Final Closure Report

Environmental Restoration

Pesticide Building #4126 and Ammunition Bunkers #2953, #2951, and #2950

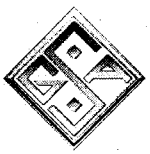
Camp Bonneville, Washington

DACA67-95-G-0001 T.O. 58

Prepared for:
United States Army Corps of Engineers - Seattle District
4375 East Marginal Way South
Seattle, Washington

December 2001

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Prepared by

GARRY STRUTHERS ASSOCIATES, INC.

Construction Management ♦ Environmental Sciences ♦ Project Management ♦ Engineering

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No warranty is expressly stated or implied in this report with regard to the condition of the substrate and groundwater below the surface of this property with the exception of the sampling and analysis of substrate assessed by GSA. This report is not intended to, nor does it purport to encompass every record, report or document available on the site and the surrounding properties. This report reflects our observations of the condition of the property during the time of field activities, and does not cover any other conditions found on the property that were not visible during these field activities, nor does it cover changed conditions to the property that have occurred since the conclusion of field activities. This report is to be used in its entirety in order to understand the full perspective of activities conducted at this site.

CONSENSUS STATEMENT

The enclosed report is entitled "Final Closure Report, Environmental Restoration Multi-Sites, Camp Bonneville, Washington." The undersigned agree with the information presented in this report, including the results and conclusions.

_____ _____

Eric Waehling
BRAC Environmental Coordinator

Date

_____ _____

Christopher Maurer
Washington State Department of Ecology

Date

_____ _____

Harry Craig
U.S. EPA Region 10

Date

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1. INTRODUCTION

Garry Struthers Associates, Inc. (GSA) has entered into a contract with the United States Army Corps of Engineers – Seattle District (USACE) for the environmental restoration of two sites at Camp Bonneville in Vancouver, Washington, under contract number DACA67-95-G-0001-58. A list of abbreviations and acronyms for the report is included in Appendix A.

The scope of work for this Task Order includes the remediation of identified hazards, at each of two designated sites, to meet regulatory soil cleanup standards with respect to chemical contamination. Confirmation soil samples were collected and analyzed to verify soil remediation. This report describes the technical approach GSA implemented in accordance with the approved Management Plan in order to manage the sampling, excavation, and transportation and disposal of the identified wastes. Historical information regarding the sites was taken from the scope of work issued to GSA.

The two sites covered under the scope of work for this contract are the Pesticide Building #4126 and Ammunition Bunkers #2953, #2951, and #2950. Maps of each of these sites are provided in Appendix B.

1.1 Site History

Camp Bonneville was established in 1909 as a drill field and rifle range. Army, Army Reserve, National Guard, Marine Corps Reserve, Navy Reserve, and Coast Guard Reserve units, as well as other Department of Defense (DoD) and government personnel have used the site over the years for various training operations. The facility is still used by federal, state, and local law enforcement agencies for both firearms and general training purposes. Camp Bonneville encompasses approximately 3,840 acres in the foothills of the Cascade Mountains, about 12 miles northeast of Vancouver, Washington (Appendix B, Figure 1).

1.1.1 Pesticide Building #4126

The Pesticide Building #4126 is located across the road from and southeast of the Camp Killpack cantonment (Appendix B, Figures 2, 4, and 6). This structure was built in approximately 1958 and is a painted wood structure with a wooden floor and wooden door. Other than doors and windows, the building has no ventilation system. The structure does not contain plumbing, electrical, or a heating system. The windows are simple framed openings with no glass and the door is detached and is leaning against an interior wall. The structure was designed to be moved from site to site as it was needed. It is approximately 6 feet deep by 8 feet wide (see Appendix J for photos).

The area surrounding the structure is relatively level and contains mostly brush and grass. There are two large Douglas fir trees within 10 feet of the structure. There is a concrete pad (approximately 8 feet by 8 feet) approximately four feet from the front of the structure.

Tasks performed previously at this site included UXO clearance/screening surveying, geophysical surveying, surface soil sampling, and wood sampling. For more details regarding this site, please refer to the "Supplemental Site Investigation Report – Ammunition Storage Magazines and Pesticide Storage Area, December 2000" prepared by URS.

Selenium and thallium were not detected in the samples. Arsenic, barium, beryllium, cadmium, chromium, copper, mercury, nickel, silver, and zinc were detected in some or all of the samples, but at concentrations below the project screening criteria. Antimony and lead were present in most or all samples at concentrations exceeding one or more of the project screening levels.

Herbicides and Pesticides were found at this site. 4,4-DDT, 2,4,5-T, and MCPP were present in most or all samples at concentrations exceeding one or more of the project screening levels.

TPH-diesel was present in most or all samples at concentrations exceeding one or more of the project screening levels.

Appendix D contains historical chemical data results from this site.

1.1.2 Ammunition Bunkers (#2953, #2951, and #2950)

The ammunition storage magazines are located east of the Camp Bonneville cantonment and southwest of the existing sewage treatment lagoon (Appendix B, Figures 2, 3 and 5). These structures are constructed of concrete with a heavy metal doors. According to historical records, the structures were built in 1976. These magazines were used to store munitions of various types that were brought to Camp Bonneville for training purposes.

The largest storage magazine is surrounded by a chain-link fence, topped with barbed wire, and with a gate near the northwest corner. The two smaller magazines are fenced separately from the larger magazine (with one common fence side). The entrance to this fenced area is north of the two structures. The area between and surrounding the ammunition storage magazines is covered with grasses. The area is relatively flat, with a slight slope downward to the south toward Lacamas Creek. The creek is located immediately south of the fenced area.

Tasks performed previously at these sites included UXO clearance/screening surveying, geophysical surveying, and subsurface soil sampling. For more details regarding these bunkers, please refer to the "Final Report Multisites Investigation, July 1999" prepared by Shannon and Wilson, Inc. and the "Supplemental Site Investigation Report – Ammunition Storage Magazines and Pesticide Storage Area, December 2000" prepared by URS.

1.1.2.1 Bunker #2953

This bunker is the westernmost ammunition storage magazine of the three bunkers. It is the largest, measuring approximately 80 square feet by 8 feet in height. The entrance to this structure faces generally southward (see Appendix J for photos).

Selenium was not detected in the samples. Mercury, and silver were detected in some or all of the samples, but at concentrations below the project screening levels. Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, thallium, and zinc were present in most or all samples at concentrations exceeding one or more of the project screening levels.

PETN and Picric Acid were detected in some of the samples, but at concentrations below the regulatory screening criteria. 2,4-Dinitroltoluene (DNT) was present in some of the samples at concentrations exceeding one or more of the project screening levels.

Appendix D contains historical chemical data results from this site.

1.1.2.2 Bunker #2951

This bunker is the smallest of the three bunkers, measuring approximately 4 square feet by 4 feet in height. It is located between the other two bunkers. The entrance to this structure faces generally southward (see Appendix J for photos).

Selenium and thallium were not detected in the samples. Mercury, silver, and zinc were detected in some or all of the samples, but at concentrations below the project screening levels. Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, and nickel were present in most or all samples at concentrations exceeding one or more of the project screening levels.

Appendix D contains historical chemical data results from this site.

1.1.2.3 Bunker #2950

This bunker measures approximately 16 square feet by 5 feet in height. It is located easternmost of the three bunkers. The entrance to this structure faces generally eastward (see Appendix J for photos).

Selenium and thallium were not detected in the samples. Beryllium, mercury, nickel, silver, and zinc were detected in some or all of the samples, but at concentrations below the project screening levels. Antimony, arsenic, barium, cadmium, chromium, copper, and lead were present in most or all samples at concentrations exceeding one or more of the project screening levels.

RDX was present in one sample at a concentration exceeding one or more of the project screening levels.

Appendix D contains historical chemical data results from this site.

1.2 Management Plan

GSA developed a Management Plan (MP) during the planning phase of GSA activities on this project (Titled "Supplemental Management Plan – Ammunition Bunkers #2953, #2950, and #2951 and Pesticide Building #4126, Camp Bonneville, Washington" dated April 25, 2001) for the purpose of conducting the project field activities. This MP underwent USACE review as well as regulatory review by Ecology and EPA. The USACE approved the Management Plan for the closure of the two identified sites.

The actual implementation of the field activities deviated from the Management Plan, following approval by the onsite USACE QA personnel, in the following ways:

1.2.1 Sampling Procedure for the Wooden Pesticide Building was Modified

Originally, sampling of the wooden structure was to be performed using a stainless steel drill bit, a paper plate, a stainless steel bowl, and sample jars. Due to the hardness of the wood and the large quantity of material needed to fill the sample jars, the drill bit did not work. Shavings were created using a chainsaw and making vertical cuts through each of the representative surfaces (four walls, floor, roof, door, window sill, and framing members). Because the building was to be removed as construction building debris, sample collection followed the "USAEHA Sampling Protocol Building Demolition Debris and Buildings Painted with lead-Based Paint." Shavings were collected into stainless steel bowls from the interior floor of the building and mixed prior to placing samples in sample jars.

1.2.2 Disinfection and Cleaning of the Ammunition Bunkers was Modified

The Management Plan called for leaving the disinfection solution (1:4 bleach/water solution) on the concrete surfaces of the bunkers for two hours, but was the duration was changed to one hour. The

research available regarding Hanta Virus disinfection indicated that the solution only needed to remain on the surface for one hour to kill the virus.

The Management Plan also called for a wet/dry heppa vacuum to be used to vacuum out the bunkers. However, the bunkers were already cleaned and the disinfectant spray had dried (no water present), so it was sufficient to clean out the bunkers using brooms and dustpans. The swept material was placed into plastic bags along with the disposable PPE and added to the wood stockpile. The brooms and dustpans were decontaminated by washing in soapy water followed by disinfection with the bleach/water solution.

1.2.3 Duration of UXO Clearance Support was Modified

The management plan required the UXO clearance support team to be onsite while the construction and sampling team were onsite. However, all construction, digging, and brush clearing were completed the first day of field activities and it was determined that the UXO team was not needed the second day when only sampling would be conducted. The UXO team was sent home after the first day of field activities.

2. CLOSURE REQUIREMENTS

A summary of the closure requirements for the two sites that was required for this project is presented in the following subsections.

2.1 Confirmation Parameters of Concern and Site-Specific Clean-Closure Levels

Site closure levels for this project were based upon parameters established from previous investigation data (refer to the "Final Report Multisites Investigation, July 1999" prepared by Shannon and Wilson, Inc. and the "Supplemental Site Investigation Report – Ammunition Storage Magazines and Pesticide Storage Area, December 2000" prepared by URS). Groundwater action levels were included to account for the possibility of finding groundwater in the excavations. Table 1 identifies the parameters of concern and the site-specific clean-closure levels for each of the identified parameters. The site cleanup levels for this project are based upon the MTCA Method B soil criteria, where available, and upon the MTCA Method A level when a method B level has not been established, as is the case for total lead, for example. An allowance has also been made in the established site-specific criteria for the elevated background concentrations of the metals arsenic and beryllium. The identification of which parameters were of concern for each site during this remedial activity was based upon the previous characterization work conducted by Shannon & Wilson and URS, which is discussed in Section 1.1 of this report and tabulated in Appendix D.

Table 1. Clean-Closure Soil Levels for Selected Site Confirmation Analytes of Concern

Site Location	Parameter	Highest Concentration Found[1]	Soil Cleanup Levels
Pesticide Bldg #4126	Diesel Range	59 mg/kg	2,000 mg/kg[2]
Pesticide Bldg #4126	Antimony	7 mg/kg	32 mg/kg
Pesticide Bldg #4126	**Lead**	**970 mg/kg**	**250 mg/kg**
Pesticide Bldg #4126	4,4-DDT	2.7 mg/kg	2.94 mg/kg
Pesticide Bldg #4126	2,4,5-T	92 mg/kg	800 mg/kg
Pesticide Bldg #4126	MCPP	42 mg/kg	61,000 mg/kg
Ammo Bunkers #2950, #2951, and #2953	Antimony	9.3 mg/kg	32 mg/kg
Ammo Bunkers #2950, #2951, and #2953	**Arsenic**	**15.5 mg/kg**	**7 mg/kg**
Ammo Bunkers #2950, #2951, and #2953	Barium	2,590 mg/kg	5,600 mg/kg
Ammo Bunkers #2950, #2951, and #2953	**Beryllium**	**5.6 mg/kg**	**2 mg/kg**
Ammo Bunkers #2950, #2951, and #2953	Cadmium	18.3 mg/kg	80 mg/kg
Ammo Bunkers #2950, #2951, and #2953	Chromium	114 mg/kg	400 mg/kg
Ammo Bunkers #2950, #2951, and #2953	Copper	297 mg/kg	2,960 mg/kg

Site Location	Parameter	Highest Concentration Found[1]	Soil Cleanup Levels
Ammo Bunkers #2950, #2951, and #2953	**Lead**	**566 mg/kg**	**250 mg/kg**
Ammo Bunkers #2951 and #2953	Nickel	117 mg/kg	1,600 mg/kg
Ammo Bunker #2953	Thallium	0.49 mg/kg	5.6 mg/kg
Ammo Bunker #2953	Zinc	525 mg/kg	24,000 mg/kg
Ammo Bunker #2953	2,4-DNT	17.2 mg/kg	160 mg/kg
Ammo Bunker #2953	PETN	2.28 mg/kg	NA mg/kg
Ammo Bunker #2953	Picric Acid	1.1 mg/kg	NA mg/kg
Ammo Bunker #2950	**RDX**	**410 mg/kg**	**9.09 mg/kg**

1 The levels listed are the highest concentrations documented by Shannon & Wilson and URS for the site (Appendix D)

2 A mutual agreement between the USACE and Ecology allowed the site-specific cleanup level of 200 mg/kg to be changed to the proposed new MTCA Method A level of 2000 mg/kg.

Bold values indicate historical concentrations found, which exceeded soil cleanup levels.

2.2 Waste Disposal Parameters of Concern and Associated Regulatory Levels

Waste streams encountered on this project were limited to:

- Waste Soil
- Wood Waste
- Waste Personnel Protective Equipment (PPE) and Disposable Sampling Supplies
- Waste Decon Water

A description of the parameters associated with the characterization of the above waste streams is provided in the following sections.

Waste munitions were not anticipated on this project and no UXO was encountered during the course of the remedial activities.

Waste characterization profiling for this project was based upon parameters established from previous investigation data and generator knowledge. Table 2 identifies the parameters of concern and the applicable waste designation levels for each of the identified parameters. The waste designation levels are based upon the Washington State Dangerous Waste characteristic criteria as promulgated in WAC 173-303-090. The identification of which parameters were of concern for each site during this remedial activity was based upon the previous characterization work conducted by Shannon & Wilson and URS, which is discussed in Section 1.1 of this report and tabulated in Appendix D.

Table 2. Waste Designation Level for Selected Analytes of Concern

Site Location	Parameter	Waste Designation Code	Waste Designation Level
Pesticide Building #4126 Wood Debris	Lead	D008	TCLP 5 mg/L
Pesticide Building #4126 Waste Soil	Lead	D008	TCLP 5 mg/L

Site Location	Parameter	Waste Designation Code	Waste Designation Level
Pesticide Building #4126 Waste Soil	DDD, DDE, DDT	U060, U061	Detected
Ammo Bunkers #2950, #2951, and #2953	Arsenic	D004	TCLP 5 mg/L
Ammo Bunkers #2950, #2951, and #2953	Barium	D005	TCLP 100 mg/L
Ammo Bunkers #2950, #2951, and #2953	Cadmium	D006	TCLP 1 mg/L
Ammo Bunkers #2950, #2951, and #2953	Lead	D008	TCLP 5 mg/L
Ammo Bunkers #2953	2,4-DNT	D030	TCLP 0.13 mg/L

2.2.1 Pesticide Building Soil Waste Stream

The soil from the pesticide building area was handled as "Discarded Chemical Products – U060, U061" (WAC 173-303) and accepted as is at the treatment facility in Arlington, OR.

2.2.2 Ammunition Area Soil Waste Stream

The soil from the ammunition area was handled as non-hazardous contaminated soil and accepted as is at the disposal facility in Hillsboro, OR.

2.2.3 Wood Waste Stream

The wood from the pesticide building was handled as a "Listed Waste – D008" (WAC 173-303), treated by microencapsulation, and accepted at the treatment facility in Arlington, OR.

The wood from the wooden pallets removed from the ammunition bunkers were transported to the waste disposal facility along with the wood building waste stream.

2.2.4 Disposable PPE and Sampling Supplies

The used disposable PPE and sampling supplies were transported to the waste disposal facility along with the wood building waste stream.

2.2.5 Waste Decon Water

The USACE and GSA determined that disposable PPE would be used to minimize the quantity of personnel decontamination water generated, and that the equipment decontamination water could be mixed together with the associated waste soil stockpiles. Since it was determined that only equipment that came into contact with the subsurface soils needed to be decontaminated, decontamination of equipment was primarily limited to the cleaning of the stainless steel sampling bowls and spoons and the bucket of the heavy equipment (i.e. backhoe or loader). The cleaning of the heavy equipment was deemed to only be necessary at the end of the usage of the equipment. The quantity of water necessary for this task was further limited by first sweeping off the equipment with a disposable broom. This approach was cost effective and enabled the project to be completed on an expedited schedule. The waste decontamination water was added to the waste soil waste stream prior to the characterization of that waste stream.

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3. REMEDIAL ACTIVITIES FOR THE MULTI-SITE INVESTIGATION AREAS

The field activities associated with this remedial action began on May 7, 2001, and continued intermittently until completion on September 17, 2001. The daily contractor quality control reports and daily field notes describing field activities are contained in Appendix s. The UXO contractor field notes can be found at the end of Appendix E. The remedial actions performed at the two sites are described in the subsequent sections of this report. A photographic record of field activities can be found in Appendix J.

Sections 3.1 to 3.3 describe the remedial actions performed in the field, including excavation, screening and confirmation sampling activities. Section 3.4 describes waste characterization sampling activities. Section 4.0 describes data quality control review of laboratory data, and Section 5.0 presents the results of the laboratory data. Section 6.0 describes waste disposal activities.

3.1 General

The rationale for specific elements of the remedial action are presented in this section. The closure design had been based on site-specific information, as well as consideration of EPA and State of Washington Department of Ecology regulations and guidance. The remedial confirmation sampling design consisted of the collection of five discrete samples from each excavation. One sample was collected from the excavation floor and an individual sample was collected at each of four locations that were representative of the sidewalls of the excavation.

The closure for each of the site areas included the excavation and stockpiling of the suspected contaminated soil, followed by confirmation sampling and fixed laboratory analysis, and concluded with backfilling and site restoration.

The excavated soil from each location was stockpiled separately and covered using 10-milimeter thick Visqueen sheeting.

3.2 Pesticide Building #4126

The field activities at Pesticide Building #4126 began on May 7, 2001. This area was previously determined not to be an area of UXO concern, however the UXO team was standing by while the work was conducted on this date. No UXO or UXO scrap was encountered.

The work began with the waste characterization sampling of the wooden structure (section 3.4). Following the sampling of the wood structure, the structure was dismantled. These timbers were stockpiled near the excavation for disposal. Once the structure was removed, a backhoe was used to excavate the footprint of the building and its dripline to a depth of one-foot bgs. The concrete slab located near the building was not removed. It was not included in the scope of work and the instructions to leave in place was confirmed during the remedial action by the USACE site QA.

GSA conducted the initial confirmation sampling at this site on May 7, 2001. The analytes of concern for the initial confirmation sampling event were diesel, antimony, lead, 2,4,5-T, 4,4 DDT, and MCPP. Samples included four wall samples, one floor sample, and one duplicate floor sample.

The results from the confirmation samples indicated that no additional excavation was needed. Restoration of this site occurred on September 17, 2001, with the import of backfill material to match that of the native material, and the regrading of the site.

Results from the samples collected at this site are found in Appendix C, Table C-1. Sample locations are shown in Appendix B, Figure 7.

3.3 Ammunition Bunkers #2953, #2951, and #2950

3.3.1 Ammunition Bunker #2951

The field activities at Ammunition Bunker #2951 began on May 7, 2001. This area was previously determined not to be an area of UXO concern, however the UXO team was standing by while the work was conducted on this date. No UXO or UXO scrap was encountered.

A backhoe was used to excavate the footprint of the excavation to a depth of one-foot bgs.

Following the excavation activities and determining that confirmation sampling could begin, GSA conducted the initial confirmation sampling at this site on May 7, 2001. The analytes of concern for the initial confirmation sampling event were antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, and nickel. Samples included four wall samples and one floor sample.

The results from the initial confirmation samples indicated that no additional excavation was needed. Restoration of this site occurred on September 17, 2001, with the import of backfill material to match that of the native material, and the regrading of the site.

Results from the samples collected at this site are found in Appendix C, Table C-2. Sample locations are shown in Appendix B, Figure 9.

Disinfection of the bunker was conducted on May 8, 2001. One hour following disinfection, a wooden pallet inside the bunker was removed and the bunker was swept clean of debris and soil.

3.3.2 Ammunition Bunker #2950

The field activities at Ammunition Bunker #2950 began on May 7, 2001. This area was previously determined not to be an area of UXO concern, however the UXO team was standing by while the work was conducted on this date. No UXO or UXO scrap was encountered.

A backhoe was used to excavate the footprint of the excavation to a depth of one-foot bgs.

Following the excavation activities and determining that confirmation sampling could begin, GSA conducted the initial confirmation sampling at this site on May 7 and 8, 2001. The analytes of concern for the initial confirmation sampling event were antimony, arsenic, barium, cadmium, chromium, copper, lead, and RDX. Samples included four wall samples, one floor sample, and one duplicate floor sample.

The results from the initial confirmation samples indicated that no additional excavation was needed. Restoration of this site occurred on September 17, 2001, with the import of backfill material to match that of the native material, and the regrading of the site.

Results from the samples collected at this site are found in Appendix C, Table C-2. Sample locations are shown in Appendix B, Figure 10.

Disinfection of the bunker was conducted on May 8, 2001. One hour following disinfection, a wooden pallet inside the bunker was removed and the bunker was swept clean of debris and soil.

3.3.3 Ammunition Bunker #2953

The field activities at Ammunition Bunker #2953 began on May 7, 2001. This area was previously determined not to be an area of UXO concern, however the UXO team was standing by while the work was conducted on this date. No UXO or UXO scrap was encountered.

A backhoe was used to excavate the footprint of the excavation to a depth of one-foot bgs.

Following the excavation activities and determining that confirmation sampling could begin, GSA conducted the initial confirmation sampling at this site on May 8, 2001. The analytes of concern for the initial confirmation sampling event were antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, thallium, zinc, 2,4-DNT, PETN, and picric acid. Samples included four wall samples, one floor sample, and one duplicate floor sample.

The results from the initial confirmation samples indicated that no additional excavation was needed. Restoration of this site occurred on September 17, 2001, with the hauling in of imported backfill material to match that of the native material, and the regrading of the site.

Results from the samples collected at this site are found in Appendix C, Table C-2. Sample locations are shown in Appendix B, Figure 8.

Disinfection of the bunker was conducted on May 8, 2001. One hour following disinfection, the bunker was swept clean of debris and soil.

3.4 Waste Characterization Sampling

Waste characterization sampling was conducted on May 7, 2001. The excavated soil from each location and the waste wood (pesticide building #4126) was stockpiled separately and covered using 10-milimeter thick Visqueen sheeting.

Soil waste characterization sampling for each stockpile was conducted by taking a composite sample comprised of three grab samples from different stockpile locations. The three samples were homogenized into a single sample before being collected for analysis.

Wood waste characterization sampling was conducted by creating wood shavings as the sample matrix. Initially, wood shavings were created using a 1-inch spade bit. It immediately became clear that the wood was too hard and not enough shavings were being created. Following a discussion with the construction team and the USACE, it was decided to use a chainsaw. Using the chainsaw from the inside of the structure, vertical cuts were made in the walls and the door of the wood structure. Shavings were collected from the floor of the structure and mixed in stainless steel bowls before being collected for analysis.

Results from the waste characterization samples are found in Appendix C, Table C-3.

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4. SUMMARY OF DATA QUALITY

This assessment combines the sampling plan, the results of the chemical data review process, field observations, and quality control to evaluate the overall precision, accuracy, representativeness, completeness and comparability of the sampling and measurement process. A QA/QC sample key is found in Appendix C, Table C-4. Detailed data quality memos are found in Appendices F and G.

4.1 Pesticide Building #4126

No significant nonconformities were reported for precision or accuracy. Field duplicates were evaluated and found to show acceptable precision. The sampling procedures were followed as written in the Management Plan. The measurement process record and quality control indicate that project objectives were met for representativeness. The results for total metals - antimony were qualified with a "J" flag indicating that these data are to be used with caution due to low-bias matrix spike QC recoveries. The sample set collected was as per the Management Plan and meets the completeness requirements for the project. The sampling and analytical methods used met comparability requirements for the project. The analytical methods included Washington NWTPH-Dx for diesel and heavy oil range hydrocarbons, EPA Method 6020 for total antimony and lead, EPA Method 8081 for pesticides, and EPA Method 8151 for herbicides. No sampling nonconformities were reported.

4.2 Ammunition Bunkers

4.2.1 Ammunition Bunker #2951

No significant nonconformities were reported for precision or accuracy. Field duplicates were evaluated and found to show acceptable precision. The sampling procedures were followed as written in the Management Plan. The measurement process record and quality control indicate that project objectives were met for representativeness. The results for total metals (antimony, arsenic, barium, chromium, copper, and nickel) were qualified with a "J" flag indicating that these data are to be used with caution due to low-bias matrix spike QC recoveries. The sample set collected was as per the Management Plan and meets the completeness requirements for the project. The sampling and analytical methods used met comparability requirements for the project. The analytical methods included EPA Method 6020 for total antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, thallium, and zinc. No sampling nonconformities were reported.

4.2.2 Ammunition Bunker #2950

No significant nonconformities were reported for precision or accuracy. Field duplicates were evaluated and found to show acceptable precision. The sampling procedures were followed as written in the Management Plan. The measurement process record and quality control indicate that project objectives were met for representativeness. The results for total metals (antimony, arsenic, barium, chromium, copper, and nickel) were qualified with a "J" flag indicating that these data are to be used with caution due to low-bias matrix spike QC recoveries. The sample set collected was as per the Management Plan and meets the completeness requirements for the project. The sampling and analytical methods used met comparability requirements for the project. The analytical methods included EPA Method 6020 for total antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, thallium, and zinc and EPA Method 8330 for explosives. No sampling nonconformities were reported.

4.2.3 Ammunition Bunker #2953

No significant nonconformities were reported for precision or accuracy. Field duplicates were evaluated and found to show acceptable precision. The sampling procedures were followed as written in the Management Plan. The measurement process record and quality control indicate that project objectives were met for representativeness. The results for total metals (antimony, arsenic, barium, chromium, copper, and nickel) were qualified with a "J" flag indicating that these data are to be used with caution due to low-bias matrix spike QC recoveries. The sample set collected was as per the Management Plan and meets the completeness requirements for the project. The sampling and analytical methods used met comparability requirements of the project. The analytical methods included EPA Method 6020 for total antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, thallium, and zinc and EPA Method 8330 for explosives. No sampling nonconformities were reported.

4.3 Waste Disposal Analysis

These samples were collected for profiling waste soil and wood transported to appropriate waste handling facilities. No critical nonconformities were reported for precision or accuracy, however some challenging matrices such as paint were analyzed. Field duplicates were evaluated and found to show acceptable precision. Field duplicates were collected for the other waste soil matrices and methods during the site characterization and remedial confirmation sampling. The sampling procedures were followed as written in the Management Plan. In general, the waste samples were collected as composites to improve representativeness. The measurement process record and quality control indicate that project objectives were met for representativeness. No data were qualified. The analytical methods, depending on the source of the sample, included Washington NWTPH-Dx for diesel and heavy oil range hydrocarbons, EPA 1311/6010 for TCLP metals and EPA 8330 for TCLP-2,4-DNT. No sampling nonconformities were reported.

5. WASTE PROFILING AND DISPOSAL

5.1 General

Waste characterization sampling, as described in Section 3.4, was used to categorize all of the individual waste streams for disposal.

5.2 Waste Soil

As the data provided in Table C-3 of Appendix C indicates, the soil stockpiles from the ammunition sites were characterized as non-regulated wastes. Based on this characterization and site-specific knowledge, the waste soil was transported to the Hillsboro disposal facility under waste permit number 5795. The corresponding waste profile information and the approved landfill disposal permit are contained in Appendix I.

The soil stockpile from the pesticide building site was characterized as regulated waste (U060, U061). Based on this characterization and site-specific knowledge, the waste soil was transported to the Arlington treatment facility under waste manifest number 00001. The corresponding waste profile information and the approved landfill disposal permit are contained in Appendix I.

A total of 8.67 tons of waste soil was transported to the Hillsboro Landfill on September 17, 2001. A total of 5 tons of waste soil was transported to the Arlington Treatment Facility on September 17, 2001. A certificate of disposal for these waste streams can be found in Appendix I. The following are estimates of the quantities handled from each site:

Pesticide Building #4126	5 cy	7.56 tons
Ammunition Bunkers	5.75 cy	8.67 tons

5.3 Wood Debris from Pesticide Building #4126

As the data provided in Table C-3 of Appendix C indicates, the wood debris (from the pesticide building structure) was handled as a "Listed Waste" (D008) in accordance with local and state regulations (WAC 173-303). Two wood pallets from the ammunition bunkers, disposable PPE, and sampling waste were included in this waste stream. Based on this characterization and site-specific knowledge, the waste debris was transported to the Arlington treatment facility under waste manifest number 00002. The corresponding waste profile information and the disposal manifest are contained in Appendix I.

A total of 1.38 tons (11.66 cy) of debris was transported to the Arlington Treatment Facility on September 17, 2001 for disposal. A certificate of disposal for this waste stream can be found in Appendix I.

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6. SUMMARY OF SITE CLOSURE STATUS

The results from the confirmation sampling data indicate that the pesticide building #4126 site and the ammunition bunker site (bunkers #2951, #2950, and #2953) are now in compliance with the site clean-closure levels. The tables in Appendix C contain the laboratory results for the confirmation samples collected from these areas.

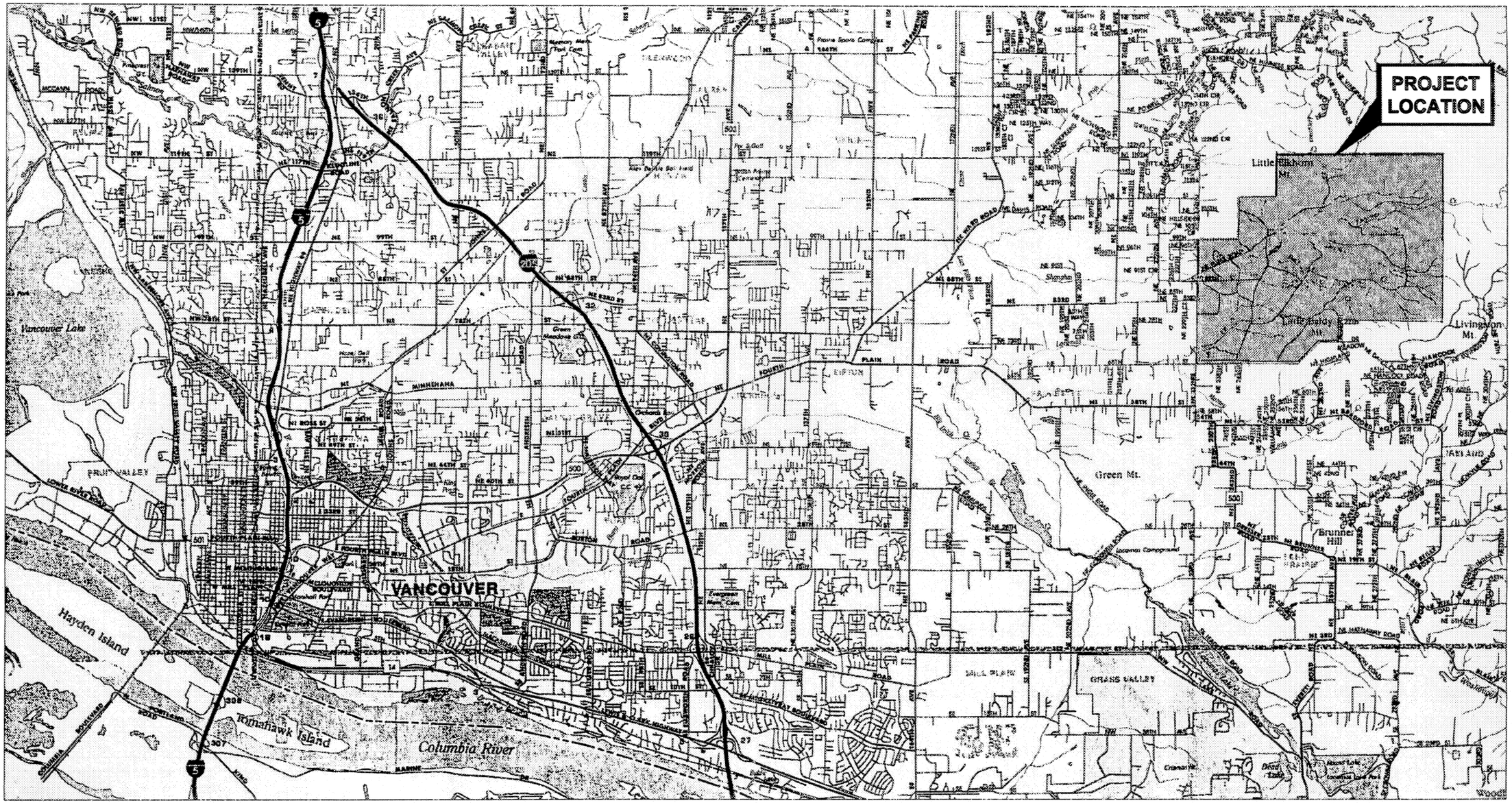
Copies of complete laboratory data packages can be found in Appendix H.

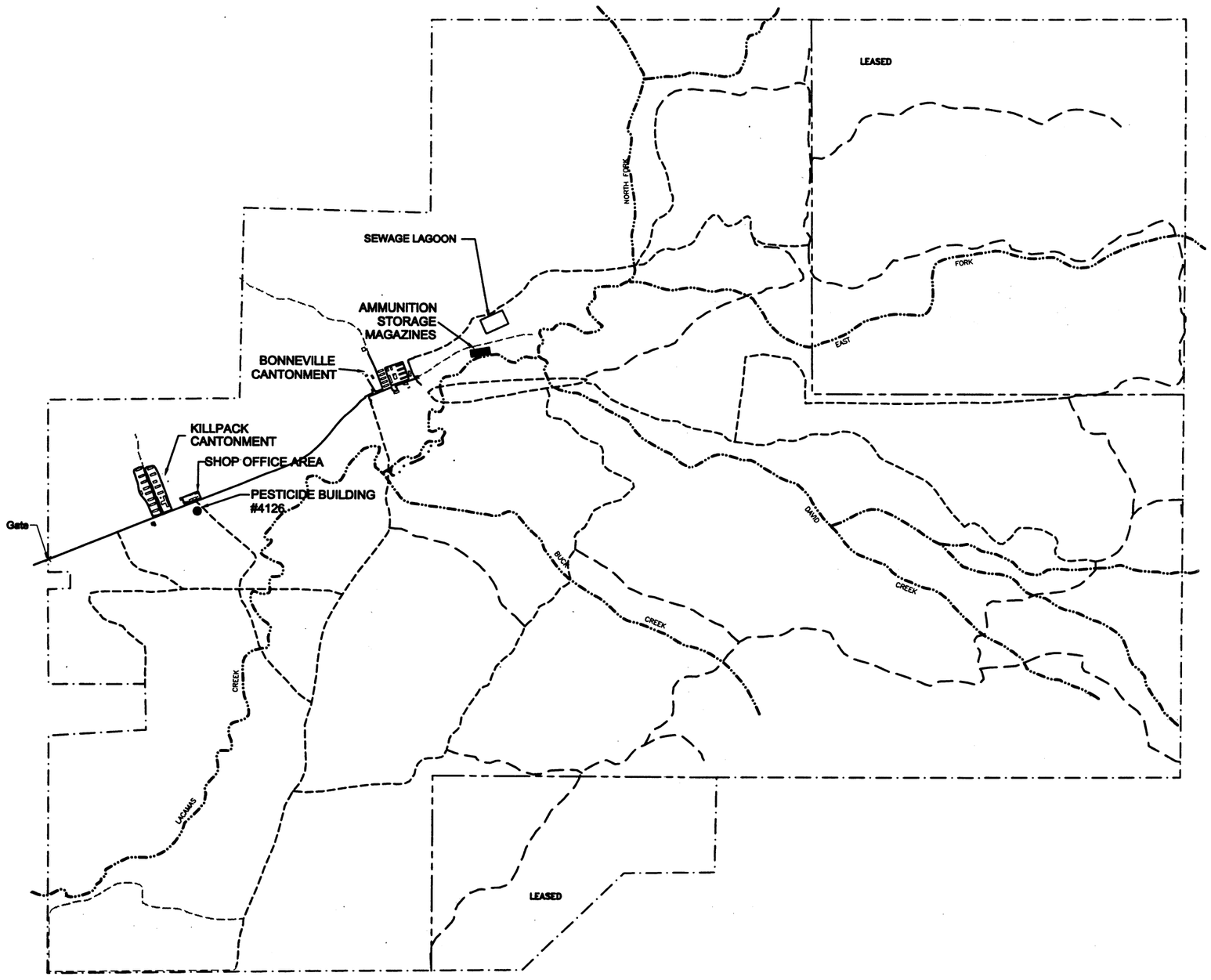
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ABBREVIATIONS AND ACRONYMS

°C	Degrees Celsius
APP	Accident Prevention Plan
bgs	Below Ground Surface
BRAC	Base Realignment and Closure
CASK	Columbia Analytical Services, Inc. of Kelso, Washington
CCC	Calibration Check Compound
CCV	Continuing Calibration Verification
CDL	Commercial Drivers License
CDQM	Chemical Data Quality Manager
CLP	EPA Contract Laboratory Program
COC	Chain Of Custody
COR	Contracting Officer's Representative
CQC	Contractor Quality Control or Construction Quality Control
DCQCR	Daily Chemical Quality Control Report
DQOs	Data Quality Objectives
E&E	Ecology And Environment
EBS	Environmental Baseline Study
Ecology	Washington State Department Of Ecology
EIT	Engineer in Training
EM	Electromagnetic
EPA	Environmental Protection Agency
°F	Degrees Fahrenheit
FM	Facility Manager
FSP	Field Sampling Plan (Part 1 Of Sampling And Analysis Plan)
FWENC	Foster Wheeler Environmental, Inc.
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GSA	Garry Struthers Associates, Inc.
HCl	Hydrochloric Acid
HNO_3	Nitric Acid
IAA	Immuno Assay Analysis
ICP	Inductively Coupled Plasma Emission Spectrometry
LCS	Laboratory Control Sample
LDQMP	Laboratory Data Quality Management Plan
LDR	Land Disposal Restriction
Mod.	Modified
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MTCA	Washington State Model Toxics Control Act
NAR	No Analysis Requested
ND	None Detected
NTP	Notice To Proceed
OC	Organochlorine
OE	Ordnance and Explosives
OP	Organophosphorus
ORD	EPA's Office Of Research And Development
P.E.	Professional Engineer

PCS	Petroleum-contaminated Soil
PHS	U.S. Public Health Service
PID	Photoionization Detector
POC	Pesticides Of Concern
PPE	Personal Protective Equipment
ppb	Part(s) Per Billion
ppm	Part(s) Per Million
PRC	PRC Environmental Management, Inc.
QA	Quality Assurance
QAPP	Quality Assurance Project Plan (Part 2 of Sampling And Analysis Plan)
QAR	Quality Assurance Representative
QC	Quality Control
QCM	Quality Control Manager
RAMP	Remedial Action Management Plan
RF	Response Factor
RPD	Relative Percent Difference
RRF	Relative Response Factor
SAP	Sampling and Analysis Plan
SOP	Standard Operating Procedure
SPCC	System Performance Check Compound
SS	Site Supervisor
SSHM	Site Safety & Health Manager
SSHO	Site Safety & Health Officer
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TDC	Transportation And Disposal Coordinator
TDP	Transportation And Disposal Plan
USACE	United States Army Corps Of Engineers
UXO	Unexploded Ordnance
WAC	Washington Administrative Code


PROJECT LOCATION
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Vancouver Lake
VANCOUVER
Hayden Island
Tomahawk Island
Columbia River
Green Mt.
Little Baldy Mt.
Livingston Mt.
Brunner Hill
MILL PLAIN
GRASS VALLEY
FRUIT VALLEY
MINNEHAHA
PLAIN
FOURTH PLAIN BLVD.
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LEGEND

- INSTALLATION PROPERTY BOUNDARY
- LEASED AREAS BOUNDRY
- ALL WEATHER, HARD SURFACE, ASPHALT ROAD
- ALL WEATHER, LOOSE SURFACE, GRAVEL ROAD
- FAIR WEATHER, LOOSE SURFACE, EARTHEN ROAD
- CREEKS

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SCALE IN FEET

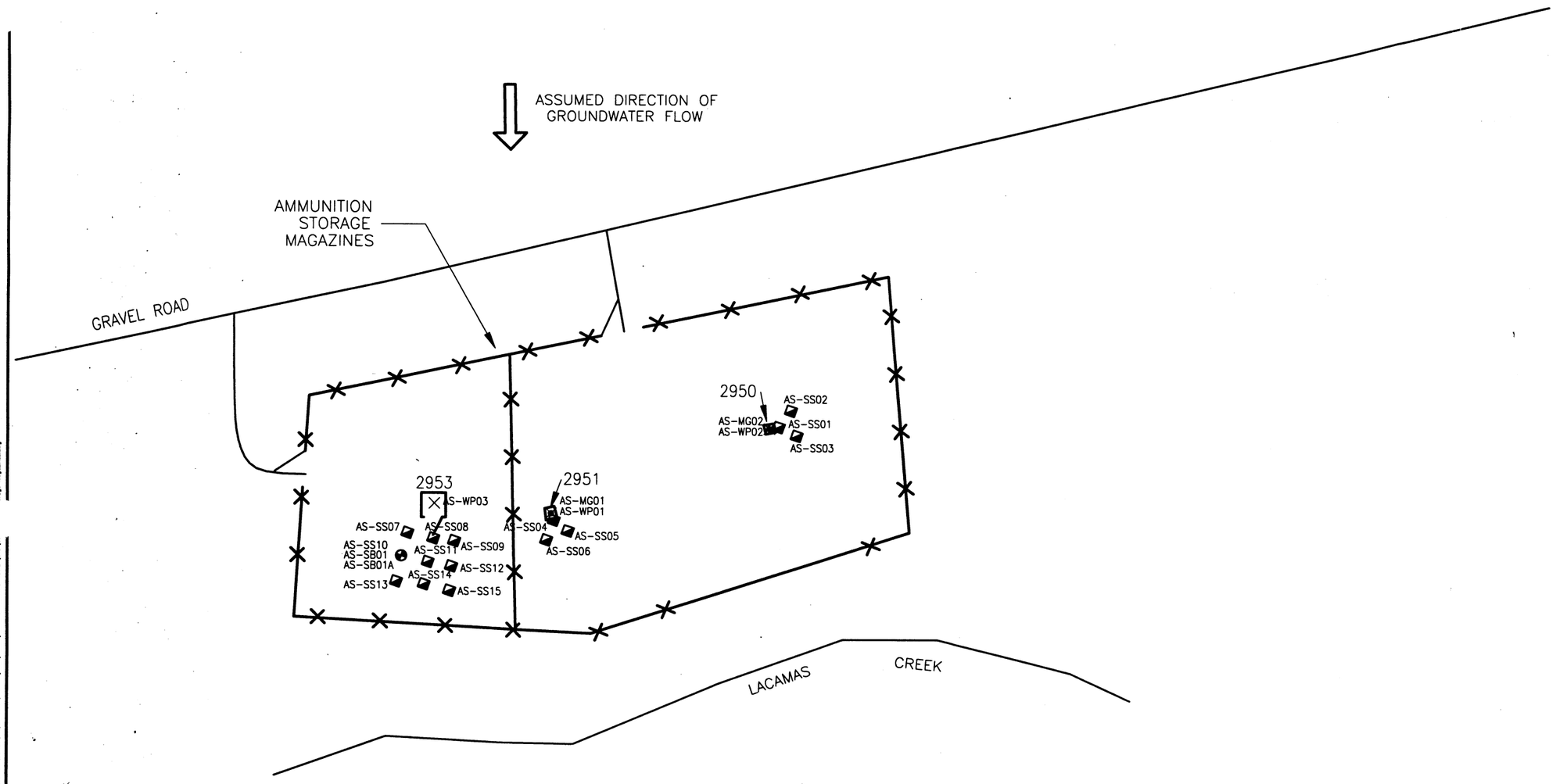
GARRY STRUTHERS ASSOCIATES, INC.
3150 Richards Road, Suite 100 Bellevue, WA 98005-4446
Phone: (425) 519-0300 Fax: (425) 519-0309
E-mail: gsa@gsaseco-inc.com http://www.gsaseco-inc.com

CAMP BONNEVILLE
MILITARY RESERVATION
AMMO. & PEST REMEDIAL ACTION

SITE MAP

FIGURE 2

JAN 2001 PLOT SCALE: 1:1 FILE: gsamark\CONST\Project Files\WRA Projects\1.0.DP\Ammo & Pest Remed\Section\1.0.



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SCALE IN FEET

LEGEND

- FENCE
- CREEKS
- SURFACE SOIL SAMPLE LOCATION
- SOIL BORING LOCATION

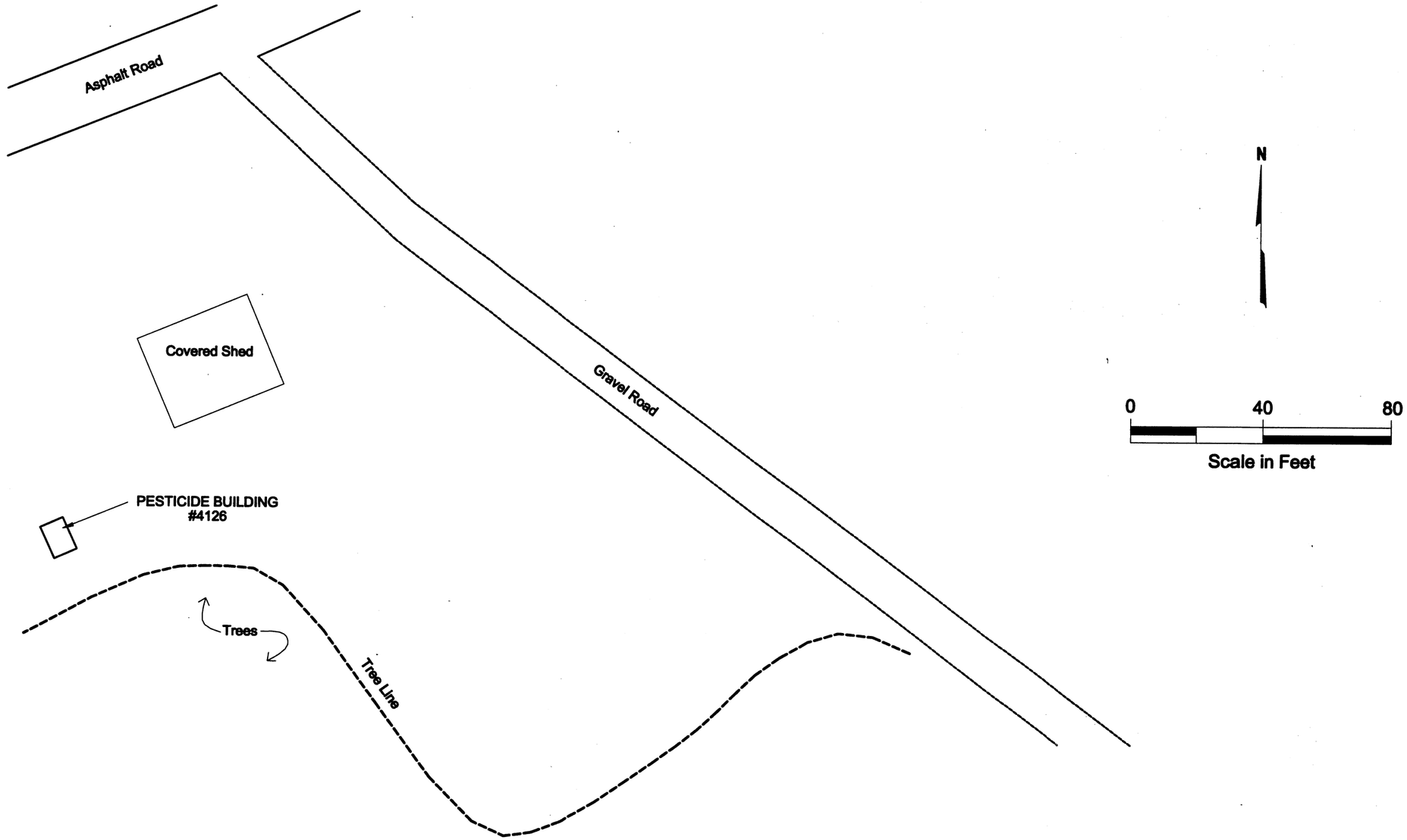
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CAMP BONNEVILLE
AMMUNITION STORAGE MAGAZINES
SHANNON & WILSON SITE INVESTIGATION

SAMPLE LOCATIONS

FIGURE 3

PLOT SCALE: 1:1
JAN 2001



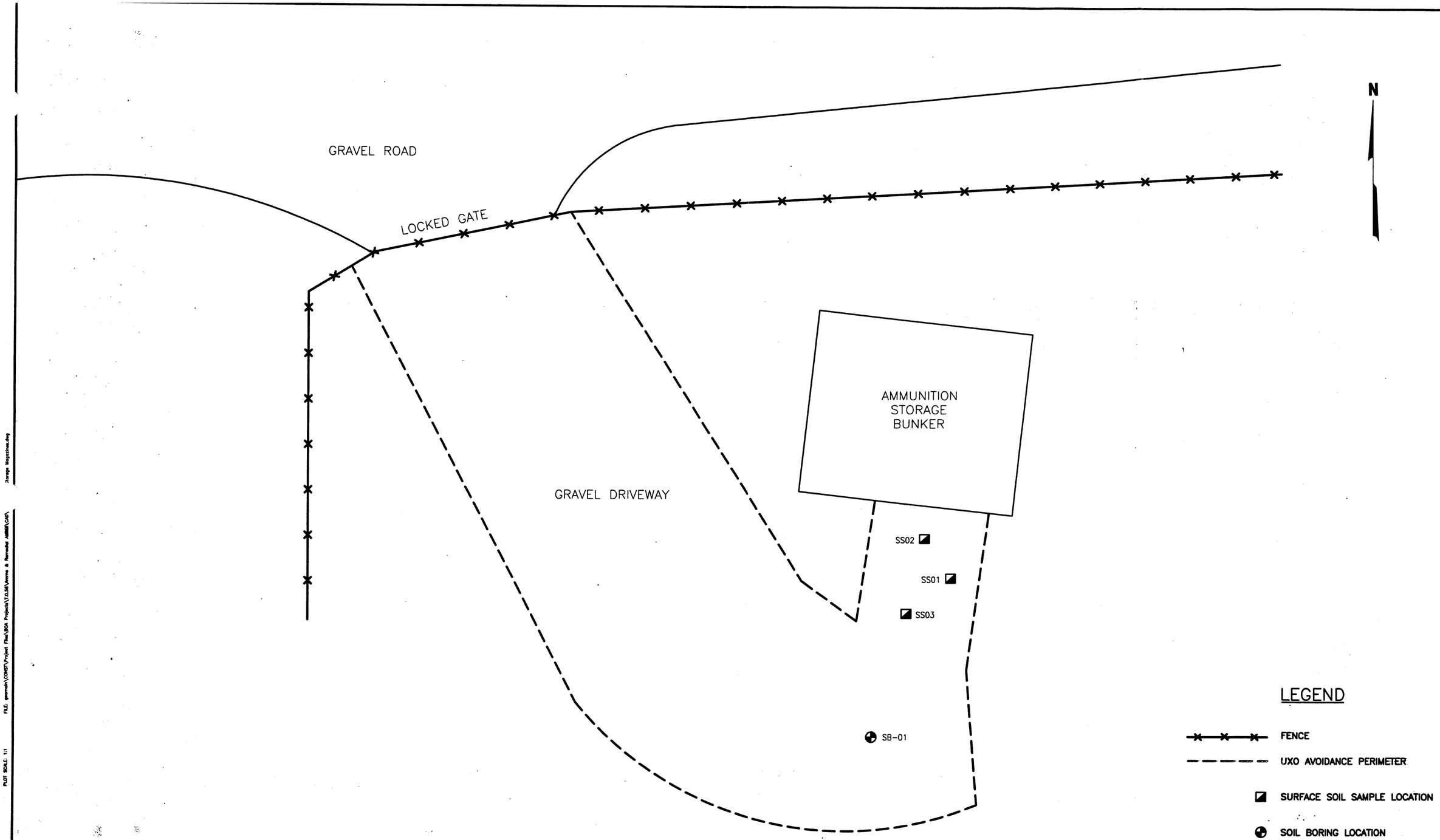
JAN 2001 PLOT SCALE: 1:1 FILE: gsmith\CD65T\Project Files\EDA Projects\17-0.5ft\ArcmodPart Remedial\EBSn\Cd Vicin Building.dwg

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CAMP BONNEVILLE
MILITARY RESERVATION
PESTICIDE BUILDING #4126

AREA MAP

FIGURE
4



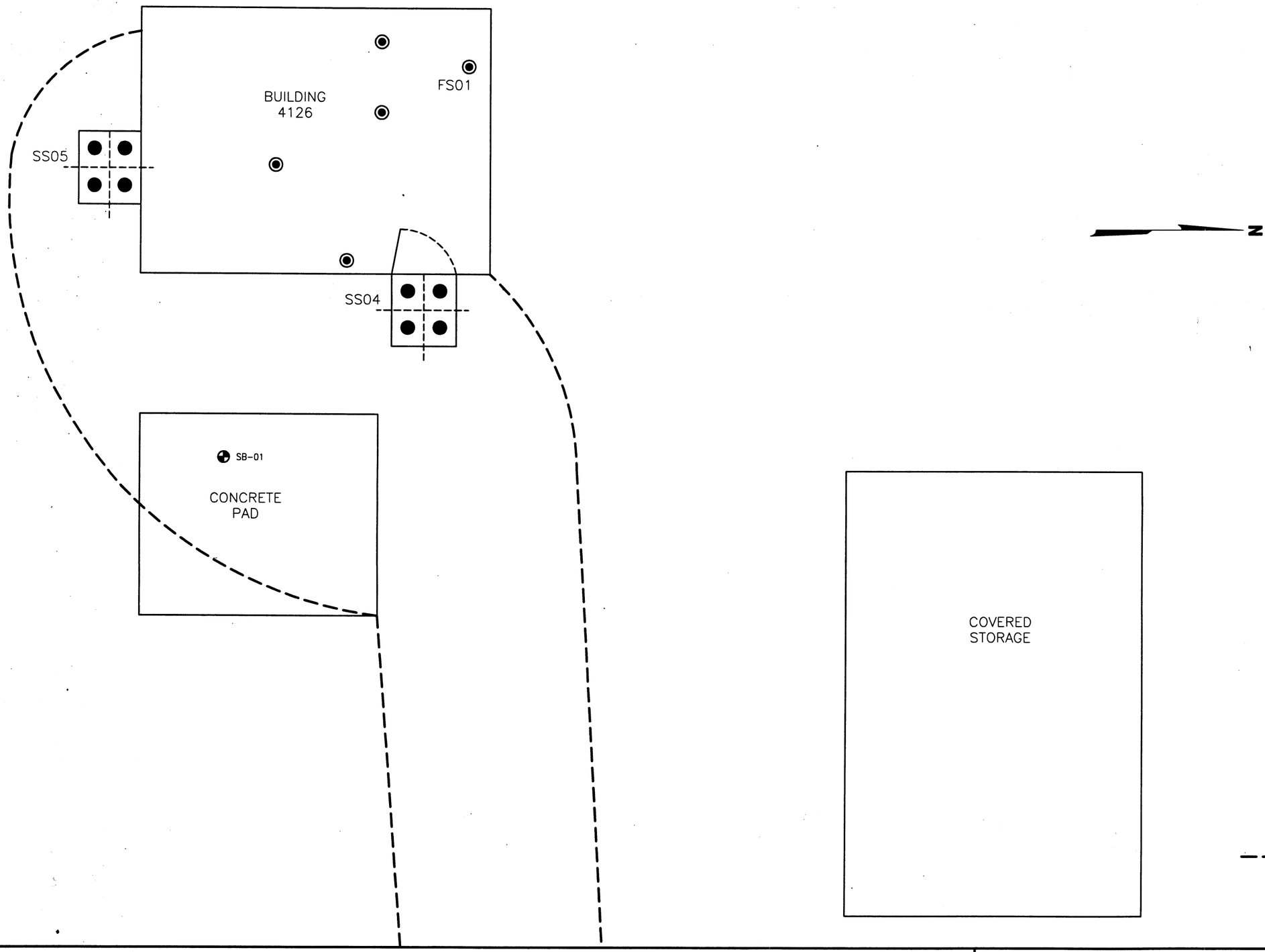
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CAMP BONNEVILLE
AMMUNITION STORAGE MAGAZINES
URS SITE INVESTIGATION

SAMPLE LOCATIONS

FIGURE 5

FILE: gsamark\CONST\Project Files\IRA Projects\17.0.04\Ammo & Remedial AMMO\CAD\
PLOT SCALE: 1:1
JAN 2001



LEGEND

- FLOORING MATERIAL SUBSAMPLE LOCATION (FOR COMPOSITE SAMPLE)
- SURFACE SOIL SUBSAMPLE LOCATION (FOR COMPOSITE SAMPLE)
- UXO AVOIDANCE PERIMETER

DRAWING NOT TO SCALE

GARRY STRUTHERS ASSOCIATES, INC.
3150 Richards Road, Suite 100 Bellevue, WA 98005-4446
Phone: (425) 519-0300 Fax: (425) 519-0309
E-mail: gsa@gasseoc-inc.com http://www.gasseoc-inc.com

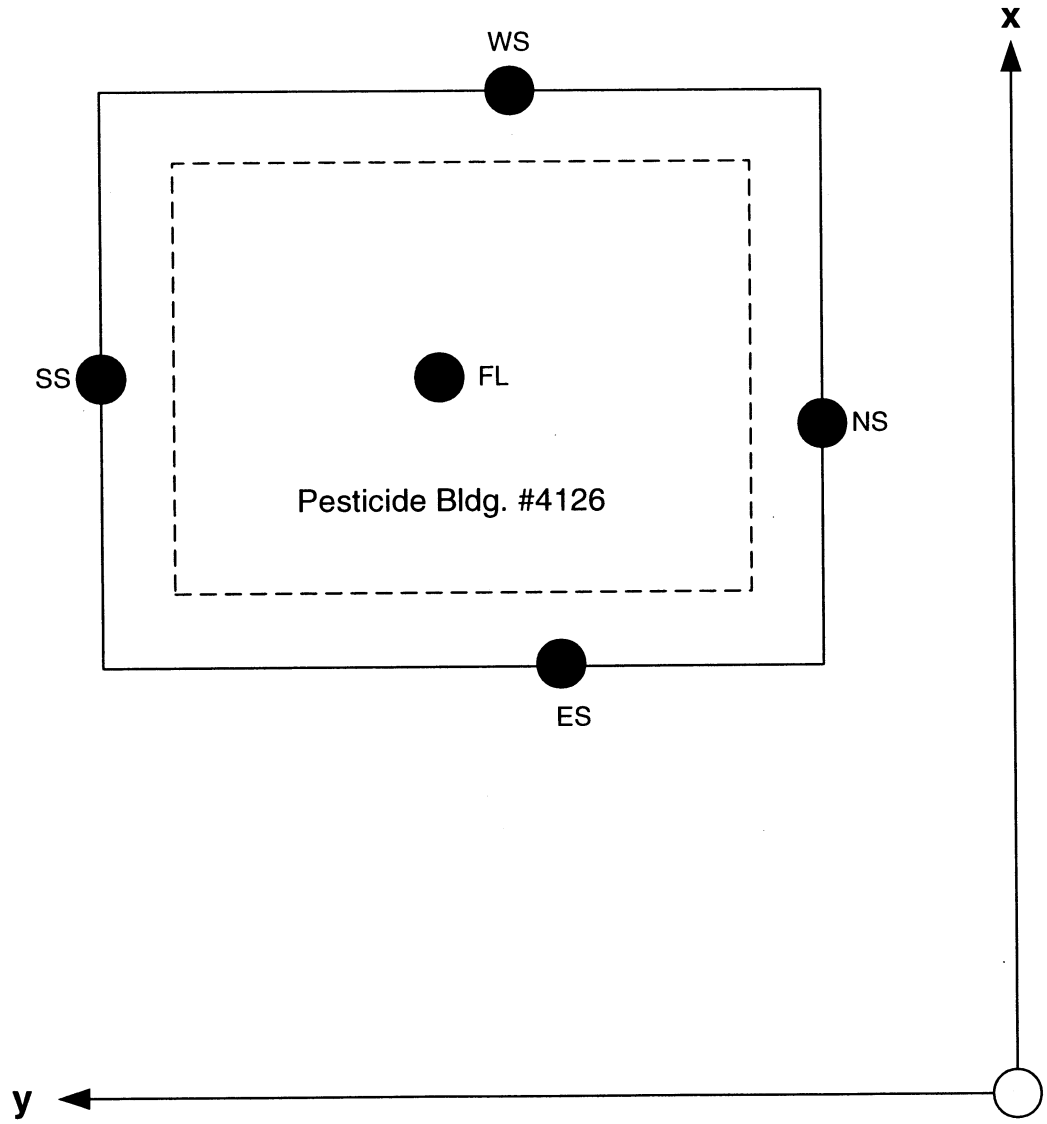
CAMP BONNEVILLE
PESTICIDE BUILDING #4126
URS SITE INVESTIGATION

SAMPLE LOCATIONS

FIGURE 6

DATE: JAN 2001 PLOT SCALE: 1:1 FILE: gasmark\CONST\Project Files\QRA Projects\V1.0.5#\Ammo & Remedial Action\C
Idde Building.dwg

Sample Locations
Pesticide Bldg. #4126



Pesticide Bldg. #4126 Samples

#	X	Y	depth
FL	45.1	21.3	1
NS	43.2	14.9	1
ES	38.5	19.4	1
SS	45.0	25.6	1
WS	50.8	20.9	1

All dimensions in feet and tenths of feet.
Depths are feet below ground surface (bgs).

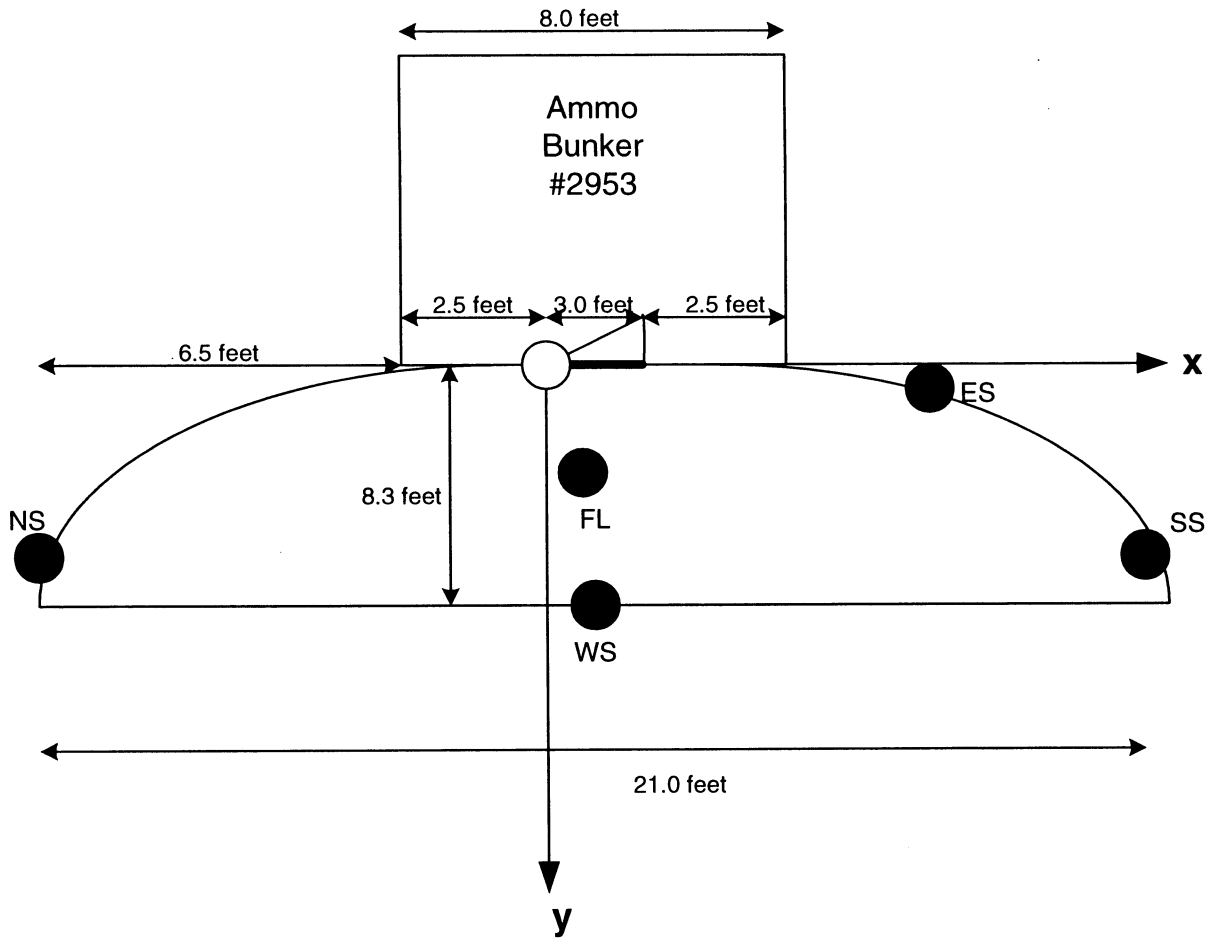
● Sample Location

N

○ Canopy

Figure 7
Camp Bonneville
Vancouver, Washington

Sample Locations
Ammunition Bunker #2953



Ammo Bunker #2153 Samples

#	X	Y	depth
FL	1.2	4.0	1
NS	-9.0	7.2	1
ES	4.3	0.5	1
SS	10.5	7.0	1
WS	4.0	8.3	1

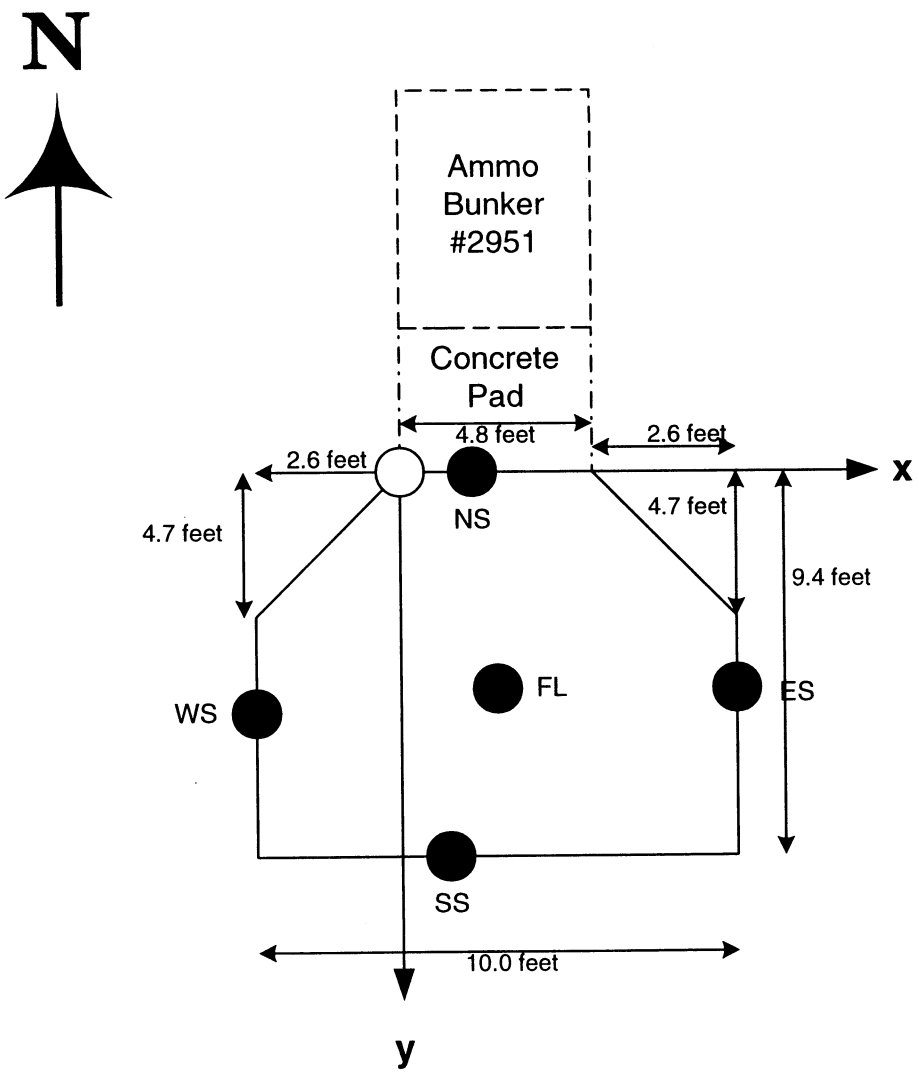
All dimensions in feet and tenths of feet.
Depths are feet below ground surface (bgs).

● Sample Location

N

Figure 8
Camp Bonneville
Vancouver, Washington

Sample Locations
Ammunition Bunker #2951



Ammo Bunker #2151 Samples

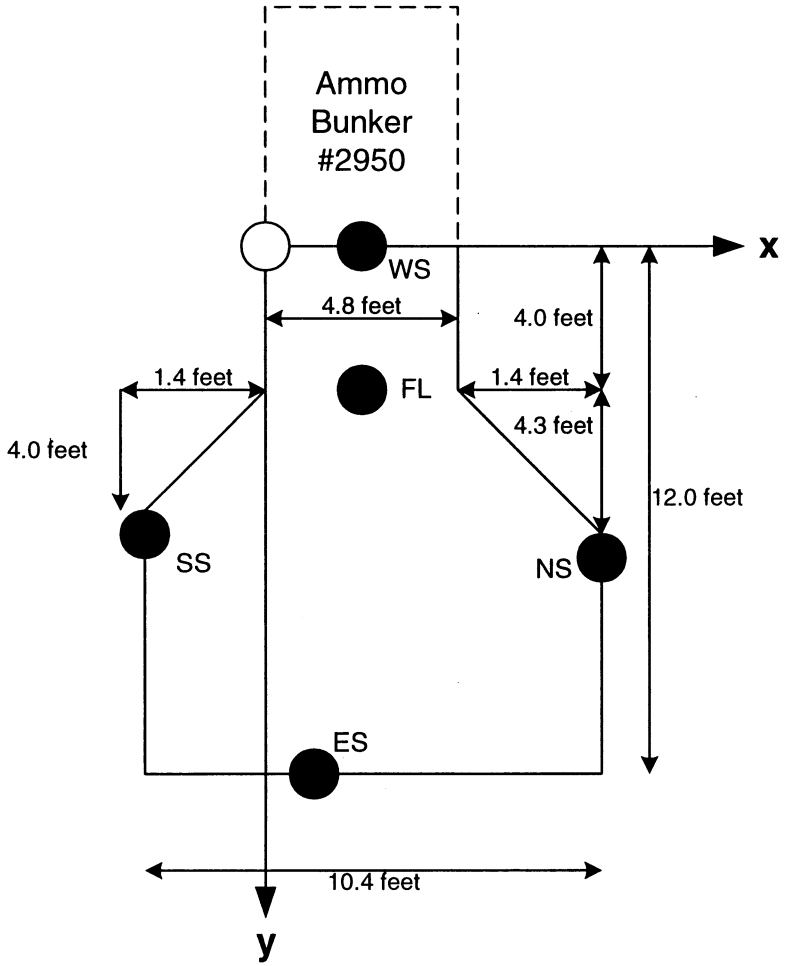
#	X	Y	depth
FL	3.4	4.9	1
NS	2.6	0.0	1
ES	7.4	7.0	1
SS	2.2	9.4	1
WS	-2.6	7.7	1

All dimensions in feet and tenths of feet.
Depths are feet below ground surface (bgs).

● Sample Location

Figure 9
Camp Bonneville
Vancouver, Washington

Sample Locations
Ammunition Bunker #2950



Ammo Bunker #2150 Samples

#	X	Y	depth
FL	2.0	4.0	1
NS	6.2	8.3	1
ES	1.5	12.0	1
SS	-1.4	8.0	1
WS	2.0	0.0	1

All dimensions in feet and tenths of feet.
Depths are feet below ground surface (bgs).

