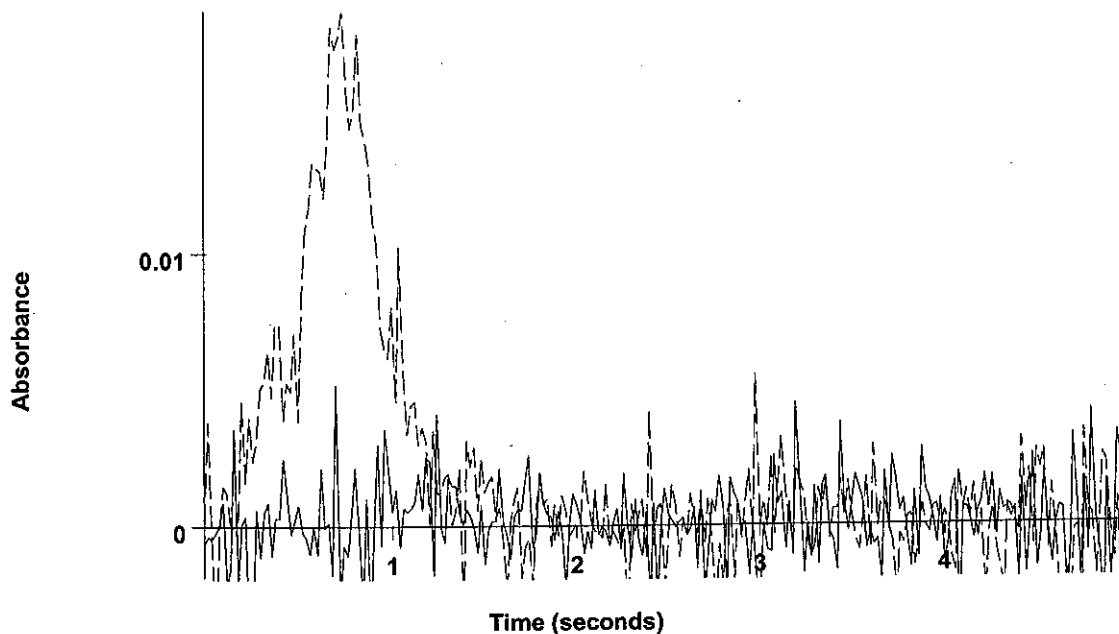
2	11.7	11.7	0.0199	0.0201	0.0290	0.0208	0.0219	06:55:19	Yes
Mean:	10.7	10.7	0.0182						
SD :	1.47	1.47	0.0025						
%RSD:	13.80	13.80	13.52						

Recovery for Tl = 106.6 % within 85 % to 115 %

=====
 Element: Tl Seq. No.: 69 AS Loc.: 40 Date: 06/26/2006
 Sample ID: bf62207-dup2
 µL dispensed: 10 from 148, 5 from 147, 15 from 40
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.2	0.2	0.0007	0.0009	0.0052	0.0100	0.0189	06:58:09	Yes

Tl



bf62207-dup2
(Replicate 1)
(AA)

bf62207-dup2
(Replicate 1)
(BG)

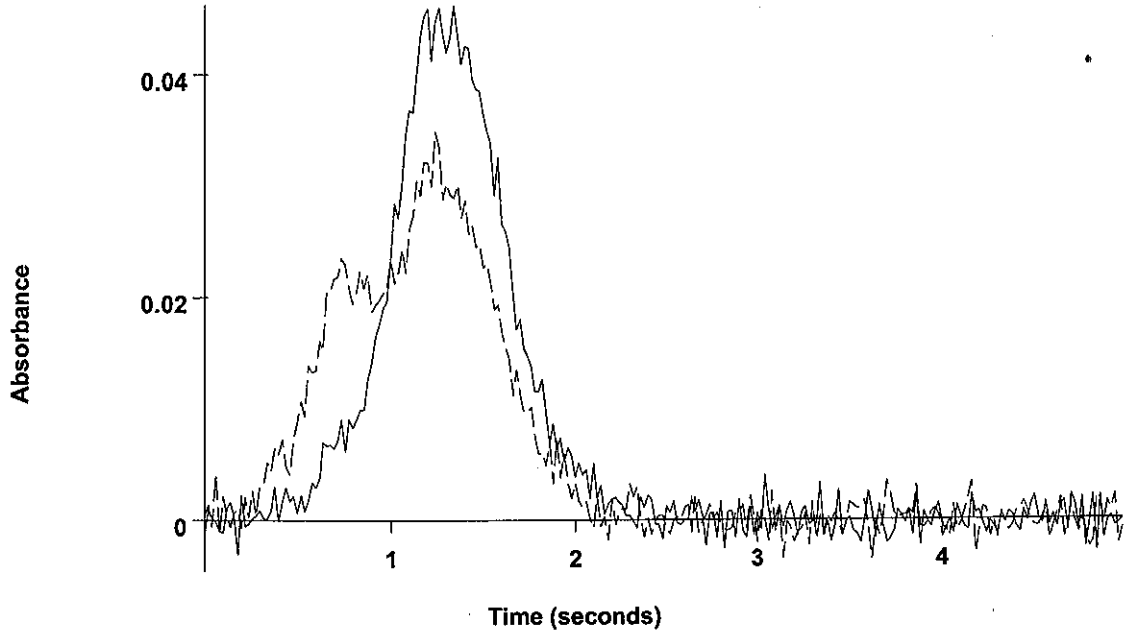
2	0.4	0.4	0.0010	0.0012	0.0034	0.0093	0.0196	07:01:00	Yes
Mean:	0.3	0.3	0.0008						
SD :	0.15	0.15	0.0003						
%RSD:	54.73	54.73	30.91						

Handwritten signature

=====
Element: Tl Seq. No.: 70 AS Loc.: 41 Date: 06/26/2006
Sample ID: bf62207-ms4
µL dispensed: 10 from 148, 5 from 147, 15 from 41
=====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	20.0	20.0	0.0338	0.0340	0.0462	0.0302	0.0349	07:03:49	Yes

TI



 bf62207-ms4
 (Replicate 1)
 (AA)

 bf62207-ms4
 (Replicate 1)
 (BG)

2	19.3	19.3	0.0326	0.0328	0.0461	0.0292	0.0334	07:06:38	Yes
Mean:	19.7	19.7	0.0332						
SD :	0.53	0.53	0.0009						
%RSD:	2.68	2.68	2.65						

995

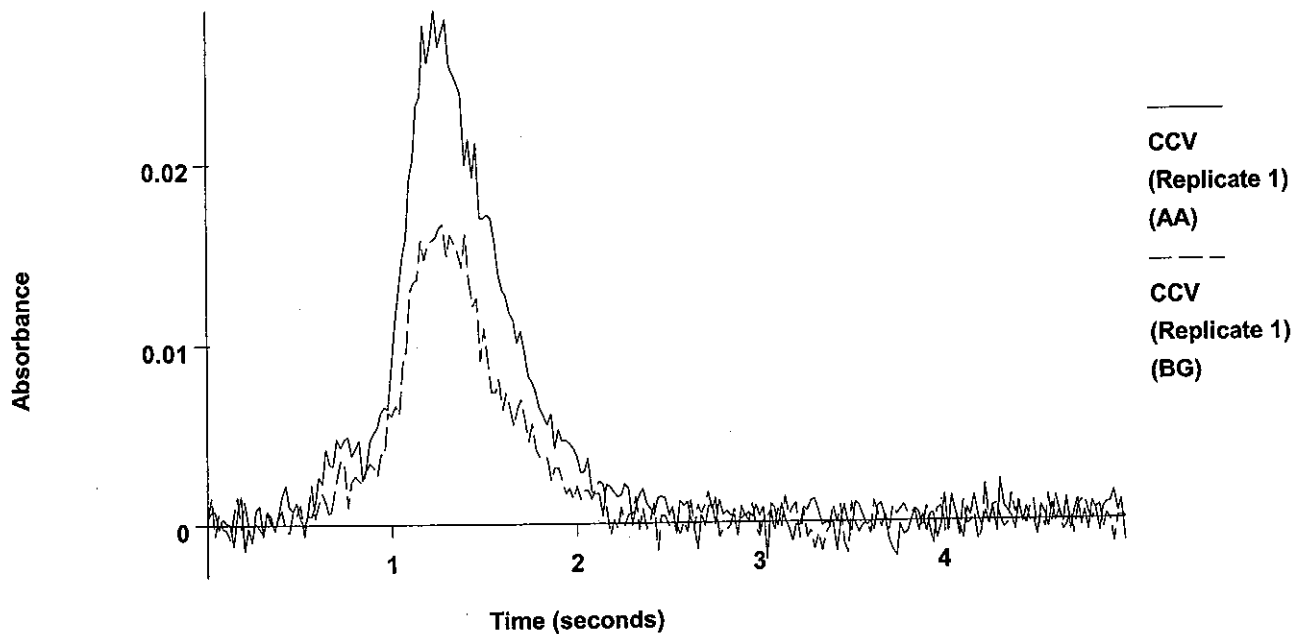
=====
 Element: Tl Seq. No.: 71 AS Loc.: 124 Date: 06/26/2006

Sample ID: CCV

µL dispensed: 10 from 148, 5 from 147, 15 from 124

Repl #	SampleConc µg/L	StdConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	11.0	11.0	0.0187	0.0189	0.0286	0.0112	0.0167	07:09:29	Yes

Tl



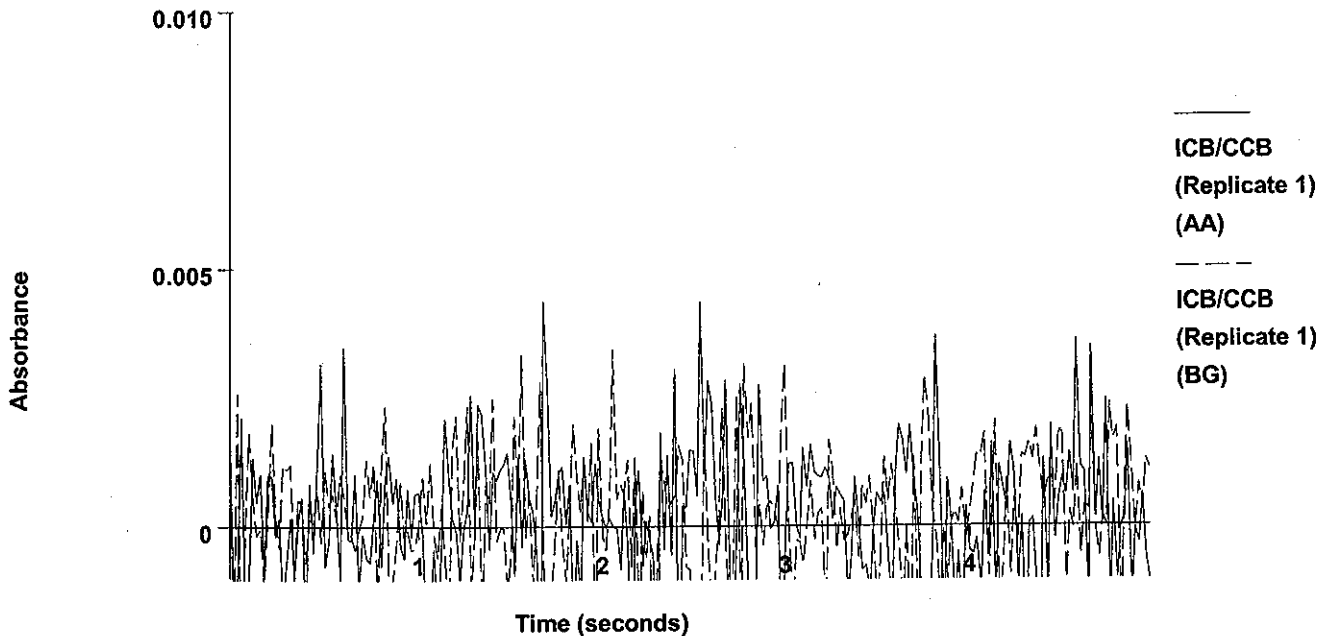
2	10.2	10.2	0.0174	0.0176	0.0264	0.0127	0.0173	07:12:22	Yes
Mean:	10.6	10.6	0.0180						
SD :	0.53	0.53	0.0009						
%RSD:	5.00	5.00	4.90						

QC value within specified limits. ✓

=====
 Element: Tl Seq. No.: 72 AS Loc.: 148 Date: 06/26/2006
 Sample ID: ICB/CCB
 µL dispensed: 10 from 148, 5 from 147, 15 from 148
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.4	0.4	0.0010	0.0012	0.0044	0.0015	0.0035	07:15:13	Yes

Tl



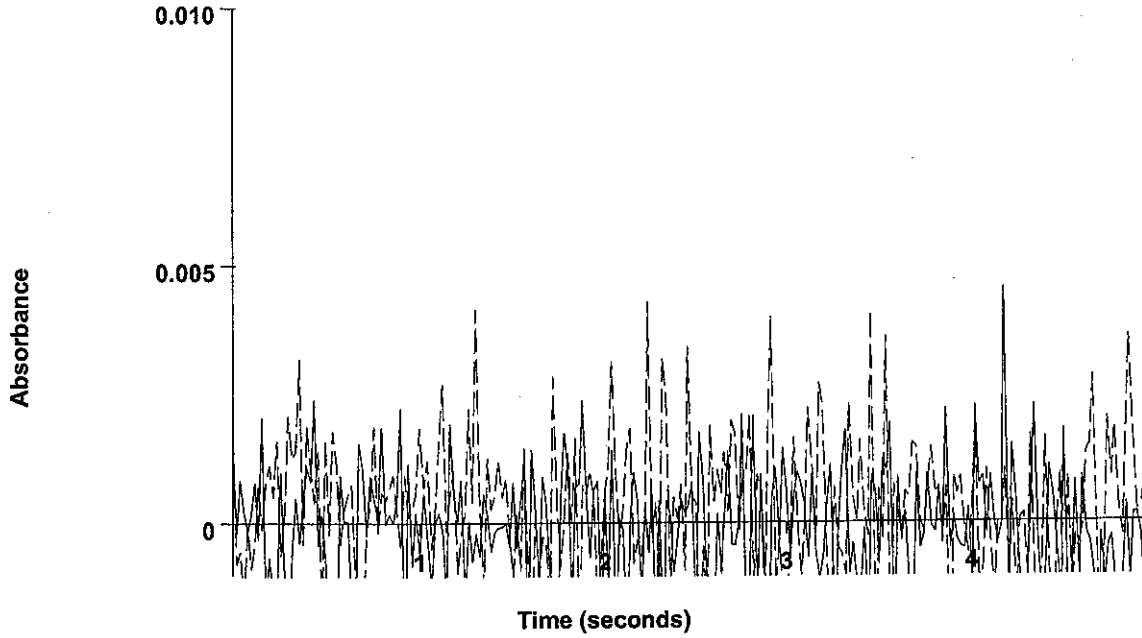
2	0.1	0.1	0.0006	0.0008	0.0019	0.0002	0.0021	07:18:02	Yes
Mean:	0.2	0.2	0.0008						
SD :	0.18	0.18	0.0003						
%RSD:	74.78	74.78	39.69						

QC value within specified limits.

=====
 Element: Tl Seq. No.: 73 AS Loc.: 42 Date: 06/26/2006
 Sample ID: bf62207-sd2 x5
 µL dispensed: 10 from 148, 5 from 147, 15 from 42
 =====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.7	-0.7	-0.0008	-0.0006	0.0046	0.0017	0.0043	07:20:51	Yes

Tl



bf62207-sd2 x5
(Replicate 1)
(AA)

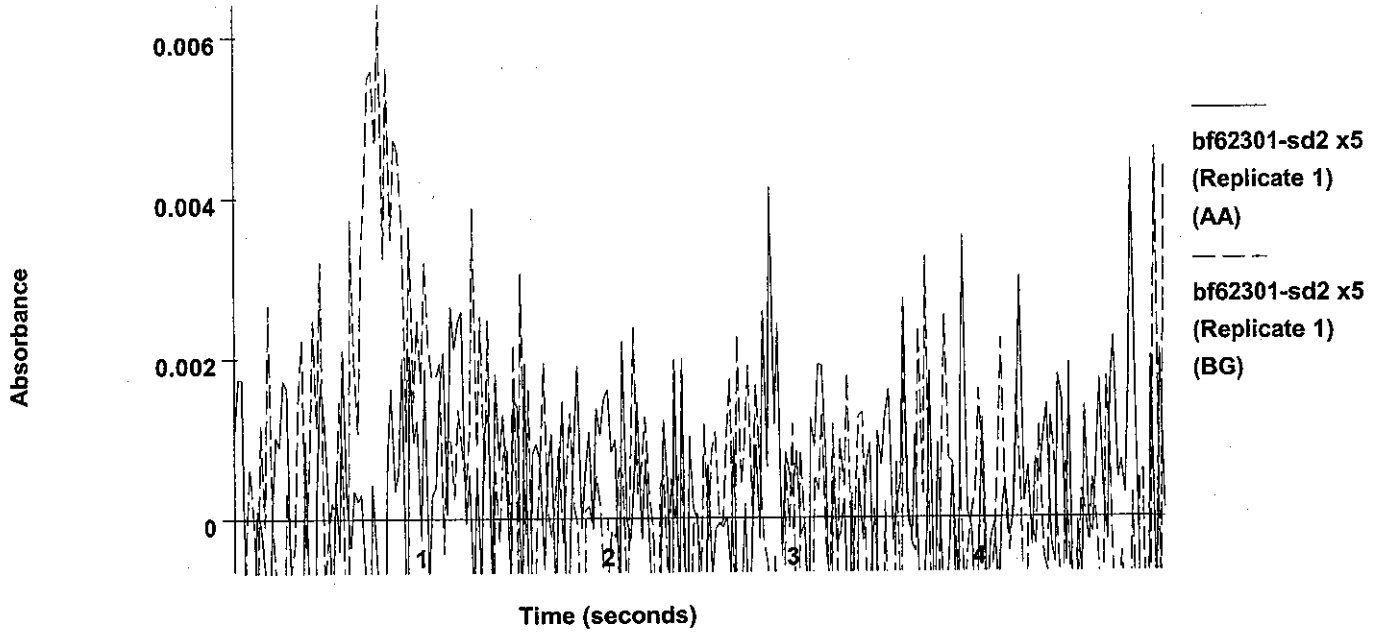
bf62207-sd2 x5
(Replicate 1)
(BG)

2	-0.2	-0.2	0.0001	0.0003	0.0031	0.0015	0.0045	07:23:40	Yes
Mean:	-0.4	-0.4	-0.0003						
SD :	0.36	0.36	0.0006						
%RSD:	84.52	84.52	175.14						

=====
 Element: Tl Seq. No.: 74 AS Loc.: 43 Date: 06/26/2006
 Sample ID: bf62301-blk1
 µL dispensed: 10 from 148, 5 from 147, 15 from 43
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.1	0.1	0.0005	0.0007	0.0020	0.0003	0.0026	07:26:30	Yes

Tl



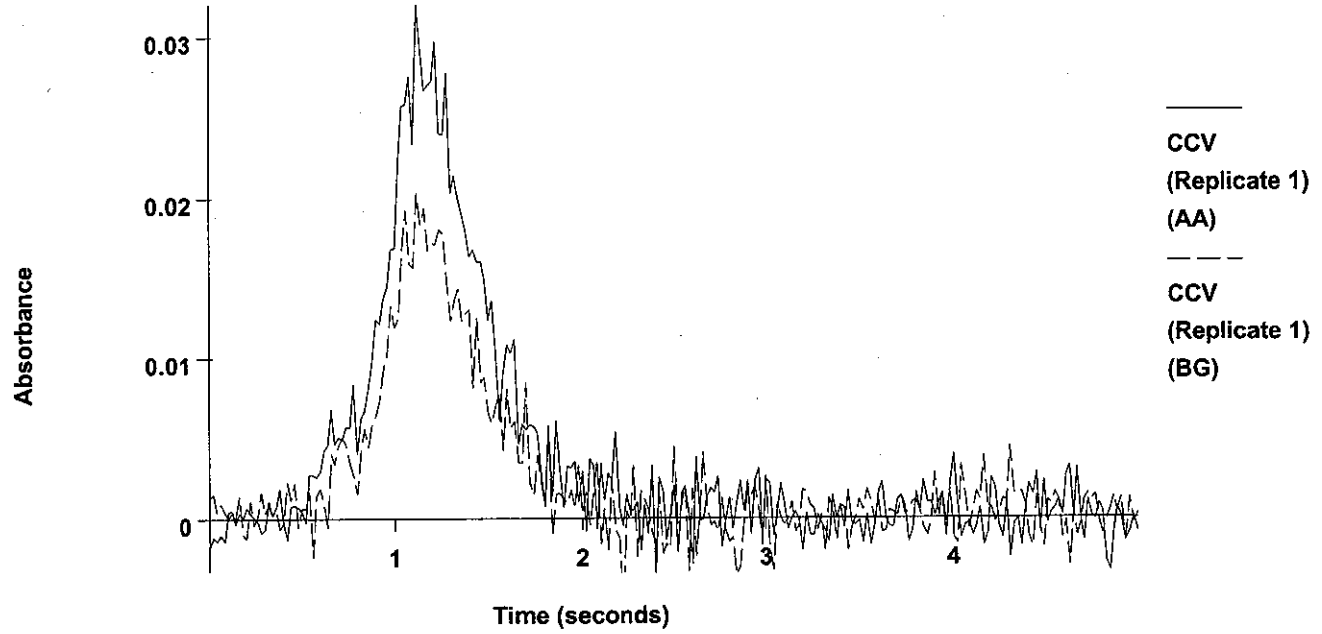
2	-0.2	-0.2	0.0000	0.0002	0.0036	0.0022	0.0051	08:49:45	Yes
Mean:	0.1	0.1	0.0006						
SD :	0.50	0.50	0.0008						
%RSD:	393.4	393.4	144.91						

Handwritten mark resembling the number 14

=====
 Element: Tl Seq. No.: 89 AS Loc.: 124 Date: 06/26/2006
 Sample ID: CCV
 µL dispensed: 10 from 148, 5 from 147, 15 from 124
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	11.1	11.1	0.0189	0.0191	0.0321	0.0122	0.0204	08:52:36	Yes

Tl



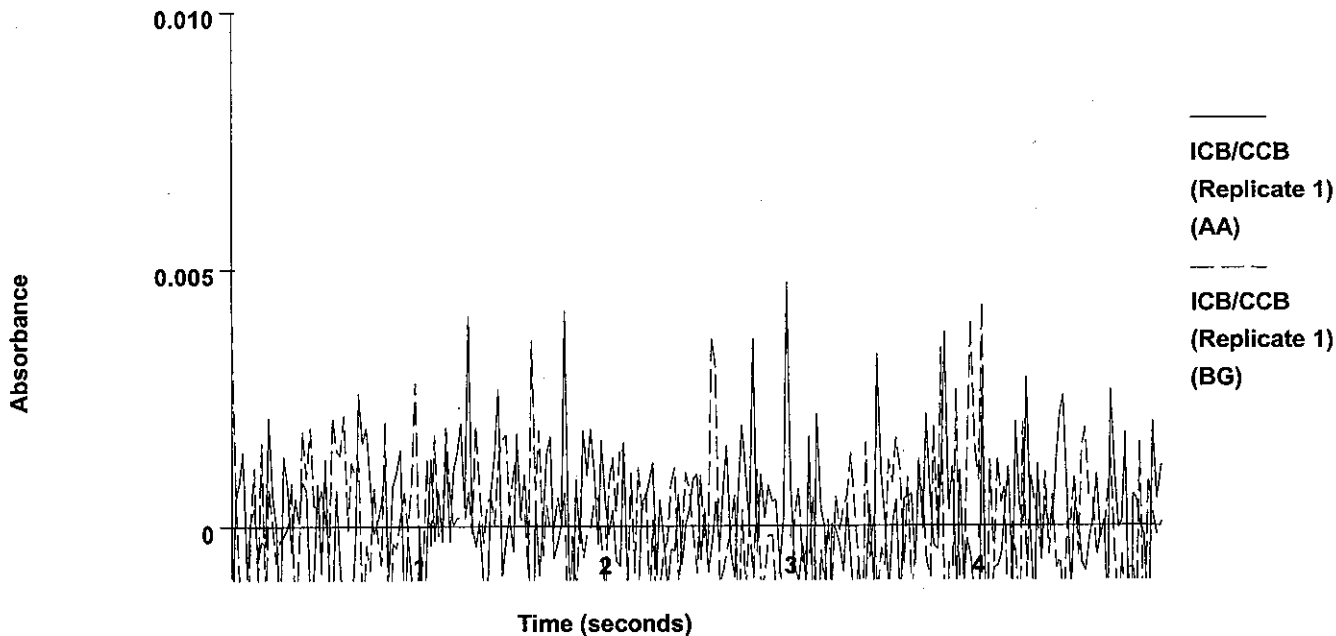
2	10.5	10.5	0.0179	0.0181	0.0262	0.0102	0.0188	08:55:27	Yes
Mean:	10.8	10.8	0.0184						
SD :	0.42	0.42	0.0007						
%RSD:	3.93	3.93	3.85						

QC value within specified limits.