● Sample Location

N

Figure 10
Camp Bonneville
Vancouver, Washington

Table C-1
Camp Bonneville
Pesticide Building #4126
Confirmation Samples
Sampled 05/07/01

Parameter	Lab and Method	Decision Criteria	NS-PBS-04	ES-PBS-05	SS-PBS-06	WS-PBS-07	FL-PBS-08	FLD-PBS-09
Diesel in Soil	**NCA EPA 3550B/NWTPH-Dx**							
TPH-Diesel (mg/kg)		2000[A]	33.2	14.3	31.5	41.2	29.2	12.6
Metals in Soil	**NCA EPA 3050B/6020**							
Antimony (mg/kg)		32[X]	U (0.391) J	U (0.376) J	U (0.385) J	U (0.407) J	U (0.385) J	U (0.365) J
Lead (mg/kg)		250[A]	70.8	60.0	221	56.2	36.2	37.6
Pesticides/Herbicides in Soil	**NCA EPA 3550B/8081A EPA 3550B/8151A**							
4,4'-DDT (mg/kg)		2.94[B]	0.0077	0.108	U (0.005)	0.0126	0.00617	0.0103
4,4'-DDE (mg/kg)		2.94[B]	0.00214	0.0342	0.0312	0.00213	U (0.001)	0.00103
4,4'-DDD (mg/kg)		4.17[B]	0.00112	0.0744	0.201	0.00237	0.00362	0.00495
2,4,5-T (mg/kg)		800[B]	U (0.05)	2.19	1.44	U (0.05)	U (0.05)	U (0.05)
MCPP (mg/kg)		61000[B]	U (1.0)	U (11)	U (5)	U (1.0)	U (1.0)	U (1.0)

U = not detected at the concentration shown in ( )
J = data to be used with caution due to "low bias" MS/MSD recoveries - data are usable for the intended purpose
A=MTCA A
B=MTCA B
X=Background

Table C-2
Camp Bonneville
Ammunition Bunkers #2951, #2950, and #2953
Confirmation Samples
Sampled 05-07-08/01

Parameter	Lab and Method	Decision Criteria	NS-A51-12	ES-A51-13	SS-A51-14	WS-A51-15	FL-A51-16
Metals in Soil	**NCA EPA 3050B/6020**		Bunker #2951	Bunker #2951	Bunker #2951	Bunker #2951	Bunker #2951
Antimony (mg/kg)		32[B]	2.50 J	U (0.370) J	U (0.305) J	U (0.394) J	U (0.397) J
Arsenic (mg/kg)		7[X]	5.36 J	2.13 J	1.17 J	1.78 J	1.84 J
Barium (mg/kg)		5600[B]	208 J	184 J	178 J	187 J	177 J
Beryllium (mg/kg)		2[B]	0.714	0.743	0.728	0.710	0.592
Cadmium (mg/kg)		80[B]	0.647	0.638	1.21	0.647	0.451
Chromium (mg/kg)		400[B]	32.5 J	34.2 J	33.2 J	35.1 J	36.8 J
Copper (mg/kg)		2960[B]	101 J	108 J	97.3 J	110 J	101 J
Lead (mg/kg)		250[A]	38.2	21.1	13.4	13.0	12.6
Nickel (mg/kg)		1600[B]	16.9 J	19.6 J	15.8 J	18.4 J	18.7 J
Thallium (mg/kg)		5.6[B]	na	na	na	na	na
Zinc (mg/kg)		24000[B]	na	na	na	na	na
Explosives Compounds in Soil	**SAS EPA 8330 EPA 8330 mod**						
2,4-DNT (mg/kg)		160[B]	na	na	na	na	na
PETN (mg/kg)		---	na	na	na	na	na
RDX (mg/kg)		9.09[B]	na	na	na	na	na
Picric Acid (mg/kg)		---	na	na	na	na	na

U = not detected at the concentration shown in ( )
J = data to be used with caution due to "low bias" MS/MSD recoveries - data are usable for the intended purpose
na = not analyzed
A=MTCA A
B=MTCA B
X=Background

Table C-2
Camp Bonneville
Ammunition Bunkers #2951, #2950, and #2953
Confirmation Samples
Sampled 05-07-08/01

Parameter	Lab and Method	Decision Criteria	NS-A50-26 XNS-A50-18	ES-A50-27 XES-A50-19	SS-A50-28 XSS-A50-20	WS-A50-29 XWS-A50-21	FL-A50-30 XFL-A50-22	XFLD-A50-23
Metals in Soil	**NCA EPA 3050B/6020**		Bunker #2950	Bunker #2950	Bunker #2950	Bunker #2950	Bunker #2950	Bunker #2950
Antimony (mg/kg)		32[B]	U (0.413) J	U (0.413) J	U (0.394) J	U (0.338) J	U (0.370) J	na
Arsenic (mg/kg)		7[X]	2.87 J	2.55 J	1.94 J	2.71 J	3.33 J	na
Barium (mg/kg)		5600[B]	124 J	121 J	193 J	120 J	133 J	na
Beryllium (mg/kg)		2[B]	na	na	na	na	na	na
Cadmium (mg/kg)		80[B]	U (0.413)	U (0.413)	U (0.394)	0.746	0.432	na
Chromium (mg/kg)		400[B]	43.4 J	37.8 J	39.0 J	39.5 J	38.4 J	na
Copper (mg/kg)		2960[B]	86.6 J	84.2 J	105 J	89.8 J	90.4 J	na
Lead (mg/kg)		250[A]	17.3	15.0	15.4	21.5	19.5	na
Nickel (mg/kg)		1600[B]	na	na	na	na	na	na
Thallium (mg/kg)		5.6[B]	na	na	na	na	na	na
Zinc (mg/kg)		24000[B]	na	na	na	na	na	na
Explosives Compounds in Soil	**SAS EPA 8330 EPA 8330 mod**							
2,4-DNT (mg/kg)		160[B]	na	na	na	na	na	na
PETN (mg/kg)		---	na	na	na	na	na	na
RDX (mg/kg)		9.09[B]	U (0.063)	U (0.059)	U (0.067)	U (0.063)	U (0.063)	U (0.061)
Picric Acid (mg/kg)		---	na	na	na	na	na	na

U = not detected at the concentration shown in ( )
J = data to be used with caution due to "low bias" MS/MSD recoveries - data are usable for the intended purpose
na = not analyzed
A=MTCA A
B=MTCA B
X=Background

Table C-2
Camp Bonneville
Ammunition Bunkers #2951, #2950, and #2953
Confirmation Samples
Sampled 05-07-08/01

Parameter	Lab and Method	Decision Criteria	NS-A53-31 XNS-A53-41	ES-A53-32 XES-A53-42	SS-A53-33 XSS-A53-43	WS-A53-34 XWS-A53-44	FL-A53-35 XFL-A53-45	FLD-A53-36 XFLD-A53-46
Metals in Soil	**NCA EPA 3050B/6020**		Bunker #2953	Bunker #2953	Bunker #2953	Bunker #2953	Bunker #2953	Bunker #2953
Antimony (mg/kg)		32[B]	U (0.388) J	U (0.347) J	U (0.400) J	U (0.407) J	U (0.350) J	U (0.446) J
Arsenic (mg/kg)		7[X]	2.29 J	1.92 J	1.68 J	2.09 J	1.84 J	2.55 J
Barium (mg/kg)		5600[B]	154 J	165 J	192 J	180 J	157 J	176 J
Beryllium (mg/kg)		2[B]	0.824	0.740	0.688	0.691	0.628	0.799
Cadmium (mg/kg)		80[B]	U (0.388)	0.365	U (0.400)	0.454	U (0.350)	U (0.446)
Chromium (mg/kg)		400[B]	39.5 J	37.9 J	34.4 J	39.0 J	38.7 J	40.5 J
Copper (mg/kg)		2960[B]	103 J	111 J	94.6 J	104 J	110 J	120 J
Lead (mg/kg)		250[A]	10.5	13.5	22.8	30.0	12.1	21.6
Nickel (mg/kg)		1600[B]	20.9 J	19.1 J	19.6 J	19.4 J	19.8 J	20.9 J
Thallium (mg/kg)		5.6[B]	U (0.388)	U (0.347)	U (0.400)	U (0.407)	U (0.350)	U (0.446)
Zinc (mg/kg)		24000[B]	66	72.7	84.4	74.7	65	77.9
Explosives Compounds in Soil	**SAS EPA 8330 EPA 8330 mod**							
2,4-DNT (mg/kg)		160[B]	U (0.064)	U (0.057)	U (0.057)	U (0.061)	U (0.058)	U (0.059)
PETN (mg/kg)		---	U (0.13)	U (0.11)	U (0.11)	U (0.12)	U (0.12)	U (0.12)
RDX (mg/kg)		9.09[B]	na	na	na	na	na	na
Picric Acid (mg/kg)		---	U (0.13)	U (0.11)	U (0.11)	U (0.12)	U (0.12)	U (0.12)

U = not detected at the concentration shown in ( )
J = data to be used with caution due to "low bias" MS/MSD recoveries - data are usable for the intended purpose
na = not analyzed
A=MTCA A
B=MTCA B
X=Background

Table C-3
Camp Bonneville
Waste Characterization Sample Results
Sampled 05/07-08/01

Parameter	Lab and Method	Decision Criteria	PBW-50701-01	PBW-50701-02	SP-PBS-11
TCLP Metals in Wood	**NCA EPA 1311/3010AB/6010B**		Pest Bldg #4126	Pest Bldg #4126	Pest Bldg #4126
Lead (mg/L)		5	**34.4**	**35.3**	na
TCLP Metals in Soil	**NCA EPA 1311/3010AB/6010B**				
Lead (mg/L)		5	na	na	0.343

Parameter	Lab and Method	Decision Criteria	SP-A51-17	SP-A50-25	SP-A53-38 XSP-A53-48	SPD-A53-39 XSPD-A53-49
TCLP Metals in Soil	**NCA EPA 1311/3010AB/6010B**		Bunker #2951	Bunker #2950	Bunker #2953	Bunker #2953
Arsenic (mg/L)		5	U (0.5)	U (0.5)	U (0.5)	U (0.5)
Barium (mg/L)		100	U (1)	U (1)	U (1)	U (1)
Cadmium (mg/L)		1	U (0.005)	U (0.005)	U (0.005)	U (0.005)
Lead (mg/L)		5	U (0.2)	U (0.2)	U (0.2)	U (0.2)
TCLP 2,4-DNT in Soil						
2,4-DNT (mg/L)		0.13	na	na	U (0.0004)	U (0.0004)

na = not analyzed
U = not detected at the concentration shown in ( )
BOLD = result exceeds decision criteria

Table C-4
Camp Bonneville
QA/QC Sample Key
Sampled 05-07-08/01

Location	Primary	Field Duplicate	QA
wood shavings from the Pesticide Building #4126	PBW-50701-01	PBW-50701-02	PBW-50701-03
soil from the floor of the Pesticide Building excavation	FL-PBS-08	FLD-PBS-09	FLQ-PBS-10
soil from the floor of the Ammo Bunker #2950 excavation	XFL-A50-22	XFLD-A50-23	XFLQ-A50-24
soil from the floor of the Ammo Bunker #2953 excavation	FL-A53-35	FLD-A53-36	FLQ-A53-37
soil from the stockpile from the Ammo Bunker #2953 excavation	SP-A53-38	SPD-A53-39	SPQ-A53-40
soil from the floor of the Ammo Bunker #2953 excavation	XFL-A53-45	XFL-A53-46	XFL-A53-47
soil from the stockpile from the Ammo Bunker #2953 excavation	XSP-A53-48	XSPD-A53-49	XSPQ-A53-50

Shannon Wilson
Ammunition Storage Bunkers
Site Investigation March 1998
Data Results

Parameter	Units	Sample Concentration																		Regulatory/Risk Based Criteria				Background
		Surface Soil Grid Samples															Subsurface Soils		Magazine Soils					
		AS-SS01-01	AS-SS-02-01	AS-SS03-01	AS-SS04-01	AS-SS05-01	AS-SS06-01	AS-SS07-01	AS-SS08-01	AS-SS09-01	AS-SS10-01	AS-SS11-01	AS-SS12-01	AS-SS13-01	AS-SS14-01	AS-SS15-01	AS-SB01-01	AS-SB01-02	AS-MG01-01	AS-MG02-01	MTCA A	MTCA B	MTCA B-GW	EPA Reg. 3	
Sample Date		3/3/98	3/3/98	3/3/98	3/3/98	3/3/98	3/3/98	3/4/98	3/4/98	3/4/98	3/4/98	3/4/98	3/4/98	3/4/98	3/4/98	3/4/98	8/4/98	8/4/98	3/4/98	3/4/98					
Sample Depth	ft bgs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	6.0	NA	NA					
Explosives																									
2,4,6-trinitrotoluene	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12 J	NA	33.3	0.292	21	
2,4-dinitrotoluene	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.28 J	NA	160	3.2	160	
2-amino-4,6-dinitrotoluene	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.28 J	NA	NA	NA	NA	
4-amino-2,6-dinitrotoluene	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.53 J	NA	NA	NA	NA	
Hexahydro-1,3,5... (RDX)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**410 D**	NA	9.09	0.08	NA	
Octahydro-1,3,5... (HMX)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18 J	NA	NA	NA	NA	
PETN	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.4	NA	NA	NA	NA	
PA	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND R	ND	ND	NA	NA	NA	NA	
Metals																									
Antimony	mg/kg	0.26 J	0.48 J	0.36 J	0.32 J	0.52 J	0.42 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.074 J	0.089 J	**9.3**	**1.1 J**	NA	32 - 72[c]	0.64 - 1.44[c]	31	0.12
Arsenic	mg/kg	**10.9**	**10.0**	**8.6**	**4.2**	**9.6**	**7.7**	**10.3**	**14.1**	**15.5**	**7.8**	**9.2**	**11.7**	**8.3**	**9.3**	**11.2**	**4.1 J**	**4.7**	**11.7**	**9.0**	20	1.67	0.005	0.43	7
Barium	mg/kg	**238**	**406**	**407**	**278**	**573**	**432**	**451**	**551**	**741**	**2590**	**680**	**965**	**583**	**639**	**619**	**127**	**170**	82.8	**157**	NA	5,600	112	5,500	257
Beryllium	mg/kg	**1.6**	**1.8**	**1.5**	**1.3**	**2.3**	**1.7**	**2.0**	**2.6**	**3.9**	**4.8**	**2.6**	**5.6**	**2.4**	**2.0**	**2.5**	**0.7**	**0.8**	ND	**0.67**	NA	0.233	0.002	0.15	2
Cadmium	mg/kg	**3.1**	**2.5**	**2.3**	**1.9**	**2.5**	**1.9**	**2.6**	**4.5**	**3.6**	**18.0**	**5.3**	**18.3**	**2.6**	**2.3**	**2.5**	0.91	0.038 J	**3.7**	**9.8**	2	80	1.6	39	1
Chromium	mg/kg	**57.3**	**58.7**	**58.7**	**29.2**	**75.2**	**56.1**	**71.3**	**84.5**	**114**	**87.0**	**63.0**	**83.1**	**65.3**	**62.5**	**72.0**	**27.4 B**	**22.1 B**	**89.2**	**80.2**	100	80,000d/400[c]	1,600d/8e	78,000d/390e	42
Copper	mg/kg	**151**	**154**	**146**	**178**	**211**	**157 J**	**179**	**211**	**297**	**159**	**172**	**203**	**166**	**166**	**203**	**64.7**	**79.0**	**136**	**112**	NA	2,960	59.2	3,100	114
Lead	mg/kg	69.2 J	40.8	47.8	54.7	50.0	33.7	31.3	55.9	54.8	37.8	32.8	36.3	34.2	50.5	43.9	11.3	10.7	**566**	**386**	250	NA	NA	400f	17
Nickel	mg/kg	**34.7**	**34.3**	**35.7**	28.9	**41.5**	**32.6**	**35.2**	**56.6**	**58.2**	**117**	**52.1**	**98.3**	**35.1**	**38.7**	**44.7**	14.1	14.4	19.8	24.6	NA	1,600	32	1,600	38
Selenium	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	400	8	390	NA
Silver	mg/kg	0.41 J	0.55 J	0.45 J	0.34 J	0.49 J	0.44 J	ND	0.79 J	0.77 J	2.9 J	0.96 J	2.8 J	0.52 J	0.47 J	0.50 J	0.19 J	0.19 J	0.26 J	0.83	NA	400	8	390	NA
Thallium	mg/kg	ND	ND	ND	ND	ND	ND	ND	**0.49 J**	ND	ND	ND	ND	ND	ND	ND	**0.33**	**0.23 J**	ND	ND	NA	5.6	0.112	6.3 - 7g	0.27
Zinc	mg/kg	129	147	171	151	258	178 J	160	267	307	**525**	246	**483**	192	220	210	44.8	44.9	399	436	NA	24,000	480	23,000	86
Mercury	mg/kg	0.26 J	0.16 J	0.16 J	0.087 J	0.18 J	0.12 J	0.21 J	0.20 J	0.28 J	0.058 J	0.13 J	0.067 J	0.14 J	0.20 J	0.15 J	ND	ND	**4.2**	0.27 J	1	24	24	7.8h/23i	0.07

Notes:
This table includes only those constituents detected in the samples.
Concentrations in **bold** exceed one or more regulatory criteria but are below background
Shading indicates that the value exceeds one or more regulatory criteria and background (if applicable).
See Table 6-17 for additional notes and acronyms.

SUMMARY OF PESTICIDES, HERBICIDES AND PCBs IN SOIL
PESTICIDE STORAGE AREA
CAMP BONNEVILLE, WASHINGTON

Sample ID	FS01	SS04	SS504	SS05	
Sample location	FS01	SS04		SS05	
QAQC Type			duplicate		Screening
Date Sampled	6/26/00	6/27/00	6/27/00	6/27/00	Level[a]
Pesticides (µg/kg dry)					
4,4'-DDD	150 U	76	48	4.7 U	2,400
4,4'-DDE	80 U	230	190	7.7	1700
4,4'-DDT	2600	2700 J	1400 J	42	1700
Aldrin	40 U	2 U	2.1 U	2.4 U	29
alpha-BHC	40 U	4.8 U	2.7 U	2.4 U	90
beta-BHC	40 U	2 U	2.1 U	4.2	320
delta-BHC	40 UJ	R	R	R	NA
gamma-BHC (Lindane)	40 U	2	2.1 U	2.4 U	440
alpha-Chlordane	40 U	2 U	2.1 U	2.4 U	769
gamma-Chlordane	40 U	2 U	2.1 U	2.4 U	769
Dieldrin	80 U	4 U	4.3 U	4.7 U	30
Endosulfan I	40 U	2 U	2.1 U	2.4 U	37000
Endosulfan II	80 U	4 U	4.3 U	4.7 U	37000
Endosulfan sulfate	80 U	4 U	4.3 U	4.7 U	NA
Endrin	290 U	39 U	35 U	4.7 U	1800
Endrin aldehyde	80 U	R	R	R	NA
Endrin ketone	80 U	4 U	4.3 U	4.7 U	NA
Heptachlor	40 U	2 U	2.1 U	2.4 U	110
Heptachlor epoxide	40 U	2 U	2.1 U	2.4 U	53
Methoxychlor	400 U	20 U	21 U	24 U	31000
Toxaphene	11000 U	200 U	210 U	240 U	440
PCBs (µg/kg dry)					
Aroclor 1016	800 U	40 U	42 U	47 U	390
Aroclor 1221	1600 U	80 U	85 U	94 U	130
Aroclor 1232	800 U	40 U	42 U	110 U	130
Aroclor 1242	800 U	40 U	42 U	47 U	130
Aroclor 1248	800 U	40 U	42 U	47 U	130
Aroclor 1254	800 U	40 U	42 U	80 U	220
Aroclor 1260	800 U	40 U	42 U	96 U	130
Herbicides (µg/kg dry)					
2,4-D	500 J	40 UJ	42 UJ	47 UJ	69000
2,4-DB	3000 J	200 UJ	220 UJ	240 UJ	49000
2,4,5-TP (Silvex)	23 UJ	10 UJ	11 UJ	12 UJ	640000
2,4,5-T	92000 J	170 J	230 J	160 J	61000
Dalapon	90 UJ	110 UJ	120 UJ	130 UJ	180000
Dicamba	20 UJ	24 UJ	26 UJ	28 UJ	180000
Dinoseb	73 UJ	20 UJ	22 UJ	24 UJ	2610
Dichloroprop	37 UJ	40 UJ	42 UJ	47 UJ	NA
MCPA	42000 UJ	51000 UJ	54000 UJ	59000 UJ	31000
MCPP	42000 J	50000 UJ	53000 UJ	59000 UJ	6100

Notes:

[a]See Table 5-1 For complete list of screening levels

ug/kg - micrograms per kilogram

NA - not applicable

U - not detected above stated detection limit

J - Value is estimated

R - Rejected data

Bold values indicate detections

Bold and underlined values indicate an exceedance of the screening levels.

SUMMARY OF TPH IN SOIL
PESTICIDE STORAGE AREA AND AMMUNITION STORAGE MAGAZINES
CAMP BONNEVILLE, WASHINGTON

Sample ID	FS01	SS04	SS504	SS05	SB01-4.5	SB01-504.5	
Sample location	FS01	SS04		SS05	SB01-4.5		
QAQC Type			duplicate			duplicate	Screening
Date Sampled	6/26/00	6/27/00	6/27/00	6/27/00	6/27/00	6/27/00	Level[a]
TPH-HCID (mg/kg dry)							
Gx Range Hydrocarbons	--	--	--	--	20 U	20 U	100
Diesel Range Hydrocarbons	--	--	--	--	50 U	50 U	2,000
Motor Oil Range Hydrocarbons	--	--	--	--	100 U	100 U	4,000
TPH-Diesel (mg/kg dry)							
Diesel Range Hydrocarbons	**3900**	**42**	**59**	**43**	--	--	2,000
Motor Oil Range Hydrocarbons	**1800**	**230**	**230**	**200**	--	--	4,000
TPH-Gasoline (mg/kg dry)							
Gasoline Range Hydrocarbons	**460** J	6.4 U	6.2 U	6.9 U	--	--	100

Notes:

[a]See table 5-6 For complete list of screening levels

--': not analyzed

U - not detected above stated detection limit

J - Value is estimated

Bold values indicate detections

Bold and **underlined** values indicate an exceedance of the screening levels.

Samples FS01, SS04, SS504, SS05 were collected from the Pesticide Storage Area

Samples SB01-4.5 and SB01-504.5 were collected from the Ammunition Storage Magazines

SUMMARY OF METALS AND CONVENTIONALS IN SOIL
PESTICIDE STORAGE AREA AND AMMUNITION STORAGE MAGAZINES
CAMP BONNEVILLE, WASHINGTON

	PESTICIDE STORAGE AREA			AMMUNITION STORAGE MAGAZINE						
Sample ID	FS01	SS04	SS05	SS01	SS02	SS502	SS03	SB01-4.5	SB01-504.5	
Sample location	FS01	SS04	SS05	SS01	SS02		SS03	SB01-4.5		
QAQC Type						duplicate			duplicate	
Date Sampled	6/26/00	6/27/00	6/27/00	6/27/00	6/27/00	6/27/00	6/27/00	6/27/00	6/27/00	Screening Level[a]
Metals (mg/kg dry)										
Antimony	5 U	6 U	7	6 U	6 U	8	5 U	20	--	3
Arsenic	0.11	1.7	1.8	2	3.1	2.9	3	0.6 U	--	6
Barium	7.2	197	250	119	181	174	149	151	--	257
Beryllium	0.1 U	1	0.9	0.5	0.5	0.5	0.5	0.6	--	15
Cadmium	1	0.8	0.9	1	5.6	5.5	1.4	0.6 U	--	2
Chromium	0.8	30.2	28.2	28.1	25.1	33.6	20.4	36	--	100
Copper	1.2	85.8	83.2	77.2	102	89.6	65	123	--	290
Lead	29	270	970	43	280	210	72	7	--	250
Mercury	0.46	0.09	0.12	0.05 U	0.05 U	0.05	0.05 U	0.05 U	--	1
Nickel	1 U	15	18	18	16	19	14	21	--	160
Selenium	0.2 U	0.3 U	0.6 U	0.6 U	0.6 U	0.5 U	0.2 U	0.6 U	--	39
Silver	0.3 U	0.7	0.6	0.9	0.6	0.6	0.6	0.9 U	--	39
Thallium	0.1 U	0.1 U	0.3 U	0.1 U	0.3 U	0.3 U	0.3 U	0.1 U	--	6
Zinc	255	214	330	78.3	141	165	86.5	76	--	2,300
Conventionals (mg/kg dry)										
Total Organic Carbon	--	--	--	--	--	--	--	0.13 J	0.28 J	NA
Total Solids	--	--	--	--	--	--	--	73.4	75.8	NA

Notes:

[a]See Table 5-8 For complete list of screening levels

mg/kg - milligrams per kilogram

--: not analyzed

NA - not applicable

U - not detected above stated detection limit

J - Value is estimated

Bold values indicate detections

Bold and underlined values indicate an exceedance of the screening levels

SUMMARY OF ORDNANCE AND EXPLOSIVES
AMMUNITION STORAGE AREA
CAMP BONNEVILLE, WASHINGTON

Sample ID	SS01	SS02	SS502	SS03	SB01-4.5	
Sample location	SS01	SS02		SS03	SB01-4.5	
QAQC Type			duplicate			Screening
Date Sampled	6/27/00	6/27/00	6/27/00	6/27/00	6/27/00	Level[a]
Ordnance (µg/kg dry)						
1,3,5-Trinitrobenzene	**120 U**	**120 U**	**114 U**	**120 U**	**120 U**	**4,000**
1,3-DNB	120 U	120 U	114 U	120 U	120 U	610
2,4,6-Trinitrotoluene	**120 U**	**120 U**	**114 U**	**120 U**	**120 U**	**16,000**
2,4-Dinitrotoluene	**8,420**	**17,200**	**93 J**	**54 J**	120 U	12,000
2,6-Dinitrotoluene	**120 U**	**120 U**	**114 U**	**120 U**	**120 U**	**16,200**
2-Amino-4,6-Dinitrotoluene	120 U	120 U	114 U	120 U	120 U	16,200
4-Amino-2,6-Dinitrotoluene	**120 U**	**120 U**	**114 U**	**120 U**	**120 U**	**NA**
HMX	250 U	250 U	238 U	250 U	250 U	NA
Nitrobenzene	**120 U**	**120 U**	**114 U**	**120 U**	**120 U**	**2,000**
RDX	250 U	250 U	238 U	250 U	250 U	4,400
Tetryl	**250 UJ**	**250 UJ**	**238 UJ**	**250 UJ**	**250 UJ**	**61,000**
m-Nitrotoluene	250 U	250 U	238 U	250 U	250 U	37,000
o-Nitrotoluene	**250 U**	**250 U**	**238 U**	**250 U**	**250 U**	**37,000**
p-Nitrotoluene	120 U	120 U	114 U	120 U	120 U	37,000
Propellants (µg/kg dry)						
Ammonium Perchlorate	**48 U**	**50 U**	**51 U**	**51 U**	**45 U**	**39**
Nitroglycerin	5,780 U	5,510 U	5,450 U	5,520 U	6,010 U	35
Nitroguanidine	**125 U**	**125 U**	**125 U**	**123 U**	**123 U**	**610,000**
PETN	500 U	**2,280**	476 U	500 U	500 U	208 x 10^6
Picric Acid	**1,000 U**	**1,100**	**952 U**	**1,000 U**	**1,000 U**	**624,000**

Notes:

[a]See Table 5-9 for complete list of screening levels.

NA - not applicable

U - not detected above stated detection limit

J - Value is estimated

Bold values indicate detections

Bold and Underlined values indicateand exceedance of the screening level.

Site Control Log

Date	Name	Agency or Company	Time Entering Site	Work Areas Entered	Time Exiting Site	PPE Utilized (if Applicable)
7 May 01	Curtis, Gary C	ECC	0700		1500	
7 May 01	WALTHER, RICHARD H.	ECC	0700		1500	
7 May 01	Kim Thompson	GSA	0700		1500	
7 may 01	MATT MORAN	GSC	0700		1500	
7 May 01	Elizabeth Chien	GSA	0700		1500	
7 MAY 01	CHRISTOPHER HALL	USACE	0700		1500	
7 May 01	Robin LARSON	GSC	0700		1500	
8 MAY 01	CHRIS Hace	USACE	0645		1045	
8 May 01	Elizabeth Chien	GSA	0645		11:00	
8 May 01	Kim Thompson	GSA	0645		11:00	
8 may 01	MATT MORAN	GSC	0645		8:45	
8 May 01	Robin LARSON	GSC	0645		8:45	
8 May 01	K					
17 Sept 01	Elizabeth Chien	GSA	6:50		11:50	
17 Sept 01	Matt Moran	GSC	6:50		11:50	
17 Sep 01	Shaleigh Daniel	USACE	6:50		11:50	
17 Sept 01	William Dozier	GSC	6:50		11:50	
17 Sept	Robin LARSON	GSC	6:50		11:50	
17 Sept	CHRIS HACE	COE	6:50		11:50	

ACCIDENT PREVENTION PLAN REVIEW

By signing the page below, you certify that you have read, understood, and concur with the information presented in the Camp Bonneville Supplemental Accident Prevention Plan and will abide by the criteria and specifications presented herein:

Name (Printed)	Title	Phone	Date	Signature
Richard McManus	GSA Construction Ops. Manager	(425) 519-0300	5/3/01	
Elizabeth Chien	GSA PM, QC Manager	(425) 519-0300	5/3/01	
Robin Larson	GSA SSHO, Site Superintendent	(425) 519-0300	5/7/01	
Kim Thompson	GSA H&S Officer, Assist. QC	(425) 519-0300	5/7/01	
Ken Jennings	GSA H&S Manager	(425) 519-0300	5/3/01	
Gary C. Curtis	ECC		5/7/01	
R.H. WALTHER	ECC		5/7/01	
MATT MORAN	ESC	425 519-0300	5/7/01	
CHRIS HALL	USACE	253 966-4380	5/7/01	

GSA Daily Construction Quality Control Report (page 1)

Project Number: DACA67-75-C-0015 Date: 5/7/01 Report No.: 10

Project Name: Camp Bonneville Pesticide Bldg & Ammo Bunker Cleaning Location: Vancouver, WA

Weather : Clear __ P. Cloudy X Cloudy ___ Fog __ Rainfall __ (100% of workday)

Temperature during workday: High 70 °F. Low 50 degrees F.

1. WORK PERFORMED BY CONTRACTOR/SUBCONTRACTOR(S):

Contractor Name	No. of Workers	Crafts w/ Hours	Work Performed
GSC	1	Supervisor 8	Demo pesticide Bldg - Excavate soils & Clean Ammo Bunkers
	1	Operator 8	"
	2	Environmental Techs 16	Soil & Wood samples
EEC	2	UXO Technicians 16	Clear work AREAS

2. EQUIPMENT DATA

Type. Size. Etc.	Owned or Rented	Hours Used	Hours Standby
580 K 4x4 Backhoe	X	8	0
1 JD Tractor/Brush Hog	X	8	0
1 Ton Flatbed	X	8	0
1/2 Ton Van	X	8	0
2 Weed Eaters	X	8	0
4 Two Way Radios	X	8	0

GSA Daily Construction Quality Control Report (page 2)

3. QUALITY CONTROL INSPECTIONS AND RESULTS: (Include a description of preparatory, initial, and/or follow up inspections or meetings; check of subcontractors work and materials delivered to the site compared to submittals and/or specifications; comments on the proper storage of materials; include comments on corrective actions to be taken):

Pre construction meeting, Preparatory phase meeting & Formal health & Safety Meeting held on S.te

4. QUALITY CONTROL TESTING AND RESULTS (Comment on tests and attached test reports):

Soil & wood samples taken. See Daily Chemical Quality Control Report

5. DAILY SAFETY INSPECTIONS (Include comments on new hazards to be added to the Hazard Analysis and corrective action of any safety issues):

Formal Health & Safety meeting Conducted See attached

6. REMARKS (Include conversations with or instructions from any Government representatives or regulatory officials; delays of any kind that are impacting the job; conflicts in the contract documents; comments on change orders; environmental considerations; etc.):

MR. Chris Hall, COE Construction Representative on Site To inspect work & work progress

CONTRACTOR'S VERIFICATION: The above report is complete and correct. All material, equipment used, and work performed during this reporting period ~~are~~ in compliance with the contract documents except as noted above.

Contractor QC Representative Debi E Larson

GARRY STRUTHERS CONSTRUCTION

GENERAL CONTRACTOR

SAFETY MEETING REPORT

Project Number: DACA67-95-G-0001 Date: 5-7-01

Project Name: Ammunition Storage Bunkers And Pesticide Bldg. Location: Camp Bonneville

Meeting Conducted By: Robin Larson

Subjects Discussed:

Emergency procedures - Chemicals we are Testing for UXO procedures - PPE - Radios - Animals - Chain of command - Work plan including areas of work and work to be accomplished.

Persons in Attendance:

Name	Company
Elizabeth Chien	GSA
Warren Gallos	US Army
Rob E Lan	GSC
Kimberly Thompson	GSA
Matt Moran	GSC
Greg C Curtis	ECC
Tom Hall	USACE
R Weathers	ECC

DAILY CHEMICAL QUALITY CONTROL REPORT

CONTRACT NO.	TITLE AND LOCATION			DATE	
DACA67-95-G-0001 Task Order 58	Camp Bonneville Environmental Restoration Services Vancouver, WA			May 7, 2001	
CONTRACTOR Garry Struthers Associates, Inc.		**AM WEATHER** Clear, sunny, 40° F		**PM WEATHER** Clear, sunny, 70° F	
WORK PERFORMED/SAMPLES COLLECTED: Elizabeth Chien, Kim Thompson				**COLLECTED BY:**	
SAMPLE ID:	**LOCATION**	**# OF JARS**	**MATRIX**	**INITIAL**	**TIME**
PBW-50701-01	Pesticide Bldg. #4126 Wood Shed all four walls	4	Wood shavings	KT	8:35
PBW-50701-02 (duplicate of PBW-50701-01)	Pesticide Bldg. #4126 Wood Shed all four walls	2	Wood shavings	KT	8:40
PBW-50701-03 (QA of PBW-50701-01)	Pesticide Bldg. #4126 Wood Shed all four walls	2	Wood shavings	KT	8:45
NS-PBS-04	Pesticide Bldg. #4126 excavation north sidewall	1	soil	EAC	11:22
ES-PBS-05	Pesticide Bldg. #4126 excavation east sidewall	1	soil	EAC	11:24
SS-PBS-06	Pesticide Bldg. #4126 excavation south sidewall	1	soil	EAC	11:26
WS-PBS-07	Pesticide Bldg. #4126 excavation west sidewall	1	soil	EAC	11:28
FL-PBS-08	Pesticide Bldg. #4126 excavation floor	2	soil	EAC	11:05
FLD-PBS-09 (duplicate of FL-PBS-08)	Pesticide Bldg. #4126 excavation floor	1	soil	EAC	11:10
FLQ-PBS-10 (QA of FL-PBS-08)	Pesticide Bldg. #4126 excavation floor	1	soil	EAC	11:15
SP-PBS-11	Pesticide Bldg. #4126 stockpile	1	soil	KT	11:20
NS-A51-12	Ammo Bunker #2951 excavation north sidewall	1	soil	KT	12:55
ES-A51-13	Ammo Bunker #2951 excavation east sidewall	1	soil	KT	12:58
SS-A51-14	Ammo Bunker #2951 excavation south sidewall	1	soil	KT	13:00

CONTRACT NO. DACA67-95-G-0001 Task Order 58	TITLE AND LOCATION Camp Bonneville Environmental Restoration Services Vancouver, WA			DATE May 7, 2001	
CONTRACTOR Garry Struthers Associates, Inc.		AM WEATHER Clear, sunny, 40° F		PM WEATHER Clear, sunny, 70° F	
WORK PERFORMED/SAMPLES COLLECTED: Elizabeth Chien, Kim Thompson				COLLECTED BY:	
SAMPLE ID:	**LOCATION**	**# OF JARS**	**MATRIX**	**INITIAL**	**TIME**
WS-A51-15	Ammo Bunker #2951 excavation west sidewall	1	soil	KT	13:03
FL-A51-16	Ammo Bunker #2951 excavation floor	2	soil	KT	13:06
SP-A51-17	Ammo Bunker #2951 stockpile	1	soil	EAC	13:05
NS-A50-26	Ammo Bunker #2950 excavation north sidewall	1	soil	EAC	13:25
ES-A50-27	Ammo Bunker #2950 excavation east sidewall	1	soil	EAC	13:27
SS-A50-28	Ammo Bunker #2950 excavation south sidewall	1	soil	EAC	13:30
WS-A50-29	Ammo Bunker #2950 excavation west sidewall	1	soil	EAC	13:32
FL-A50-30	Ammo Bunker #2950 excavation floor	2	soil	EAC	13:35
SP-A50-25	Ammo Bunker #2950 stockpile	1	soil	KT	13:08

LIST CHEMICAL DATA QUALITY MANAGEMENT INSPECTIONS UNDERTAKEN:

INSPECTIONS: none

CORRECTIVE ACTIONS TAKEN: none

INSTRUCTIONS FROM GOVERNMENT PERSONNEL: approved the use of a chain saw to create sufficient quantity of wood shavings from the Pesticide Building #4126.

ADDITIONAL REMARKS:

Deviated from Field Sampling Plan regarding sampling the Wooden Pesticide Building #4126: the drill was not creating enough wood shavings to fill all the sample jars. After discussion with the construction crew and the USACE, it was decided to use a chain saw to create shavings. The construction crew worked from inside the shed so that the wood shavings would fall onto the floor on the inside. Cuts were made in all four walls. Shavings were collected into a large bowl and mixed by hand before collecting into the sample jars.

Reviewed by:	Name	Signature	Date
Sampler:	Kimberly Thompson	Kimberly Thompson	5/11/01
Sampler:	Elizabeth Chien	Elizabeth Chien	5/9/01
Project Chemist:	Mike Webb	Michael Webb	5/10/01
Project Manager:	Elizabeth Chien	Elizabeth Chien	5/9/01

GSA Daily Construction Quality Control Report (page 1)

Project Number: DACA67-95-G0001 Date: 5/8/01 Report No.: 11

Project Name: Bldg 4 Ammo Bunker Cleaning Location: VANCOUVER, WA
CAMP BONNEVILLE PESTICIDE

Weather : Clear __ P. Cloudy X Cloudy __ Fog __ Rainfall __ (__ % of workday)

Temperature during workday: High 70 °F. Low 40 degrees F.

1. WORK PERFORMED BY CONTRACTOR/SUBCONTRACTOR(S):

Contractor Name	No. of Workers Crafts w/ Hours	Work Performed
GSE	1 Supervisor 8	Soil Samples. Bunker Cleaning - Equipment Demobilization
	1 OPERATOR 8	"
	1 PROJECT MANAGER 8	"
	1 ENVIRONMENTAL TECHNICIAN 8	"

2. EQUIPMENT DATA

Type, Size, Etc.	Owned or Rented	Hours Used	Hours Standby
580K 4X4 Backhoe		—	Demobilize
1 JD TRACTOR W/ Brush hog		—	Demobilize
1 TON Flatbed		8	Demobilize
½ TON TRUCK		8	Demobilize
2 weed eaters		—	Demobilize
4 Two way Radios		—	Demobilize

GSA Daily Construction Quality Control Report (page 2)

3. QUALITY CONTROL INSPECTIONS AND RESULTS: (Include a description of preparatory, initial, and/or follow up inspections or meetings; check of subcontractors work and materials delivered to the site compared to submittals and/or specifications; comments on the proper storage of materials; include comments on corrective actions to be taken):

No materials delivered to site

4. QUALITY CONTROL TESTING AND RESULTS (Comment on tests and attached test reports):

Soil samples taken. See Daily Chemical Quality Control Report.

5. DAILY SAFETY INSPECTIONS (Include comments on new hazards to be added to the Hazard Analysis and corrective action of any safety issues):

No New Hazards

6. REMARKS (Include conversations with or instructions from any Government representatives or regulatory officials; delays of any kind that are impacting the job; conflicts in the contract documents; comments on change orders; environmental considerations; etc.):

MR. Chris Hall, COE Construction Representative on Site to inspect work & work progress

CONTRACTOR'S VERIFICATION: The above report is complete and correct. All material, equipment used, and work performed during this reporting period are in compliance with the contract documents except as noted above.

Contractor QC Representative Rikki E Lane

DAILY CHEMICAL QUALITY CONTROL REPORT

CONTRACT NO.	TITLE AND LOCATION			DATE	
DACA67-95-G-0001 Task Order 58	Camp Bonneville Environmental Restoration Services Vancouver, WA			May 8, 2001	
CONTRACTOR		**AM WEATHER**		**PM WEATHER**	
Garry Struthers Associates, Inc.		Clear, sunny, 40° F			
WORK PERFORMED/SAMPLES COLLECTED:				**COLLECTED BY:**	
Elizabeth Chien, Kim Thompson					
SAMPLE ID:	**LOCATION**	**# OF JARS**	**MATRIX**	**INITIAL**	**TIME**
XNS-A50-18	Ammo Bunker #2950 excavation north sidewall	1	soil	EAC	7:40
XES-A50-19	Ammo Bunker #2950 excavation east sidewall	1	soil	EAC	7:43
XSS-A50-20	Ammo Bunker #2950 excavation south sidewall	1	soil	EAC	7:46
XWS-A50-21	Ammo Bunker #2950 excavation west sidewall	1	soil	EAC	7:48
XFL-A50-22	Ammo Bunker #2950 excavation floor	2	soil	EAC	7:50
XFLD-A50-23 (duplicate of XFL-A50-22)	Ammo Bunker #2950 excavation floor	1	soil	EAC	7:52
XFLQ-A50-24 (QA of XFL-A50-22)	Ammo Bunker #2950 excavation floor	1	soil	EAC	7:54
NS-A53-31	Ammo Bunker #2953 excavation north sidewall	1	soil	KT	8:35
ES-A53-32	Ammo Bunker #2953 excavation east sidewall	1	soil	KT	8:37
SS-A53-33	Ammo Bunker #2953 excavation south sidewall	1	soil	KT	8:40
WS-A53-34	Ammo Bunker #2953 excavation west sidewall	1	soil	KT	8:43
FL-A53-35	Ammo Bunker #2953 excavation floor	2	soil	KT	8:45
FLD-A53-36 (duplicate of FL-A53-35)	Ammo Bunker #2953 excavation floor	1	soil	KT	8:48
FLQ-A53-37 (QA of FL-A53-35)	Ammo Bunker #2953 excavation floor	1	soil	KT	8:50

CONTRACT NO. DACA67-95-G-0001 Task Order 58	TITLE AND LOCATION Camp Bonneville Environmental Restoration Services Vancouver, WA			DATE May 8, 2001	
CONTRACTOR Garry Struthers Associates, Inc.		AM WEATHER Clear, sunny, 40° F		PM WEATHER	
WORK PERFORMED/SAMPLES COLLECTED: Elizabeth Chien, Kim Thompson				COLLECTED BY:	
SAMPLE ID:	**LOCATION**	**# OF JARS**	**MATRIX**	**INITIAL**	**TIME**
SP-A53-38	Ammo Bunker #2953 stockpile	3	soil	KT	8:53
SPD-A53-39 dup of SP-A53-38	Ammo Bunker #2953 stockpile	1	soil	KT	8:55
SPQ-A53-40 QA of SP-A53-38	Ammo Bunker #2953 stockpile	1	soil	KT	9:00
XNS-A53-41	Ammo Bunker #2953 excavation north sidewall	1	soil	KT	9:03
XES-A53-42	Ammo Bunker #2953 excavation east sidewall	1	soil	KT	9:06
XSS-A53-43	Ammo Bunker #2953 excavation south sidewall	1	soil	KT	9:10
XWS-A53-44	Ammo Bunker #2953 excavation west sidewall	1	soil	KT	9:12
XFL-A53-45	Ammo Bunker #2953 excavation floor	2	soil	KT	9:14
XFLD-A53-46 (duplicate of XFL-A53-45)	Ammo Bunker #2953 excavation floor	1	soil	KT	9:16
XFLQ-A53-47 (QA of XFL-A53-45)	Ammo Bunker #2953 excavation floor	1	soil	KT	9:18
XSP-A53-48	Ammo Bunker #2953 stockpile	3	soil	KT	9:20
XSPD-A53-49 dup of XSP-A53-48	Ammo Bunker #2953 stockpile	1	soil	KT	9:22
XSPQ-A53-50 QA of XSP-A53-48	Ammo Bunker #2953 stockpile	1	soil	KT	9:24

INSTRUMENT CALIBRATION/FIELD DATA & REMARKS:

LIST CHEMICAL DATA QUALITY MANAGEMENT INSPECTIONS UNDERTAKEN:

INSPECTIONS: none

CORRECTIVE ACTIONS TAKEN: none

INSTRUCTIONS FROM GOVERNMENT PERSONNEL: clean out the bunkers using brooms and dustpans – no vacuum

ADDITIONAL REMARKS:

Deviation from Work Plan regarding UXO support: digging was completed the previous day with UXO construction support. After discussion with the construction crew, the USACE, the sampling crew, and the UXO crew, it was decided that UXO support was not needed today since no digging would be occurring. The UXO team was sent home and the final sampling and cleaning out of the bunkers was conducted without UXO support.

Deviation from Work Plan regarding cleaning out the ammunition bunkers: the bunkers were already clean. After discussion with the USACE and the sampling crew, it was decided that sweeping the bunkers would be sufficient (vacuuming is not necessary). Following disinfection, the sampling crew donned tyvek and respirators and swept dirt, animal fur and droppings, and plant material onto dustpans. This material, as well as the tyvek and gloves was disposed of in heavy-duty plastic bags and added to the wood stockpile.

Reviewed by:	Name	Signature	Date
Sampler:	Kimberly Thompson	Kimberly Thompson	5/11/01
Sampler:	Elizabeth Chien	Elizabeth Chien	5/9/01
Project Chemist:	Mike Webb	Michael Webb	5/10/01
Project Manager:	Elizabeth Chien	Elizabeth Chien	5/9/01

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20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 (541) 383-9310 FAX 382-7588

CHAIN OF CUSTODY REPORT

Work Order #: B1E0234

CLIENT: GSA
INVOICE TO: GSA
REPORT TO: Elizabeth Chien
ADDRESS:
PHONE: 425-519-0300 x219 FAX: 425-519-0309
P.O. NUMBER:
PROJECT NAME: Camp Bonneville
PROJECT NUMBER: 99-004.58
SAMPLED BY: K. Thompson / E. Chien

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: ~~10~~ STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: ~~5~~ STD. | 4 | 3 | 2 | 1 | <1
OTHER — Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES: TCLP Pb	NWTPH-D	Antimony, Pb, 2,4,5-T, 4,4'-DDT, mCPP	Antimony, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, [illegible]	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1. PBW-50701-01	5/7/01 8:35	X				O	4	WC for project MS/MSD TCLP Pb	
2. PBW-50701-02	5/7/01 ~~8:35~~ SG 8:40	X				O	2		
3. ~~PBW-50701-03~~									
4. NS-PBS-04	11:22		X	X		S	1		
5. ES-PBS-05	11:24		X	X		S	1		
6. SS-PBS-06	11:26		X	X		S	1		
7. WS-PBS-07	11:28		X	X		S	1		
8. FL-PBS-08	11:05		X	X		S	2	MS/MSD for Diesel and Pesticides	
9. FLD-PBS-09	11:10		X	X		S	1		
10. SP-PBS-11	11:20	X				S	1		
11. NS-AS1-12	12:55				X	S	1		
12. ES-AS1-13	12:58				X	S	1		
13. SS-AS1-14	13:00				X	S	1		
14. WS-AS1-15	13:03				X	S	1		
15. FL-AS1-16	13:06				X	S	2	MS/MSD for As, Ba, Cd, Pb	

RELINQUISHED BY: Elizabeth Chien — PRINT NAME: — FIRM: GSA — DATE: 5/8/01 — TIME: 16:00
RECEIVED BY: — PRINT NAME: ROBERT GREEN — FIRM: NCA — DATE: 5/8/01 — TIME: 4:05
RELINQUISHED BY: — PRINT NAME: — FIRM: — DATE: — TIME:
RECEIVED BY: — PRINT NAME: — FIRM: — DATE: — TIME:

ADDITIONAL R[illegible]KS:
TE 7C

COC REV 3/99

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CHAIN OF CUSTODY REPORT

Work Order #: BZE0234

CLIENT: GSA
REPORT TO: Elizabeth Chien
ADDRESS:
PHONE: 425-519-0300 x219 FAX: 425-519-0309

INVOICE TO: GSA
P.O. NUMBER:

PROJECT NAME: Camp Bonneville
PROJECT NUMBER: 99-004.58
SAMPLED BY: Kim Thompson / E. Chien

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: [10] STD. [7] [5] [4] [3] [2] [1] [<1]
Petroleum Hydrocarbon Analyses: [5] STD. [4] [3] [2] [1] [<1]
[OTHER] Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES: TCLP As, Ba, Cd, Pb	Antimony, As, Ba, Cd, Cr, Cu, Pb	Antimony, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Thallium, Zinc	TCLP As, Ba, Cd, Pb	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1. SP-AS1-17	5/7/01 13:05	X				S	1		
2. SP-AS0-25	13:08	X				S	1		
3. NS-AS0-26	13:25		X			S	1		
4. ES-AS0-27	13:27		X			S	1		
5. SS-AS0-28	13:30		X			S	1		
6. WS-AS0-29	13:32		X			S	1		
7. FL-AS0-30	13:35		X			S	2	[illegible]	
8. MS-AS3-31	5/8/01 8:35			X		S	1		
9. ES-AS3-32	5/8/01 8:37			X		S	1		
10. SS-AS3-33	8:40			X		S	1		
11. WS-AS3-34	8:43			X		S	1		
12. FL-AS3-35	8:45			X		S	2	MS/MSD for Antimony, Be, Cr, Cu, Ni, Thallium, Zinc	
13. FLD-AS3-36	8:48			X		S	1		
14. SP-AS3-38	8:53				X	S	3	MS/MSD TCLP As, Ba, Cd, Pb	
15. SPD-AS3-39	5/8/01 8:55				X	S	1		

RELINQUISHED BY: Elizabeth Chien FIRM: GSA DATE: 5/8/01 TIME: 16:00
RECEIVED BY: [signature] PRINT NAME: ROBERT GRFER FIRM: NCA DATE: 5/10/01 TIME: 4:05
RELINQUISHED BY: PRINT NAME: FIRM: DATE: TIME:
RECEIVED BY: PRINT NAME: FIRM: DATE: TIME:

ADDITIONAL REMARKS:

COC REV 3/99

TEMP: 70°

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ANALYTICAL & ENVIRONMENTAL CHEMISTS
5755 8th Street East • Tacoma, WA 98424
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www.saslab.com

SAS Lab No. 97986

TURNAROUND REQUEST (business days)
Standard (10 days) X
RUSH: 24 hrs ___ 48 hrs ___ 5 day ___

CHAIN OF CUSTODY/REQUEST FOR LABORATORY ANALYSIS

Client: GSA
Project Name: Camp Bonneville
Contact: Elizabeth Chien
Phone No.: 425-519-0300 x219
Fax No.: 425-519-0309
Email: echien@gsasec-inc.com

Analyses Requested

Lab Use Only	Sample ID	Date	Time	Matrix	# of Containers	RDX	TCLP 2,4 DNT	2,4 DNT, PETN Picric Acid										
	XWS-A5D-18	5/8/01	7:40	S	1	X												
	XES-A5D-19		7:43	S	1	X												
	XSS-A5D-20		7:46	S	1	X												
	XWS-A5D-21		7:48	S	1	X												
	XFZ-A5D-22		7:50	S	2	(X)												
	XFLD-A5D-23		7:52	S	1	X												
	XWS-A53-41		9:03	S	1			X										
	XES-A53-42		9:06	S	1			X										
	XSS-A53-43		9:10	S	1			X										
	XWS-A53-44		9:12	S	1			X										
	XFZ-A53-45		9:14	S	2			(X)										
	XFLD-A53-46		9:16	S	1			X										
	XSP-A53-48		9:20	S	3		(X)											
~~—~~	~~XSPD-A53-47~~																	
	XSPD-A53-49		9:22	S	1		X											

	Signature	Printed Name	Firm	Time/Date
Relinquished By:	E. Chien	E. Chien	GSA	5/8/01 14:10
Received By	A Strom	A Strom	SAS	5/8/01 210
Relinquished By:				
Received By				
Relinquished By:				
Received By				

Special Instructions

(X) use for project specific MS/MSD

Watch these analyses carefully, especially Picric Acid.

COC No. ___

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CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT: GSA

REPORT TO: USACE - Sandy Lemitch

ADDRESS: GSA - Elizabeth Chien

PHONE: 415 519-3200 x.214 FAX: 415 519-3214

INVOICE TO: USACE

P.O. NUMBER: LIMS # 6362

PROJECT NAME:

PROJECT NUMBER:

SAMPLED BY:

TURNAROUND REQUEST in Business Days*

Organic & Inorganic Analyses: 10 STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1

OTHER Please Specify

*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	TCLP Pb	WET CH - D	Antimony, Pb 244.5 T, 4400T MCAWW	RDX	Antimony, As, Ba, Be, Cd, Cr, Cu, Mo, Ni, Se, Zinc	TCLP As, Ba, Cd, Pb	2,4-DNT, 2,6-DNT, Nitrobenzene, Acetone	TCLP 2,4-DNT	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1. PBW-50701-03	5/7/01 8:45	X								O	2		
2. ~~FLQ-PBS-10~~	~~5/7/01 11:15~~		~~X~~	~~X~~						~~S~~	~~1~~		
3. FLQ-PBS-10	5/7/01 11:15		X	X						S	1		
4. XFLQ-A50-24	5/8/01 7:54				X					S	1		
5. FLQ-A53-37	5/8/01 6:50					X				S	1		
6. SPQ-A53-40	5/8/01 9:00					X	X			S	1		
7. XFLQ-A53-47	5/8/01 9:18							X		S	1		
8. SPQ-A53-50	5/8/01 9:24								X	S	1		
9.													
10.													
11.													
12.													
13.													
14.													
15.													

RELINQUISHED BY: PRINT NAME: Elizabeth Chien FIRM: GSA DATE: 5/8/01 TIME: 9:26

RECEIVED BY: PRINT NAME: FIRM: DATE: TIME:

RELINQUISHED BY: PRINT NAME: FIRM: DATE: TIME:

RECEIVED BY: PRINT NAME: FIRM: DATE: TIME:

ADDITIONAL REMARKS:

TEMP:

COC REV 3/99

PAGE OF

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No. 351

Camp Bonneville
Ammo / Pest Areas
5/7-8/01
99-004.58 P 1001, 1002

4 5/8" x 7" - 48 Numbered Pages

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

Name Elizabeth Chien

Address

Phone

Project Camp Bonneville
Ammunition Bunkers
2950, 2951, 2953 and
Pesticide Bldg 4126

5/7-8/01

Yellow Polyethylene Protective Slipcovers (Item #31) are available for this style of notebook. Helps protect your notebook from wear & tear. Contact your dealer or the J. L. Darling Corporation.

CONTENTS

PAGE	REFERENCE	DATE
	Monday 5/7/01	
	Chris Hall – USACE	
	Robin Larson – GSC	
	Matt Moran – GSC	
	Elizabeth Chien – GSA	
	Kim Thompson – GSA	
	Dick Walter – ECC	
	Chad Curtis – ECC	
	digging completed, sent UXO home	
	Tuesday 5/8/01	
	Chris Hall – USACE	
	Robin Larson – GSC	
	Matt Moran – GSC	
	Elizabeth Chien – GSA	
	Kim Thompson – GSA	
	no UXO support needed	

Sunny 40°
Sunny 70°

5/7/01

7:00 Tailgate Meeting
7:30 visit both sites
8:00 UXO @ Pesticide Bldg
conduct Mag sweeps
8:30 Sample Wood Shed
Pesticide Bldg 4126

- tried to sample using drill but wood was too hard
- switched to chainsaw to create wood shavings
- took shavings samples from all four walls and door

PBW-50701-01	8:35	4 jars	Prim MS/MSD
PBW-50701-02	8:40	2 jars	Field Dup
PBW-50701-03	8:45	2 jars	QA

analyze for TCLP Pb

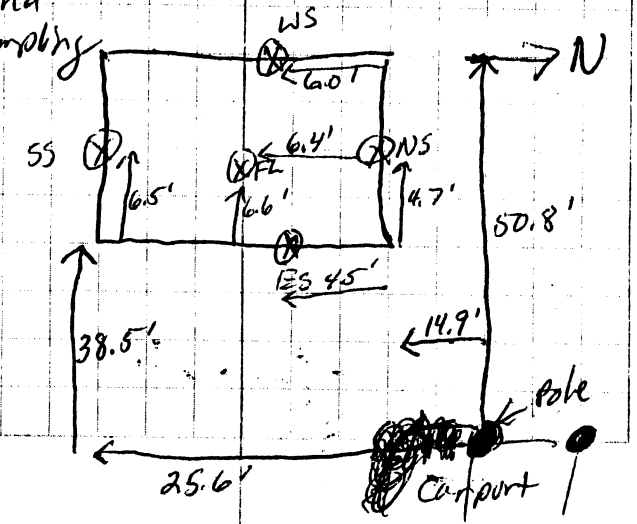
9:00 Start to Demo Pest. Bldg.

10:15 start to excavate Pest. Bldg. foot-print

10:50 Collect Soil Samples

NS-PBS-04	11:22	1 jar
ES-PBS-05	11:24	1 jar
SS-PBS-06	11:26	1 jar
WS+PBS-07	11:28	1 jar
FL-PBS-08	11:05	2 jar
FLD-PBS-09	11:10	1 jar
FLQ-PBS-10	11:15	1 jar
stockpile SP-PBS-11	11:20	1 jar

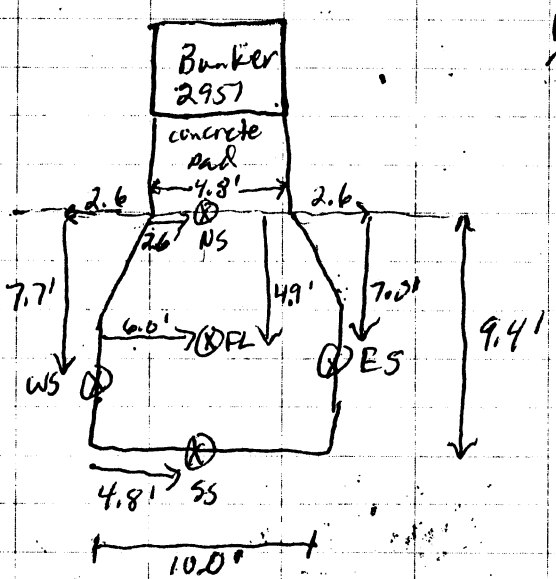
11:35 end Sampling



11 – 11:45 begin grubbing at 2951, 2950

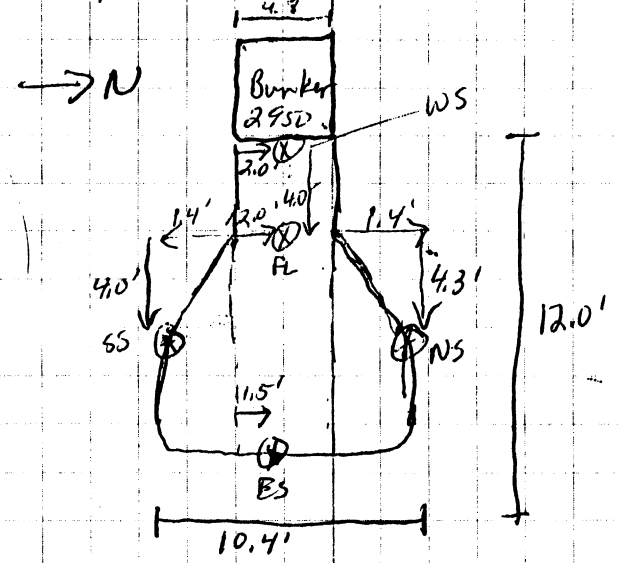
12:00 begin excavating 2951
12:45 begin sampling 2951

NS – A51 – 12	12:55	1 jar
ES – A51 – 13	12:58	1 jar
SS – A51 – 14	13:00	1 jar
WS – A51 – 15	13:03	1 jar
FL – A51 – 16	13:06	2 jar
stockpile SP-A51-17	13:05	1 jar



12:45 begin excavating 2950
13:15 begin sampling 2950

NS – A50 – 26	13:25	1 jar
ES – A50 – 27	13:27	1 jar
SS – A50 – 28	13:30	1 jar
WS – A50 – 29	13:32	1 jar
FL – A50 – 30	13:35	2 jar
stockpile – SP-A50-25	13:08	1 jar



13:30 begin grubbing 2953
14:00 begin excavating 2953
14:45 leave site

Elizabeth Chen

5/8/01

Sunny 40°

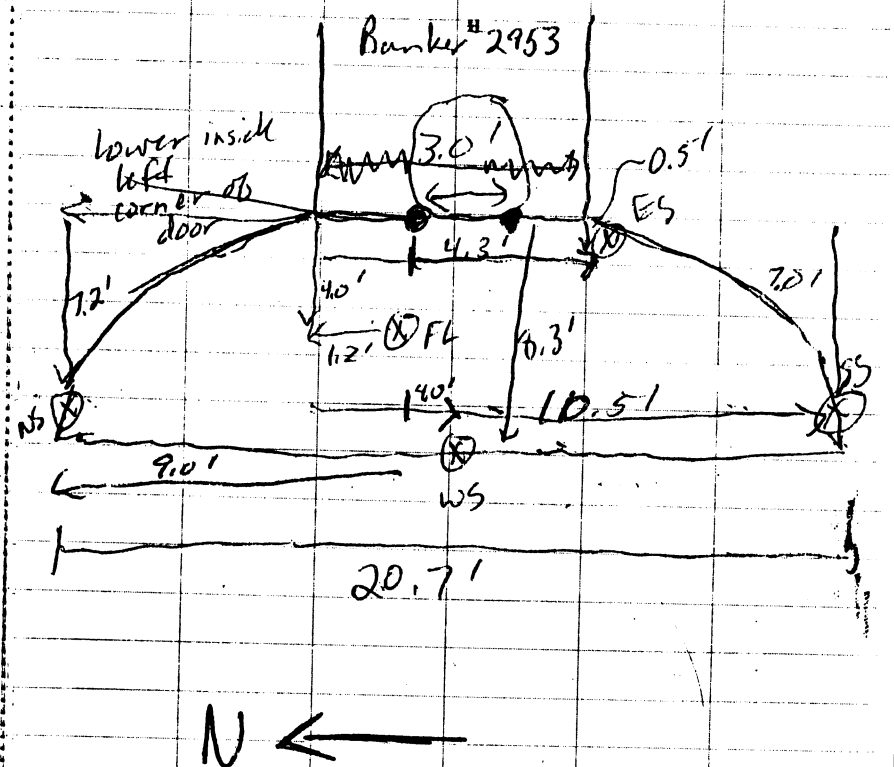
6:45 meet at site
7:00 start dissected
#2953, #2951, #2950

7:45 collect ROX samples from #2950

XNS - A50 - 18	7:40	1	jar
XES - A50 - 19	7:43	1	jar
XSS - A50 - 20	7:46	1	jar
XWS - A50 - 21	7:48	1	jar
XFL - A50 - 22	7:50	2	jar
XFLD - A50 - 23	7:52	1	jar
XFLQ - A50 - 24	7:54	1	jar

8:15 collect samples from #2953

			Jars
NCA			
	NS - A53 - 31	8:35	1
	ES - A53 - 32	8:37	1
	SS - A53 - 33	8:40	1
	WS - A53 - 34	8:43	1
	FL - A53 - 35	8:45	2
	FLD - A53 - 36	8:48	1
	FLQ - A53 - 37	8:50	1
stockpile	SP - A53 - 38	8:53	3
	SPD - A53 - 39	8:55	1
	SPQ - A53 - 40	9:00	1
SAS			
	XNS - A53 - 41	9:03	1
	XES - A53 - 42	9:06	1
	XSS - A53 - 43	9:10	1
	XWS - A53 - 44	9:12	1
	XFL - A53 - 45	9:14	2
	XFLD - A53 - 46	9:16	1
	XFLQ - A53 - 47	9:18	1
	XSP - A53 - 48	9:20	3
	XSPD - A53 - 49	9:22	1
	XSPQ - A53 - 50	9:24	1



9:45 Begin Cleaning Bunkers

11:30 Clean-up & Loadup

11:00 Leave Site

14:00 Drop off samples at Sound Analytical

14:30 Drop off QA samples at Fed Ex

16:00 Drop off sampler at North Creek Analytical

Elizabeth Chien

9/17/01

arrive on-site 7:00 am

visited each site reviewed what needed to be done 7:30

front loader delivered 7:45

8:25 dirt delivered to Pesticide building # 4126

8:45 dirt delivered to ~~Pesticide building # 4126~~ Ammo Buildings

Also truck & trailer arrived

9:35 load pest soil

9:40 load pest building

10:30 2 buckets of soil from Ammo added to pest soil

also spread ammo soil

10:30 load Ammo Soil

11:30 Spead Pesticide Building Soil

12:00 Left site

Elizabeth Chien

GARRY STRUTHERS ASSOCIATES, INC.
Bellevue, WA 98005-4446
(425) 519-0300 (phone)
(425) 519-0309 (fax)

MEMORANDUM

Date: June 13, 2001
To: Elizabeth Chien, Project Manager
From: Mike Webb, Project Chemist

Project: Bonneville (DACA67-95-G-0001-058)
Project No.: 99-004.058

Re: Chemical Data Quality Control Report
Ammunition Bunkers #2950, #2951, and #2953 and Pesticide Building #4126
Camp Bonneville, Washington:
North Creek Analytical, Inc. Report #B1E0234

Purpose:

This assessment summarizes data quality factors that affect usability and provides guidance in the use of these data. These data were collected for site characterization and waste disposal purposes.

Analytical Methods:

- EPA 3550B/NWTPH-Dx for Diesel and Heavy Oil
- EPA 3050B/6020 for Pb, Sb, As, Ba, Be, Cd, Cr, Cu, Ni, Tl, and Zn
- EPA 1311/3010A/6010B for TCLP Pb, As, Ba, and Cd
- EPA 3550B/8081A for 4,4-DDD, 4,4-DDE, and 4,4-DDT
- EPA 8151 A for 2,4,5-T and MCPP

Data Qualification:

No data were rejected due to quality control problems. "U" qualifiers were used to indicate that the analyte was not detected above the reported sample quantitation limit. A "J" flag was used to indicate results that are to be used with caution due to low matrix spike recoveries indicating possible low-biased analyte recovery.

Samples:

PBW-50701-01, PBW-50701-02 (duplicate of PBW-50701-01), NS-PBS-04, ES-PBS-05, SS-PBS-06, WS-PBS-07, FL-PBS-08, FLD-PBS-09 (duplicate of FL-PBS-08), SP-PBS-11, NS-A51-12, ES-A51-13, SS-A51-14, WS-A51-15, FL-A51-16, SP-A51-17, SP-A50-25, NS-A50-26, ES-A50-27, SS-A50-28, WS-A50-29, FL-A50-30, NS-A53-31, ES-A53-32, SS-A53-33, WS-A53-34, FL-A53-35, FLD-A53-36 (duplicate of FL-A53-35), SP-A53-38, SPD-A53-39 (duplicate of SP-A53-38)

Summary of Quality Control:

- Sample Handling, Holding Time and Chain of Custody – **Acceptable.**
- Methodology/Comparability/Representativeness/Completeness – **Acceptable**. The compliance methods used are standard EPA methods or State of Washington-approved methods. Sampling was completed as per the Sampling and Analysis Plan.
- Analytical Sensitivity – **Acceptable.**

- Accuracy –
  Calibration (Initial and Continuing) – **Acceptable.** – Some of the end-of-run CCV results were out of limits and reruns were performed. CCVs for the reported batches of results were acceptable.
  Matrix Spikes – **Not Acceptable for some metals.** – Some metals showed low recoveries for the matrix spike and were verified by the laboratory to exhibit a matrix effect. These data were qualified. The low recoveries were deemed not a significant issue for the project decisions because these metals (except arsenic) were detected at concentrations well below the action limits. Compensating for low recoveries for arsenic would still show concentrations within the cleanup levels as established by the Washington Model Toxics Cleanup Act (95% upper confidence level of the mean and compliance monitoring requirements).
  Laboratory Control Samples (LCS) – **Acceptable.**
  Laboratory Blanks – **Acceptable.**
  Field Blanks – **Not Applicable.**
- Precision –
  Laboratory Duplicates or Matrix Spike Duplicates – **Not Acceptable for some metals.** Samples spiked for metals appeared inhomogeneous and matrix spike duplicates were outside of limits for some analytes. These spiked samples were reanalyzed, verifying larger than expected variability. No additional data flags were required. The variability was not deemed a significant issue for the project decisions because these metals (except arsenic) were detected at concentrations well below the action limits. The effects of variability for arsenic was taken into account by performing statistical calculations for determining the 95% upper confidence limit (UCL) of the group sample mean. The group UCL was below the site action level for arsenic.
  Field Duplicates – **Acceptable.** (Pairs: PBW-50701-01/PBW-50701-02, FL-PBS-08/FLD-PBS-09, FL-A53-35/FLD-A53-36, and SP-A53-38/SPD-A53-39)
- Data Integrity/Consistency/Documentation – **Acceptable.**

Field Sampling Issues:

Sampling procedures were in accordance with the Sampling and Analysis Plan (SAP) with the exception of sampling the wood building. Originally, a representative sample of the wood building was to be created using a drill with a spade bit, drilling through the wood producing wood shavings. Due to field problems (wood too hard for drill, drill did not create enough shavings), a chainsaw was used to create wood shavings. These shavings were collected into a stainless steel bowl and mixed prior to placing the shavings into sample jars.

Overall Conclusions:

These data are acceptable for use for the intended purposes. The overall data completeness meets the project data quality objectives.

GARRY STRUTHERS ASSOCIATES, INC.
Bellevue, WA 98005-4446
(425) 519-0300 (phone)
(425) 519-0309 (fax)

MEMORANDUM

Date: June 13, 2001
To: Elizabeth Chien, Project Manager
From: Mike Webb, Project Chemist

Project: Bonneville (DACA67-95-G-0001-058)
Project No.: 99-004.058

Re: Chemical Data Quality Control Report
Ammunition Bunkers #2950, #2951, and #2953 and Pesticide Building #4126
Camp Bonneville, Washington:
Sound Analytical Services, Inc. Report #97986

Purpose:

This assessment summarizes data quality factors that affect usability and provides guidance in the use of these data. These data were collected for site characterization and waste disposal purposes.

Analytical Methods:

- EPA 8330 for 2,4-dinitrotoluene, PETN, RDX
- EPA 1311/8330 for TCLP 2,4-dinitrotoluene
- EPA 8330 modified for Picric Acid

Data Qualification:

No data were rejected due to quality control problems. "U" qualifiers were used to indicate that the analyte was not detected above the reported sample quantitation limit. A "J" flag was used to indicate results that are to be used with caution due to low matrix spike recoveries indicating possible low-biased analyte recovery. A "U" and "J" flag together indicate uncertainty in the detection level for an undetected analyte.

Samples:

XNS-A50-18, XES-A50-19, XSS-A50-20, XWS-A50-21, XFL-A50-22, XFLD-A50-23 (duplicate of XFL-A50-22), XNS-A53-41, XES-A53-42, XSS-A53-43, XWS-A53-44, XFL-A53-45, XFLD-A53-46 (duplicate of XFL-A53-45), XSP-A53-48, XSPD-A53-49 (duplicate of XSP-A53-48).

Summary of Quality Control:

- Sample Handling, Holding Time and Chain of Custody – **Acceptable.**
- Methodology/Comparability/Representativeness/Completeness – **Acceptable.** The compliance methods used are standard EPA methods or State of Washington-approved methods. Sampling was performed as per the Sampling and Analysis Plan.
- Analytical Sensitivity – **Acceptable.**

- Accuracy –
  Calibration (Initial and Continuing) – **Acceptable.**
  Matrix Spikes – **Not Acceptable.** – The matrix spike showed low recovery outside of the project targets for one of two spiked samples. The laboratory verified that the sample exhibited a matrix effect. The primary sample results for RDX were reported qualified indicating the possible low-biased results. These data are deemed usable. This nonconformance has no impact on project decisions because the detection level for these undetected results is much lower than the site action level. The recoveries of surrogates in the MS/MSD were high and outside of project limits due to an apparent interference that was adequately explained by the laboratory.
  Laboratory Control Samples (LCS) – **Acceptable.**
  Laboratory Blanks – **Acceptable.**
  Field Blanks – **Not Applicable.**
- Precision –
  Laboratory Duplicates or Matrix Spike Duplicates – **Acceptable.**
  Field Duplicates – **Acceptable.** (Pairs: XFL-A50-22/XFLD-A50-23, XFL-A53-45/XFLD-A53-46, and XSP-A53-48/XSPD-A53-49)
- Data Integrity/Consistency/Documentation – **Acceptable.**

Field Sampling Issues:

Sampling procedures were in accordance with the Sampling and Analysis Plan (SAP) without modification.

Overall Conclusions:

These data are acceptable for use for the intended purposes. The overall data completeness meets the project data quality objectives.

GARRY STRUTHERS ASSOCIATES, INC.
Bellevue, WA 98005-4446
(425) 519-0300 (phone)
(425) 519-0309 (fax)

MEMORANDUM

Date: June 13, 2001
To: Elizabeth Chien, Project Manager
From: Mike Webb, Project Chemist

Project: Bonneville (DACA67-95-G-0001-058)
Project No.: 99-004.058

Re: Chemical Data Quality Control Report
Ammunition Bunkers #2950, #2951, and #2953 and Pesticide Building #4126
Camp Bonneville, Washington:
North Creek Analytical, Inc. Report #B1E0234

Purpose:

This assessment summarizes data quality factors that affect usability and provides guidance in the use of these data. These data were collected for site characterization and waste disposal purposes.

Analytical Methods:

- EPA 3550B/NWTPH-Dx for Diesel and Heavy Oil
- EPA 3050B/6020 for Pb, Sb, As, Ba, Be, Cd, Cr, Cu, Ni, Tl, and Zn
- EPA 1311/3010A/6010B for TCLP Pb, As, Ba, and Cd
- EPA 3550B/8081A for 4,4-DDD, 4,4-DDE, and 4,4-DDT
- EPA 8151 A for 2,4,5-T and MCPP

Data Qualification:

No data were rejected due to quality control problems. "U" qualifiers were used to indicate that the analyte was not detected above the reported sample quantitation limit. A "J" flag was used to indicate results that are to be used with caution due to low matrix spike recoveries indicating possible low-biased analyte recovery.

Samples:

PBW-50701-01, PBW-50701-02 (duplicate of PBW-50701-01), NS-PBS-04, ES-PBS-05, SS-PBS-06, WS-PBS-07, FL-PBS-08, FLD-PBS-09 (duplicate of FL-PBS-08), SP-PBS-11, NS-A51-12, ES-A51-13, SS-A51-14, WS-A51-15, FL-A51-16, SP-A51-17, SP-A50-25, NS-A50-26, ES-A50-27, SS-A50-28, WS-A50-29, FL-A50-30, NS-A53-31, ES-A53-32, SS-A53-33, WS-A53-34, FL-A53-35, FLD-A53-36 (duplicate of FL-A53-35), SP-A53-38, SPD-A53-39 (duplicate of SP-A53-38)

Summary of Quality Control:

- Sample Handling, Holding Time and Chain of Custody – **Acceptable.**
- Methodology/Comparability/Representativeness/Completeness – **Acceptable**. The compliance methods used are standard EPA methods or State of Washington-approved methods. Sampling was completed as per the Sampling and Analysis Plan.
- Analytical Sensitivity – **Acceptable.**

- Accuracy –
  Calibration (Initial and Continuing) – **Acceptable.** – Some of the end-of-run CCV results were out of limits and reruns were performed. CCVs for the reported batches of results were acceptable.
  Matrix Spikes – **Not Acceptable for some metals.** – Some metals showed low recoveries for the matrix spike and were verified by the laboratory to exhibit a matrix effect. These data were qualified. The low recoveries were deemed not a significant issue for the project decisions because these metals (except arsenic) were detected at concentrations well below the action limits. Compensating for low recoveries for arsenic would still show concentrations within the cleanup levels as established by the Washington Model Toxics Cleanup Act (95% upper confidence level of the mean and compliance monitoring requirements).
  Laboratory Control Samples (LCS) – **Acceptable.**
  Laboratory Blanks – **Acceptable.**
  Field Blanks – **Not Applicable.**
- Precision –
  Laboratory Duplicates or Matrix Spike Duplicates – **Not Acceptable for some metals.** Samples spiked for metals appeared inhomogeneous and matrix spike duplicates were outside of limits for some analytes. These spiked samples were reanalyzed, verifying larger than expected variability. No additional data flags were required. The variability was not deemed a significant issue for the project decisions because these metals (except arsenic) were detected at concentrations well below the action limits. The effects of variability for arsenic was taken into account by performing statistical calculations for determining the 95% upper confidence limit (UCL) of the group sample mean. The group UCL was below the site action level for arsenic.
  Field Duplicates – **Acceptable.** (Pairs: PBW-50701-01/PBW-50701-02, FL-PBS-08/FLD-PBS-09, FL-A53-35/FLD-A53-36, and SP-A53-38/SPD-A53-39)
- Data Integrity/Consistency/Documentation – **Acceptable.**

Field Sampling Issues:

Sampling procedures were in accordance with the Sampling and Analysis Plan (SAP) with the exception of sampling the wood building. Originally, a representative sample of the wood building was to be created using a drill with a spade bit, drilling through the wood producing wood shavings. Due to field problems (wood too hard for drill, drill did not create enough shavings), a chainsaw was used to create wood shavings. These shavings were collected into a stainless steel bowl and mixed prior to placing the shavings into sample jars.

Overall Conclusions:

These data are acceptable for use for the intended purposes. The overall data completeness meets the project data quality objectives.

GARRY STRUTHERS ASSOCIATES, INC.
Bellevue, WA 98005-4446
(425) 519-0300 (phone)
(425) 519-0309 (fax)

MEMORANDUM

Date: June 13, 2001
To: Elizabeth Chien, Project Manager
From: Mike Webb, Project Chemist

Project: Bonneville (DACA67-95-G-0001-058)
Project No.: 99-004.058

Re: Chemical Data Quality Control Report
Ammunition Bunkers #2950, #2951, and #2953 and Pesticide Building #4126
Camp Bonneville, Washington:
Sound Analytical Services, Inc. Report #97986

Purpose:

This assessment summarizes data quality factors that affect usability and provides guidance in the use of these data. These data were collected for site characterization and waste disposal purposes.

Analytical Methods:

- EPA 8330 for 2,4-dinitrotoluene, PETN, RDX
- EPA 1311/8330 for TCLP 2,4-dinitrotoluene
- EPA 8330 modified for Picric Acid

Data Qualification:

No data were rejected due to quality control problems. "U" qualifiers were used to indicate that the analyte was not detected above the reported sample quantitation limit. A "J" flag was used to indicate results that are to be used with caution due to low matrix spike recoveries indicating possible low-biased analyte recovery. A "U" and "J" flag together indicate uncertainty in the detection level for an undetected analyte.

Samples:

XNS-A50-18, XES-A50-19, XSS-A50-20, XWS-A50-21, XFL-A50-22, XFLD-A50-23 (duplicate of XFL-A50-22), XNS-A53-41, XES-A53-42, XSS-A53-43, XWS-A53-44, XFL-A53-45, XFLD-A53-46 (duplicate of XFL-A53-45), XSP-A53-48, XSPD-A53-49 (duplicate of XSP-A53-48).

Summary of Quality Control:

- Sample Handling, Holding Time and Chain of Custody – **Acceptable.**
- Methodology/Comparability/Representativeness/Completeness – **Acceptable.** The compliance methods used are standard EPA methods or State of Washington-approved methods. Sampling was performed as per the Sampling and Analysis Plan.
- Analytical Sensitivity – **Acceptable.**

- Accuracy –
  Calibration (Initial and Continuing) – **Acceptable.**
  Matrix Spikes – **Not Acceptable.** – The matrix spike showed low recovery outside of the project targets for one of two spiked samples. The laboratory verified that the sample exhibited a matrix effect. The primary sample results for RDX were reported qualified indicating the possible low-biased results. These data are deemed usable. This nonconformance has no impact on project decisions because the detection level for these undetected results is much lower than the site action level. The recoveries of surrogates in the MS/MSD were high and outside of project limits due to an apparent interference that was adequately explained by the laboratory.
  Laboratory Control Samples (LCS) – **Acceptable.**
  Laboratory Blanks – **Acceptable.**
  Field Blanks – **Not Applicable.**
- Precision –
  Laboratory Duplicates or Matrix Spike Duplicates – **Acceptable.**
  Field Duplicates – **Acceptable.** (Pairs: XFL-A50-22/XFLD-A50-23, XFL-A53-45/XFLD-A53-46, and XSP-A53-48/XSPD-A53-49)
- Data Integrity/Consistency/Documentation – **Acceptable.**

Field Sampling Issues:

Sampling procedures were in accordance with the Sampling and Analysis Plan (SAP) without modification.

Overall Conclusions:

These data are acceptable for use for the intended purposes. The overall data completeness meets the project data quality objectives.

Sound Analytical Services, Inc
ANALYTICAL & ENVIRONMENTAL CHEMISTS
5755 8th Street East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
www.saslab.com

TRANSMITTAL MEMORANDUM

RECEIVED
JUN 07 2001
Garry Struthers Assoc., Inc.

DATE: June 6, 2001

TO: Elizabeth Chien
Garry Struthers Associates, Inc.
3150 Richards Road, Ste. 100
Bellevue, WA 98005-4446

PROJECT: Camp Bonneville

REPORT NUMBER: 97986

Enclosed are the test results for fourteen samples received at Sound Analytical Services on May 8, 2001.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

The samples associated with this laboratory work order were analyzed in compliance with the US Army Corps of Engineers "Shell for Analytical Chemistry", with modifications as necessary to meet project-specific requirements. The data package was reviewed and meets all quality control objectives specified in the project Quality Assurance Plan except as noted in the associated analytical narrative.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie
Project Manager

Lila A. Transue
Quality Assurance Director

Sound Analytical Services, Inc
ANALYTICAL & ENVIRONMENTAL CHEMISTS
5755 8th Street East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
www.saslab.com

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc. Date: June 6, 2001

Project: Camp Bonneville Lab No.: 97986

Delivered By: Submitter

Condition of samples upon receipt: Samples were received in good condition. The cooler receipt form is included in the chain of custody section of this package. Chain of custody was in order.

Sample Identification:

Lab. No.	Client ID	Date Sampled	Matrix	Description
97986-1	XNS-A50-18	05-08-01	solid	Moist, brown sandy soil
97986-2	XES-A50-19	05-08-01	solid	Moist, brown sandy soil
97986-3	XSS-A50-20	05-08-01	solid	Moist, brown sandy soil
97986-4	XWS-A50-21	05-08-01	solid	Moist, brown sandy soil
97986-5	XFL-A50-22	05-08-01	solid	Moist, brown sandy soil
97986-6	XFLD-A50-23	05-08-01	solid	Moist, brown sandy soil
97986-7	XNS-A53-41	05-08-01	solid	Moist, brown sandy soil
97986-8	XES-A53-42	05-08-01	solid	Moist, brown sandy soil
97986-9	XSS-A53-43	05-08-01	solid	Moist, brown sandy soil
97986-10	XWS-A53-44	05-08-01	solid	Moist, brown sandy soil
97986-11	XFL-A53-45	05-08-01	solid	Moist, brown sandy soil
97986-12	XFLD-A53-46	05-08-01	solid	Moist, brown sandy soil
97986-13	XSP-A53-48	05-08-01	solid	Moist, brown sandy soil
97986-14	XSPD-A53-49	05-08-01	solid	Moist, brown sandy soil

SAMPLE EXTRACTION AND ANALYSIS

EXPLOSIVES

Samples 97986-1 through 97986-12 were extracted and analyzed for explosives in accordance with EPA SW-846 Method 8330 Modified. The samples were extracted 05-18-01 and analyzed on 05-18-01 and 05-22-01, which was within the required holding time. Second column (Cyano column) confirmation of was not performed for RDX, 2,4-dinitrotoluene or PETN, because no target analytes were detected during the primary column analyses. Second column confirmation is not available for picric acid.

Samples 97986-1 through 97986-6 were analyzed for RDX only, and samples 97986-7 through 97986-12 were analyzed for 2,4-dinitrotoluene, PETN and picric acid.

The percent recoveries (%Rs) of the surrogate, 3,4-dinitrotoluene, exceeded the laboratory quality control (QC) limits for SLC607 (blank spike), DLC607 (blank spike duplicate), 97986S05 (matrix spike analysis of sample 97986-5, 97986D05 (matrix spike duplicate analysis of sample 97986-05) and 97986D11. The

SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL NARRATIVE

Client: Garry Struthers Associates, Inc. Date: June 6, 2001

Project: Camp Bonneville Lab No.: 97986

EXPLOSIVES, cont.
%Rs for SLC607 and DLC607 also exceeded the project specific QC limits. The surrogate (3,4-dinitrotoluene) coelutes with 4-aminodinitrotoluene on the primary column (the C18 column) and increases the measured surrogate concentration. The reported surrogate concentrations for these samples are all above the QC limits, so no corrective action was taken. The %Rs have been flagged "N".

The %Rs for RDX in 97986S05 and 97986D05 exceeded the laboratory QC acceptance limits, and the %R for 97986D05 exceeded the project specific QC limits. No corrective action was taken, as the %Rs of RDX in the blank spike and blank spike duplicate were acceptable, indicating possible sample specific matrix interference. The %Rs have been flagged "X7".

No difficulties were encountered during the explosives analyses.

All other quality control parameters were within acceptance limits.

TOXICITY CHARACTERISTICS LEACHING PROCEDURE (TCLP)
Samples 97809-1 and 97809-2 were extracted in accordance with EPA SW-846 Method 1311 on 05-14-01 and filtered on 05-15-01.

TCLP Explosives
The extracts from samples 97986-13 and 97986-14 were extracted using SPE on 05-15-01, and analyzed for 2,4-dinitrotoluene on 05-20-01 in accordance with EPA SW-846 Method 8330 Modified. The samples were extracted and analyzed within the required holding time. Second column (Cyano column) confirmation of detected compounds was performed on 05-23-01.

Sample results were quantitated using the C18 column. All results were confirmed using the Cyano column. Results are flagged "C1" or "C2" as deemed appropriate.

No difficulties were encountered during the TCLP explosives analyses.

All quality control parameters were within acceptance limits.

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XNS-A50-18
Lab ID:	97986-01
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	75.16
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	81.8		63	119

Sample results are on a dry weight basis.

Analyte		**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
RDX	ND	"J" eac 6/13/01	0.063	0.013	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XES-A50-19
Lab ID:	97986-02
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	77.97
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	82.9		63	119

Sample results are on a dry weight basis.

Analyte		**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
RDX	ND	"J" cac 6/13/01	0.059	0.013	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XSS-A50-20
Lab ID:	97986-03
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	72.8
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	67.4		63	119

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
RDX	ND "J" tac 6/13/01	0.067	0.014	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XWS-A50-21
Lab ID:	97986-04
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	72.8
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	81.8		63	119

Sample results are on a dry weight basis.

Analyte		**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
RDX	ND	"J"	0.063	0.013	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XFL-A50-22
Lab ID:	97986-05
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	74.53
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	82.2		63	119

Sample results are on a dry weight basis.

Analyte		**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
RDX	ND	"J" tal 6/13/01	0.063	0.014	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XFLD-A50-23
Lab ID:	97986-06
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	74.33
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	82.4		63	119

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
RDX	ND	0.061	0.013	

UJH
tac
6/13/01

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XNS-A53-41
Lab ID:	97986-07
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	75.38
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	78.9		63	119

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	ND	0.064	0.0071	
PETN	ND	0.13	0.083	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XNS-A53-41
Lab ID:	97986-07
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
% Solids	75.38
Dilution Factor	1

Picric Acid by USEPA Method 8330 - Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dinoseb	77.6		60	140

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Picric Acid	ND	0.13	0.043	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XES-A53-42
Lab ID:	97986-08
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	76.02
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	78.7		63	119

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	ND	0.057	0.0064	
PETN	ND	0.11	0.075	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XES-A53-42
Lab ID:	97986-08
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
% Solids	76.02
Dilution Factor	1

Picric Acid by USEPA Method 8330 - Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dinoseb	74		60	140

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Picric Acid	ND	0.11	0.038	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XSS-A53-43
Lab ID:	97986-09
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	80.07
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	75.2		63	119

Sample results are on a dry weight basis.

Analyte		**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	ND		0.057	0.0064	
PETN	ND		0.11	0.075	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XSS-A53-43
Lab ID:	97986-09
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
% Solids	80.07
Dilution Factor	1

Picric Acid by USEPA Method 8330 - Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dinoseb	82.8		60	140

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Picric Acid	ND	0.11	0.038	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XWS-A53-44
Lab ID:	97986-10
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	78.42
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	76.8		63	119

Sample results are on a dry weight basis.

Analyte		**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	ND		0.061	0.0068	
PETN	ND		0.12	0.08	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XWS-A53-44
Lab ID:	97986-10
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
% Solids	78.42
Dilution Factor	1

Picric Acid by USEPA Method 8330 - Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dinoseb	81.2		60	140

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Picric Acid	ND	0.12	0.041	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XFL-A53-45
Lab ID:	97986-11
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	76.14
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	78.4		63	119

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	ND	0.058	0.0065	
PETN	ND	0.12	0.077	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XFL-A53-45
Lab ID:	97986-11
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
% Solids	76.14
Dilution Factor	1

Picric Acid by USEPA Method 8330 - Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dinoseb	79.3		60	140

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Picric Acid	ND	0.12	0.039	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XFLD-A53-46
Lab ID:	97986-12
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	76.01
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	76.2		63	119

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	ND	0.059	0.0066	
PETN	ND	0.12	0.078	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XFLD-A53-46
Lab ID:	97986-12
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
% Solids	76.01
Dilution Factor	1

Picric Acid by USEPA Method 8330 - Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dinoseb	76.1		60	140

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Picric Acid	ND	0.12	0.04	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Project Name	Camp Bonneville
Date Received	05-08-01

Sample Preparation Information for Toxicity Characteristic Leaching Procedure (TCLP) EPA Method 1311

Client Sample ID	XSP-A53-48
Lab ID	97986-13

% Solids:	100
No. of Extractions:	1
Type of Extraction(s):	rotary
Extraction Fluid:	#1
Date Filtered:	05-15-01

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XSP-A53-48
Lab ID:	97986-13
Date Received:	5/8/01
Date Prepared:	5/15/01
Date Analyzed:	5/20/01
% Solids	-
Dilution Factor	1
Sample Volume	500 mLs

TCLP Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
3,4-Dinitrotoluene	99.3		72	116

Analyte	Result (ug/L)	PQL	MDL	Flags
2,4-Dinitrotoluene	ND	0.4	0.042	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Project Name	Camp Bonneville
Date Received	05-08-01

Sample Preparation Information for Toxicity Characteristic Leaching Procedure (TCLP) EPA Method 1311

Client Sample ID	XSPD-A53-49
Lab ID	97986-14

% Solids:	100
No. of Extractions:	1
Type of Extraction(s):	rotary
Extraction Fluid:	#1
Date Filtered:	05-15-01

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XSPD-A53-49
Lab ID:	97986-14
Date Received:	5/8/01
Date Prepared:	5/15/01
Date Analyzed:	5/20/01
% Solids	-
Dilution Factor	1
Sample Volume	500 mLs

TCLP Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
3,4-Dinitrotoluene	102		72	116

Analyte	Result (ug/L)	PQL	MDL	Flags
2,4-Dinitrotoluene	ND	0.4	0.042	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - LC607
Date Received:	-
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	90.6		63	119

Sample results are on an as received basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
RDX	ND	0.05	0.011	
2,4-Dinitrotoluene	ND	0.05	0.0056	
PETN	ND	0.1	0.066	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - LC607
Date Received:	-
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
% Solids	
Dilution Factor	1

Picric Acid by USEPA Method 8330 - Modified

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Dinoseb	86.8		60	140

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	MDL	Flags
Picric Acid	ND	0.1	0.034	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike/Blank Spike Duplicate Report

Lab ID:	LC607
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
QC Batch ID:	LC607

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

Compound Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	BSD Result (mg/kg)	BSD % Rec.	RPD	Flag
RDX	0	1	0.915	91.5	0.948	94.8	3.5	
2,4-Dinitrotoluene	0	1	0.922	92.2	0.948	94.8	2.8	
PETN	0	2	1.92	96.1	1.88	94	-2.2	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SLC607
Date Received:	-
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	170	N	63	119

Sample results are on an as received basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
RDX	0.91	0.05	0.011	
2,4-Dinitrotoluene	0.92	0.05	0.0056	
PETN	1.9	0.1	0.066	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	DLC607
Date Received:	-
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	178	N	63	119

Sample results are on an as received basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
RDX	0.95	0.05	0.011	
2,4-Dinitrotoluene	0.95	0.05	0.0056	
PETN	1.9	0.1	0.066	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike/Blank Spike Duplicate Report

Lab ID:	LC607
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
QC Batch ID:	LC607

Picric Acid by USEPA Method 8330 - Modified

Compound Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	BSD Result (mg/kg)	BSD % Rec.	RPD	Flag
Picric Acid	0	2	1.66	83	1.7	85.1	2.5	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SLC607
Date Received:	-
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
% Solids	
Dilution Factor	1

Picric Acid by USEPA Method 8330 - Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dinoseb	102		60	140

Sample results are on an as received basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Picric Acid	1.7	0.1	0.034	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	DLC607
Date Received:	-
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
% Solids	
Dilution Factor	1

Picric Acid by USEPA Method 8330 - Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dinoseb	93.7		60	140

Sample results are on an as received basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Picric Acid	1.7	0.1	0.034	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	XFL-A50-22
Lab ID:	97986-05
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
QC Batch ID:	LC607

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

Compound Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	MSD Result (mg/kg)	MSD % Rec.	RPD	Flag
RDX	0	1.24	0.64	51.5	0.589	48.9	-5.2	X7

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XFL-A50-22 - ms
Lab ID:	97986S05
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	74.53
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	145	N	63	119

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
RDX	0.64	0.062	0.013	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XFL-A50-22 - msd
Lab ID:	97986D05
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	74.53
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	147	N	63	119

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
RDX	0.59	0.06	0.013	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	SFL-A53-45
Lab ID:	97986-11
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
QC Batch ID:	LC607

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

Compound Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	MSD Result (mg/kg)	MSD % Rec.	RPD	Flag
2,4-Dinitrotoluene	0	1.22	0.941	77	0.982	79.2	2.8	
PETN	0	2.44	2.04	83.3	2.1	84.5	1.4	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	SFL-A53-45 - ms
Lab ID:	97986S11
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	76.14
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	118		63	119

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	0.94	0.061	0.0068	
PETN	2	0.12	0.08	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	SFL-A53-45 - msd
Lab ID:	97986D11
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/18/01
% Solids	76.14
Dilution Factor	1

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	127	N	63	119

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	0.98	0.062	0.0069	
PETN	2.1	0.12	0.081	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	SFL-A53-45
Lab ID:	97986-11
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
QC Batch ID:	LC607

Picric Acid by USEPA Method 8330 - Modified

Compound Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	MSD Result (mg/kg)	MSD % Rec.	RPD	Flag
Picric Acid	0	2.44	1.65	67.4	1.6	64.5	-4.4	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	SFL-A53-45 - ms
Lab ID:	97986S11
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
% Solids	76.14
Dilution Factor	1

Picric Acid by USEPA Method 8330 - Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dinoseb	85.3		60	140

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Picric Acid	1.6	0.12	0.041	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	SFL-A53-45 - msd
Lab ID:	97986D11
Date Received:	5/8/01
Date Prepared:	5/18/01
Date Analyzed:	5/22/01
% Solids	76.14
Dilution Factor	1

Picric Acid by USEPA Method 8330 - Modified

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dinoseb	76.5		60	140

Sample results are on a dry weight basis.

Analyte	**Result (mg/kg)**	**PQL**	**MDL**	**Flags**
Picric Acid	1.6	0.12	0.042	C1

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - LC606
Date Received:	-
Date Prepared:	5/15/01
Date Analyzed:	5/19/01
% Solids	-
Dilution Factor	1
Sample Volume	500 mLs

TCLP Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
3,4-Dinitrotoluene	98.6		72	116

Analyte	Result (ug/L)	PQL	MDL	Flags
2,4-Dinitrotoluene	ND	0.4	0.042	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike/Blank Spike Duplicate Report

Lab ID:	LC606
Date Prepared:	5/15/01
Date Analyzed:	5/19/01
QC Batch ID:	LC606

TCLP Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
2,4-Dinitrotoluene	0	10	9.57	95.7	9.81	98.1	2.5	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	SLC606
Date Received:	-
Date Prepared:	5/15/01
Date Analyzed:	5/19/01
% Solids	-
Dilution Factor	1
Sample Volume	500 mLs

TCLP Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	92.3		72	116

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	9.6	0.4	0.042	

SOUND ANALYTICAL SERVICES, INC.

Client Name	0
Client ID:	
Lab ID:	DLC606
Date Received:	-
Date Prepared:	5/15/01
Date Analyzed:	5/19/01
% Solids	-
Dilution Factor	1
Sample Volume	500 mLs

TCLP Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	96.4		72	116

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	9.8	0.4	0.042	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID:	XSP-A53-48
Lab ID:	97986-13
Date Prepared:	5/15/01
Date Analyzed:	5/20/01
QC Batch ID:	LC606

TCLP Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

Compound Name	Sample Result (ug/L)	Spike Amount (ug/L)	MS Result (ug/L)	MS % Rec.	MSD Result (ug/L)	MSD % Rec.	RPD	Flag
2,4-Dinitrotoluene	0	10	9.87	98.7	9.96	99.6	0.91	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XSP-A53-48 - ms
Lab ID:	97986S13
Date Received:	5/8/01
Date Prepared:	5/15/01
Date Analyzed:	5/20/01
% Solids	-
Dilution Factor	1
Sample Volume	500 mLs

TCLP Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	98.2		72	116

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	9.9	0.4	0.042	

SOUND ANALYTICAL SERVICES, INC.

Client Name	Garry Struthers Associates, Inc.
Client ID:	XSP-A53-48 - msd
Lab ID:	97986D13
Date Received:	5/8/01
Date Prepared:	5/15/01
Date Analyzed:	5/20/01
% Solids	-
Dilution Factor	1
Sample Volume	500 mLs

TCLP Nitroamine & Nitroaromatic Compounds by USEPA Method 8330

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
3,4-Dinitrotoluene	97.4		72	116

Analyte	**Result (ug/L)**	**PQL**	**MDL**	**Flags**
2,4-Dinitrotoluene	10	0.4	0.042	

DATA QUALIFIER DEFINITIONS

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
5755 8th Street East o Tacoma, WA 98424
(253) 922-2310 o FAX (253) 922-5047
e-mail: info@saslab.com

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be $\leq$ 40%.

C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

D: The reported result for this analyte was calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____ .

X2: Contaminant does not appear to be "typical" product.

X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.

X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike recovery was not determined due to the required dilution.

X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.

X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.

: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.

QC ACCEPTANCE LIMITS

Sound Analytical Services - Method QC Limits

Nitroamine & Nitroaromatic Compounds by USEPA Method 8330 Modified

Analysis Method : 8330
Matrix : Soil
Expires: 11/17/2001

Blank Spike Recovery		
2,4-Dinitrotoluene	78 - 105%	=<13% RPD
RDX	68 - 111%	=<10% RPD
PETN	74 - 108%	=<20% RPD*
Matrix Spike Recovery		
2,4-Dinitrotoluene	78 - 105%	=<13% RPD
RDX	68 - 111%	=<10% RPD
PETN	42 - 142%	=<35% RPD*
Surrogate Recovery		
3,4-Dinitrotoluene	48 - 143%	

* Default limits

Picric Acid by USEPA Method 8330 Modified

Analysis Method : 8330
Matrix : Soil

Blank Spike Recovery		
Picric Acid	60 – 120%*	=<20% RPD*
Matrix Spike Recovery		
Picric Acid	65 - 121%	=<35% RPD*
Surrogate Recovery		
Dinoseb	65 - 135%*	

* Default limits

TCLP Nitroamine & Nitroaromatic Compounds by USEPA Method 8330 Modified

Analysis Method : 8330
Matrix : Leachate
Preparation Method : SPE

Blank Spike Recovery		
2,4-Dinitrotoluene	60 - 120%*	=<20% RPD*
Matrix Spike Recovery		
2,4-Dinitrotoluene	50 - 140%*	=<50% RPD*
Surrogate Recovery		
3,4-Dinitrotoluene	72 - 116%	

CHAIN OF CUSTODY

Sound Analytical Services, Inc.
ANALYTICAL & ENVIRONMENTAL CHEMISTS
5755 8th Street East • Tacoma, WA 98424
(253) 922-2310 • FAX (253) 922-5047
www.saslab.com

GH

SAS Lab No. 97986

TURNAROUND REQUEST (business days)
Standard (10 days) X
RUSH: 24 hrs ___ 48 hrs ___ 5 day ___

CHAIN OF CUSTODY/REQUEST FOR LABORATORY ANALYSIS

Client: GSA
Project Name: Camp Bonneville
Contact: Elizabeth Chien
Phone No.: 425-519-0300 x219
Fax No.: 425-519-0309
Email: echien@gsasac-inc.com

Lab Use Only	Sample ID	Date	Time	Matrix	# of Containers	RDX	TCLP 2,4 DNT	2,4 DNT, PETN Picric Acid										
	Analyses Requested																	
1	XNS-A5D-18	5/8/01	7:40	S	1	X												
2	XES-A5D-19		7:43	S	1	X												
3	XSS-A5D-20		7:46	S	1	X												
4	XWS-A5D-21		7:48	S	1	X												
5	XFL-A5D-22		7:50	S	2	(X)												
6	XFLD-A5D-23		7:52	S	1	X												
7	XNS-A53-41		9:03	S	1			X										
8	XES-A53-42		9:06	S	1			X										
9	XSS-A53-43		9:10	S	1			X										
10	XWS-A53-44		9:12	S	1			X										
11	XFL-A53-45		9:14	S	2			(X)										
12	XFLD-A53-46		9:16	S	1			X										
13	XSP-A53-48		9:20	S	3		(X)											
	~~XSPDA~~																	
14	XSPD-A53-49		9:22	S	1		X											

	Signature	Printed Name	Firm	Time/Date
Relinquished By:	E. Chien	E. Chien	GSA	5/8/01 14:10
Received By	A Strom	A Strom	SAS	5/8/01 2:10
Relinquished By:				
Received By				
nquished				
Received By				

Special Instructions

(X) use for project specific MS/MSD

watch these analyses carefully, especially Picric Acid.. 54

COC No. _____

COOLER RECEIPT FORM

PROJECT: Camp Bonneville

COOLER RECEIVED ON 5/8/01 AND OPENED ON 5/8/01 BY AMS

Astrom
(SIGNATURE)

TEMPERATURE UPON RECEIPT: COOLER 2.1 oC
TEMP. BLANK _____ oC

1.	Were custody seals on outside of cooler and intact? a. If YES, how many and where: _____ b. Were signature and date correct?	YES (NO) YES NO
2.	Were custody papers taped to lid inside cooler?	(YES) NO
3.	Were custody papers properly filled out (ink, signed, etc)?	(YES) NO
4.	Did you sign custody papers in the appropriate place?	(YES) NO
5.	Did you attach shipper's packing slip to this form? Hand Delivered	YES (NO)
6.	What kind of packing material was used? Ice	
7.	Was sufficient ice used (if appropriate)?	(YES) NO
8.	Were all bottles sealed in separate plastic bags?	(YES) NO
9.	Did all bottles arrive in good condition (unbroken)?	(YES) NO
10.	Were all bottle labels complete (no., date, signed, pres, etc)?	(YES) NO
11.	Did all bottle labels and tags agree with custody papers?	(YES) NO
12.	Were correct bottles used for the test indicated?	(YES) NO
13.	If present, were VOA vials checked for absence of air bubbles and noted if found? N/A	YES NO
14.	Adequate volume of VOA vials received per sample? N/A	YES NO
15.	Was sufficient amount of sample sent in each bottle?	(YES) NO
16.	Were correct preservatives used?	(YES) NO
17.	Were extra labels added to pre-tared containers?	YES (NO)

18. Corrective action taken, if necessary:
    a. Name of person contacted: _____
    b. Date: _____

EXPLOSIVES DATA PACKAGE

SAMPLE DATA

Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\006-1601.D\DAD1B.CH Vial: 6
Signal #2 : F:\HPCHEM\2\DATA\EX052101\006-1601.D\DAD1A.CH
Acq On : 18-May-2001, 18:27:41 Operator: JDW
Sample : 97986-1 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:49 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml
	System Monitoring Compounds						
10)	SR 3,4-Dinitrotolue	5.97	5.97	714632	1332780	409.003	415.472
	Target Compounds						
1)	HMX	0.00	0.00	0	0	N.D.	N.D.
2)	RDX	0.00	0.00	0	0	N.D.	N.D.
3)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
4)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
5)	Tetryl	0.00	0.00	0	0	N.D.	N.D.
6)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
7)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
8)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
9)	4-Aminodinitroto	5.97	5.97	714632	1332780	364.971	331.903
11)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
12)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
13)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
14)	4-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
15)	3-Nitrotoluene	10.28	0.00	47945	0	28.474	N.D. #
16)	PETN	0.00	0.00	0	0	N.D.	N.D.

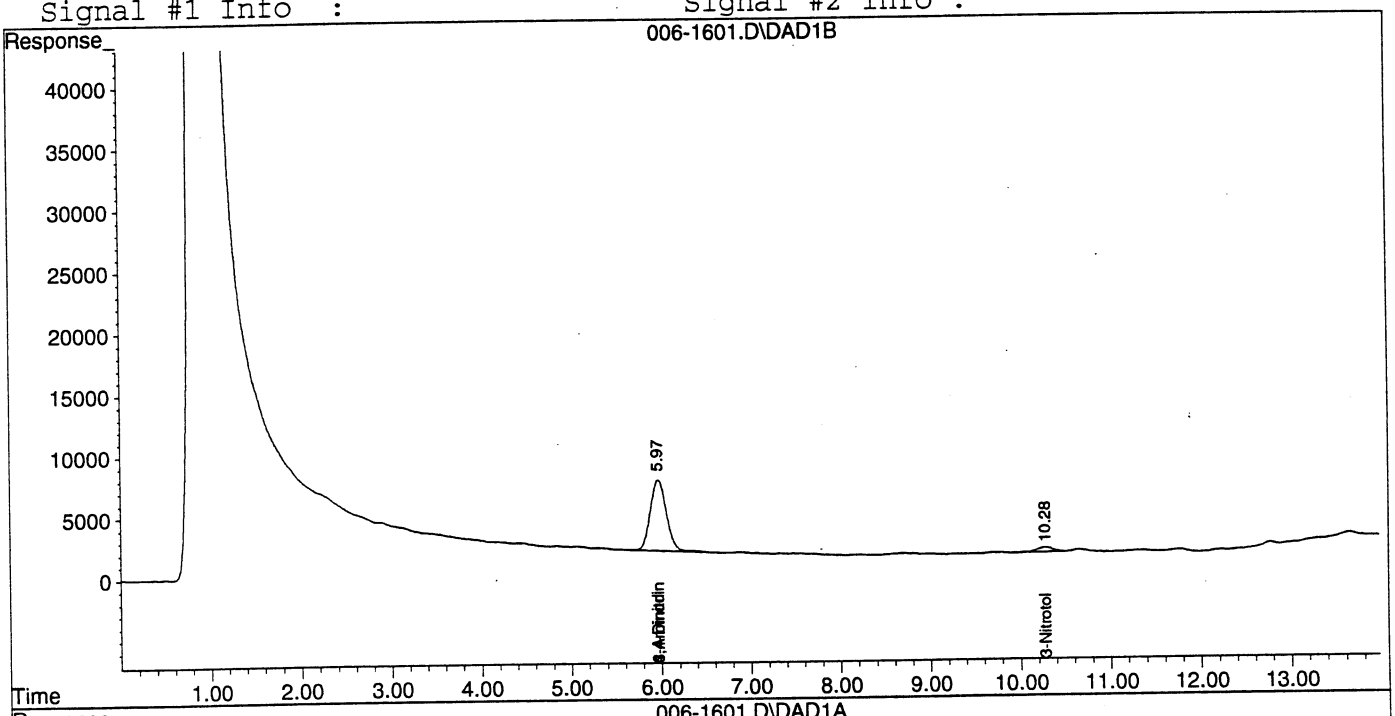
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.
006-1601.D C18_PETN.M Tue May 22 00:15:23 2001 Page 1

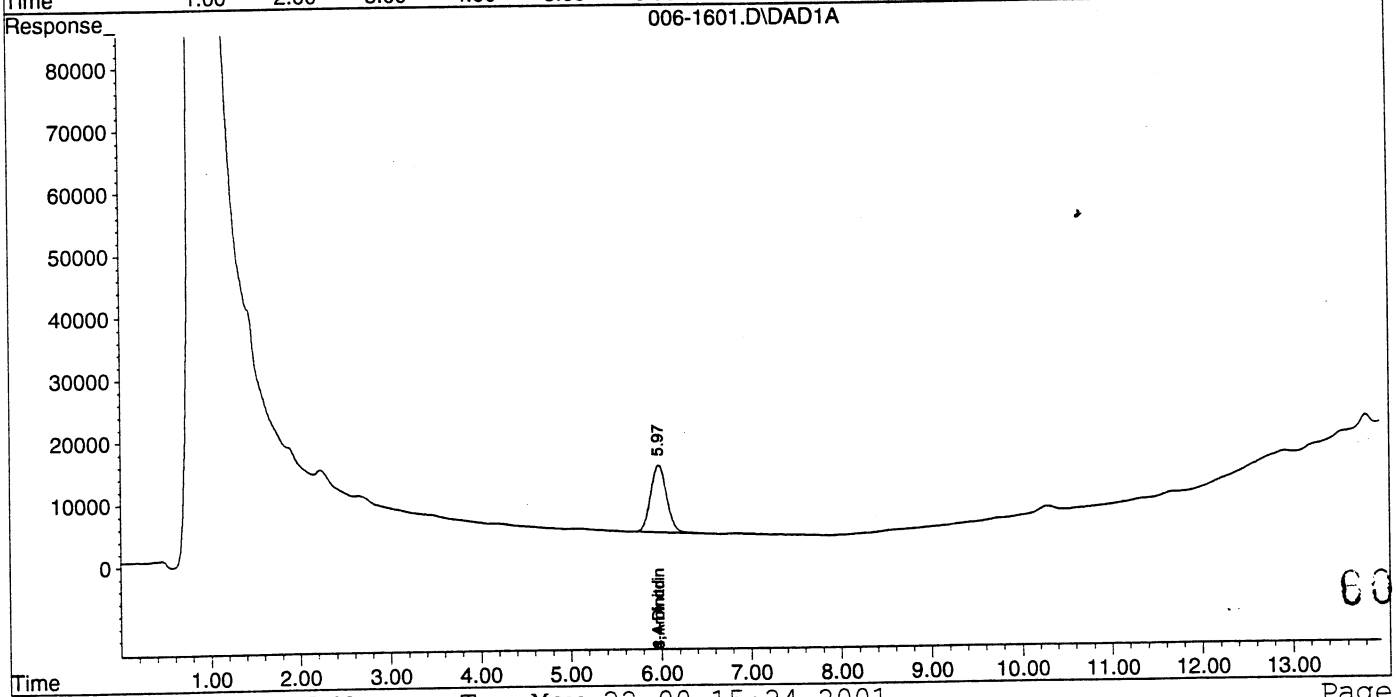
Quantitation Report

Signal #1 : F:\HPCHEM\2\DATA\EX052101\006-1601.D\DAD1B.CH Vial: 6
Signal #2 : F:\HPCHEM\2\DATA\EX052101\006-1601.D\DAD1A.CH
Acq On : 18-May-2001, 18:27:41 Operator: JDW
Sample : 97986-1 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:49 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\007-1701.D\DAD1B.CH Vial: 7
Signal #2 : F:\HPCHEM\2\DATA\EX052101\007-1701.D\DAD1A.CH
Acq On : 18-May-2001, 18:46:10 Operator: JDW
Sample : 97986-2 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:49 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml
	System Monitoring Compounds						
0)	SR 3,4-Dinitrotolue	5.99	5.99	723972	1326894	414.349	413.638
	Target Compounds						
1)	HMX	0.00	0.00	0	0	N.D.	N.D.
2)	RDX	0.00	0.00	0	0	N.D.	N.D.
3)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
4)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
5	Tetryl	0.00	0.00	0	0	N.D.	N.D.
6)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
7)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
8)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
9)	4-Aminodinitroto	5.99	5.99	723972	1326894	369.741	330.438
1)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
2)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
3)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
4)	4-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
5)	3-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
6)	PETN	0.00	0.00	0	0	N.D.	N.D.

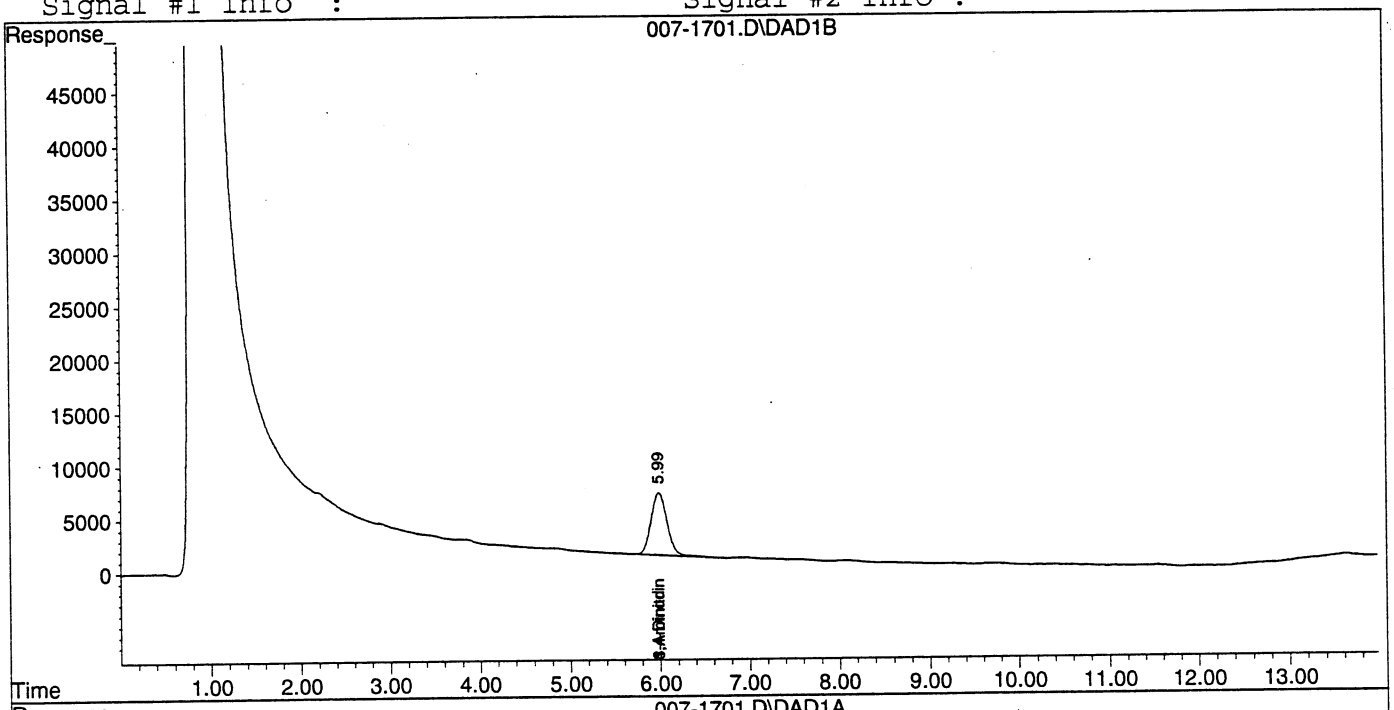
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.
007-1701.D C18_PETN.M Tue May 22 00:15:26 2001 Page 1

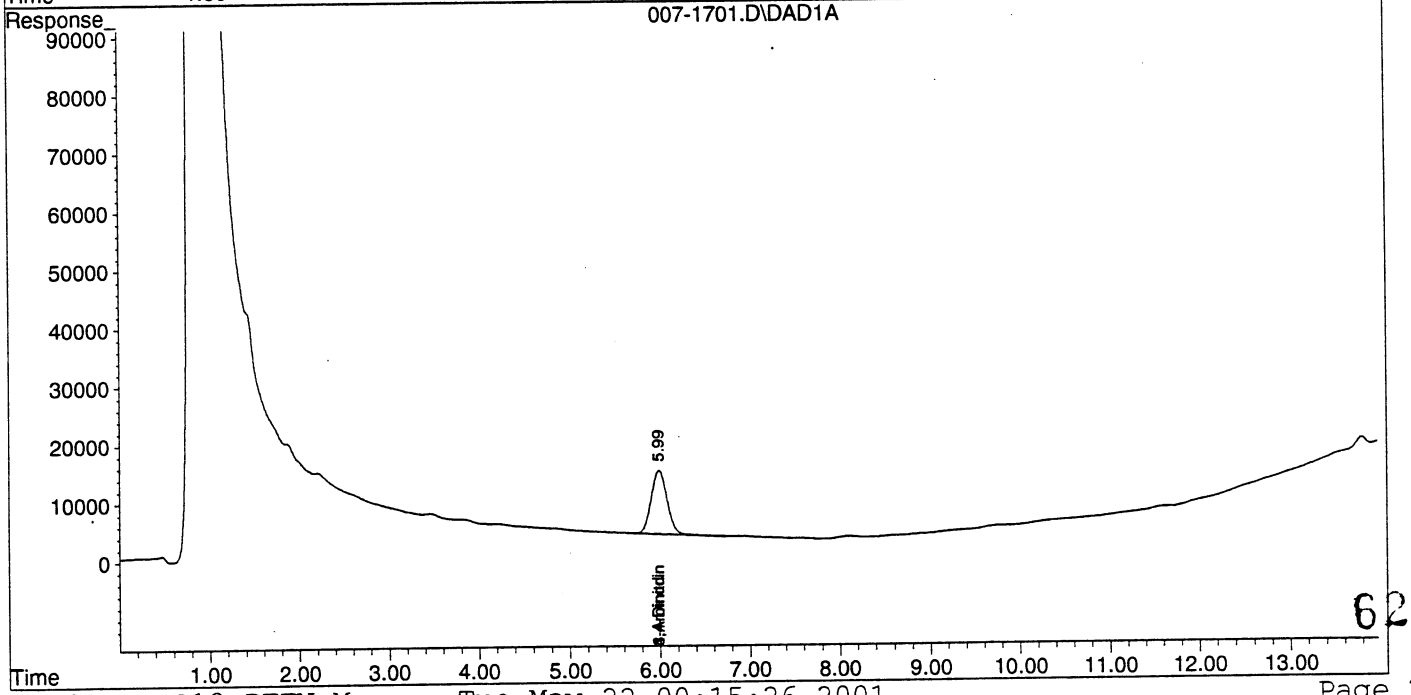
Quantitation Report

Signal #1 : F:\HPCHEM\2\DATA\EX052101\007-1701.D\DAD1B.CH Vial: 7
Signal #2 : F:\HPCHEM\2\DATA\EX052101\007-1701.D\DAD1A.CH
Acq On : 18-May-2001, 18:46:10 Operator: JDW
Sample : 97986-2 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:49 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\008-1801.D\DAD1B.CH Vial: 8
Signal #2 : F:\HPCHEM\2\DATA\EX052101\008-1801.D\DAD1A.CH
Acq On : 18-May-2001, 19:04:39 Operator: JDW
Sample : 97986-3 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:50 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Rerun 1:5

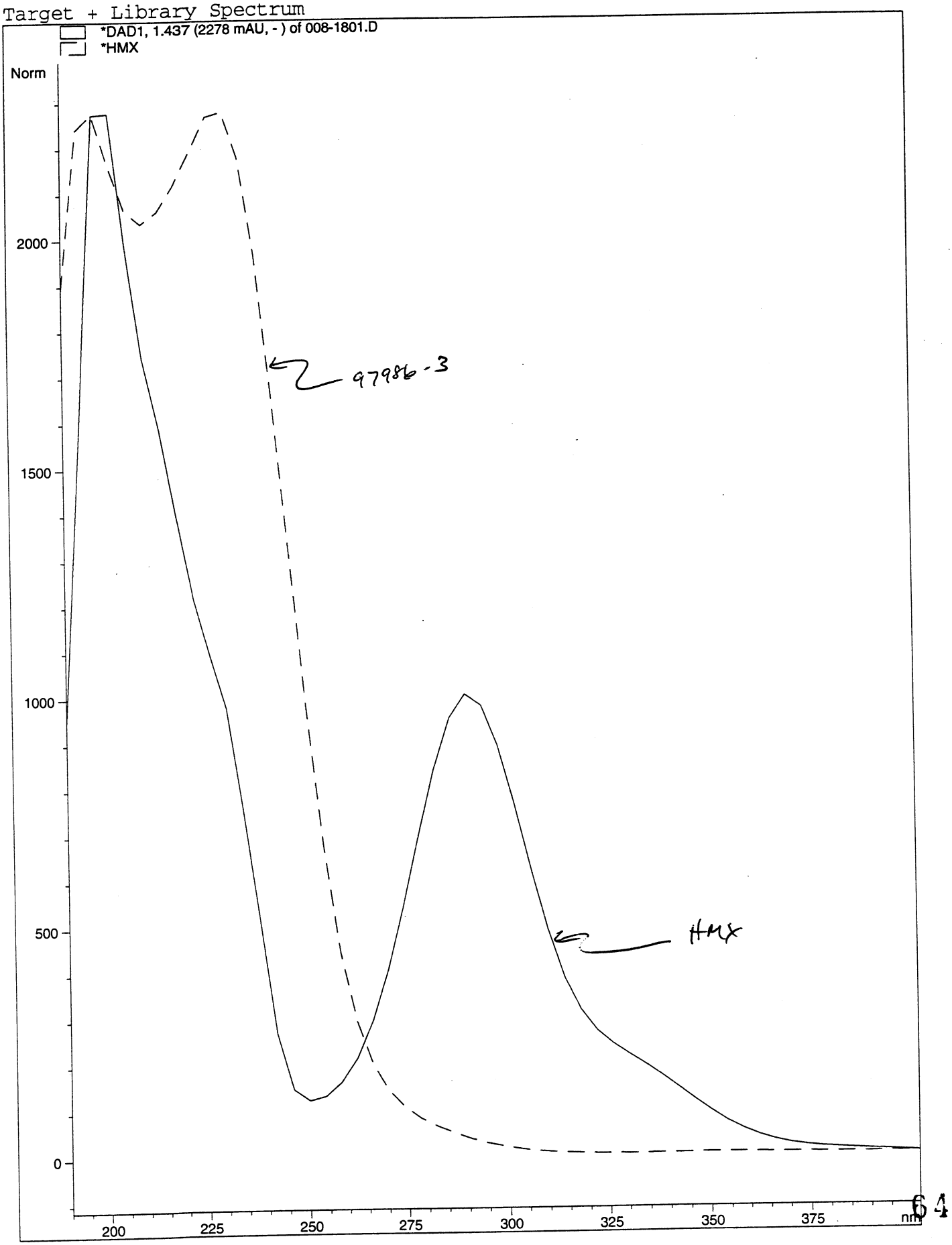
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml	
	System Monitoring Compounds							
10)	SR 3,4-Dinitrotolue	5.97	5.97	588607	1111451	336.876	346.477	
	Target Compounds							
1)	HMX	1.44	1.44	18179896	217.1E6	17361.094	~~67912.147~~	# No match see Spectra
2)	RDX	0.00	0.00	0	0	N.D.	N.D.	
3)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.	
4)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.	
5)	Tetryl	0.00	0.00	0	0	N.D.	N.D.	
6)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.	
7)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.	
8)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.	
9)	4-Aminodinitroto	5.97	5.97	588607	1111451	300.608	276.786	
11)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.	
12)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.	
13)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.	
14)	4-Nitrotoluene	9.68	0.00	139763	0	108.901	N.D.	#
15)	3-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.	
16)	PETN	0.00	0.00	0	0	N.D.	N.D.	

RT shift also.

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(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

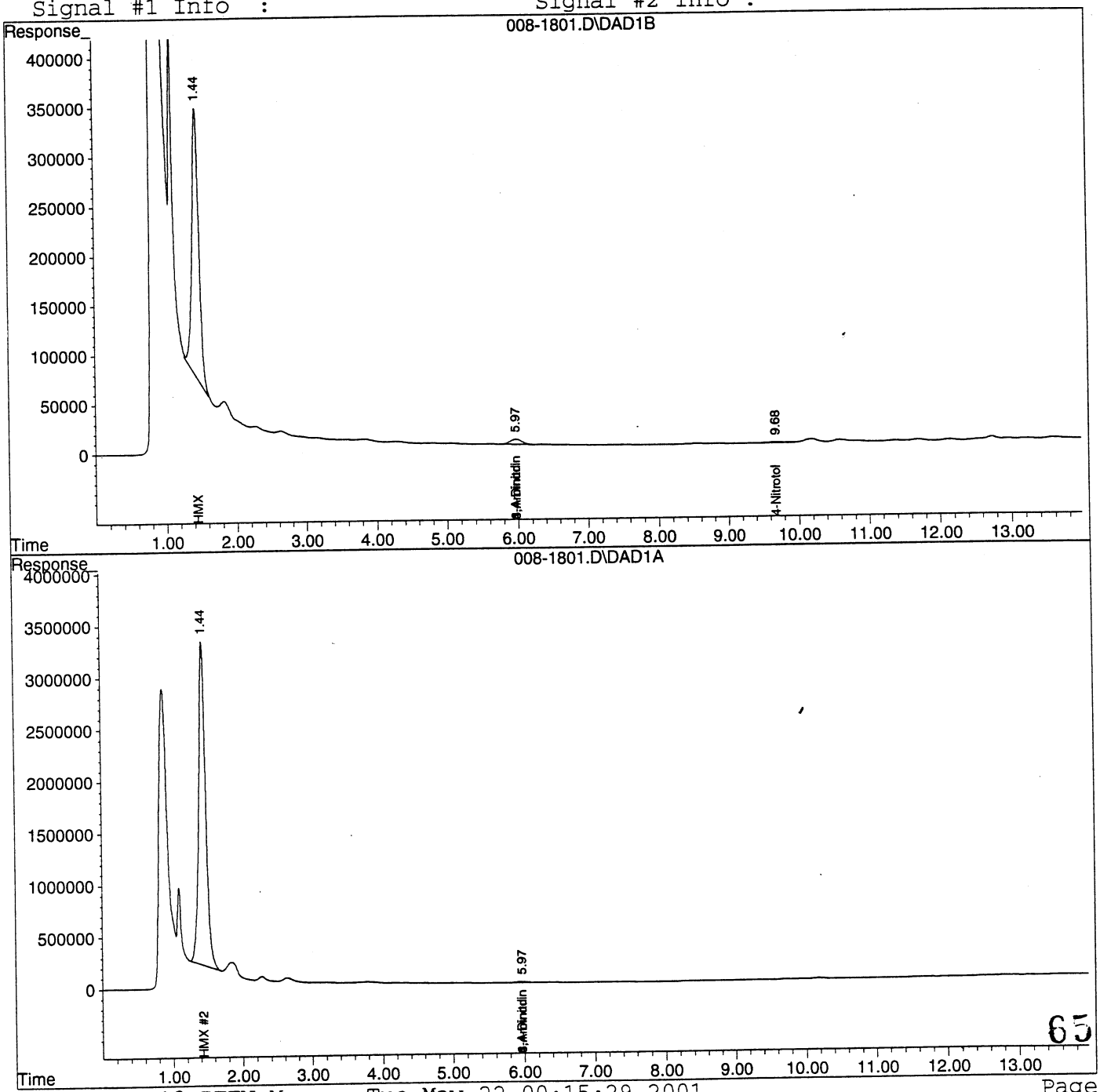

Target + Library Spectrum
*DAD1, 1.437 (2278 mAU, -) of 008-1801.D
*HMX
Norm
2000
1500
1000
500
0
97986-3
HMX
200
225
250
275
300
325
350
375
nm

Quantitation Report

Signal #1 : F:\HPCHEM\2\DATA\EX052101\008-1801.D\DAD1B.CH Vial: 8
Signal #2 : F:\HPCHEM\2\DATA\EX052101\008-1801.D\DAD1A.CH
Acq On : 18-May-2001, 19:04:39 Operator: JDW
Sample : 97986-3 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:50 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\009-1901.D\DAD1B.CH Vial: 9
Signal #2 : F:\HPCHEM\2\DATA\EX052101\009-1901.D\DAD1A.CH
Acq On : 18-May-2001, 19:23:08 Operator: JDW
Sample : 97986-4 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:50 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml
	System Monitoring Compounds						
0)	SR 3,4-Dinitrotolue	5.96	5.96	714934	1315230	409.176	410.001
	Target Compounds						
1)	HMX	0.00	0.00	0	0	N.D.	N.D.
2)	RDX	0.00	0.00	0	0	N.D.	N.D.
3)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
4)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
5)	Tetryl	0.00	0.00	0	0	N.D.	N.D.
6)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
7)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
8)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
9)	4-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
1)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
2)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
3)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
4)	4-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
5)	3-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
6)	PETN	0.00	0.00	0	0	N.D.	N.D.

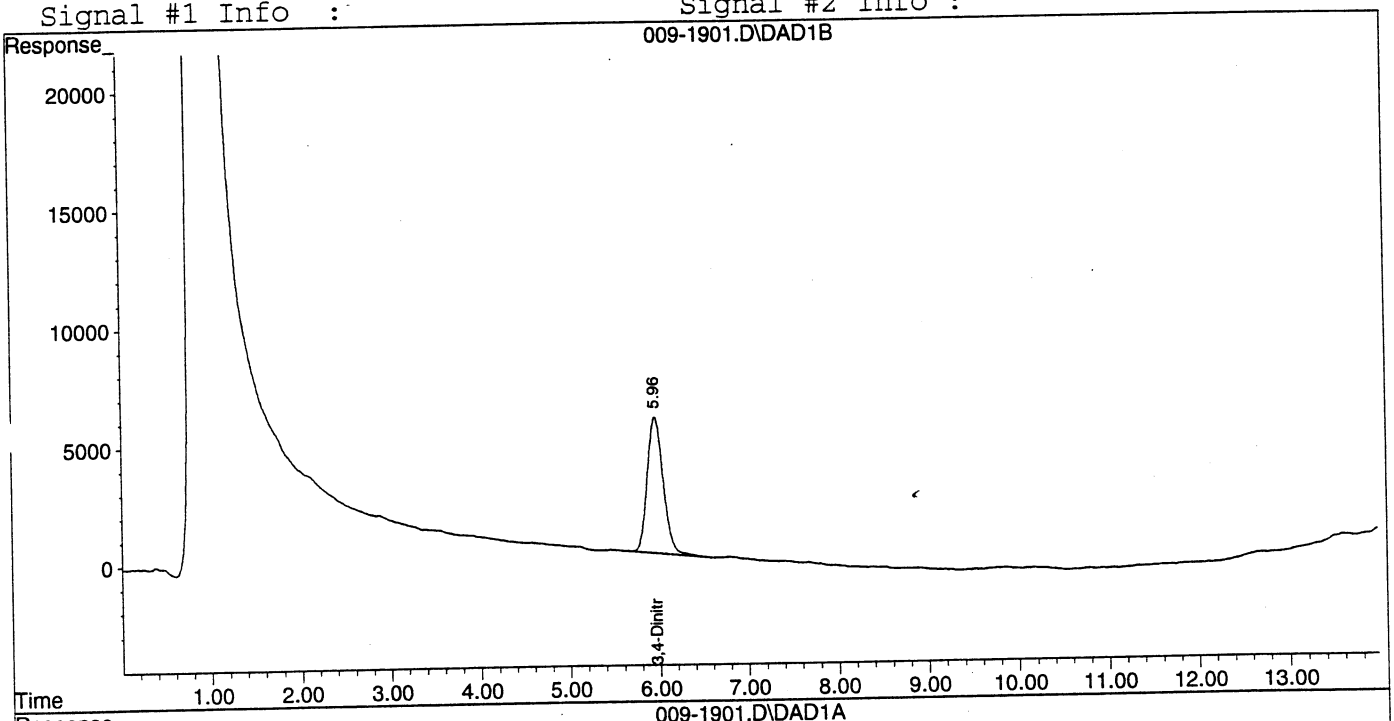
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009-1901.D C18_PETN.M Tue May 22 00:15:31 2001 Page 1

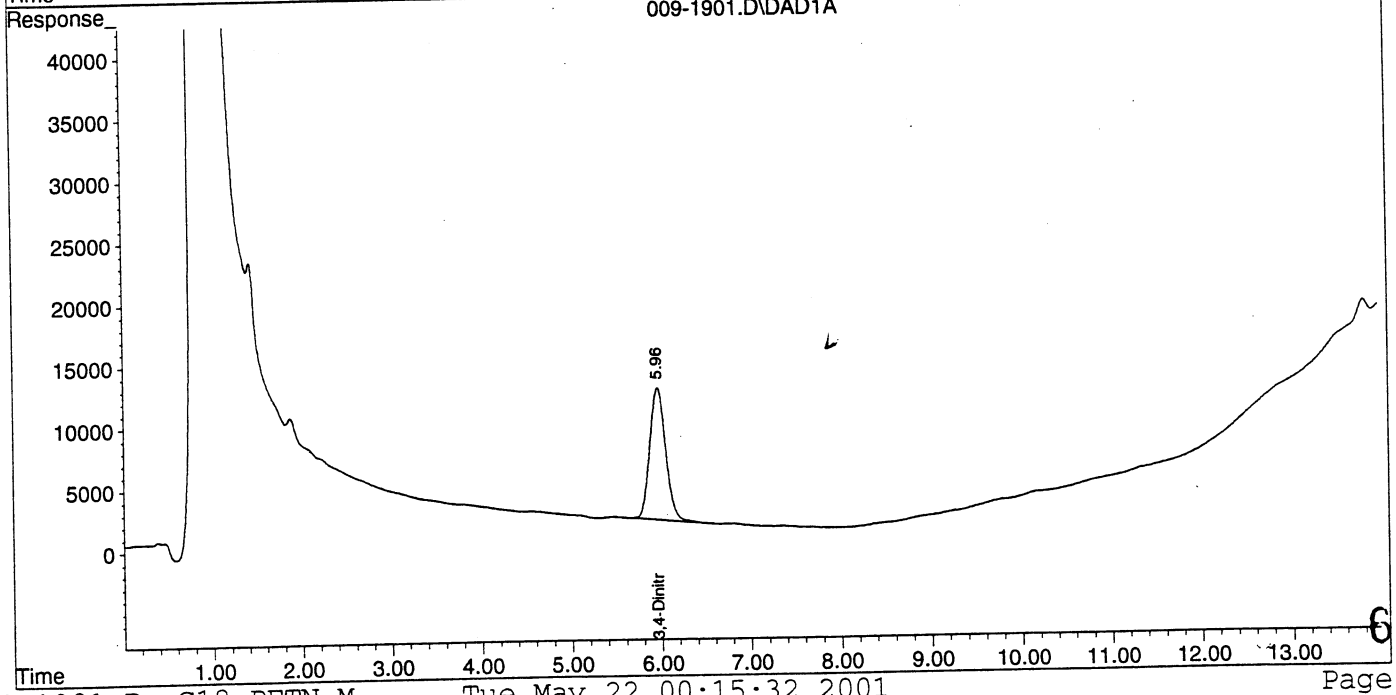
Quantitation Report

Signal #1 : F:\HPCHEM\2\DATA\EX052101\009-1901.D\DAD1B.CH Vial: 9
Signal #2 : F:\HPCHEM\2\DATA\EX052101\009-1901.D\DAD1A.CH
Acq On : 18-May-2001, 19:23:08 Operator: JDW
Sample : 97986-4 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:50 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\010-2001.D\DAD1B.CH Vial: 10
Signal #2 : F:\HPCHEM\2\DATA\EX052101\010-2001.D\DAD1A.CH
Acq On : 18-May-2001, 19:41:39 Operator: JDW
Sample : 97986-5 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:51 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml
	System Monitoring Compounds						
0)	SR 3,4-Dinitrotolue	5.99	5.99	718531	1324776	411.235	412.977
	Target Compounds						
1)	HMX	0.00	0.00	0	0	N.D.	N.D.
2)	RDX	0.00	0.00	0	0	N.D.	N.D.
3)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
4)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
5)	Tetryl	0.00	0.00	0	0	N.D.	N.D.
6)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
7)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
8)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
9)	4-Aminodinitroto	5.99	5.99	718531	1324776	366.962	329.910
1)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
2)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
3)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
4)	4-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
5)	3-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
6)	PETN	0.00	0.00	0	0	N.D.	N.D.

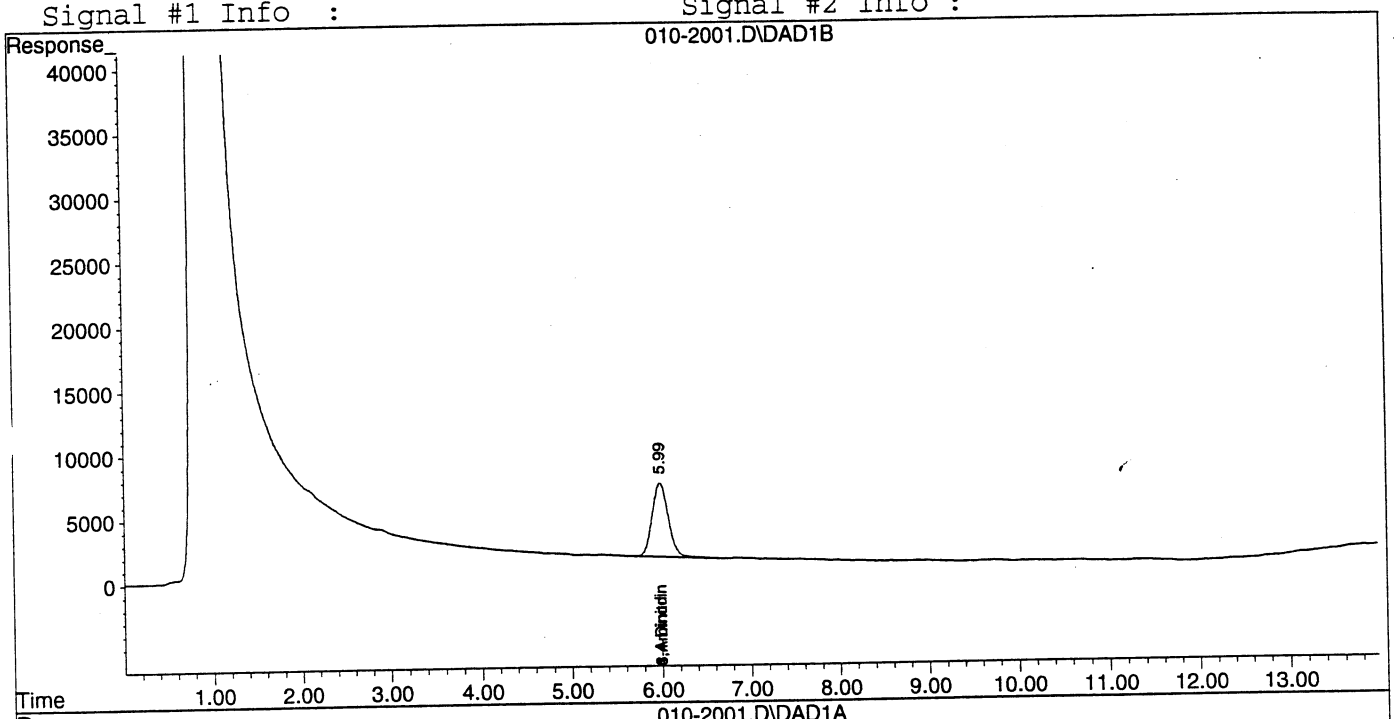
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.
010-2001.D C18_PETN.M Tue May 22 00:15:34 2001 Page 1

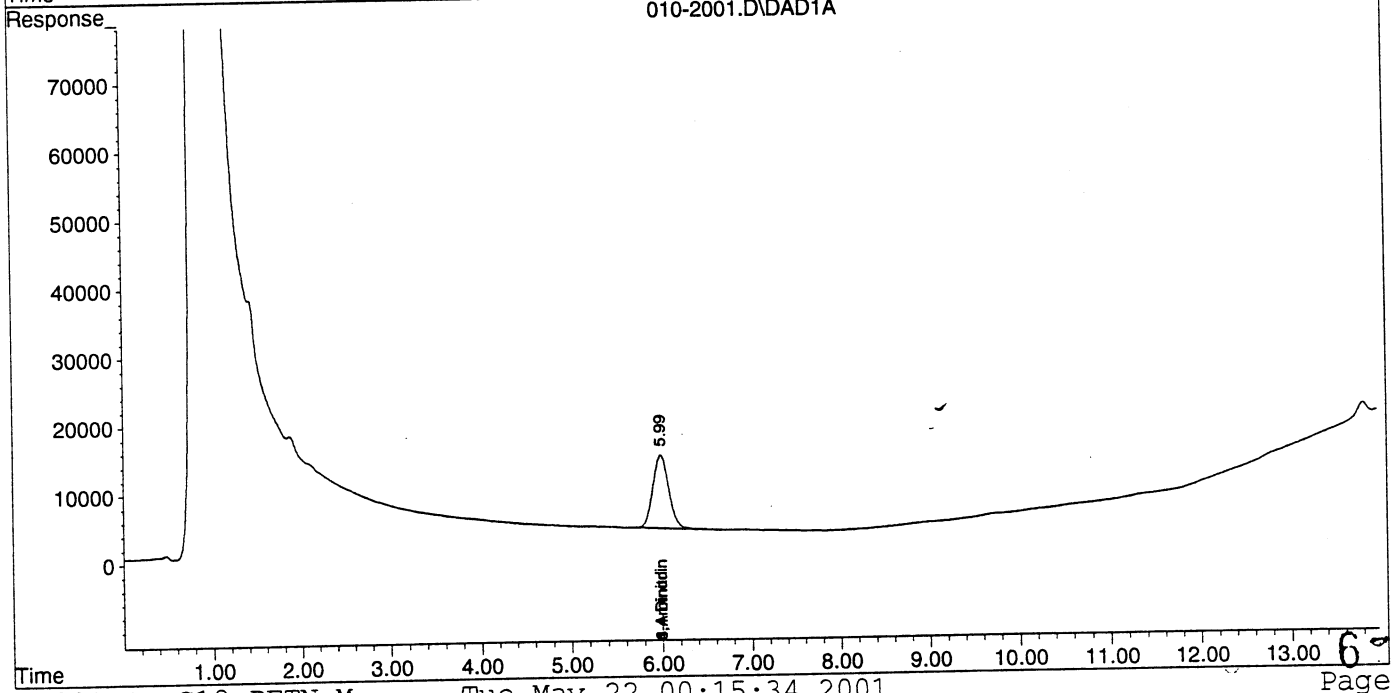
Quantitation Report

Signal #1 : F:\HPCHEM\2\DATA\EX052101\010-2001.D\DAD1B.CH Vial: 10
Signal #2 : F:\HPCHEM\2\DATA\EX052101\010-2001.D\DAD1A.CH
Acq On : 18-May-2001, 19:41:39 Operator: JDW
Sample : 97986-5 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:51 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\013-2601.D\DAD1B.CH Vial: 13
Signal #2 : F:\HPCHEM\2\DATA\EX052101\013-2601.D\DAD1A.CH
Acq On : 18-May-2001, 21:32:40 Operator: JDW
Sample : 97986-6 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:53 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml
	System Monitoring Compounds						
) SR	3,4-Dinitrotolue	5.99	5.99	720259	1330095	412.224	414.635
	Target Compounds						
)	HMX	0.00	0.00	0	0	N.D.	N.D.
)	RDX	0.00	0.00	0	0	N.D.	N.D.
)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
)	Tetryl	0.00	0.00	0	0	N.D.	N.D.
)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
)	4-Aminodinitroto	5.99	5.99	720259	1330095	367.845	331.235
)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
)	4-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
)	3-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
)	PETN	0.00	0.00	0	0	N.D.	N.D.