=====
 Element: Tl Seq. No.: 90 AS Loc.: 148 Date: 06/26/2006
 Sample ID: ICB/CCB
 µL dispensed: 10 from 148, 5 from 147, 15 from 148
 =====

Repl #	SampleConc µg/L	StdConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.1	0.1	0.0005	0.0007	0.0047	0.0006	0.0043	08:58:18	Yes

Tl



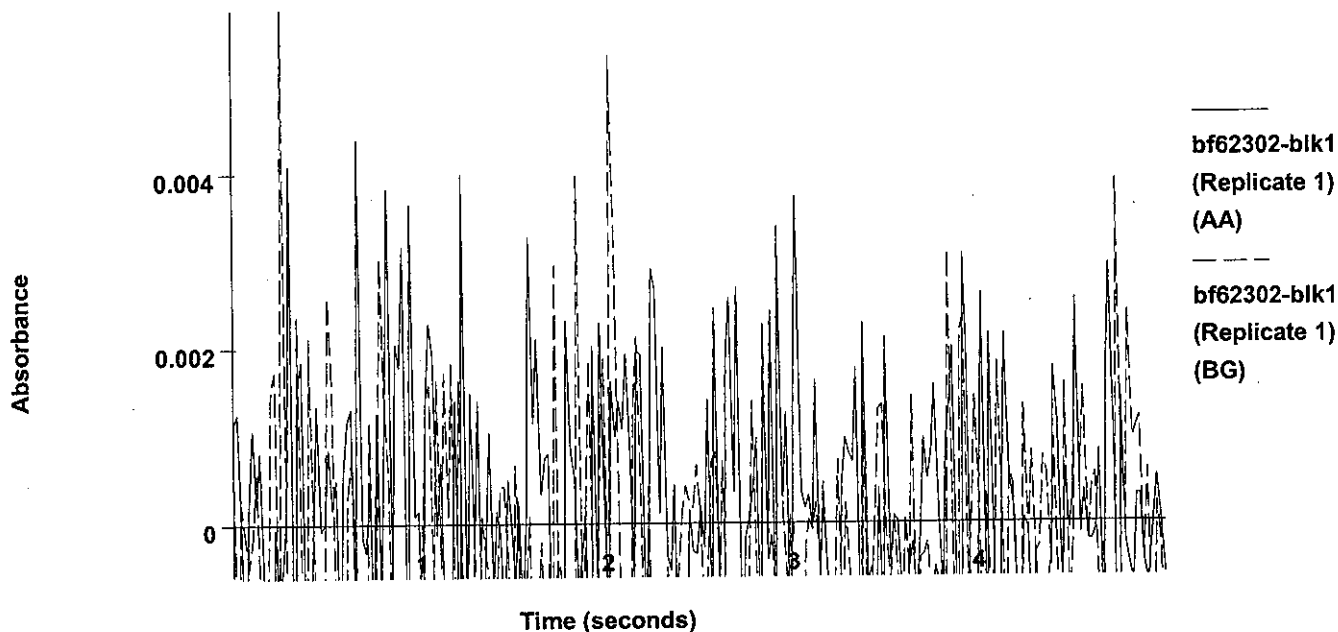
2	0.1	0.1	0.0005	0.0007	0.0043	0.0006	0.0056	09:01:07	Yes
Mean:	0.1	0.1	0.0005						
SD :	0.00	0.00	0.0000						
%RSD:	3.86	3.86	0.97						

QC value within specified limits.

=====
 Element: Tl Seq. No.: 91 AS Loc.: 54 Date: 06/26/2006
 Sample ID: bf62302-blk1
 µL dispensed: 10 from 148, 5 from 147, 15 from 54
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.2	0.2	0.0008	0.0010	0.0044	-0.0017	0.0059	09:03:55	Yes

Tl



2	-0.7	-0.7	-0.0008	-0.0006	0.0051	0.0017	0.0043	09:06:43	Yes
Mean:	-0.2	-0.2	0.0000						
SD :	0.64	0.64	0.0011						
%RSD:	293.5	293.5	215542.09						

Handwritten signature or initials.

=====
 Element: Tl Seq. No.: 92 AS Loc.: 54 Date: 06/26/2006
 Sample ID: bf62302-blk1
 µL dispensed: 7 from 148, 5 from 147, 3 from 131, 15 from 54
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	10.7	10.7	0.0182	0.0184	0.0256	0.0124	0.0157	09:09:40	Yes

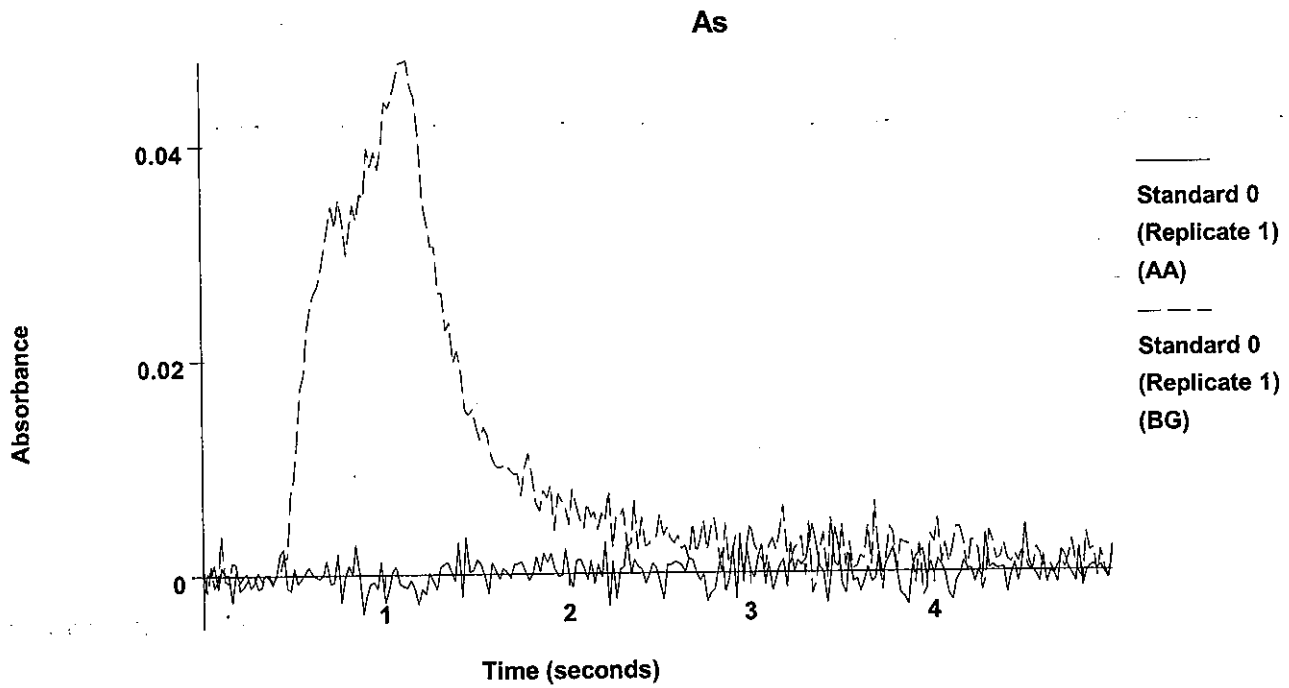
=====
 Method Name: As 5
 Method Description: As
 Element: As

Date: 06/27/2006
 Technique: Furnace
 Calibration Type:
 As, Calc. Intercept : Linear
 Wavelength: 193.7 nm
 Energy: 100
 Slit Width: 0.7
 Lamp Current: 350mA
 Sample Info Name: 062606YA.SIF

Results Data Set Name: 062606yad

=====
 Element: As Seq. No.: 130 AS Loc.: 148 Date: 06/27/2006
 Sample ID: Standard 0
 µL dispensed: 10 from 148, 5 from 147, 15 from 148

Repl #	SampleConc	StndConc	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1			0.0006	0.0006	0.0044	0.0431	0.0479	12:48:55	Yes



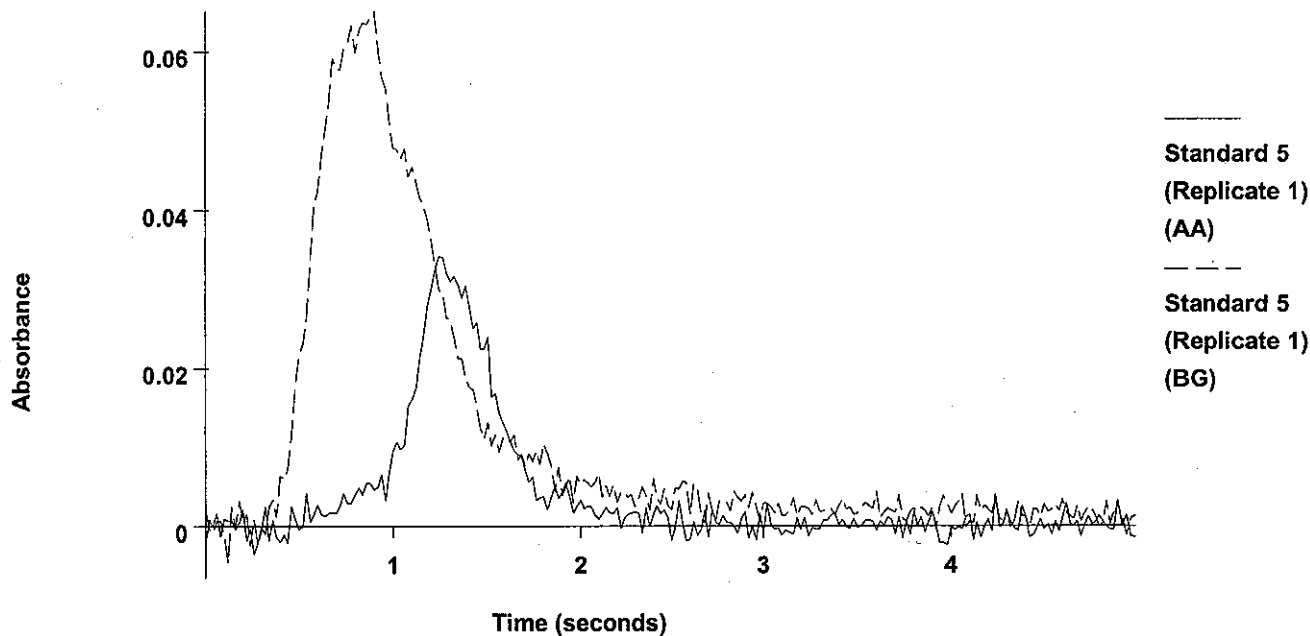
2			0.0020	0.0020	0.0031	0.0451	0.0523	12:51:44	Yes
Mean:			0.0013						
SD :			0.0010						
%RSD:			76.94						

Auto-zero performed.

=====
 Element: As Seq. No.: 131 AS Loc.: 121 Date: 06/27/2006
 Sample ID: Standard 5
 µL dispensed: 10 from 148, 5 from 147, 15 from 121

Repl #	SampleConc	StndConc	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1			0.0173	0.0186	0.0341	0.0546	0.0651	12:54:59	Yes

As

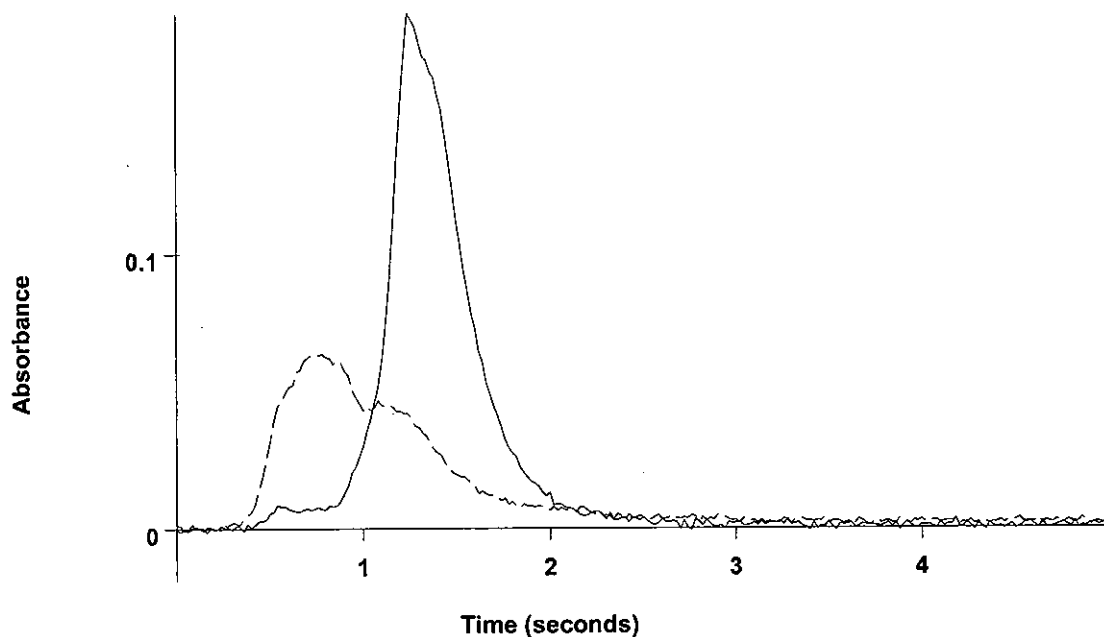


2 0.0169 0.0182 0.0358 0.0446 0.0449 12:57:49 Yes
 Mean: 0.0171
 SD : 0.0003
 %RSD: 1.58
 [As] Standard number 1 applied. [5.0]
 Correlation Coefficient: 1.00000 Slope: 0.00342
 Intercept : 0.00000

=====
 Element: As Seq. No.: 132 AS Loc.: 124 Date: 06/27/2006
 Sample ID: Standard 10
 µL dispensed: 10 from 148, 5 from 147, 15 from 124

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1			0.0376	0.0389	0.0701	0.0592	0.0660	01:01:07	Yes

As



Standard 25
(Replicate 1)
(AA)

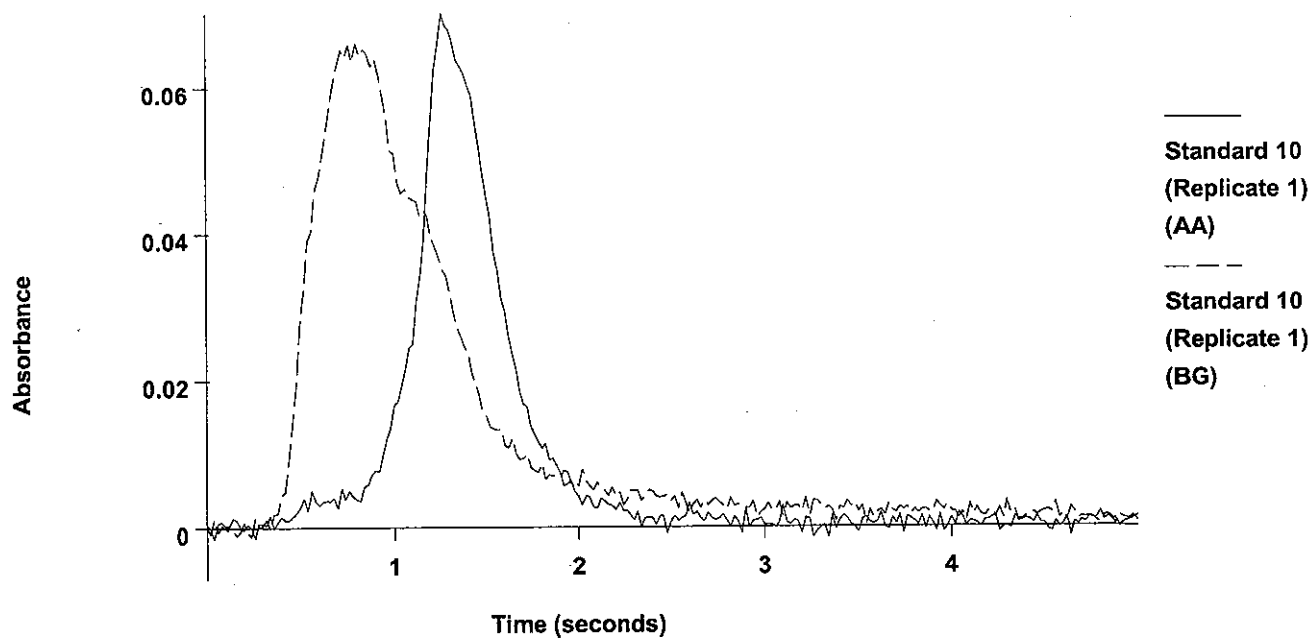
Standard 25
(Replicate 1)
(BG)

2 0.0962 0.0974 0.1898 0.0627 0.0645 01:10:08 Yes
 Mean: 0.0955
 SD : 0.0009
 %RSD: 0.92
 [As] Standard number 3 applied. [25.0]
 Correlation Coefficient: 0.99976 Slope: 0.00385
 Intercept : -0.00102

=====
 Element: As Seq. No.: 134 AS Loc.: 129 Date: 06/27/2006
 Sample ID: Standard 50
 μ L dispensed: 10 from 148, 5 from 147, 15 from 129
 =====

Repl #	SampleConc μ g/L	StndConc μ g/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1			0.1800	0.1813	0.3766	0.0555	0.0519	01:13:26	Yes

As

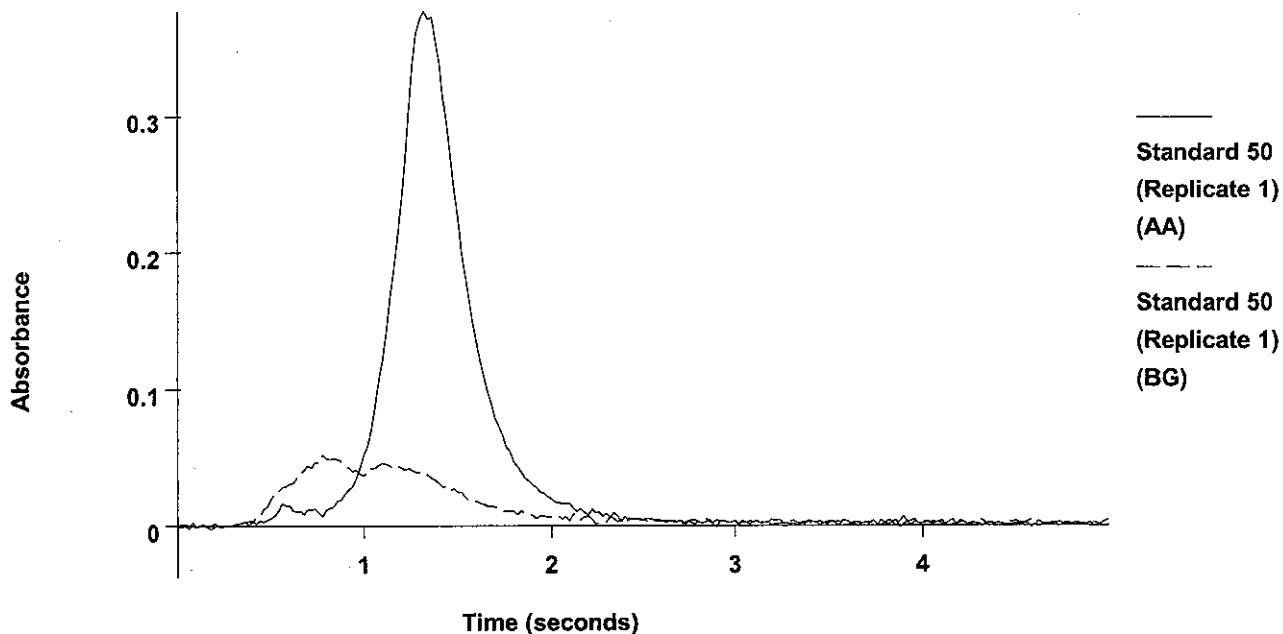


2 0.0370 0.0383 0.0769 0.0519 0.0492 01:03:58 Yes
Mean: 0.0373
SD : 0.0004
%RSD: 1.09
[As] Standard number 2 applied. [10.0]
Correlation Coefficient: 0.99886 Slope: 0.00373
Intercept : -0.00051

=====
Element: As Seq. No.: 133 AS Loc.: 126 Date: 06/27/2006
Sample ID: Standard 25
 μ L dispensed: 10 from 148, 5 from 147, 15 from 126
=====

Repl #	SampleConc μ g/L	StndConc μ g/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1			0.0949	0.0962	0.1877	0.0625	0.0636	01:07:16	Yes

As

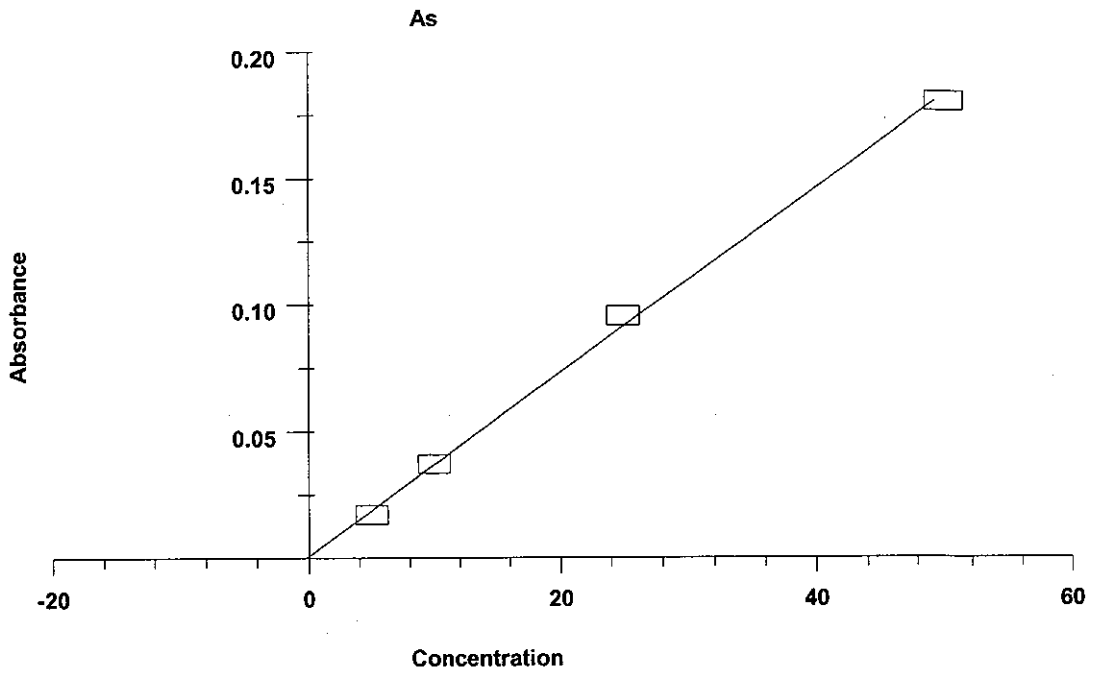


2 0.1805 0.1818 0.3851 0.0569 0.0531 01:16:16 Yes
 Mean: 0.1803
 SD : 0.0004
 %RSD: 0.21
 [As] Standard number 4 applied. [50.0]
 Correlation Coefficient: 0.99944 Slope: 0.00363
 Intercept : 0.00071

 Calibration data for As

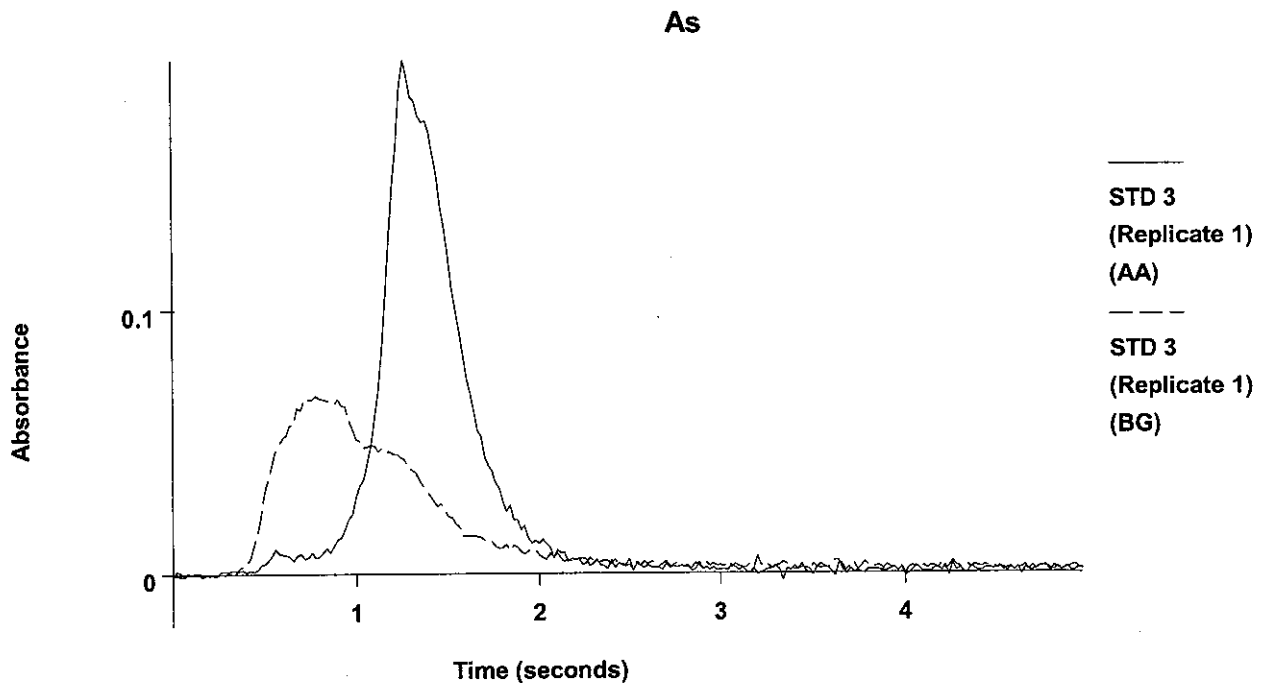
Standard ID	Mean Signal (Pk Area)	Entered Concentration (µg/L)	Calculated Concentration (µg/L)	Standard Deviation	%RSD
Standard 0	0.0013	-	----	----	----
Standard 5	0.0171	5.0	4.5	0.00	1.58
Standard 10	0.0373	10.0	10.1	0.00	1.09
Standard 25	0.0955	25.0	26.1	0.00	0.92
Standard 50	0.1803	50.0	49.5	0.00	0.21
Correlation Coefficient:		0.99944	Slope: 0.00363	Intercept: 0.0007	

*Cal good
 SP 6/27/06*



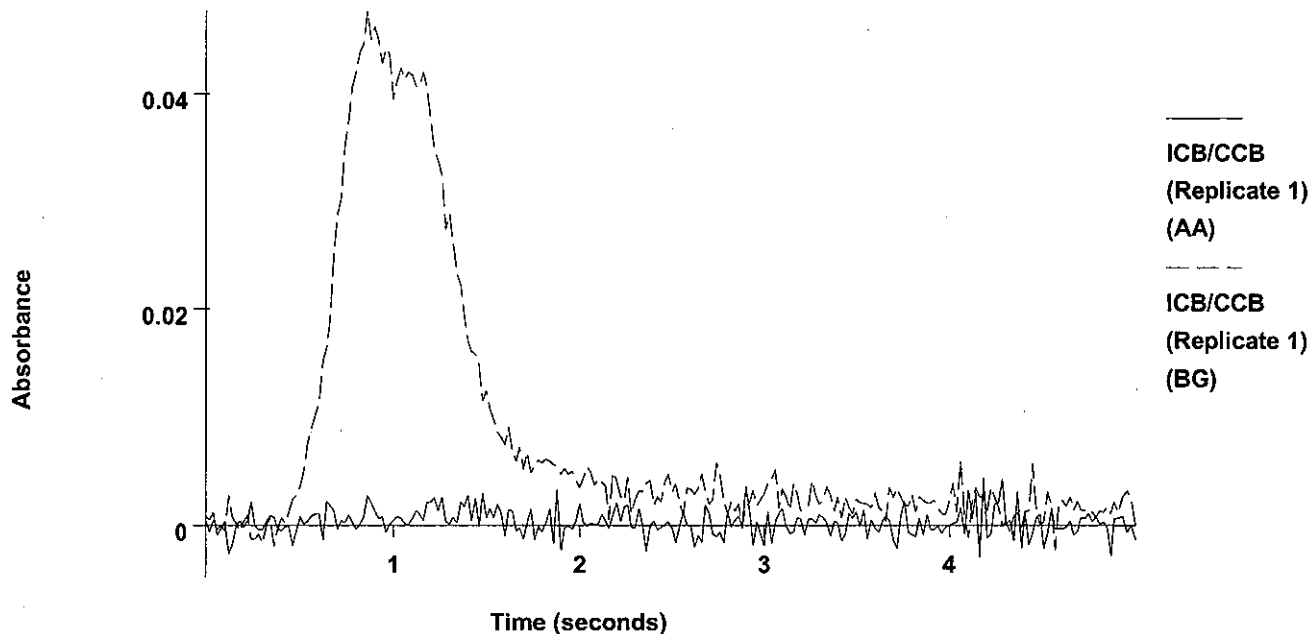
=====
 Element: As Seq. No.: 135 AS Loc.: 126 Date: 06/27/2006
 Sample ID: STD 3
 µL dispensed: 10 from 148, 5 from 147, 15 from 126
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	26.5	26.5	0.0968	0.0980	0.1945	0.0655	0.0673	01:19:13	Yes



2	25.2	25.2	0.0921	0.0934	0.1974	0.0523	0.0505	01:22:06	Yes
---	------	------	--------	--------	--------	--------	--------	----------	-----

As



ICB/CCB
(Replicate 1)
(AA)
ICB/CCB
(Replicate 1)
(BG)

2	-0.3	-0.3	-0.0004	0.0008	0.0033	0.0421	0.0476	01:33:25	Yes
Mean:	-0.2	-0.2	-0.0001						
SD :	0.14	0.14	0.0005						
%RSD:	62.3	62.3	538.00						

QC value within specified limits. ✓

=====
 Element: As Seq. No.: 138 AS Loc.: 2 Date: 06/27/2006
 Sample ID: bf62206-blk1
 µL dispensed: 10 from 148, 5 from 147, 15 from 2
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.3	-0.3	-0.0004	0.0009	0.0051	0.0442	0.0513	01:36:15	Yes

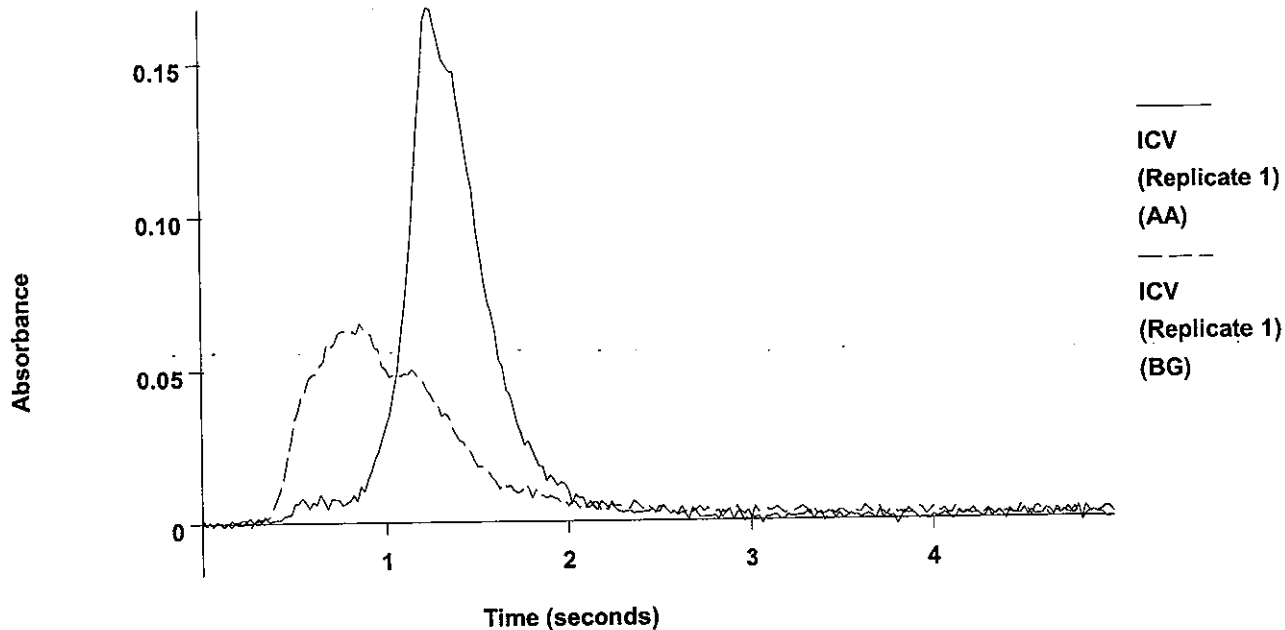
Mean: 25.8 25.8 0.0944
 SD : 0.91 0.91 0.0033
 %RSD: 3.51 3.51 3.48
 QC value within specified limits.



=====
 Element: As Seq. No.: 136 AS Loc.: 134 Date: 06/27/2006
 Sample ID: ICV
 µL dispensed: 10 from 148, 5 from 147, 15 from 134

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	23.6	23.6	0.0865	0.0877	0.1680	0.0625	0.0652	01:24:57	Yes

As



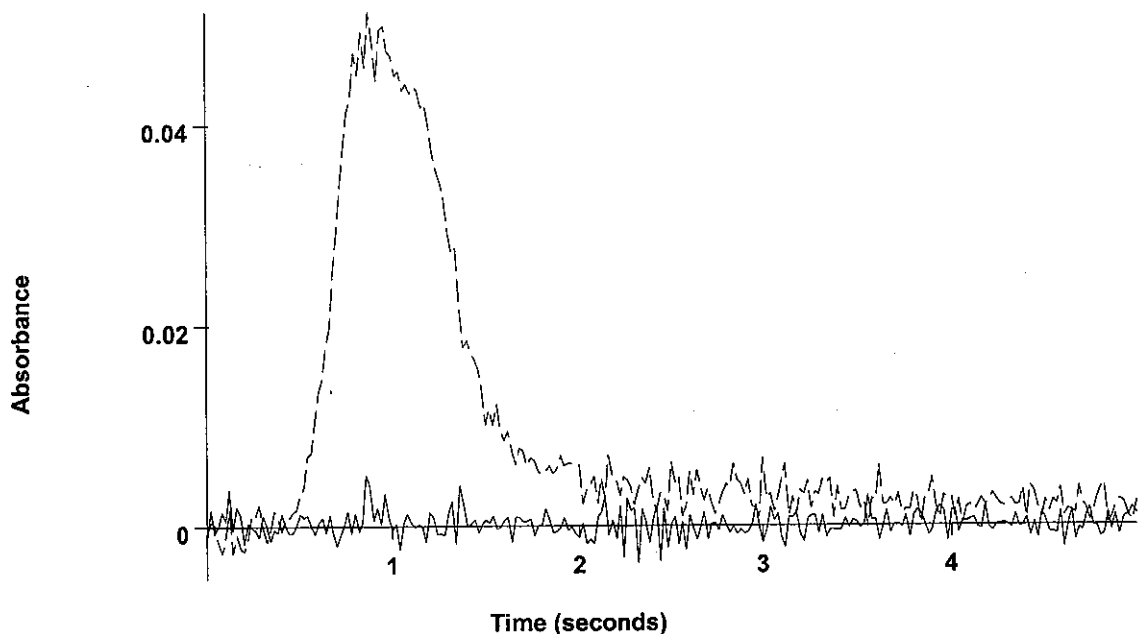
2 23.4 23.4 0.0858 0.0871 0.1862 0.0519 0.0488 01:27:46 Yes
 Mean: 23.5 23.5 0.0861
 SD : 0.13 0.13 0.0005
 %RSD: 0.54 0.54 0.53
 QC value within specified limits.



=====
 Element: As Seq. No.: 137 AS Loc.: 148 Date: 06/27/2006
 Sample ID: ICB/CCB
 µL dispensed: 10 from 148, 5 from 147, 15 from 148

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.1	-0.1	0.0003	0.0015	0.0044	0.0408	0.0477	01:30:35	Yes

As



 bf62206-blk1
 (Replicate 1)
 (AA)

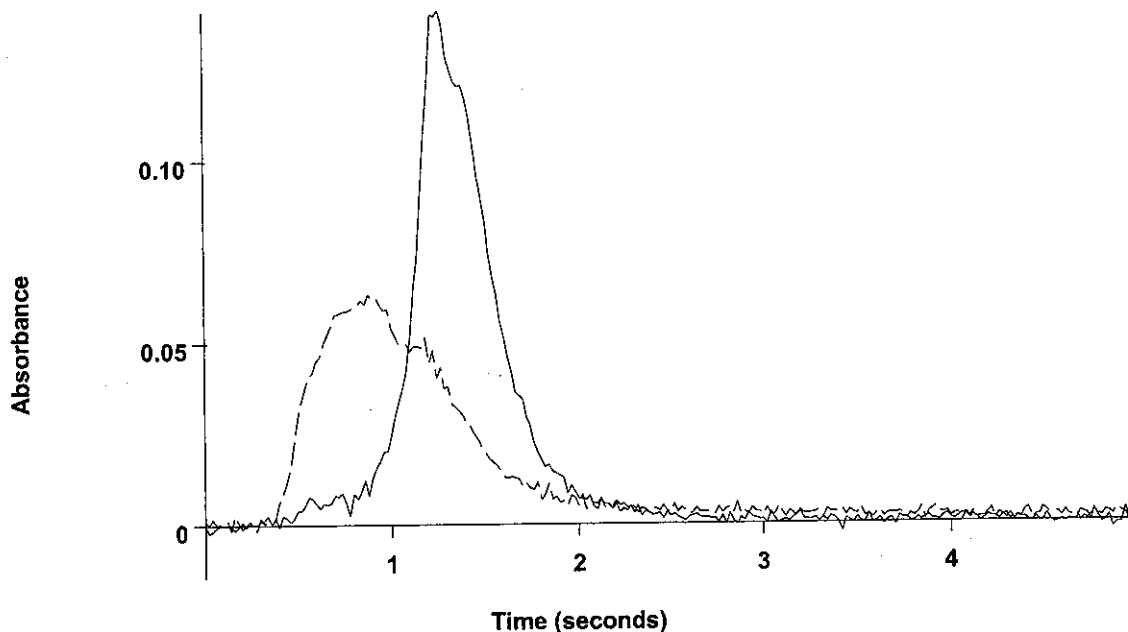
 bf62206-blk1
 (Replicate 1)
 (BG)

2	-0.2	-0.2	0.0001	0.0014	0.0045	0.0446	0.0519	01:39:05	Yes
Mean:	-0.2	-0.2	-0.0001						
SD :	0.09	0.09	0.0003						
%RSD:	39.8	39.8	229.70						

=====
 Element: As Seq. No.: 139 AS Loc.: 2 Date: 06/27/2006
 Sample ID: bf62206-blk1
 µL dispensed: 4 from 148, 5 from 147, 6 from 131, 15 from 2
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	19.6	19.6	0.0720	0.0732	0.1411	0.0624	0.0633	01:42:04	Yes

As



bf62206-blk1
(Replicate 1)
(AA)

bf62206-blk1
(Replicate 1)
(BG)

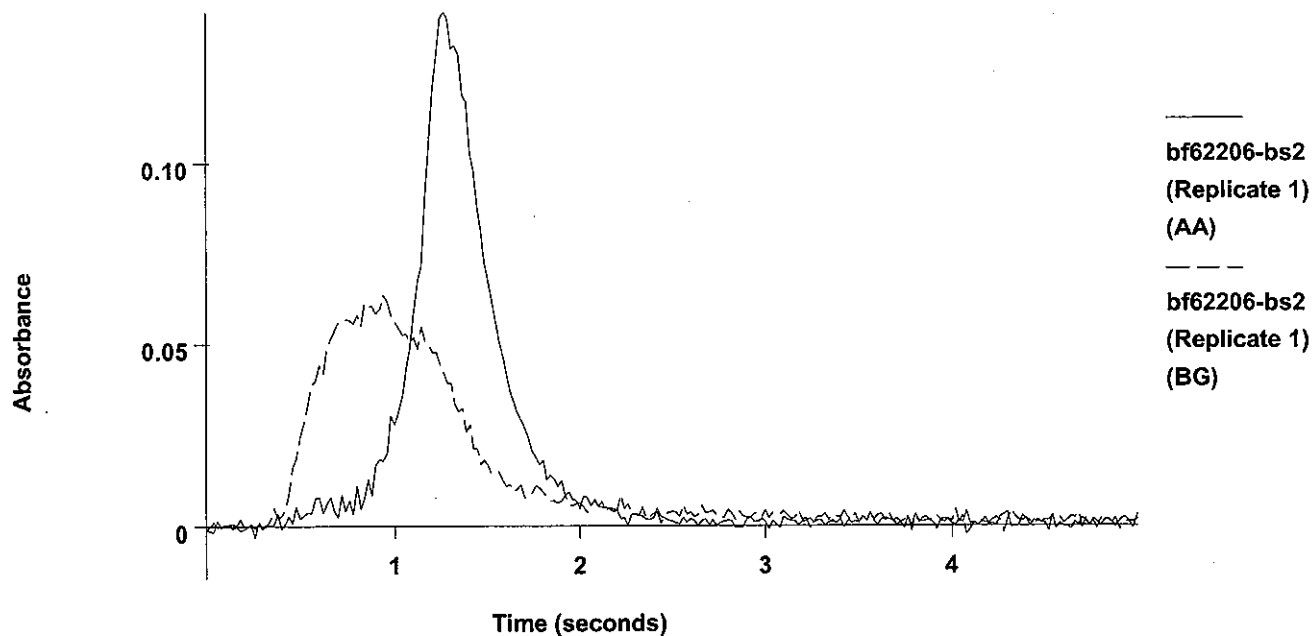
2	17.9	17.9	0.0658	0.0671	0.1329	0.0575	0.0622	01:45:03	Yes
Mean:	18.8	18.8	0.0689						
SD :	1.20	1.20	0.0044						
%RSD:	6.41	6.41	6.34						
Recovery for As = 93.9 % within 85 % to 115 %									



=====
 Element: As Seq. No.: 140 AS Loc.: 3 Date: 06/27/2006
 Sample ID: bf62206-bs2
 µL dispensed: 10 from 148, 5 from 147, 15 from 3
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	18.6	18.6	0.0681	0.0694	0.1415	0.0593	0.0635	01:47:53	Yes

As



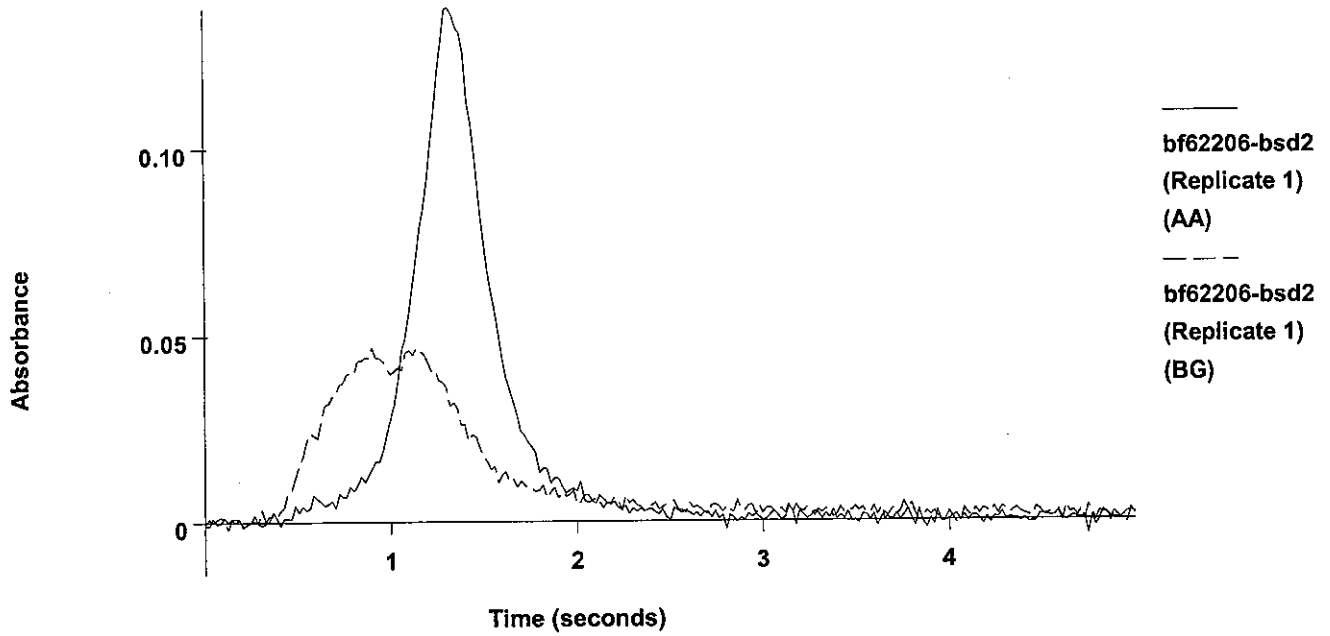
2	18.5	18.5	0.0678	0.0691	0.1301	0.0515	0.0519	01:50:43	Yes
Mean:	18.5	18.5	0.0680						
SD :	0.06	0.06	0.0002						
%RSD:	0.30	0.30	0.30						