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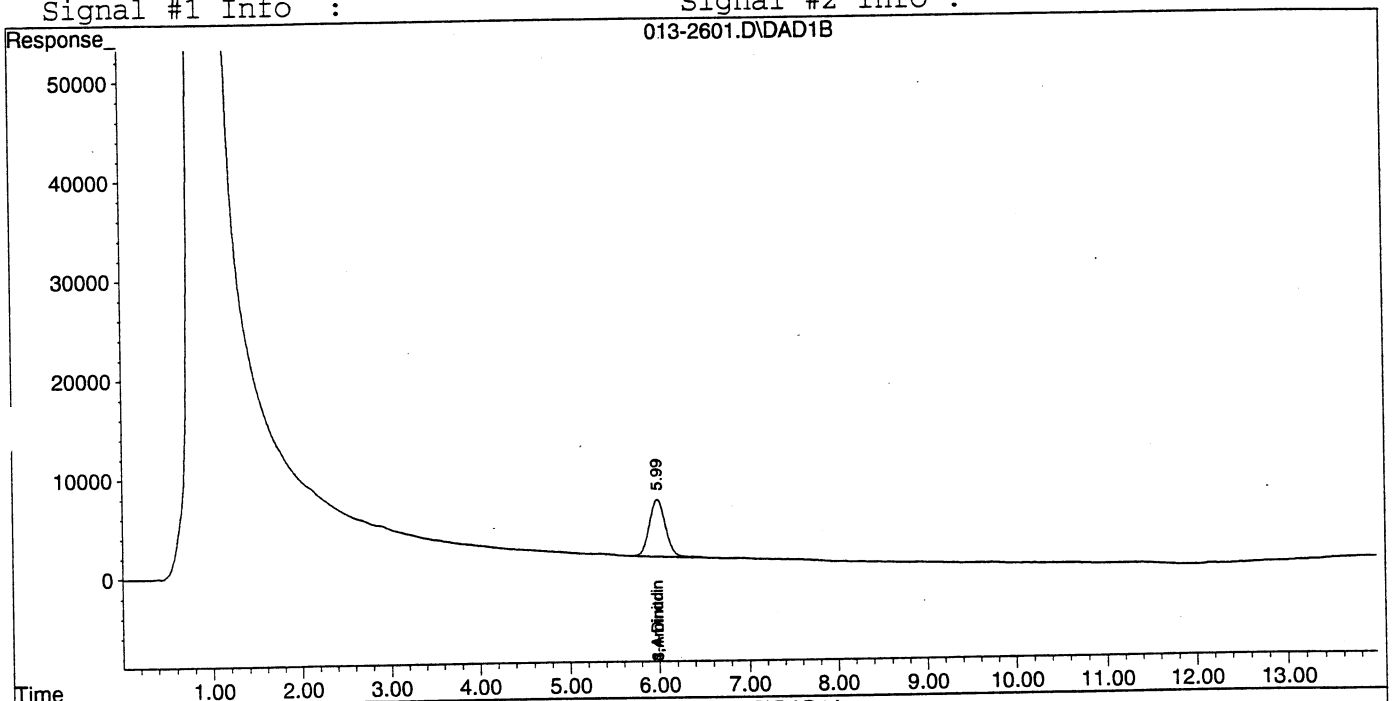
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

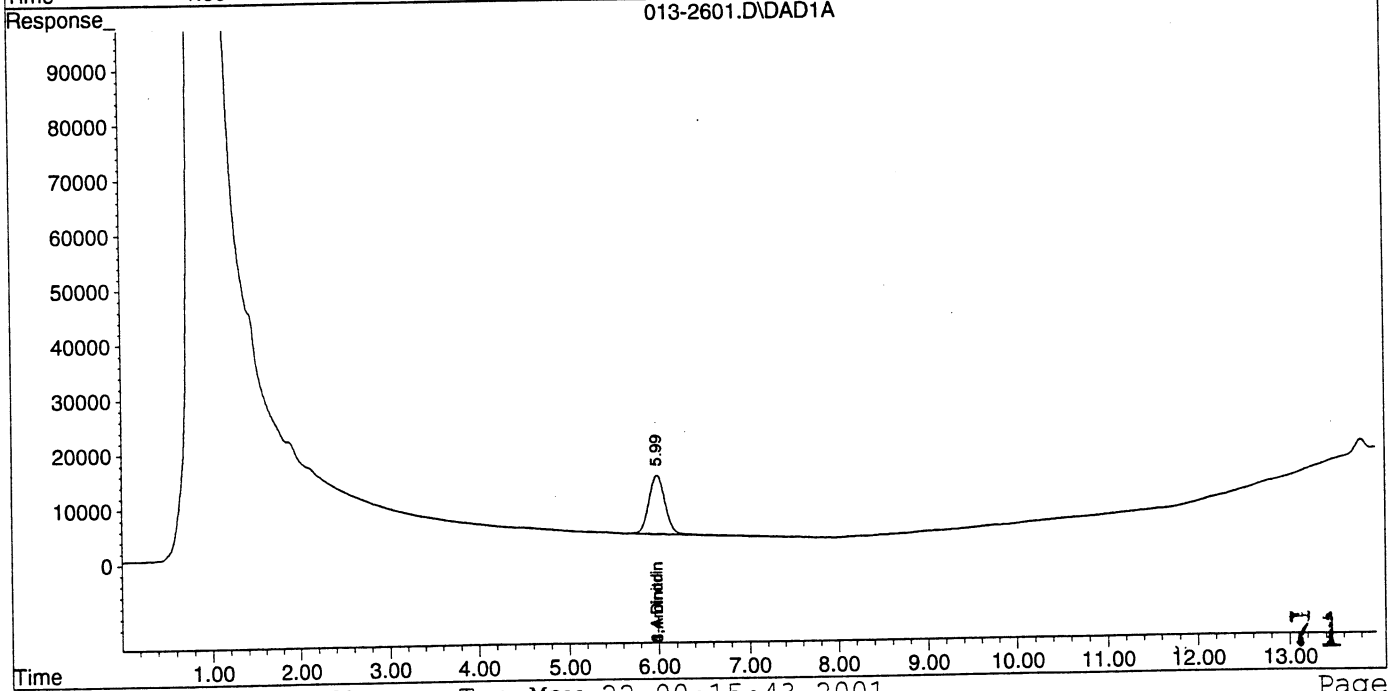
Quantitation Report

Signal #1 : F:\HPCHEM\2\DATA\EX052101\013-2601.D\DAD1B.CH Vial: 13
Signal #2 : F:\HPCHEM\2\DATA\EX052101\013-2601.D\DAD1A.CH
Acq On : 18-May-2001, 21:32:40 Operator: JDW
Sample : 97986-6 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:53 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\014-2701.D\DAD1B.CH Vial: 14
Signal #2 : F:\HPCHEM\2\DATA\EX052101\014-2701.D\DAD1A.CH
Acq On : 18-May-2001, 21:51:10 Operator: JDW
Sample : 97986-7 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:53 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml
	System Monitoring Compounds						
0)	SR 3,4-Dinitrotolue	5.97	5.97	688885	1299679	394.268	405.154
	Target Compounds						
1)	HMX	0.00	0.00	0	0	N.D.	N.D.
2)	RDX	0.00	0.00	0	0	N.D.	N.D.
3)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
4)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
5)	Tetryl	0.00	0.00	0	0	N.D.	N.D.
6)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
7)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
8)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
9)	4-Aminodinitroto	5.97	5.97	688885	1299679	351.822	323.660
1)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
2)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
3)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
4)	4-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
5)	3-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
6)	PETN	0.00	0.00	0	0	N.D.	N.D.

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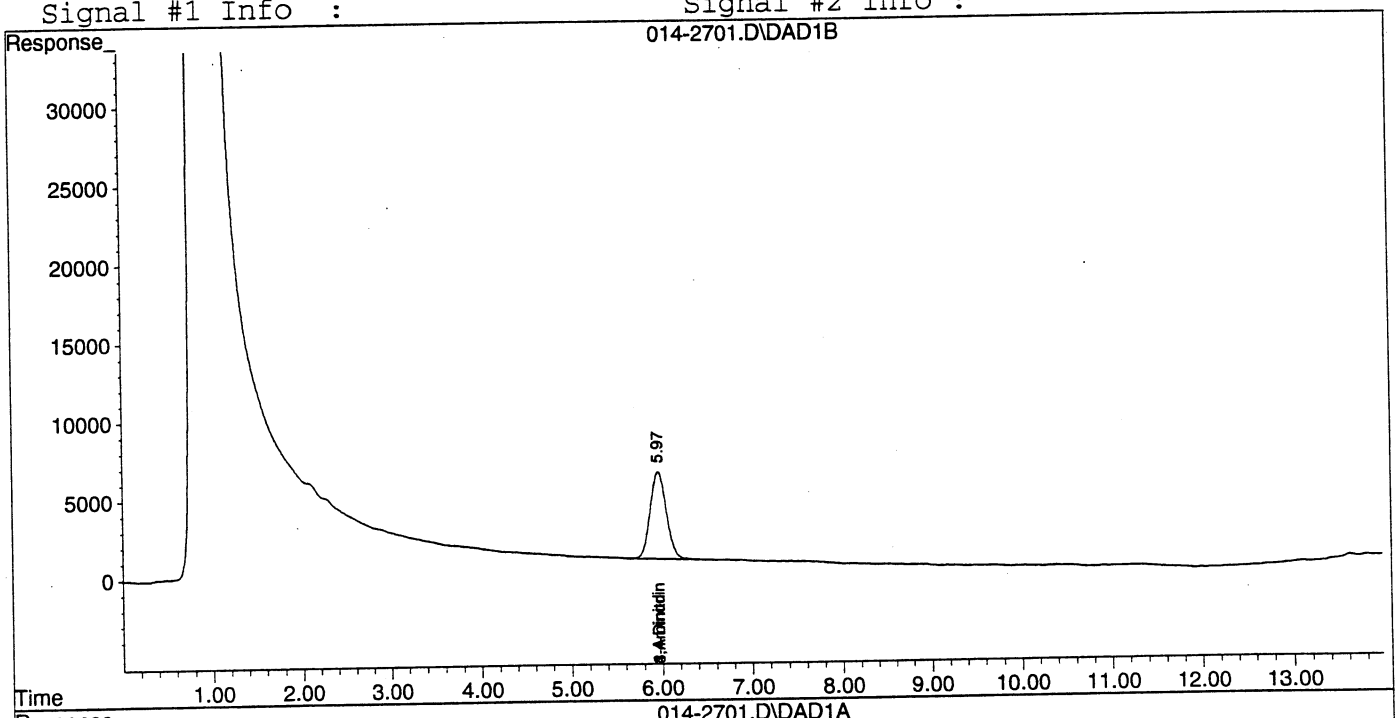
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

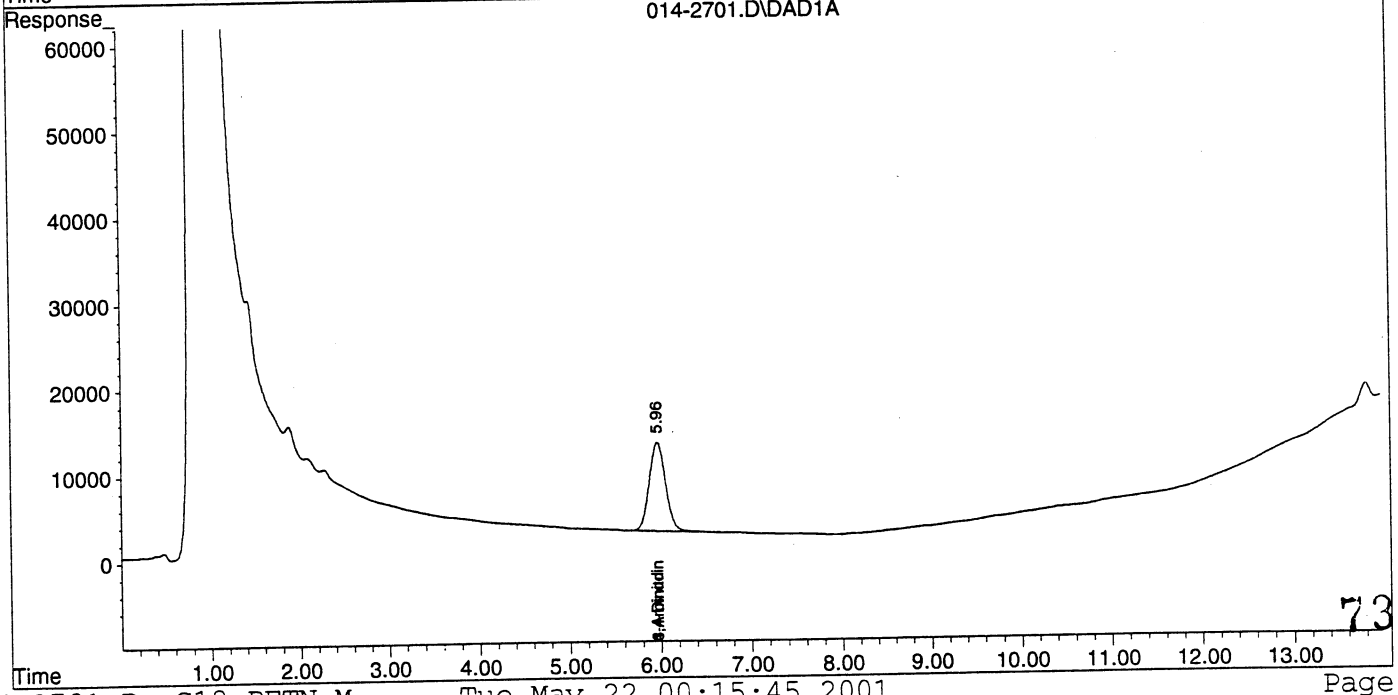
Quantitation Report

Signal #1 : F:\HPCHEM\2\DATA\EX052101\014-2701.D\DAD1B.CH Vial: 14
Signal #2 : F:\HPCHEM\2\DATA\EX052101\014-2701.D\DAD1A.CH
Acq On : 18-May-2001, 21:51:10 Operator: JDW
Sample : 97986-7 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:53 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Data File : F:\HPCHEM\1\DATA\EX052101\013-2601.D
Acq On : 22-May-2001, 07:17:32
Sample : 97986-7
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:10 2001 Quant Results File: C8_PCRIC.RES

Vial: 13
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:09:38 2001
Response via : Initial Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Picric Acid	0.00	0	N.D.	ng/ml
2)	Dinoseb (S)	9.14	2288522	776.267	ng/ml

(f)=RT Delta > 1/2 Window (m)=manual int.
013-2601.D C8_PCRIC.M Tue May 22 09:12:37 2001 Page 1

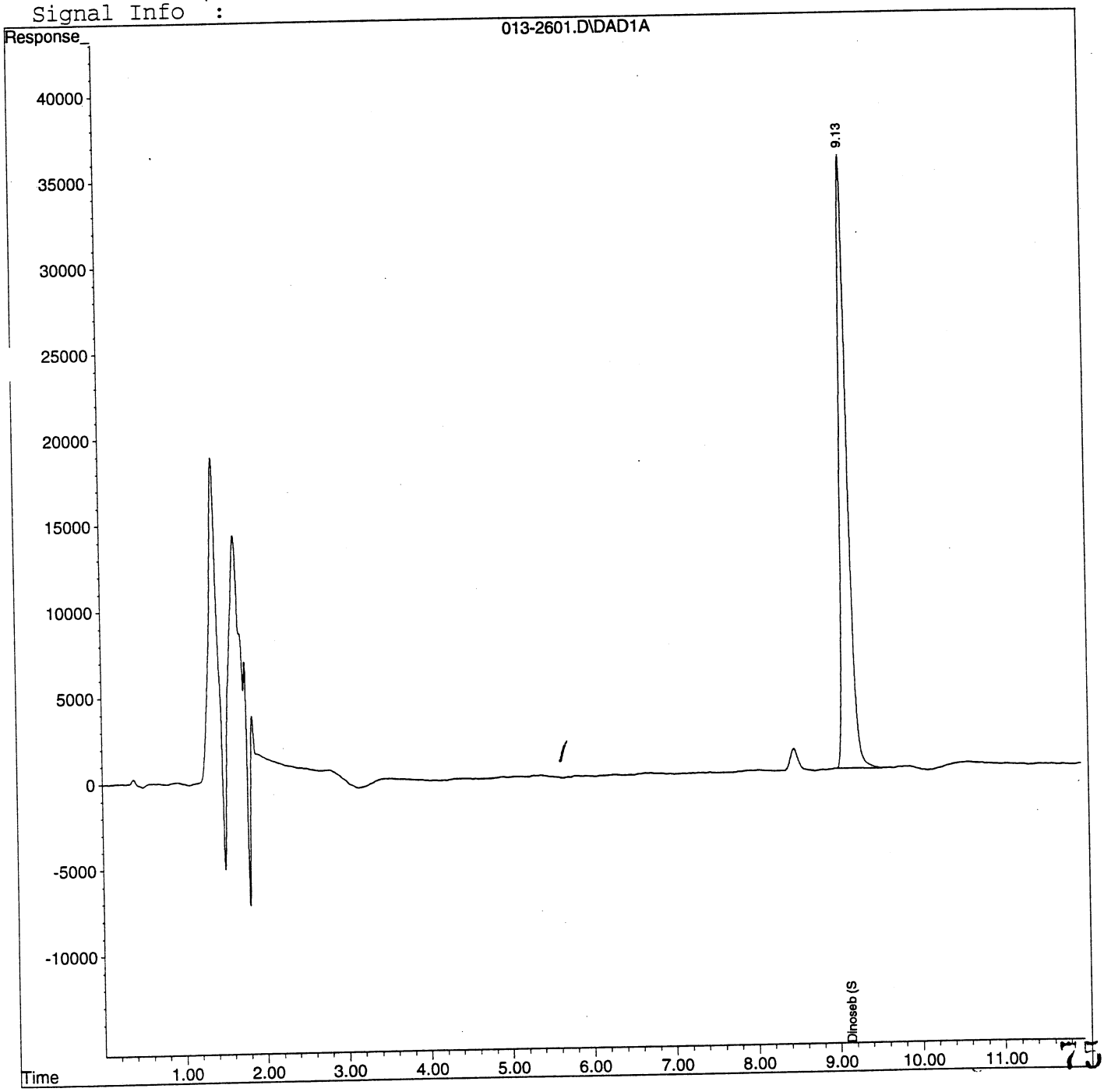
Quantitation Report

Data File : F:\HPCHEM\1\DATA\EX052101\013-2601.D
Acq On : 22-May-2001, 07:17:32
Sample : 97986-7
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:10 2001 Quant Results File: C8_PCRIC.RES

Vial: 13
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:09:38 2001
Response via : Multiple Level Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\015-2801.D\DAD1B.CH Vial: 15
Signal #2 : F:\HPCHEM\2\DATA\EX052101\015-2801.D\DAD1A.CH
Acq On : 18-May-2001, 22:09:38 Operator: JDW
Sample : 97986-8 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:53 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml
	System Monitoring Compounds						
0)	SR 3,4-Dinitrotolue	5.99	5.99	687435	1278911	393.438	398.680
	Target Compounds						
1)	HMX	0.00	0.00	0	0	N.D.	N.D.
2)	RDX	0.00	0.00	0	0	N.D.	N.D.
3)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
4)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
5)	Tetryl	0.00	0.00	0	0	N.D.	N.D.
6)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
7)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
8)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
9)	4-Aminodinitroto	5.99	5.99	687435	1278911	351.081	318.489
10)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
11)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
12)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
13)	4-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
14)	3-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
15)	PETN	0.00	0.00	0	0	N.D.	N.D.

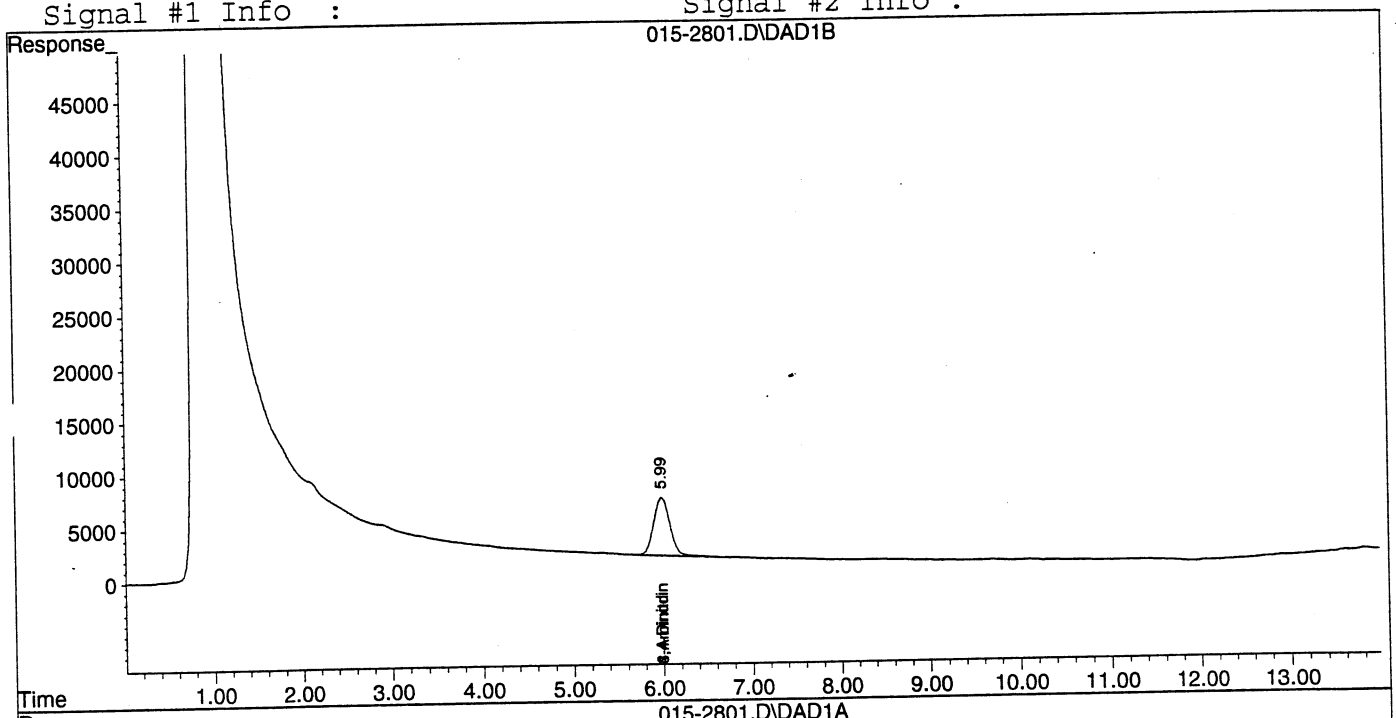
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.
015-2801.D C18_PETN.M Tue May 22 00:15:47 2001 Page 1

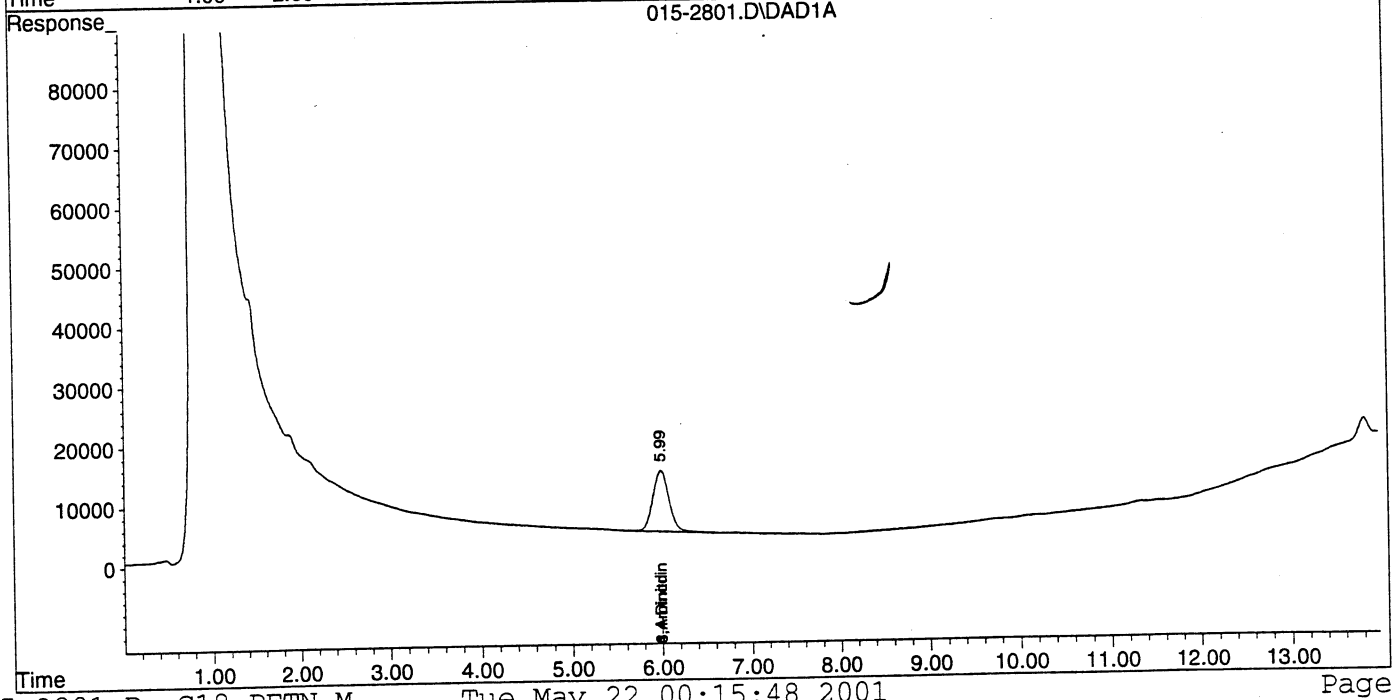
Quantitation Report

Signal #1 : F:\HPCHEM\2\DATA\EX052101\015-2801.D\DAD1B.CH Vial: 15
Signal #2 : F:\HPCHEM\2\DATA\EX052101\015-2801.D\DAD1A.CH
Acq On : 18-May-2001, 22:09:38 Operator: JDW
Sample : 97986-8 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:53 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Data File : F:\HPCHEM\1\DATA\EX052101\014-2701.D
Acq On : 22-May-2001, 07:34:34
Sample : 97986-8
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:10 2001 Quant Results File: C8_PCRIC.RES

Vial: 14
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:09:38 2001
Response via : Initial Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units
Target Compounds				
1) Picric Acid	0.00	0	N.D.	ng/ml
2) Dinoseb (S)	9.14	2182678	740.365	ng/ml

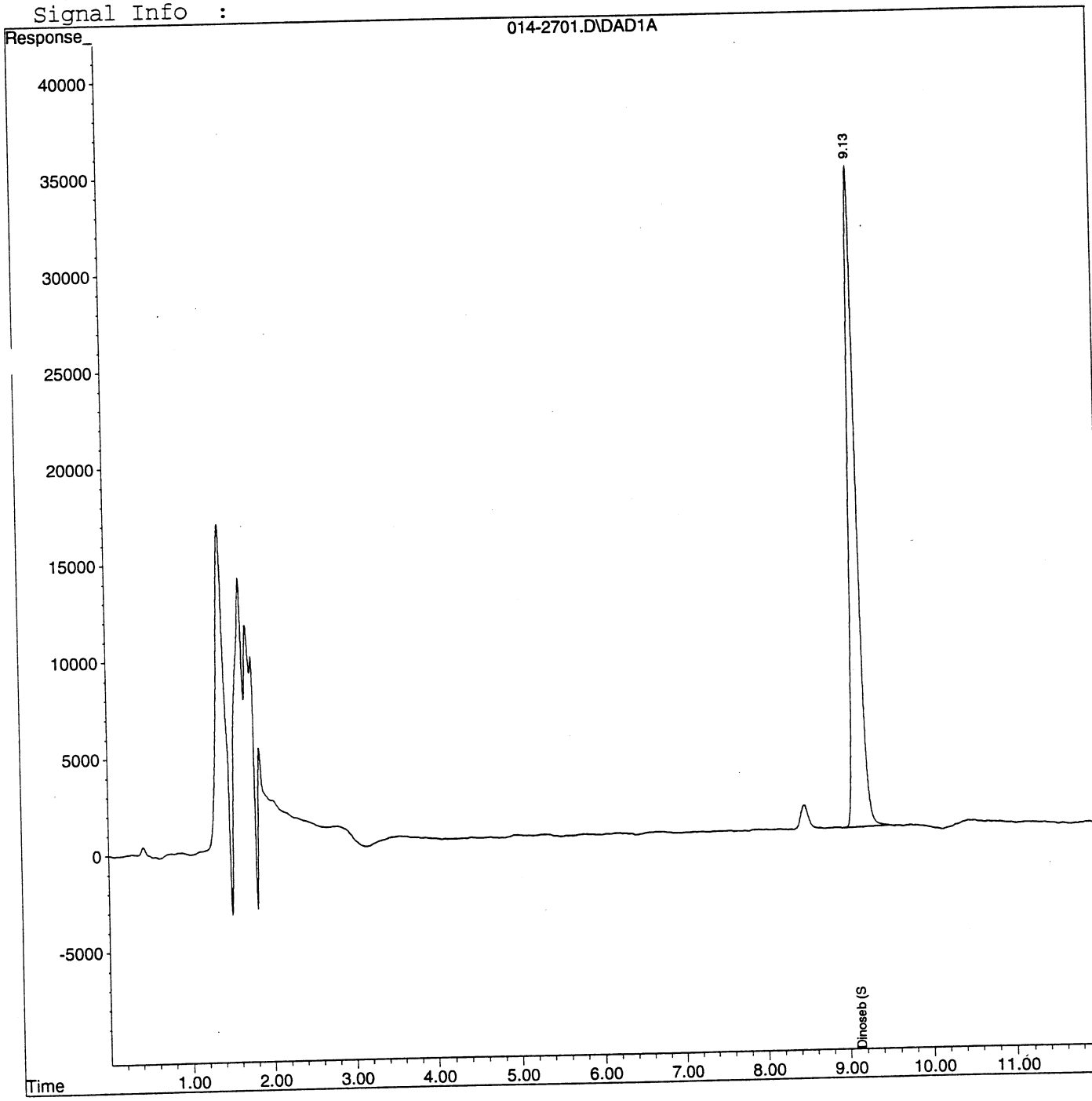
Quantitation Report

Data File : F:\HPCHEM\1\DATA\EX052101\014-2701.D
Acq On : 22-May-2001, 07:34:34
Sample : 97986-8
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:10 2001 Quant Results File: C8_PCRIC.RES

Vial: 14
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:09:38 2001
Response via : Multiple Level Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :



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Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\016-2901.D\DAD1B.CH Vial: 16
Signal #2 : F:\HPCHEM\2\DATA\EX052101\016-2901.D\DAD1A.CH
Acq On : 18-May-2001, 22:28:07 Operator: JDW
Sample : 97986-9 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:53 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml
	System Monitoring Compounds						
0)	SR 3,4-Dinitrotolue	6.00	6.00	656850	1245187	375.933	388.167
	Target Compounds						
1)	HMX	0.00	0.00	0	0	N.D.	N.D.
2)	RDX	0.00	0.00	0	0	N.D.	N.D.
3)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
4)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
5)	Tetryl	0.00	0.00	0	0	N.D.	N.D.
6)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
7)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
8)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
9)	4-Aminodinitroto	6.00	6.00	656850	1245187	335.461	310.090
1)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
2)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
3)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
4)	4-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
5)	3-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
6)	PETN	0.00	0.00	0	0	N.D.	N.D.

80

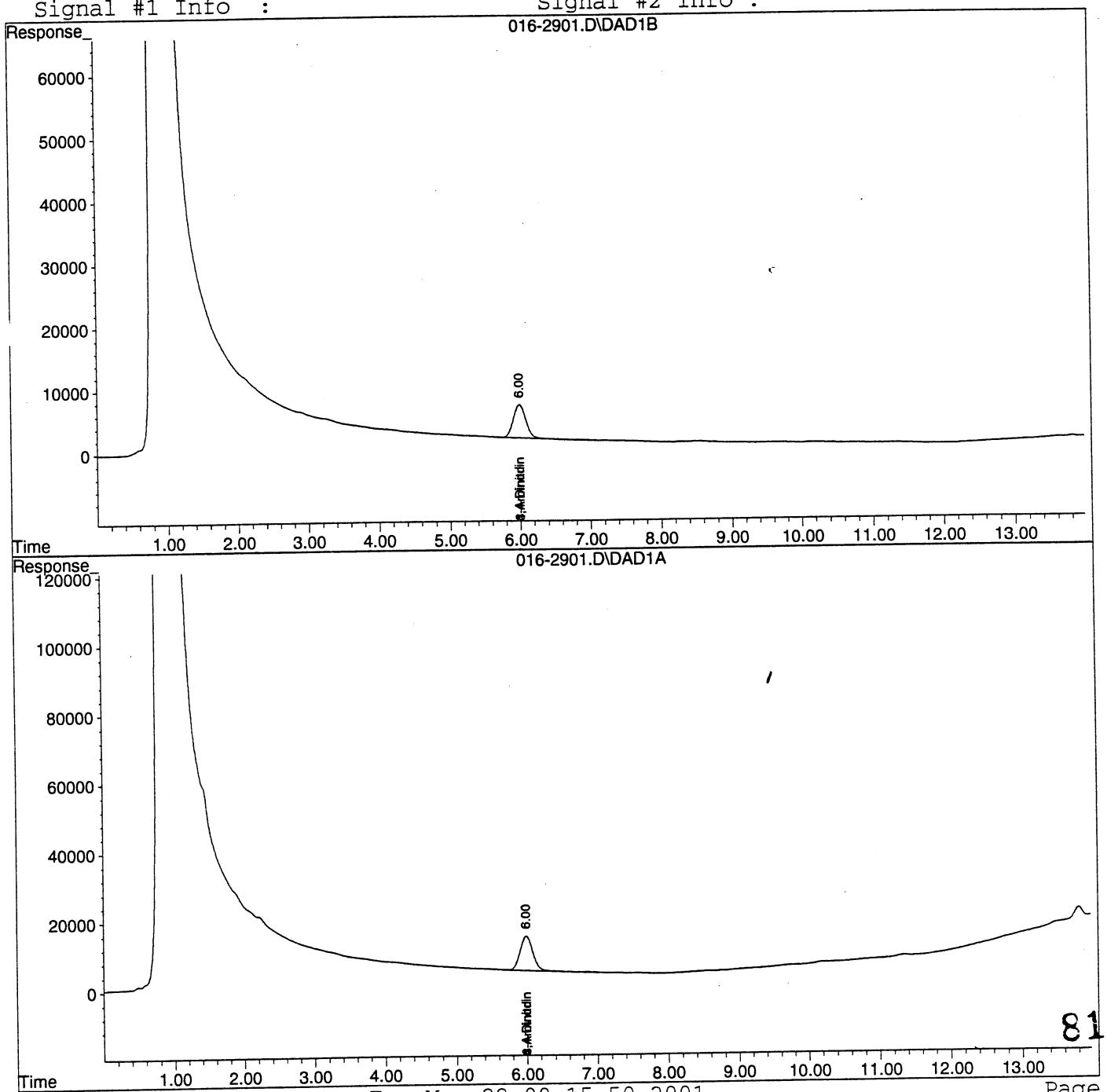
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report

Signal #1 : F:\HPCHEM\2\DATA\EX052101\016-2901.D\DAD1B.CH Vial: 16
Signal #2 : F:\HPCHEM\2\DATA\EX052101\016-2901.D\DAD1A.CH
Acq On : 18-May-2001, 22:28:07 Operator: JDW
Sample : 97986-9 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 21 22:53 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



81

Quantitation Report (Not Reviewed)

Data File : F:\HPCHEM\1\DATA\EX052101\015-2801.D
Acq On : 22-May-2001, 07:51:38
Sample : 97986-9
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:10 2001 Quant Results File: C8_PCRIC.RES

Vial: 15
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:09:38 2001
Response via : Initial Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units
Target Compounds			
1) Picric Acid	0.00	0	N.D. ng/ml
2) Dinoseb (S)	9.13	2440430	827.794 ng/ml

81.1

(f)=RT Delta > 1/2 Window
(m)=manual int.

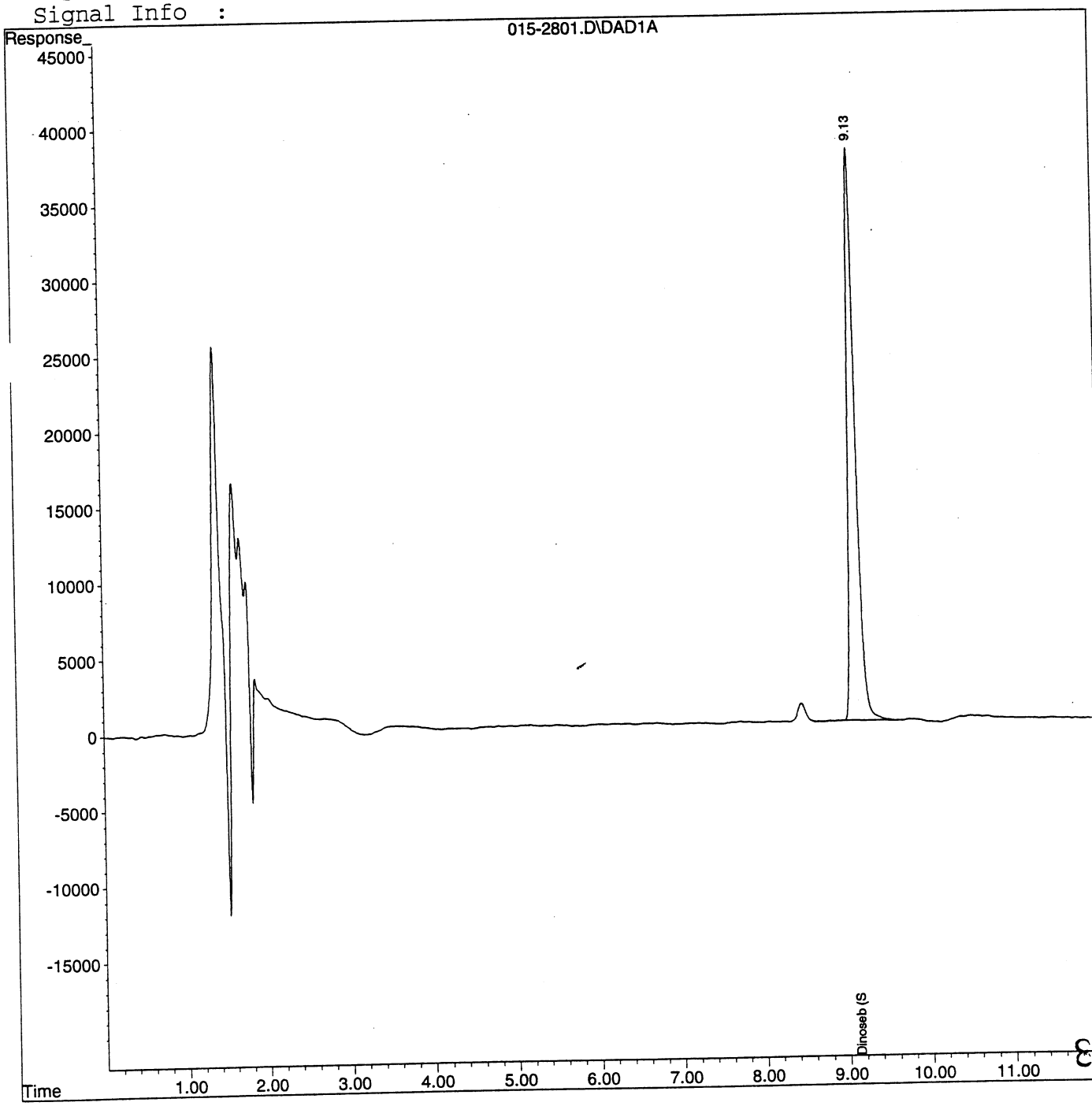
Quantitation Report

Data File : F:\HPCHEM\1\DATA\EX052101\015-2801.D
Acq On : 22-May-2001, 07:51:38
Sample : 97986-9
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:10 2001 Quant Results File: C8_PCRIC.RES

Vial: 15
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:09:38 2001
Response via : Multiple Level Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\017-3001.D\DAD1B.CH Vial: 17
Signal #2 : F:\HPCHEM\2\DATA\EX052101\017-3001.D\DAD1A.CH
Acq On : 18-May-2001, 22:46:42 Operator: JDW
Sample : 97986-10 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 22 0:13 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml
	System Monitoring Compounds						
0)	SR 3,4-Dinitrotolue	5.99	5.99	671363	1228586	384.239	382.991
	Target Compounds						
1)	HMX	0.00	0.00	0	0	N.D.	N.D.
2)	RDX	0.00	0.00	0	0	N.D.	N.D.
3)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
4)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
5)	Tetryl	0.00	0.00	0	0	N.D.	N.D.
6)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
7)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
8)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
9)	4-Aminodinitroto	5.99	5.99	671363	1228586	342.873	305.956
.1)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
.2)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
.3)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
.4)	4-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
.5)	3-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
.6)	PETN	0.00	0.00	0	0	N.D.	N.D.

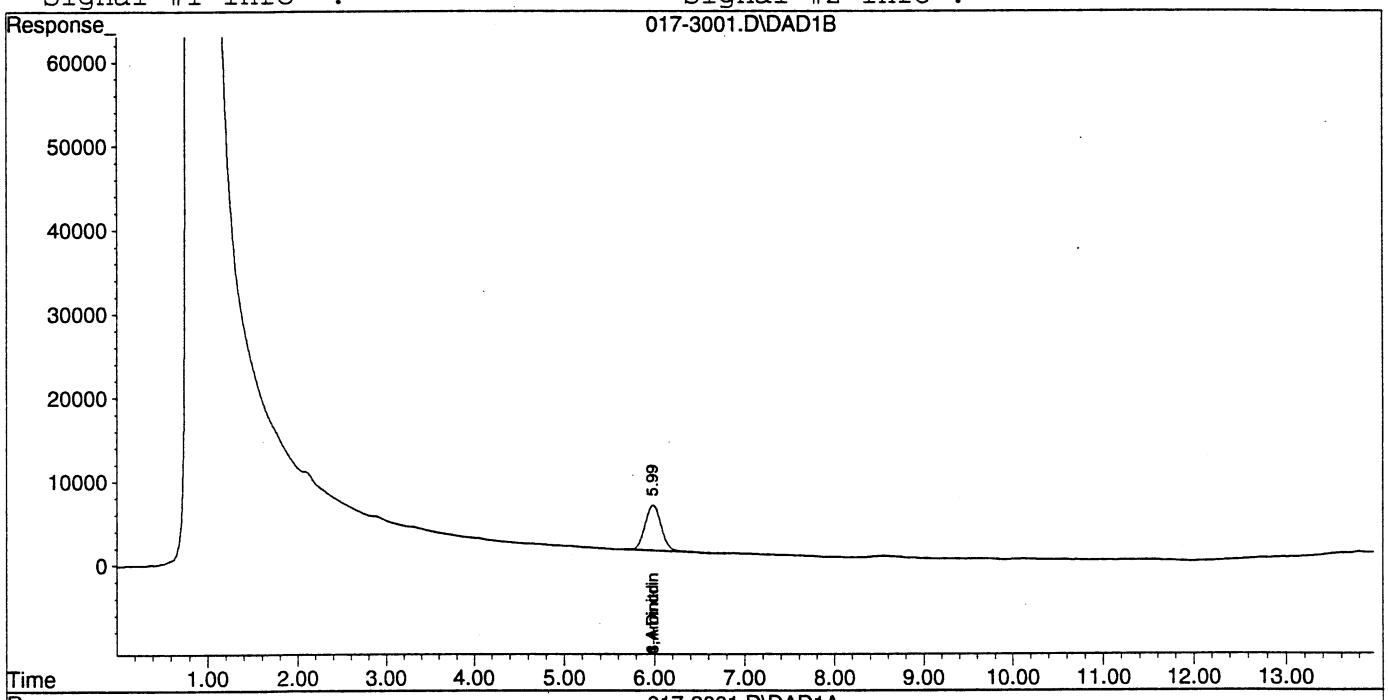
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

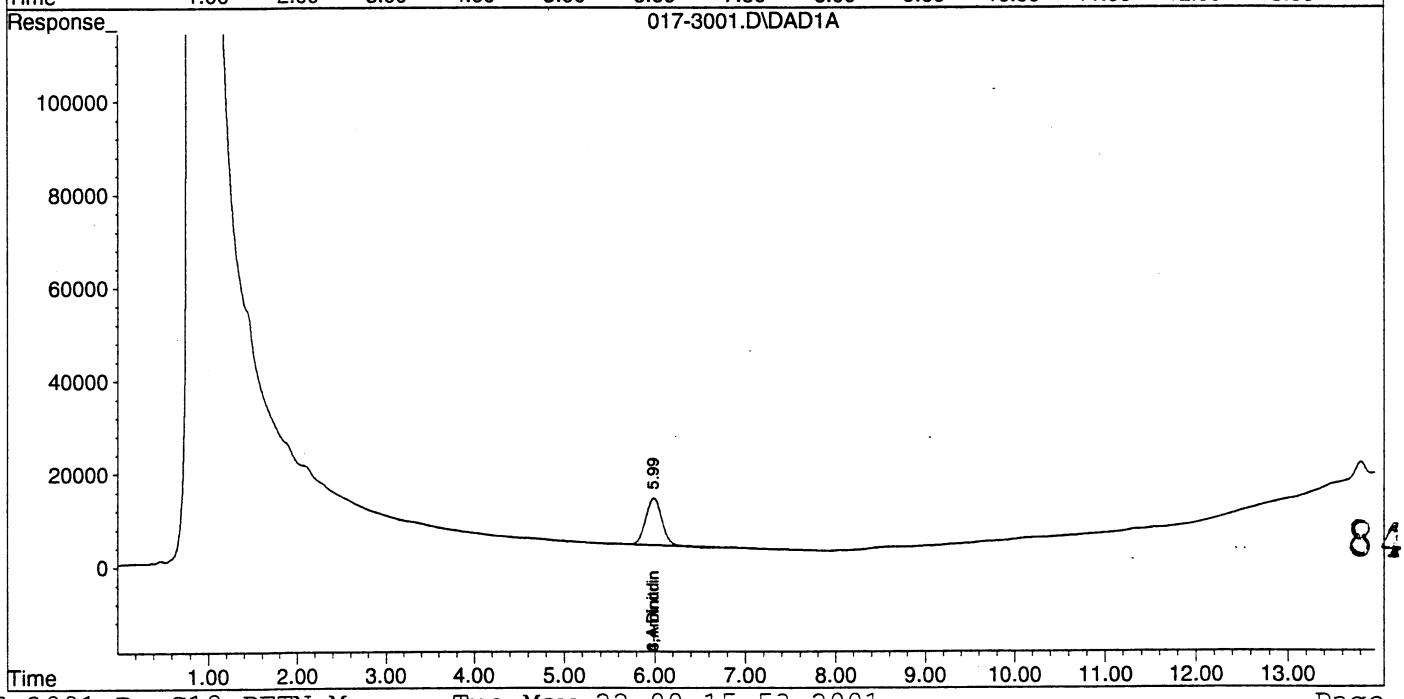
Quantitation Report

Signal #1 : F:\HPCHEM\2\DATA\EX052101\017-3001.D\DAD1B.CH Vial: 17
Signal #2 : F:\HPCHEM\2\DATA\EX052101\017-3001.D\DAD1A.CH
Acq On : 18-May-2001, 22:46:42 Operator: JDW
Sample : 97986-10 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 22 0:13 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





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Quantitation Report (Not Reviewed)

Data File : F:\HPCHEM\1\DATA\EX052101\016-2901.D
Acq On : 22-May-2001, 08:08:42
Sample : 97986-10
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:11 2001 Quant Results File: C8_PCRIC.RES

Vial: 16
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:09:38 2001
Response via : Initial Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Picric Acid	0.00	0	N.D.	ng/ml
2)	Dinoseb (S)	9.12f	2393515	811.880	ng/ml

(f)=RT Delta > 1/2 Window (m)=manual int.
016-2901.D C8_PCRIC.M Tue May 22 09:12:41 2001 Page 1

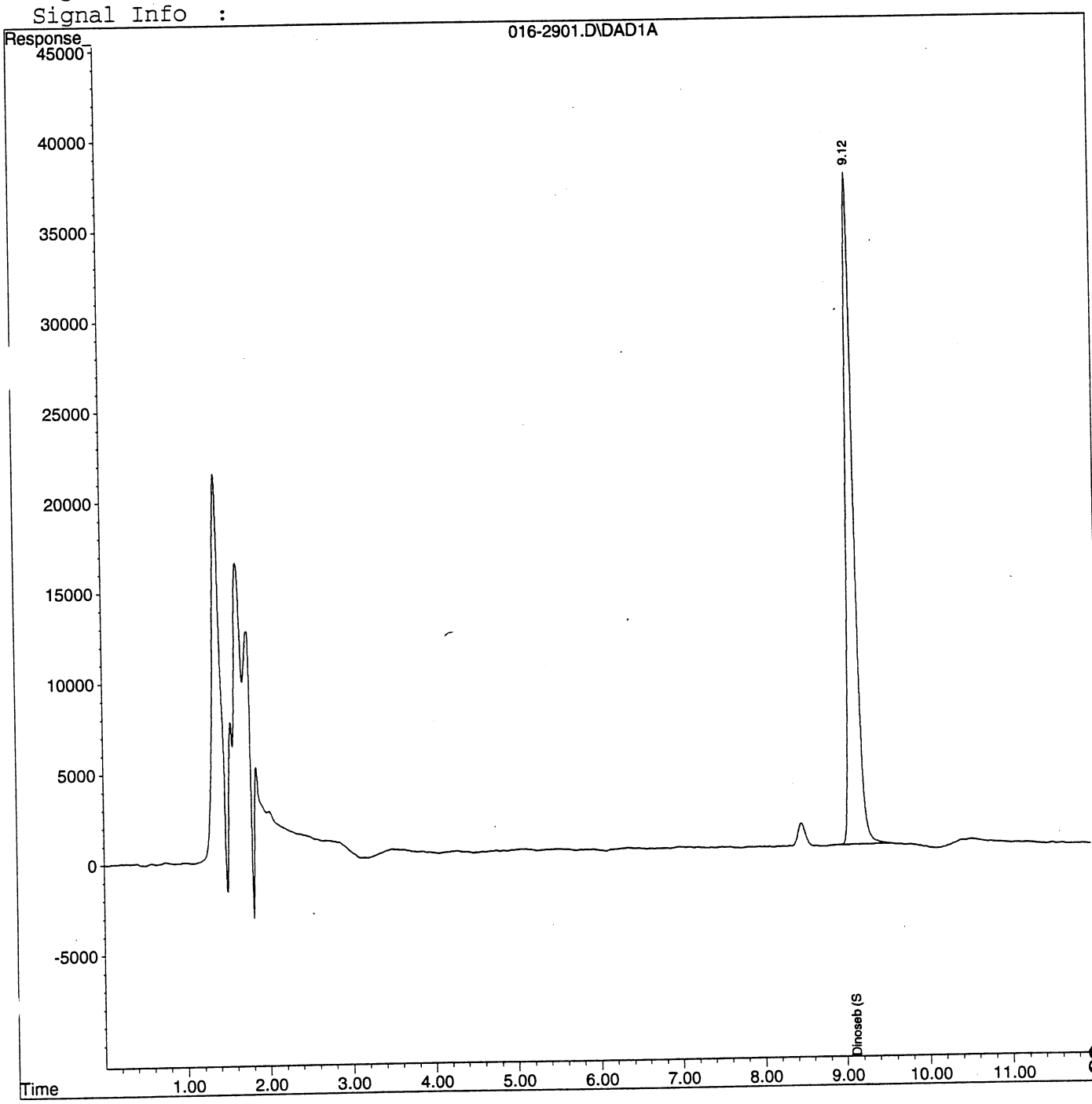
Quantitation Report

Data File : F:\HPCHEM\1\DATA\EX052101\016-2901.D
Acq On : 22-May-2001, 08:08:42
Sample : 97986-10
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:11 2001 Quant Results File: C8_PCRIC.RES

Vial: 16
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:09:38 2001
Response via : Multiple Level Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\018-3101.D\DAD1B.CH Vial: 18
Signal #2 : F:\HPCHEM\2\DATA\EX052101\018-3101.D\DAD1A.CH
Acq On : 18-May-2001 23:05:11 Operator: JDW
Sample : 97986-11 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 22 0:13 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml
	System Monitoring Compounds						
10)	SR 3,4-Dinitrotolue	6.00	6.00	684986	1291444	392.036	402.586
	Target Compounds						
1)	HMX	0.00	0.00	0	0	N.D.	N.D.
2)	RDX	0.00	0.00	0	0	N.D.	N.D.
3)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
4)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
5)	Tetryl	0.00	0.00	0	0	N.D.	N.D.
6)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
7)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
8)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
9)	4-Aminodinitroto	6.00	6.00	684986	1291444	349.830	321.610
11)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
12)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
13)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
14)	4-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
15)	3-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
16)	PETN	0.00	0.00	0	0	N.D.	N.D.

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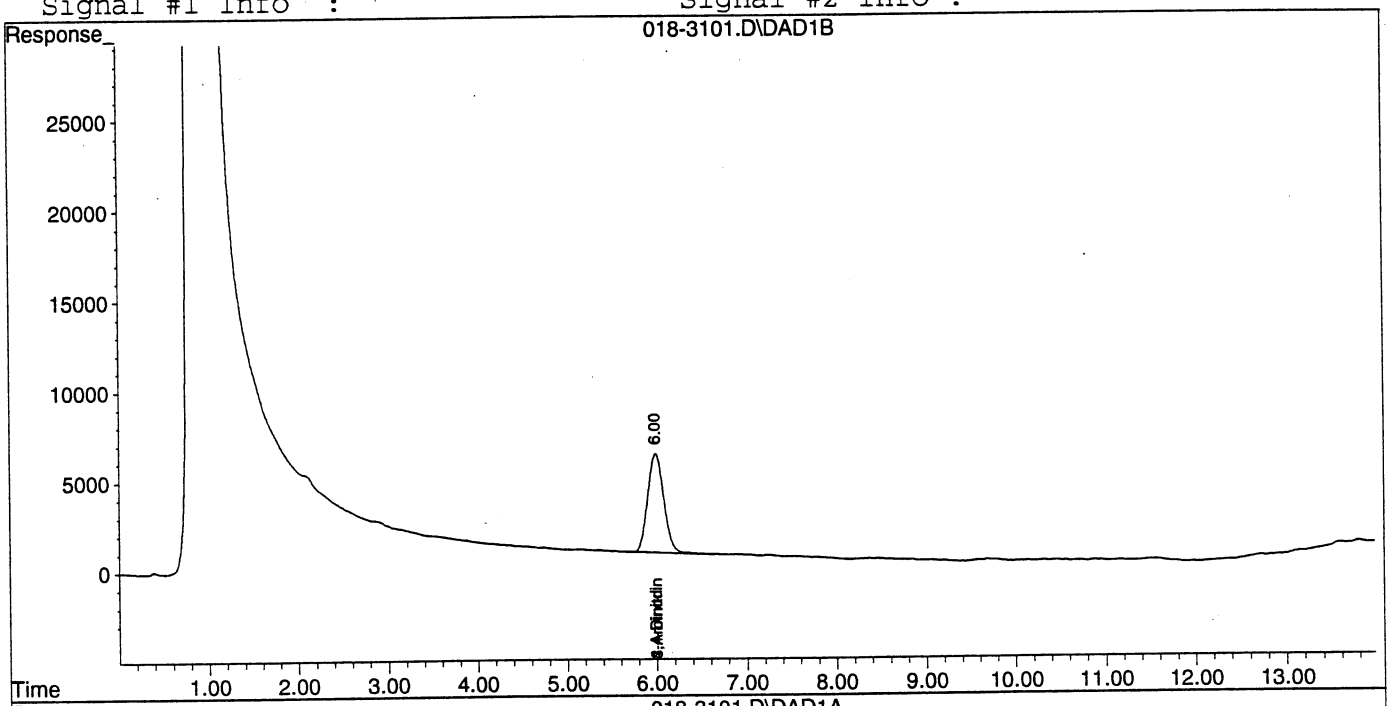
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

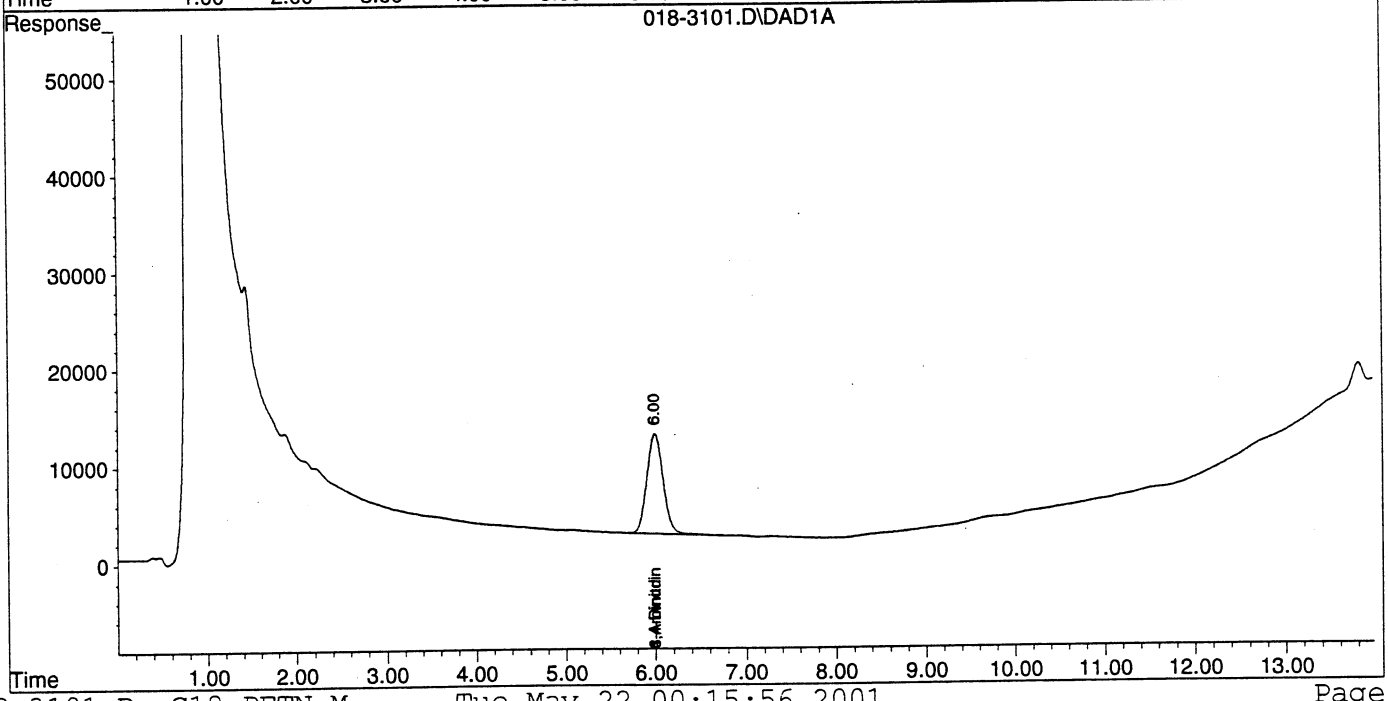
Quantitation Report

Signal #1 : F:\HPCHEM\2\DATA\EX052101\018-3101.D\DAD1B.CH Vial: 18
Signal #2 : F:\HPCHEM\2\DATA\EX052101\018-3101.D\DAD1A.CH
Acq On : 18-May-2001, 23:05:11 Operator: JDW
Sample : 97986-11 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 22 0:13 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Data File : F:\HPCHEM\1\DATA\EX052101\017-3001.D
Acq On : 22-May-2001, 08:25:45
Sample : 97986-11
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:11 2001 Quant Results File: C8_PCRIC.RES

Vial: 17
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:11:39 2001
Response via : Initial Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units
Target Compounds				
1) Picric Acid	0.00	0	N.D.	ng/ml
2) Dinoseb (S)	9.12	2337974	793.041	ng/ml

83

(f)=RT Delta > 1/2 Window
(m)=manual int.

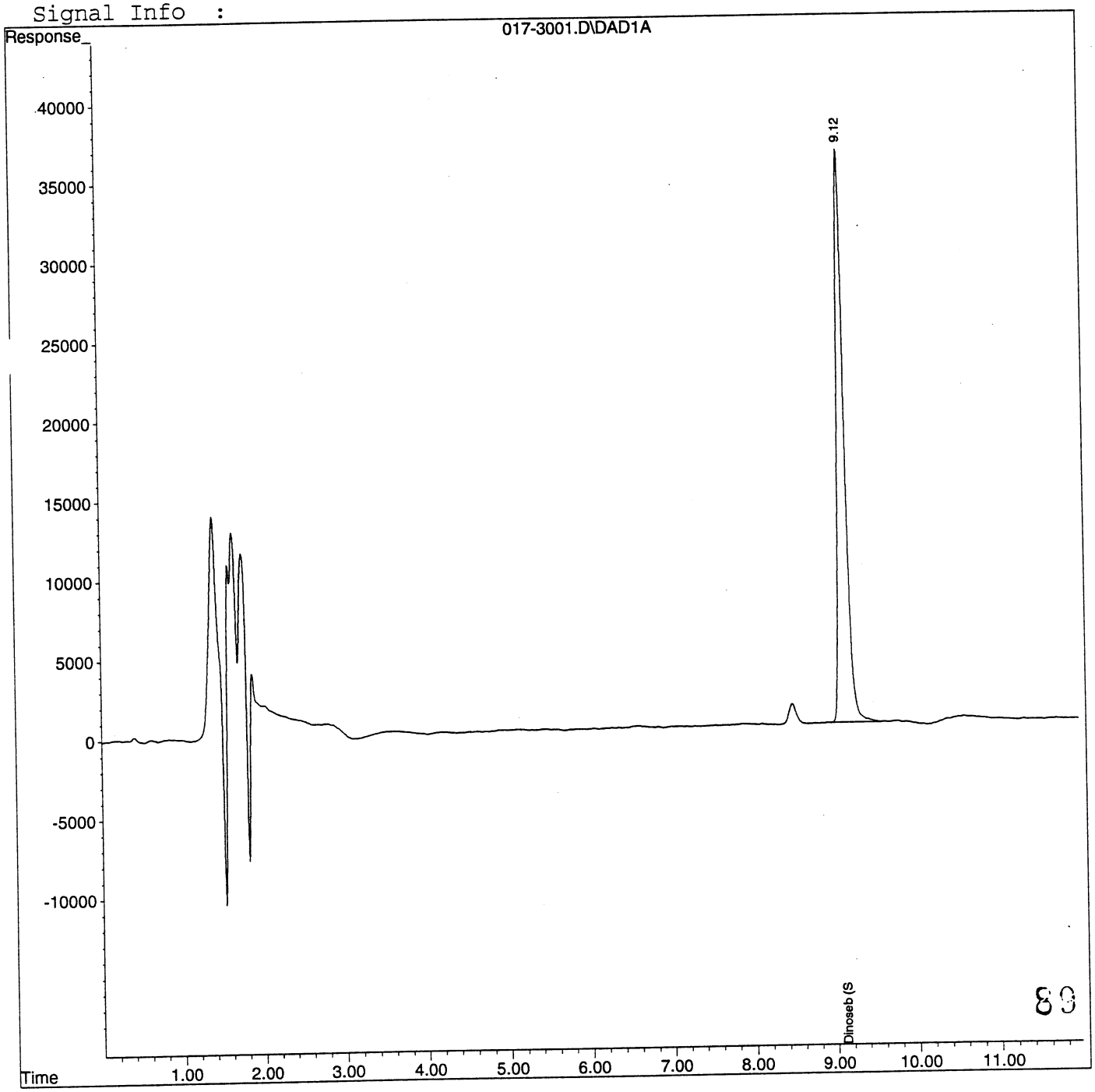
Quantitation Report

Data File : F:\HPCHEM\1\DATA\EX052101\017-3001.D
Acq On : 22-May-2001, 08:25:45
Sample : 97986-11
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:11 2001 Quant Results File: C8_PCRIC.RES

Vial: 17
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:11:39 2001
Response via : Multiple Level Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Not Reviewed)

Signal #1 : F:\HPCHEM\2\DATA\EX052101\021-3401.D\DAD1B.CH Vial: 21
Signal #2 : F:\HPCHEM\2\DATA\EX052101\021-3401.D\DAD1A.CH
Acq On : 19-May-2001, 00:00:50 Operator: JDW
Sample : 97986-12 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 22 8:46 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Initial Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/ml	ng/ml
	System Monitoring Compounds						
0)	SR 3,4-Dinitrotolue	6.00	6.00	665476	1231531	380.870	383.909
	Target Compounds						
1)	HMX	0.00	0.00	0	0	N.D.	N.D.
2)	RDX	0.00	0.00	0	0	N.D.	N.D.
3)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
4)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
5)	Tetryl	0.00	0.00	0	0	N.D.	N.D.
6)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
7)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
8)	2-Aminodinitroto	0.00	0.00	0	0	N.D.	N.D.
9)	4-Aminodinitroto	6.00	6.00	665476	1231531	339.866	306.689
10)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
11)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
12)	2-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
13)	4-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
14)	3-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
15)	PETN	0.00	0.00	0	0	N.D.	N.D.

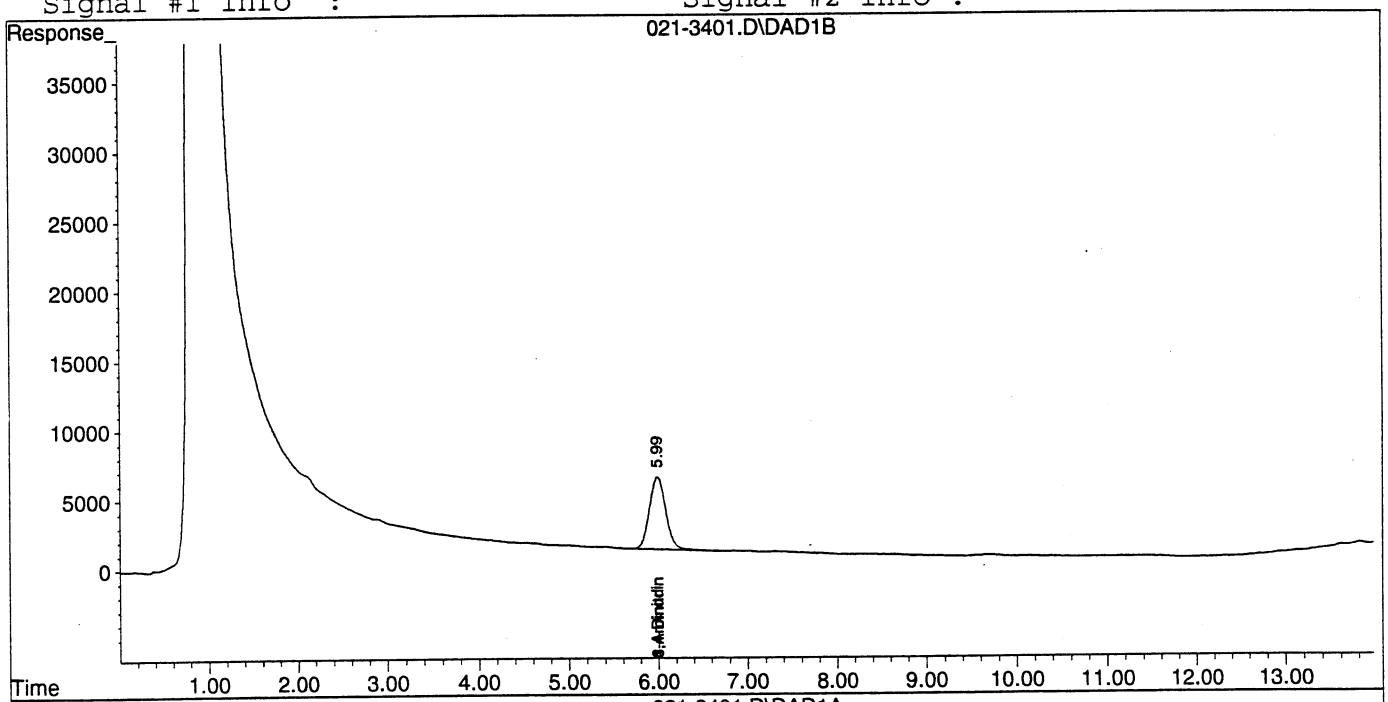
90

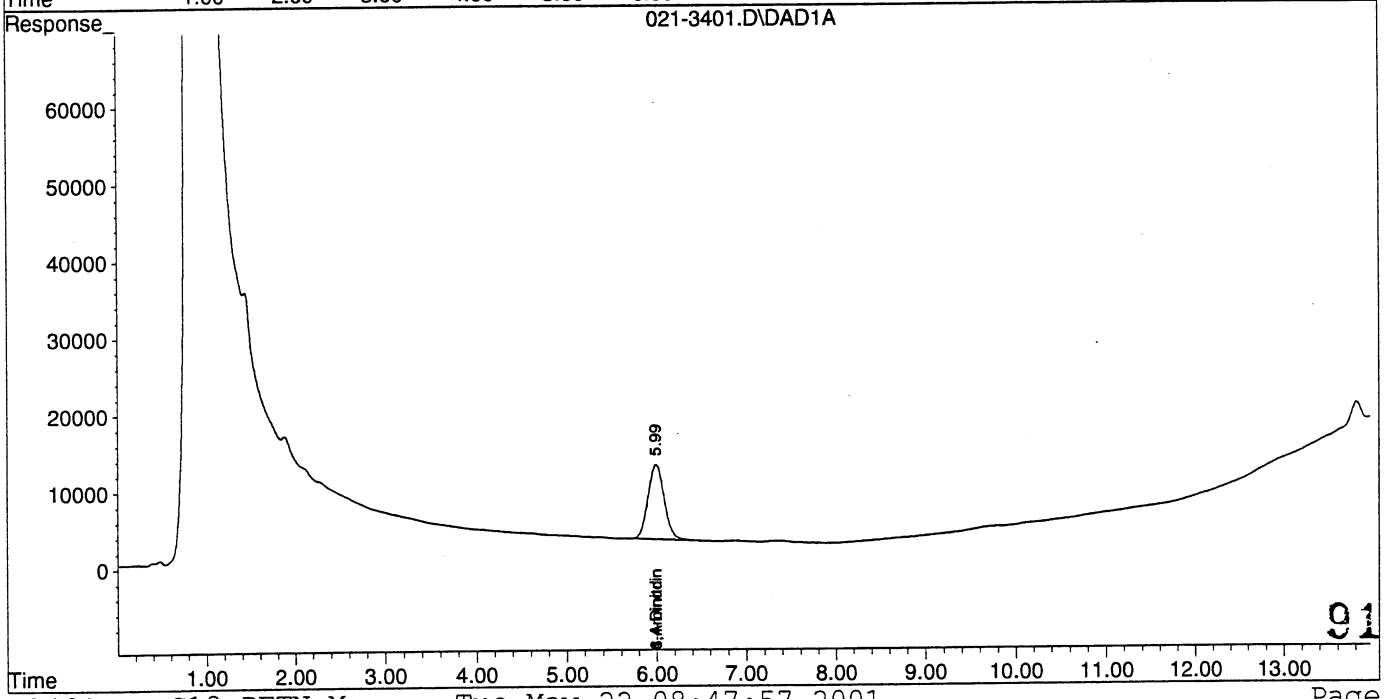
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Signal #1 : F:\HPCHEM\2\DATA\EX052101\021-3401.D\DAD1B.CH Vial: 21
Signal #2 : F:\HPCHEM\2\DATA\EX052101\021-3401.D\DAD1A.CH
Acq On : 19-May-2001, 00:00:50 Operator: JDW
Sample : 97986-12 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E
Quant Time: May 22 8:46 2001 Quant Results File: C18_PETN.RES

Quant Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:29:17 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_PETN.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (Not Reviewed)

Data File : F:\HPCHEM\1\DATA\EX052101\020-3301.D
Acq On : 22-May-2001, 09:16:57
Sample : 97986-12
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:39 2001 Quant Results File: C8_PCRIC.RES

Vial: 20
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:11:39 2001
Response via : Initial Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units
Target Compounds				
1) Picric Acid	0.00	0	N.D.	ng/ml
2) Dinoseb (S)	9.11	2244083	761.193	ng/ml

92

(f)=RT Delta > 1/2 Window (m)=manual int.