935

=====
 Element: As Seq. No.: 141 AS Loc.: 4 Date: 06/27/2006
 Sample ID: bf62206-bsd2
 µL dispensed: 10 from 148, 5 from 147, 15 from 4
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	18.6	18.6	0.0681	0.0694	0.1378	0.0500	0.0468	01:53:33	Yes

As



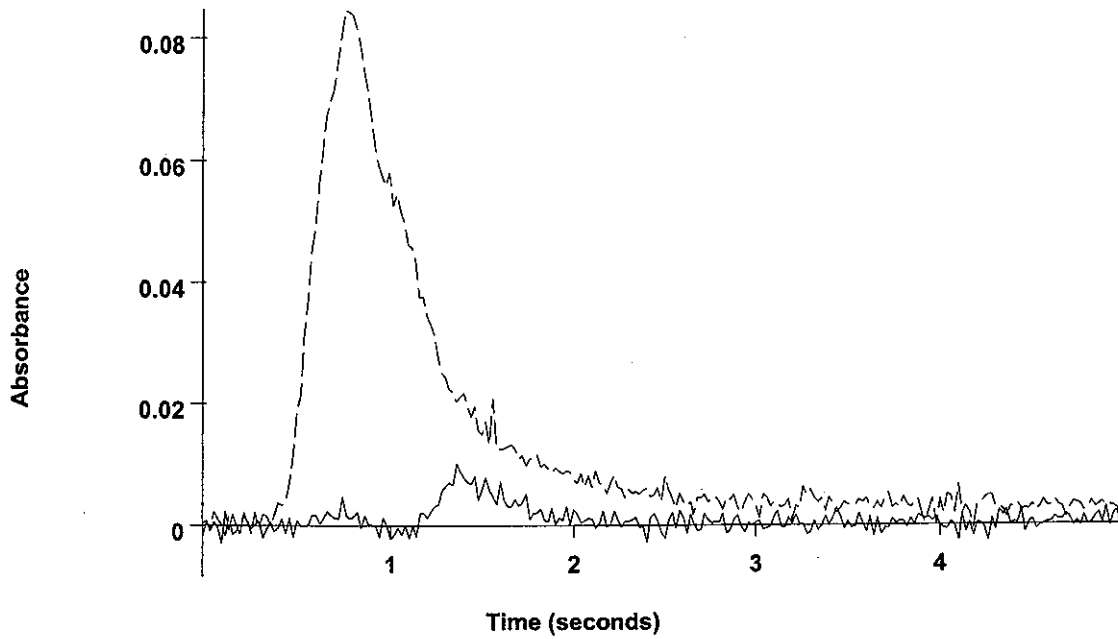
2	18.7	18.7	0.0685	0.0698	0.1366	0.0534	0.0504	01:56:24	Yes
Mean:	18.6	18.6	0.0683						
SD :	0.08	0.08	0.0003						
%RSD:	0.44	0.44	0.43						

935

=====
 Element: As Seq. No.: 142 AS Loc.: 5 Date: 06/27/2006
 Sample ID: 0606346-01
 µL dispensed: 10 from 148, 5 from 147, 15 from 5
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.8	0.8	0.0036	0.0049	0.0102	0.0658	0.0846	01:59:14	Yes

As



0606346-01
(Replicate 1)
(AA)

0606346-01
(Replicate 1)
(BG)

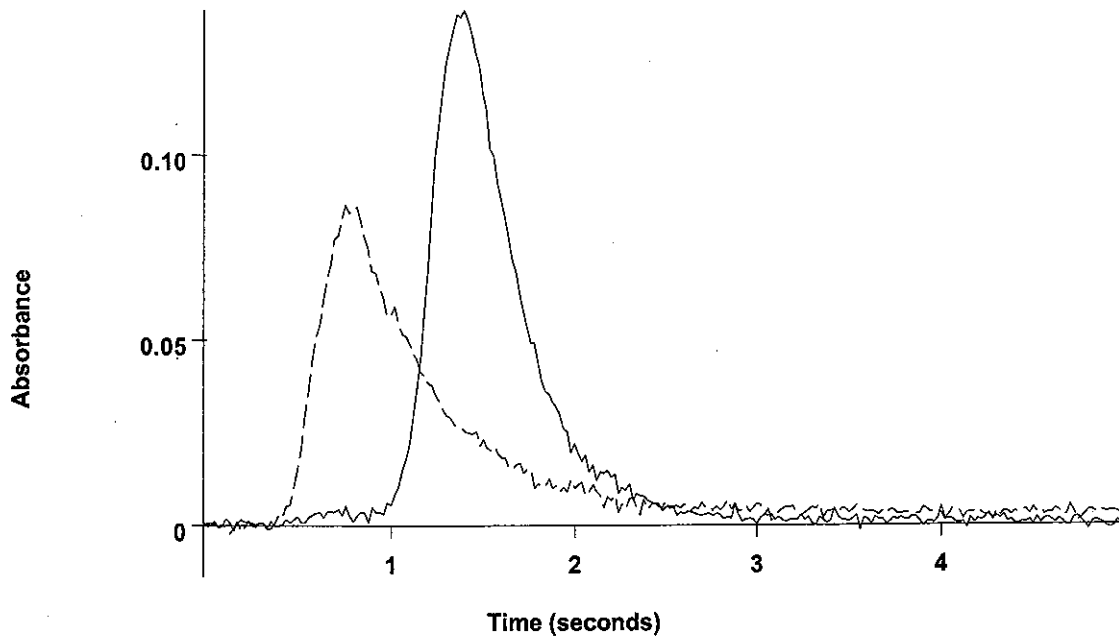
2	0.9	0.9	0.0040	0.0053	0.0091	0.0692	0.0766	02:02:04	Yes
Mean:	0.9	0.9	0.0038						
SD :	0.08	0.08	0.0003						
%RSD:	8.95	8.95	7.30						

Handwritten signature or initials

=====
Element: As Seq. No.: 143 AS Loc.: 5 Date: 06/27/2006
Sample ID: 0606346-01
µL dispensed: 4 from 148, 5 from 147, 6 from 131, 15 from 5
=====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	22.3	22.3	0.0815	0.0828	0.1389	0.0711	0.0867	02:05:03	Yes

As



0606346-01
(Replicate 1)
(AA)

0606346-01
(Replicate 1)
(BG)

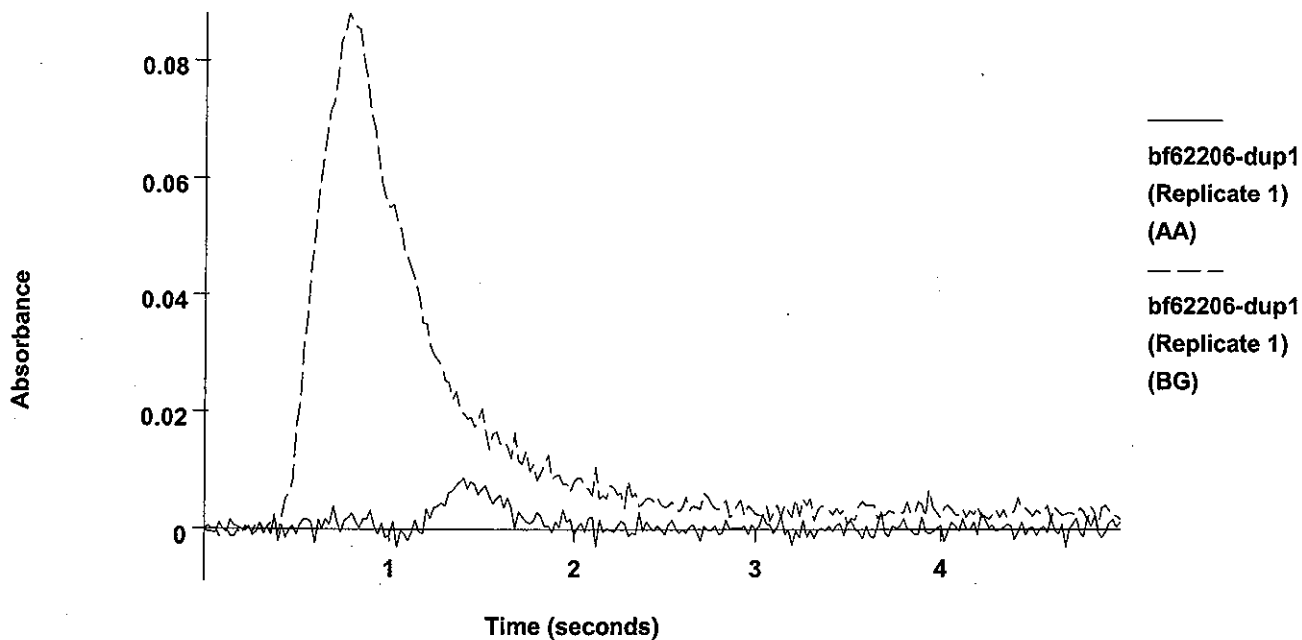
2	21.9	21.9	0.0804	0.0816	0.1493	0.0704	0.0916	02:08:03	Yes
Mean:	22.1	22.1	0.0809						
SD :	0.22	0.22	0.0008						
%RSD:	0.98	0.98	0.97						

Recovery for As = 110.5 % within 85 % to 115 %

=====
Element: As Seq. No.: 144 AS Loc.: 6 Date: 06/27/2006
Sample ID: bf62206-dup1
µL dispensed: 10 from 148, 5 from 147, 15 from 6
=====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.6	0.6	0.0029	0.0042	0.0087	0.0665	0.0881	02:10:54	Yes

As



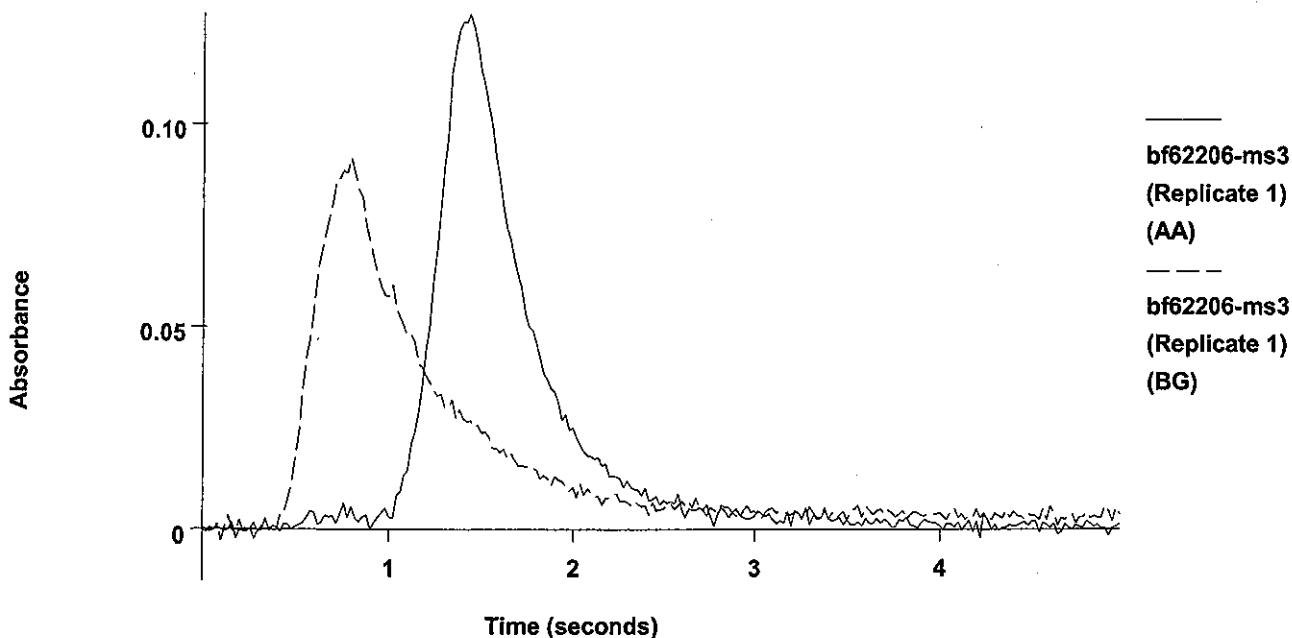
2	0.8	0.8	0.0035	0.0048	0.0108	0.0660	0.0879	02:13:44	Yes
Mean:	0.7	0.7	0.0032						
SD :	0.11	0.11	0.0004						
%RSD:	16.1	16.1	12.58						

Handwritten signature

=====
 Element: As Seq. No.: 145 AS Loc.: 7 Date: 06/27/2006
 Sample ID: bf62206-ms3
 µL dispensed: 10 from 148, 5 from 147, 15 from 7
 =====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	20.6	20.6	0.0755	0.0768	0.1272	0.0751	0.0920	02:16:35	Yes

As



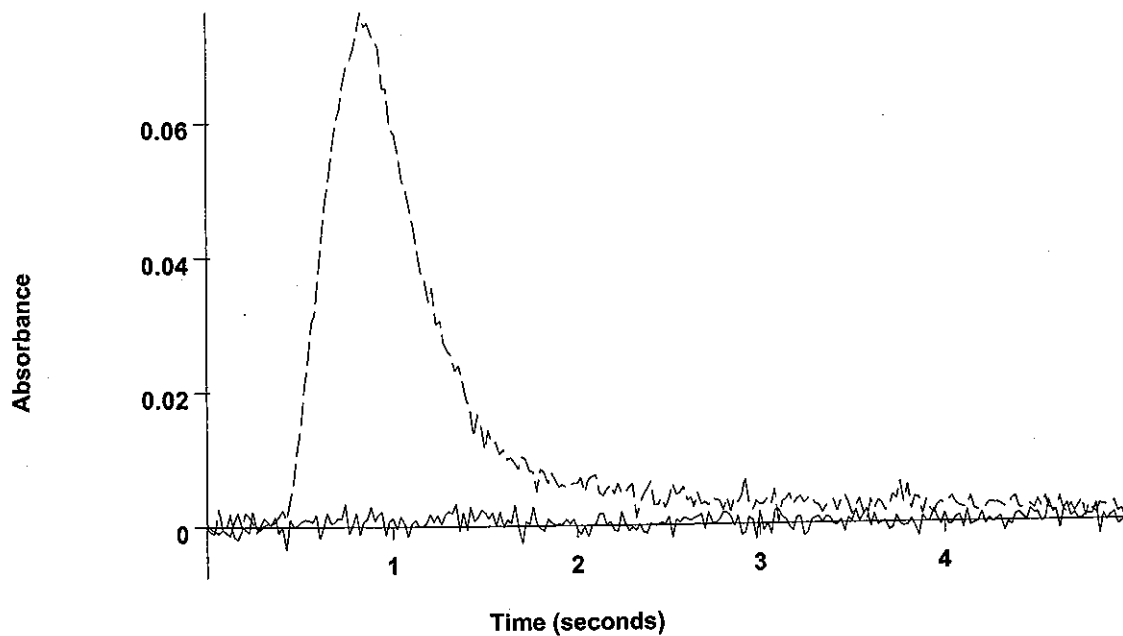
2	20.6	20.6	0.0753	0.0766	0.1301	0.0739	0.0903	02:19:26	Yes
Mean:	20.6	20.6	0.0754						
SD :	0.04	0.04	0.0001						
%RSD:	0.17	0.17	0.17						

1035

=====
 Element: As Seq. No.: 146 AS Loc.: 8 Date: 06/27/2006
 Sample ID: bf62206-sd1 x5
 µL dispensed: 10 from 148, 5 from 147, 15 from 8
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.0	0.0	0.0008	0.0021	0.0034	0.0594	0.0765	02:22:16	Yes

As



 bf62206-sd1 x5
 (Replicate 1)
 (AA)

 bf62206-sd1 x5
 (Replicate 1)
 (BG)

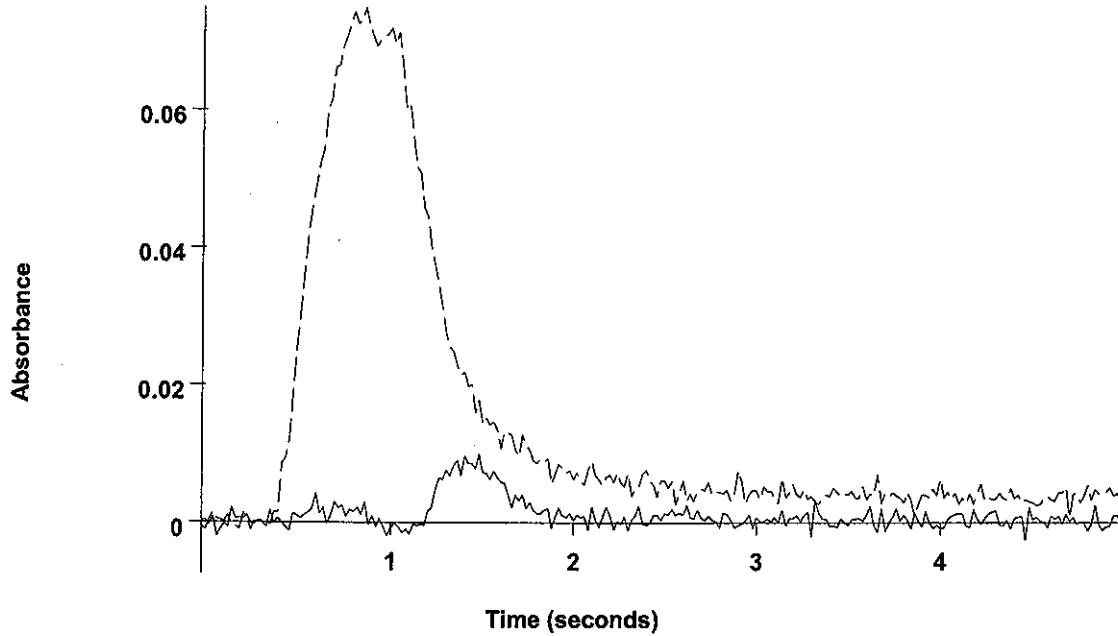
2	0.0	0.0	0.0007	0.0020	0.0043	0.0572	0.0712	02:25:06	Yes
Mean:	0.0	0.0	0.0008						
SD :	0.02	0.02	0.0001						
%RSD:	72.9	72.9	7.90						

PR

=====
 Element: As Seq. No.: 147 AS Loc.: 9 Date: 06/27/2006
 Sample ID: 0606346-02
 µL dispensed: 10 from 148, 5 from 147, 15 from 9
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	1.0	1.0	0.0044	0.0057	0.0100	0.0703	0.0749	02:27:56	Yes

As



 0606346-02
 (Replicate 1)
 (AA)

 0606346-02
 (Replicate 1)
 (BG)

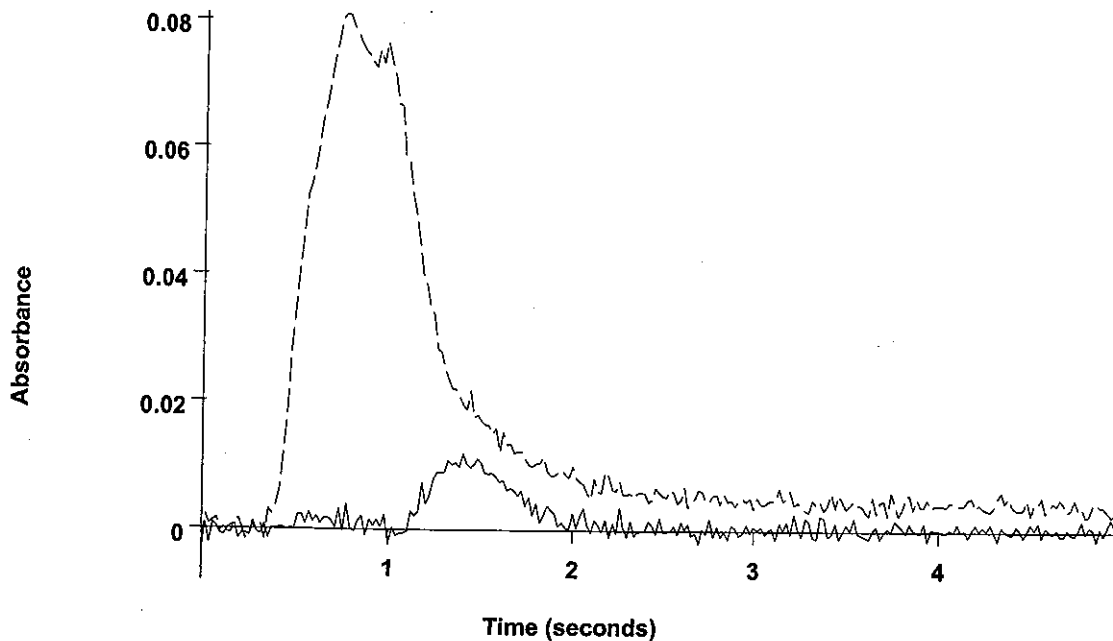
2	0.7	0.7	0.0033	0.0046	0.0097	0.0639	0.0722	02:30:56	Yes
Mean:	0.9	0.9	0.0039						
SD :	0.23	0.23	0.0008						
%RSD:	26.2	26.2	21.37						

PR

=====
 Element: As Seq. No.: 148 AS Loc.: 10 Date: 06/27/2006
 Sample ID: 0606346-03
 µL dispensed: 10 from 148, 5 from 147, 15 from 10
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	1.3	1.3	0.0056	0.0069	0.0120	0.0747	0.0809	02:33:47	Yes

As



0606346-03
(Replicate 1)
(AA)

0606346-03
(Replicate 1)
(BG)

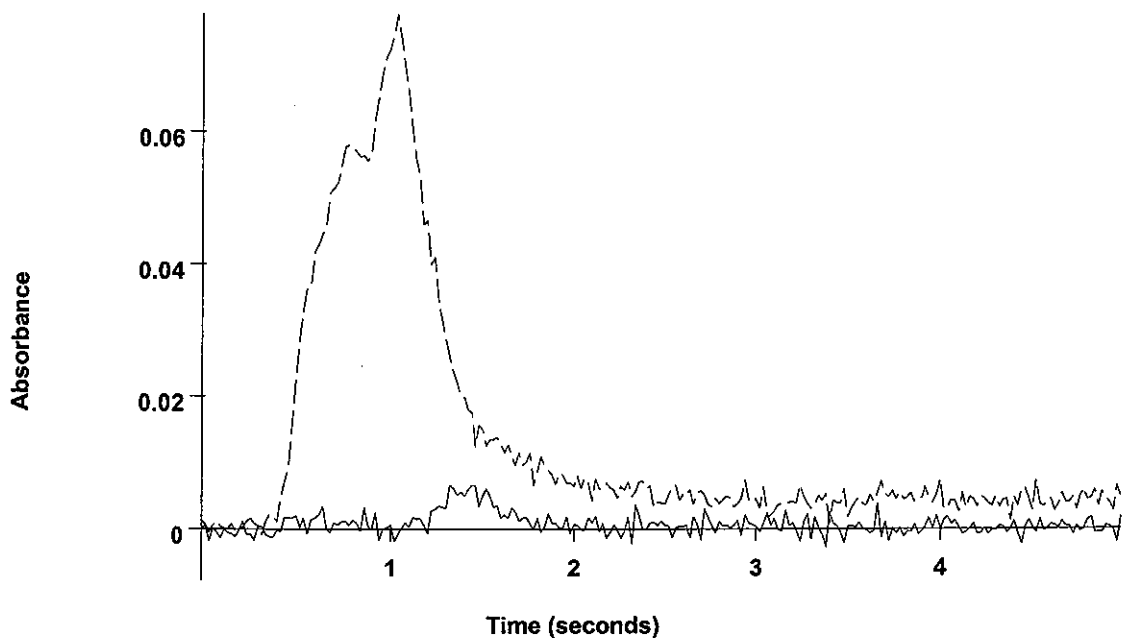
2	1.4	1.4	0.0059	0.0072	0.0159	0.0598	0.0671	02:36:51	Yes
Mean:	1.4	1.4	0.0058						
SD :	0.07	0.07	0.0002						
%RSD:	4.69	4.69	4.11						

Handwritten signature

=====
 Element: As Seq. No.: 149 AS Loc.: 11 Date: 06/27/2006
 Sample ID: 0606346-05
 µL dispensed: 10 from 148, 5 from 147, 15 from 11
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.4	0.4	0.0022	0.0035	0.0066	0.0664	0.0777	02:39:43	Yes

As



0606346-05
(Replicate 1)
(AA)

0606346-05
(Replicate 1)
(BG)

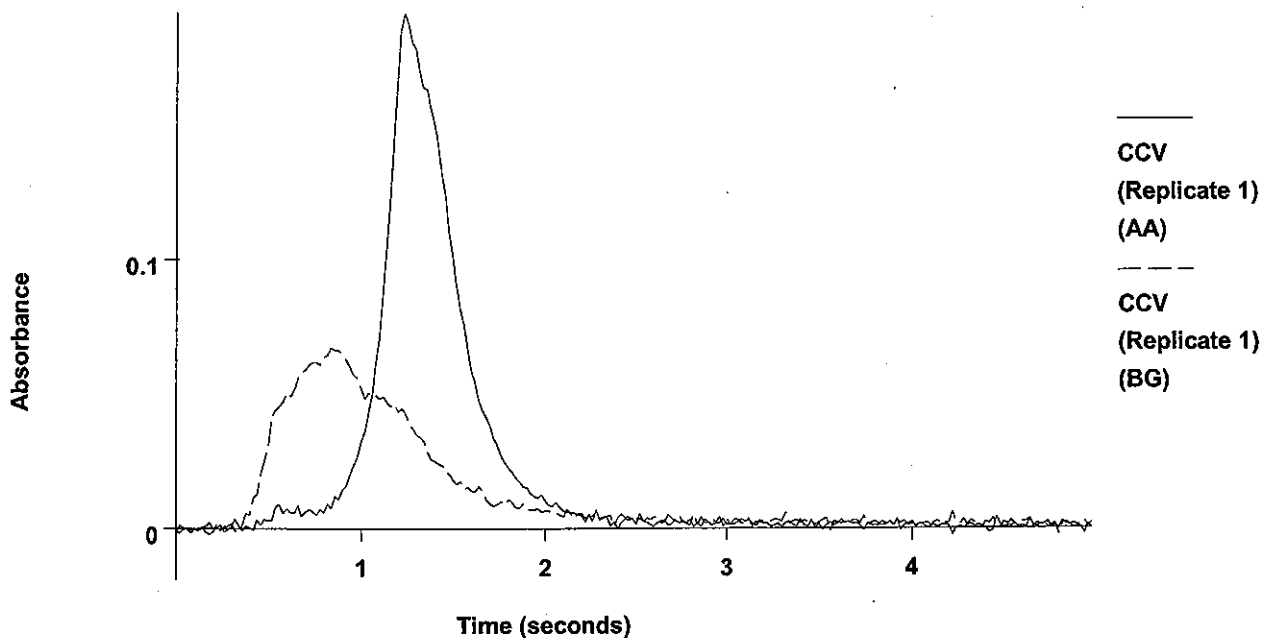
2	0.6	0.6	0.0028	0.0041	0.0075	0.0617	0.0727	02:42:32	Yes
Mean:	0.5	0.5	0.0025						
SD :	0.11	0.11	0.0004						
%RSD:	22.7	22.7	16.37						

PP

Element: As Seq. No.: 150 AS Loc.: 126 Date: 06/27/2006
Sample ID: CCV
µL dispensed: 10 from 148, 5 from 147, 15 from 126

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	25.3	25.3	0.0924	0.0937	0.1912	0.0625	0.0671	02:45:25	Yes

As



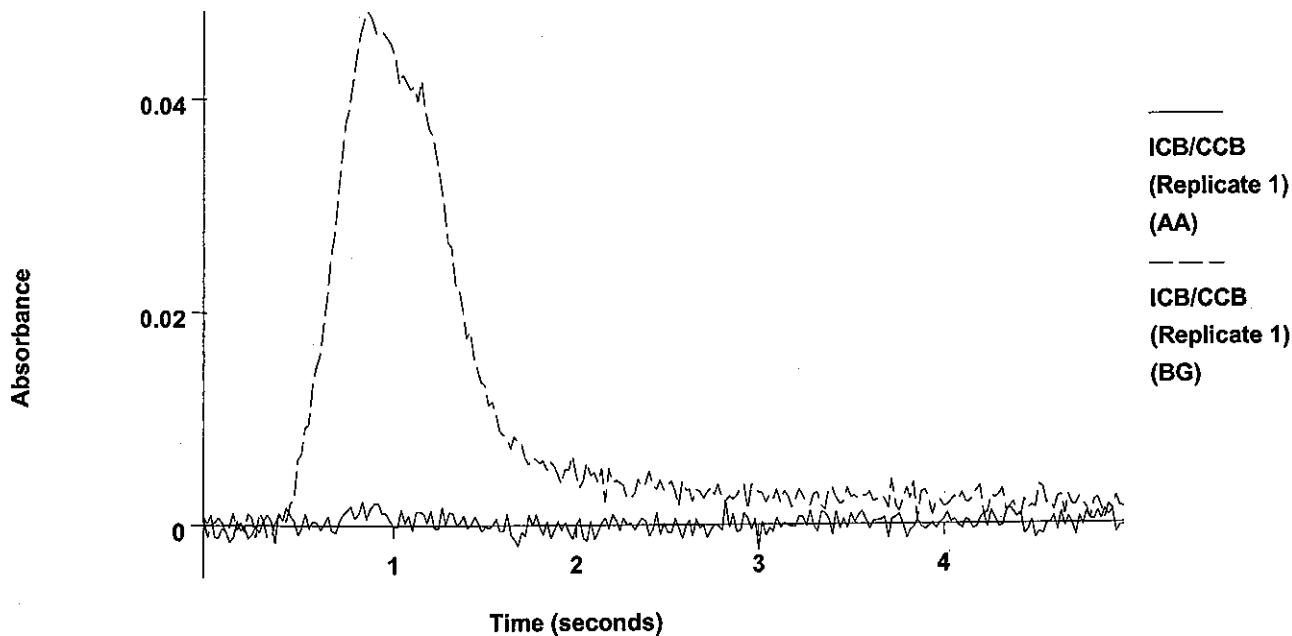
2	25.2	25.2	0.0923	0.0935	0.1741	0.0606	0.0677	02:48:17	Yes
Mean:	25.2	25.2	0.0923						
SD :	0.03	0.03	0.0001						
%RSD:	0.10	0.10	0.10						

QC value within specified limits. ✓

=====
 Element: As Seq. No.: 151 AS Loc.: 148 Date: 06/27/2006
 Sample ID: ICB/CCB
 µL dispensed: 10 from 148, 5 from 147, 15 from 148
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.4	-0.4	-0.0007	0.0006	0.0023	0.0429	0.0483	02:51:07	Yes

As



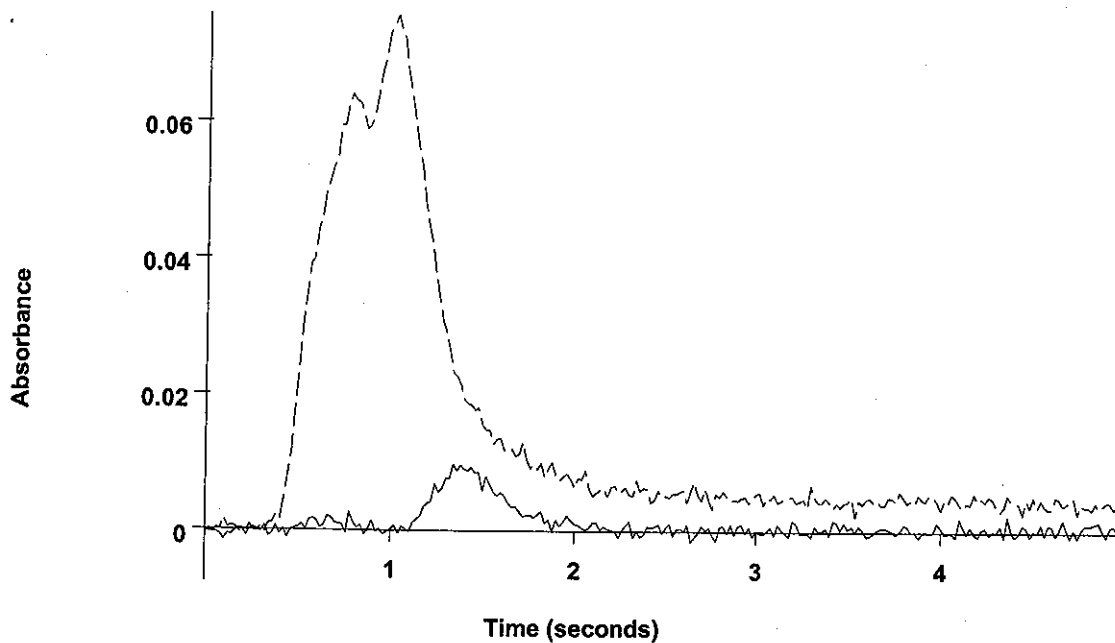
2	-0.1	-0.1	0.0003	0.0015	0.0023	0.0482	0.0532	02:53:58	Yes
Mean:	-0.3	-0.3	-0.0002						
SD :	0.18	0.18	0.0007						
%RSD:	72.4	72.4	325.29						

QC value within specified limits. ✓

=====
 Element: As Seq. No.: 152 AS Loc.: 12 Date: 06/27/2006
 Sample ID: 0606346-06
 µL dispensed: 10 from 148, 5 from 147, 15 from 12

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.9	0.9	0.0040	0.0053	0.0098	0.0691	0.0757	02:56:47	Yes

As



0606346-06
(Replicate 1)
(AA)

0606346-06
(Replicate 1)
(BG)

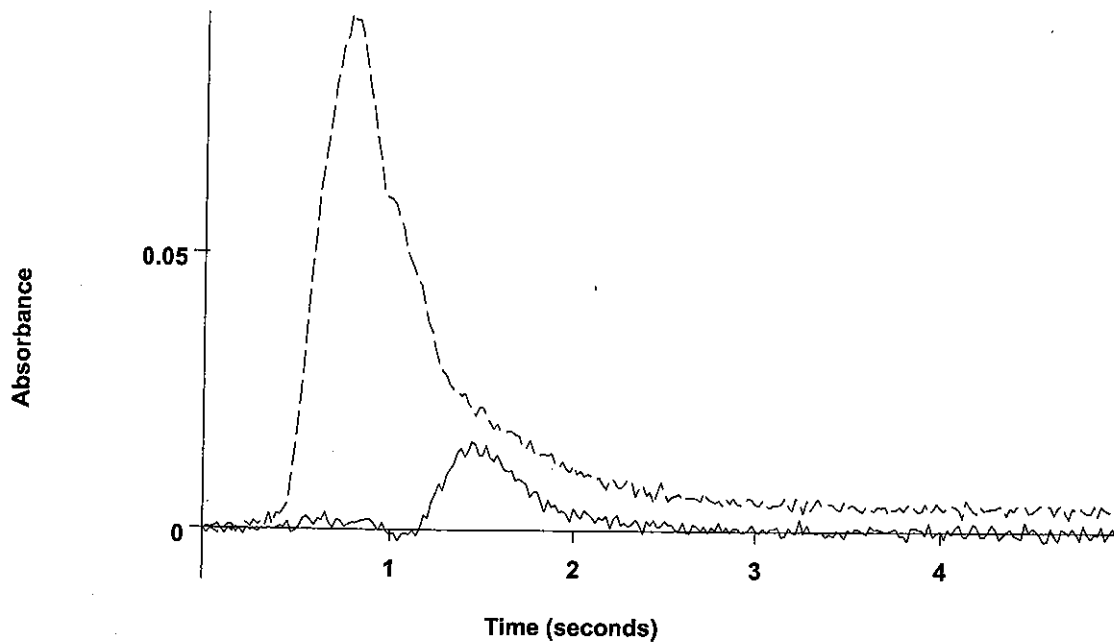
2	1.0	1.0	0.0044	0.0057	0.0123	0.0636	0.0690	02:59:37	Yes
Mean:	1.0	1.0	0.0042						
SD :	0.08	0.08	0.0003						
%RSD:	8.61	8.61	7.16						

ND

=====
 Element: As Seq. No.: 153 AS Loc.: 13 Date: 06/27/2006
 Sample ID: 0606346-07
 µL dispensed: 10 from 148, 5 from 147, 15 from 13
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	2.0	2.0	0.0079	0.0091	0.0159	0.0764	0.0930	03:02:27	Yes

As



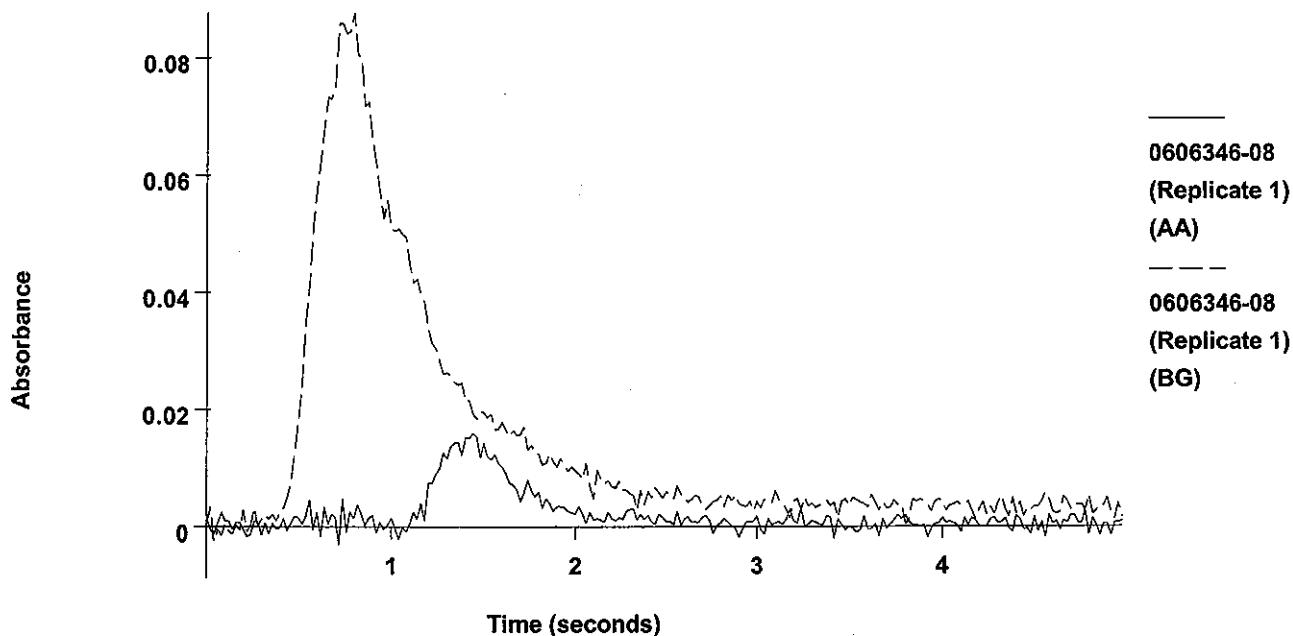
2	2.2	2.2	0.0089	0.0101	0.0147	0.0735	0.0917	03:05:17	Yes
Mean:	2.1	2.1	0.0084						
SD :	0.19	0.19	0.0007						
%RSD:	9.18	9.18	8.41						

PA

=====
 Element: As Seq. No.: 154 AS Loc.: 14 Date: 06/27/2006
 Sample ID: 0606346-08
 µL dispensed: 10 from 148, 5 from 147, 15 from 14

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	2.3	2.3	0.0089	0.0102	0.0160	0.0696	0.0877	03:08:08	Yes

As



0606346-08
(Replicate 1)
(AA)
0606346-08
(Replicate 1)
(BG)

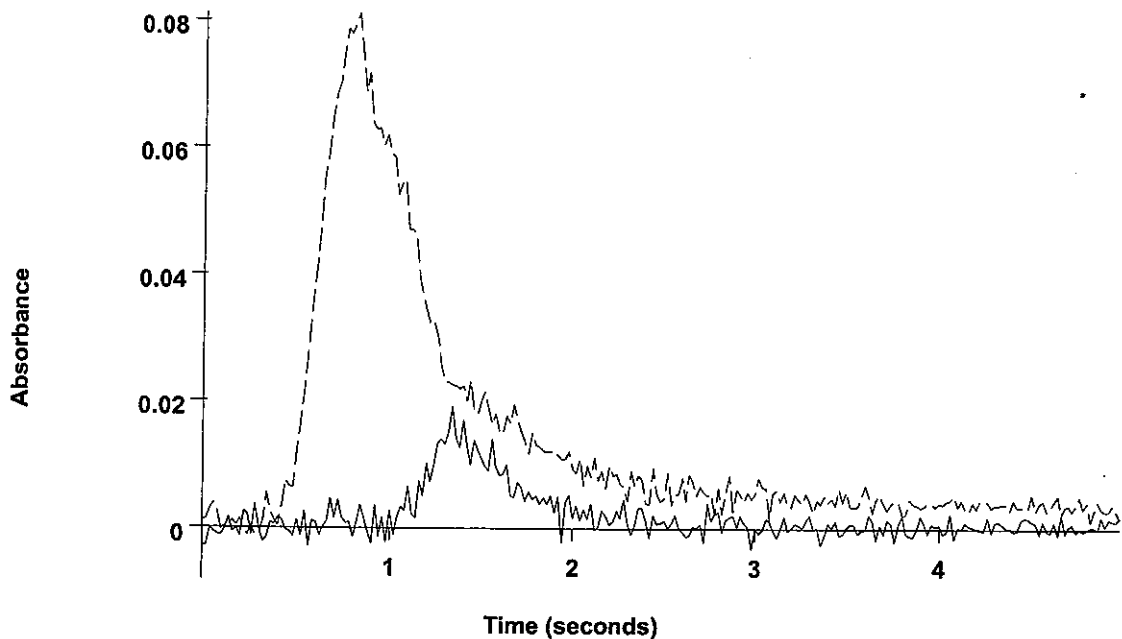
2	2.2	2.2	0.0088	0.0101	0.0162	0.0703	0.0863	03:10:58	Yes
Mean:	2.2	2.2	0.0088						
SD :	0.02	0.02	0.0001						
%RSD:	0.90	0.90	0.83						

Handwritten signature or initials

 Element: As Seq. No.: 155 AS Loc.: 15 Date: 06/27/2006
 Sample ID: 0606346-09
 µL dispensed: 10 from 148, 5 from 147, 15 from 15

Repl #	SampleConc µg/L	StdConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	2.2	2.2	0.0086	0.0099	0.0191	0.0692	0.0812	03:13:48	Yes

As



0606346-09
 (Replicate 1)
 (AA)
 0606346-09
 (Replicate 1)
 (BG)

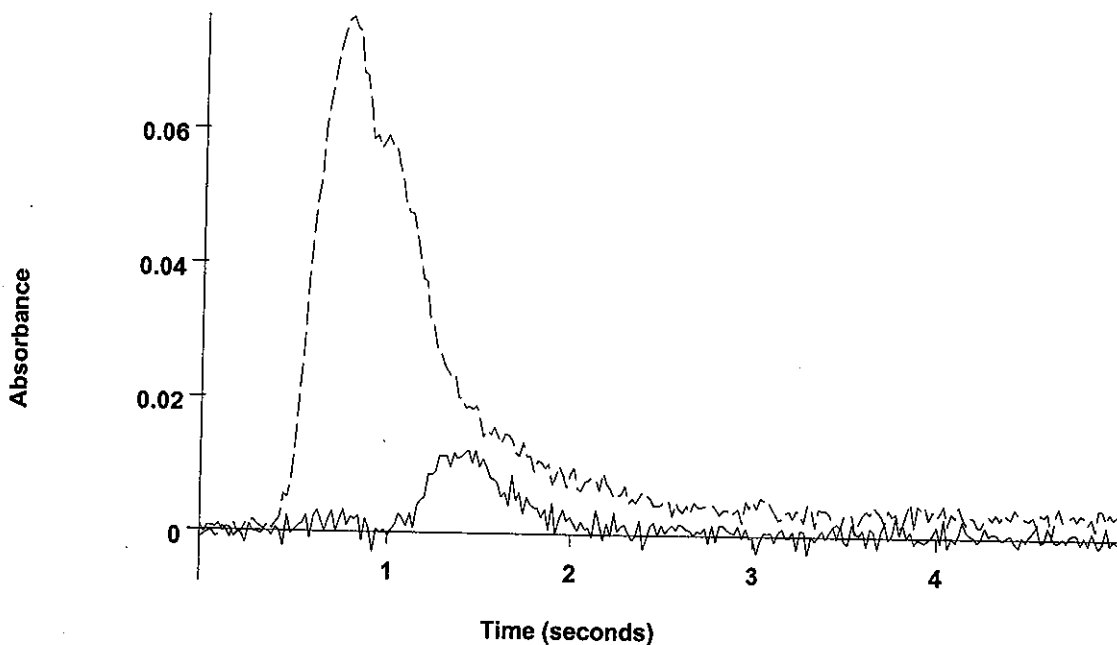
2	2.5	2.5	0.0098	0.0110	0.0186	0.0671	0.0854	03:16:39	Yes
Mean:	2.3	2.3	0.0092						
SD :	0.23	0.23	0.0008						
%RSD:	9.87	9.87	9.11						

Handwritten signature

=====
 Element: As Seq. No.: 156 AS Loc.: 16 Date: 06/27/2006
 Sample ID: 0606346-10
 µL dispensed: 10 from 148, 5 from 147, 15 from 16

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	1.7	1.7	0.0067	0.0080	0.0123	0.0647	0.0769	03:19:28	Yes

As



0606346-10
(Replicate 1)
(AA)

0606346-10
(Replicate 1)
(BG)

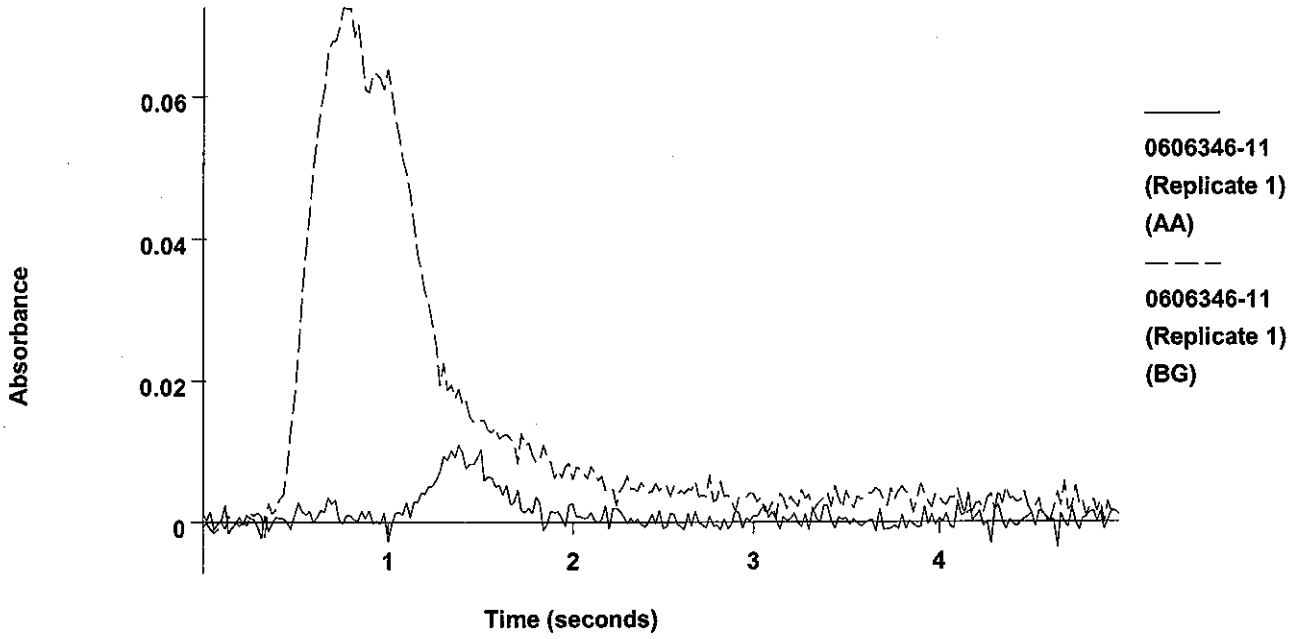
2	1.6	1.6	0.0066	0.0079	0.0139	0.0642	0.0877	03:22:18	Yes
Mean:	1.6	1.6	0.0067						
SD :	0.02	0.02	0.0001						
%RSD:	1.27	1.27	1.14						