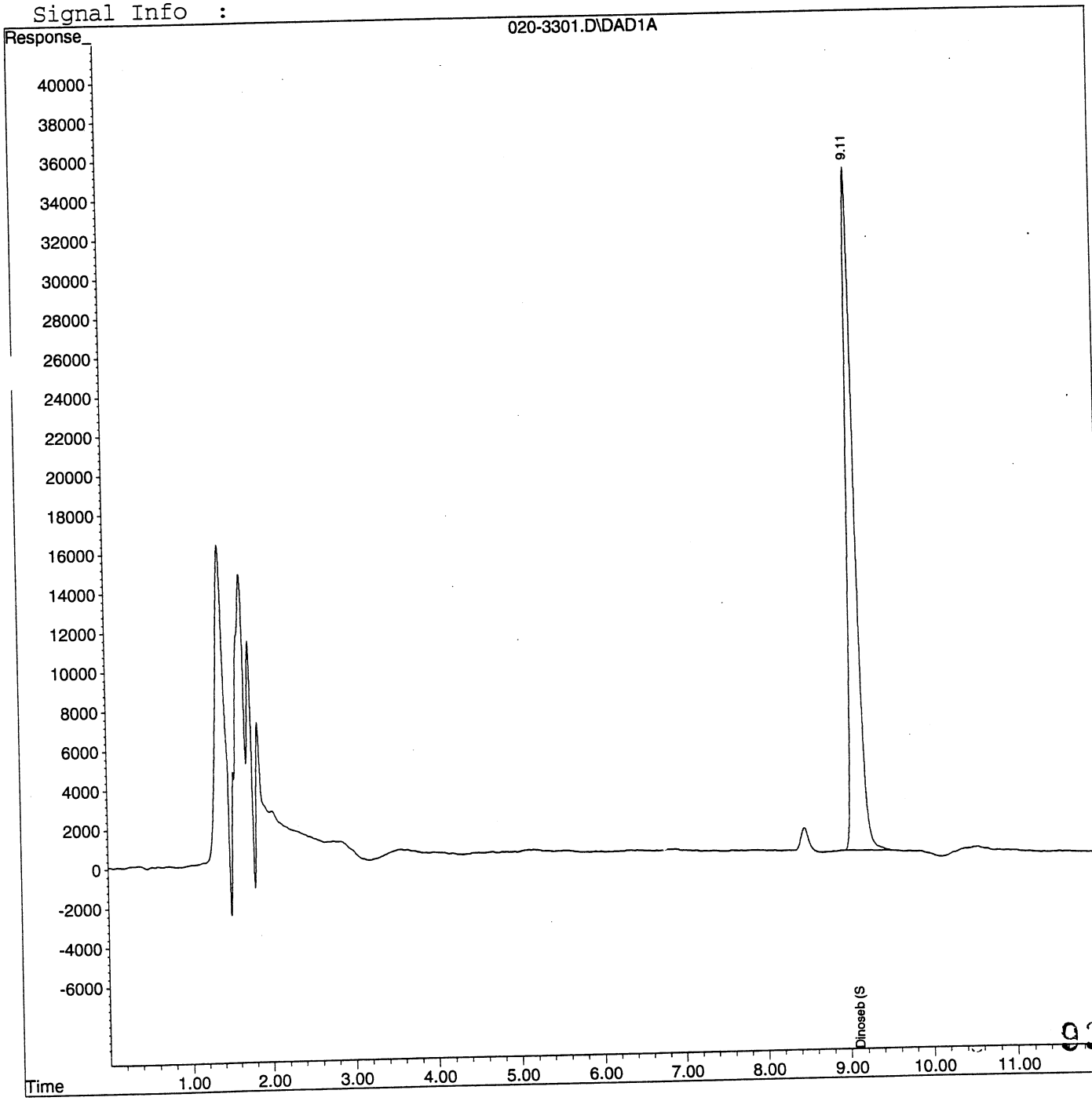
Quantitation Report

Data File : F:\HPCHEM\1\DATA\EX052101\020-3301.D
Acq On : 22-May-2001, 09:16:57
Sample : 97986-12
Misc :
IntFile : AUTOINT1.E
Quant Time: May 22 9:39 2001 Quant Results File: C8_PCRIC.RES

Vial: 20
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 09:11:39 2001
Response via : Multiple Level Calibration
DataAcq Meth : PICRIC.M

Volume Inj. :
Signal Phase :
Signal Info :



INITIAL CALIBRATION DATA

Response Factor Report G1315A

Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:24:34 2001

Calibration Files
1 =077-0401.D 2 =078-0501.D 3 =079-0601.D
4 =080-0701.D 5 =081-0801.D 6 =076-0301.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)		HMX	0.956	1.002	1.062	1.098	1.085	1.080	1.047	E3	5.34
2)		RDX	1.322	1.364	1.396	1.447	1.421	1.419	1.395	E3	3.24
3)		1,3,5-Trinitrobenze	3.122	3.007	3.032	3.122	3.078	3.070	3.072	E3	1.52
4)		1,3-Dinitrobenzene	4.030	4.063	4.091	4.199	4.152	4.127	4.110	E3	1.49
5)		Tetryl	2.049	2.193	2.185	2.237	2.287	2.285	2.206	E3	4.01
6)		2,4,6-Trinitrotolue	2.936	2.739	2.746	2.845	2.814	2.794	2.812	E3	2.59
7)		Nitrobenzene	2.507	2.469	2.479	2.574	2.550	2.526	2.517	E3	1.62
8)		2-Aminodinitrotolue	2.565	2.562	2.612	2.725	2.686	2.664	2.636	E3	2.53
9)		4-Aminodinitrotolue	1.958	1.931	1.923	2.004	1.976	1.956	1.958	E3	1.52
10)	SR	3,4-Dinitrotoluene	1.941	1.715	1.701	1.721	1.658		1.747	E3	6.37
11)		2,4-Dinitrotoluene	3.620	3.729	3.740	3.883	3.834	3.807	3.769	E3	2.47
12)		2,6-Dinitrotoluene	1.896	2.117	2.095	2.265	2.196	2.193	2.127	E3	6.05
13)		2-Nitrotoluene	1.338	1.654	1.548	1.632	1.618	1.617	1.568	E3	7.54
14)		4-Nitrotoluene	1.217	1.287	1.260	1.325	1.311	1.301	1.283	E3	3.07
15)		3-Nitrotoluene	1.303	1.876	1.689	1.754	1.750	1.731	1.684	E3	11.68
16)		PETN			2.455	3.304	1.586		2.448	E1	35.10

Signal #2 Calibration Files
=077-0401.D 2 =078-0501.D 3 =079-0601.D
4 =080-0701.D 5 =081-0801.D 6 =076-0301.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)		HMX	3.048	3.425	3.256	3.187	3.134	3.128	3.196	E3	4.11
2)		RDX	2.533	2.405	2.446	2.623	2.569	2.558	2.522	E3	3.24
3)		1,3,5-Trinitrobenze	5.331	5.082	4.996	5.250	5.148	5.098	5.151	E3	2.36
4)		1,3-Dinitrobenzene	2.970	2.926	2.801	2.878	2.861	2.833	2.878	E3	2.14
5)		Tetryl	3.486	3.614	3.594	3.670	3.768	3.758	3.648	E3	2.93
6)		2,4,6-Trinitrotolue	3.471	3.392	3.421	3.533	3.513	3.480	3.468	E3	1.54
7)		Nitrobenzene	2.137	2.349	2.447	2.412	2.498	2.472	2.386	E3	5.56
8)		2-Aminodinitrotolue	3.942	3.843	3.968	4.086	4.057	4.021	3.986	E3	2.22
9)		4-Aminodinitrotolue	3.809	4.015	4.004	4.108	4.092	4.065	4.016	E3	2.72
10)	SR	3,4-Dinitrotoluene	3.304	3.263	3.168	3.219	3.085		3.208	E3	2.66
11)		2,4-Dinitrotoluene	2.633	2.334	2.419	2.507	2.479	2.453	2.471	E3	4.03
12)		2,6-Dinitrotoluene	2.697	2.612	2.716	2.639	2.802	2.764	2.705	E3	2.68
13)		2-Nitrotoluene	1.523	1.879	2.038	2.135	2.131	2.127	1.972	E3	12.23
14)		4-Nitrotoluene	2.289	2.025	2.240	2.364	2.357	2.341	2.269	E3	5.66
15)		3-Nitrotoluene	2.437	2.664	2.695	2.841	2.866	2.836	2.723	E3	5.99
16)		PETN	1.003	0.933	0.882	0.964	0.962		0.949	E3	4.73

(#) = Out of Range

Response Factor Report G1315A

Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 10:11:29 2001

Calibration Files
1 =081-0501.D 2 =082-0601.D 3 =083-0701.D
4 =084-0801.D 5 =085-0901.D =

	Compound	1	2	3	4	5	Avg	%RSD
1)	Picric Acid	3.706	3.982	3.854	4.025	4.078	3.929 E3	3.81
2)	Dinoseb (S)	2.935	2.975	2.902	2.914	3.014	2.948 E3	1.57

(#) = Out of Range

CONTINUING CALIBRATION DATA

Sequence Log

ectory : f:\HPCHEM\2\DATA\EX052101

#	Filename	Sample Name	Date/Time
1	071-0201.d	20 ng/ml 8330	05/18/01 12:54
2	072-0301.d	100 ng/ml 8330	05/18/01 13:13
3	073-0401.d	500 ng/ml 8330	05/18/01 13:31
4	074-0101.d	1500 ng/ml 8330	05/18/01 13:50
5	075-0201.d	3500 ng/ml 8330	05/18/01 14:08
6	076-0301.d	5000 ng/ml 8330	05/18/01 14:27
7	077-0401.d	50 ng/ml PETN	05/18/01 14:45
8	078-0501.d	500 ng/ml PETN	05/18/01 15:04
9	079-0601.d	1000 ng/ml PETN	05/18/01 15:22
10	080-0701.d	2500 ng/ml PETN	05/18/01 15:41
11	081-0801.d	5000 ng/ml PETN	05/18/01 15:59
12	082-0901.d	8330 + PETN ICV	05/18/01 16:18
13	001-1101.d	500 ng/ml 8330	05/18/01 16:55
14	002-1201.d	1000 ng/ml PETN	05/18/01 17:13
15	003-1301.d	mb lc607	05/18/01 17:32
16	004-1401.d	bs lc607	05/18/01 17:50
17	005-1501.d	bsd lc607	05/18/01 18:09
18	006-1601.d	97986-1	05/18/01 18:27
19	007-1701.d	97986-2	05/18/01 18:46
20	008-1801.d	97986-3	05/18/01 19:04
21	009-1901.d	97986-4	05/18/01 19:23
22	010-2001.d	97986-5	05/18/01 19:41
23	011-2101.d	97986-5 ms	05/18/01 20:00
24	012-2201.d	97986-5 msd	05/18/01 20:18
25	001-2401.d	500 ng/ml 8330	05/18/01 20:55
26	002-2501.d	1000 ng/ml PETN	05/18/01 21:14
27	013-2601.d	97986-6	05/18/01 21:32
28	014-2701.d	97986-7	05/18/01 21:51
29	015-2801.d	97986-8	05/18/01 22:09
30	016-2901.d	97986-9	05/18/01 22:28
31	017-3001.d	97986-10	05/18/01 22:46
32	018-3101.d	97986-11	05/18/01 23:05
33	019-3201.d	97986-11 ms	05/18/01 23:23
34	020-3301.d	97986-11 msd	05/18/01 23:42
35	021-3401.d	97986-12	05/19/01 00:00
36	001-3801.d	500 ng/ml 8330	05/19/01 01:14
37	002-3901.d	1000 ng/ml PETN	05/19/01 01:33

Signal #1 : F:\HPCHEM\2\DATA\EX052101\001-1101.D\DAD1B.CH Vial: 1
Signal #2 : F:\HPCHEM\2\DATA\EX052101\001-1101.D\DAD1A.CH
Acq On : 18-May-2001, 16:55:14 Operator: JDW
Sample : 500 ng/ml 8330 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:24:34 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	HMX	500.000	502.900	-0.6	0	0.00
2	RDX	500.000	494.653	1.1	0	0.00
3	1,3,5-Trinitrobenzene	500.000	480.994	3.8	0	0.00
4	1,3-Dinitrobenzene	500.000	493.855	1.2	0	-0.02
5	Tetryl	500.000	490.697	1.9	0	-0.03
6	2,4,6-Trinitrotoluene	500.000	485.806	2.8	0	-0.02
7	Nitrobenzene	500.000	487.390	2.5	0	-0.02
8	2-Aminodinitrotoluene	500.000	491.931	1.6	0	-0.04
9	4-Aminodinitrotoluene	500.000	489.456	2.1	0	-0.04
11	2,4-Dinitrotoluene	500.000	495.257	0.9	0	-0.03
12	2,6-Dinitrotoluene	500.000	486.254	2.7	0	-0.04
13	2-Nitrotoluene	500.000	505.009	-1.0	0	-0.03
14	4-Nitrotoluene	500.000	492.231	1.6	0	-0.04
1	3-Nitrotoluene	500.000	496.582	0.7	0	-0.04
	Signal #2					
1	HMX	500.000	498.960	0.2	0	0.00
2	RDX	500.000	492.382	1.5	0	0.00
3	1,3,5-Trinitrobenzene	500.000	512.887	-2.6	0	0.00
4	1,3-Dinitrobenzene	500.000	488.857	2.2	0	-0.02
5	Tetryl	500.000	489.744	2.1	0	-0.03
6	2,4,6-Trinitrotoluene	500.000	491.240	1.8	0	-0.02
7	Nitrobenzene	500.000	500.630	-0.1	0	-0.02
8	2-Aminodinitrotoluene	500.000	493.198	1.4	0	-0.04
9	4-Aminodinitrotoluene	500.000	496.888	0.6	0	-0.04
11	2,4-Dinitrotoluene	500.000	483.155	3.4	0	-0.03
12	2,6-Dinitrotoluene	500.000	494.117	1.2	0	-0.04
13	2-Nitrotoluene	500.000	525.428	-5.1	0	-0.03
14	4-Nitrotoluene	500.000	498.912	0.2	0	-0.04
15	3-Nitrotoluene	500.000	498.274	0.3	0	-0.04

Signal #1 : F:\HPCHEM\2\DATA\EX052101\002-1201.D\DAD1B.CH Vial: 2
Signal #2 : F:\HPCHEM\2\DATA\EX052101\002-1201.D\DAD1A.CH
Acq On : 18-May-2001, 17:13:42 Operator: JDW
Sample : 1000 ng/ml PETN Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:24:34 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
10	SR 3,4-Dinitrotoluene (S)	500.000	475.413	4.9	0	0.02
	Signal #2					
10	SR 3,4-Dinitrotoluene (S)	500.000	482.834	3.4	0	0.02
16	PETN	1000.000	914.349	8.6	0	0.00

100

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Signal #1 : F:\HPCHEM\2\DATA\EX052101\001-2401.D\DAD1B.CH Vial: 1
Signal #2 : F:\HPCHEM\2\DATA\EX052101\001-2401.D\DAD1A.CH
Acq On : 18-May-2001, 20:55:41 Operator: JDW
Sample : 500 ng/ml 8330 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:24:34 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	HMX	500.000	508.033	-1.6	0	0.00
2	RDX	500.000	497.962	0.4	0	0.00
3	1,3,5-Trinitrobenzene	500.000	484.904	3.0	0	0.00
4	1,3-Dinitrobenzene	500.000	494.269	1.1	0	0.00
5	Tetryl	500.000	484.502	3.1	0	0.00
6	2,4,6-Trinitrotoluene	500.000	488.424	2.3	0	-0.01
7	Nitrobenzene	500.000	490.927	1.8	0	-0.01
8	2-Aminodinitrotoluene	500.000	494.059	1.2	0	0.00
9	4-Aminodinitrotoluene	500.000	484.356	3.1	0	0.00
11	2,4-Dinitrotoluene	500.000	501.477	-0.3	0	0.00
12	2,6-Dinitrotoluene	500.000	492.326	1.5	0	-0.02
13	2-Nitrotoluene	500.000	503.009	-0.6	0	-0.02
14	4-Nitrotoluene	500.000	489.079	2.2	0	-0.02
	3-Nitrotoluene	500.000	502.325	-0.5	0	-0.02

Signal #2

1	HMX	500.000	503.758	-0.8	0	0.00
2	RDX	500.000	495.509	0.9	0	0.00
3	1,3,5-Trinitrobenzene	500.000	504.775	-1.0	0	0.00
4	1,3-Dinitrobenzene	500.000	490.542	1.9	0	0.00
5	Tetryl	500.000	485.729	2.9	0	0.00
6	2,4,6-Trinitrotoluene	500.000	495.743	0.9	0	-0.01
7	Nitrobenzene	500.000	507.460	-1.5	0	-0.01
8	2-Aminodinitrotoluene	500.000	495.657	0.9	0	0.00
9	4-Aminodinitrotoluene	500.000	498.173	0.4	0	0.00
11	2,4-Dinitrotoluene	500.000	488.811	2.2	0	-0.01
12	2,6-Dinitrotoluene	500.000	503.531	-0.7	0	-0.02
13	2-Nitrotoluene	500.000	514.568	-2.9	0	-0.02
14	4-Nitrotoluene	500.000	495.519	0.9	0	-0.02
15	3-Nitrotoluene	500.000	503.528	-0.7	0	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
001-2401.D C18_PETN.M Thu May 24 12:52:05 2001

Signal #1 : F:\HPCHEM\2\DATA\EX052101\002-2501.D\DAD1B.CH Vial: 2
Signal #2 : F:\HPCHEM\2\DATA\EX052101\002-2501.D\DAD1A.CH
Acq On : 18-May-2001, 21:14:11 Operator: JDW
Sample : 1000 ng/ml PETN Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:24:34 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
10	SR	3,4-Dinitrotoluene (S)	500.000	476.666	4.7	0	0.05
		Signal #2					
10	SR	3,4-Dinitrotoluene (S)	500.000	489.046	2.2	0	0.05
16		PETN	1000.000	920.438	8.0	0	0.04

Signal #1 : F:\HPCHEM\2\DATA\EX052101\001-3801.D\DAD1B.CH Vial: 1
Signal #2 : F:\HPCHEM\2\DATA\EX052101\001-3801.D\DAD1A.CH
Acq On : 19-May-2001, 01:14:53 Operator: JDW
Sample : 500 ng/ml 8330 Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:24:34 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	HMX	500.000	506.011	-1.2	0	0.00
2	RDX	500.000	494.710	1.1	0	0.00
3	1,3,5-Trinitrobenzene	500.000	482.989	3.4	0	0.00
4	1,3-Dinitrobenzene	500.000	499.584	0.1	0	-0.02
5	Tetryl	500.000	465.381	6.9	0	-0.02
6	2,4,6-Trinitrotoluene	500.000	487.758	2.4	0	-0.02
7	Nitrobenzene	500.000	488.153	2.4	0	-0.03
8	2-Aminodinitrotoluene	500.000	494.070	1.2	0	-0.04
9	4-Aminodinitrotoluene	500.000	485.954	2.8	0	-0.04
11	2,4-Dinitrotoluene	500.000	502.530	-0.5	0	-0.04
12	2,6-Dinitrotoluene	500.000	490.236	2.0	0	-0.05
13	2-Nitrotoluene	500.000	502.217	-0.4	0	-0.05
14	4-Nitrotoluene	500.000	485.424	2.9	0	-0.05
	3-Nitrotoluene	500.000	494.752	1.0	0	-0.05
	Signal #2					
1	HMX	500.000	500.857	-0.2	0	0.00
2	RDX	500.000	489.214	2.2	0	0.00
3	1,3,5-Trinitrobenzene	500.000	493.607	1.3	0	0.00
4	1,3-Dinitrobenzene	500.000	494.445	1.1	0	-0.02
5	Tetryl	500.000	463.312	7.3	0	-0.02
6	2,4,6-Trinitrotoluene	500.000	493.933	1.2	0	-0.02
7	Nitrobenzene	500.000	501.191	-0.2	0	-0.03
8	2-Aminodinitrotoluene	500.000	493.356	1.3	0	-0.04
9	4-Aminodinitrotoluene	500.000	496.938	0.6	0	-0.04
11	2,4-Dinitrotoluene	500.000	486.565	2.7	0	-0.04
12	2,6-Dinitrotoluene	500.000	501.465	-0.3	0	-0.05
13	2-Nitrotoluene	500.000	519.566	-3.9	0	-0.04
14	4-Nitrotoluene	500.000	495.165	1.0	0	-0.05
15	3-Nitrotoluene	500.000	496.593	0.7	0	-0.05

Signal #1 : F:\HPCHEM\2\DATA\EX052101\002-3901.D\DAD1B.CH Vial: 2
Signal #2 : F:\HPCHEM\2\DATA\EX052101\002-3901.D\DAD1A.CH
Acq On : 19-May-2001, 01:33:23 Operator: JDW
Sample : 1000 ng/ml PETN Inst : G1315A
Misc : Multiplr: 1.00
IntFile Signal #1: AUTOINT1.E IntFile Signal #2: AUTOINT2.E

Method : C:\HPCHEM\2\METHODS\C18_PETN.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Mon May 21 16:24:34 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
10	SR 3,4-Dinitrotoluene (S)	500.000	486.112	2.8	0	0.03
	Signal #2					
10	SR 3,4-Dinitrotoluene (S)	500.000	497.201	0.6	0	0.03
16	PETN	1000.000	941.986	5.8	0	0.02

Sequence Log

)irectory : f:\HPCHEM\1\DATA\EX052101

	Filename	Sample Name	Date/Time
	081-0501.d	50 ng/ml Picric	05/22/01 01:19
	082-0601.d	500 ng/ml Picric	05/22/01 01:36
	083-0701.d	1000ng/ml Picric	05/22/01 01:53
	084-0801.d	2500ng/ml Picric	05/22/01 02:10
	085-0901.d	5000ng/ml Picric	05/22/01 02:27
	086-1001.d	1000ng/ml Picric	05/22/01 02:44
	001-1201.d	1000ng/ml Picric	05/22/01 03:18
	002-1301.d	mb lc607	05/22/01 03:35
	003-1401.d	bs lc607	05/22/01 03:52
0	004-1501.d	bsd lc607	05/22/01 04:09
1	005-1601.d	97986-1	05/22/01 04:26
2	006-1701.d	97986-2	05/22/01 04:43
3	007-1801.d	97986-3	05/22/01 05:00
4	008-1901.d	97986-4	05/22/01 05:17
5	009-2001.d	97986-5	05/22/01 05:35
6	010-2101.d	97986-5 ms	05/22/01 05:52
7	011-2201.d	97986-5 msd	05/22/01 06:09
8	001-2401.d	1000ng/ml Picric	05/22/01 06:43
9	012-2501.d	97986-6	05/22/01 07:00
0	013-2601.d	97986-7	05/22/01 07:17
1	014-2701.d	97986-8	05/22/01 07:34
2	015-2801.d	97986-9	05/22/01 07:51
3	016-2901.d	97986-10	05/22/01 08:08
4	017-3001.d	97986-11	05/22/01 08:25
5	018-3101.d	97986-11 ms	05/22/01 08:42
6	019-3201.d	97986-11 msd	05/22/01 08:59
7	020-3301.d	97986-12	05/22/01 09:16
8	001-3501.d	1000ng/ml Picric	05/22/01 09:51

Data File : F:\HPCHEM\1\DATA\EX052101\001-1201.D Vial: 1
Acq On : 22-May-2001, 03:18:36 Operator: JDW
Sample : 1000ng/ml Picric Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 10:11:29 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	Picric Acid	1000.000	986.195	1.4	0	0.11
2	Dinoseb (S)	1000.000	989.553	1.0	0	0.07

Data File : F:\HPCHEM\1\DATA\EX052101\001-2401.D Vial: 1
Acq On : 22-May-2001, 06:43:28 Operator: JDW
Sample : 1000ng/ml Picric Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 10:11:29 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	Picric Acid	1000.000	986.369	1.4	0	0.00
2	Dinoseb (S)	1000.000	984.214	1.6	0	-0.02

Evaluate Continuing Calibration Report

Data File : F:\HPCHEM\1\DATA\EX052101\001-3501.D Vial: 1
Acq On : 22-May-2001, 09:51:11 Operator: JDW
Sample : 1000ng/ml Picric Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\C8_PCRIC.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Tue May 22 10:11:29 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	Picric Acid	1000.000	985.783	1.4	0	-0.05
2	Dinoseb (S)	1000.000	986.558	1.3	0	-0.06

103

(#) = Out of Range SPCC's out = 0 CCC's out = 0

TCLP EXPLOSIVES

SAMPLE DATA

Quantitation Report (Not Reviewed)

Data File : F:\HPCHEM\2\DATA\EX052201\018-2701.D
Acq On : 20-May-2001, 01:29:16
Sample : 97986-13
Misc :
IntFile : AUTOINT1.E
Quant Time: May 23 8:53 2001 Quant Results File: C18_0310.RES

Vial: 18
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C18_0310.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Wed May 02 10:23:47 2001
Response via : Initial Calibration
DataAcq Meth : C18_8330.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
10)	SR 3,4-Dinitrotoluene (S)	5.81	831861	496.438	ng/ml
	Target Compounds				
1)	HMX	1.39	38777	35.489	ng/ml
2)	RDX	0.00	0	N.D.	ng/ml
3)	1,3,5-Trinitrobenzene	0.00	0	N.D.	ng/ml
4)	1,3-Dinitrobenzene	0.00	0	N.D.	ng/ml
5)	Tetryl	0.00	0	N.D.	ng/ml
	2,4,6-Trinitrotoluene	4.55	629792	221.031	ng/ml
	Nitrobenzene	0.00	0	N.D.	ng/ml
8)	2-Aminodinitrotoluene	0.00	0	N.D.	ng/ml
9)	4-Aminodinitrotoluene	5.81	831861	391.216	ng/ml
11)	2,4-Dinitrotoluene	0.00	0	N.D.	ng/ml
12)	2,6-Dinitrotoluene	0.00	0	N.D.	ng/ml
13)	2-Nitrotoluene	0.00	0	N.D.	ng/ml
14)	4-Nitrotoluene	0.00	0	N.D.	ng/ml
15)	3-Nitrotoluene	0.00	0	N.D.	ng/ml

171

(f)=RT Delta > 1/2 Window
(m)=manual int.

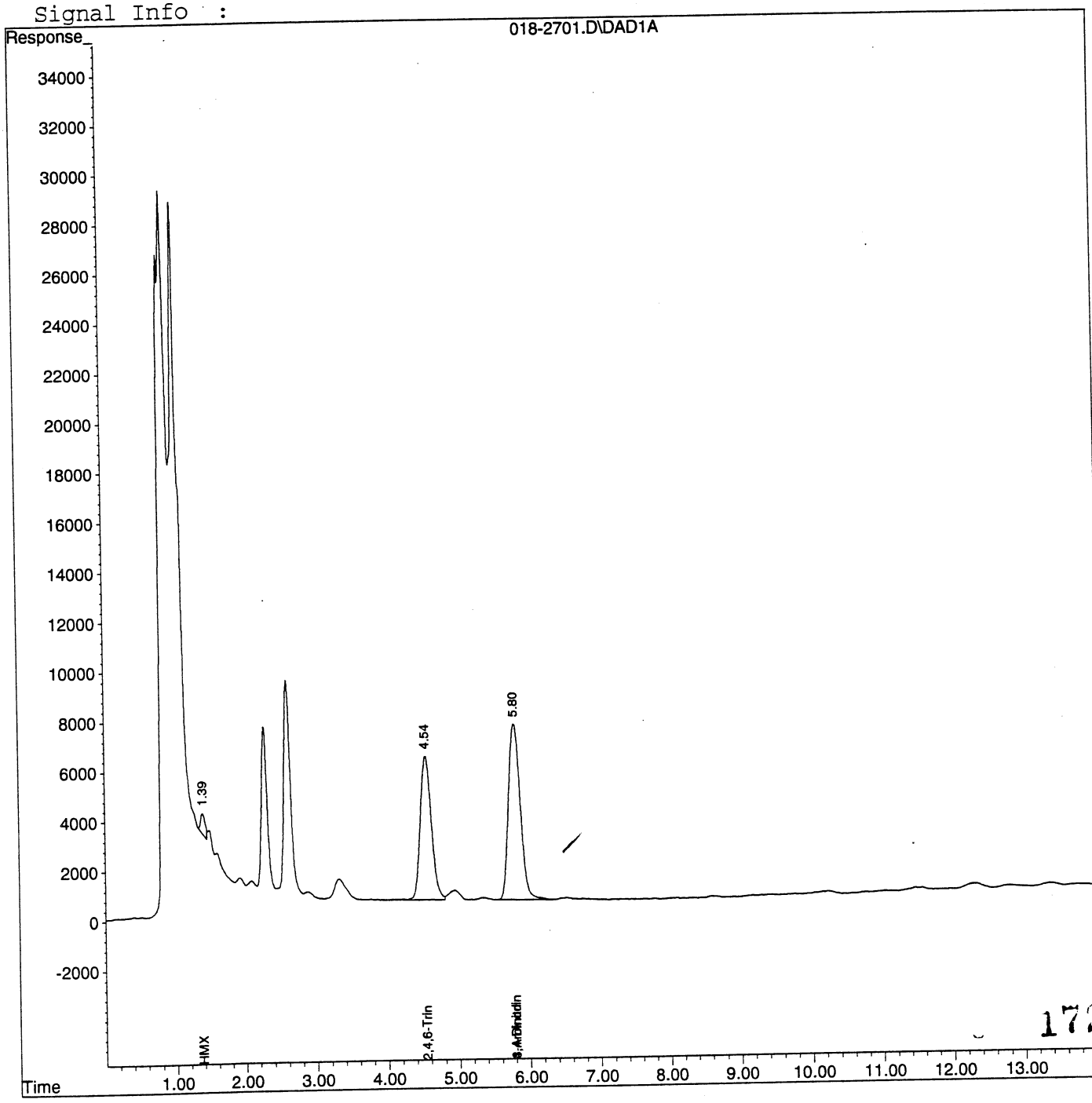
Quantitation Report

Data File : F:\HPCHEM\2\DATA\EX052201\018-2701.D
Acq On : 20-May-2001, 01:29:16
Sample : 97986-13
Misc :
IntFile : AUTOINT1.E
Quant Time: May 23 8:53 2001 Quant Results File: C18_0310.RES

Vial: 18
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C18_0310.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Wed May 02 10:23:47 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_8330.M

Volume Inj. :
Signal Phase :
Signal Info :



172

Data File : F:\HPCHEM\1\DATA\EX052301\018-1601.D Vial: 18
Acq On : 23-May-2001, 16:31:50 Operator: JDW
Sample : 97986-13 Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E
Quant Time: May 24 9:03 2001 Quant Results File: CN_0511.RES

Quant Method : C:\HPCHEM\2\METHODS\CN_0511.M (Chemstation Integrator)
Title : USEPA Method 8330 - Confirmation Column
Last Update : Wed May 23 10:01:57 2001
Response via : Initial Calibration
DataAcq Meth : CN_8330.M

Volume Inj. :
Signal Phase :
Signal Info :

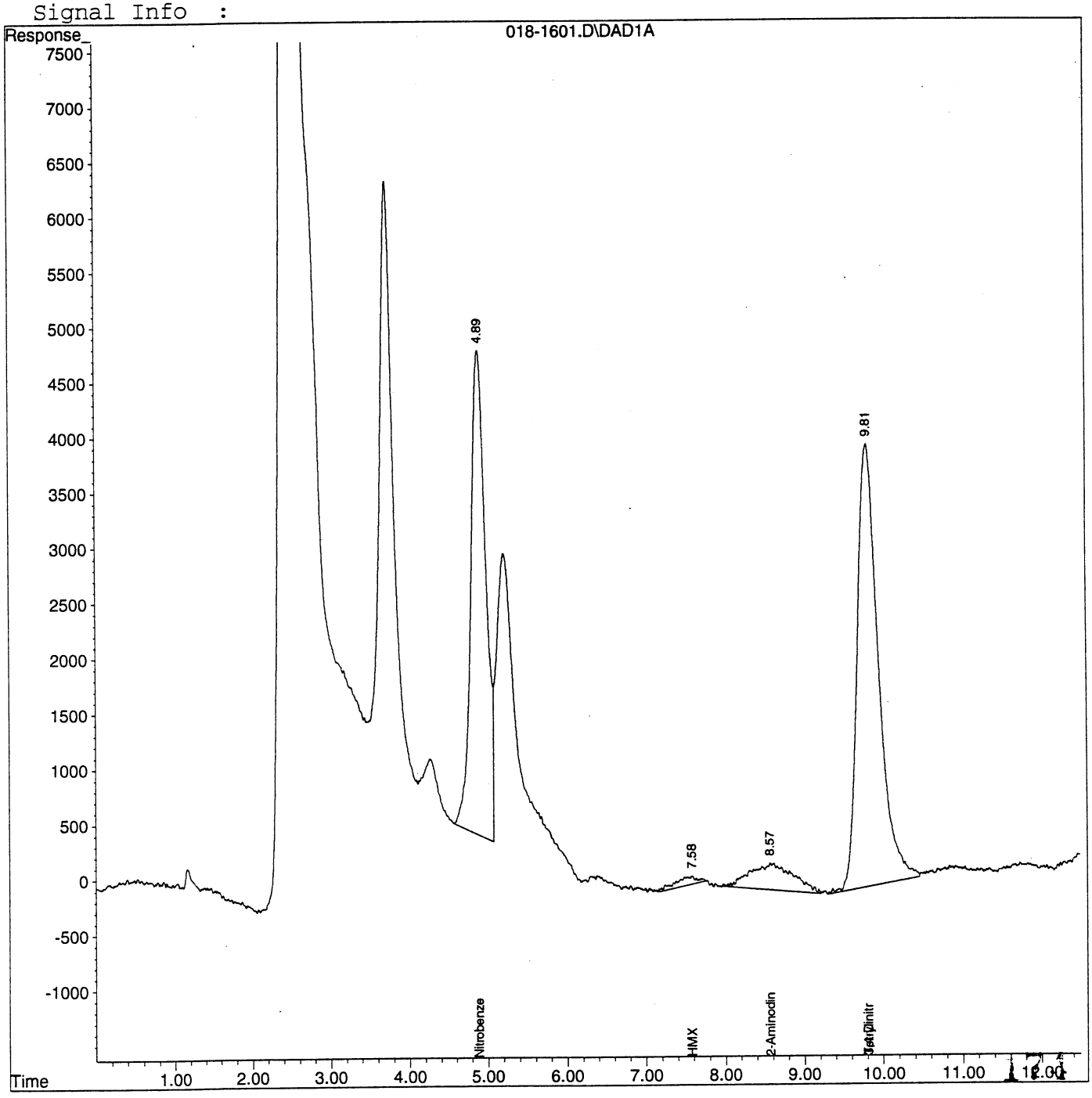
	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
10)	SR 3,4-Dinitrotoluene (S)	9.81	739339	490.712	ng/ml
	Target Compounds				
1)	HMX	7.58	15539	12.872	ng/ml
2)	RDX	0.00	0	N.D.	ng/ml
3)	1,3,5-Trinitrobenzene	0.00	0	N.D.	ng/ml
4)	1,3-Dinitrobenzene	0.00	0	N.D.	ng/ml
5)	Tetryl	9.81	739339	373.956	ng/ml
6)	2,4,6-Trinitrotoluene	0.00	0	N.D.	ng/ml
7)	Nitrobenzene	4.89	575198	237.120	ng/ml
	2-Aminodinitrotoluene	8.57	92710	40.561	ng/ml
9)	4-Aminodinitrotoluene	0.00	0	N.D.	ng/ml
11)	2,4-Dinitrotoluene	0.00	0	N.D.	ng/ml
12)	2,6-Dinitrotoluene & NTs	0.00	0	N.D.	ng/ml

(f)=RT Delta > 1/2 Window (m)=manual int.
018-1601.D CN_0511.M Thu May 24 09:09:40 2001 Page 1

Data File : F:\HPCHEM\1\DATA\EX052301\018-1601.D Vial: 18
Acq On : 23-May-2001, 16:31:50 Operator: JDW
Sample : 97986-13 Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E
Quant Time: May 24 9:03 2001 Quant Results File: CN_0511.RES

Quant Method : C:\HPCHEM\2\METHODS\CN_0511.M (Chemstation Integrator)
Title : USEPA Method 8330 - Confirmation Column
Last Update : Wed May 23 10:01:57 2001
Response via : Multiple Level Calibration
DataAcq Meth : CN_8330.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : F:\HPCHEM\2\DATA\EX052201\021-3001.D
Acq On : 20-May-2001, 02:24:49
Sample : 97986-14
Misc :
IntFile : AUTOINT1.E
Quant Time: May 23 8:55 2001 Quant Results File: C18_0310.RES

Vial: 21
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C18_0310.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Wed May 02 10:23:47 2001
Response via : Initial Calibration
DataAcq Meth : C18_8330.M

OK

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
10) SR 3,4-Dinitrotoluene (S)	5.81	856946	511.408	ng/ml
Target Compounds				
1) HMX	0.00	0	N.D.	ng/ml
2) RDX	0.00	0	N.D.	ng/ml
3) 1,3,5-Trinitrobenzene	0.00	0	N.D.	ng/ml
4) 1,3-Dinitrobenzene	0.00	0	N.D.	ng/ml
5) Tetryl	0.00	0	N.D.	ng/ml
2,4,6-Trinitrotoluene	4.55	1194017	419.052	ng/ml
Nitrobenzene	0.00	0	N.D.	ng/ml
8) 2-Aminodinitrotoluene	0.00	0	N.D.	ng/ml
9) 4-Aminodinitrotoluene	5.81	856946	403.013	ng/ml
11) 2,4-Dinitrotoluene	0.00	0	N.D.	ng/ml
12) 2,6-Dinitrotoluene	0.00	0	N.D.	ng/ml
13) 2-Nitrotoluene	0.00	0	N.D.	ng/ml
14) 4-Nitrotoluene	0.00	0	N.D.	ng/ml
15) 3-Nitrotoluene	0.00	0	N.D.	ng/ml

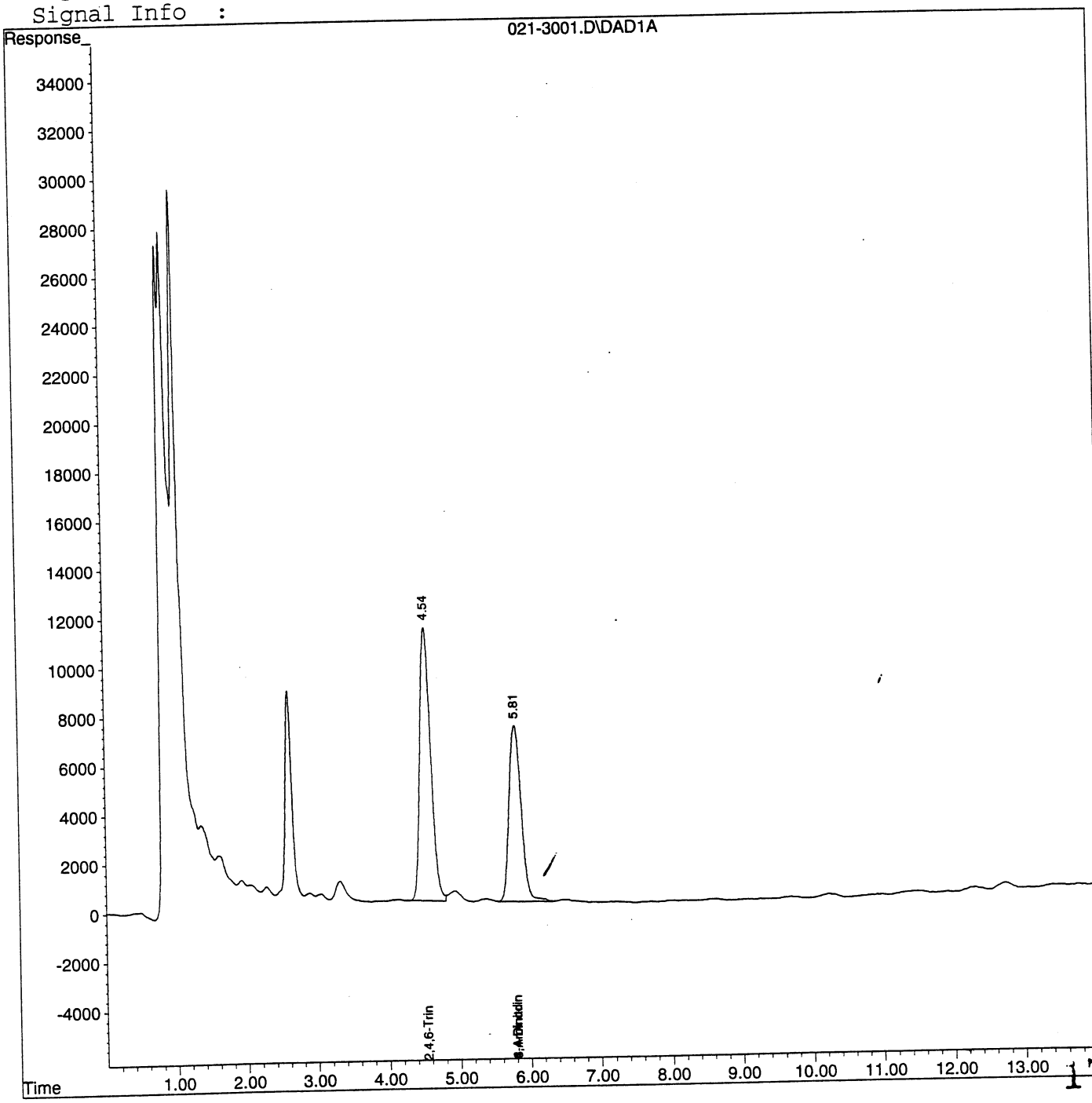
Quantitation Report

Data File : F:\HPCHEM\2\DATA\EX052201\021-3001.D
Acq On : 20-May-2001, 02:24:49
Sample : 97986-14
Misc :
IntFile : AUTOINT1.E
Quant Time: May 23 8:55 2001 Quant Results File: C18_0310.RES

Vial: 21
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\C18_0310.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Wed May 02 10:23:47 2001
Response via : Multiple Level Calibration
DataAcq Meth : C18_8330.M

Volume Inj. :
Signal Phase :
Signal Info :



Data File : F:\HPCHEM\1\DATA\EX052301\021-1901.D Vial: 21
Acq On : 23-May-2001, 17:32:28 Operator: JDW
Sample : 97986-14 Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E
Quant Time: May 24 9:04 2001 Quant Results File: CN_0511.RES

Quant Method : C:\HPCHEM\2\METHODS\CN_0511.M (Chemstation Integrator)
Title : USEPA Method 8330 - Confirmation Column
Last Update : Wed May 23 10:01:57 2001
Response via : Initial Calibration
DataAcq Meth : CN_8330.M

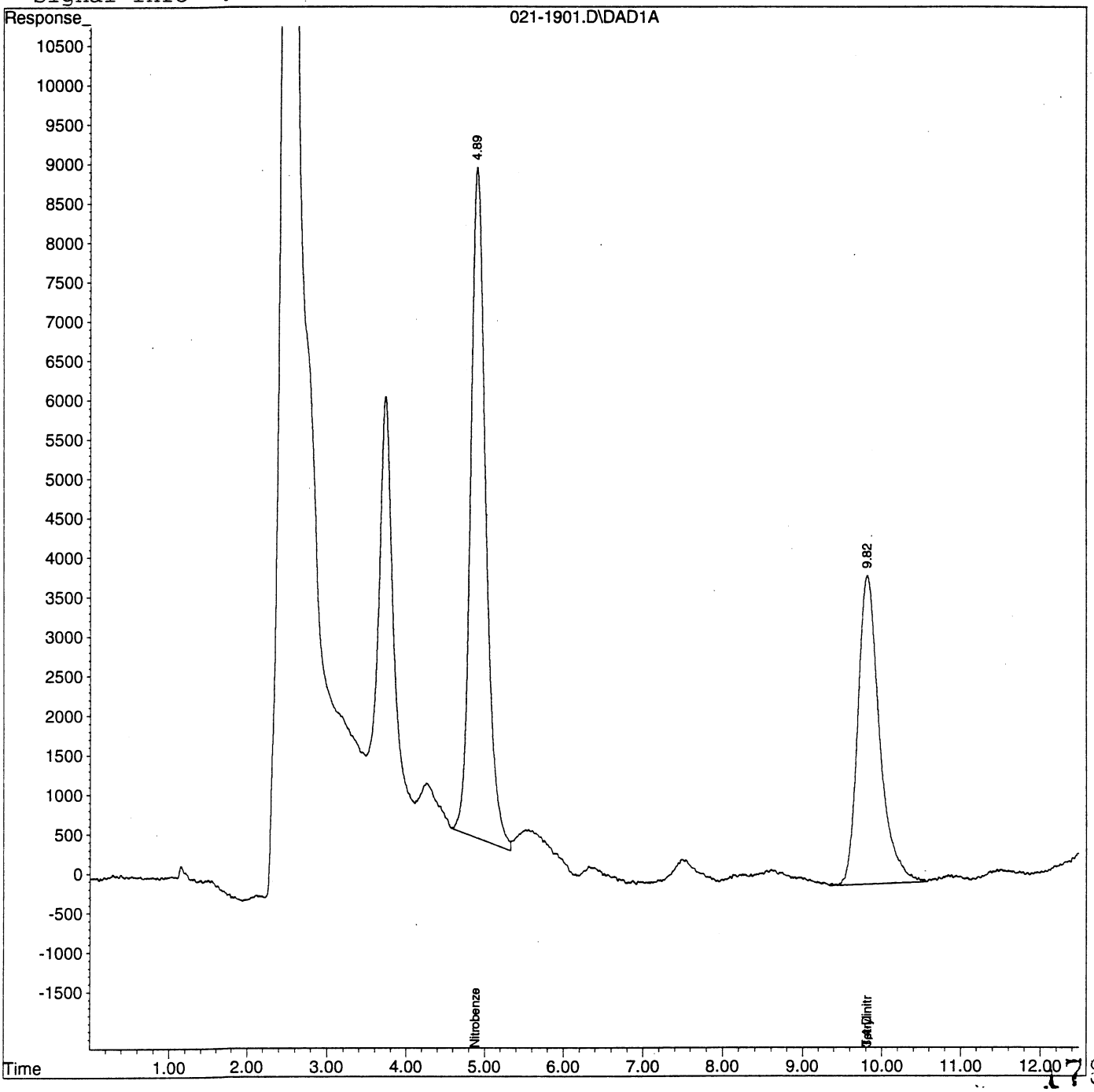
Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
10)	SR 3,4-Dinitrotoluene (S)	9.82	737903	489.759	ng/ml
	Target Compounds				
1)	HMX	0.00	0	N.D.	ng/ml
2)	RDX	0.00	0	N.D.	ng/ml
3)	1,3,5-Trinitrobenzene	0.00	0	N.D.	ng/ml
4)	1,3-Dinitrobenzene	0.00	0	N.D.	ng/ml
5)	Tetryl	9.82	737903	373.230	ng/ml
6)	2,4,6-Trinitrotoluene	0.00	0	N.D.	ng/ml
	Nitrobenzene	4.89	1141949	470.758	ng/ml
	2-Aminodinitrotoluene	0.00	0	N.D.	ng/ml
9)	4-Aminodinitrotoluene	0.00	0	N.D.	ng/ml
11)	2,4-Dinitrotoluene	0.00	0	N.D.	ng/ml
12)	2,6-Dinitrotoluene & NTs	0.00	0	N.D.	ng/ml

Data File : F:\HPCHEM\1\DATA\EX052301\021-1901.D Vial: 21
Acq On : 23-May-2001, 17:32:28 Operator: JDW
Sample : 97986-14 Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E
Quant Time: May 24 9:04 2001 Quant Results File: CN_0511.RES

Quant Method : C:\HPCHEM\2\METHODS\CN_0511.M (Chemstation Integrator)
Title : USEPA Method 8330 - Confirmation Column
Last Update : Wed May 23 10:01:57 2001
Response via : Multiple Level Calibration
DataAcq Meth : CN_8330.M

Volume Inj. :
Signal Phase :
Signal Info :



INITIAL CALIBRATION DATA

Response Factor Report G1315A

Method : C:\HPCHEM\2\METHODS\CN_0511.M (Chemstation Integrator)
Title : USEPA Method 8330 - Confirmation Column
Last Update : Mon May 14 08:38:55 2001

Calibration Files
1 =067-1301.D 2 =068-1401.D 3 =069-1501.D
4 =070-1601.D 5 =071-1701.D 6 =066-1201.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)		HMX	0.942	1.275	1.148	1.273	1.293	1.312	1.207	E3	11.78
2)		RDX	1.358	1.431	1.402	1.566	1.591	1.599	1.491	E3	7.13
3)		1,3,5-Trinitrobenze	2.604	2.756	2.720	2.765	2.780	2.781	2.734	E3	2.47
4)		1,3-Dinitrobenzene	3.331	3.069	3.147	3.282	3.299	3.302	3.238	E3	3.24
5)		Tetryl	1.845	1.752	1.846	2.053	2.168	2.198	1.977	E3	9.50
6)		2,4,6-Trinitrotolue	3.173	3.084	2.402	2.392	2.383	2.380	2.636	E3	14.52
7)		Nitrobenzene	1.903	2.310	2.458	2.607	2.638	2.640	2.426	E3	11.83
8)		2-Aminodinitrotolue	2.963	2.347	2.008	2.124	2.126	2.146	2.286	E3	15.29
9)		4-Aminodinitrotolue	2.217	2.073	1.851	2.036	2.049	2.059	2.047	E3	5.71
10)	SR	3,4-Dinitrotoluene	1.408	1.557	1.554	1.479	1.536		1.507	E3	4.20
11)		2,4-Dinitrotoluene	2.902	2.973	2.889	3.102	3.149	3.150	3.028	E3	3.99
12)		2,6-Dinitrotoluene	4.977	5.543	5.639	5.937	5.975	5.955	5.671	E3	6.80

Response Factor Report G1315A

Method : C:\HPCHEM\2\METHODS\C18_0310.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Wed May 02 10:23:47 2001

Calibration Files
1 =001-0801.D 2 =002-0901.D 3 =003-1001.D
4 =004-1101.D 5 =005-1201.D 6 =011-1801.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)		HMX	1.085	1.090	1.079	1.098	1.107	1.098	1.093	E3	0.93
2)		RDX	1.429	1.381	1.384	1.398	1.412	1.399	1.400	E3	1.28
3)		1,3,5-Trinitrobenze	3.060	3.085	3.036	3.042	3.085	3.063	3.062	E3	0.67
4)		1,3-Dinitrobenzene	4.244	4.140	4.072	4.129	4.155	4.107	4.141	E3	1.40
5)		Tetryl	2.309	2.395	2.301	2.281	2.349	2.356	2.332	E3	1.81
6)		2,4,6-Trinitrotolue	2.801	2.887	2.825	2.850	2.880	2.853	2.849	E3	1.14
7)		Nitrobenzene	2.174	2.460	2.358	2.421	2.450	2.423	2.381	E3	4.51
8)		2-Aminodinitrotolue	2.727	2.682	2.653	2.658	2.687	2.659	2.678	E3	1.03
9)		4-Aminodinitrotolue	2.333	2.166	2.064	2.060	2.076	2.058	2.126	E3	5.13
10)	SR	3,4-Dinitrotoluene	1.659	1.640	1.668	1.709	1.703		1.676	E3	1.76
11)		2,4-Dinitrotoluene	4.355	3.846	3.665	3.677	3.713	3.685	3.824	E3	7.03
12)		2,6-Dinitrotoluene	1.942	2.168	2.141	2.154	2.180	2.153	2.123	E3	4.22
13)		2-Nitrotoluene	1.331	1.534	1.528	1.569	1.587	1.582	1.522	E3	6.35
14)		4-Nitrotoluene	1.171	1.213	1.256	1.297	1.323	1.310	1.262	E3	4.75
15)		3-Nitrotoluene	1.592	1.634	1.675	1.682	1.724	1.688	1.666	E3	2.78

(#) = Out of Range

CONTINUING CALIBRATION DATA

Sequence Log

irectory : f:\HPCHEM\2\DATA\EX052201

	Filename	Sample Name	Date/Time
	001-1401.d	500 ng/ml 8330	05/19/01 21:28
	002-1501.d	500 ng/ml3,4-DNT	05/19/01 21:46
	010-1601.d	mb lc608	05/19/01 22:05
	011-1701.d	bs lc608	05/19/01 22:24
	012-1801.d	bsd lc608	05/19/01 22:42
	001-2501.d	500 ng/ml 8330	05/20/01 00:52
	002-2601.d	500 ng/ml3,4-DNT	05/20/01 01:10
	018-2701.d	97986-13	05/20/01 01:29
	019-2801.d	97986-13 ms	05/20/01 01:47
0	020-2901.d	97986-13 msd	05/20/01 02:06
1	021-3001.d	97986-14	05/20/01 02:24
2	001-3501.d	500 ng/ml 8330	05/20/01 03:57
3	002-3601.d	500 ng/ml3,4-DNT	05/20/01 04:15

Evaluate Continuing Calibration Report

Data File : F:\HPCHEM\2\DATA\EX052201\001-1401.D Vial: 1
Acq On : 19-May-2001, 21:28:27 Operator: JDW
Sample : 500 ng/ml 8330 Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\C18_0310.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Wed May 02 10:23:47 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	HMX	500.000	526.194	-5.2	0	0.01
2	RDX	500.000	516.125	-3.2	0	0.03
3	1,3,5-Trinitrobenzene	500.000	518.810	-3.8	0	0.02
4	1,3-Dinitrobenzene	500.000	524.091	-4.8	0	0.03
5	Tetryl	500.000	530.238	-6.0	0	0.07
6	2,4,6-Trinitrotoluene	500.000	545.141	-9.0	0	0.04
7	Nitrobenzene	500.000	560.342	-12.1	0	0.01
8	2-Aminodinitrotoluene	500.000	519.747	-3.9	0	0.08
9	4-Aminodinitrotoluene	500.000	491.308	1.7	0	0.06
11	2,4-Dinitrotoluene	500.000	515.110	-3.0	0	0.03
12	2,6-Dinitrotoluene	500.000	495.509	0.9	0	0.01
13	2-Nitrotoluene	500.000	544.598	-8.9	0	-0.01
14	4-Nitrotoluene	500.000	532.576	-6.5	0	-0.02
15	3-Nitrotoluene	500.000	523.699	-4.7	0	-0.02

Evaluate Continuing Calibration Report

Data File : F:\HPCHEM\2\DATA\EX052201\002-1501.D Vial: 2
Acq On : 19-May-2001, 21:46:57 Operator: JDW
Sample : 500 ng/ml3,4-DNT Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\C18_0310.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Wed May 02 10:23:47 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
10 SR	3,4-Dinitrotoluene (S)	500.000	519.501	-3.9	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : F:\HPCHEM\2\DATA\EX052201\001-2501.D Vial: 1
Acq On : 20-May-2001, 00:52:08 Operator: JDW
Sample : 500 ng/ml 8330 Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\C18_0310.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Wed May 02 10:23:47 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	HMX	500.000	529.212	-5.8	0	0.01
2	RDX	500.000	516.645	-3.3	0	0.03
3	1,3,5-Trinitrobenzene	500.000	510.373	-2.1	0	0.02
4	1,3-Dinitrobenzene	500.000	525.372	-5.1	0	0.02
5	Tetryl	500.000	516.590	-3.3	0	0.05
6	2,4,6-Trinitrotoluene	500.000	543.655	-8.7	0	0.03
7	Nitrobenzene	500.000	555.988	-11.2	0	0.00
8	2-Aminodinitrotoluene	500.000	518.201	-3.6	0	0.06
9	4-Aminodinitrotoluene	500.000	489.848	2.0	0	0.04
11	2,4-Dinitrotoluene	500.000	519.466	-3.9	0	0.02
12	2,6-Dinitrotoluene	500.000	488.419	2.3	0	0.00
13	2-Nitrotoluene	500.000	541.878	-8.4	0	-0.02
14	4-Nitrotoluene	500.000	533.530	-6.7	0	-0.03
15	3-Nitrotoluene	500.000	531.580	-6.3	0	-0.03

Evaluate Continuing Calibration Report

Data File : F:\HPCHEM\2\DATA\EX052201\002-2601.D Vial: 2
Acq On : 20-May-2001, 01:10:42 Operator: JDW
Sample : 500 ng/ml3,4-DNT Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\C18_0310.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Wed May 02 10:23:47 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
10 SR	3,4-Dinitrotoluene (S)	500.000	514.390	-2.9	0	0.04

(#) = Out of Range SPCC's out = 0 CCC's out = 0
002-2601.D C18_0310.M Wed May 23 11:53:25 2001

Data File : F:\HPCHEM\2\DATA\EX052201\001-3501.D Vial: 1
Acq On : 20-May-2001, 03:57:20 Operator: JDW
Sample : 500 ng/ml 8330 Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\C18_0310.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Wed May 02 10:23:47 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	HMX	500.000	533.420	-6.7	0	0.01
2	RDX	500.000	515.456	-3.1	0	0.03
3	1,3,5-Trinitrobenzene	500.000	509.987	-2.0	0	0.02
4	1,3-Dinitrobenzene	500.000	527.231	-5.4	0	0.03
5	Tetryl	500.000	503.456	-0.7	0	0.06
6	2,4,6-Trinitrotoluene	500.000	541.795	-8.4	0	0.04
7	Nitrobenzene	500.000	552.510	-10.5	0	0.00
8	2-Aminodinitrotoluene	500.000	515.707	-3.1	0	0.07
9	4-Aminodinitrotoluene	500.000	486.930	2.6	0	0.05
11	2,4-Dinitrotoluene	500.000	518.914	-3.8	0	0.03
12	2,6-Dinitrotoluene	500.000	475.782	4.8	0	0.01
13	2-Nitrotoluene	500.000	542.377	-8.5	0	-0.01
14	4-Nitrotoluene	500.000	533.918	-6.8	0	-0.02
15	3-Nitrotoluene	500.000	530.885	-6.2	0	-0.02

Evaluate Continuing Calibration Report

Data File : F:\HPCHEM\2\DATA\EX052201\002-3601.D Vial: 2
Acq On : 20-May-2001, 04:15:50 Operator: JDW
Sample : 500 ng/ml3,4-DNT Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\C18_0310.M (Chemstation Integrator)
Title : USEPA Method 8330 - Primary Column
Last Update : Wed May 02 10:23:47 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
10	SR	3,4-Dinitrotoluene (S)	500.000	514.560	-2.9	0	0.04

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(#) = Out of Range SPCC's out = 0 CCC's out = 0
002-3601.D C18_0310.M Wed May 23 11:53:27 2001 Page 1

Sequence Log

)irectory : f:\HPCHEM\1\DATA\EX052301

	Filename	Sample Name	Date/Time
	001-0101.d	Prime	05/23/01 11:28
	001-0301.d	500 ng/ml 8330	05/23/01 12:09
	002-0401.d	500 ng/ml 34-DNT	05/23/01 12:29
	010-0501.d	mb lc606	05/23/01 12:49
	011-0601.d	bs lc606	05/23/01 13:09
	012-0701.d	bsd lc606	05/23/01 13:30
	100-1301.d	Rinse	05/23/01 15:31
	001-1401.d	500 ng/ml 8330	05/23/01 15:51
	002-1501.d	500 ng/ml 34-DNT	05/23/01 16:11
0	018-1601.d	97986-13	05/23/01 16:31
1	019-1701.d	97986-13 ms	05/23/01 16:51
2	020-1801.d	97986-13 msd	05/23/01 17:12
3	021-1901.d	97986-14	05/23/01 17:32
4	001-2401.d	500 ng/ml 8330	05/23/01 19:13
5	002-2501.d	500 ng/ml 34-DNT	05/23/01 19:33

Data File : F:\HPCHEM\1\DATA\EX052301\001-0301.D Vial: 1
Acq On : 23-May-2001, 12:09:19 Operator: JDW
Sample : 500 ng/ml 8330 Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\CN_0511.M (Chemstation Integrator)
Title : USEPA Method 8330 - Confirmation Column
Last Update : Mon May 14 08:38:55 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	HMX	500.000	526.574	-5.3	0	0.03
2	RDX	500.000	515.928	-3.2	0	0.05
3	1,3,5-Trinitrobenzene	500.000	507.376	-1.5	0	0.02
4	1,3-Dinitrobenzene	500.000	526.337	-5.3	0	0.03
5	Tetryl	500.000	474.034	5.2	0	-0.02
6	2,4,6-Trinitrotoluene	500.000	508.479	-1.7	0	0.00
7	Nitrobenzene	500.000	538.946	-7.8	0	0.03
8	2-Aminodinitrotoluene	500.000	473.434	5.3	0	0.00
9	4-Aminodinitrotoluene	500.000	485.779	2.8	0	0.00
11	2,4-Dinitrotoluene	500.000	506.819	-1.4	0	0.02
12	2,6-Dinitrotoluene & NTs	500.000	522.768	-4.6	0	0.02

Data File : F:\HPCHEM\1\DATA\EX052301\002-0401.D Vial: 2
Acq On : 23-May-2001, 12:29:29 Operator: JDW
Sample : 500 ng/ml 34-DNT Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\CN_0511.M (Chemstation Integrator)
Title : USEPA Method 8330 - Confirmation Column
Last Update : Mon May 14 08:38:55 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
10 SR	3,4-Dinitrotoluene (S)	500.000	510.155	-2.0	0	0.00

Data File : F:\HPCHEM\1\DATA\EX052301\001-1401.D Vial: 1
Acq On : 23-May-2001, 15:51:28 Operator: JDW
Sample : 500 ng/ml 8330 Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\CN_0511.M (Chemstation Integrator)
Title : USEPA Method 8330 - Confirmation Column
Last Update : Mon May 14 08:38:55 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	HMX	500.000	525.335	-5.1	0	0.02
2	RDX	500.000	517.637	-3.5	0	0.04
3	1,3,5-Trinitrobenzene	500.000	504.753	-1.0	0	0.02
4	1,3-Dinitrobenzene	500.000	528.788	-5.8	0	0.02
5	Tetryl	500.000	466.675	6.7	0	-0.04
6	2,4,6-Trinitrotoluene	500.000	504.236	-0.8	0	0.00
7	Nitrobenzene	500.000	551.366	-10.3	0	0.02
8	2-Aminodinitrotoluene	500.000	472.732	5.5	0	-0.03
9	4-Aminodinitrotoluene	500.000	487.205	2.6	0	-0.03
11	2,4-Dinitrotoluene	500.000	514.338	-2.9	0	0.00
12	2,6-Dinitrotoluene & NTs	500.000	522.542	-4.5	0	0.00

Data File : F:\HPCHEM\1\DATA\EX052301\002-1501.D Vial: 2
Acq On : 23-May-2001, 16:11:38 Operator: JDW
Sample : 500 ng/ml 34-DNT Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\CN_0511.M (Chemstation Integrator)
Title : USEPA Method 8330 - Confirmation Column
Last Update : Mon May 14 08:38:55 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
0 SR	3,4-Dinitrotoluene (S)	500.000	526.855	-5.4	0	-0.02

Data File : F:\HPCHEM\1\DATA\EX052301\001-2401.D
Acq On : 23-May-2001, 19:13:18
Sample : 500 ng/ml 8330
Misc :
IntFile : AUTOINT1.E

Vial: 1
Operator: JDW
Inst : G1315A
Multiplr: 1.00

Method : C:\HPCHEM\2\METHODS\CN_0511.M (Chemstation Integrator)
Title : USEPA Method 8330 - Confirmation Column
Last Update : Mon May 14 08:38:55 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	HMX	500.000	522.999	-4.6	0	0.03
2	RDX	500.000	514.937	-3.0	0	0.04
3	1,3,5-Trinitrobenzene	500.000	498.692	0.3	0	0.02
4	1,3-Dinitrobenzene	500.000	527.293	-5.5	0	0.02
5	Tetryl	500.000	464.156	7.2	0	-0.02
6	2,4,6-Trinitrotoluene	500.000	503.804	-0.8	0	0.00
7	Nitrobenzene	500.000	548.166	-9.6	0	0.02
8	2-Aminodinitrotoluene	500.000	472.784	5.4	0	0.00
9	4-Aminodinitrotoluene	500.000	480.501	3.9	0	0.00
11	2,4-Dinitrotoluene	500.000	511.256	-2.3	0	0.01
12	2,6-Dinitrotoluene & NTs	500.000	522.028	-4.4	0	0.01

Data File : F:\HPCHEM\1\DATA\EX052301\002-2501.D Vial: 2
Acq On : 23-May-2001, 19:33:28 Operator: JDW
Sample : 500 ng/ml 34-DNT Inst : G1315A
Misc : Multiplr: 1.00
IntFile : AUTOINT1.E

Method : C:\HPCHEM\2\METHODS\CN_0511.M (Chemstation Integrator)
Title : USEPA Method 8330 - Confirmation Column
Last Update : Mon May 14 08:38:55 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
0 SR	3,4-Dinitrotoluene (S)	500.000	507.785	-1.6	0	0.00

Data Package

Client: Garry Struthers Associates

Project: Camp Bonneville Project

Project Number: 99-004.58

Laboratory Work Order: B1E0234

Amended on

June 20, 2001

North Creek Analytical, Inc.
11720 North Creek Parkway North, Suite 400
Bothell, WA 98011-8223

Phone: (425) 420-9200
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Case Narrative

Sample Receiving

Nineteen soil samples and two wood chip samples were collected 05/07/01 between 08:35 and 13:35. Eight soil samples were collected 05/08/01 between 08:35 and 08:55. The samples were received at North Creek Analytical, Inc. (NCA) on 05/08/01 with all of the containers intact at a temperature of 6.0°C.

Sample PBW-50701-02 (B1E0234-02) was labeled with a collection time of 08:40 on the container, but with a collection time of 08:35 on the chain-of-custody. The sample was logged into the laboratory computer system using the time of 08:35 from the chain-of-custody.

Sample Preparation

- **EPA 3550B/NWTPH-Dx** – These samples were prepared in one analytical batch (1E11024) in accordance with EPA 3550B and NWTPH-Dx. Standard aliquots of ~30 g were prepared and reduced to a final volume of 2 mLs in Methylene chloride.

- **EPA 3050B/6020 for Pb, Sb, As, Ba, Be, Cd, Cr, Cu, Ni, Tl and Zn** – These samples were prepared in two analytical batches (1E14022 and 1E14023) in accordance with EPA 3050B. Standard aliquots of ~1 g were prepared and diluted to a final volume of 500 mLs in reagent water.

- **EPA 1311/3010A/6010B for TCLP Pb, As, Ba, and Cd** – These samples were TCLP extracted in accordance with EPA 1311 in one analytical batch (1E13004). Sample PBW-50701-02 (B1E0234-02) was extracted at a non-standard aliquot of 75 g to a final volume of 1500 mL, maintaining the proportions. The TCLP extracts were prepared in two analytical batches (1E15022 and 1E15023) in accordance with EPA 3010A. A 50 mL aliquot of each leachate was digested, then reagent water added to adjust the final volume to 50 mLs.

- **EPA 3550B/8081A for 4,4'-DDT** – These samples were prepared in one analytical batch (1E11019) in accordance with EPA 3550B. Standard aliquots of ~30 g were prepared and reduced to a final volume of 5 mLs in Hexane.

- **EPA 8151A for 2,4,5-T and MCPP** – These samples were prepared in one analytical batch (1E17028) in accordance with EPA 8151A. Standard aliquots of ~30 g were prepared and reduced to a final volume of 5 mLs in Hexane.

Analysis

- **EPA 3550B/NWTPH-Dx** – These samples were analyzed in accordance with NWTPH-Dx without dilutions.

  The diesel range hydrocarbon results for sample FL-PBS-08 (B1E0234-07) were qualified due to overlap from a heavy oil range product.

- **EPA 3050B/6020 for Pb, Sb, As, Ba, Be, Cd, Cr, Cu, Ni, Tl and Zn –** These samples were analyzed in accordance with EPA 6020. All of the target analytes were analyzed without dilution or qualification, except as discussed in the narrative.

  Sample SS-PBS-06 (B1E0234-05) was analyzed at a 2-fold dilution for Lead due to high analyte concentration.

Samples NS-A51-12 (B1E0234-10), ES-A51-13 (B1E0234-11), SS-A51-14 (B1E0234-12), WS-A51-15 (B1E0234-13), and FL-A51-16 (B1E0234-14) were analyzed at a 2-fold dilution for Barium due to high analyte concentration.

The Initial Calibration Verification Check (ICV) for Beryllium was outside the acceptance criteria on 05/15/01. Samples Method Blank (1E14022-BLK1), NS-A51-12 (B1E0234-10), Matrix Spike (1E14022-MS1), Matrix Spike Duplicate (1E14022-MSD1), ES-A51-13 (B1E0234-11) and SS-A51-14 (B1E0234-12) were reanalyzed for Beryllium on 05/16/01. Samples Laboratory Control Sample (1E14022-BS1), WS-A51-15 (B1E0234-13) and FL-A51-16 (B1E0234-14) were reanalyzed for Beryllium on 05/17/01. Samples Method Blank (1E14023-BLK1), Matrix Spike (1E14023-MS1), Matrix Spike Duplicate (1E14023-MSD1), NS-A53-31 (B1E0234-22), ES-A53-32 (B1E0234-23), Laboratory Control Sample (1E14023-BS1), SS-A53-33 (B1E0234-24), WS-A53-34 (B1E0234-25), FL-A53-35 (B1E0234-26), and FLD-A53-36 (B1E0234-27) were reanalyzed for Beryllium on 05/18/01.

The bracketing Continuing Calibration Verification Check (CCV) for Barium was outside the acceptance criteria on 05/15/01 at 19:46. The associated samples were reanalyzed on 05/16/01.

The bracketing CCV for Chromium, Antimony and Thallium was outside the acceptance criteria on 05/15/01 at 21:01. The associated samples were reanalyzed on 05/16/01.

The bracketing CCV for Lead was outside the acceptance criteria on 05/15/01 at 22:15. The associated samples were reanalyzed on 05/16/01.

The bracketing CCV for Nickel was outside the acceptance criteria on 05/16/01 at 23:43. The associated sample, FL-A53-35 (B1E0234-26), was reanalyzed on 05/19/01.

The interference check for Zinc was outside the acceptance criteria on 05/16/01 for both analytical runs. Samples Method Blank (1E14023-BLK1), Matrix Spike (1E14023-MS1), Matrix Spike Duplicate (1E14023-MSD1), NS-A53-31 (B1E0234-22), and ES-A53-32 (B1E0234-23) were reanalyzed on 05/18/01. Samples Laboratory Control Sample (1E14023-BS1), SS-A53-33 (B1E0234-24), WS-A53-34 (B1E0234-25), FL-A53-35 (B1E0234-26), and FLD-A53-36 (B1E0234-27) were reanalyzed on 05/19/01.

Various internal standards associated with samples and QC that were analyzed on 05/15/01 and 05/17/01 had less than 60% recovery and were flagged by the instrument as failing on the raw analytical data. EPA 6020 has an acceptance criterion of 30-120% for the internal standard recovery. All of the internal standard recoveries were within the EPA 6020 acceptance criterion and no further corrective action was taken.

- **EPA 1311/3010A/6010B for TCLP Pb, As, Ba, and Cd** – These samples were analyzed without dilution or qualification in accordance with EPA 6010B.

- **EPA 3550B/8081A for 4,4'-DDT** – These samples were analyzed in accordance with EPA 8081A for 4,4'-DDT. Sample ES-PBS-05 (B1E0234-04) was analyzed at a 5-fold dilution due to high levels of analytes present. Sample SS-PBS-06 (B1E0234-05) was analyzed undiluted and at a 5-fold dilution due to high levels of analytes present.

  During analysis of the samples, high levels of 4,4'-DDD and 4,4'-DDE were detected in the samples. Upon notification, the client requested that these compounds be included in the analytical report.

  NS-PBS-04 (B1E0234-03) and FL-PBS-08 (B1E0234-07): The results for 4,4'-DDT from two dissimilar columns differed by greater than 40%. The higher value was reported and should be considered estimated.

ES-PBS-05 (B1E0234-04) and WS-PBS-07 (B1E0234-06): The results for 4,4'-DDD from two dissimilar columns differed by greater than 40%. The higher value was reported and should be considered estimated.

SS-PBS-06 (B1E0234-05): The results for 4,4'-DDD and 4,4'-DDE from two dissimilar columns differed by greater than 40%. The higher values were reported and should be considered estimated.

The DCB surrogate recovery for sample SS-PBS-06 (B1E0234-05) was outside of established control limits due to matrix interferences.

The 4,4'-DDD and 4,4'-DDE recoveries for the closing Pesticide CCV analyzed on 05/19/01 at 04:42 were outside the acceptance criteria of 85% to 115% on both Signal One and Signal Two. The associated samples [NS-PBS-04 (B1E0234-03), ES-PBS-05 (B1E0234-04), SS-PBS-06 (B1E0234-05), WS-PBS-07 (B1E0234-06), FL-PBS-08 (B1E0234-07), and FLD-PBS-09 (B1E0234-08)] were reanalyzed for 4,4'-DDD and 4,4'-DDE on 05/21/01 and 05/22/01.

Results for the Method Blank (1E11019-BLK1) were reported from the sequence analyzed on 05/19/01. Since the bias was high and there were no detectable concentrations for 4,4'-DDD, 4,4'-DDE or 4,4'-DDT in the method blank, no further corrective action was taken.

The initial Pesticide CCV analyzed on 05/21/01 at 11:20 was outside the acceptance criteria on Signal One and Signal Two. The instrument was recalibrated. No associated sample results were reported.

The 4,4'-DDE and 4,4'-DDT recoveries for the closing Pesticide CCV analyzed on 05/21/01 at 22:20 were outside the acceptance criteria of 85% to 115% on Signal One. Sample results were taken from Signal Two.

The 4,4'-DDE and 4,4'-DDD recoveries on Signal One and the 4,4'-DDT recovery on Signal Two for the CCVs analyzed on 05/22/01 at 15:35 and 16:27 were outside the acceptance criteria of 85% to 115%. Sample results were taken from the Signal with recoveries within acceptance criteria.

- **EPA 8151A for 2,4,5-T and MCPP** – These samples were analyzed in accordance with EPA 8151A. ES-PBS-05 (B1E0234-04) was analyzed undiluted and at an 11-fold dilution due to high levels of analytes present. Sample SS-PBS-06 (B1E0234-05) was analyzed undiluted and at a 5-fold dilution due to high levels of analytes present.

  Sample FL-PBS-08 (B1E0234-07) was reported with the full Herbicide list for Quality Control purposes.

Quality Assurance

Per client request, site specific QC was prepared for all analyses.

- **EPA 3550B/NWTPH-Dx** – These samples were prepared in one analytical batch (1E11024) in accordance with EPA 3550B. All of the recoveries for the monitored target analytes were within the established acceptance criteria.

- **EPA 3050B/6020 for Pb, Sb, As, Ba, Be, Cd, Cr, Cu, Ni, Tl and Zn** — These samples were prepared in two analytical batches (1E14022 and 1E14023) in accordance with EPA 3050B. All of the recoveries for the monitored target analytes were within the established acceptance criteria or qualified in this narrative.

  1E14022-MS1/MSD1 (Sb and As): The recoveries for Antimony and Arsenic were below the established control limits, while the recoveries for Antimony and Arsenic were within the established control limits in the laboratory control sample. A Post Spike (1E14022-PS1) was

prepared and analyzed for Antimony with recovery within established control limits. This indicates a low bias for Antimony in the associated samples.

1E14022-MS1/MSD1 (Ba and Cu): The recoveries for Barium and Copper are outside of the established control limit due to high analyte content in comparison to the amount of target analyte spiked into the sample. Analyses are not controlled on matrix spike percent recoveries when the sample concentration is significantly higher than the spike level.

1E14022-MS1/MSD1 (Cr): The recovery for Chromium was outside the established control limits, while the recovery for Chromium was within the established control limits in the laboratory control sample. Visual examination indicated that the matrix spike recovery for Chromium was outside the control limits due to non-homogeneous sample matrix.