PK

=====
 Element: As Seq. No.: 157 AS Loc.: 17 Date: 06/27/2006
 Sample ID: 0606346-11
 µL dispensed: 10 from 148, 5 from 147, 15 from 17
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	1.1	1.1	0.0046	0.0059	0.0110	0.0617	0.0726	03:25:08	Yes

As



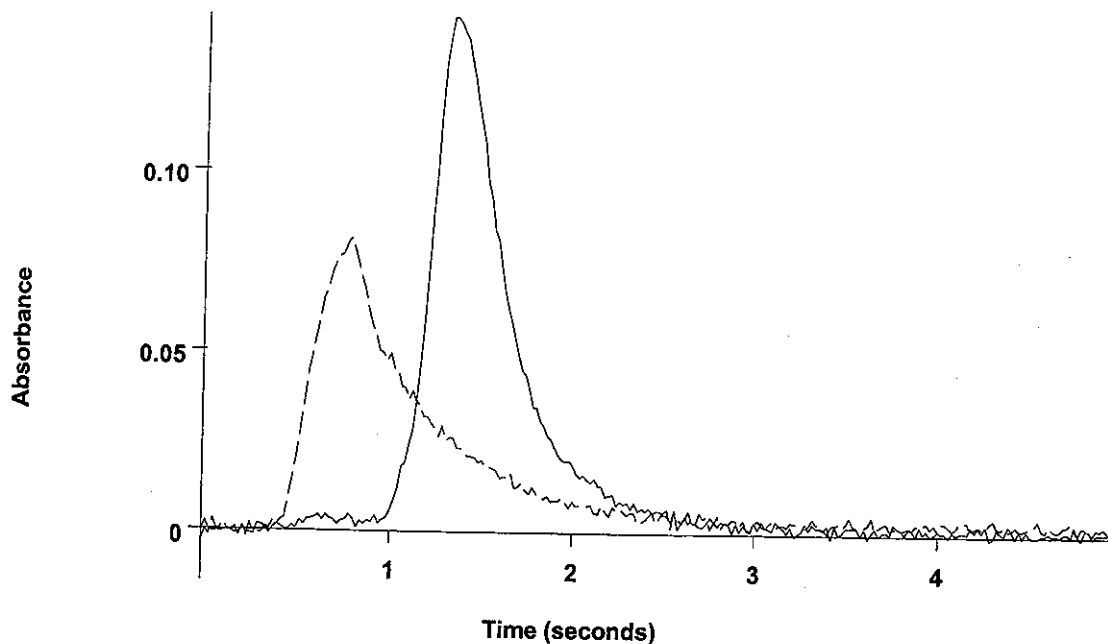
2	0.9	0.9	0.0041	0.0054	0.0096	0.0671	0.0855	03:27:58	Yes
Mean:	1.0	1.0	0.0044						
SD :	0.11	0.11	0.0004						
%RSD:	10.7	10.7	8.97						

Handwritten signature

=====
 Element: As Seq. No.: 158 AS Loc.: 17 Date: 06/27/2006
 Sample ID: 0606346-11
 µL dispensed: 4 from 148, 5 from 147, 6 from 131, 15 from 17
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	20.9	20.9	0.0764	0.0777	0.1429	0.0625	0.0814	03:30:57	Yes

As



0606346-11
(Replicate 1)
(AA)

0606346-11
(Replicate 1)
(BG)

2	20.8	20.8	0.0762	0.0775	0.1583	0.0646	0.0817	03:33:55	Yes
Mean:	20.8	20.8	0.0763						
SD :	0.04	0.04	0.0001						
%RSD:	0.17	0.17	0.17						

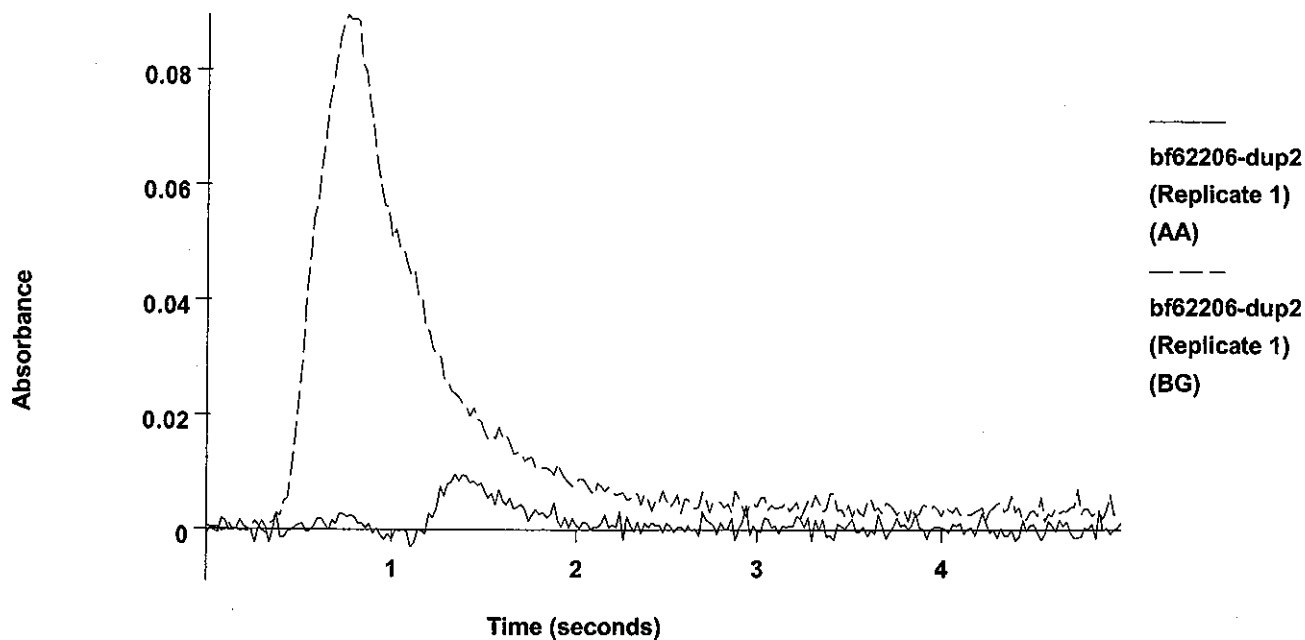
Recovery for As = 104.2 % within 85 % to 115 %



=====
 Element: As Seq. No.: 159 AS Loc.: 18 Date: 06/27/2006
 Sample ID: bf62206-dup2
 µL dispensed: 10 from 148, 5 from 147, 15 from 18
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	1.0	1.0	0.0043	0.0056	0.0098	0.0706	0.0897	03:36:44	Yes

As



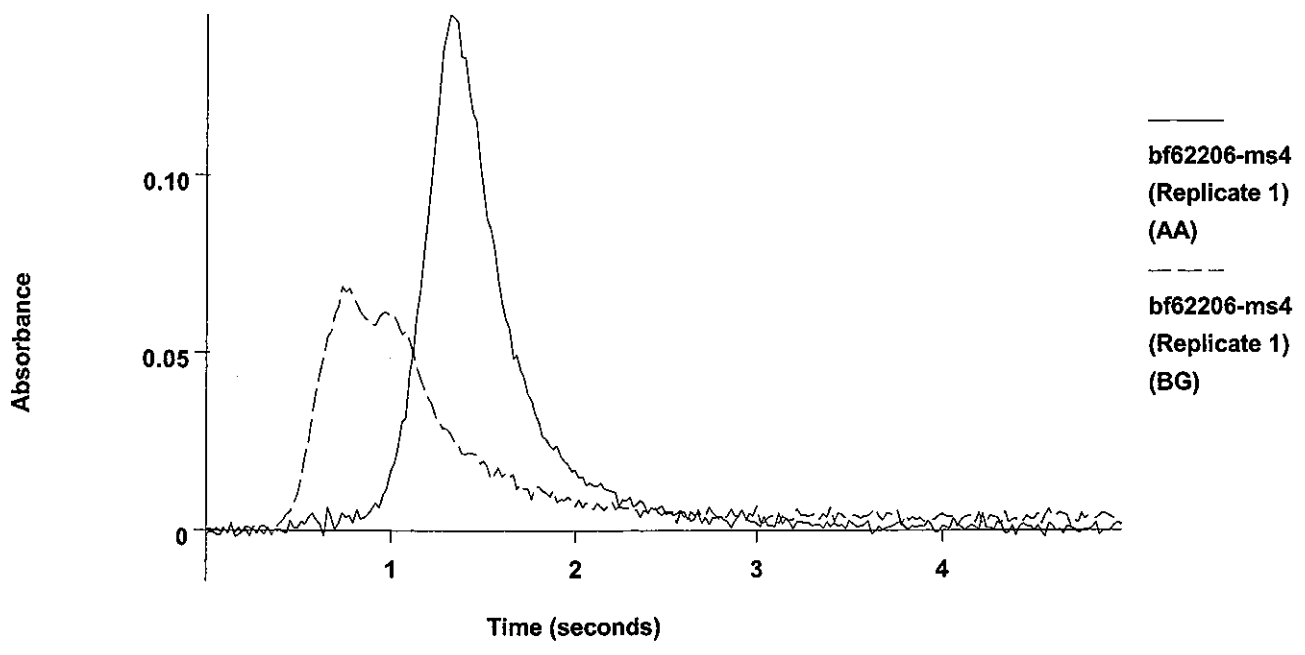
2	1.1	1.1	0.0045	0.0058	0.0110	0.0627	0.0860	03:39:34	Yes
Mean:	1.0	1.0	0.0044						
SD :	0.05	0.05	0.0002						
%RSD:	4.76	4.76	4.00						

PR

=====
 Element: As Seq. No.: 160 AS Loc.: 19 Date: 06/27/2006
 Sample ID: bf62206-ms4
 µL dispensed: 10 from 148, 5 from 147, 15 from 19
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	21.3	21.3	0.0779	0.0792	0.1451	0.0635	0.0685	03:42:25	Yes

As



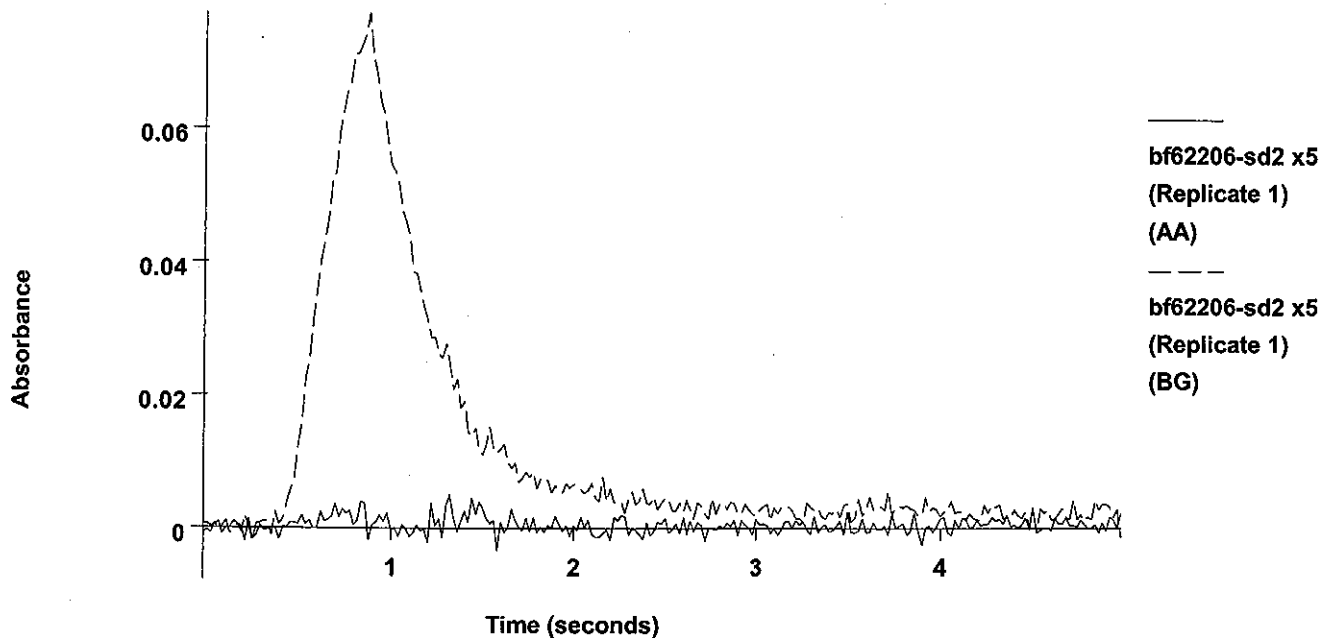
2	22.1	22.1	0.0810	0.0822	0.1527	0.0670	0.0841	03:45:15	Yes
Mean:	21.7	21.7	0.0794						
SD :	0.59	0.59	0.0022						
%RSD:	2.74	2.74	2.71						

1095

=====
 Element: As Seq. No.: 161 AS Loc.: 20 Date: 06/27/2006
 Sample ID: bf62206-sd2 x5
 µL dispensed: 10 from 148, 5 from 147, 15 from 20
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.1	0.1	0.0012	0.0024	0.0050	0.0557	0.0772	03:48:04	Yes

As



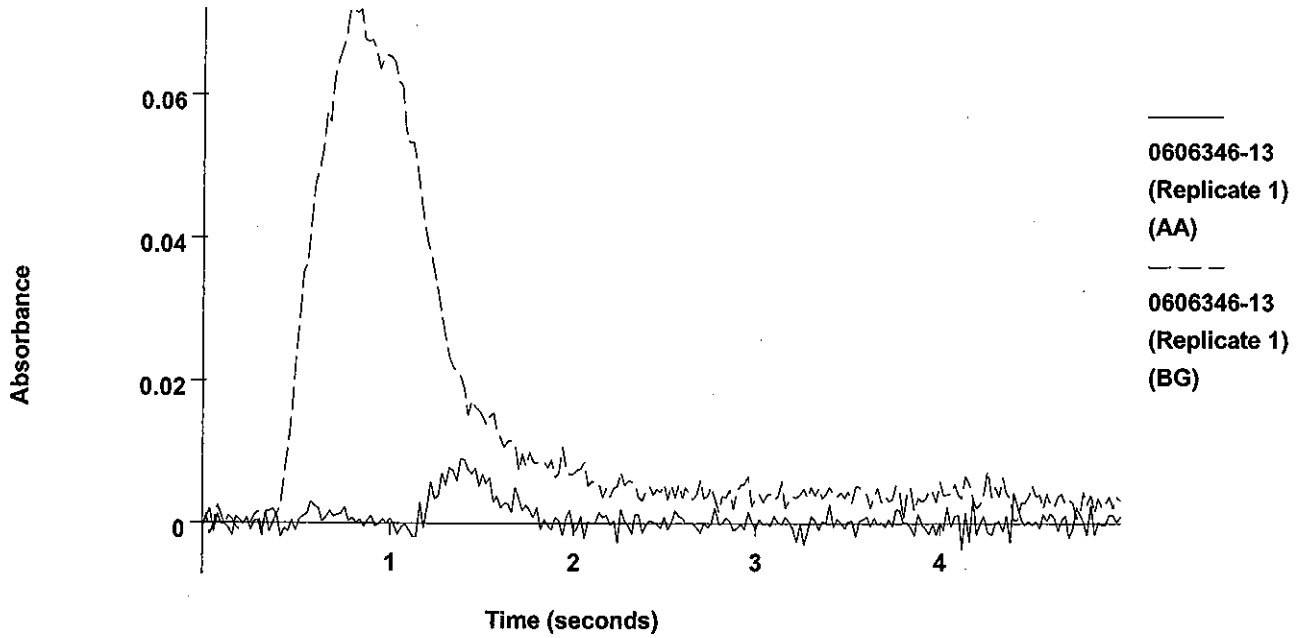
2	0.3	0.3	0.0017	0.0029	0.0043	0.0554	0.0742	03:50:53	Yes
Mean:	0.2	0.2	0.0014						
SD :	0.10	0.10	0.0004						
%RSD:	51.3	51.3	25.58						

PT

=====
 Element: As Seq. No.: 162 AS Loc.: 21 Date: 06/27/2006
 Sample ID: 0606346-13
 µL dispensed: 10 from 148, 5 from 147, 15 from 21
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.4	0.4	0.0022	0.0035	0.0090	0.0658	0.0720	03:53:44	Yes

As



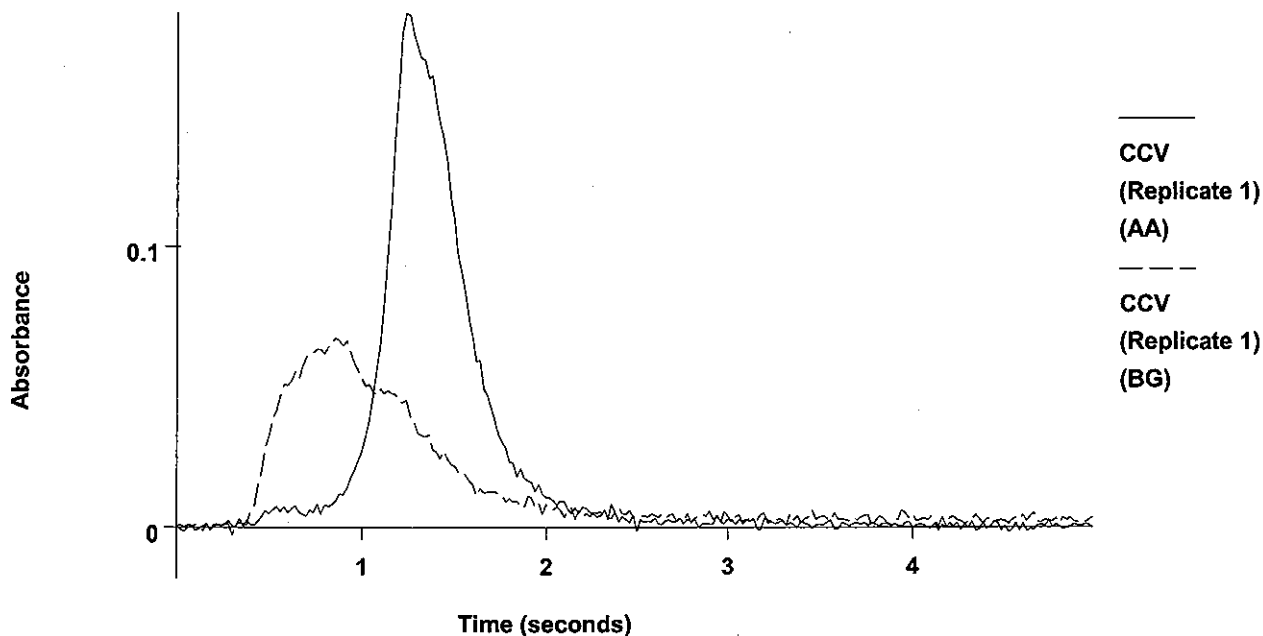
2	0.6	0.6	0.0028	0.0041	0.0099	0.0643	0.0744	03:56:34	Yes
Mean:	0.5	0.5	0.0025						
SD :	0.12	0.12	0.0004						
%RSD:	23.4	23.4	16.91						

PT

=====
 Element: As Seq. No.: 163 AS Loc.: 126 Date: 06/27/2006
 Sample ID: CCV
 µL dispensed: 10 from 148, 5 from 147, 15 from 126
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	25.2	25.2	0.0923	0.0936	0.1831	0.0662	0.0674	03:59:25	Yes

As



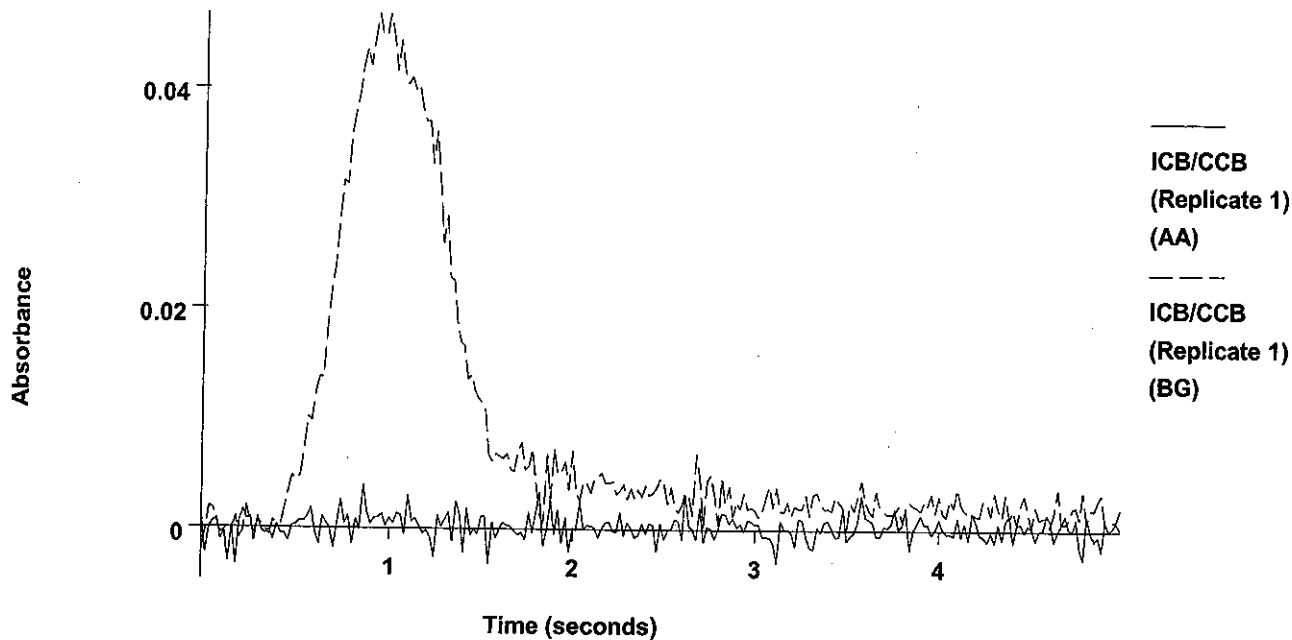
2	25.1	25.1	0.0919	0.0932	0.1917	0.0591	0.0637	04:02:18	Yes
Mean:	25.2	25.2	0.0921						
SD :	0.08	0.08	0.0003						
%RSD:	0.32	0.32	0.32						

QC value within specified limits. ✓

=====
 Element: As Seq. No.: 164 AS Loc.: 148 Date: 06/27/2006
 Sample ID: ICB/CCB
 µL dispensed: 10 from 148, 5 from 147, 15 from 148
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.3	-0.3	-0.0004	0.0009	0.0039	0.0397	0.0468	04:05:08	Yes

As



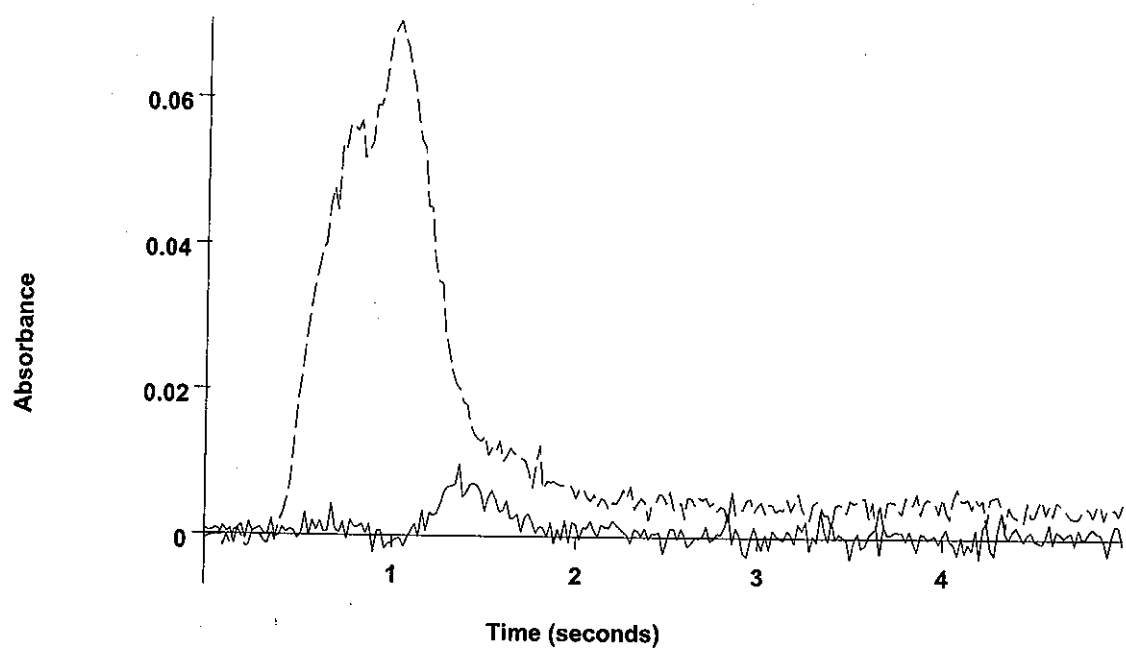
2	-0.4	-0.4	-0.0009	0.0004	0.0040	0.0431	0.0490	04:07:57	Yes
Mean:	-0.4	-0.4	-0.0006						
SD :	0.10	0.10	0.0004						
%RSD:	27.6	27.6	57.59						

QC value within specified limits. ✓

=====
 Element: As Seq. No.: 165 AS Loc.: 22 Date: 06/27/2006
 Sample ID: 0606346-14
 µL dispensed: 10 from 148, 5 from 147, 15 from 22
 =====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.7	0.7	0.0033	0.0046	0.0099	0.0621	0.0706	04:10:47	Yes

As



 0606346-14
 (Replicate 1)
 (AA)

 0606346-14
 (Replicate 1)
 (BG)

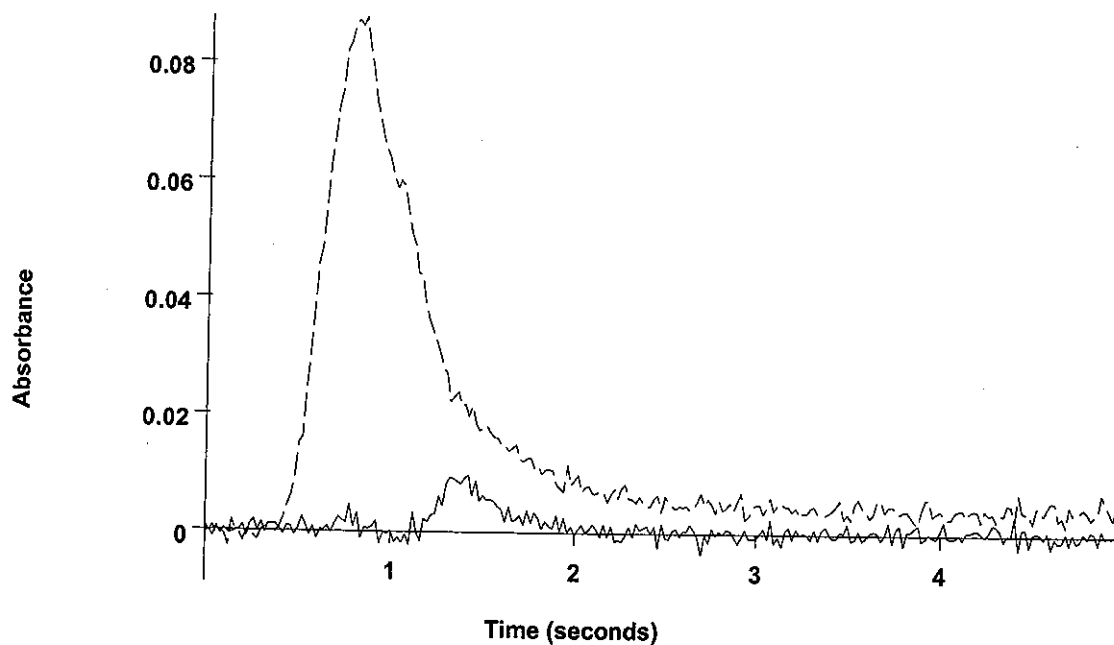
2	0.7	0.7	0.0034	0.0046	0.0081	0.0618	0.0674	04:13:37	Yes
Mean:	0.7	0.7	0.0033						
SD :	0.01	0.01	0.0000						
%RSD:	1.17	1.17	0.92						

Handwritten signature

=====
 Element: As Seq. No.: 166 AS Loc.: 23 Date: 06/27/2006
 Sample ID: 0606346-15
 µL dispensed: 10 from 148, 5 from 147, 15 from 23

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.6	0.6	0.0029	0.0042	0.0096	0.0700	0.0877	04:16:28	Yes

As



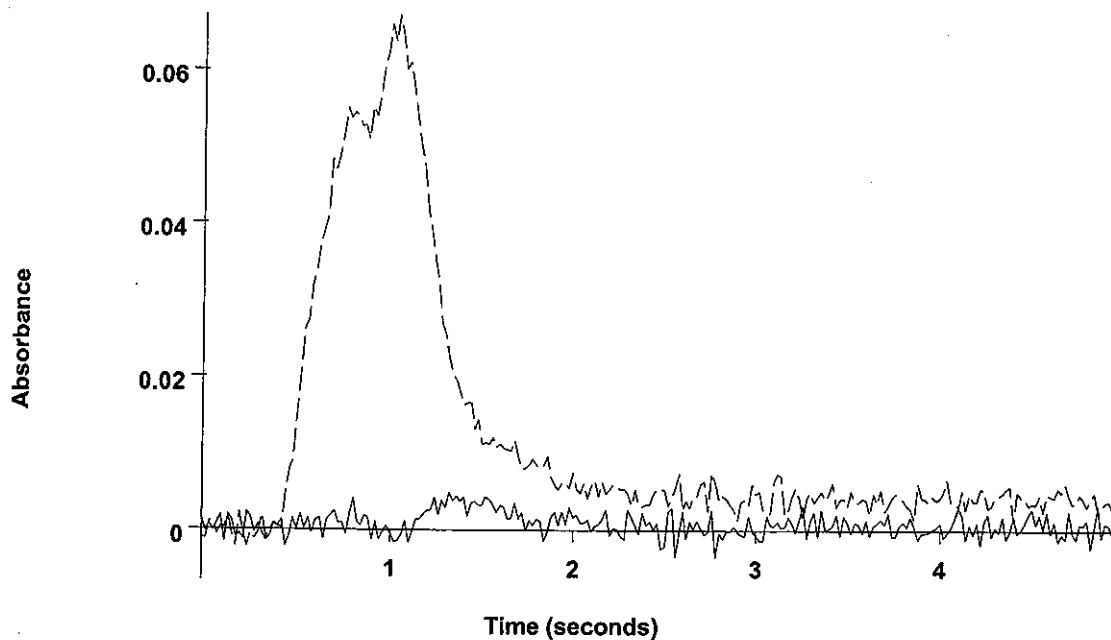
2	0.9	0.9	0.0040	0.0053	0.0095	0.0634	0.0844	04:19:18	Yes
Mean:	0.8	0.8	0.0035						
SD :	0.21	0.21	0.0008						
%RSD:	27.2	27.2	21.69						

Handwritten signature

=====
 Element.: As Seq. No.: 167 AS Loc.: 24 Date: 06/27/2006
 Sample ID: 0606346-01 dis
 µL dispensed: 10 from 148, 5 from 147, 15 from 24
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.5	0.5	0.0027	0.0040	0.0049	0.0595	0.0672	04:22:08	Yes

As



0606346-01 dis
(Replicate 1)
(AA)

0606346-01 dis
(Replicate 1)
(BG)

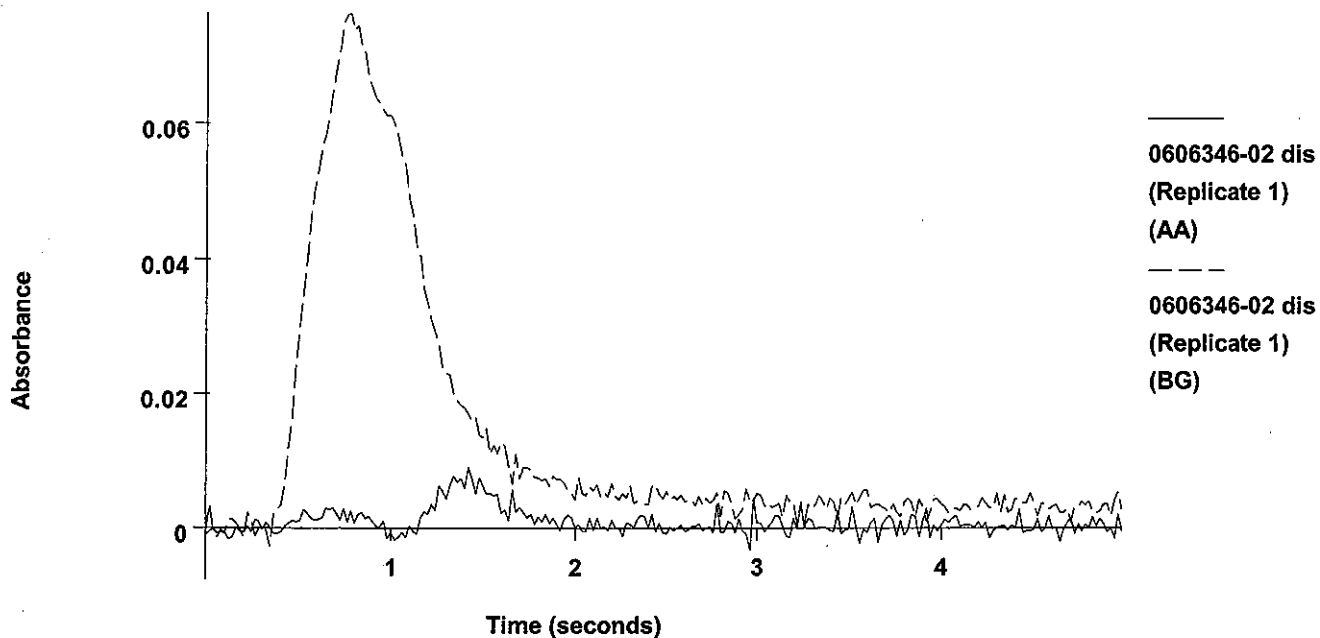
2	0.1	0.1	0.0011	0.0024	0.0063	0.0638	0.0745	04:24:58	Yes
Mean:	0.3	0.3	0.0019						
SD :	0.30	0.30	0.0011						
%RSD:	90.9	90.9	57.33						

Handwritten signature/initials

=====
 Element: As Seq. No.: 168 AS Loc.: 25 Date: 06/27/2006
 Sample ID: 0606346-02 dis
 µL dispensed: 10 from 148, 5 from 147, 15 from 25
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlncCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.7	0.7	0.0034	0.0046	0.0091	0.0645	0.0764	04:27:49	Yes

As



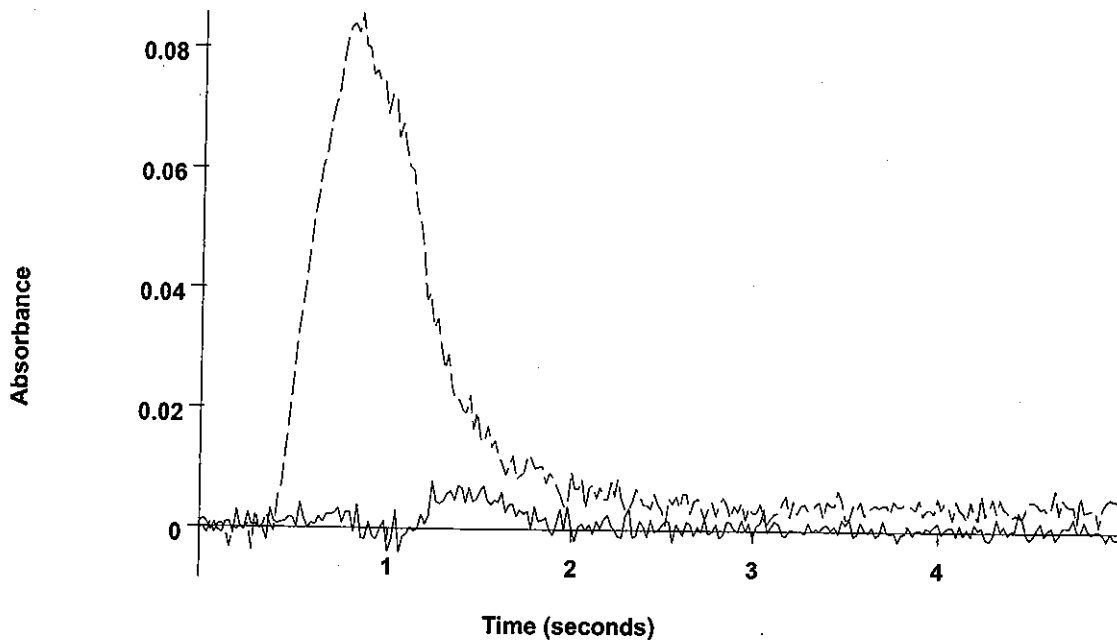
2	0.4	0.4	0.0022	0.0035	0.0071	0.0578	0.0687	04:30:39	Yes
Mean:	0.6	0.6	0.0028						
SD :	0.22	0.22	0.0008						
%RSD:	39.0	39.0	29.15						

PA

=====
 Element: As Seq. No.: 169 AS Loc.: 26 Date: 06/27/2006
 Sample ID: 0606346-03 dis
 µL dispensed: 10 from 148, 5 from 147, 15 from 26
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.8	0.8	0.0037	0.0049	0.0080	0.0722	0.0857	04:33:28	Yes

As



0606346-03 dis
(Replicate 1)
(AA)

0606346-03 dis
(Replicate 1)
(BG)

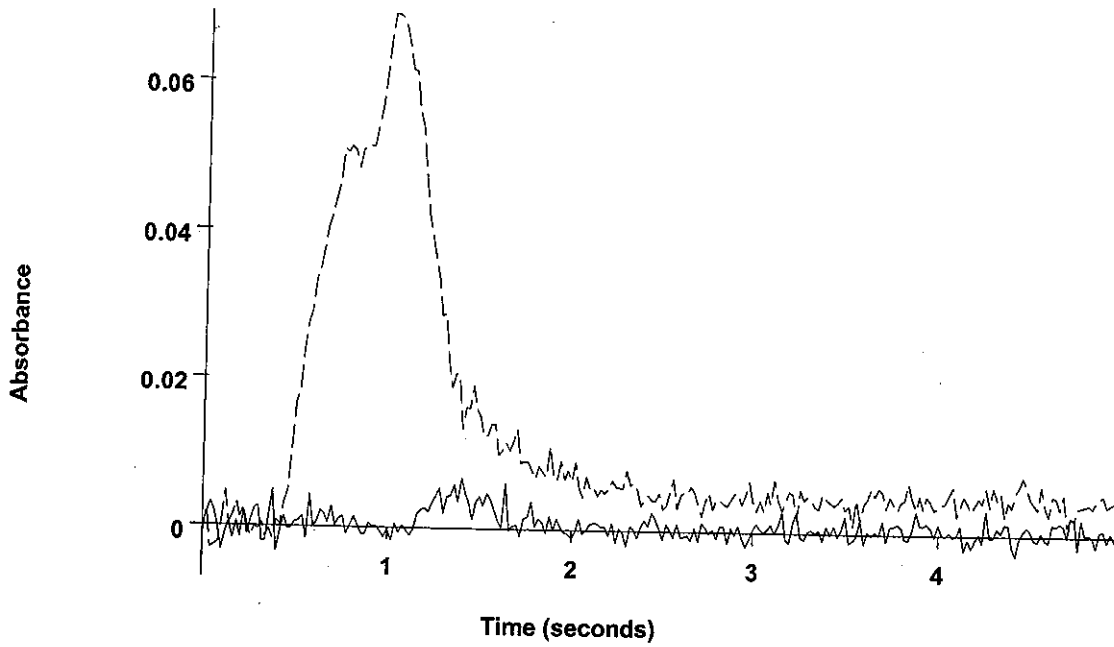
2	0.6	0.6	0.0029	0.0042	0.0107	0.0716	0.0827	04:36:18	Yes
Mean:	0.7	0.7	0.0033						
SD :	0.14	0.14	0.0005						
%RSD:	20.3	20.3	15.97						

Handwritten signature

=====
 Element: As Seq. No.: 170 AS Loc.: 27 Date: 06/27/2006
 Sample ID: 0606346-05 dis
 µL dispensed: 10 from 148, 5 from 147, 15 from 27
 =====

Repl #	Sample Conc µg/L	Stnd Conc µg/L	Blk Corr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.3	0.3	0.0019	0.0032	0.0068	0.0610	0.0692	04:39:08	Yes

As



0606346-05 dis
(Replicate 1)
(AA)

0606346-05 dis
(Replicate 1)
(BG)

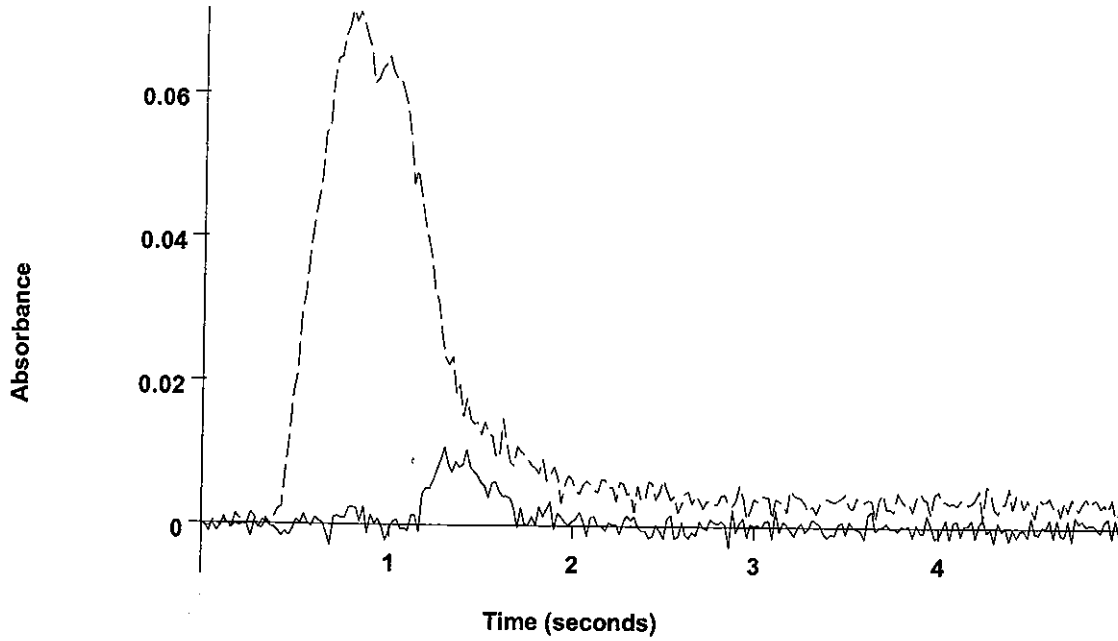
2	0.3	0.3	0.0017	0.0030	0.0073	0.0709	0.0802	04:41:57	Yes
Mean:	0.3	0.3	0.0018						
SD :	0.03	0.03	0.0001						
%RSD:	10.1	10.1	6.12						

Handwritten initials

=====
 Element: As Seq. No.: 171 AS Loc.: 28 Date: 06/27/2006
 Sample ID: 0606346-06 dis
 µL dispensed: 10 from 148, 5 from 147, 15 from 28
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.5	0.5	0.0025	0.0038	0.0110	0.0637	0.0717	04:44:46	Yes

As



 0606346-06 dis
 (Replicate 1)
 (AA)

 0606346-06 dis
 (Replicate 1)
 (BG)

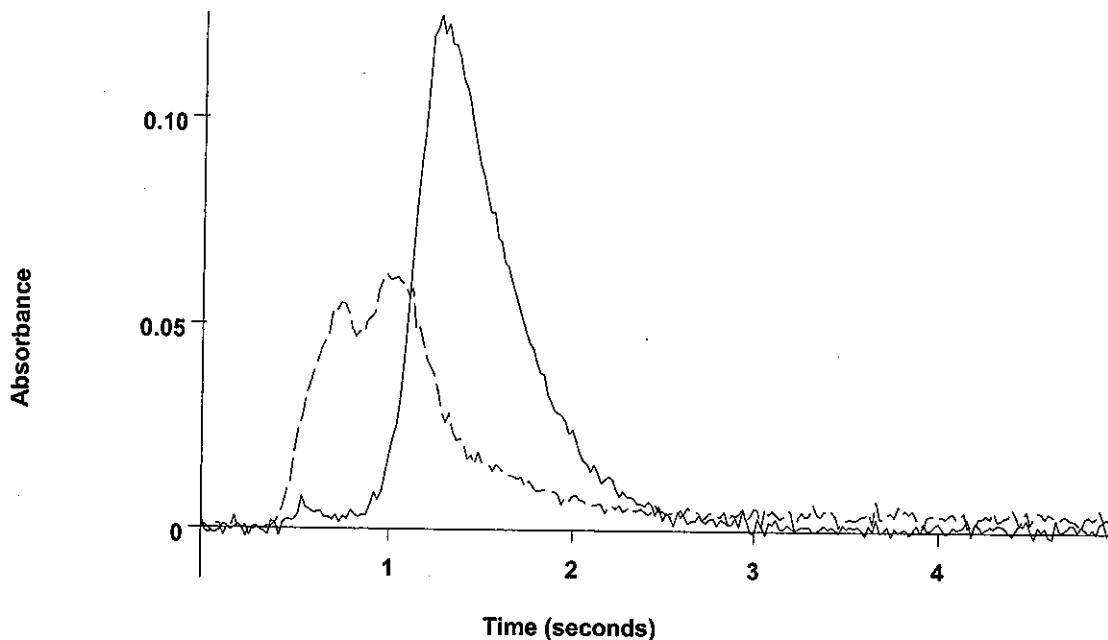
2	0.9	0.9	0.0040	0.0053	0.0095	0.0569	0.0679	04:47:36	Yes
Mean:	0.7	0.7	0.0033						
SD :	0.30	0.30	0.0011						
%RSD:	41.7	41.7	32.73						