1E14022-MSD1 (Ni): The recovery for Nickel was outside of the established control limits. The recoveries for Nickel were within the established control limits for the LCS and MS. Based upon these results, the recovery for Nickel in the MSD does not represent an out-of-control condition for the batch.

1E14023-MS1/MSD1 (As and Sb): The recoveries for Antimony and Arsenic were below the established control limits, while the recoveries for Antimony and Arsenic were within the established control limits in the laboratory control sample. A Post Spike (1E14023-PS1) was prepared and analyzed for Antimony and Arsenic with recoveries within established control limits. This indicates a low bias for Antimony and Arsenic in the associated samples.

1E14023-MS1 (Cu): The recovery for Copper was outside of the established control limits. The recoveries for Copper were within the established control limits for the LCS and MSD. Based upon these results, the recovery for Copper in the MS does not represent an out-of-control condition for the batch.

1E14023-MSD1 (Ba): The recovery for Barium was outside of the established control limits. The recoveries for Barium were within the established control limits for the LCS and MS. Based upon these results, the recovery for Barium in the MSD does not represent an out-of-control condition for the batch.

- **EPA 1311/3010A/6010B for TCLP Pb, As, Ba, and Cd** – These samples were prepared in two analytical batches (1E15022 and 1E15023) in accordance with EPA 1311 and 3010A. All of the recoveries for the monitored target analytes were within the established acceptance criteria.

- **EPA 3550B/8081A for 4,4'-DDT** – These samples were prepared in one analytical batch (1E11019) in accordance with EPA 3550B. All of the recoveries for the monitored target analytes were within the established acceptance criteria.

- **EPA 8151A for 2,4,5-T and MCPP** – These samples were prepared in one analytical batch (1E17028) in accordance with EPA 8151A. All of the recoveries for the monitored target analytes were within the established acceptance criteria or qualified within this narrative.

  The Method Blank (1E17018-BLK1) is reported with the complete Herbicide list for quality control purposes.

" I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signatures:"

6/20/01

Prepared by Anne Conrad, QA Associate

D. a. Wunderlich 6/20/01

Reviewed by Dave Wunderlich, QA Manager

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

ANALYTICAL REPORT FOR SAMPLES - Amended

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PBW-50701-01	B1E0234-01	Other wet	05/07/01 08:35	05/08/01 16:05
PBW-50701-02	B1E0234-02	Other wet	05/07/01 08:40	05/08/01 16:05
NS-PBS-04	B1E0234-03	Soil	05/07/01 11:22	05/08/01 16:05
ES-PBS-05	B1E0234-04	Soil	05/07/01 11:24	05/08/01 16:05
SS-PBS-06	B1E0234-05	Soil	05/07/01 11:26	05/08/01 16:05
WS-PBS-07	B1E0234-06	Soil	05/07/01 11:28	05/08/01 16:05
FL-PBS-08	B1E0234-07	Soil	05/07/01 11:05	05/08/01 16:05
FLD-PBS-09	B1E0234-08	Soil	05/07/01 11:10	05/08/01 16:05
SP-PBS-11	B1E0234-09	Soil	05/07/01 11:20	05/08/01 16:05
NS-A51-12	B1E0234-10	Soil	05/07/01 12:55	05/08/01 16:05
ES-A51-13	B1E0234-11	Soil	05/07/01 12:58	05/08/01 16:05
SS-A51-14	B1E0234-12	Soil	05/07/01 13:00	05/08/01 16:05
WS-A51-15	B1E0234-13	Soil	05/07/01 13:03	05/08/01 16:05
FL-A51-16	B1E0234-14	Soil	05/07/01 13:06	05/08/01 16:05
SP-A51-17	B1E0234-15	Soil	05/07/01 13:05	05/08/01 16:05
SP-A50-25	B1E0234-16	Soil	05/07/01 13:08	05/08/01 16:05
NS-A50-26	B1E0234-17	Soil	05/07/01 13:25	05/08/01 16:05
ES-A50-27	B1E0234-18	Soil	05/07/01 13:27	05/08/01 16:05
SS-A50-28	B1E0234-19	Soil	05/07/01 13:30	05/08/01 16:05
WS-A50-29	B1E0234-20	Soil	05/07/01 13:32	05/08/01 16:05
FL-A50-30	B1E0234-21	Soil	05/07/01 13:35	05/08/01 16:05
NS-A53-31	B1E0234-22	Soil	05/08/01 08:35	05/08/01 16:05
ES-A53-32	B1E0234-23	Soil	05/08/01 08:37	05/08/01 16:05
SS-A53-33	B1E0234-24	Soil	05/08/01 08:40	05/08/01 16:05
WS-A53-34	B1E0234-25	Soil	05/08/01 08:43	05/08/01 16:05
FL-A53-35	B1E0234-26	Soil	05/08/01 08:45	05/08/01 16:05
FLD-A53-36	B1E0234-27	Soil	05/08/01 08:48	05/08/01 16:05
SP-A53-38	B1E0234-28	Soil	05/08/01 08:53	05/08/01 16:05
SPD-A53-39	B1E0234-29	Soil	05/08/01 08:55	05/08/01 16:05

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NS-PBS-04 (B1E0234-03) Soil Sampled: 05/07/01 11:22 Received: 05/08/01 16:05									
Diesel Range Hydrocarbons	**33.2**	10.0	mg/kg dry	1	1E11024	05/11/01	05/12/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	**109**	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*85.8 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*97.9 %*	*50-150*			"	"	"	"	
ES-PBS-05 (B1E0234-04) Soil Sampled: 05/07/01 11:24 Received: 05/08/01 16:05									
Diesel Range Hydrocarbons	**14.3**	10.0	mg/kg dry	1	1E11024	05/11/01	05/12/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	**31.3**	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*88.5 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*106 %*	*50-150*			"	"	"	"	
SS-PBS-06 (B1E0234-05) Soil Sampled: 05/07/01 11:26 Received: 05/08/01 16:05									
Diesel Range Hydrocarbons	**31.5**	10.0	mg/kg dry	1	1E11024	05/11/01	05/12/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	**85.3**	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*89.9 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*95.7 %*	*50-150*			"	"	"	"	
WS-PBS-07 (B1E0234-06) Soil Sampled: 05/07/01 11:28 Received: 05/08/01 16:05									
Diesel Range Hydrocarbons	**41.2**	10.0	mg/kg dry	1	1E11024	05/11/01	05/12/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	**95.9**	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*89.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*104 %*	*50-150*			"	"	"	"	
FL-PBS-08 (B1E0234-07) Soil Sampled: 05/07/01 11:05 Received: 05/08/01 16:05									
Diesel Range Hydrocarbons	**29.2**	10.0	mg/kg dry	1	1E11024	05/11/01	05/12/01	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	**187**	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*88.8 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*94.8 %*	*50-150*			"	"	"	"	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FLD-PBS-09 (B1E0234-08) Soil	**Sampled: 05/07/01 11:10**		**Received: 05/08/01 16:05**						
Diesel Range Hydrocarbons	**12.6**	10.0	mg/kg dry	1	1E11024	05/11/01	05/12/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	**49.5**	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*88.1 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*98.5 %*	*50-150*			"	"	"	"	

th Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Robert Greer, Project Manager

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NS-PBS-04 (B1E0234-03) Soil Sampled: 05/07/01 11:22 Received: 05/08/01 16:05									
Lead	**70.8**	0.391	mg/kg dry	1	1E14022	05/14/01	05/15/01	EPA 6020	
Antimony	ND wJ	0.391	"	"	"	"	"	"	
ES-PBS-05 (B1E0234-04) Soil Sampled: 05/07/01 11:24 Received: 05/08/01 16:05									
Lead	**60.0**	0.376	mg/kg dry	1	1E14022	05/14/01	05/15/01	EPA 6020	
Antimony	ND wJ	0.376	"	"	"	"	"	"	
SS-PBS-06 (B1E0234-05) Soil Sampled: 05/07/01 11:26 Received: 05/08/01 16:05									
Lead	**221**	0.769	mg/kg dry	2	1E14022	05/14/01	05/17/01	EPA 6020	
Antimony	ND wJ	0.385	"	1	"	"	05/15/01	"	
WS-PBS-07 (B1E0234-06) Soil Sampled: 05/07/01 11:28 Received: 05/08/01 16:05									
Lead	**56.2**	0.407	mg/kg dry	1	1E14022	05/14/01	05/15/01	EPA 6020	
Antimony	ND wJ	0.407	"	"	"	"	"	"	
FL-PBS-08 (B1E0234-07) Soil Sampled: 05/07/01 11:05 Received: 05/08/01 16:05									
Lead	**36.2**	0.385	mg/kg dry	1	1E14022	05/14/01	05/15/01	EPA 6020	
Antimony	ND wJ	0.385	"	"	"	"	05/16/01	"	
FLD-PBS-09 (B1E0234-08) Soil Sampled: 05/07/01 11:10 Received: 05/08/01 16:05									
Lead	**37.6**	0.365	mg/kg dry	1	1E14022	05/14/01	05/15/01	EPA 6020	
Antimony	ND wJ	0.365	"	"	"	"	05/16/01	"	
NS-A51-12 (B1E0234-10) Soil Sampled: 05/07/01 12:55 Received: 05/08/01 16:05									
Arsenic	**5.36** J	0.397	mg/kg dry	1	1E14022	05/14/01	05/15/01	EPA 6020	
Barium	**208** J	7.94	"	2	"	"	05/16/01	"	
Beryllium	**0.714**	0.397	"	1	"	"	05/16/01	"	
Cadmium	**0.647**	0.397	"	"	"	"	05/15/01	"	
Chromium	**32.5** J	0.397	"	"	"	"	05/16/01	"	
Copper	**101** J	0.397	"	"	"	"	05/15/01	"	
Nickel	**16.9** J	0.397	"	"	"	"	"	"	
Lead	**38.2**	0.397	"	"	"	"	"	"	
Antimony	**2.50** J	0.397	"	"	"	"	05/16/01	"	

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Robert Green, Project Manager

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
ES-A51-13 (B1E0234-11) Soil Sampled: 05/07/01 12:58 Received: 05/08/01 16:05									
Arsenic	**2.13** J	0.370	mg/kg dry	1	1E14022	05/14/01	05/15/01	EPA 6020	
Barium	**184** J	7.41	"	2	"	"	05/16/01	"	
Beryllium	**0.743**	0.370	"	1	"	"	05/16/01	"	
Cadmium	**0.638**	0.370	"	"	"	"	05/15/01	"	
Chromium	**34.2** J	0.370	"	"	"	"	05/16/01	"	
Copper	**108** J	0.370	"	"	"	"	05/15/01	"	
Nickel	**19.6** J	0.370	"	"	"	"	"	"	
Lead	**21.1**	0.370	"	"	"	"	"	"	
Antimony	ND UJ	0.370	"	"	"	"	05/16/01	"	
SS-A51-14 (B1E0234-12) Soil Sampled: 05/07/01 13:00 Received: 05/08/01 16:05									
Arsenic	**1.17** J	0.305	mg/kg dry	1	1E14022	05/14/01	05/15/01	EPA 6020	
Barium	**178** J	6.10	"	2	"	"	05/16/01	"	
ryllium	**0.728**	0.305	"	1	"	"	05/16/01	"	
dmium	**1.21**	0.305	"	"	"	"	05/15/01	"	
Chromium	**33.2** J	0.305	"	"	"	"	05/16/01	"	
Copper	**97.3** J	0.305	"	"	"	"	05/15/01	"	
Nickel	**15.8** J	0.305	"	"	"	"	"	"	
Lead	**13.4**	0.305	"	"	"	"	"	"	
Antimony	ND UJ	0.305	"	"	"	"	05/16/01	"	
WS-A51-15 (B1E0234-13) Soil Sampled: 05/07/01 13:03 Received: 05/08/01 16:05									
Arsenic	**1.78** J	0.394	mg/kg dry	1	1E14022	05/14/01	05/15/01	EPA 6020	
Barium	**187** J	7.87	"	2	"	"	05/16/01	"	
Beryllium	**0.710**	0.394	"	1	"	"	05/17/01	"	
Cadmium	**0.647**	0.394	"	"	"	"	05/15/01	"	
Chromium	**35.1** J	0.394	"	"	"	"	05/16/01	"	
Copper	**110** J	0.394	"	"	"	"	05/15/01	"	
Nickel	**18.4** J	0.394	"	"	"	"	"	"	
Lead	**13.0**	0.394	"	"	"	"	"	"	
Antimony	ND UJ	0.394	"	"	"	"	05/16/01	"	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FL-A51-16 (B1E0234-14) Soil Sampled: 05/07/01 13:06 Received: 05/08/01 16:05									
Arsenic	**1.84** J	0.397	mg/kg dry	1	1E14022	05/14/01	05/15/01	EPA 6020	
Barium	**177** J	7.94	"	2	"	"	05/17/01	"	
Beryllium	**0.592**	0.397	"	1	"	"	05/17/01	"	
Cadmium	**0.451**	0.397	"	"	"	"	05/15/01	"	
Chromium	**36.8** J	0.397	"	"	"	"	05/16/01	"	
Copper	**101** J	0.397	"	"	"	"	05/15/01	"	
Nickel	**18.7** J	0.397	"	"	"	"	"	"	
Lead	**12.6**	0.397	"	"	"	"	"	"	
Antimony	ND UJ	0.397	"	"	"	"	05/16/01	"	
NS-A50-26 (B1E0234-17) Soil Sampled: 05/07/01 13:25 Received: 05/08/01 16:05									
Arsenic	**2.87** J	0.413	mg/kg dry	1	1E14023	05/14/01	05/16/01	EPA 6020	
Barium	**124** J	4.13	"	"	"	"	"	"	
Cadmium	ND	0.413	"	"	"	"	"	"	
Chromium	**43.4** J	0.413	"	"	"	"	"	"	
Copper	**86.6** J	0.413	"	"	"	"	"	"	
Lead	**17.3**	0.413	"	"	"	"	"	"	
Antimony	ND UJ	0.413	"	"	"	"	"	"	
ES-A50-27 (B1E0234-18) Soil Sampled: 05/07/01 13:27 Received: 05/08/01 16:05									
Arsenic	**2.55** J	0.413	mg/kg dry	1	1E14023	05/14/01	05/16/01	EPA 6020	
Barium	**121** J	4.13	"	"	"	"	"	"	
Cadmium	ND	0.413	"	"	"	"	"	"	
Chromium	**37.8** J	0.413	"	"	"	"	"	"	
Copper	**84.2** J	0.413	"	"	"	"	"	"	
Lead	**15.0**	0.413	"	"	"	"	"	"	
Antimony	ND UJ	0.413	"	"	"	"	"	"	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-A50-28 (B1E0234-19) Soil Sampled: 05/07/01 13:30 Received: 05/08/01 16:05									
Arsenic	**1.94** J	0.394	mg/kg dry	1	1E14023	05/14/01	05/16/01	EPA 6020	
Barium	**193** J	3.94	"	"	"	"	"	"	
Cadmium	ND	0.394	"	"	"	"	"	"	
Chromium	**39.0** J	0.394	"	"	"	"	"	"	
Copper	**105** J	0.394	"	"	"	"	"	"	
Lead	**15.4**	0.394	"	"	"	"	"	"	
Antimony	ND UJ	0.394	"	"	"	"	"	"	
WS-A50-29 (B1E0234-20) Soil Sampled: 05/07/01 13:32 Received: 05/08/01 16:05									
Arsenic	**2.71** J	0.338	mg/kg dry	1	1E14023	05/14/01	05/16/01	EPA 6020	
Barium	**120** J	3.38	"	"	"	"	"	"	
Cadmium	**0.746**	0.338	"	"	"	"	"	"	
Chromium	**39.5** J	0.338	"	"	"	"	"	"	
pper	**89.8** J	0.338	"	"	"	"	"	"	
.ad	**21.5**	0.338	"	"	"	"	"	"	
Antimony	ND UJ	0.338	"	"	"	"	"	"	
FL-A50-30 (B1E0234-21) Soil Sampled: 05/07/01 13:35 Received: 05/08/01 16:05									
Arsenic	**3.33** J	0.370	mg/kg dry	1	1E14023	05/14/01	05/16/01	EPA 6020	
Barium	**133** J	3.70	"	"	"	"	"	"	
Cadmium	**0.432**	0.370	"	"	"	"	"	"	
Chromium	**38.4** J	0.370	"	"	"	"	"	"	
Copper	**90.4** J	0.370	"	"	"	"	"	"	
Lead	**19.5**	0.370	"	"	"	"	"	"	
Antimony	ND UJ	0.370	"	"	"	"	"	"	

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Garry Struthers Associates 3150 Richards Road Bellevue WA, 98005	Project: Camp Bonneville Project Project Number: 99-004.58 Project Manager: Elizabeth Chien	**Amended Report** Issued: 06/07/01 16:04

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NS-A53-31 (B1E0234-22) Soil Sampled: 05/08/01 08:35 Received: 05/08/01 16:05									
Arsenic	**2.29** J	0.388	mg/kg dry	1	1E14023	05/14/01	05/16/01	EPA 6020	
Barium	**154** J	3.88	"	"	"	"	"	"	
Beryllium	**0.824**	0.388	"	"	"	"	05/18/01	"	
Cadmium	ND	0.388	"	"	"	"	05/16/01	"	
Chromium	**39.5** J	0.388	"	"	"	"	"	"	
Copper	**103** J	0.388	"	"	"	"	"	"	
Nickel	**20.9** J	0.388	"	"	"	"	"	"	
Lead	**10.5**	0.388	"	"	"	"	"	"	
Antimony	ND UJ	0.388	"	"	"	"	"	"	
Thallium	ND	0.388	"	"	"	"	"	"	
Zinc	**66.0**	3.88	"	"	"	"	05/18/01	"	
ES-A53-32 (B1E0234-23) Soil Sampled: 05/08/01 08:37 Received: 05/08/01 16:05									
Arsenic	**1.92** J	0.347	mg/kg dry	1	1E14023	05/14/01	05/16/01	EPA 6020	
Barium	**165** J	3.47	"	"	"	"	"	"	
Beryllium	**0.740**	0.347	"	"	"	"	05/18/01	"	
Cadmium	**0.365**	0.347	"	"	"	"	05/16/01	"	
Chromium	**37.9** J	0.347	"	"	"	"	"	"	
Copper	**111** J	0.347	"	"	"	"	"	"	
Nickel	**19.1** J	0.347	"	"	"	"	"	"	
Lead	**13.5**	0.347	"	"	"	"	"	"	
Antimony	ND UJ	0.347	"	"	"	"	"	"	
Thallium	ND	0.347	"	"	"	"	"	"	
Zinc	**72.7**	3.47	"	"	"	"	05/18/01	"	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-A53-33 (B1E0234-24) Soil Sampled: 05/08/01 08:40 Received: 05/08/01 16:05									
Arsenic	**1.68** J	0.400	mg/kg dry	1	1E14023	05/14/01	05/16/01	EPA 6020	
Barium	**192** J	4.00	"	"	"	"	"	"	
Beryllium	**0.688**	0.400	"	"	"	"	05/18/01	"	
Cadmium	ND	0.400	"	"	"	"	05/16/01	"	
Chromium	**34.4** J	0.400	"	"	"	"	"	"	
Copper	**94.6** J	0.400	"	"	"	"	"	"	
Nickel	**19.6** J	0.400	"	"	"	"	"	"	
Lead	**22.8**	0.400	"	"	"	"	"	"	
Antimony	ND UJ	0.400	"	"	"	"	"	"	
Thallium	ND	0.400	"	"	"	"	"	"	
Zinc	**84.4**	4.00	"	"	"	"	05/19/01	"	
WS-A53-34 (B1E0234-25) Soil Sampled: 05/08/01 08:43 Received: 05/08/01 16:05									
senic	**2.09** J	0.407	mg/kg dry	1	1E14023	05/14/01	05/16/01	EPA 6020	
ium	**180** J	4.07	"	"	"	"	"	"	
Beryllium	**0.691**	0.407	"	"	"	"	05/18/01	"	
Cadmium	**0.454**	0.407	"	"	"	"	05/16/01	"	
Chromium	**39.0** J	0.407	"	"	"	"	"	"	
Copper	**104** J	0.407	"	"	"	"	"	"	
Nickel	**19.4** UJ	0.407	"	"	"	"	"	"	
Lead	**30.0**	0.407	"	"	"	"	"	"	
Antimony	ND UJ	0.407	"	"	"	"	"	"	
Thallium	ND	0.407	"	"	"	"	"	"	
Zinc	**74.7**	4.07	"	"	"	"	05/19/01	"	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FL-A53-35 (B1E0234-26) Soil Sampled: 05/08/01 08:45 Received: 05/08/01 16:05									
Arsenic	**1.84** J	0.350	mg/kg dry	1	1E14023	05/14/01	05/16/01	EPA 6020	
Barium	**157** J	3.50	"	"	"	"	"	"	
Beryllium	**0.628**	0.350	"	"	"	"	05/18/01	"	
Cadmium	ND	0.350	"	"	"	"	05/16/01	"	
Chromium	**38.7** J	0.350	"	"	"	"	"	"	
Copper	**110** J	0.350	"	"	"	"	"	"	
Nickel	**19.8** J	0.350	"	"	"	"	"	"	
Lead	**12.1**	0.350	"	"	"	"	"	"	
Antimony	ND WJ	0.350	"	"	"	"	"	"	
Thallium	ND	0.350	"	"	"	"	"	"	
Zinc	**65.0**	3.50	"	"	"	"	05/19/01	"	
FLD-A53-36 (B1E0234-27) Soil Sampled: 05/08/01 08:48 Received: 05/08/01 16:05									
Arsenic	**2.55** J	0.446	mg/kg dry	1	1E14023	05/14/01	05/16/01	EPA 6020	
Barium	**176** J	4.46	"	"	"	"	"	"	
Beryllium	**0.799**	0.446	"	"	"	"	05/18/01	"	
Cadmium	ND	0.446	"	"	"	"	05/16/01	"	
Chromium	**40.5** J	0.446	"	"	"	"	"	"	
Copper	**120** J	0.446	"	"	"	"	"	"	
Nickel	**20.9** J	0.446	"	"	"	"	"	"	
Lead	**21.6**	0.446	"	"	"	"	"	"	
Antimony	ND WJ	0.446	"	"	"	"	"	"	
Thallium	ND	0.446	"	"	"	"	"	"	
Zinc	**77.9**	4.46	"	"	"	"	05/19/01	"	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

TCLP Metals by EPA 1311/6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PBW-50701-01 (B1E0234-01) Other wet Sampled: 05/07/01 08:35 Received: 05/08/01 16:05									
Lead	**34.4**	0.200	mg/l	1	1E15022	05/15/01	05/17/01	EPA 6010B	
PBW-50701-02 (B1E0234-02) Other wet Sampled: 05/07/01 08:35 Received: 05/08/01 16:05									
Lead	**35.3**	0.200	mg/l	1	1E15022	05/15/01	05/17/01	EPA 6010B	
SP-PBS-11 (B1E0234-09) Soil Sampled: 05/07/01 11:20 Received: 05/08/01 16:05									
Lead	**0.343**	0.200	mg/l	1	1E15023	05/15/01	05/17/01	EPA 6010B	
SP-A51-17 (B1E0234-15) Soil Sampled: 05/07/01 13:05 Received: 05/08/01 16:05									
Arsenic	ND	0.500	mg/l	1	1E15023	05/15/01	05/17/01	EPA 6010B	
Barium	ND	1.00	"	"	"	"	05/18/01	"	
Cadmium	ND	0.00500	"	"	"	"	05/17/01	"	
Lead	ND	0.200	"	"	"	"	"	"	
SP-A50-25 (B1E0234-16) Soil Sampled: 05/07/01 13:08 Received: 05/08/01 16:05									
Arsenic	ND	0.500	mg/l	1	1E15023	05/15/01	05/17/01	EPA 6010B	
Barium	ND	1.00	"	"	"	"	05/18/01	"	
Cadmium	ND	0.00500	"	"	"	"	05/17/01	"	
Lead	ND	0.200	"	"	"	"	"	"	
SP-A53-38 (B1E0234-28) Soil Sampled: 05/08/01 08:53 Received: 05/08/01 16:05									
Arsenic	ND	0.500	mg/l	1	1E15023	05/15/01	05/17/01	EPA 6010B	
Barium	ND	1.00	"	"	"	"	05/18/01	"	
Cadmium	ND	0.00500	"	"	"	"	05/17/01	"	
Lead	ND	0.200	"	"	"	"	"	"	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

TCLP Metals by EPA 1311/6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SPD-A53-39 (B1E0234-29) Soil Sampled: 05/08/01 08:55 Received: 05/08/01 16:05									
Arsenic	ND	0.500	mg/l	1	1E15023	05/15/01	05/17/01	EPA 6010B	
Barium	ND	1.00	"	"	"	"	05/18/01	"	
Cadmium	ND	0.00500	"	"	"	"	05/17/01	"	
Lead	ND	0.200	"	"	"	"	"	"	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Organochlorine Pesticides by EPA Method 8081A

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NS-PBS-04 (B1E0234-03) Soil Sampled: 05/07/01 11:22 Received: 05/08/01 16:05									
4,4'-DDD	**1.12**	1.00	ug/kg dry	1	1E11019	05/11/01	05/21/01	EPA 8081A	
4,4'-DDE	**2.14**	1.00	"	"	"	"	"	"	
4,4'-DDT	**7.70**	1.00	"	"	"	"	"	"	P-01
Surrogate: TCX	*74.0 %*	*40-140*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*85.1 %*	*40-140*			"	"	"	"	
ES-PBS-05 (B1E0234-04) Soil Sampled: 05/07/01 11:24 Received: 05/08/01 16:05									
4,4'-DDD	**74.4**	10.0	ug/kg dry	5	1E11019	05/11/01	05/22/01	EPA 8081A	P-01
4,4'-DDE	**34.2**	10.0	"	"	"	"	"	"	
4,4'-DDT	**108**	10.0	"	"	"	"	"	"	
Surrogate: TCX	*81.0 %*	*40-140*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*83.7 %*	*40-140*			"	"	"	"	
SS-PBS-06 (B1E0234-05) Soil Sampled: 05/07/01 11:26 Received: 05/08/01 16:05									
'-DDD	**201**	5.00	ug/kg dry	5	1E11019	05/11/01	05/21/01	EPA 8081A	P-01
4,4'-DDE	**31.2**	5.00	"	"	"	"	"	"	P-01
4,4'-DDT	ND	1.00	"	1	"	"	05/18/01	"	
Surrogate: TCX	*76.4 %*	*40-140*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*505 %*	*40-140*			"	"	"	"	*S-04*
WS-PBS-07 (B1E0234-06) Soil Sampled: 05/07/01 11:28 Received: 05/08/01 16:05									
4,4'-DDD	**2.37**	1.00	ug/kg dry	1	1E11019	05/11/01	05/21/01	EPA 8081A	P-01
4,4'-DDE	**2.13**	1.00	"	"	"	"	"	"	
4,4'-DDT	**12.6**	1.00	"	"	"	"	"	"	
Surrogate: TCX	*72.4 %*	*40-140*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*85.6 %*	*40-140*			"	"	"	"	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Organochlorine Pesticides by EPA Method 8081A
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FL-PBS-08 (B1E0234-07) Soil Sampled: 05/07/01 11:05 Received: 05/08/01 16:05									
4,4'-DDD	**3.62**	1.00	ug/kg dry	1	1E11019	05/11/01	05/21/01	EPA 8081A	
4,4'-DDE	ND	1.00	"	"	"	"	"	"	
4,4'-DDT	**6.17**	1.00	"	"	"	"	"	"	P-01
Surrogate: TCX	*66.7 %*	*40-140*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*86.3 %*	*40-140*			"	"	"	"	
FLD-PBS-09 (B1E0234-08) Soil Sampled: 05/07/01 11:10 Received: 05/08/01 16:05									
4,4'-DDD	**4.95**	1.00	ug/kg dry	1	1E11019	05/11/01	05/21/01	EPA 8081A	
4,4'-DDE	**1.03**	1.00	"	"	"	"	"	"	
4,4'-DDT	**10.3**	1.00	"	"	"	"	"	"	
Surrogate: TCX	*71.4 %*	*40-140*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*90.6 %*	*40-140*			"	"	"	"	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Chlorinated Herbicides by EPA Method 8151A/1658

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NS-PBS-04 (B1E0234-03RE1) Soil	**Sampled: 05/07/01 11:22**		**Received: 05/08/01 16:05**						
2,4,5-T	ND	50.0	ug/kg dry	1	1E17028	05/17/01	05/21/01	EPA 8151A	
MCPP	ND	1000	"	"	"	"	"	"	
Surrogate: 2,4-DCAA	*97.3 %*	*31-136*			"	"	"	"	
ES-PBS-05 (B1E0234-04RE1) Soil	**Sampled: 05/07/01 11:24**		**Received: 05/08/01 16:05**						
2,4,5-T	**2190**	550	ug/kg dry	11	1E17028	05/17/01	05/22/01	EPA 8151A	
MCPP	ND	1000	"	1	"	"	05/22/01	"	
Surrogate: 2,4-DCAA	*119 %*	*31-136*			"	"	"	"	
SS-PBS-06 (B1E0234-05RE1) Soil	**Sampled: 05/07/01 11:26**		**Received: 05/08/01 16:05**						
2,4,5-T	**1440**	250	ug/kg dry	5	1E17028	05/17/01	05/22/01	EPA 8151A	
MCPP	ND	1000	"	1	"	"	05/22/01	"	
Surrogate: 2,4-DCAA	*113 %*	*31-136*			"	"	"	"	
[illegible]-PBS-07 (B1E0234-06RE1) Soil	**Sampled: 05/07/01 11:28**		**Received: 05/08/01 16:05**						
[illegible],4,5-T	ND	50.0	ug/kg dry	1	1E17028	05/17/01	05/21/01	EPA 8151A	
MCPP	ND	1000	"	"	"	"	"	"	
Surrogate: 2,4-DCAA	*91.0 %*	*31-136*			"	"	"	"	
FL-PBS-08 (B1E0234-07RE1) Soil	**Sampled: 05/07/01 11:05**		**Received: 05/08/01 16:05**						
2,4-D	ND	40.0	ug/kg dry	1	1E17028	05/17/01	05/21/01	EPA 8151A	
2,4-DB	ND	20.0	"	"	"	"	"	"	
2,4,5-T	ND	50.0	"	"	"	"	"	"	
2,4,5-TP (Silvex)	ND	50.0	"	"	"	"	"	"	
Dalapon	ND	50.0	"	"	"	"	"	"	
Dicamba	ND	20.0	"	"	"	"	"	"	
Dichlorprop	ND	10.0	"	"	"	"	"	"	
Dinoseb	ND	10.0	"	"	"	"	"	"	
MCPA	ND	1000	"	"	"	"	"	"	
MCPP	ND	1000	"	"	"	"	"	"	
Pentachlorophenol	ND	40.0	"	"	"	"	"	"	
Surrogate: 2,4-DCAA	*93.8 %*	*31-136*			"	"	"	"	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Chlorinated Herbicides by EPA Method 8151A/1658

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FLD-PBS-09 (B1E0234-08RE1) Soil	**Sampled: 05/07/01 11:10**		**Received: 05/08/01 16:05**						
2,4,5-T	ND	50.0	ug/kg dry	1	1E17028	05/17/01	05/21/01	EPA 8151A	
MCPP	ND	1000	"	"	"	"	"	"	
Surrogate: 2,4-DCAA	*97.1 %*	*31-136*			"	"	"	"	

North Creek Analytical - Bothell

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NS-PBS-04 (B1E0234-03) Soil Sampled: 05/07/01 11:22 Received: 05/08/01 16:05									
Dry Weight	**75.6**	1.00	%	1	1E10004	05/10/01	05/11/01	BSOPSPL003R07	
ES-PBS-05 (B1E0234-04) Soil Sampled: 05/07/01 11:24 Received: 05/08/01 16:05									
Dry Weight	**76.6**	1.00	%	1	1E10004	05/10/01	05/11/01	BSOPSPL003R07	
SS-PBS-06 (B1E0234-05) Soil Sampled: 05/07/01 11:26 Received: 05/08/01 16:05									
Dry Weight	**76.8**	1.00	%	1	1E10004	05/10/01	05/11/01	BSOPSPL003R07	
WS-PBS-07 (B1E0234-06) Soil Sampled: 05/07/01 11:28 Received: 05/08/01 16:05									
Dry Weight	**75.1**	1.00	%	1	1E10004	05/10/01	05/11/01	BSOPSPL003R07	
FL-PBS-08 (B1E0234-07) Soil Sampled: 05/07/01 11:05 Received: 05/08/01 16:05									
Dry Weight	**79.4**	1.00	%	1	1E10004	05/10/01	05/11/01	BSOPSPL003R07	
FLD-PBS-09 (B1E0234-08) Soil Sampled: 05/07/01 11:10 Received: 05/08/01 16:05									
Weight	**79.5**	1.00	%	1	1E10004	05/10/01	05/11/01	BSOPSPL003R07	
NS-A51-12 (B1E0234-10) Soil Sampled: 05/07/01 12:55 Received: 05/08/01 16:05									
Dry Weight	**78.1**	1.00	%	1	1E10004	05/10/01	05/11/01	BSOPSPL003R07	
ES-A51-13 (B1E0234-11) Soil Sampled: 05/07/01 12:58 Received: 05/08/01 16:05									
Dry Weight	**75.0**	1.00	%	1	1E10004	05/10/01	05/11/01	BSOPSPL003R07	
SS-A51-14 (B1E0234-12) Soil Sampled: 05/07/01 13:00 Received: 05/08/01 16:05									
Dry Weight	**76.9**	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
WS-A51-15 (B1E0234-13) Soil Sampled: 05/07/01 13:03 Received: 05/08/01 16:05									
Dry Weight	77.0	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	
FL-A51-16 (B1E0234-14) Soil Sampled: 05/07/01 13:06 Received: 05/08/01 16:05									
Dry Weight	77.6	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	
NS-A50-26 (B1E0234-17) Soil Sampled: 05/07/01 13:25 Received: 05/08/01 16:05									
Dry Weight	75.5	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	
ES-A50-27 (B1E0234-18) Soil Sampled: 05/07/01 13:27 Received: 05/08/01 16:05									
Dry Weight	77.1	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	
SS-A50-28 (B1E0234-19) Soil Sampled: 05/07/01 13:30 Received: 05/08/01 16:05									
Dry Weight	75.1	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	
WS-A50-29 (B1E0234-20) Soil Sampled: 05/07/01 13:32 Received: 05/08/01 16:05									
Dry Weight	73.9	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	
FL-A50-30 (B1E0234-21) Soil Sampled: 05/07/01 13:35 Received: 05/08/01 16:05									
Dry Weight	72.8	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	
NS-A53-31 (B1E0234-22) Soil Sampled: 05/08/01 08:35 Received: 05/08/01 16:05									
Dry Weight	75.0	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	
ES-A53-32 (B1E0234-23) Soil Sampled: 05/08/01 08:37 Received: 05/08/01 16:05									
Dry Weight	75.6	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-A53-33 (B1E0234-24) Soil Sampled: 05/08/01 08:40 Received: 05/08/01 16:05									
Dry Weight	**77.0**	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	
WS-A53-34 (B1E0234-25) Soil Sampled: 05/08/01 08:43 Received: 05/08/01 16:05									
Dry Weight	**77.7**	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	
FL-A53-35 (B1E0234-26) Soil Sampled: 05/08/01 08:45 Received: 05/08/01 16:05									
Dry Weight	**75.3**	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	
FLD-A53-36 (B1E0234-27) Soil Sampled: 05/08/01 08:48 Received: 05/08/01 16:05									
Dry Weight	**74.7**	1.00	%	1	1E10012	05/10/01	05/11/01	BSOPSPL003R07	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E11024: Prepared 05/11/01 Using EPA 3550B										
Blank (1E11024-BLK1)										
Diesel Range Hydrocarbons	ND	10.0	mg/kg wet							
Lube Oil Range Hydrocarbons	ND	25.0	"							
Surrogate: 2-FBP	*8.89*		"	*10.7*		*83.1*	*50-150*			
Surrogate: Octacosane	*9.80*		"	*10.7*		*91.6*	*50-150*			
LCS (1E11024-BS1)										
Diesel Range Hydrocarbons	66.7	10.0	mg/kg wet	66.7		100	64-122			
Surrogate: 2-FBP	*9.85*		"	*10.7*		*92.1*	*50-150*			
Matrix Spike (1E11024-MS1)					**Source: B1E0234-07**					
Diesel Range Hydrocarbons	74.3	10.0	mg/kg dry	84.0	29.2	53.7	50-150			
Surrogate: 2-FBP	*11.7*		"	*13.4*		*87.3*	*50-150*			
Matrix Spike Dup (1E11024-MSD1)					**Source: B1E0234-07**					
Diesel Range Hydrocarbons	88.7	10.0	mg/kg dry	84.0	29.2	70.8	50-150	17.7	40	
Surrogate: 2-FBP	*11.7*		"	*13.4*		*87.3*	*50-150*			

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3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Total Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E14022: Prepared 05/14/01 Using EPA 3050B										
Blank (1E14022-BLK1)										
Antimony	ND	0.500	mg/kg wet							
Arsenic	ND	0.500	"							
Barium	ND	5.00	"							
Beryllium	ND	0.500	"							
Cadmium	ND	0.500	"							
Chromium	ND	0.500	"							
Copper	ND	0.500	"							
Lead	ND	0.500	"							
Nickel	ND	0.500	"							
LCS (1E14022-BS1)										
·timony	26.1	0.500	mg/kg wet	25.0		104	85-115			
·enic	25.1	0.500	"	25.0		100	85-115			
Barium	26.1	5.00	"	25.0		104	85-115			
Beryllium	24.1	0.500	"	25.0		96.4	85-115			
Cadmium	24.2	0.500	"	25.0		96.8	85-115			
Chromium	26.7	0.500	"	25.0		107	85-115			
Copper	24.8	0.500	"	25.0		99.2	85-115			
Lead	25.3	0.500	"	25.0		101	85-115			
Nickel	24.6	0.500	"	25.0		98.4	85-115			
Matrix Spike (1E14022-MS1)					**Source: B1E0234-14**					
Antimony	5.74	0.385	mg/kg dry	24.8	ND	22.9	70-130			Q-13
Arsenic	12.9	0.385	"	24.8	1.84	44.6	70-130			Q-13
Barium	194	7.69	"	24.8	177	68.5	70-130			Q-15
Beryllium	20.8	0.385	"	24.8	0.592	81.5	70-130			
Cadmium	20.5	0.385	"	24.8	0.451	80.8	70-130			
Chromium	53.6	0.385	"	24.8	36.8	67.7	70-130			Q-14
Copper	111	0.385	"	24.8	101	40.3	70-130			Q-15
Lead	36.4	0.385	"	24.8	12.6	96.0	70-130			
Nickel	36.9	0.385	"	24.8	18.7	73.4	70-130			

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3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Total Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E14022: Prepared 05/14/01 Using EPA 3050B										
Matrix Spike Dup (1E14022-MSD1)					**Source: B1E0234-14**					
Antimony	4.35	0.382	mg/kg dry	24.6	ND	17.5	70-130	27.6	20	Q-13
Arsenic	13.0	0.382	"	24.6	1.84	45.4	70-130	0.772	20	Q-13
Barium	183	7.63	"	24.6	177	24.4	70-130	5.84	20	Q-15
Beryllium	20.4	0.382	"	24.6	0.592	80.5	70-130	1.94	20	
Cadmium	19.9	0.382	"	24.6	0.451	79.1	70-130	2.97	20	
Chromium	53.2	0.382	"	24.6	36.8	66.7	70-130	0.749	20	Q-14
Copper	106	0.382	"	24.6	101	20.3	70-130	4.61	20	Q-15
Lead	36.6	0.382	"	24.6	12.6	97.6	70-130	0.548	20	
Nickel	35.4	0.382	"	24.6	18.7	67.9	70-130	4.15	20	Q-01
Post Spike (1E14022-PS1)					**Source: B1E0234-14**					
Antimony	259	1.98	mg/kg dry	256	ND	101	70-130			
Batch 1E14023: Prepared 05/14/01 Using EPA 3050B										
Blank (1E14023-BLK1)										
Antimony	ND	0.500	mg/kg wet							
Arsenic	ND	0.500	"							
Barium	ND	5.00	"							
Beryllium	ND	0.500	"							
Cadmium	ND	0.500	"							
Chromium	ND	0.500	"							
Copper	ND	0.500	"							
Lead	ND	0.500	"							
Nickel	ND	0.500	"							
Thallium	ND	0.500	"							
Zinc	ND	5.00	"							

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Total Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E14023: Prepared 05/14/01 Using EPA 3050B										
LCS (1E14023-BS1)										
Antimony	25.5	0.500	mg/kg wet	25.0		102	85-115			
Arsenic	23.3	0.500	"	25.0		93.2	85-115			
Barium	26.1	5.00	"	25.0		104	85-115			
Beryllium	23.5	0.500	"	25.0		94.0	85-115			
Cadmium	24.1	0.500	"	25.0		96.4	85-115			
Chromium	26.6	0.500	"	25.0		106	85-115			
Copper	25.8	0.500	"	25.0		103	85-115			
Lead	24.9	0.500	"	25.0		99.6	85-115			
Nickel	26.8	0.500	"	25.0		107	85-115			
Thallium	24.7	0.500	"	25.0		98.8	85-115			
Zinc	23.6	5.00	"	25.0		94.4	85-115			
trix Spike (1E14023-MS1)					**Source: B1E0234-26**					
Antimony	2.07	0.360	mg/kg dry	23.9	ND	8.66	70-130			Q-13
Arsenic	13.7	0.360	"	23.9	1.84	49.6	70-130			Q-13
Barium	186	3.60	"	23.9	157	121	70-130			
Beryllium	21.4	0.360	"	23.9	0.628	86.9	70-130			
Cadmium	19.9	0.360	"	23.9	ND	81.9	70-130			
Chromium	59.3	0.360	"	23.9	38.7	86.2	70-130			
Copper	126	0.360	"	23.9	110	66.9	70-130			Q-01
Lead	39.0	0.360	"	23.9	12.1	113	70-130			
Nickel	38.9	0.360	"	23.9	19.8	79.9	70-130			
Thallium	23.8	0.360	"	23.9	ND	98.9	70-130			
Zinc	96.1	3.60	"	23.9	65.0	130	70-130			
Matrix Spike Dup (1E14023-MSD1)					**Source: B1E0234-26**					
Antimony	1.44	0.362	mg/kg dry	24.1	ND	5.98	70-130	35.9	20	Q-13
Arsenic	14.0	0.362	"	24.1	1.84	50.5	70-130	2.17	20	Q-13
Barium	199	7.25	"	24.1	157	174	70-130	6.75	20	Q-01
Beryllium	20.7	0.362	"	24.1	0.628	83.3	70-130	3.33	20	
Cadmium	20.1	0.362	"	24.1	ND	82.0	70-130	1.00	20	
Chromium	61.2	0.362	"	24.1	38.7	93.4	70-130	3.15	20	
Copper	134	0.362	"	24.1	110	99.6	70-130	6.15	20	
Lead	38.3	0.362	"	24.1	12.1	109	70-130	1.81	20	
Nickel	39.9	0.362	"	24.1	19.8	83.4	70-130	2.54	20	

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3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Total Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E14023: Prepared 05/14/01 Using EPA 3050B										
Matrix Spike Dup (1E14023-MSD1)					**Source: B1E0234-26**					
Thallium	24.2	0.362	mg/kg dry	24.1	ND	99.7	70-130	1.67	20	
Zinc	95.1	3.62	"	24.1	65.0	125	70-130	1.05	20	
Post Spike (1E14023-PS1)					**Source: B1E0234-26**					
Antimony	231	1.75	mg/kg dry	232	ND	99.6	70-130			
Arsenic	445	1.75	"	464	1.84	95.5	70-130			

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

TCLP Metals by EPA 1311/6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E15022: Prepared 05/15/01 Using EPA 3010A TCLP										
Blank (1E15022-BLK1)										
Lead	ND	0.200	mg/l							
LCS (1E15022-BS1)										
Lead	10.8	0.200	mg/l	10.0		108	80-120			
Matrix Spike (1E15022-MS1)					**Source: B1E0234-01**					
Lead	43.3	0.400	mg/l	10.0	34.4	89.0	80-120			
Matrix Spike Dup (1E15022-MSD1)					**Source: B1E0234-01**					
Lead	44.7	0.400	mg/l	10.0	34.4	103	80-120	3.18	20	
Batch 1E15023: Prepared 05/15/01 Using EPA 3010A TCLP										
Blank (1E15023-BLK1)										
enic	ND	0.500	mg/l							
arium	ND	1.00	"							
Cadmium	ND	0.00500	"							
Lead	ND	0.200	"							
LCS (1E15023-BS1)										
Arsenic	9.54	0.500	mg/l	10.0		95.4	80-120			
Barium	9.74	1.00	"	10.0		97.4	80-120			
Cadmium	10.3	0.00500	"	10.0		103	80-120			
Lead	10.5	0.200	"	10.0		105	80-120			
Matrix Spike (1E15023-MS1)					**Source: B1E0234-28**					
Arsenic	9.40	0.500	mg/l	10.0	ND	94.0	80-120			
Barium	9.89	1.00	"	10.0	ND	94.4	80-120			
Cadmium	9.76	0.00500	"	10.0	ND	97.6	80-120			
Lead	10.2	0.200	"	10.0	ND	102	80-120			

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

TCLP Metals by EPA 1311/6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E15023: Prepared 05/15/01 Using EPA 3010A TCLP										
Matrix Spike Dup (1E15023-MSD1)					**Source: B1E0234-28**					
Arsenic	10.6	0.500	mg/l	10.0	ND	106	80-120	12.0	20	
Barium	9.92	1.00	"	10.0	ND	94.7	80-120	0.303	20	
Cadmium	10.6	0.00500	"	10.0	ND	106	80-120	8.25	20	
Lead	10.0	0.200	"	10.0	ND	100	80-120	1.98	20	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Organochlorine Pesticides by EPA Method 8081A - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E11019: Prepared 05/11/01 Using EPA 3550B										
Blank (1E11019-BLK1)										
4,4'-DDD	ND	1.00	ug/kg wet							
4,4'-DDE	ND	1.00	"							
4,4'-DDT	ND	1.00	"							
Surrogate: TCX	*5.97*		"	*6.67*		*89.5*	*40-140*			
Surrogate: Decachlorobiphenyl	*5.87*		"	*6.67*		*88.0*	*40-140*			
LCS (1E11019-BS1)										
4,4'-DDT	12.7	1.00	ug/kg wet	16.7		76.0	50-130			
Surrogate: TCX	*6.25*		"	*6.67*		*93.7*	*40-140*			
Surrogate: Decachlorobiphenyl	*6.33*		"	*6.67*		*94.9*	*40-140*			
Matrix Spike (1E11019-MS1)					**Source: B1E0234-07**					
'-DDT	24.8	1.00	ug/kg dry	21.0	6.17	88.7	40-140			
rogate: TCX	*7.47*		"	*8.40*		*88.9*	*40-140*			
Surrogate: Decachlorobiphenyl	*8.42*		"	*8.40*		*100*	*40-140*			
Matrix Spike Dup (1E11019-MSD1)					**Source: B1E0234-07**					
4,4'-DDT	19.8	1.00	ug/kg dry	21.0	6.17	64.9	40-140	22.4	35	
Surrogate: TCX	*7.11*		"	*8.40*		*84.6*	*40-140*			
Surrogate: Decachlorobiphenyl	*8.30*		"	*8.40*		*98.8*	*40-140*			

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Chlorinated Herbicides by EPA Method 8151A/1658 - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E17028: Prepared 05/17/01 Using EPA 8151A										
Blank (1E17028-BLK1)										
2,4-D	ND	40.0	ug/kg wet							
2,4-DB	ND	20.0	"							
2,4,5-T	ND	50.0	"							
2,4,5-TP (Silvex)	ND	50.0	"							
Dalapon	ND	50.0	"							
Dicamba	ND	20.0	"							
Dichlorprop	ND	10.0	"							
Dinoseb	ND	10.0	"							
MCPA	ND	1000	"							
MCPP	ND	1000	"							
Pentachlorophenol	ND	40.0	"							
Surrogate: 2,4-DCAA	*136*		"	*167*		*81.4*	*31-136*			
LCS (1E17028-BS1)										
2,4-D	92.8	40.0	ug/kg wet	100		92.8	41-141			
2,4,5-T	91.8		"	100		91.8	50-150			
2,4,5-TP (Silvex)	95.5	50.0	"	100		95.5	51-116			
MCPP	8250		"	10000		82.5	50-150			
Surrogate: 2,4-DCAA	*166*		"	*167*		*99.4*	*31-136*			
Matrix Spike (1E17028-MS1)					**Source: B1E0234-07RE1**					
2,4-D	114	40.0	ug/kg dry	126	ND	90.5	41-141			
2,4,5-T	109		"	126	ND	86.5	30-108			
2,4,5-TP (Silvex)	111	50.0	"	126	ND	88.1	51-116			
MCPP	6730		"	12600	ND	53.4	30-108			
Surrogate: 2,4-DCAA	*163*		"	*210*		*77.6*	*31-136*			
Matrix Spike Dup (1E17028-MSD1)					**Source: B1E0234-07RE1**					
2,4-D	147	40.0	ug/kg dry	126	ND	117	41-141	25.3	44	
2,4,5-T	120		"	126	ND	95.2	30-108	9.61	50	
2,4,5-TP (Silvex)	122	50.0	"	126	ND	96.8	51-116	9.44	27	
MCPP	8530		"	12600	ND	67.7	30-108	23.6	50	
Surrogate: 2,4-DCAA	*219*		"	*210*		*104*	*31-136*			

North Creek Analytical - Bothell

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1E10004: Prepared 05/10/01 Using Dry Weight										
Blank (1E10004-BLK1)										
Dry Weight	100	1.00	%							
Batch 1E10012: Prepared 05/10/01 Using Dry Weight										
Blank (1E10012-BLK1)										
Dry Weight	99.6	1.00	%							

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Amended Report**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	Issued: 06/07/01 16:04

Notes and Definitions

D-09	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
P-01	Greater than 40% difference between results from two dissimilar columns.
Q-01	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
Q-13	Multiple analyses indicate the percent recovery is outside the control limits due to a matrix effect.
Q-14	Visual examination indicates the RPD and/or matrix spike recovery is outside the control limit due to a non-homogeneous sample matrix.
Q-15	Analyses are not controlled on matrix spike RPD and/or percent recoveries when the sample concentration is significantly higher than the spike level.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

NWTPH-Dx
Analytical Summary

LabNumber	Client Sample ID	Date & Time Analyzed	Dilution	Instrument
1E11024-BLK1	Method Blank	5/12/01 13:11	1	GC #7
1E11024-BS1	Laboratory Control Sample	5/12/01 13:33	1	GC #7
1E11024-MS1	Matrix Spike	5/12/01 13:33	1	GC #7
1E11024-MSD1	Matrix Spike Duplicate	5/12/01 13:55	1	GC #7
B1E0234-03	NS-PBS-04	5/12/01 16:08	1	GC #7
B1E0234-04	ES-PBS-05	5/12/01 16:31	1	GC #7
B1E0234-05	SS-PBS-06	5/12/01 16:31	1	GC #7
B1E0234-06	WS-PBS-07	5/12/01 16:53	1	GC #7
B1E0234-07	FL-PBS-08	5/12/01 16:53	1	GC #7
B1E0234-08	FLD-PBS-09	5/12/01 18:21	1	GC #7

Injection Log

Directory: D:\HPCHEM\4\DATA\051201

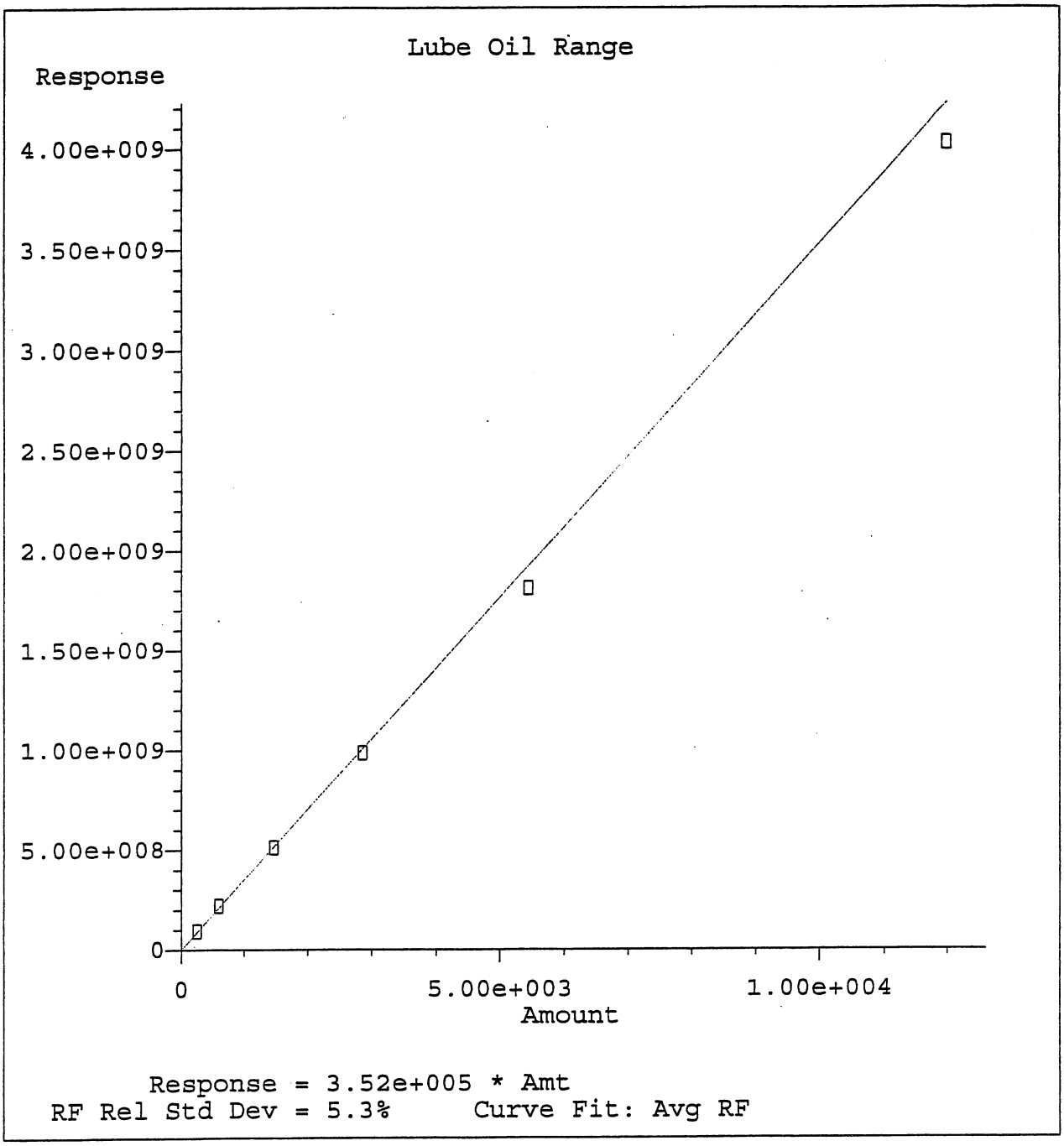
Emily Truce 5/12/01 GC#7

e	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
	2	E12001.D	1.	Diesel CCV X	1600ppm 1010125	5/12/012006 6
	3	E12002.D	1.	Motor oil CCV	1600ppm 0080150	5/12/012006 6:11:0
3	3	E12003.D	1.	Motor oil CCV	1600ppm 0080150	5/12/012006 6:32:5
4	2	E12004.D	1.	Diesel CCV OUT INT	1600ppm 1010125	5/12/012006 6:32:5
5	1	E12005.D	1.	MeCl2		5/12/012006 6:54:3
6	100	E12006.D	1.	MeCl2		5/12/012006 6:54:3
7	2	E12007.D	1.	Diesel ccv	R1 1600 ppm 1010125	5/12/012007 7:22:4
8	4	E12008.D	1.	1e10001-blk1	s	5/12/012007 7:22:4
9	5	E12009.D	1.	1e10001-bs1	s 1000 ppm 1030138	5/12/012007 7:44:4
10	6	E12010.D	1.	1e10001-dup1	s b1e0115-01	5/12/012007 7:44:4
11	7	E12011.D	1.	1e10001-dup2	s b1e0150-01	5/12/012008 8:06:5
12	8	E12012.D	1.	b1d0746-02	s	5/12/012008 8:06:5
13	9	E12013.D	1.	b1d0746-10	s	5/12/012008 8:29:0
14	10	E12014.D	1.	b1e0115-01	s	5/12/012008 8:29:0
15	11	E12015.D	1.	b1e0115-02	s	5/12/012008 8:51:1
16	12	E12016.D	1.	b1e0115-03	s	5/12/012008 8:51:1
17	13	E12017.D	1.	b1e0115-04	s	5/12/012009 9:13:3
18	1	E12018.D	1.	MeCl2		5/12/012009 9:13:3
19	100	E12019.D	1.	MeCl2		5/12/012009 9:36:0
20	1	E12020.D	1.	MeCl2		5/12/012009 9:36:0
21	14	E12023.D	1.	b1e0115-05	s	5/12/012009 9:58:2
22	15	E12024.D	1.	b1e0150-01	s	5/12/012009 9:58:2
23	16	E12025.D	1.	b1e0150-02	s	5/12/012010 10:20:4
24	17	E12026.D	1.	b1e0150-03	s	5/12/012010 10:20:4
25	18	E12027.D	1.	b1e0150-04	s	5/12/012010 10 4
26	19	E12028.D	1.	b1e0150-05	s	5/12/012010 10. .4
27	20	E12029.D	1.	1e10023-blk1	s	5/12/012011 11:04:4
28	21	E12030.D	1.	1e10023-bs1	s 1000 ppm 1030138	5/12/012011 11:04:4
29	22	E12031.D	1.	1e10023-bsd1	s 1000 ppm 1030138	5/12/012011 11:26:5
30	23	E12032.D	101.	b1e0153-01 CS 1X	s 101x	5/12/012011 11:26:5
31	2	E12033.D	1.	Diesel ccv	1600 ppm 1010125	5/12/012011 11:49:0
32	3	E12034.D	1.	Motor oil ccv	1600 ppm 0080150	5/12/012011 11:49:0
33	3	E12035.D	1.	Motor oil ccv	1600 ppm 0080150	5/12/012012 12:11:3
34	2	E12036.D	1.	Diesel ccv OUT INT	1600 ppm 1010125	5/12/012012 12:11:3
35	1	E12037.D	1.	MeCl2		5/12/012012 12:46:5
36	100	E12038.D	1.	MeCl2		5/12/012012 12:46:5
37	24	E12039.D	101.	b1e0153-02 CS 1X	s 101x	5/12/012001 1:11:3
38	25	E12040.D	1.	1e11024-blk1	s	5/12/012001 1:11:3
39	26	E12041.D	1.	1e11024-bs1	s 1000 ppm 1030138	5/12/012001 1:33:5
40	27	E12042.D	1.	1e11024-ms1	s 1000 ppm 1030138 b1e0234-07	5/12/012001 1:33:5
41	28	E12043.D	1.	1e11024-msd1	s 1000 ppm 1030138 b1e0234-07	5/12/012001 1:55:3
42	29	E12044.D	1.	b1e0223-01	s	5/12/012001 1:55:3
43	30	E12045.D	1.	b1e0223-02	s	5/12/012002 2:17:2
44	31	E12046.D	1.	b1e0223-03	s	5/12/012002 2:17:2
45	32	E12047.D	1.	b1e0223-04	s	5/12/012002 2
46	33	E12048.D	1.	b1e0223-05	s	5/12/012002 2.
47	1	E12049.D	1.	MeCl2		5/12/012003 3:02:1
48	100	E12050.D	1.	MeCl2		5/12/012003 3:02:1

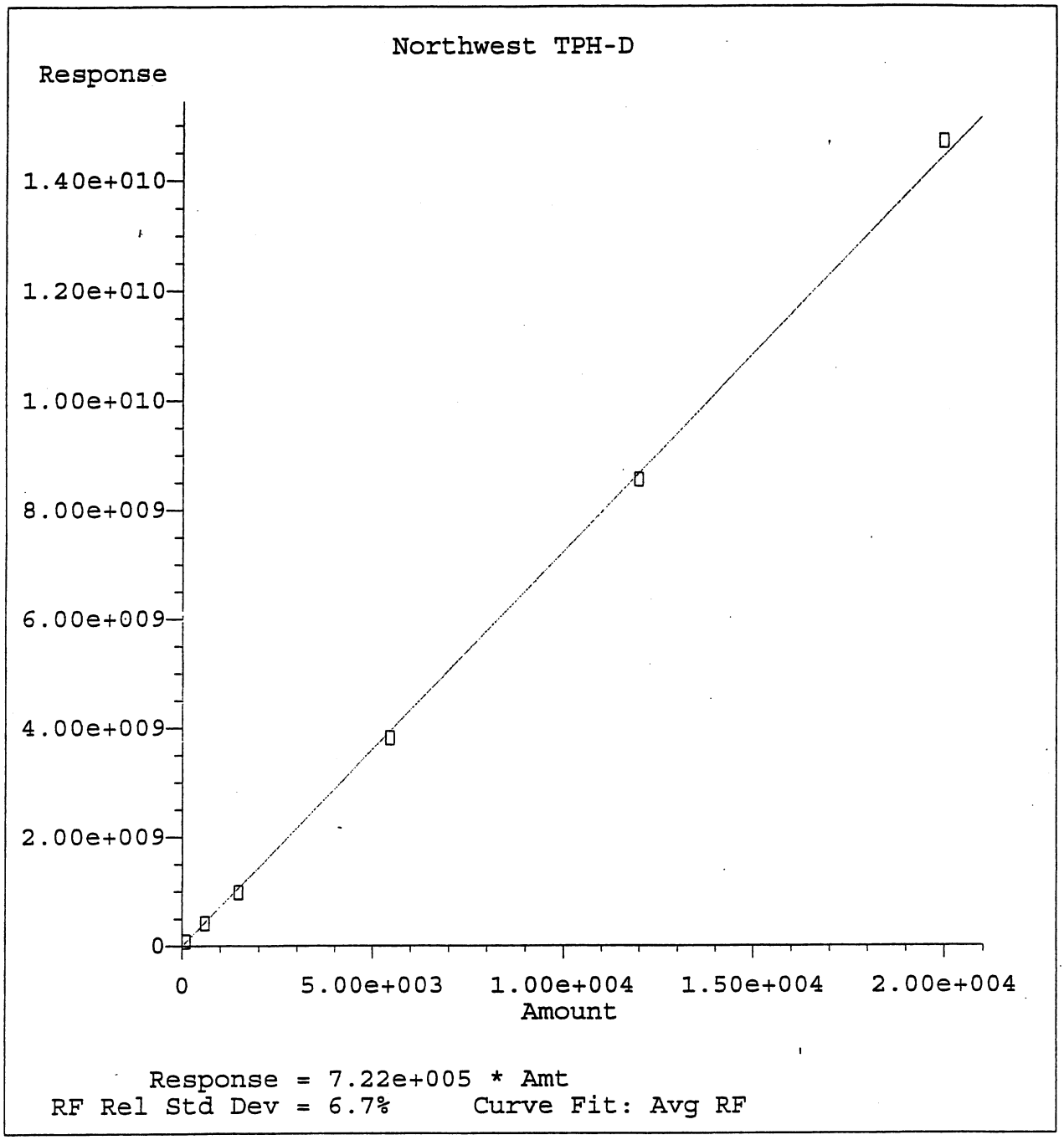
Injection Log

Directory: D:\HPCHEM\4\DATA\051201

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
49	34	E12051.D	1.	b1e0223-06	s	5/12/012003 3:24:2
[illegible]	35	E12052.D	1.	b1e0223-07	s	5/12/012003 3:24:2
5[illegible]	36	E12053.D	5.	b1e0223-08 r.s. 41x	s 5x	5/12/012003 3:46:2
52	37	E12054.D	1.	b1e0223-09	s	5/12/012003 3:46:2
53	38	E12055.D	1.	b1e0223-10	s	5/12/012004 4:08:3
54	39	E12056.D	1.	b1e0234-03	s	5/12/012004 4:08:3
55	40	E12057.D	1.	b1e0234-04	s	5/12/012004 4:31:0
56	41	E12058.D	1.	b1e0234-05	s	5/12/012004 4:31:0
57	42	E12059.D	1.	b1e0234-06	s	5/12/012004 4:53:0
58	43	E12060.D	1.	b1e0234-07	s	5/12/012004 4:53:0
59	2	E12061.D	1.	Diesel ccv	1600 ppm 1010125	5/12/012005 5:14:4
60	3	E12062.D	1.	Motor oil ccv	1600 ppm 0080150	5/12/012005 5:14:4
61	3	E12063.D	1.	Motor oil ccv	1600 ppm 0080150	5/12/012005 5:37:0
62	2	E12064.D	1.	Diesel ccv	1600 ppm 1010125	5/12/012005 5:37:0
63	1	E12065.D	1.	MeCl2		5/12/012005 5:59:3
64	100	E12066.D	1.	MeCl2		5/12/012005 5:59:3
65	44	E12067.D	1.	b1e0234-08	s	5/12/012006 6:21:5
66	45	E12068.D	1.	1e07014-blk1	w	5/12/012006 6:21:5
67	46	E12069.D	1.	1e07014-bs1	w 2000 ppm 0110001	5/12/012006 6:44:2
68	47	E12070.D	1.	1e07014-bsd1	w 2000 ppm 0110001	5/12/012006 6:44:2
69	48	E12071.D	1.	b1e0146-01	w	5/12/012007 7:06:3
70	49	E12072.D	1.	b1e0146-02	w	5/12/012007 7:06:3
71	50	E12073.D	1.	b1e0146-03 r.s. 41x	w	5/12/012007 7:28:3
72	51	E12074.D	1.	b1e0146-04	w	5/12/012007 7:28:3
7[illegible]	52	E12075.D	1.	b1e0146-05	w	5/12/012007 7:50:2
7[illegible]	53	E12076.D	1.	1e09004-blk1	w	5/12/012007 7:50:2
75	1	E12077.D	1.	MeCl2		5/12/012008 8:12:2
76	100	E12078.D	1.	MeCl2		5/12/012008 8:12:2
77	54	E12079.D	1.	1e09004-bs1	2000 ppm 1030138	5/12/012008 8:34:2
78	55	E12080.D	1.	1e09004-bsd1	2000 ppm 1030138	5/12/012008 8:34:2
79	56	E12081.D	1.	b1e0151-21	w	5/12/012008 8:56:2
80	57	E12082.D	1.	b1e0151-22	w	5/12/012008 8:56:2
81	58	E12083.D	1.	b1e0151-23	w	5/12/012009 9:18:2
82	59	E12084.D	1.	b1e0151-24	w	5/12/012009 9:18:2
83	60	E12085.D	1.	b1e0151-25	w	5/12/012009 9:40:3
84	61	E12086.D	1.	b1e0151-26 r.s. 41x	w	5/12/012009 9:40:3
85	98	E12087.D	1.	Diesel ccv	1600 ppm 1010125	5/12/012010 10:02:3
86	99	E12088.D	1.	Motor oil ccv	1600 ppm 0080150	5/12/012010 10:02:3
87	99	E12089.D	1.	Motor oil ccv	1600 ppm 0080150	5/12/012010 10:24:3
88	98	E12090.D	1.	Diesel ccv	1600 ppm 1010125	5/12/012010 10:24:3
89	1	E12091.D	1.	MeCl2		5/12/012010 10:46:3
90	100	E12092.D	1.	MeCl2		5/12/012010 10:46:3



Method Name: D:\HPCHEM\4\METHODS\TPHD.M
Calibration Table Last Updated: Mon Apr 30 08:40:04 2001



Method Name: D:\HPCHEM\4\METHODS\TPHD.M
Calibration Table Last Updated: Mon Apr 30 07:59:28 2001

Total Metals by EPA 6020
Analytical Summary

LabNumber	Client Sample ID	Analyte	Date & Time Analyzed	Dilution	Instrument
1E14022-BLK1	Method Blank	As,Cd,Cu,Ni,Pb,Sb	5/15/01 18:45	1	ICPMS
1E14022-PS1	Post Spike	Sb	5/15/01 18:51	5	ICPMS
1E14022-BS1	Laboratory Control Sample	As,Cd,Cu,Ni,Pb,Sb	5/15/01 18:57	1	ICPMS
B1E0234-03	NS-PBS-04	Pb,Sb	5/15/01 19:15	1	ICPMS
B1E0234-04	ES-PBS-05	Pb,Sb	5/15/01 19:22	1	ICPMS
B1E0234-05	SS-PBS-06	Sb	5/15/01 19:28	1	ICPMS
B1E0234-06	WS-PBS-07	Pb,Sb	5/15/01 19:34	1	ICPMS
B1E0234-07	FL-PBS-08	Pb	5/15/01 19:53	1	ICPMS
B1E0234-08	FLD-PBS-09	Pb	5/15/01 19:59	1	ICPMS
B1E0234-10	NS-A51-12	As,Cd,Cu,Ni,Pb	5/15/01 20:05	1	ICPMS
B1E0234-11	ES-A51-13	As,Cd,Cu,Ni,Pb	5/15/01 20:11	1	ICPMS
B1E0234-12	SS-A51-14	As,Cd,Cu,Ni,Pb	5/15/01 20:17	1	ICPMS
B1E0234-13	WS-A51-15	As,Cd,Cu,Ni,Pb	5/15/01 20:24	1	ICPMS
B1E0234-14	FL-A51-16	As,Cd,Cu,Ni,Pb	5/15/01 20:30	1	ICPMS
1E14022-BLK1	Method Blank	Ba,Be,Cr	5/16/01 16:16	1	ICPMS
B1E0234-07	FL-PBS-08	Sb	5/16/01 16:22	1	ICPMS
B1E0234-08	FLD-PBS-09	Sb	5/16/01 16:28	1	ICPMS
B1E0234-10	NS-A51-12	Be,Cr,Sb	5/16/01 16:35	1	ICPMS
1E14022-MS1	Matrix Spike	As,Cd,Cu,Ni,Pb,Sb	5/16/01 16:53	1	ICPMS
1E14022-MSD1	Matrix Spike Duplicate	As,Cd,Cu,Ni,Pb,Sb	5/16/01 16:59	1	ICPMS
B1E0234-11	ES-A51-13	Sb	5/16/01 17:05	1	ICPMS
B1E0234-12	SS-A51-14	Sb	5/16/01 17:12	1	ICPMS
B1E0234-13	WS-A51-15	Sb	5/16/01 17:18	1	ICPMS
B1E0234-14	FL-A51-16	Sb	5/16/01 17:24	1	ICPMS
1E14022-BS1	Laboratory Control Sample	Ba	5/16/01 17:30	1	ICPMS
1E14022-MS1	Matrix Spike	Be, Cr	5/16/01 19:30	1	ICPMS
1E14022-MSD1	Matrix Spike Duplicate	Be, Cr	5/16/01 19:36	1	ICPMS
B1E0234-11	ES-A51-13	Be, Cr	5/16/01 19:43	1	ICPMS
B1E0234-12	SS-A51-14	Be, Cr	5/16/01 19:49	1	ICPMS
B1E0234-13	WS-A51-15	Cr	5/16/01 20:07	1	ICPMS
B1E0234-14	FL-A51-16	Cr	5/16/01 20:13	1	ICPMS
1E14022-BS1	Laboratory Control Sample	Cr	5/16/01 20:19	1	ICPMS
1E14023-MS1	Matrix Spike	As, Ba, Cd, Cr, Cu, Ni, Pb, Sb, Tl	5/16/01 20:26	1	ICPMS
1E14023-MSD1	Matrix Spike Duplicate	As, Cd, Cr, Cu, Ni, Pb, Sb, Tl	5/16/01 20:32	1	ICPMS
1E14023-BLK1	Method Blank	As, Ba, Cd, Cr, Cu, Ni, Pb, Sb, Tl	5/16/01 20:38	1	ICPMS
B1E0234-22	NS-A53-31	As, Ba, Cd, Cr, Cu, Ni, Pb, Sb, Tl	5/16/01 20:44	1	ICPMS
B1E0234-23	ES-A53-32	As, Ba, Cd, Cr, Cu, Ni, Pb, Sb, Tl	5/16/01 20:50	1	ICPMS
B1E0234-24	SS-A53-33	As, Ba, Cd, Cr, Cu, Ni, Pb, Sb, Tl	5/16/01 20:56	1	ICPMS
B1E0234-25	WS-A53-34	As, Ba, Cd, Cr, Cu, Ni, Pb, Sb, Tl	5/16/01 21:03	1	ICPMS

Total Metals by EPA 6020
Analytical Summary

LabNumber	Client Sample ID	Analyte	Date & Time Analyzed	Dilution	Instrument
B1E0234-17	NS-A50-26	As, Ba, Cd, Cr, Cu, Pb, Sb	5/16/01 21:21	1	ICPMS
B1E0234-18	ES-A50-27	As, Ba, Cd, Cr, Cu, Pb, Sb	5/16/01 21:27	1	ICPMS
B1E0234-26	FL-A53-35	As, Ba, Cd, Cr, Cu, Pb, Sb, Tl	5/16/01 21:33	1	ICPMS
B1E0234-27	FLD-A53-36	As, Ba, Cd, Cr, Cu, Ni, Pb, Sb, Tl	5/16/01 21:40	1	ICPMS
1E14023-BS1	Laboratory Control Sample	As, Ba, Cd, Cr, Cu, Ni, Pb, Sb, Tl	5/16/01 21:46	1	ICPMS
B1E0234-19	SS-A50-28	As, Ba, Cd, Cr, Cu, Pb, Sb	5/16/01 21:52	1	ICPMS
B1E0234-20	WS-A50-29	As, Ba, Cd, Cr, Cu, Pb, Sb	5/16/01 21:58	1	ICPMS
B1E0234-21	FL-A50-30	As, Ba, Cd, Cr, Cu, Pb, Sb	5/16/01 22:10	1	ICPMS
1E14023-PS1	Post Spike	As, Sb	5/16/01 22:35	5	ICPMS
1E14023-MSD1	Matrix Spike Duplicate	Ba	5/16/01 22:47	2	ICPMS
B1E0234-10	NS-A51-12	Ba	5/16/01 23:12	2	ICPMS
B1E0234-11	ES-A51-13	Ba	5/16/01 23:19	2	ICPMS
B1E0234-12	SS-A51-14	Ba	5/16/01 23:25	2	ICPMS
B1E0234-13	WS-A51-15	Ba	5/16/01 23:31	2	ICPMS
1E14022-MS1	Matrix Spike	Ba	5/16/01 23:49	2	ICPMS
1E14022-MSD1	Matrix Spike Duplicate	Ba	5/16/01 23:55	2	ICPMS
B1E0234-14	FL-A51-16	Ba	5/17/01 0:02	2	ICPMS
B1E0234-05	SS-PBS-06	Pb	5/17/01 0:08	2	ICPMS
1E14022-BS1	Laboratory Control Sample	Be	5/17/01 10:35	1	ICPMS
B1E0234-13	WS-A51-15	Be	5/17/01 10:41	1	ICPMS
B1E0234-14	FL-A51-16	Be	5/17/01 10:47	1	ICPMS
1E14023-BLK1	Method Blank	Be, Zn	5/18/01 20:02	1	ICPMS
1E14023-MS1	Matrix Spike	Be, Zn	5/18/01 20:08	1	ICPMS
1E14023-MSD1	Matrix Spike Duplicate	Be, Zn	5/18/01 20:15	1	ICPMS
B1E0234-22	NS-A53-31	Be, Zn	5/18/01 20:21	1	ICPMS
B1E0234-23	ES-A53-32	Be, Zn	5/18/01 20:27	1	ICPMS
1E14023-BS1	Laboratory Control Sample	Be	5/18/01 20:45	1	ICPMS
B1E0234-24	SS-A53-33	Be	5/18/01 20:52	1	ICPMS
B1E0234-25	WS-A53-34	Be	5/18/01 20:58	1	ICPMS
B1E0234-26	FL-A53-35	Be	5/18/01 21:04	1	ICPMS
B1E0234-27	FLD-A53-36	Be	5/18/01 21:10	1	ICPMS
1E14023-BS1	Laboratory Control Sample	Zn	5/19/01 15:51	1	ICPMS
B1E0234-24	SS-A53-33	Zn	5/19/01 15:57	1	ICPMS
B1E0234-25	WS-A53-34	Zn	5/19/01 16:03	1	ICPMS
B1E0234-26	FL-A53-35	Zn	5/19/01 16:09	1	ICPMS
B1E0234-27	FLD-A53-36	Zn	5/19/01 16:34	1	ICPMS

TCLP Metals by EPA 1311/6010B
Analytical Summary

LabNumber	Client Sample ID	Analyte	Date & Time Analyzed	Dilution	Instrument
1E15023-BLK1	Method Blank	As,Cd,Pb	5/17/01 15:51	1	ICP
B1E0234-09	SP-PBS-11	Pb	5/17/01 15:51	1	ICP
B1E0234-15	SP-A51-17	As,Cd,Pb	5/17/01 15:59	1	ICP
B1E0234-16	SP-A50-25	As,Cd,Pb	5/17/01 16:03	1	ICP
B1E0234-28	SP-A53-38	As,Cd,Pb	5/17/01 16:08	1	ICP
B1E0234-29	SPD-A53-39	As,Cd,Pb	5/17/01 16:12	1	ICP
1E15023-BS1	Laboratory Control Sample	As,Cd,Pb	5/17/01 16:20	1	ICP
1E15023-MS1	Matrix Spike	As,Cd,Pb	5/17/01 16:24	1	ICP
1E15023-MSD1	Matrix Spike Duplicate	As,Cd,Pb	5/17/01 16:29	1	ICP
1E15022-BLK1	Method Blank	Pb	5/17/01 16:41	1	ICP
B1E0234-01	PBW-50701-01	Pb	5/17/01 16:46	1	ICP
B1E0234-02	PBW-50701-02	Pb	5/17/01 16:50	1	ICP
1E15022-BS1	Laboratory Control Sample	Pb	5/17/01 16:58	1	ICP
1E15022-MS1	Matrix Spike	Pb	5/17/01 17:02	2	ICP
1E15022-MSD1	Matrix Spike Duplicate	Pb	5/17/01 17:07	2	ICP
1E15023-BLK1	Method Blank	Ba	5/18/01 10:31	1	ICP
B1E0234-15	SP-A51-17	Ba	5/18/01 10:34	1	ICP
B1E0234-16	SP-A50-25	Ba	5/18/01 10:38	1	ICP
B1E0234-28	FLD-A53-38	Ba	5/18/01 10:41	1	ICP
B1E0234-29	SPD-A53-39	Ba	5/18/01 10:44	1	ICP
1E15023-BS1	Laboratory Control Sample	Ba	5/18/01 10:50	1	ICP
1E15023-MS1	Matrix Spike	Ba	5/18/01 10:56	1	ICP
1E15023-MSD1	Matrix Spike Duplicate	Ba	5/18/01 10:59	1	ICP

Data Package

Client: Garry Struthers Associates

Project: Camp Bonneville Project

Project Number: 99-004.58

Laboratory Work Order: B1E0234 Additional

July 3, 2001

North Creek Analytical, Inc.
11720 North Creek Parkway North, Suite 400
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Case Narrative

Sample Receiving

Nineteen soil samples and two wood chip samples were collected 05/07/01 between 08:35 and 13:35. Eight soil samples were collected 05/08/01 between 08:35 and 08:55. The samples were received at North Creek Analytical, Inc. (NCA) on 05/08/01 with all of the containers intact at a temperature of 6.0°C.