PA

=====
 Element: As Seq. No.: 172 AS Loc.: 28 Date: 06/27/2006
 Sample ID: 0606346-06 dis
 µL dispensed: 4 from 148, 5 from 147, 6 from 131, 15 from 28
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	21.7	21.7	0.0794	0.0807	0.1251	0.0612	0.0623	04:50:33	Yes

As



 0606346-06 dis
 (Replicate 1)
 (AA)

 0606346-06 dis
 (Replicate 1)
 (BG)

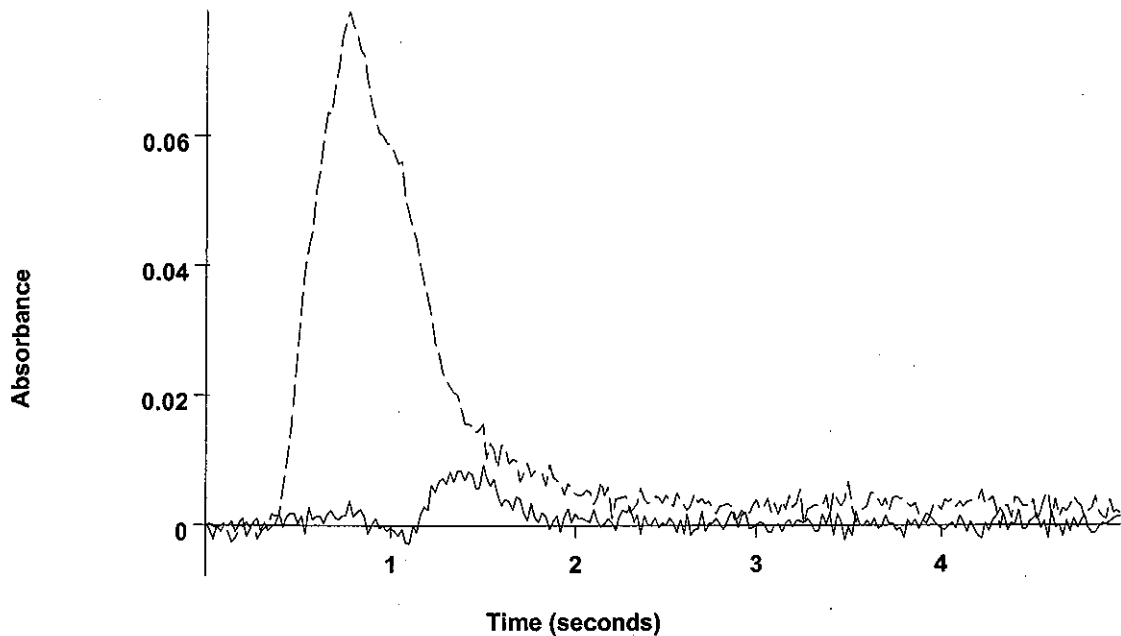
2	22.2	22.2	0.0813	0.0826	0.1405	0.0588	0.0613	04:53:30	Yes
Mean:	21.9	21.9	0.0804						
SD :	0.36	0.36	0.0013						
%RSD:	1.65	1.65	1.63						

Recovery for As = 109.7 % within 85 % to 115 %

=====
 Element: As Seq. No.: 173 AS Loc.: 29 Date: 06/27/2006
 Sample ID: bf62207-dup1
 µL dispensed: 10 from 148, 5 from 147, 15 from 29

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.8	0.8	0.0037	0.0049	0.0094	0.0621	0.0792	04:56:19	Yes

As

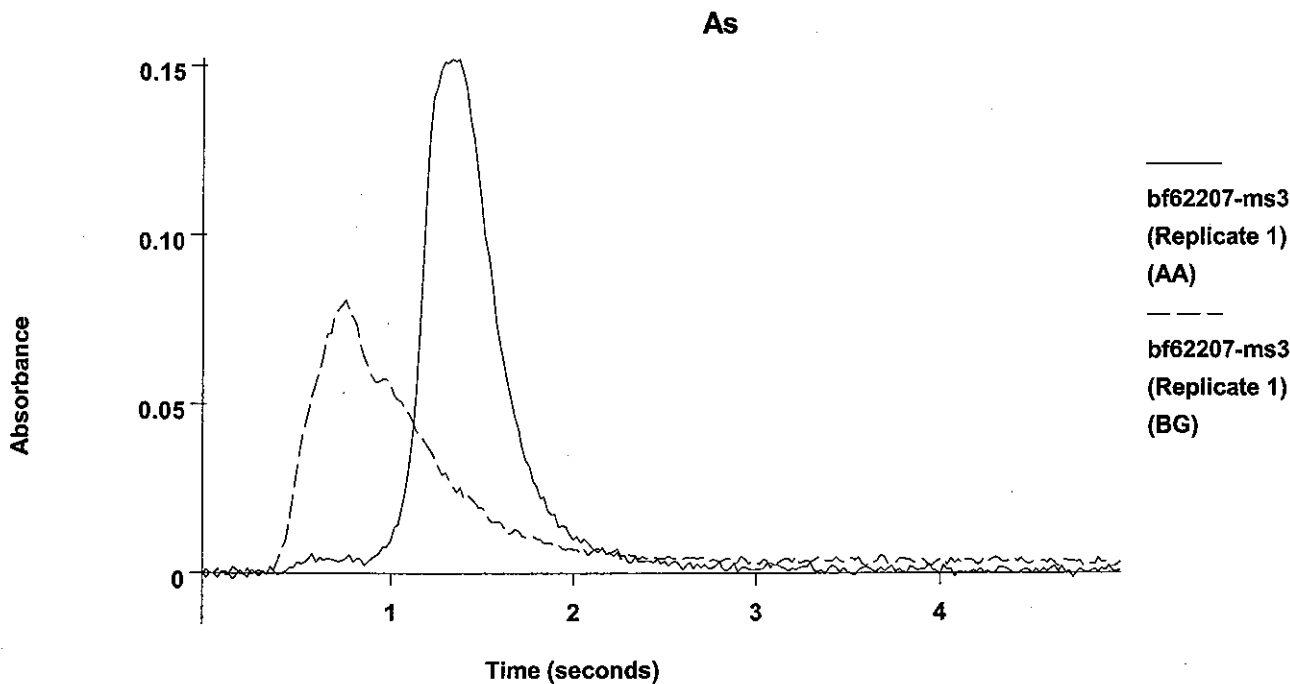


2	0.5	0.5	0.0024	0.0037	0.0110	0.0642	0.0774	04:59:10	Yes
Mean:	0.6	0.6	0.0030						
SD :	0.24	0.24	0.0009						
%RSD:	37.5	37.5	28.78						

Handwritten signature or initials

=====
 Element: As Seq. No.: 174 AS Loc.: 30 Date: 06/27/2006
 Sample ID: bf62207-ms3
 µL dispensed: 10 from 148, 5 from 147, 15 from 30
 =====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	21.4	21.4	0.0784	0.0797	0.1520	0.0680	0.0808	05:01:59	Yes

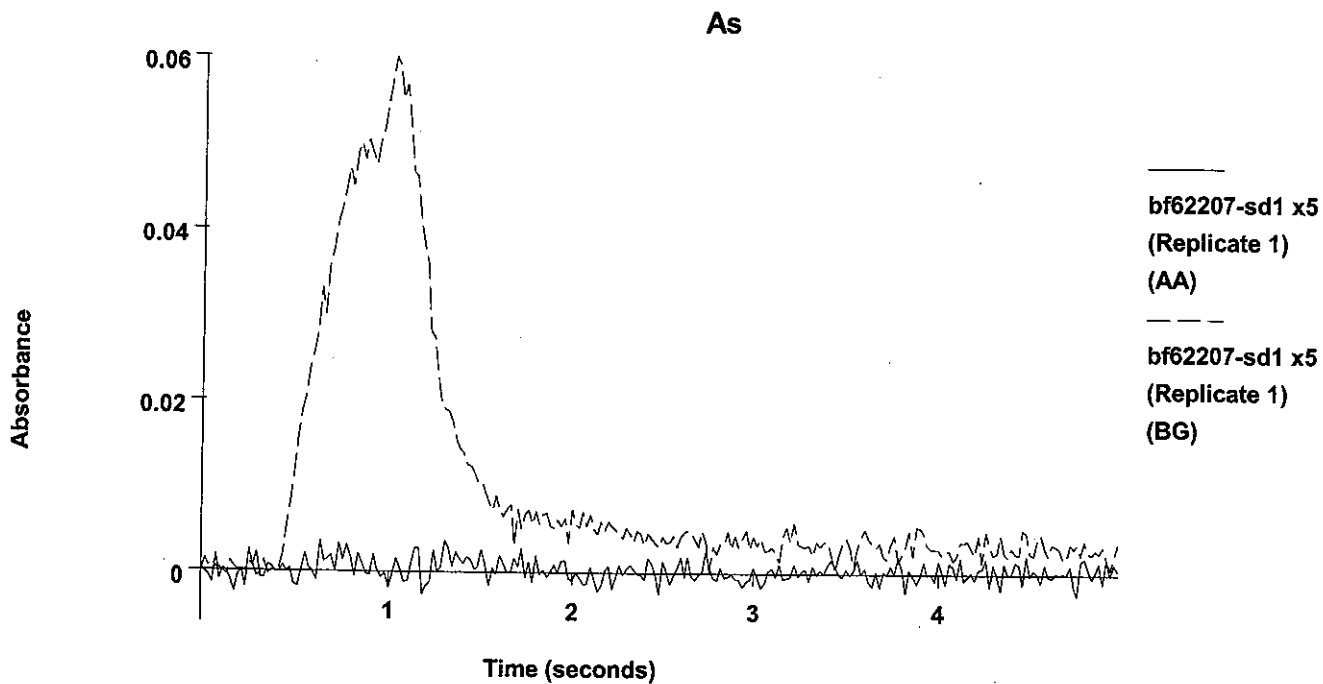


2	20.7	20.7	0.0759	0.0772	0.1236	0.0693	0.0722	05:04:48	Yes
Mean:	21.1	21.1	0.0772						
SD :	0.50	0.50	0.0018						
%RSD:	2.36	2.36	2.34						

1067

=====
 Element: As Seq. No.: 175 AS Loc.: 31 Date: 06/27/2006
 Sample ID: bf62207-sd1 x5
 µL dispensed: 10 from 148, 5 from 147, 15 from 31
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlncCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.2	-0.2	0.0000	0.0013	0.0037	0.0494	0.0600	05:07:38	Yes



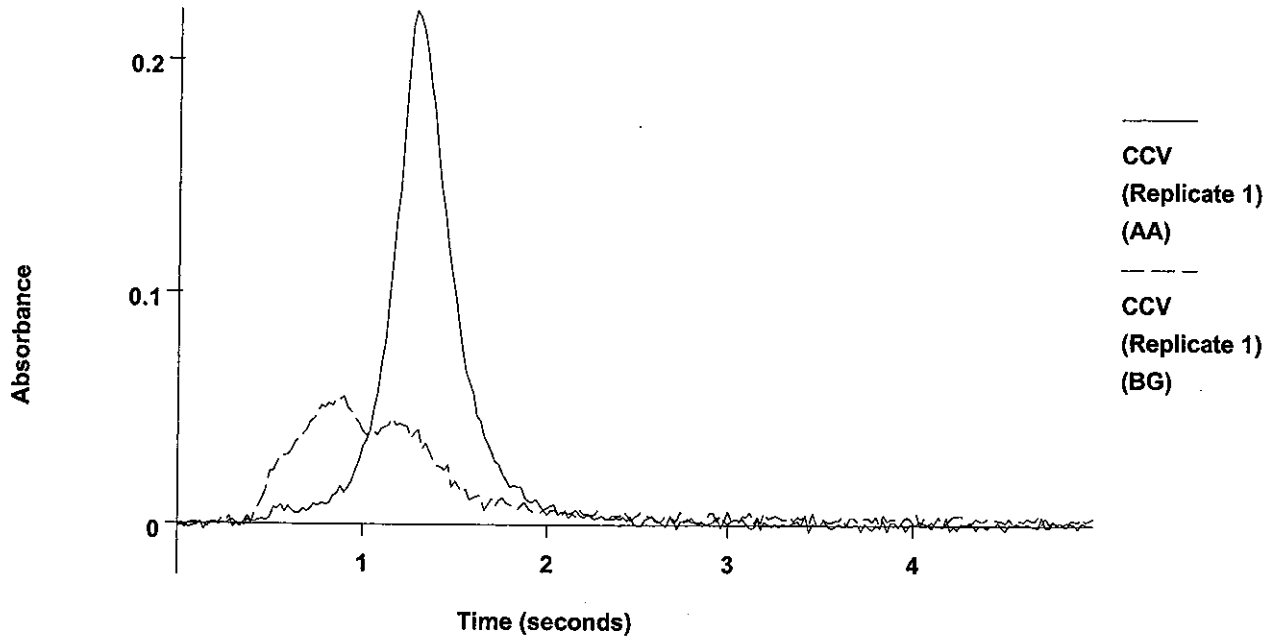
2	0.1	0.1	0.0012	0.0025	0.0052	0.0593	0.0779	05:10:28	Yes
Mean:	0.0	0.0	0.0006						
SD :	0.24	0.24	0.0009						
%RSD:	674	674	148.17						

PA

=====
 Element: As Seq. No.: 176 AS Loc.: 126 Date: 06/27/2006
 Sample ID: CCV
 µL dispensed: 10 from 148, 5 from 147, 15 from 126
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlncCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	24.9	24.9	0.0910	0.0923	0.2214	0.0534	0.0553	05:13:20	Yes

As



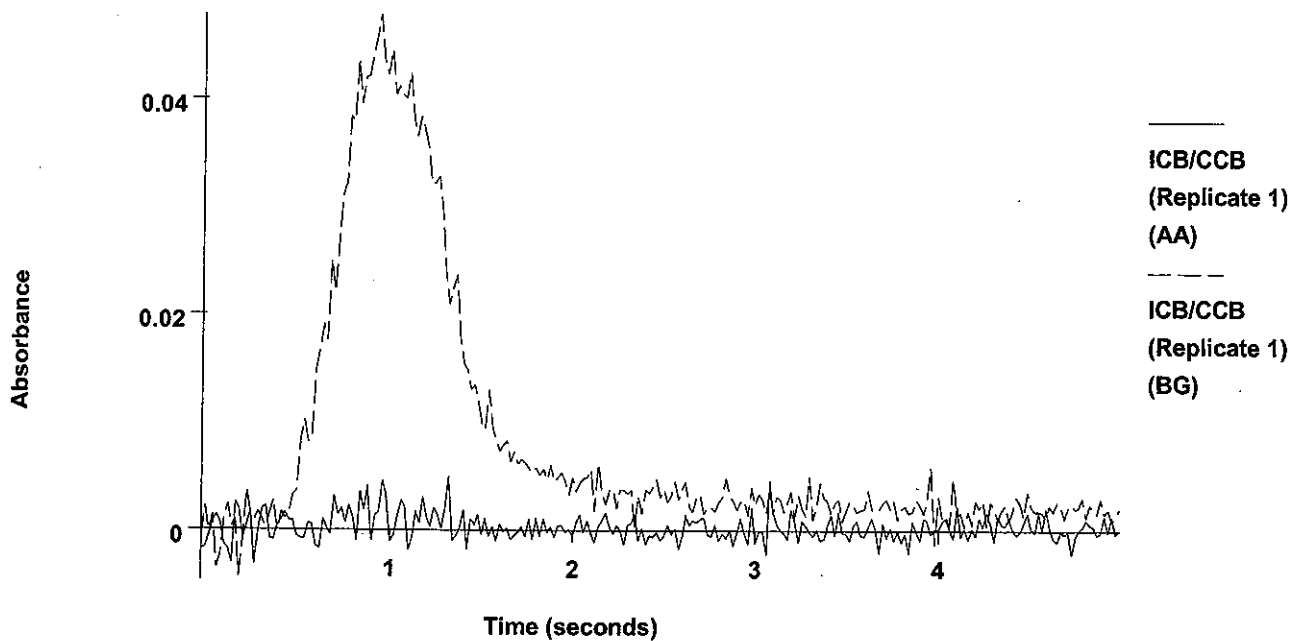
2	24.8	24.8	0.0907	0.0920	0.1795	0.0515	0.0462	05:16:14	Yes
Mean:	24.8	24.8	0.0909						
SD :	0.06	0.06	0.0002						
%RSD:	0.23	0.23	0.23						

QC value within specified limits.

=====
 Element: As Seq. No.: 177 AS Loc.: 148 Date: 06/27/2006
 Sample ID: ICB/CCB
 µL dispensed: 10 from 148, 5 from 147, 15 from 148
 =====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	-0.2	-0.2	0.0001	0.0013	0.0050	0.0403	0.0478	05:19:04	Yes

As



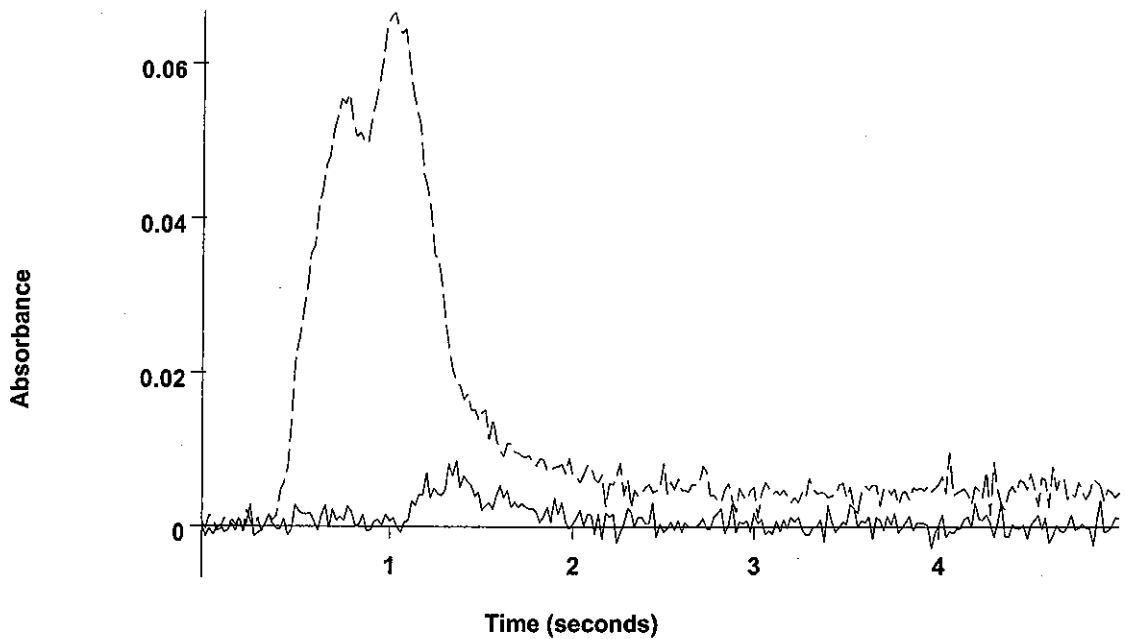
2	-0.3	-0.3	-0.0004	0.0008	0.0034	0.0448	0.0508	05:21:54	Yes
Mean:	-0.2	-0.2	-0.0002						
SD :	0.10	0.10	0.0004						
%RSD:	39.1	39.1	181.95						

QC value within specified limits. ✓

=====
 Element: As Seq. No.: 178 AS Loc.: 32 Date: 06/27/2006
 Sample ID: 0606346-07 dis
 µL dispensed: 10 from 148, 5 from 147, 15 from 32
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.8	0.8	0.0036	0.0049	0.0085	0.0633	0.0667	05:24:43	Yes

As



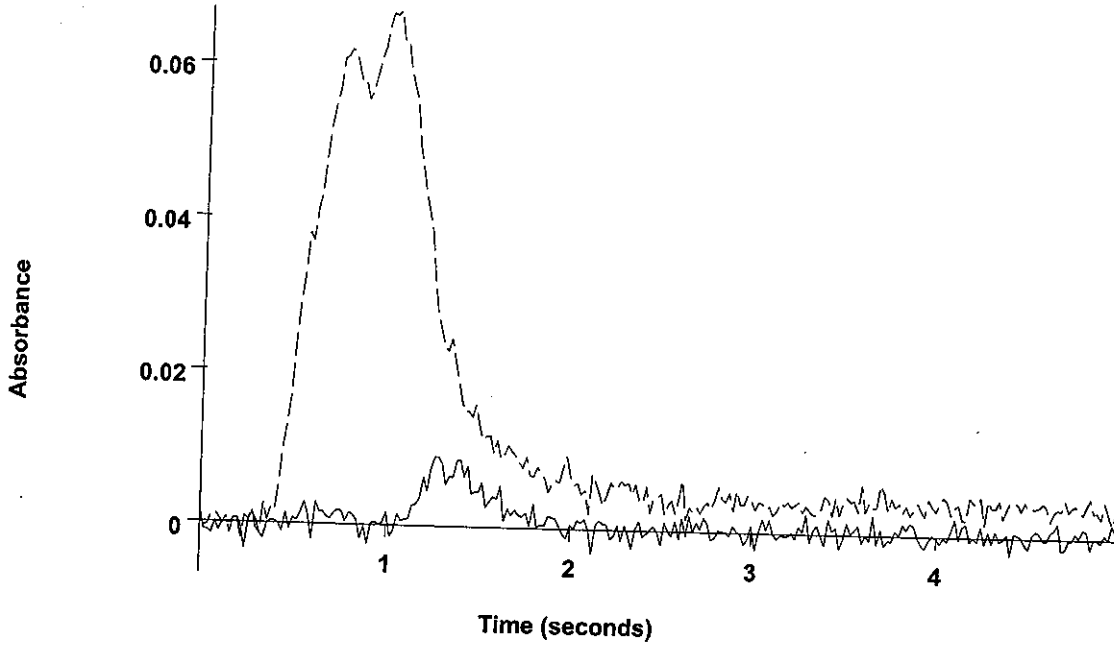
2	0.7	0.7	0.0031	0.0044	0.0085	0.0599	0.0668	05:27:33	Yes
Mean:	0.7	0.7	0.0034						
SD :	0.11	0.11	0.0004						
%RSD:	14.5	14.5	11.45						

NT

=====
 Element: As Seq. No.: 179 AS Loc.: 33 Date: 06/27/2006
 Sample ID: 0606346-08 dis
 µL dispensed: 10 from 148, 5 from 147, 15 from 33
 =====

Repl #	SampleConc µg/L	StndConc µg/L	Blncorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.6	0.6	0.0027	0.0040	0.0090	0.0623	0.0670	05:30:23	Yes

As



 0606346-08 dis
 (Replicate 1)
 (AA)

 0606346-08 dis
 (Replicate 1)
 (BG)

2	0.8	0.8	0.0037	0.0050	0.0091	0.0633	0.0679	05:33:13	Yes
Mean:	0.7	0.7	0.0032						
SD :	0.19	0.19	0.0007						
%RSD:	27.8	27.8	21.74						

PD

=====
 Element: As Seq. No.: 180 AS Loc.: 34 Date: 06/27/2006
 Sample ID: 0606346-09 dis
 µL dispensed: 10 from 148, 5 from 147, 15 from 34
 =====

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Area	Peak Height	Bkgnd Area	Bkgnd Height	Time	Peak Stored
1	0.7	0.7	0.0033	0.0045	0.0094	0.0651	0.0804	05:36:04	Yes