The client requested additional testing on sample SP-PBS-11 (B1E0234-09). This data package addresses the results from this analysis.

Sample Preparation

- **EPA 3550B/8081A for 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD** – The sample was prepared in one analytical batch (1F25033) in accordance with EPA 3550B. A standard aliquot of ~30 g was prepared and reduced to a final volume of 5 mLs in Hexane.

  Per client request, the sample was prepared outside of method established holding time.

Analysis

- **EPA 3550B/8081A for 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD** – The sample was analyzed in accordance with EPA 8081A for 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD.

  Sample SP-PBS-11 (B1E0234-09) was analyzed undiluted and at a 11-fold dilution due to high levels of analytes present.

  SP-PBS-11 (B1E0234-09): The results for 4,4'-DDT from two dissimilar columns differed by greater than 25%. The lower value was reported and should be considered estimated.

  The DCB surrogate recovery for sample SP-PBS-11 (B1E0234-09) was outside of established control limits due to matrix interferences. Review of the associated QC indicates that the recovery for this surrogate does not represent an out-of-control condition.

  The 4,4'-DDT recovery for the opening Pesticide CCV analyzed on 06/27/01 at 23:25 was outside the acceptance criteria of 85% to 115% on Signal One. Sample results were taken from Signal Two.

  The 4,4'-DDT recovery on Signal One and the 4,4'-DDE recovery on Signal Two for the closing Pesticide CCV analyzed on 06/28/01 at 10:19 were outside the acceptance criteria of 85% to 115%. Sample results for 4,4'-DDT were taken from Signal Two.

Quality Assurance

- **EPA 3550B/8081A for 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD** – The sample was prepared in one analytical batch (1F25033) in accordance with EPA 3550B. All of the recoveries for the monitored target analytes were within the established acceptance criteria.

" I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signatures:"

7/5/01

Prepared by Anne Conrad, QA Associate

Dave Wunderlich (by dwd) 07.05.01

Reviewed by Dave Wunderlich, QA Manager

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Reported:**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	07/03/01 15:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SP-PBS-11	B1E0234-09	Soil	05/07/01 11:20	05/08/01 16:05

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Reported:**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	07/03/01 15:29

Organochlorine Pesticides by EPA Method 8081A

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SP-PBS-11 (B1E0234-09) Soil	**Sampled: 05/07/01 11:20**	**Received: 05/08/01 16:05**							**Q29**
4,4'-DDD	ND	2.00	ug/kg dry	1	1F25033	06/25/01	06/28/01	EPA 8081A	
4,4'-DDE	ND	2.00	"	"	"	"	"	"	
4,4'-DDT	**435**	22.0	"	11	"	"	06/28/01	"	P
Surrogate: TCX	*56.2 %*	*28-128*			"	"	*06/28/01*	"	
Surrogate: Decachlorobiphenyl	*146 %*	*29-141*			"	"	"	"	*S-03*

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the c[illegible]f custody document. This analytical report must be reproduced in its en[illegible]ty.

Robert Greer, Project Manager

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Reported:**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	07/03/01 15:29

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SP-PBS-11 (B1E0234-09) Soil Sampled: 05/07/01 11:20 Received: 05/08/01 16:05									
Dry Weight	**79.4**	1.00	%	1	1G02023	07/02/01	07/02/01	BSOPSPL003R07	

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Reported:**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	07/03/01 15:29

Organochlorine Pesticides by EPA Method 8081A - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1F25033: Prepared 06/25/01 Using EPA 3550B										
Blank (1F25033-BLK1)										
Aldrin	ND	1.00	ug/kg							
alpha-BHC	ND	1.00	"							
beta-BHC	ND	2.00	"							
delta-BHC	ND	1.00	"							
gamma-BHC (Lindane)	ND	1.00	"							
Chlordane (tech)	ND	10.0	"							
alpha-Chlordane	ND	1.00	"							
gamma-Chlordane	ND	1.00	"							
4,4'-DDD	ND	2.00	"							
4,4'-DDE	ND	2.00	"							
4,4'-DDT	ND	2.00	"							
Dieldrin	ND	2.00	"							
Endosulfan I	ND	1.00	"							
Endosulfan II	ND	2.00	"							
Endosulfan sulfate	ND	2.00	"							
Endrin	ND	2.00	"							
Endrin aldehyde	ND	2.00	"							
Endrin ketone	ND	2.00	"							
Heptachlor	ND	1.00	"							
Heptachlor epoxide	ND	1.00	"							
Methoxychlor	ND	10.0	"							
Toxaphene	ND	50.0	"							
Surrogate: TCX	*4.45*		"	*6.67*		*66.7*	*28-128*			
Surrogate: Decachlorobiphenyl	*5.40*		"	*6.67*		*81.0*	*29-141*			
LCS (1F25033-BS1)										
Aldrin	6.52	1.00	ug/kg	8.33		78.3	40-122			
gamma-BHC (Lindane)	6.20	1.00	"	8.33		74.4	38-125			
4,4'-DDT	14.9	2.00	"	16.7		89.2	40-160			
Dieldrin	14.7	2.00	"	16.7		88.0	40-160			
Endrin	15.5	2.00	"	16.7		92.8	40-160			
Heptachlor	6.65	1.00	"	8.33		79.8	47-132			
Surrogate: TCX	*5.80*		"	*6.67*		*87.0*	*28-128*			
Surrogate: Decachlorobiphenyl	*6.18*		"	*6.67*		*92.7*	*29-141*			

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the c[illegible] f custody document. This analytical report must be reproduced in its e[illegible] y.

Robert Green, Project Manager

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Reported:**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	07/03/01 15:29

Organochlorine Pesticides by EPA Method 8081A - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1F25033: Prepared 06/25/01 Using EPA 3550B										
LCS Dup (1F25033-BSD1)										
Aldrin	5.19	1.00	ug/kg	8.33		62.3	40-122	22.7	30	
gamma-BHC (Lindane)	4.69	1.00	"	8.33		56.3	38-125	27.7	30	
4,4'-DDT	12.3	2.00	"	16.7		73.7	40-160	19.1	35	
Dieldrin	11.6	2.00	"	16.7		69.5	40-160	23.6	35	
Endrin	12.4	2.00	"	16.7		74.3	40-160	22.2	35	
Heptachlor	5.42	1.00	"	8.33		65.1	47-132	20.4	30	
Surrogate: TCX	*4.61*		"	*6.67*		*69.1*	*28-128*			
Surrogate: Decachlorobiphenyl	*5.67*		"	*6.67*		*85.0*	*29-141*			
Matrix Spike (1F25033-MS1)					**Source: B1F0512-16**					
Aldrin	6.71	1.00	ug/kg dry	10.2	ND	65.8	32-130			
ıma-BHC (Lindane)	6.36	1.00	"	10.2	ND	62.4	31-120			
-DDT	15.1	2.00	"	20.3	ND	74.4	30-150			
Dieldrin	14.8	2.00	"	20.3	ND	72.9	30-150			
Endrin	16.9	2.00	"	20.3	ND	83.3	30-150			
Heptachlor	7.21	1.00	"	10.2	ND	70.7	40-129			
Surrogate: TCX	*5.97*		"	*8.12*		*73.5*	*28-128*			
Surrogate: Decachlorobiphenyl	*6.96*		"	*8.12*		*85.7*	*29-141*			
Matrix Spike Dup (1F25033-MSD1)					**Source: B1F0512-16**					
Aldrin	6.74	1.00	ug/kg dry	10.2	ND	66.1	32-130	0.446	35	
gamma-BHC (Lindane)	6.41	1.00	"	10.2	ND	62.8	31-120	0.783	35	
4,4'-DDT	15.8	2.00	"	20.3	ND	77.8	30-150	4.53	35	
Dieldrin	15.0	2.00	"	20.3	ND	73.9	30-150	1.34	35	
Endrin	17.0	2.00	"	20.3	ND	83.7	30-150	0.590	35	
Heptachlor	7.45	1.00	"	10.2	ND	73.0	40-129	3.27	35	
Surrogate: TCX	*6.20*		"	*8.12*		*76.4*	*28-128*			
Surrogate: Decachlorobiphenyl	*7.47*		"	*8.12*		*92.0*	*29-141*			

rth Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Robert Greer, Project Manager

www.ncalabs.com

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
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509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Reported:**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	07/03/01 15:29

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1G02023: Prepared 07/02/01 Using Dry Weight										
Blank (1G02023-BLK1)										
Dry Weight	100	1.00	%							

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Garry Struthers Associates	Project: Camp Bonneville Project	
3150 Richards Road	Project Number: 99-004.58	**Reported:**
Bellevue WA, 98005	Project Manager: Elizabeth Chien	07/03/01 15:29

Notes and Definitions

P	Greater than 25% difference between results from primary and secondary columns. The lower value has been reported.
Q29	This sample was prepared outside of the method established holding time.
S-03	The surrogate recovery for this sample is outside of established control limits. Review of associated QC indicates the recovery for this surrogate does not represent an out-of-control condition.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

EPA 8081A
Analytical Summary

LabNumber	Client Sample ID	Date/Time Analyzed	Dilution	Instrument
1F25033-BLK1	Method Blank	6/28/01 0:17	1	ECD3
1F25033-BS1	Laboratory Control Sample	6/28/01 0:43	1	ECD3
1F25033-BSD1	Laboratory Control Sample Duplicate	6/28/01 1:10	1	ECD3
1F25033-MS1	Matrix Spike	6/28/01 2:28	1	ECD3
1F25033-MSD1	Matrix Spike Duplicate	6/28/01 2:54	1	ECD3
B1F0512-16	Batch QC	6/28/01 4:13	1	ECD3
B1E0234-09	SP-PBS-11	6/28/01 7:42	1	ECD3
B1E0234-09	SP-PBS-11	6/28/01 9:53	11	ECD3

Injection Log

Directory: . e:\ecd#3\062701

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	f2700001.d	1.	HAM	rinse	27 Jun 101 12::
2	1	f2700002.d	1.	HAM	rinse	27 Jun 101 13::
3	2	f2700003.d	1.	1x 1060044	pest	27 Jun 101 13::
4	3	f2700004.d	1.	1x 1060071	E/D	27 Jun 101 13::
5	4	f2700005.d	1.	5x 1040016	pest initial calibration	27 Jun 101 13::
6	5	f2700006.d	1.	10x 1040016	pest initial calibration	27 Jun 101 12::
7	6	f2700007.d	1.	20x 1040016	pest initial calibration	27 Jun 101 12::
8	7	f2700008.d	1.	50x 1040016	pest initial calibration	27 Jun 101 12::
9	8	f2700009.d	1.	100x 1040016	pest initial calibration	27 Jun 101 12::
10	9	f2700010.d	1.	200x 1040016	pest initial calibration	27 Jun 101 12::
11	10	f2700011.d	1.	20x 0100093	pest 2nd source	27 Jun 101 12::
12	11	f2700012.d	1.	Toxaphene initial calibration	20x 0120003	27 Jun 101 12::
13	12	f2700013.d	1.	Tech. Chlordane initial calibration	20x 0110092	27 Jun 101 12::
14	13	f2700014.d	1.	5x 1040014	pcb initial calibration	27 Jun 101 12::
15	14	f2700015.d	1.	10x 1040014	pcb initial calibration	27 Jun 101 12::
16	15	f2700016.d	1.	20x 1040014	pcb initial calibration	27 Jun 101 12::
17	16	f2700017.d	1.	50x 1040014	pcb initial calibration	27 Jun 101 12::
18	17	f2700018.d	1.	100x 1040014	pcb initial calibration	27 Jun 101 12::
19	18	f2700019.d	1.	200x 1040014	pcb initial calibration	27 Jun 101 12::
20	19	f2700020.d	1.	20x 0100094	pcb 2nd source	27 Jun 101 12::
21	20	f2700021.d	1.	1221 Initial calibration	20x 1040129	27 Jun 101 12::
22	21	f2700022.d	1.	1232 Initial calibration	20x 1040130	27 Jun 101 12::
23	22	f2700023.d	1.	1242 Initial calibration	20x 1040131	27 Jun 101 12::
24	23	f2700024.d	1.	1248 Initial calibration	20x 1040132	27 Jun 101 12::
25	24	f2700025.d	1.	1254 Initial calibration	20x 1040133	27 Jun 101 12::
26	25	f2700026.d	1.	1262 Initial calibration	20x 1040134	27 Jun 101 13::
27	26	f2700027.d	1.	1268 Initial calibration	20x 1040135	27 Jun 101 13::
28	27	f2700028.d	1.	1x 1060071	E/D	27 Jun 101 13::
29	28	f2700029.d	1.	20x 1060044	pest ccv	27 Jun 101 13::
30	29	f2700030.d	1.	20x 1060071	pcb ccv	27 Jun 101 13::
[illegible]	30	f2700031.d	1.	1F25033-blk1 RS AW	1x	28 Jun 101 13::
32	31	f2700032.d	1.	1F25033-bs1	1x	28 Jun 101 13::
33	32	f2700033.d	1.	1F25033-bsd1	1x	28 Jun 101 12::
34	33	f2700034.d	1.	1F25033-bs2	1x	28 Jun 101 12::
35	34	f2700035.d	1.	1F25033-bsd2	1x	28 Jun 101 12::
36	35	f2700036.d	1.	1F25033-ms1	1x	28 Jun 101 12::
37	36	f2700037.d	1.	1F25033-msd1	1x	28 Jun 101 12::
38	37	f2700038.d	1.	B1F0511-01 RS 51x	1x	28 Jun 101 12::
39	38	f2700039.d	1.	B1F0512-12	1x	28 Jun 101 12::
40	39	f2700040.d	1.	B1F0512-16	1x	28 Jun 101 12::
41	40	f2700041.d	1.	B1F0585-21	1x	28 Jun 101 12::
42	41	f2700042.d	1.	B1F0498-01	1x	28 Jun 101 12::
43	42	f2700043.d	1.	B1F0498-02	1x	28 Jun 101 12::
44	43	f2700044.d	1.	B1F0498-06	1x	28 Jun 101 12::
45	44	f2700045.d	1.	B1F0498-07	1x	28 Jun 101 12::
46	45	f2700046.d	1.	B1F0447-11	1x	28 Jun 101 12::
47	46	f2700047.d	1.	B1F0447-12	1x	28 Jun 101 12::
48	47	f2700048.d	1.	B1E0234-09 RS 11x DDT, DDE, DDD only	11x	28 Jun 101 12::
49	48	f2700049.d	1.	B1F0440-01	1x	28 Jun 101 12::
50	49	f2700050.d	1.	1x 1060071	E/D	28 Jun 101 12::
51	50	f2700051.d	1.	20x 1060044 - DMT LOW, DDT OK.	pest ccv	28 Jun 101 12::
52	51	f2700052.d	1.	20x 1060071 - DMT LOW	pcb ccv	28 Jun 101 12::
53	99	f2700053.d	1.	B1F0234-09 r1	11x	28 Jun 101 12::
54	100	f2700054.d	1.	20x 1060044	pest ccv	28 Jun 101 13::

DDT / Endrin Breakdown Report

Compound	Response #1	Response #2
Endrin	7462514	6304034
DDD	61135	180119
DDT	6716294	4918838
DDE	44467	31343
Endrin Aldehyde	59660	38831
Endrin Ketone	83632	41129
DDT Breakdown	2%	4%
Endrin Breakdown	2%	1%

% breakdown must be 15% or less.

Brenda S Donald

Response Factor Report ECD3

Method : C:\HPCHEM\3\METHODS\PDBF2701.M (Chemstation Integrator) START : 6/27/0
Title : Method 8081 OCL Pesticide Multilevel Calibration
Last Update : Wed Jun 27 14:30:20 2001 END : 6/29/01

Calibration Files
5x =F2700005.D 10x =F2700006.D 20x =F2700007.D
50x =F2700008.D 100x =F2700009.D 200x =F2700010.D

		Compound	5x	10x	20x	50x	100x	200x	Avg		%RSD	
1)	s	TCX	2.210	2.882	2.850	3.216	2.385	3.313	2.810	E4	15.64	
2)		a-BHC	2.851	3.504	3.193	3.140	1.985	2.596	2.878	E4	18.63	
3)		Lindane (g-BHC)	2.437	3.025	2.811	2.880	1.900	2.523	2.596	E4	15.66	
4)		b-BHC	1.187	1.522	1.507	1.707	1.281	1.723	1.488	E4	14.66	
5)		d-BHC	2.196	2.681	2.437	2.392	1.553	2.084	2.224	E4	17.46	
6)		Heptachlor	2.061	2.679	2.644	2.973	2.233	3.132	2.620	E4	15.76	
7)		Aldrin	2.160	2.604	2.392	2.506	1.839	2.553	2.342	E4	12.51	
8)		Hept. Epox.	1.920	2.379	2.308	2.539	1.906	2.614	2.278	E4	13.30	
9)		g-Chlordane	1.931	2.378	2.318	2.558	1.942	2.665	2.299	E4	13.34	
10)		a-Chlordane	1.804	2.225	2.199	2.436	1.853	2.537	2.176	E4	13.69	
11)		Endo. I	1.821	2.231	2.139	2.316	1.737	2.378	2.104	E4	12.62	
12)		4,4'-DDE	1.635	1.989	1.894	1.911	1.335	1.787	1.759	E4	13.69	
13)		Dieldrin	1.747	2.148	2.062	2.147	1.521	2.043	1.945	E4	13.09	
14)		Endrin	1.323	1.644	1.587	1.698	1.198	1.637	1.515	E4	13.46	
15)		4,4'-DDD	1.250	1.518	1.452	1.448	1.040	1.357	1.344	E4	13.07	
16)		Endo. II	1.543	1.877	1.887	2.178	1.537	2.194	1.869	E4	15.47	
17)		4,4'-DDT	1.195	1.424	1.361	1.350	0.953	1.220	1.251	E4	13.60	
18)		Endrin Ald.	1.218	1.484	1.496	1.640	1.314	1.796	1.491	E4	14.09	
19)		Endo. Sulf.	1.409	1.678	1.670	1.769	1.371	1.809	1.618	E4	11.40	
)		Methoxychlor	5.530	6.712	7.058	7.826	6.587	8.394	7.018	E3	14.31	
21)		Endrin Ket.	1.713	2.028	1.991	1.981	1.503	1.919	1.856	E4	11.11	
22)	s	DCB	2.058	2.369	2.618	2.912	2.728	3.228	2.652	E4	15.44	

Signal #2 Calibration Files
5x =F2700005.D 10x =F2700006.D 20x =F2700007.D
50x =F2700008.D 100x =F2700009.D 200x =F2700010.D

		Compound	5x	10x	20x	50x	100x	200x	Avg		%RSD	
1)	s	TCX	1.615	2.048	1.867	1.920	1.321	1.820	1.765	E4	14.71	
2)		a-BHC	1.825	1.969	1.565	1.333	0.845	1.105	1.440	E4	29.81	L
3)		Lindane (g-BHC)	1.754	2.054	1.691	1.544	0.971	1.310	1.554	E4	24.22	L
4)		b-BHC	0.942	1.196	1.086	1.187	1.009	1.468	1.148	E4	16.14	
5)		d-BHC	1.378	1.567	1.238	1.114	0.720	0.977	1.166	E4	25.68	L
6)		Heptachlor	1.903	2.325	2.157	2.338	1.741	2.383	2.141	E4	12.32	
7)		Aldrin	1.686	1.953	1.651	1.601	1.091	1.469	1.575	E4	18.11	
8)		Hept. Epox.	1.548	1.840	1.706	1.810	1.350	1.837	1.682	E4	11.72	
9)		g-Chlordane	6.410	7.664	7.127	7.228	5.321	7.268	6.836	E3	12.39	
10)		a-Chlordane	1.518	1.819	1.716	1.824	1.371	1.859	1.684	E4	11.72	
11)		Endo. I	0.844	0.992	0.911	0.984	0.742	1.013	0.915	E4	11.49	
12)		4,4'-DDE	1.369	1.584	1.406	1.315	0.925	1.229	1.305	E4	16.89	
13)		Dieldrin	1.425	1.672	1.515	1.479	1.030	1.390	1.419	E4	15.09	
14)		Endrin	1.199	1.397	1.259	1.243	0.859	1.165	1.187	E4	15.09	
15)		4,4'-DDD	1.003	1.130	1.026	0.957	0.668	0.887	0.945	E4	16.67	
16)		Endo. II	1.189	1.391	1.323	1.334	0.963	1.272	1.245	E4	12.37	
17)		4,4'-DDT	9.048	9.696	8.659	8.548	4.762	5.785	7.750	E3	25.63	L
18)		Endrin Ald.	0.868	0.984	0.977	1.058	0.820	0.846	0.925	E4	10.17	
)		Endo. Sulf.	1.029	1.165	1.116	1.127	0.868	1.101	1.068	E4	10.08	
20)		Methoxychlor	5.159	5.945	6.122	6.291	4.736	5.679	5.655	E3	10.60	

(#) = Out of Range

Response Factor Report ECD3

Method : C:\HPCHEM\3\METHODS\PDBF2701.M (Chemstation Integrator)
Title : Method 8081 OCl Pesticide Multilevel Calibration
Last Update : Wed Jun 27 14:30:20 2001

Calibration Files
5x =F2700005.D 10x =F2700006.D 20x =F2700007.D
50x =F2700008.D 100x =F2700009.D 200x =F2700010.D

		Compound	5x	10x	20x	50x	100x	200x	Avg		%RSD
21)		Endrin Ket.	1.073	1.050	0.985	0.938	0.703	0.894	0.941	E4	14.29
22)	s	DCB	1.628	1.786	1.928	2.045	1.933	2.249	1.928	E4	11.05

(#) = Out of Range

Compound List Report ECD3

Method : C:\HPCHEM\3\METHODS\PDBF2701.M (Chemstation Integrator)
Title : Method 8081 OCl Pesticide Multilevel Calibration
Last Update : Wed Jun 27 14:30:20 2001
Response via : Initial Calibration
Total Cpnds : 45

PK#	Type	Compound Name	Exp_RT	Rel_RT	Cal	A/H	ID
1	s	TCX	5.78	1.000	A	A	R
2		a-BHC	7.20	1.000	A	A	R
3		Lindane (g-BHC)	7.99	1.000	A	A	R
4		b-BHC	8.10	1.000	A	A	R
5		d-BHC	8.85	1.000	A	A	R
6		Heptachlor	8.66	1.000	A	A	R
7		Aldrin	9.33	1.000	A	A	R
8		Hept. Epox.	10.39	1.000	A	A	R
9		g-Chlordane	10.70	1.000	A	A	R
10		a-Chlordane	11.00	1.000	A	A	R
11		Endo. I	11.08	1.000	A	A	R
12		4,4'-DDE	11.42	1.000	A	A	R
13		Dieldrin	11.66	1.000	A	A	R
14		Endrin	12.36	1.000	A	A	R
15		4,4'-DDD	12.45	1.000	A	A	R
16		Endo. II	12.67	1.000	A	A	R
17		4,4'-DDT	13.02	1.000	A	A	R
18		Endrin Ald.	13.27	1.000	A	A	R
19		Endo. Sulf.	13.51	1.000	A	A	R
20		Methoxychlor	14.89	1.000	A	A	R
21		Endrin Ket.	15.41	1.000	A	A	R
22	s	DCB	19.45	1.000	A	A	R
23		Signal #2	20.35	1.000	A	A	R
24		TCX #2	5.62	1.000	A	A	R
25		a-BHC #2	7.38	1.000	L	A	R
26		Lindane (g-BHC) #2	8.15	1.000	L	A	R
27		b-BHC #2	9.46	1.000	A	A	R
28		d-BHC #2	9.95	1.000	L	A	R
29		Heptachlor #2	8.56	1.000	A	A	R
30		Aldrin #2	9.09	1.000	A	A	R
31		Hept. Epox. #2	10.32	1.000	A	A	R
32		g-Chlordane #2	10.84	1.000	A	A	R
33		a-Chlordane #2	10.99	1.000	A	A	R
34		Endo. I #2	10.89	1.000	A	A	R
35		4,4'-DDE #2	11.11	1.000	A	A	R
36		Dieldrin #2	11.49	1.000	A	A	R
37		Endrin #2	11.86	1.000	A	A	R
38		4,4'-DDD #2	12.51	1.000	A	A	R
39		Endo. II #2	12.69	1.000	A	A	R
40		4,4'-DDT #2	12.81	1.000	L	A	R
41		Endrin Ald. #2	13.45	1.000	A	A	R
42		Endo. Sulf. #2	14.06	1.000	A	A	R
43		Methoxychlor #2	13.89	1.000	A	A	R
44		Endrin Ket. #2	15.05	1.000	A	A	R
45	s	DCB #2	17.22	1.000	A	A	R

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

Injection Log

Directory: c:\hpchem\1\data\051801

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	e1800001.d	1.	HAM	rinse	18 May 101 12::0
2	2	e1800002.d	1.	1x 1040188	pest high	18 May 101 1
3	3	e1800003.d	1.	1x 1050059	E/D	18 May 101 12::3
4	4	e1800004.d	1.	20x 1040188	pest ccv	18 May 101 12::2
5	1	e1800005.d	1.	HAM	rinse	18 May 101 12::0
6	1	e1800006.d	1.	HAM	rinse	18 May 101 12::3
7	1	e1800007.d	1.	HAM	rinse	18 May 101 12::0
8	2	e1800008.d	1.	1x 1040188	pest high	18 May 101 12::2
9	5	e1800009.d	1.	5x 1040016	pest initial calibration	18 May 101 12::5
10	6	e1800010.d	1.	10x 1040016	pest initial calibration	18 May 101 12::1
11	7	e1800011.d	1.	20x 1040016	pest initial calibration	18 May 101 12::4
12	8	e1800012.d	1.	50x 1040016	pest initial calibration	18 May 101 12::1
13	9	e1800013.d	1.	100x 1040016	pest initial calibration	18 May 101 12::3
14	10	e1800014.d	1.	200x 1040016	pest initial calibration	18 May 101 12::0
15	11	e1800015.d	1.	20x 0100093	pest 2nd source	18 May 101 12::2
16	12	e1800016.d	1.	Toxaphene initial calibration	20x 0120003	18 May 101 12::5
17	13	e1800017.d	1.	Tech. Chlordane initial calibration	20x 0110092	18 May 101 12::2
18	14	e1800018.d	1.	1x 1050059	E/D	18 May 101 12::4
19	15	e1800019.d	1.	20x 1040188	pest ccv	18 May 101 13::1
20	16	e1800020.d	1.	B1E0234-03	1x	18 May 101 13::3
21	17	e1800021.d	1.	B1E0234-04 ~25@5x 5/21	1x	18 May 101 13::0
22	1	e1800022.d	1.	HAM	rinse	18 May 101 13::3
23	18	e1800023.d	1.	B1E0234-05	1x	18 May 101 13::5
24	19	e1800024.d	1.	B1E0234-06	1x	19 May 101 13::2
25	1	e1800025.d	1.	HAM	rinse	19 May 101 13::4
26	20	e1800026.d	1.	B1E0234-07	1x	19 May 101 12::1
27	21	e1800027.d	1.	B1E0234-08	1x	19 May 101 12::4
28	1	e1800028.d	1.	HAM	rinse	19 May 101 12::0
29	22	e1800029.d	1.	1E11019-ms1	1x	19 May 101 12::3
30	23	e1800030.d	1.	1E11019-msd1	1x	19 May 101 12::5
31	1	e1800031.d	1.	HAM	rinse	19 May 101 1
32	24	e1800032.d	1.	1E11019-blk1	1x	19 May 101 1
33	25	e1800033.d	1.	1E11019-bs1	1x	19 May 101 12::1
34	26	e1800034.d	1.	20x 1040188	pest ccv	19 May 101 12::4

DDT / Endrin Breakdown Report

Compound	Response #1	Response #2
Endrin	7180767	5424454
DDD	450028	316659
DDT	4610609	3782945
DDE	22513	20994
Endrin Aldehyde	53730	33823
Endrin Ketone	282404	183794
DDT Breakdown	9%	8%
Endrin Breakdown	4%	4%

% breakdown must be 15% or less.

Injection Log

Directory: c:\hpchem\1\data\052101

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	e2100001.d	1.	HAM	rinse	21 May 101 12::2
2	2	e2100002.d	1.	1x 1040188	pest high	21 May 101 1[illegible]
3	3	e2100003.d	1.	1x 1050059	E/D	21 May 101 1[illegible]
4	2	e2100004.d	1.	1x 1040188	pest high	21 May 101 13::2
5	3	e2100005.d	1.	1x 1050059	E/D	21 May 101 13::5
6	4	e2100006.d	1.	20x 1040188	pest ccv	21 May 101 13::2
7	5	e2100007.d	1.	B1E0234-04 r1	5x	21 May 101 13::5
8	6	e2100008.d	1.	20x 1040188	pest ccv	21 May 101 13::2
9	7	e2100009.d	1.	5x 1040016	pest initial calibration	21 May 101 12::3
10	8	e2100010.d	1.	10x 1040016	pest initial calibration	21 May 101 12::5
11	9	e2100011.d	1.	20x 1040016	pest initial calibration	21 May 101 12::2
12	10	e2100012.d	1.	50x 1040016	pest initial calibration	21 May 101 12::5
13	11	e2100013.d	1.	100x 1040016	pest initial calibration	21 May 101 12::1
14	12	e2100014.d	1.	200x 1040016	pest initial calibration	21 May 101 12::4
15	13	e2100015.d	1.	20x 0100093	pest 2nd source	21 May 101 12::0
16	14	e2100016.d	1.	Toxaphene initial calibration	20x 0120003	21 May 101 12::3
17	15	e2100017.d	1.	Tech. Chlordane initial calibration	20x 0110092	21 May 101 12::0
18	16	e2100018.d	1.	1x 1050059	E/D	21 May 101 12::2
19	17	e2100019.d	1.	20x 1040188	pest ccv	21 May 101 12::5
20	18	e2100020.d	1.	B1E0234-03 r1	1x	21 May 101 12::1
21	19	e2100021.d	1.	B1E0234-05 r1	5x	21 May 101 12::4
22	1	e2100022.d	1.	HAM	rinse	21 May 101 12::1
23	20	e2100023.d	1.	B1E0234-06 r1	1x	21 May 101 12::3
24	21	e2100024.d	1.	B1E0234-07 r1	1x	21 May 101 12::0
25	1	e2100025.d	1.	HAM	rinse	21 May 101 12::2
26	22	e2100026.d	1.	B1E0234-08 r1	1x	21 May 101 12::5
27	23	e2100027.d	1.	20x 1040188	pest ccv	21 May 101 13::2

DDT / Endrin Breakdown Report

File E2100003.D DKW 6/7/01

Compound	Response #1	Response #2
Endrin	6262429	3965480
DDD	815264	611041
DDT	3457730	2535752
DDE	28726	21585
Endrin Aldehyde	13218	84440
Endrin Ketone	648042	398846
DDT Breakdown	20%	20%
Endrin Breakdown	10%	11%

% breakdown must be 15% or less.

Maintanence + re-shot

SO 5/21

Response Factor Report ECD#1

Method : C:\HPCHEM\1\METHODS\PABE1801.M (Chemstation Integrator)
Title : Organochlorine Pesticide Multilevel Calibration
Last Update : Mon May 21 08:09:48 2001

Start: 5/18/01
End: 5/21/01

Calibration Files
5x =E1800009.D 10x =E1800010.D 20x =E1800011.D
50x =E1800012.D 100x =E1800013.D 200x =E1800014.D

		Compound	5x	10x	20x	50x	100x	200x	Avg		%RSD
1)	s	TCX	2.032	2.134	1.972	1.885	1.995	1.888	1.985	E4	4.74
2)		a-BHC	3.077	3.037	2.543	1.922	1.864	1.616	2.343	E4	26.96
3)		Lindane (g-BHC)	2.831	2.836	2.420	1.900	1.892	1.652	2.255	E4	22.76
4)		b-BHC	1.225	1.291	1.170	1.078	1.151	1.073	1.165	E4	7.25
5)		d-BHC	2.525	2.519	2.058	1.608	1.588	1.418	1.953	E4	25.07
6)		Heptachlor	2.319	2.392	2.113	1.879	2.032	1.899	2.106	E4	10.13
7)		Aldrin	2.402	2.441	2.087	1.819	1.881	1.754	2.064	E4	14.48
8)		Hept. Epox.	2.188	2.282	2.023	1.916	2.052	1.956	2.070	E4	6.78
9)		g-Chlordane	2.368	2.444	2.110	2.005	2.136	2.031	2.182	E4	8.33
10)		a-Chlordane	2.123	2.241	1.969	1.870	1.981	1.844	2.005	E4	7.59
11)		Endo. I	2.123	2.241	1.969	1.870	1.972	1.844	2.003	E4	7.61
12)		4,4'-DDE	1.718	1.858	1.605	1.461	1.430	1.284	1.559	E4	13.41
13)		Dieldrin	2.232	2.354	2.031	1.855	1.880	1.718	2.012	E4	12.07
14)		Endrin	1.589	1.669	1.410	1.311	1.334	1.220	1.422	E4	12.18
15)		4,4'-DDD	1.574	1.682	1.371	1.287	1.294	1.154	1.394	E4	14.16
16)		Endo. II	1.647	1.765	1.537	1.523	1.575	1.460	1.584	E4	6.81
17)		4,4'-DDT	1.214	1.230	0.987	0.927	0.900	0.805	1.011	E4	17.23
18)		Endrin Ald.	1.432	1.524	1.300	1.339	1.478	1.357	1.405	E4	6.19
19)		Endo. Sulf.	1.214	1.230	0.987	0.927	0.900	0.805	1.011	E4	17.23
20)		Methoxychlor	5.425	5.627	4.421	4.189	3.705	2.667	4.339	E3	25.38
21)		Endrin Ket.	1.723	1.854	1.604	1.610	1.599	1.407	1.633	E4	9.10
22)	s	DCB	1.640	1.845	1.645	1.907	1.970	1.848	1.809	E4	7.57

Signal #2 Calibration Files
5x =E1800009.D 10x =E1800010.D 20x =E1800011.D
50x =E1800012.D 100x =E1800013.D 200x =E1800014.D

		Compound	5x	10x	20x	50x	100x	200x	Avg		%RSD
1)	s	TCX	1.924	2.071	1.937	1.875	2.022	1.932	1.960	E4	3.69
2)		a-BHC	2.601	2.641	2.311	1.821	1.829	1.638	2.140	E4	20.30
3)		Lindane (g-BHC)	2.301	2.389	2.130	1.730	1.780	1.595	1.988	E4	16.58
4)		b-BHC	1.160	1.220	1.140	1.110	1.203	1.167	1.167	E4	3.45
5)		d-BHC	2.292	2.311	1.965	1.663	1.661	1.517	1.901	E4	18.02
6)		Heptachlor	1.882	1.967	1.775	1.681	1.824	1.758	1.814	E4	5.54
7)		Aldrin	2.033	2.094	1.822	1.625	1.708	1.618	1.817	E4	11.34
8)		Hept. Epox.	1.819	1.911	1.718	1.671	1.816	1.765	1.784	E4	4.75
9)		g-Chlordane	1.916	2.010	1.772	1.735	1.881	1.827	1.857	E4	5.40
10)		a-Chlordane	1.656	1.787	1.626	1.626	1.743	1.685	1.687	E4	3.89
11)		Endo. I	1.797	1.889	1.623	1.532	1.648	1.575	1.677	E4	8.20
12)		4,4'-DDE	1.569	1.676	1.439	1.337	1.351	1.235	1.435	E4	11.33
13)		Dieldrin	1.644	1.739	1.519	1.417	1.446	1.347	1.519	E4	9.74
14)		Endrin	1.201	1.242	1.016	0.941	0.966	0.890	1.043	E4	13.91
15)		4,4'-DDD	1.225	1.314	1.088	1.057	1.066	0.975	1.121	E4	11.12
16)		Endo. II	1.301	1.374	1.176	1.150	1.239	1.191	1.239	E4	6.87

(#) = Out of Range

Response Factor Report ECD#1

Method : C:\HPCHEM\1\METHODS\PABE1801.M (Chemstation Integrator)
Title : Organochlorine Pesticide Multilevel Calibration
Last Update : Mon May 21 08:09:48 2001

Calibration Files
5x =E1800009.D 10x =E1800010.D 20x =E1800011.D
50x =E1800012.D 100x =E1800013.D 200x =E1800014.D

		Compound	5x	10x	20x	50x	100x	200x	Avg		%RSD
17)		4,4'-DDT	7.947	7.165	4.548	3.525	2.968	2.242	4.733	E3	49.15
18)		Endrin Ald.	1.025	1.075	0.936	0.954	1.008	0.964	0.994	E4	5.25
19)		Endo. Sulf.	1.130	1.168	0.982	0.987	1.022	0.950	1.040	E4	8.47
20)		Methoxychlor	4.441	4.635	3.690	3.529	3.189	2.397	3.647	E3	22.59
21)		Endrin Ket.	1.347	1.438	1.181	1.172	1.171	1.038	1.224	E4	11.72
22)	s	DCB	1.461	1.642	1.451	1.887	1.777	1.811	1.671	E4	11.05

#) = Out of Range

Chlorinated Herbicides by EPA Method 8151A
Analytical Summary

LabNumber	Client Sample ID	Date & Time Analyzed	Dilution	Instrument
B1E0234-03RE1	NS-PBS-04	5/21/01 16:00	1	ECD3
B1E0234-06RE1	WS-PBS-07	5/21/01 16:26	1	ECD3
B1E0234-07RE1	FL-PBS-08	5/21/01 17:16	1	ECD3
B1E0234-08RE1	FLD-PBS-09	5/21/01 17:41	1	ECD3
1E17028-MS1	Matrix Spike	5/21/01 18:32	1	ECD3
1E17028-MSD1	Matrix Spike Duplicate	5/21/01 18:57	1	ECD3
1E17028-BS1	Laboratory Control Sample	5/21/01 19:47	1	ECD3
1E17028-BLK1	Method Blank	5/21/01 20:12	1	ECD3
B1E0234-04RE1	ES-PBS-05	5/22/01 11:39	11	ECD3
B1E0234-05RE1	SS-PBS-06	5/22/01 12:04	5	ECD3

Injection Log

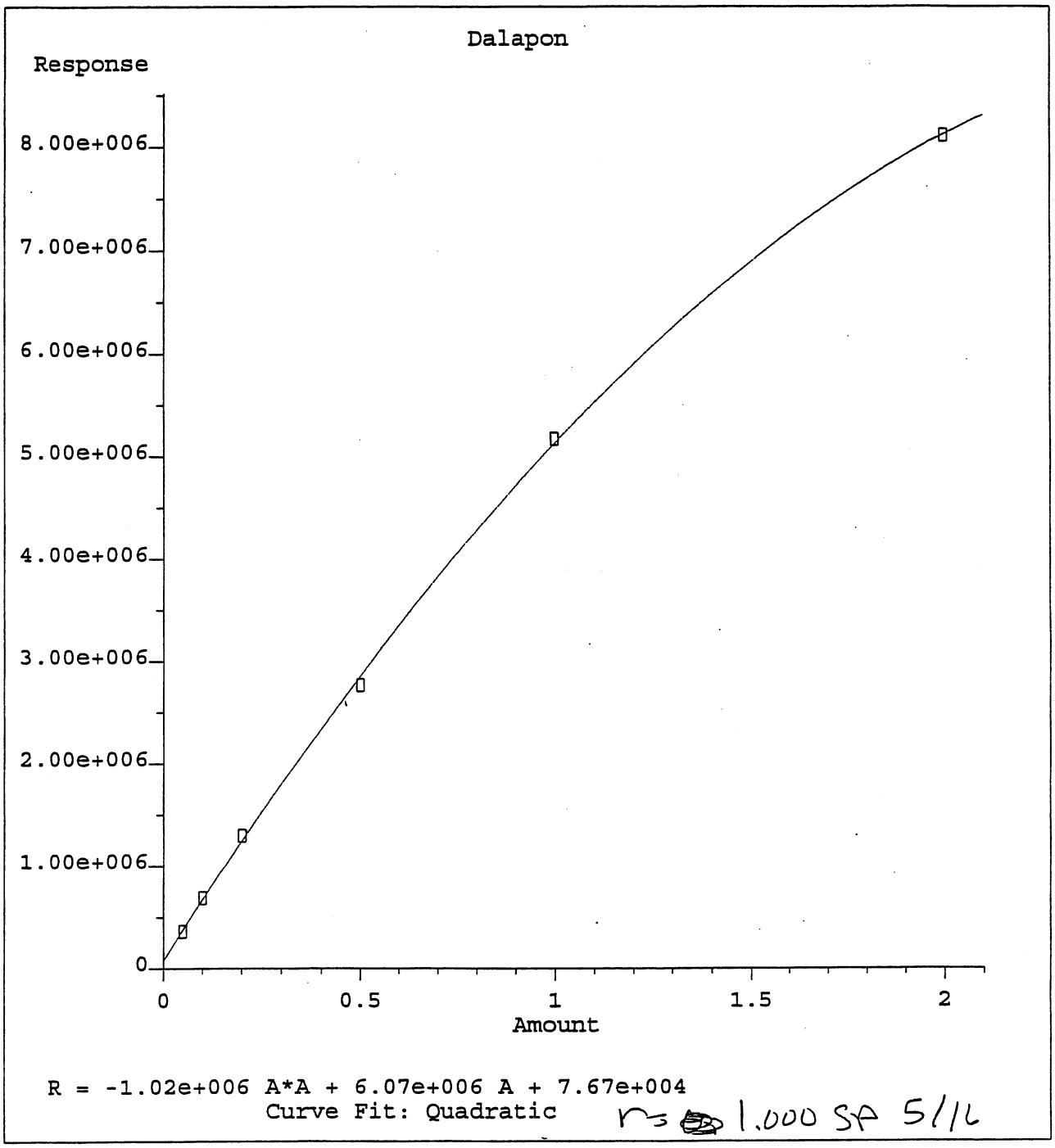
Directory: e:\ecd#3\052101

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	e2100001.d	1.	HAM	rinse	21 May 101 12:
2	2	e2100002.d	1.	1x 1050069	herb/pcp high	21 May 101 12:
3	3	e2100003.d	1.	50x 1050069	herb/pcp ccv	21 May 101 12:
4	3	e2100004.d	1.	50x 1050069	herb/pcp ccv	21 May 101 12:
5	3	e2100005.d	1.	50x 1050069	herb/pcp ccv	21 May 101 13:
6	4	e2100006.d	1.	B1E0411-02RE1	1x	21 May 101 13:
7	5	e2100007.d	1.	1E18044-blk1	1x	21 May 101 13:
8	6	e2100008.d	1.	1E18044-ms1	1x	21 May 101 13:
9	7	e2100009.d	1.	1E18044-msd1	1x	21 May 101 13:
10	8	e2100010.d	1.	1E18044-bs1	1x	21 May 101 13:
11	9	e2100011.d	1.	50x 1050069	herb/pcp ccv	21 May 101 12:
12	10	e2100012.d	1.	B1E0437-01	1x	21 May 101 12:
13	11	e2100013.d	1.	B1E0234-04RE1 > Shotwrong extract SA	5x	21 May 101 12:
14	12	e2100014.d	1.	B1E0234-05RE1	5x	21 May 101 12:
15	1	e2100015.d	1.	HAM	rinse	21 May 101 12:
16	13	e2100016.d	1.	B1E0234-03RE1	1x	21 May 101 12:
17	14	e2100017.d	1.	B1E0234-06RE1	1x	21 May 101 12:
18	1	e2100018.d	1.	HAM	rinse	21 May 101 12:
19	15	e2100019.d	1.	B1E0234-07RE1	1x	21 May 101 12:
20	16	e2100020.d	1.	B1E0234-08RE1	1x	21 May 101 12:
21	1	e2100021.d	1.	HAM	rinse	21 May 101 12:
22	17	e2100022.d	1.	1E17028-ms1	1x	21 May 101 12:
23	18	e2100023.d	1.	1E17028-msd1	1x	21 May 101 12:
24	1	e2100024.d	1.	HAM	rinse	21 May 101 12:
25	19	e2100025.d	1.	1E17028-bs1	1x	21 May 101 12:
26	20	e2100026.d	1.	1E17028-blk1	1x	21 May 101 12:
27	21	e2100027.d	1.	50x 1050069	herb/pcp ccv	21 May 101 12:

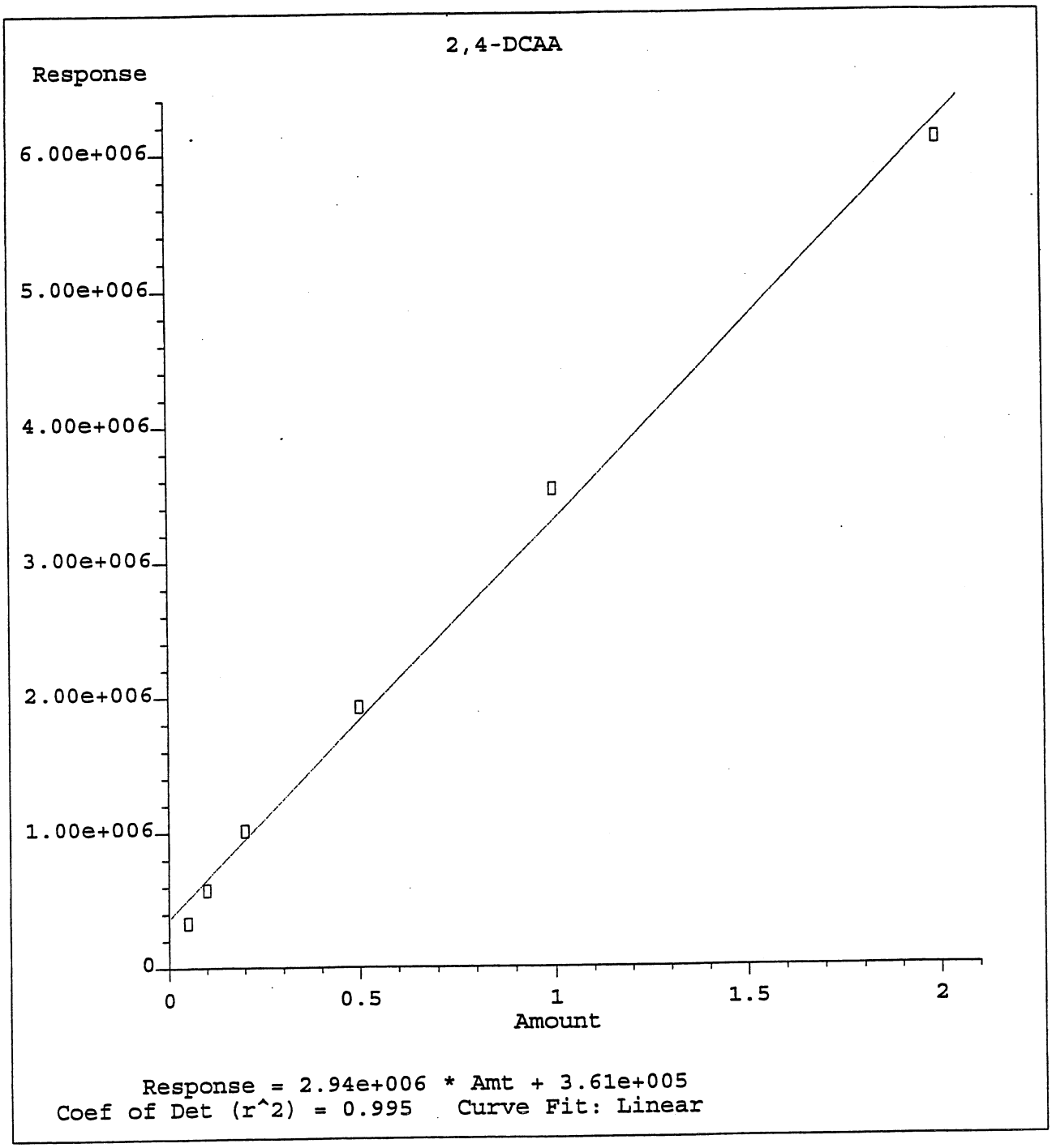
Injection Log

Directory: e:\ecd#3\052201

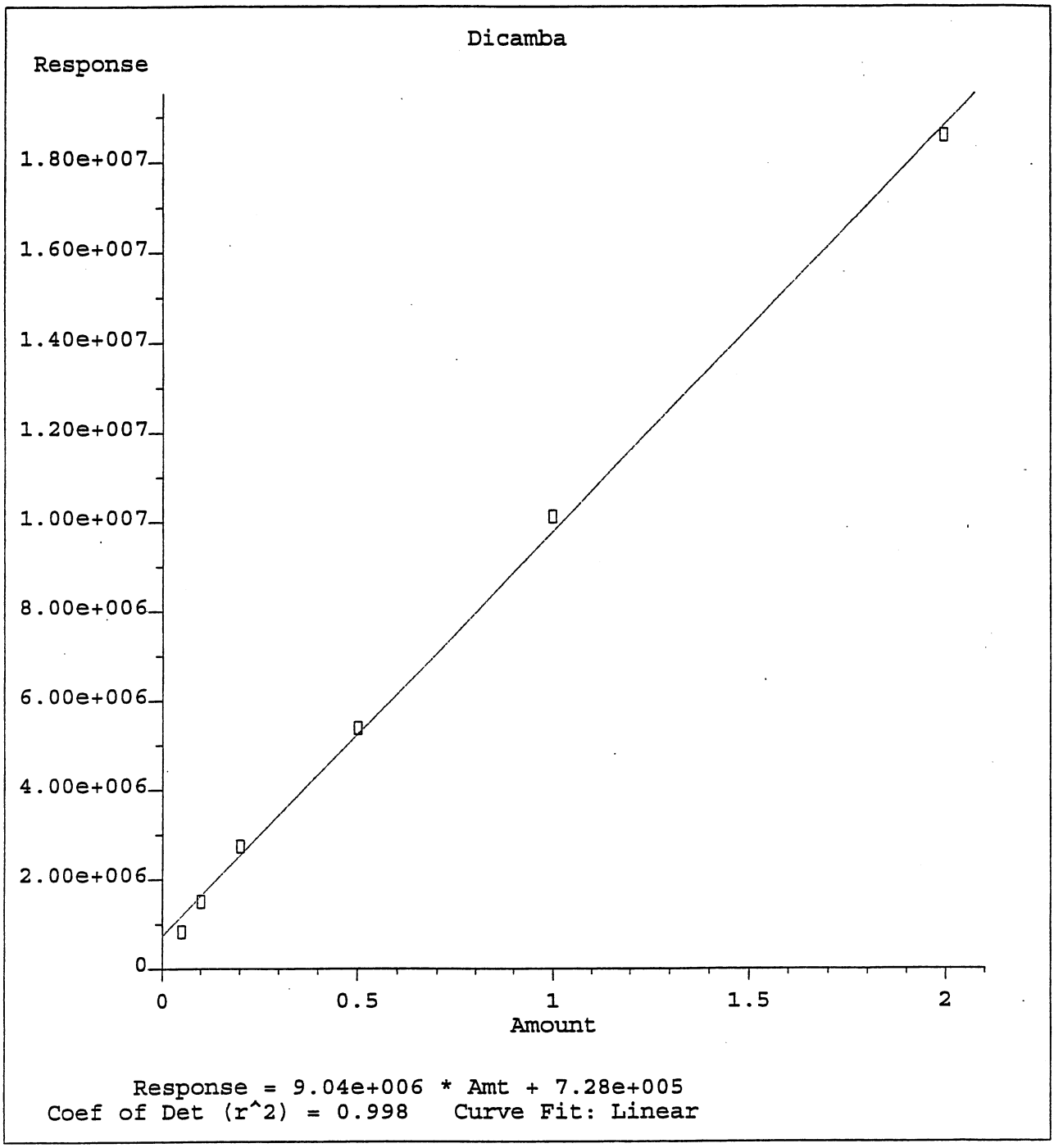
ne	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
	1	e2200001.d	1.	HAM	rinse	22 May 101 1?
	2	e2200002.d	1.	1x 1050069	herb/pcp high	22 May 101 1
	2	e2200003.d	1.	1x 1050069	herb/pcp high	22 May 101 12.
	2	e2200004.d	1.	1x 1050069	herb/pcp high	22 May 101 12:
	3	e2200005.d	1.	50x 1050069	herb/pcp ccv	22 May 101 12:
	3	e2200006.d	1.	50x 1050069	herb/pcp ccv	22 May 101 13:
	4	e2200007.d	1.	B1E0234-04RE1 r1	1x	22 May 101 13:
	5	e2200008.d	1.	B1E0234-05RE1 r1	1x	22 May 101 13:
	99	e2200009.d	1.	B1E0234-04RE1 r2	11x	22 May 101 13:
)	100	e2200010.d	1.	B1E0234-05RE1 r2	5x	22 May 101 13:
	6	e2200011.d	1.	B1E0284-01	1x	22 May 101 13:
2	7	e2200012.d	1.	1E14018-blk1	1x	22 May 101 13:
3	9	e2200013.d	1.	1E14018-ms1	1x	22 May 101 12:
4	10	e2200014.d	1.	1E14018-msd1	1x	22 May 101 12:
5	8	e2200015.d	1.	1E14018-bs1	1x	22 May 101 12:
5	11	e2200016.d	1.	50x 1050069	herb/pcp ccv	22 May 101 12:



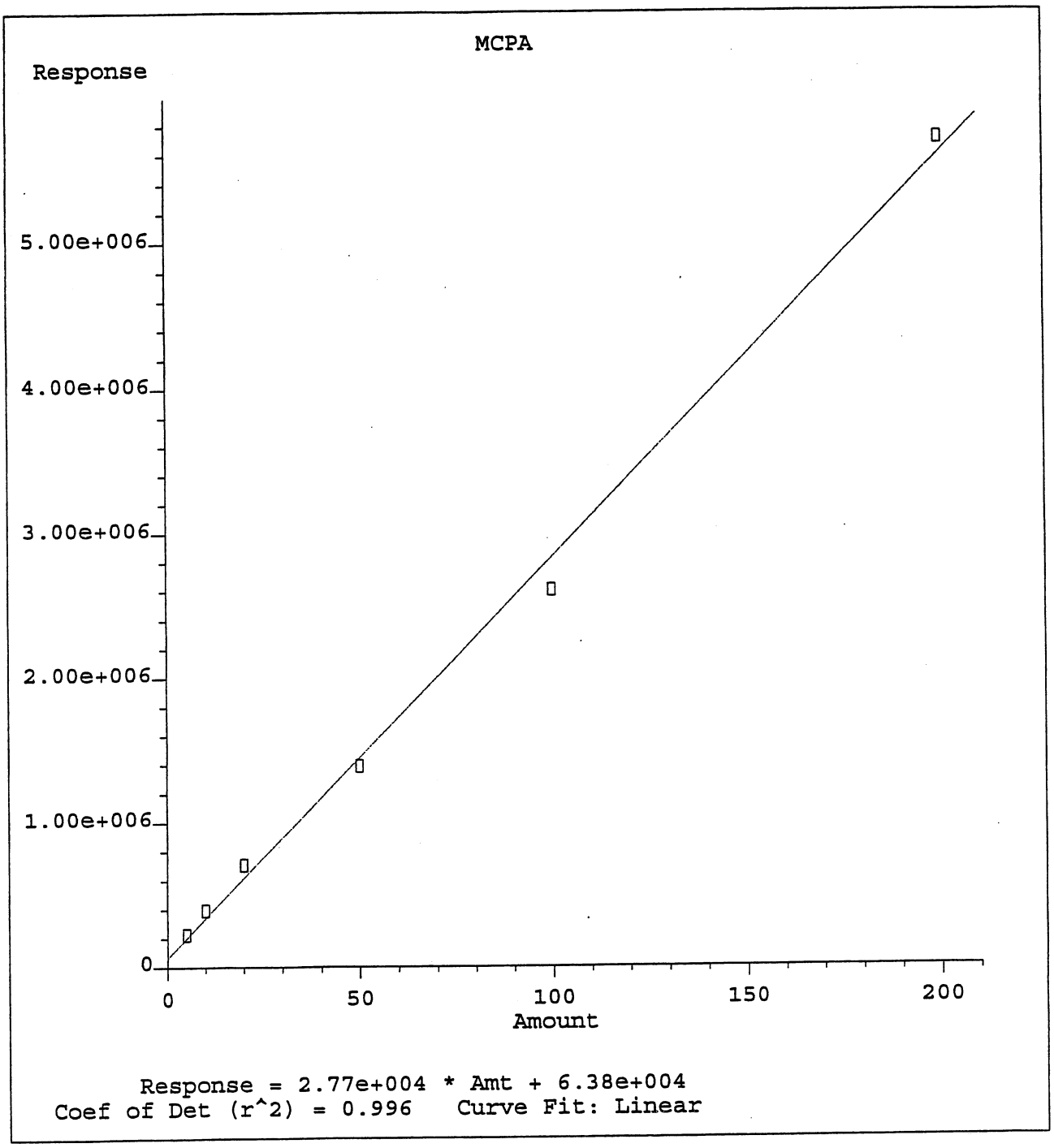
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Calibration Table Last Updated: Wed May 16 07:15:58 2001



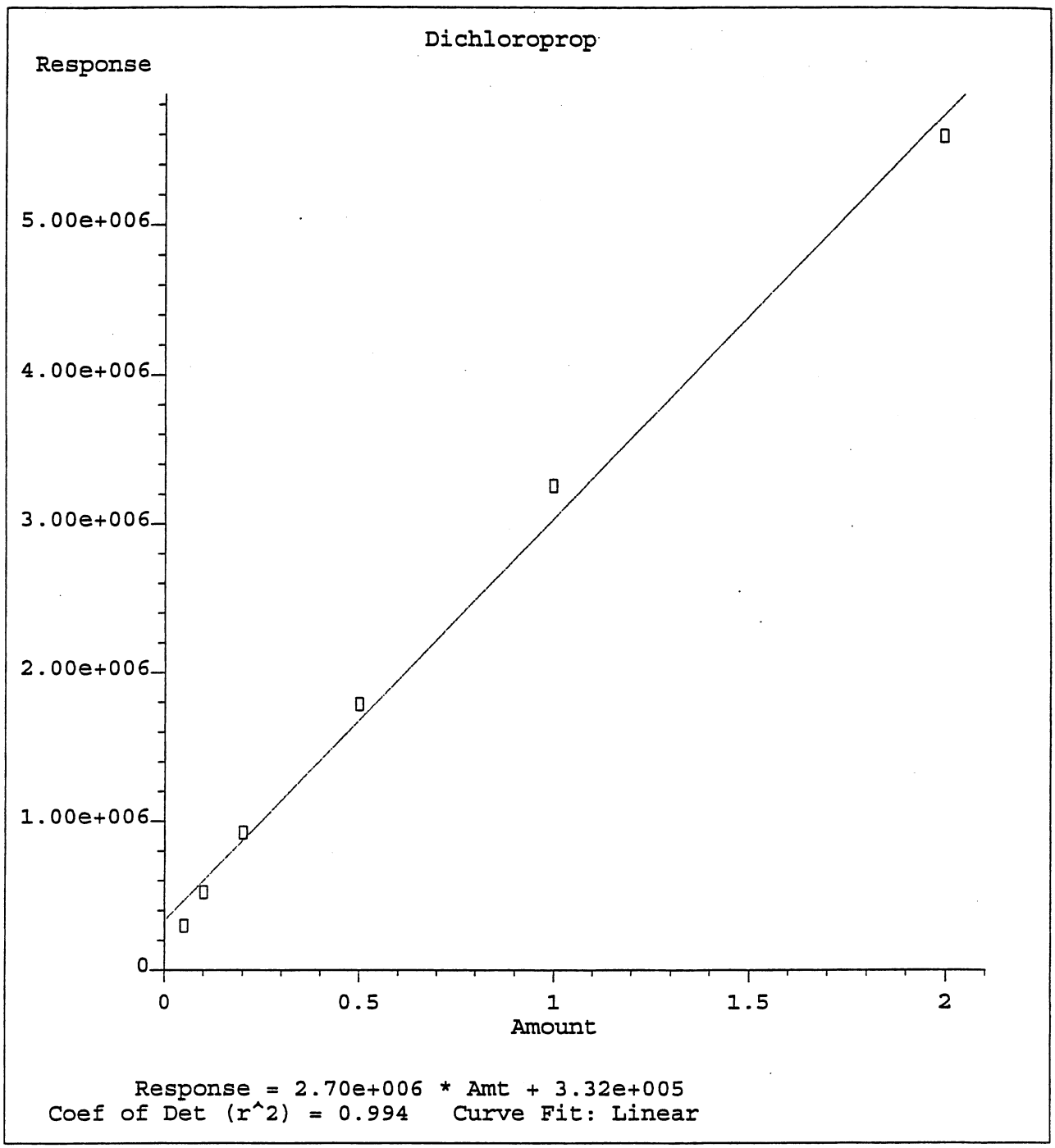
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Calibration Table Last Updated: Wed May 16 07:15:58 2001



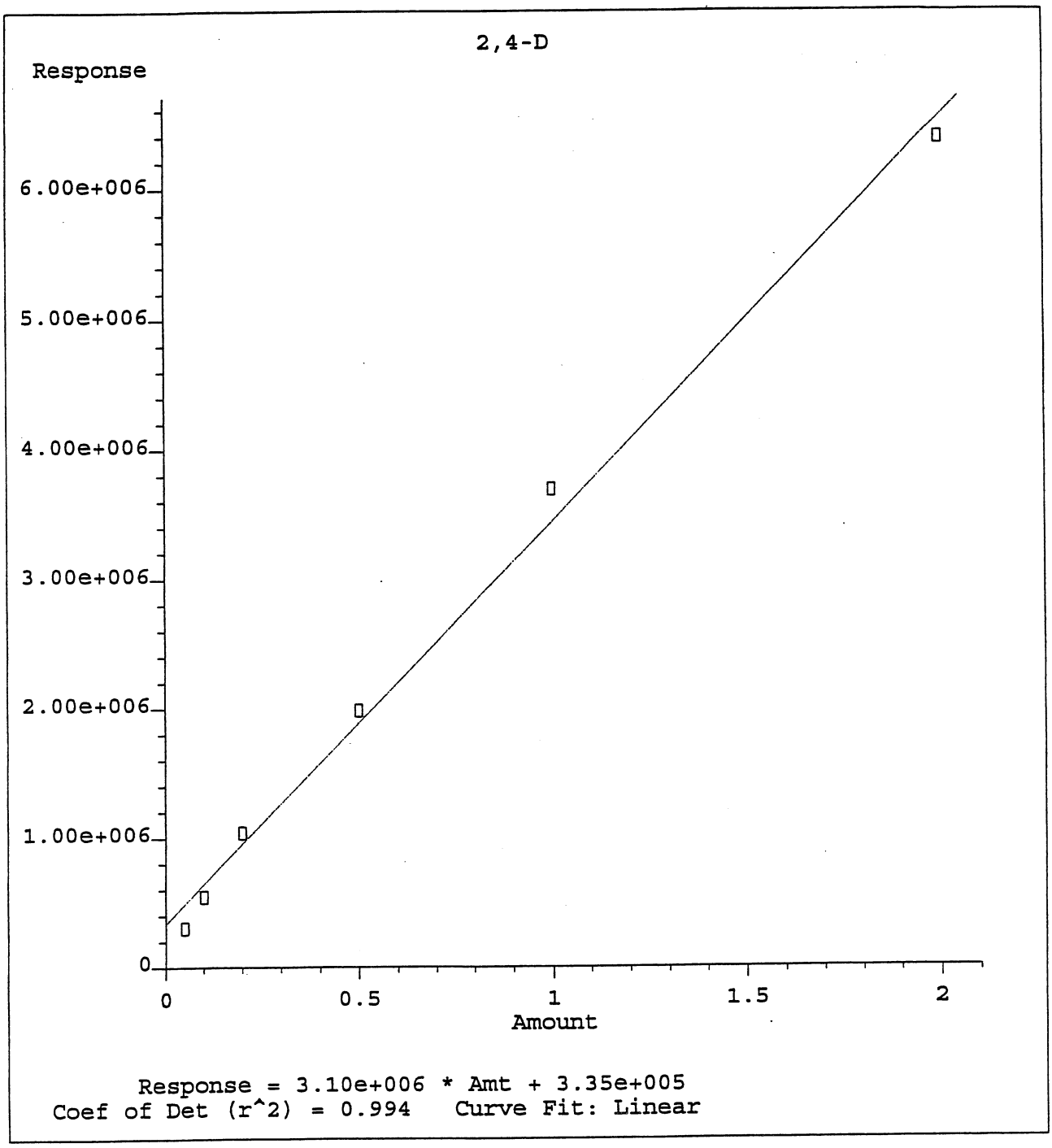
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Calibration Table Last Updated: Wed May 16 07:15:58 2001



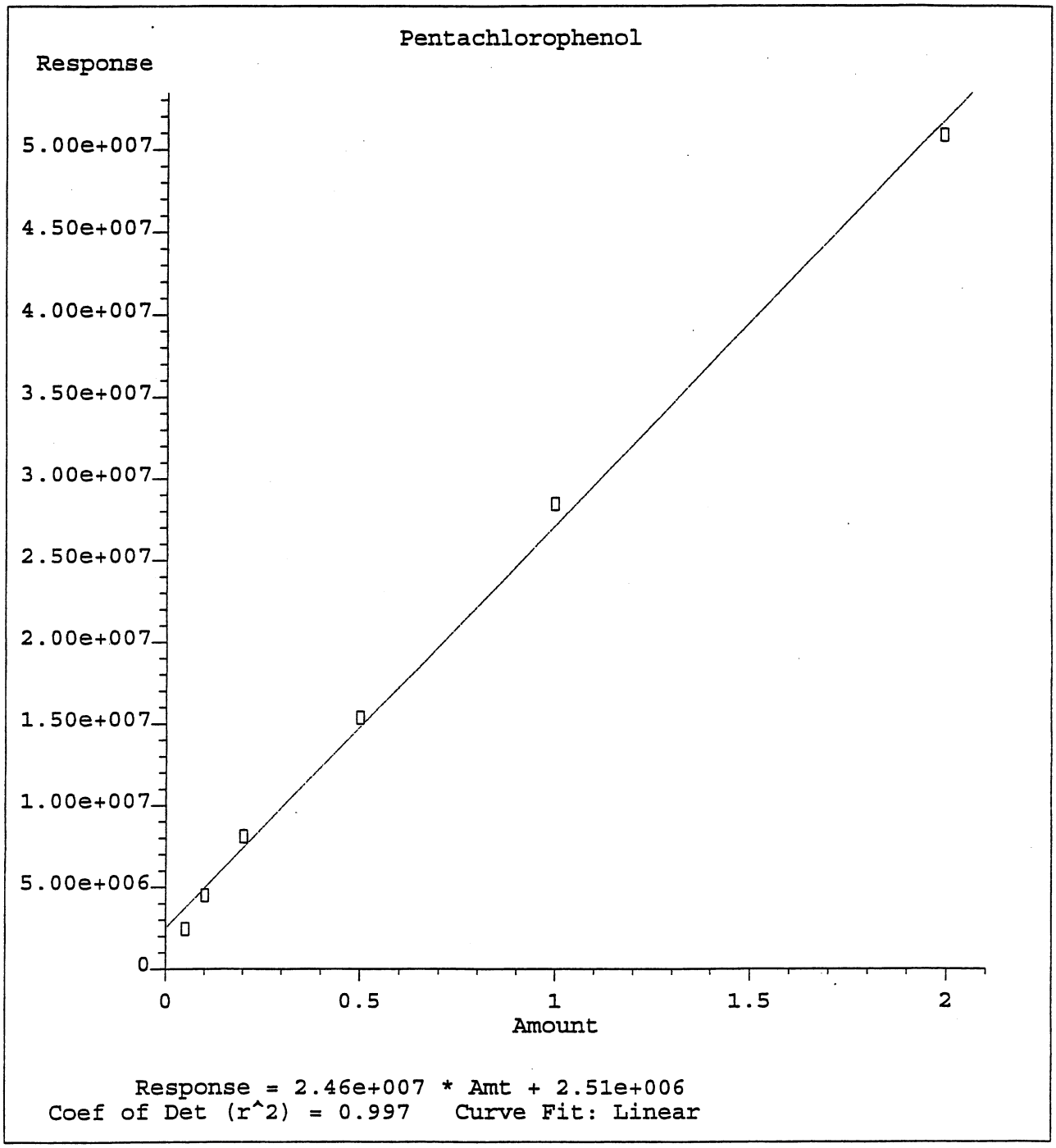
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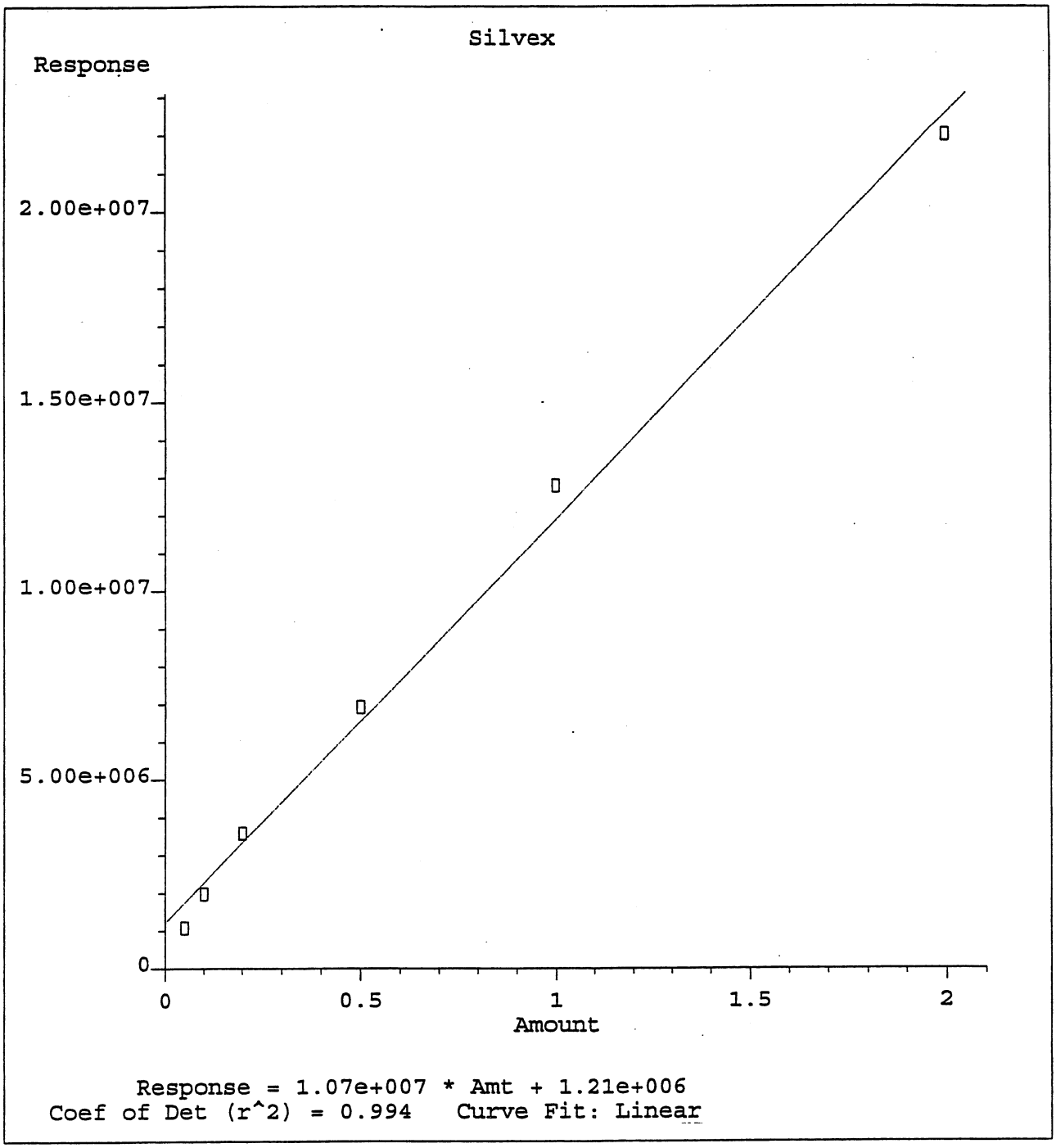
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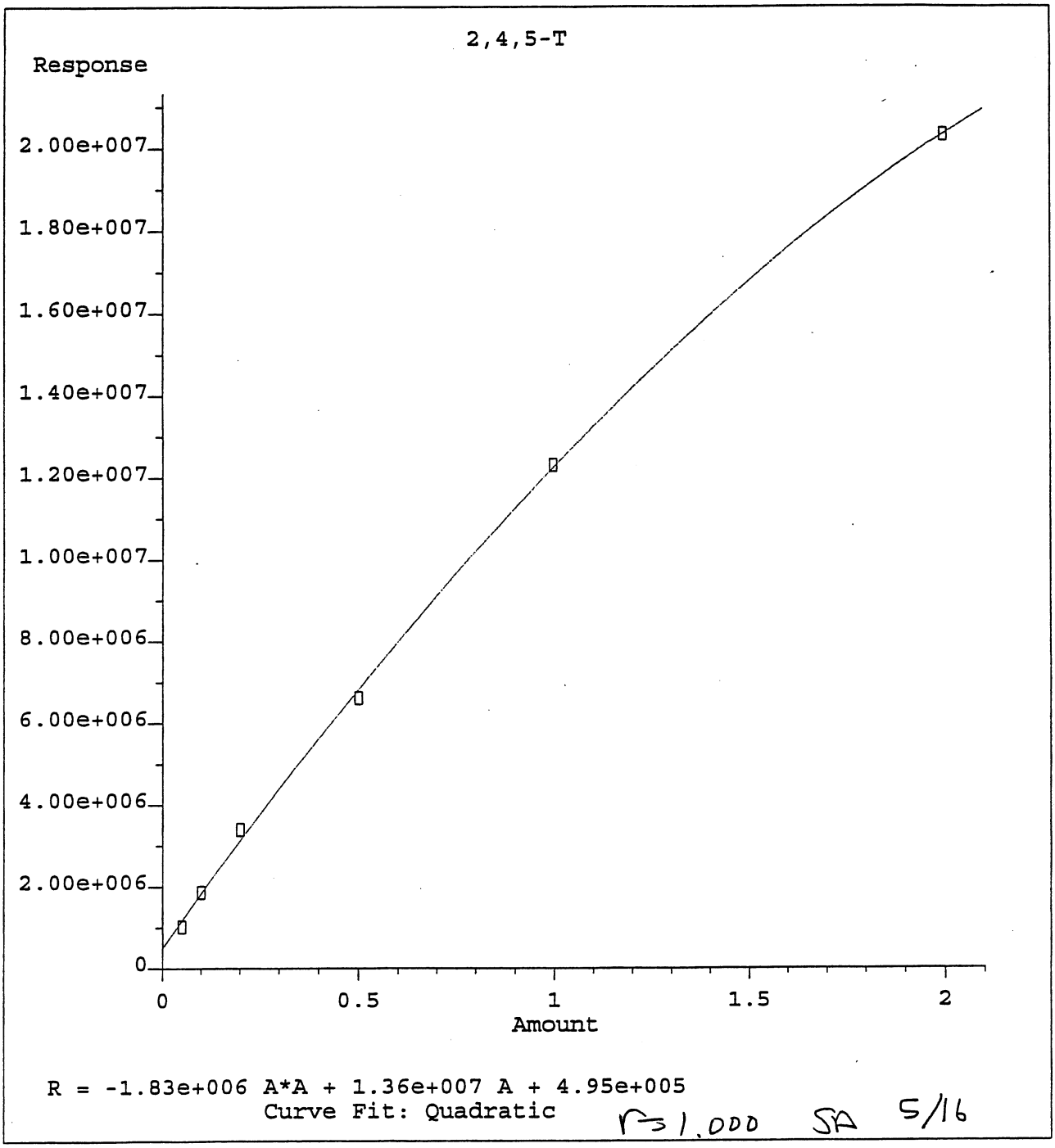
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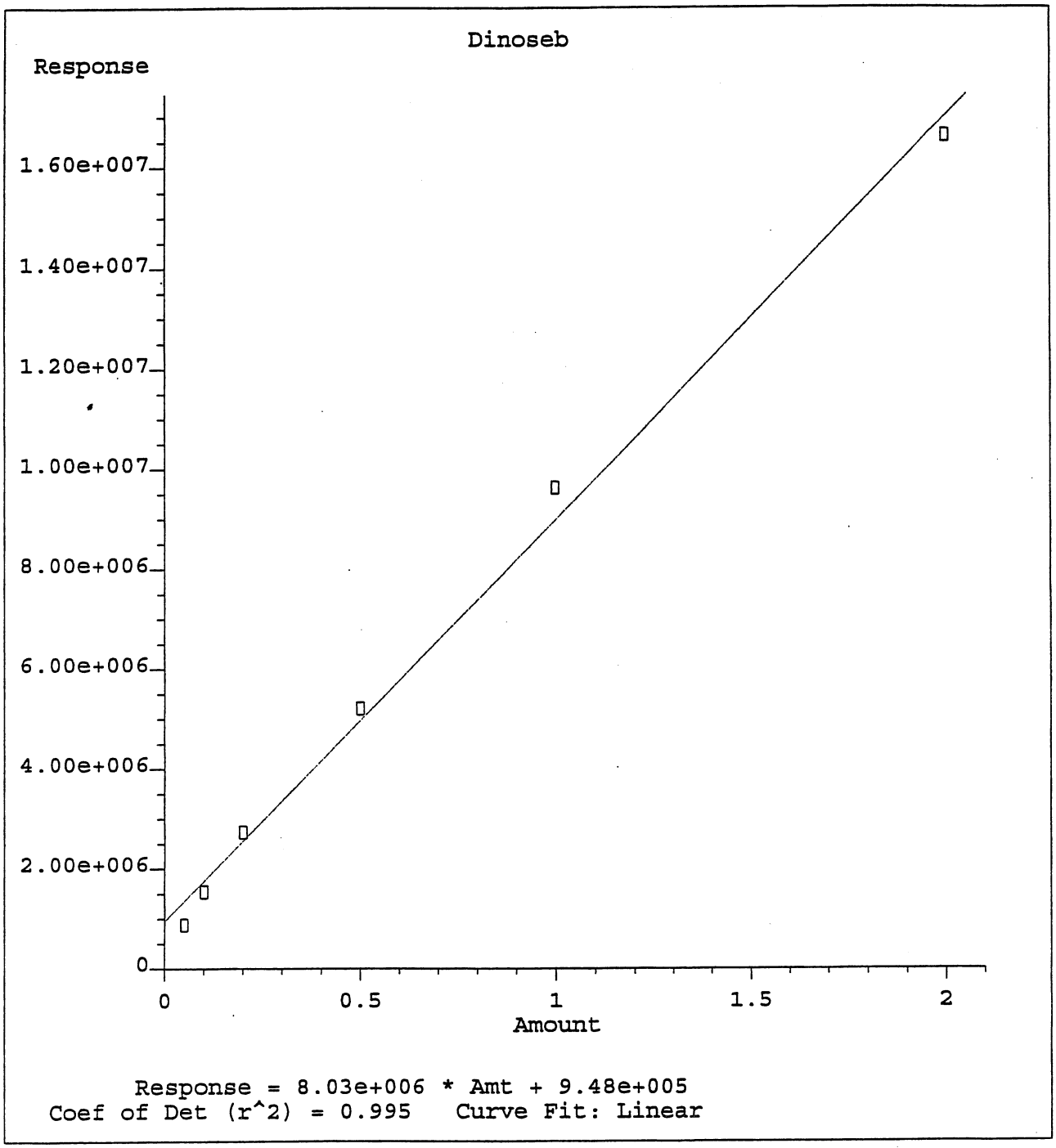
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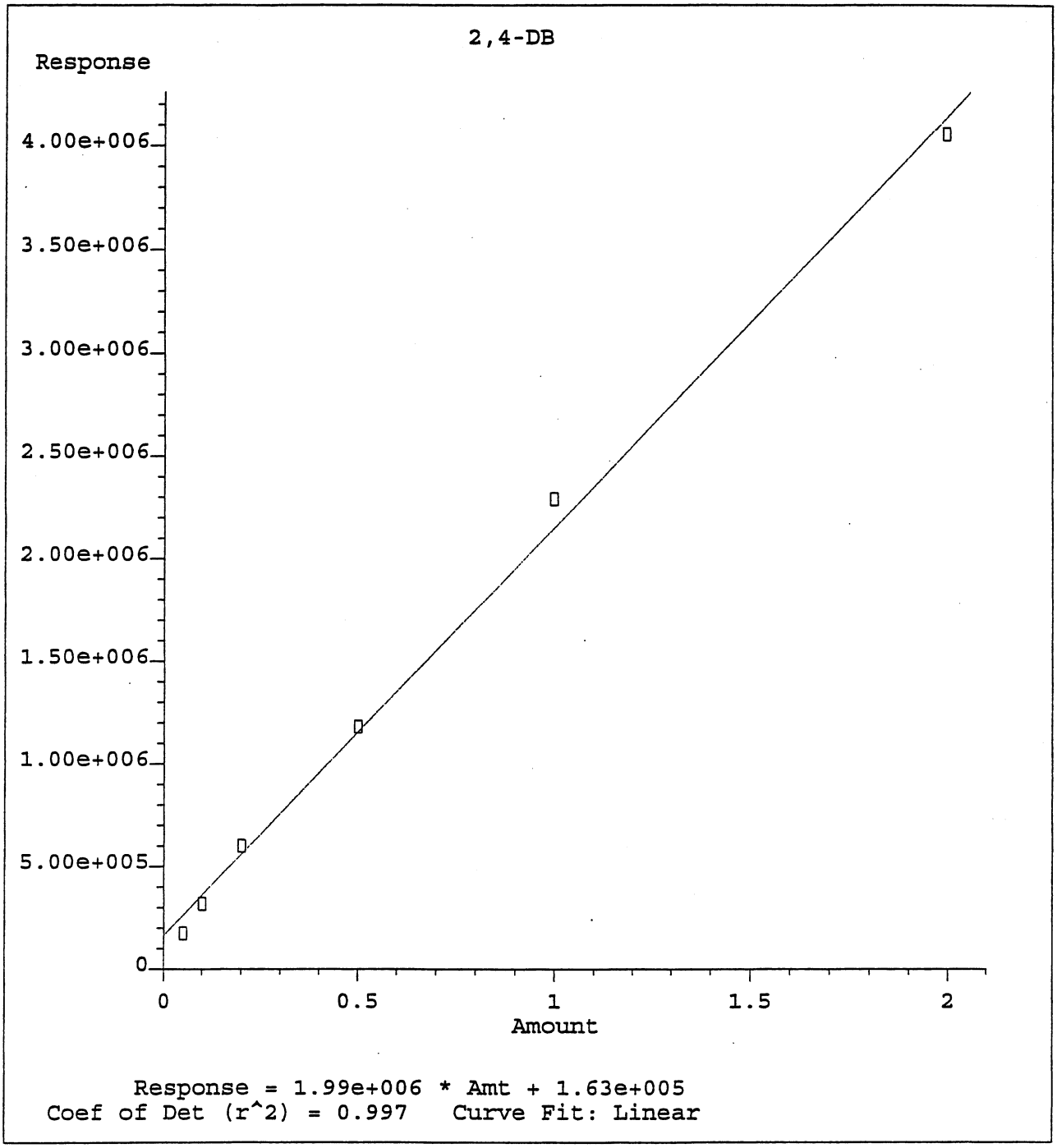
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Calibration Table Last Updated: Wed May 16 07:15:58 2001



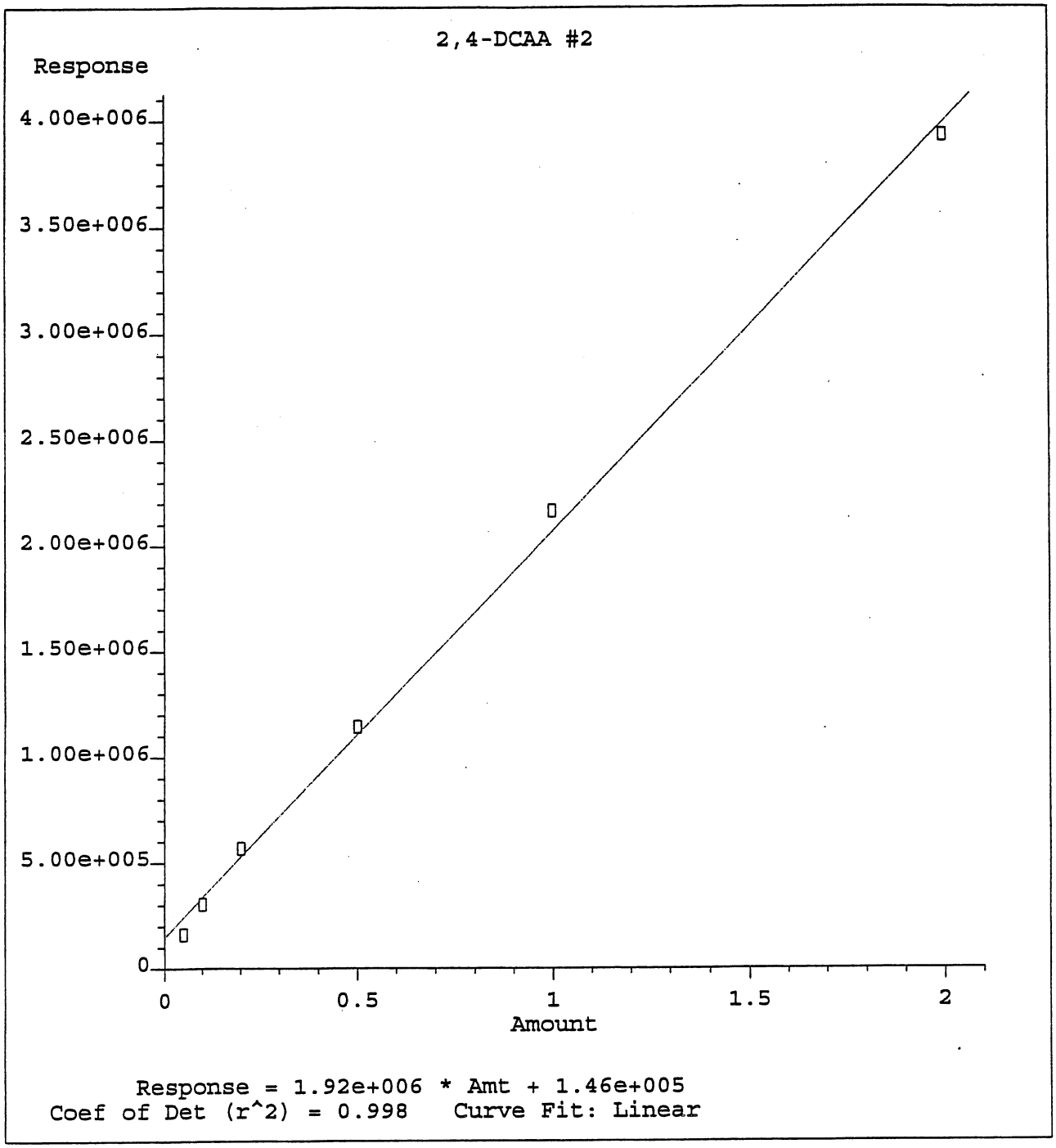
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Calibration Table Last Updated: Wed May 16 07:15:58 2001



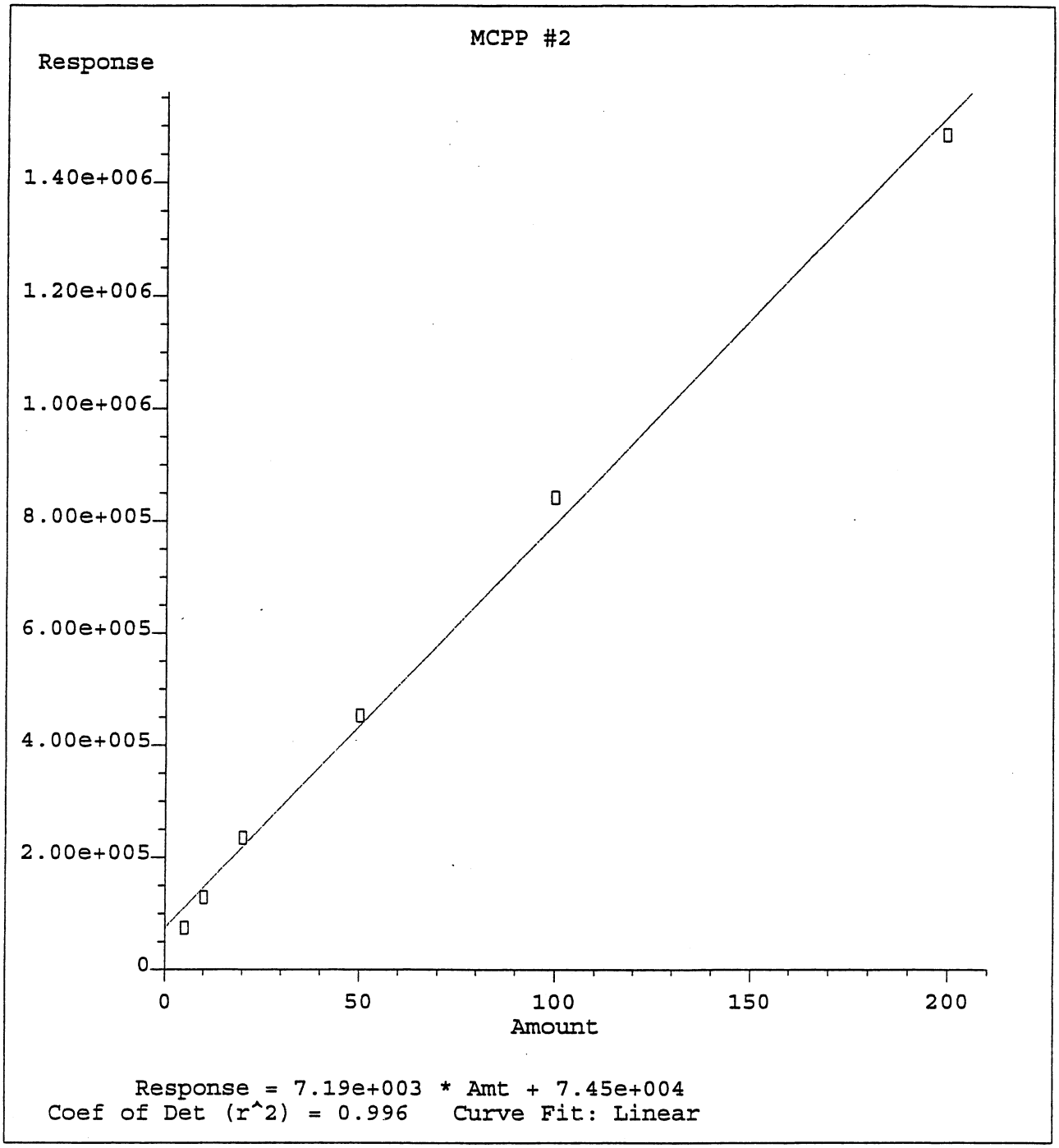
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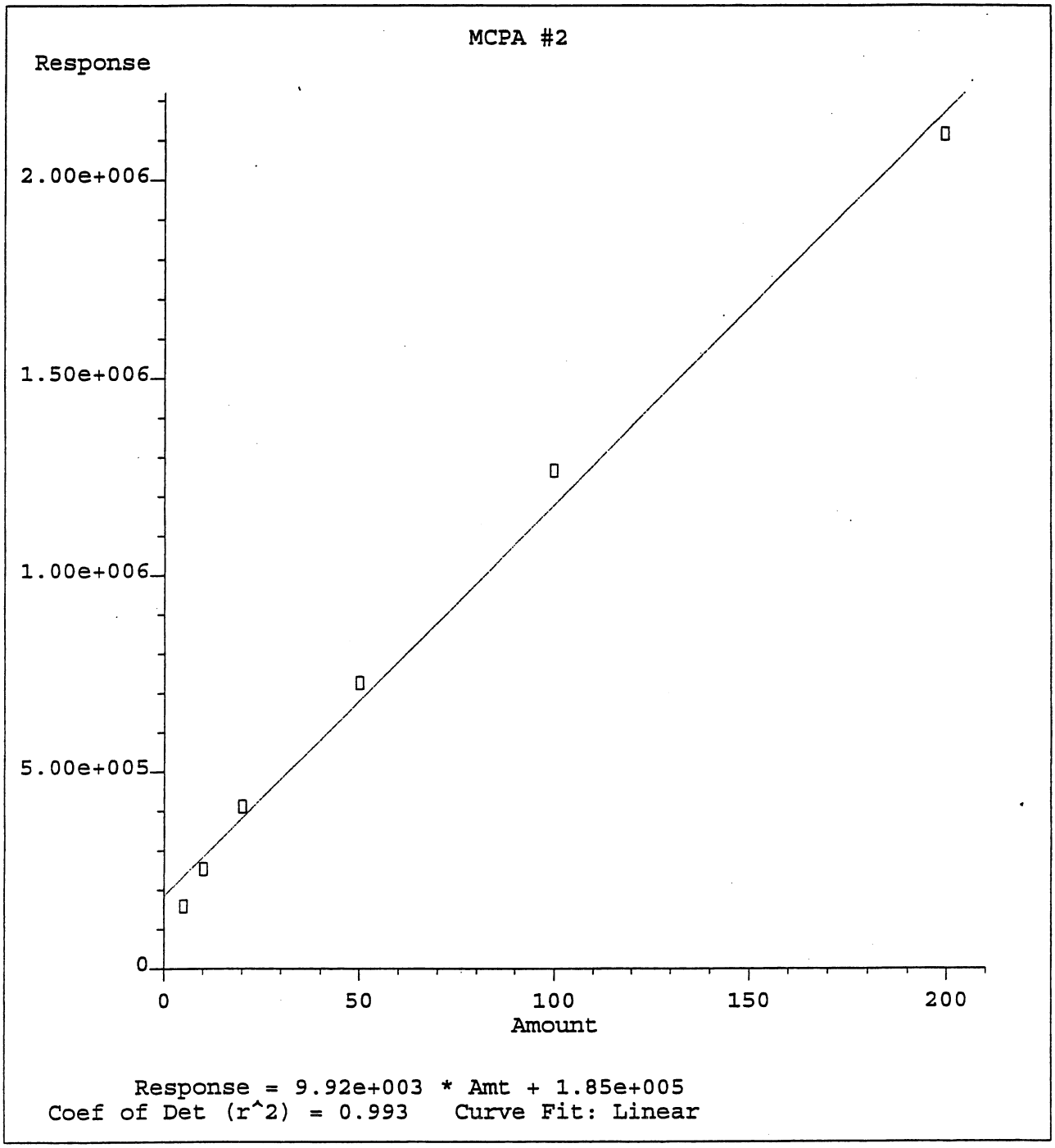
Method Name: C:\HPCHEM\3\METHODS\HRBE1501.M
Calibration Table Last Updated: Wed May 16 07:15:58 2001



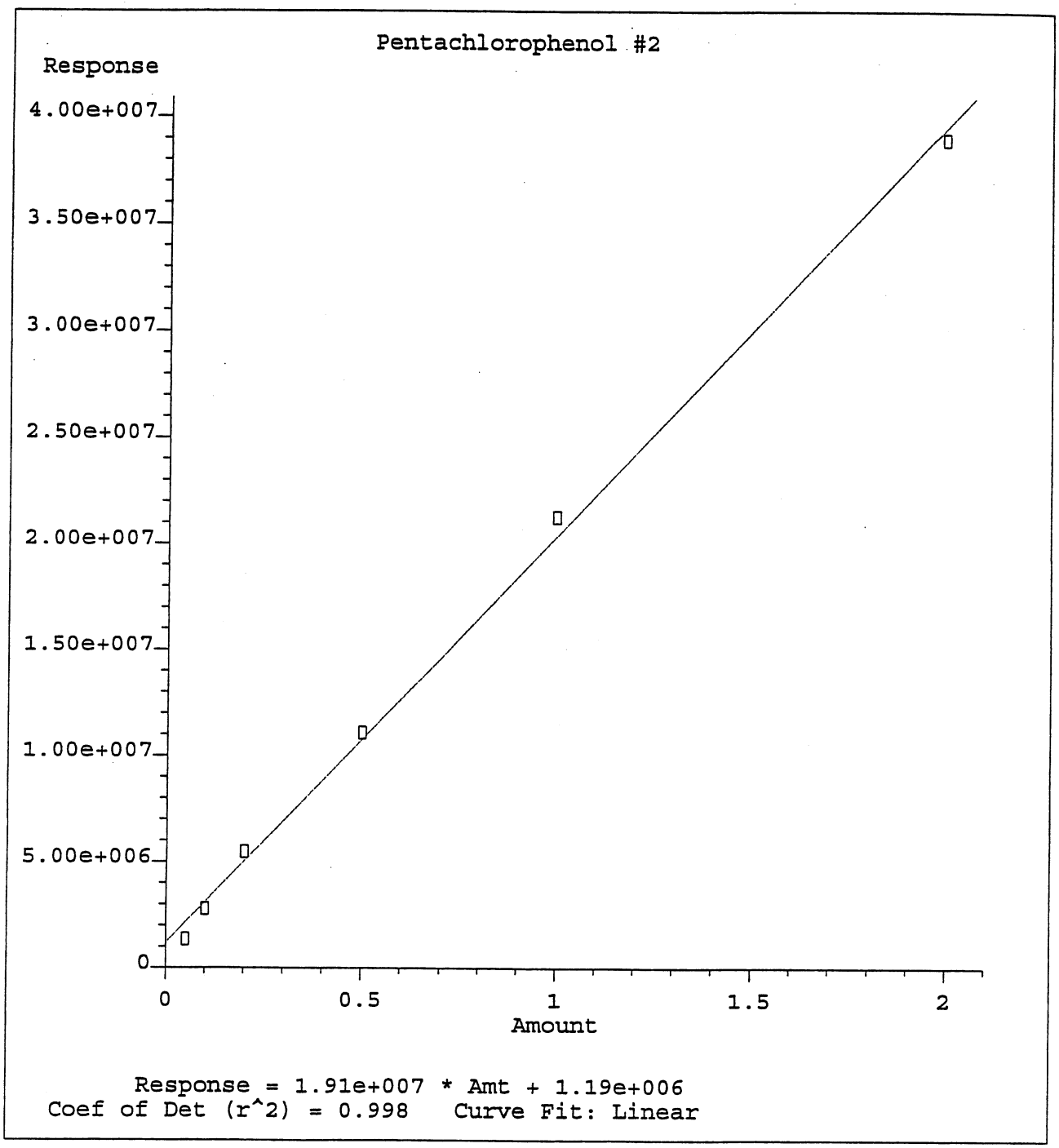
Method Name: C:\HPCHEM\3\METHODS\HRBE1501.M
Calibration Table Last Updated: Wed May 16 07:15:58 2001



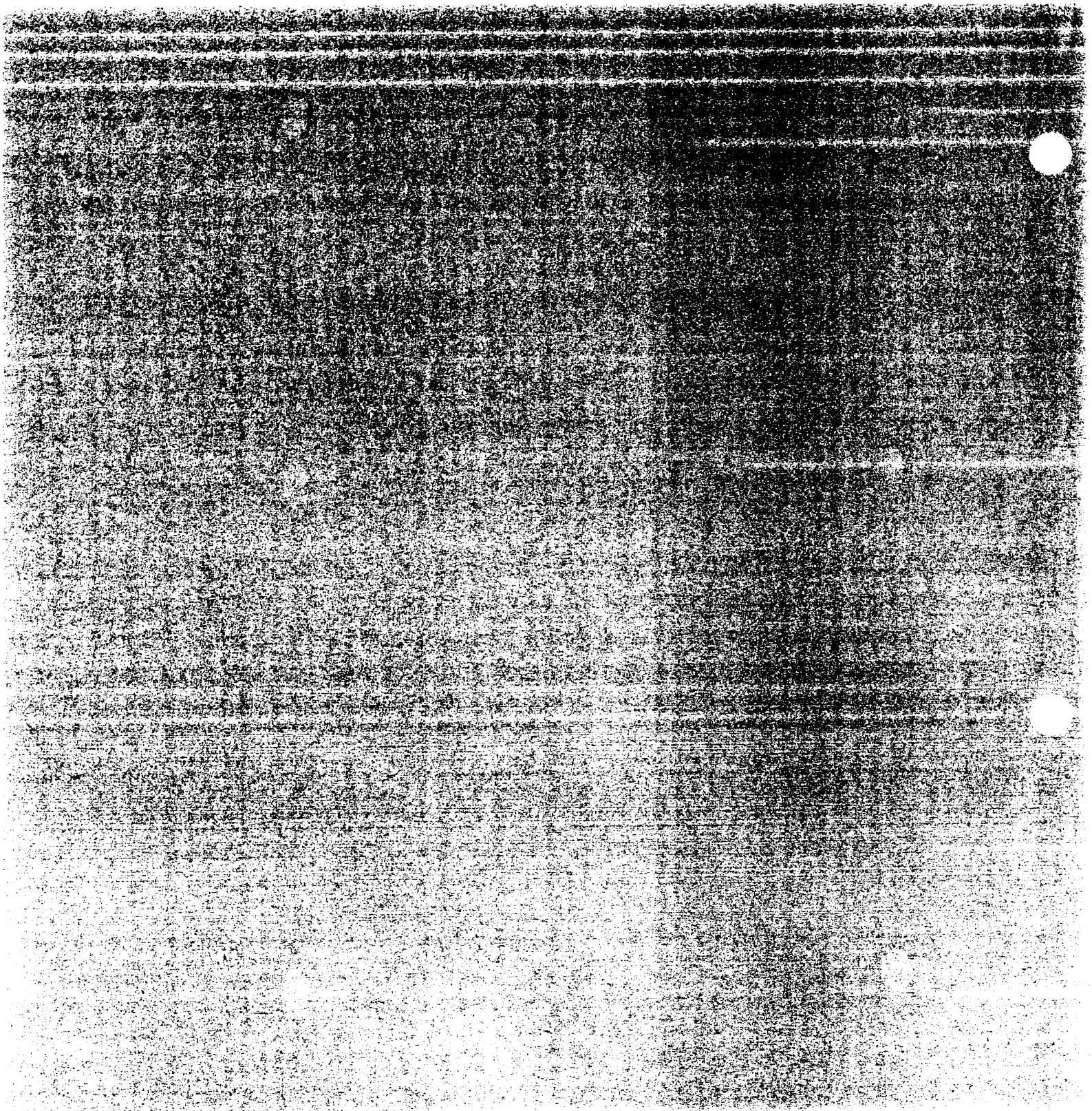
Method Name: C:\HPCHEM\3\METHODS\HRBE1501.M
Calibration Table Last Updated: Wed May 16 07:15:58 2001



Method Name: C:\HPCHEM\3\METHODS\HRBE1501.M
Calibration Table Last Updated: Wed May 16 07:15:58 2001



Method Name: C:\HPCHEM\3\METHODS\HRBE1501.M
Calibration Table Last Updated: Wed May 16 07:15:58 2001



Non-Conformances?
Circle Y or N
(If Y, see other side)

NCA SAMPLE RECEIPT CHECKLIST

Received By: **Checked-in By:**

Date: 5/8/01 Date: 5/9/01 Work Order No. B1E0234
Time: 16:05 Time: 1505 Client: Gary Stanton
Initials: PB Initials: PB Project: Camp Bonneville

Container Type:
___ Cooler
___ Box
___ Other

COC Seals:
___ Ship. Container
___ On Bottles
___ None

Packing Material:
___ Bubble Bags
___ Foam Packs
___ Styrofoam
___ Other _____

Refrigerant:
___ Gel Ice Pack
___ Loose Ice
___ Other _____

Received Via:
___ Fed Ex
___ UPS
___ DHL
___ Client
___ Courier _____
___ Other _____

Cooler Temperature: 6.0 °C CA#: ____

Sample Containers:		ID	CA#
Intact?	Y or N	____	____
Correct Type?	Y or N	____	____
Adequately Labeled? (ID, date and time)	Y or N	____	____
#Containers match COC?	Y or N	____	____
IDs match COC?	Y or N	____	____
Properly Preserved?	Y or N	____	____
Adequate Volume? (for tests requested)	Y or N	____	____

		ID	CA#
Soil VOAs: Headspace?	Y or N	____	____
Water VOAs: Headspace?	Y or N	____	____
Preserved?	Y or N	____	____

PROJECT MANAGEMENT

Is the Chain of Custody complete? Y or N

Is client information in ELEMENT accurate?
Address? Y or N
Phone #? Y or N
PM? Y or N

Is project information in ELEMENT accurate?
Proj. Name? Y or N
Proj. #? Y or N
Contact? Y or N
Bid/Prices? Y or N
Invoice info? Y or N
Tax info? Y or N
Analyses? Y or N

Has client been contacted regarding non-conformances? Y or N If Y, ____/____
Date Time
PM Initials: RG Date: 5/9/01 Time: 3:24 pm

Non-Conformances?
Circle Y or (N)
(If Y, see other side)

NCA Sample Receiving

Corrective Action Form

Date: 5-9-01
Time: 1730
Initials: ET

Work Order No. B1E0234
Client: G.S.A.
Project: Camp Bonneville project

Describe Corrective Action:

CA #	CA #	CA #
____ Salvaged Sample	____ Replaced Bottle	____ Replaced Lid
____ Verified ID w/client	____ Notified PM	____ Notified Client
____ Preserved Sample w/ _____		

Cooler Temperature: ____°C CA#: ____ Stamp COC and select either comment below

☐ **Comment:** Samples were received outside the recommended temperature range (4°C±2°C). Samples were received within 4 hours of collection and may not have had sufficient time to equilibrate with coolant. A temperature range of 2 to 15°C is considered acceptable. The samples will be analyzed as scheduled unless otherwise directed by the client.

☐ **Comment:** Samples were received outside the recommended temperature range (4°C±2°C). Samples will be analyzed as scheduled unless otherwise directed by the client.

Comments or Other Actions Taken:

#1: Sample #02 ID "PBW-50701-02" matched w/ the COC, but Sampling time didn't match - COC listed 08:35 - Label said 08:40 - I log-in according to COC. as 08:35.

Reviewed and approved by: _____ PM Signature

5/9/01 Date

nca™
North Creek Analytical, Inc.
Environmental Laboratory Network
www.ncalabs.com

East 11115 Montgomery, Suite B, Spokane, WA 98206-4776 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210
20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 (541) 383-9310 FAX 382-7588

CHAIN OF CUSTODY REPORT

Work Order #: B1E0234

CLIENT: GSA
INVOICE TO: GSA
REPORT TO: Elizabeth Chien
ADDRESS:
PHONE: 425-519-0300 x219 FAX: 425-519-0309
P.O. NUMBER:
PROJECT NAME: Camp Bonneville
PROJECT NUMBER: 99-004.58
SAMPLED BY: K. Thompson / E. Chien

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: [10] [7] [5] [4] [3] [2] [1] [<1] STD.
Petroleum Hydrocarbon Analyses: [5] [4] [3] [2] [1] [<1] STD.
[OTHER] Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES: TCLP Pb	Dilution-D	Antimony, Pb, 3.4.3.T 4.4.0.0.T mCRA	Antimony, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Ag, Tl, Zn	MATRIX (W. S. O)	# OF CONT.	COMMENTS	NCA WO ID
1. PBW-50701-01	5/7/01 8:35	X				O	4	WC for project MS/MSD TCLP Pb	-01
2. PBW-50701-02	5/7/01 8:35	X				O	2		-02
3. ~~PBW-50701-03~~									
4. NS-PBS-04	11:22		X	X		S	1		-03
5. ES-PBS-05	11:24		X	X		S	1		-04
6. SS-PBS-06	11:26		X	X		S	1		-05
7. WS-PBS-07	11:28		X	X		S	1		-06
8. FL-PBS-08	11:05		X	X		S	2	MS/MSD for Diesel and Pesticides	-07
9. FLD-PBS-09	11:10		X	X		S	1		-08
10. SP-PBS-11	11:20	X				S	1		-09
11. NS-AS1-12	12:55				X	S	1		-10
12. ES-AS1-13	12:58				X	S	1		-11
13. SS-AS1-14	13:00				X	S	1		-12
14. WS-AS1-15	13:03				X	S	1		-13
15. FL-AS1-16	13:06				X	S	2	MS/MSD for As, Ba, Cd, Pb	-14

RELINQUISHED BY: Elizabeth Chien PRINT NAME: FIRM: GSA DATE: 5/8/01 TIME: 16:00
RECEIVED BY: PRINT NAME: ROBERT GREEN FIRM: NCA DATE: 5/8/01 TIME: 405
RELINQUISHED BY: PRINT NAME: FIRM: DATE: TIME:
RECEIVED BY: PRINT NAME: FIRM: DATE: TIME:

ADDITIONAL REMARKS: NCA = 6.0° W/O
TEMP: 7

COC REV 3/99

NCA
eak Analytical Inc.
mental Laboratory Network
www.ncalabs.com

9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210
20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 (541) 383-9310 382-7588

CHAIN OF CUSTODY REPORT

Work Order #: B1E0234

CLIENT: GSA
REPORT TO: Elizabeth Chien
ADDRESS:
PHONE: 425-519-0500 x219 FAX: 425-519-0509

INVOICE TO: GSA
P.O. NUMBER:

PROJECT NAME: Camp Bonneville
PROJECT NUMBER: 99-004.58
SAMPLED BY: Kim Thompson / E. Chien

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: 10 STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1
OTHER — Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES: TCLP As, Ba, Cd, Pb	Antimony, As, Ba, Cd, Cr, Cu, Pb, Zinc	Antimony, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Thallium, Zinc	TCLP As, Ba, Cd, Pb	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1. SP-A51-17	5/7/01 13:05	X				S	1		-15
2. SP-A50-25	13:08	X				S	1		-16
3. NS-A50-26	13:25		X			S	1		-17
4. ES-A50-27	13:27		X			S	1		-18
5. SS-A50-28	13:30		X			S	1		-19
6. WS-A50-29	13:32		X			S	1		-20
7. FL-A50-30	13:35		X			S	2	~~MS/MSD TCLP~~	-21
8. NS-A53-31	5/8/01 8:35			X		S	1		-22
9. ES-A53-32	5/8/01 8:37			X		S	1		-23
10. SS-A53-33	8:40			X		S	1		-24
11. WS-A53-34	8:43			X		S	1		-25
12. FL-A53-35	8:45			X		S	2	MS/MSD for Antimony, Be, Cr, Cu, Ni, Thallium, Zinc	-26
13. FLD-A53-36	8:48			X		S	1		-27
14. SP-A53-38	8:53				X	S	3	MS/MSD TCLP As, Ba, Cd, Pb	-28
15. SPD-A53-39	5/8/01 8:55				X	S	1		-29

RELINQUISHED BY: Elizabeth Chien — FIRM: GSA — DATE: 5/8/01 — TIME: 16:00
RECEIVED BY: [signature] — PRINT NAME: ROBERT GREER — FIRM: NCA — DATE: 5/9/01 — TIME: 4105
RELINQUISHED BY: — PRINT NAME: — FIRM: — DATE: — TIME:
RECEIVED BY: — PRINT NAME: — FIRM: — DATE: — TIME:

ADDITIONAL REMARKS:
NCA = 6.0°
TEMP° 70°
PAGE 2 OF 2

COC REV 3/99

WASTE MANAGEMENT, INC ...NON HAZARDOUS WASTE DISPOSAL SOLUTIONS FOR THE PACIFIC NORTHWEST

Hillsboro Landfill, Inc.

3205 SE MINTER BRIDGE ROAD HILLSBORO, OR 97123

PERMIT # 5795

PERMIT TO DISPOSE OF NON-HAZARDOUS MATERIALS

EXPIRES: 10/18/01

GENERATOR: US ARMY/CAMP BONNEVILLE	
DESCRIPTION:*SOIL W/ METALS*	TONS:*15*
☐SPECIAL WASTE ☒CS ☐CLEAN-UP MATERIAL	
LOCATION: *VANCOUVER, WASHINGTON 23201 NE PLUSS ROAD*	COUNTY:*Clark NOT IN METRO*
CONTACT: *ELIZABETH CHIEN*	PHONE: *425-519-0300*

BILLING:*Landfill account GARY STRUTHERS AND ASSOCIATES, INC*	PO#: *N/A*	JOB#: *N/A*

We accept business checks, cash, VISA / Mastercard or charge(with prior approval)

SPECIAL HANDLING : *NOTE: ONLY SOILS FROM THE AMMUNITIONS AREA OF THE SITE ARE PERMITTED FOR DISPOSAL AT HILLSBORO LANDFILL*
HAULER: CELORIE BROTHERS

DL MK

APPROVED: KC *KRISTIN CASTNER* DATE: *07/18/01 4:55:16 PM*

A COPY OF THIS PERMIT MUST BE SHOWN BY EACH DRIVER

THERE IS A MINIMUM CHARGE OF $50-$60 FOR EACH LOAD OF SPECIAL WASTE

WASTE MANAGEMENT

TICKET REPORT BY PERMIT

Print Date 10/11/01
.rpt

ate	Permit	Ticket	Waste	Yards	Units	Tons	Pretax	Tax	Amount
/17/01	5795	150408	PCSOUT	0.00	0	8.67	283.60	19.85	$303.45
	5795 / US ARMY - CAMP BONNEVIL			**0.00**	**0**	**8.67**	**283.60**	**19.85**	**303.45**
15 / Hillsboro Landfill Inc.				**0.00**	**0**	**$8.67**	**$283.60**	**$19.85**	**$303.45**
	1 Detail Transaction(s)								

0991004

Hillsboro Landfill, Inc.
3205 SE Minter Bridge, Hillsboro 97123
Consumer Comments? We want to know!
PLEASE phone: 503-640-9427

TICKET: 150408
DATE: 09/17/2001
TIME: 12:33 - 12:33

CUSTOMER: 5151936 / BARRY STRUTHERS CONSTRUCTION
GENERATOR: US ARMY 3 / US ARMY/CAMPPROFILE #: 5795
COUNTY: CLARK / Clark
TRUCK: JLR BIN: LICENSE:
HAULER: CELORIE / CELORIE BROTHERS MANIFEST: Stewart Code
COMMENT:

P.O.: NA
GROSS: 55940 LBS
TARE: 38600 LBS Manual
NET: 17340 LBS

COMMODITY	UNIT	QNTY
PCSOUT / CONTAM. SOILS	T	8.67

IN OPERATOR: Jennifer

OUT OPERATOR: Jennifer

DRIVER: Stewart Code

CERTIFICATE OF DISPOSAL

Hillsboro Landfill, Inc. has received NON HAZARDOUS WASTE *Material from the:*

US Army—Camp Bonneville Project

23201 NE Pluss Road
Vancouver, WA

Dates of Disposal:	9/17/01
WM Profile #:	5795
Total Tons:	8.67
Waste Description:	Non-Hazardous Contaminated Soil

WASTE MANAGEMENT

I certify on behalf of Hillsboro Landfill, Inc., that to the best of my knowledge the above described NON HAZARDOUS WASTE was disposed of and managed in compliance with all applicable laws.

Signature

10/11/01
Date

10/11/01 THU 13:08 FAX 503 648 3942 HILLSBORO LANDFILL INC 002/002

PERMIT

CHEMICAL WASTE MANAGEMENT OF THE NORTHWEST
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812 **PHONE: 541-454-2030**

PERMIT TO DISPOSE OF HAZARDOUS MATERIALS

GENERATOR: US Army

DESCRIPTION: Wood Debris w/ lead based paint

QUANTITY: 15 yards

PROFILE: CS2504

EXPIRES: 7/20/02

LOCATION: 23201 NE Pluss Rd
Vancouver, WA 98682

CONTACT: Elizabeth Chien

DATE: 7/20/01

TYPE OF DISPOSAL: micro

SPECIAL HANDLING: _____

BILLING: Garry Struthers Assoc.
3150 Richards Rd. Ste. 100
Bellevue, WA
98005

APPROVED: LEAH SHANNON

DATE: 7/20/01

WASTE MANAGEMENT

EACH DRIVER MUST Show (A COPY OF THIS PERMIT).

CHEMICAL WASTE MANAGEMENT OF THE NORTHWEST
A WASTE MANAGEMENT COMPANY

17629 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2643
(541) 454-3247 Fax

RECEIVED
JUL 2 3 2001
Garry Struthers Assoc., Inc.

July 20, 2001

US ARMY
23201 NE PLUSS RD
VANCOUVER, WA 98682-9735

RE: CONFIRMATION PERMIT

ATTENTION: ELIZABETH CHIEN

We are pleased to confirm Waste Management's approval of your waste material as described below. Waste Management based upon the information provided by you prepared the attached profile for the waste material. It is important that no changes be made to the profile without Waste Management's consent. If the profile meets with your approval, then you are ready to schedule shipment of your waste.

Profile Number: CS2504
Approved Management Facility: ***CHEMICAL WASTE MANAGEMENT***
Disposal Method: MICRO

The newly formed Waste Management is working hard to provide an increased level of service to our customers. We are asking that when you ship your material, a copy of the attached form; titled "PERMIT" is sent with your Manifest or Bill of Lading. This shows that you have preapproval and pricing-contracting is in place. This will help us in processing your load in the most efficient manner.

All waste coming to Oregon Waste systems or Chemical Waste Management ***must*** *be scheduled, twenty-four hours in advance, with Greg Marrett. If you are unable to reach Greg you can contact our customer service representative Linda Wimmer. Unscheduled loads could be delayed several hours or even rejected.*

If you have any questions we have listed contact people you may use in addition to your Sales Representative

Greg Marrett: Scheduling & Transportation 541-454-3220
Linda Wimmer: WA Customer Service Pricing 800-843-3604
Tracy Breinlinger: OR Customer Service 503-493-7825
Kristin Clayton: Columbia Ridge Approvals 503-493-7834
Leah Shannon: Customer Service & Approvals 541-454-3289
Gary Fisher: Operational Assistance 541-454-3234

Thank you,

Leah Shannon
Waste Management

Date Printed 07/17/01

Chemical Waste Management, Inc.

GENERATOR'S WASTE PROFILE SHEET

Profile # ARL CS2504

(_) Check here if this is a Recertification LOCATION OF ORIGINAL CWM OF THE NORTHWEST-ARLINGTON

GENERAL INFORMATION

1. Generator Name: US ARMY Generator USEPA ID: WA7210020924
2. Generator Address: 23201 NE PLUSS RD Billing Address: GARRY STRUTHERS ASSOCIATES INC
   (_) Same
   3150 RICHARDS RD STE 100
   VANCOUVER WA 98682-9735
   BELLEVUE WA 98005-4430
3. Technical Contact/Phone: ELIZABETH CHIEN 425/519-0300
4. Alternate Contact/Phone: _____ Billing Contact/Phone: ELIZABETH CHIEN X219 425/519-0300

PROPERTIES AND COMPOSITION

5. Process Generating Waste: BUILDING DEMOLITON, SITE REMEDIATION
6. Waste Name: WOOD DEBRIS W/LEAD-BASED PAINT

7A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes (X) No (_)
B. Identify ALL USEPA listed and characteristic waste code numbers (D,F,K,P,U): D008
State Waste Codes: _____

8. Physical State @ 70F: A. Solid(X) Liquid(_) Both(_) Gas(_) B. Single Layer (_) Multilayer (X) C. Free liq. range 0 to 0%

9A. pH: Range _____ or Not applicable (X) B. Strong Odor (_):describe _____

10. Liquid Flash Point: < 73F (_) 73-99F (_) 100-139F (_) 140-199F (_) >= 200F (_) N.A. (X) Closed Cup (X) Open Cup (_)

11. CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Constituents	Range	Unit Description
LEAD	.01 to 1	%
DEBRIS	to	
WOOD	.01 to 98	%
DIRT	.01 to 1	%
PLANT DEBRIS	to	
COMMENTS	to	See attach2
TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%):	100.000000	

12. OTHER: PCBs if yes, concentration _ _____ ppm. PCBs regulated by 40 CFR 761 (_). Pyrophoric (_) Explosive (_)
Radioactive (_) Benzene if yes, concentration _ _____ ppm. NESHAP (_) Shock Sensitive (_) Oxidizer (_)
Carcinogen (_) Infectious (_) Other _____

13. If waste subject to the land ban & meets treatment standards, check here: _ & supply analytical results where applicable.

SHIPPING INFORMATION

14. PACKAGING: Bulk Solid (X) Bulk Liquid (_) Drum (_) Type/Size: YARDS Other 18 YD END DUMP TRUCK
15. ANTICIPATED ANNUAL VOLUME: 15 Units: YARDS Shipping Frequency: ONE TIME

SAMPLING INFORMATION

Sample Tracking Number: 4950503

16a. Sample source (drum, lagoon, pond, tank, vat, etc.): _____
Date Sampled: _____ Sampler's Name/Company: _____
16b. Generator's Agent Supervising Sampling: _____ 17. (X) No sample required (See instructions.)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification.

Signature on original profile CS2504 (Signature) | ELIZABETH CHIEN PROJ MGR (Name and Title) | 6/08/01 (Date)

Date Printed 07/17/01

Profile #
ARL CS2504

18. This is a Nonwastewater.

19. If this waste is subject to any California list restrictions enter the letter from below (either A or B.1) next to each restriction that is applicable:
___ HOCs. ___ PCBs. ___ Acid. ___ Metals. ___ Cyanides

20. Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each wast number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF #	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable. simply check none		C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED? Enter letter from below
				PERFORMANCE-BASED: Check as applicable		SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)	
		DESCRIPTION	NONE	268.41(a)	268.43(a)	268.42	
1	D008		X				A
2							
3							
4							
5							
6							
7							
8							
9							
10							

Management under the land disposal restrictions:
A. RESTRICTED WASTE REQUIRES TREATMENT

B.1 RESTRICTED WASTE TREATED TO 268.40 STANDARDS

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

B.5 RESTRICTED WASTES TREATED TO ALTERNATE SOIL STANDARD

B.6 RESTRICTED WASTES TREATED TO ALTERNATE DEBRIS STANDARD

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

21. Is this waste a soil or debris? No: _ Yes, Soil: _ Yes, Debris: X

22. Specific Gravity Range: _____ to _____

23. Indicate the range of each: Units

Cyanides: _ None _____ to _____ _____ Type (free, total, amenable, etc.) _____

Cyanides: _ None _____ to _____ _____ Type (free, total, amenable, etc.) _____

Sulfides: _ None _____ to _____ _____ Type _____

Optional Phenolics: _ None _____ to _____ _____

24. Identify the waste color VARIES _____ . DOT physical state Solid _____ .

and physical appearance SOLID _____

Date Printed 07/17/01

Profile #
ARL CS2504

25. COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION

TOTAL

Beryllium as Be _____ ppm

Potassium as K _____ ppm

Sodium as Na _____ ppm

Bromine as Br _____ %

Chlorine as Cl _____ %

Fluorine as F _____ %

Sulfur as S _____ %

26. RECLAMATION, FUELS or INCINERATION PARAMETERS
(Provide if information is available)

RANGE

A. Heat Value (Btu/lb): _____-_____

B. Water: _____

C. Viscosity (cps): _____@_____F _ 100 F _ 150 F

D. Ash: _____ %

E. Settleable solids: _____ %

F. Vapor Pressure @ STP (mm/Hg): ____

G. Is this waste a pumpable liquid? Yes _ No _

H. Can this waste be heated to improve flow? Yes _ No _

I. Is this waste soluble in water? Yes _ No _

J. Particle size: Will the solid portion of this waste pass through a 1/8 inch screen? Yes _ No _

27. TRANSPORTATION INFORMATION

A. Is this a DOT Hazardous Material? Yes X No _

B. Proper Shipping Name. . . . . .: HAZARDOUS WASTE, SOLID, N.O.S

and Additional Description if required: (LEAD)

D008

C. DOT Regulations: North America Hazard Class: 9 Misc.Hazardous Mat'l I.D. NA3077 Packing Group: III

D. CERCLA Reportable Quantity (RQ) and units (Lb, Kg): _____

E. Non-Bulk code 213 Bulk code 240

F. Special Provisions B54 ___ ___ ___ ___ ___

G. Labels Required CLASS 9 _____ _____

28. SPECIAL HANDLING INFORMATION

_____

_____

_____

_____

_ Material Safety Data Sheets Attached

29. OTHER INFORMATION

_____

_____

_____

_____

_____

30. CHEMICAL WASTE MANAGEMENT CERTIFICATION

Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

Date Printed 07/17/01

Profile #
ARL CS2504

31. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

METALS	TCLP Information: Check only ONE for each constituent Use units: ppm, mg/l				TCLP Data	TCA or TOTAL Use units: ppm, mg/l, mg/kg or percent			
						California List			
	Less Than	TC Regulated Level	Equal or More	Waste No.	TCLP Actual	Less Than	Regulated Level	Equal or More	Actual
Arsenic as As	X	5.0 mg/l		D004			500 mg/l		
Barium as Ba	X	100.0 mg/l		D005					
Cadmium as Cd	X	1.0 mg/l		D006			100 mg/l		
Chromium tot Cr	X	5.0 mg/l		D007					
Lead as Pb		5.0 mg/l	X	D008			500 mg/l		
Mercury as Hg	X	.2 mg/l		D009			20 mg/l		
Selenium as Se	X	1.0 mg/l		D010			100 mg/l		
Silver as Ag	X	5.0 mg/l		D011					
Nickel as Ni							134 mg/l		
Thallium as Tl							130 mg/l		
Chromium Hex							500 mg/l		
Antimony									
Beryllium									
Copper									
Vanadium									
Zinc									

.Date Printed 07/17/01

Profile #
ARL CS2504

32. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

ORGANICS	TCLP Information: Check only ONE for each constituent				TCLP Data	TCA or TOTAL Use units: ppm, mg/l or %
	Less Than	Regulated Level	Equal or More	Waste No.	TCLP Analytical Test Results Use units: ppm or mg/l	
Benzene	X	0.5 mg/l		D018		
Carbon Tetrachloride	X	0.5 mg/l		D019		
Chlordane	X	0.03 mg/l		D020		
Chlorobenzene	X	100.0 mg/l		D021		
Chloroform	X	6.0 mg/l		D022		
m-Cresol	X	200 mg/l		D024		
o-Cresol	X	200.0 mg/l		D023		
p-Cresol	X	200.0 mg/l		D025		
Cresol	X	200.0 mg/l		D026		
2.4-D	X	10.0 mg/l		D016		
1.4 Dichlorobenzene	X	7.5 mg/l		D027		
1.2-Dichloroethane	X	0.5 mg/l		D028		
1.1-Dichloroethylene	X	0.7 mg/l		D029		
2.4-Dinitrotoluene	X	0.13 mg/l		D030		
Endrin	X	.02 mg/l		D012		
Heptachlor. & Hydroxide	X	0.008 mg/l		D031		
Hexachloro-1.3 Butadiene	X	0.5 mg/l		D033		
Hexachlorobenzene	X	0.13 mg/l		D032		
Hexachloroethane	X	3.0 mg/l		D034		
Lindane	X	0.4 mg/l		D013		
Methoxychlor	X	10.0 mg/l		D014		
Methyl Ethyl Ketone	X	200.0 mg/l		D035		
Nitrobenzene	X	2.0 mg/l		D036		
Pentachlorophenol	X	100.0 mg/l		D037		
Pyridine	X	5.0 mg/l		D038		
Tetrachloroethylene	X	0.7 mg/l		D039		
Toxaphene	X	0.5 mg/l		D015		
2.4.5-TP Silvex	X	1.0 mg/l		D017		
Trichloroethylene	X	0.5 mg/l		D040		
2.4.5-Trichlorophenol	X	400.0 mg/l		D041		
2.4.6-Trichlorophenol	X	2.0 mg/l		D042		
Vinyl Chloride	X	0.2 mg/l		D043		

Date Printed 07/17/01

Profile #
ARL CS2504

ATTACHMENT 2

CHEMICAL COMPOSITION: Additional constituents NOT included on page 1 of the Waste Profile

Constituents	Range		Unit Description
VIS-LDR CERT-UHC CERT-SUBPART CC EXEMPT-MICRO		to	

Date Printed 07/17/01

Profile #
ARL CS2504

MISCELLANEOUS PROFILE FIELDS

Selling Region Lab: CWL
Master Profile No.:
Sales Office. . . : PDX
ation Orig. . .: ARL
file Expires . : 7/10/02
Approved. . . . . : 7/16/01
Signed Profile Present: Y Change Pending: _ Waste Status: A
Site (DCS) Status: 1 WASTE APPROVED
Prof. Tracking No: 4950503

Fuels Approval.:
Pumpable Liquid Exact: ___ % OR Range: ___ - ___ %
Type of Pump. .:
Additional Anticipated Vol: _____ Per: _ Unit Code/Des: ___ _____

Handling Codes: __ _____ __ _____
__ _____ __ _____
__ _____ __ _____

EPA Data: Status Code: C Tax Code. .: 2
Permit No: _____ Expr. Date.: _____ Volume. . .: _____
Certificate of Destruction or Disposal Required ? _ Project # : _____
DOT Properties: Inhalation: _ Dermal: _ Oral: _ Flammable: _ Health: _

Percent Taxable: _____ No. of Labels. . .:
Transhipp Dest .: ___ Download Generator: I435525
Material Class.: _ DCS Generator #...: 4501435525
Treatment Codes: T39 ___ ___ ___ ___ ___
Process Codes .: MIC ___ ___ ___ ___ ___ ___ ___ ___
Schedule Category : MICB
Schedule Interval :
Listed Solvent Waste: _ Hal. Org. Compounds.: _ RCRA Reactive. . . .: _
Etiologic. . . . . .: _ Water Reactive . . .: _ Pesticide Mfg. Waste: _
Ignition Screen : ___ Gas Evolution : ___ Wet Zone . . . . . .: _
Self-heating cube sz ___ Vapor Concentration _____ Boiling Point F ___
Is Gas Ignitable? _ Corrosive to Steel or Aluminum _ Organic Peroxide _
Chemical Family Name _____

GENERATOR FROM PAGE 1

Business Name	USEPA ID	Rltn	Contract in Place	at	Expires on	Evergreen Contract
US ARMY	WA7210020924	G	_	___	_____	_

ADDITIONAL BUSINESSES

Business Name	USEPA ID	Rltn	Contract in Place	at	Expires on	Evergreen Contract
GARRY STRUTHERS ASSOCIATES INC	N/A	I	Y	ARL	_____	Y

ADDITIONAL PROFILE COMMENTS

Cat	Comment	Cat	Comment

SUPPLEMENTAL FIELDS

Field	Value
SUBCC	EXEMPT
DESWO	A69
MGTCD	M137
FRMCD	B319

Date Printed 7/17/01

Profile Change History

Profile # ARL CS2504

This section lists comments describing changes made to the profile.

Profile Change Comments	Date	User
CWL/CS2504 Entire profile copied to ARL/CS2504	7/10/01	WM0225LCS
CWL/CS2504 Core Profile Info copied to ARL/CS2504	7/16/01	WM0225SR1
PROFILE ENTRY COMPLETE	7/16/01	WM0225SR1
CWL/CS2504 Change Log copied to ARL/CS2504	7/16/01	WM0225SR1
CWL/CS2504 Entire profile copied to ARL/CS2504	7/16/01	WM0225SR1

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 359745 NDK CWMI

Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WA7210020924 Manifest Document No. 00002 2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
US ARMY DEPT: CAMP BONNEVILLE
23201 NE PLUSS RD
VANCOUVER WA 98682-9735
4. Generator's Phone (360) 694-0332

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone 800-887-9206
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone (541) 454-2643

5. Transporter 1 Company Name: ENVIRO/CON
6. US EPA ID Number: WAD988516829
7. Transporter 2 Company Name
8. US EPA ID Number
9. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
10. US EPA ID Number: ORD089452353

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	State Waste No.
a. RQ, HAZARDOUS WASTE, SOLID, N.O.S, 9, NA3077, III, (LEAD), D008	X	001	DT	02760 02000	P	D008
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a. CS2504 WOOD DEBRIS W/LEAD-BASED PAINT, RQ=10LBS

K. Handling Codes for Wastes Listed Above
2 TOP F-38T
M6000

15. Special Handling Instructions and Additional Information
a. CS2504 2000 ERG#171
EMERGENCY CONTACT#(800)424-9300(WMI Contract)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: STEVE HARTUNG — Signature — Month Day Year: 09 17 01

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: ROGER THRASHER — Signature — Month Day Year: 09 17 01
18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space
Weight Changed by driver mm 9-17-01
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Nicolas D. Rouska — Signature: Nicolas D. Rouska — Month Day Year: 09 11 7 01

Style CF 17 LABELMASTER® (800) 621-5808 www.labelmaster.com

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete.

ORIGINAL-RETURN TO GENERATOR

PRINTED ON RECYCLED PAPER USING SOYBEAN INK — PRINTED WITH SOY INK

14

RECEIVED
SEP 24 2001
Garry Struthers Assoc.

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

US ARMY
ATTN: MANIFEST SECTION
WA7210020924
23201 NE PLUSS RD
VANCOUVER WA 98682-9735

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. has received waste material from US ARMY on 09/17/01 as described on [State Manifest or Uniform] Hazardous Waste Manifest number 00002.

Profile Number: CS2504
CWM Tracking ID: 35974501
Process: LANDFILL
Treatment Date: 09/18/01

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the date listed above.

LYNN MURRILL
RECORDS MANAGER
Certificate # 92093
09/20/01

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 3897453 WDR CWMI

Form Approved, OMB No. 2050-0039.

1. UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. WA7210020924	Manifest Document No. 000027	2. Page 1 of	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
US ARMY DEPT: CAMP BONNEVILLE
23201 NE PLUSS RD
VANCOUVER WA 98682-9735

4. Generator's Phone (360) 694-0332

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name	6. US EPA ID Number	C. State Transporter's ID
ENVIRO/CON	WAD988516829	D. Transporter's Phone 800-887-4206
7. Transporter 2 Company Name	8. US EPA ID Number	E. State Transporter's ID
		F. Transporter's Phone

9. Designated Facility Name and Site Address	10. US EPA ID Number	G. State Facility's ID
CWMNW, INC. 17629 CEDAR SPRINGS LANE ARLINGTON OR 97812-9709	ORD089452353	H. Facility's Phone (541)454-2643

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ, HAZARDOUS WASTE, SOLID, N.O.S, 9, NA3077, III, (LEAD), D008	X	001	DT	02760	P	D008
b.							
c.							
d.							

GENERATOR

J. Additional Descriptions for Materials Listed Above
CS2504 WOOD DEBRIS W/LEAD-BASED PAINT, RQ=10LBS

K. Handling Codes for Wastes Listed Above
2700P 138T

15. Special Handling Instructions and Additional Information
a. CS2504 2000 ERG#171

EMERGENCY CONTACT#(800)424-9300(WMI Contract)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
STEVE HARTUNG		09 17 01

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials		
Printed/Typed Name	Signature	Month Day Year
ROGER THRASHER		09 17 01
18. Transporter 2 Acknowledgement of Receipt of Materials		
Printed/Typed Name	Signature	Month Day Year

FACILITY

19. Discrepancy Indication Space
weight changed by driver mm 9-17-01

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Nicola D. Rouska	Nicola D. Rouska	09 11 17 01

Style CF 17 LABELMASTER® (800) 621-5808 www.labelmaster.com

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete.

ORIGINAL-RETURN TO GENERATOR

PRINTED ON RECYCLED PAPER USING SOYBEAN INK PRINTED WITH SOY INK

14

PERMIT

CHEMICAL WASTE MANAGEMENT OF THE NORTHWEST
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812 **PHONE: 541-454-2030**

PERMIT TO DISPOSE OF HAZARDOUS MATERIALS

GENERATOR: US ARMY

DESCRIPTION: SOIL CNTNG PESTICIDE (DDE, DDT, DDD)

QUANTITY: 7 TONS – ONE TIME

PROFILE: CS2563

EXPIRES: 7-26-02

LOCATION: 23201 NE PLUSS RD
VANCOUVER, WA 98682-9735
CONTACT: ELIZABETH CHIEN

DATE: 7-31-01

TYPE OF DISPOSAL: LANDFILL

SPECIAL HANDLING: LDR SHOULD SAY "D" FOR CODES, U060 AND U061
REQUIRES SIGNATURE, TITLE AND DATE.

BILLING: GARRY STRUTHERS ASSOCIATES INC
3150 RICHARDS RD STE 100
BELLEVUE, WA 98005-4430

APPROVED: LEAH SHANNON

DATE: 7-31-01

WASTE MANAGEMENT

EACH DRIVER MUST Show (A COPY OF THIS PERMIT).

CHEMICAL WASTE MANAGEMENT OF THE NORTHWEST
A WASTE MANAGEMENT COMPANY

17629 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2643
(541) 454-3247 Fax

July 31, 2001

US ARMY
23201 NE PLUSS RD
VANCOUVER, WA 98682-9735

RE: CONFIRMATION PERMIT

ATTENTION: ELIZABETH CHIEN

We are pleased to confirm Waste Management's approval of your waste material as described below. Waste Management based upon the information provided by you prepared the attached profile for the waste material. It is important that no changes be made to the profile without Waste Management's consent. If the profile meets with your approval, then you are ready to schedule shipment of your waste.

Profile Number: CS2563
Approved Management Facility: ***CHEMICAL WASTE MANAGEMENT***
Disposal Method: LANDFILL

The newly formed Waste Management is working hard to provide an increased level of service to our customers. We are asking that when you ship your material, a copy of the attached form; titled "PERMIT" is sent with your Manifest or Bill of Lading. This shows that you have preapproval and pricing-contracting is in place. This will help us in processing your load in the most efficient manner.

All waste coming to Oregon Waste systems or Chemical Waste Management ***must*** *be scheduled, twenty-four hours in advance, with Greg Marrett. If you are unable to reach Greg you can contact our customer service representative Linda Wimmer. Unscheduled loads could be delayed several hours or even rejected.*

If you have any questions we have listed contact people you may use in addition to your Sales Representative

Greg Marrett: Scheduling & Transportation 541-454-3220
Linda Wimmer: WA Customer Service Pricing 800-843-3604
Tracy Breinlinger: OR Customer Service 503-493-7825
Kristin Clayton: Columbia Ridge Approvals 503-493-7834
Leah Shannon: Customer Service & Approvals 541-454-3289
Gary Fisher: Operational Assistance 541-454-3234

Thank you,

Leah Shannon

Leah Shannon
Waste Management

Chemical Waste Management, Inc.

Date Printed 07/31/01

GENERATOR'S WASTE PROFILE SHEET

Profile # ARL CS2563

(_) Check here if this is a Recertification LOCATION OF ORIGINAL CWM OF THE NORTHWEST-ARLINGTON

GENERAL INFORMATION

1. Generator Name: US ARMY Generator USEPA ID: WA7210020924

2. Generator Address: 23201 NE PLUSS RD Billing Address: (_) Same GARRY STRUTHERS ASSOCIATES INC

3150 RICHARDS RD STE 100

VANCOUVER WA 98682-9735 BELLEVUE WA 98005-4430

3. Technical Contact/Phone: STEVE HARTUNG 360/694-0332

4. Alternate Contact/Phone: ELIZABETH CHIEN X219 425/519-0300 Billing Contact/Phone: ELIZABETH CHIEN X219 425/519-0300

PROPERTIES AND COMPOSITION

5. Process Generating Waste: SITE REMEDIATION. BUILDING DEMOLITION

6. Waste Name: SOIL CNTNG PESTICIDE(DDE. DDT.DDD)

7A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes (X) No (_)

B. Identify ALL USEPA listed and characteristic waste code numbers (D.F.K.P.U): U060 U061

State Waste Codes: _____

8. Physical State @ 70F: A. Solid(X) Liquid(_) Both(_) Gas(_) B. Single Layer (X) Multilayer (_) C. Free liq. range 0 to 0%

9A. pH: Range _____ or Not applicable (X) B. Strong Odor (_):describe _____

10. Liquid Flash Point: < 73F (_) 73-99F (_) 100-139F (_) 140-199F (_) >= 200F (_) N.A. (X) Closed Cup (X) Open Cup (_)

11. CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Constituents	Range	Unit Description	
INERTS	to 99	%	
SOIL	to		
ROCKS.	to		
PLANT DEBRIS	to		
DDD. DDE	.01 to 1	%	See attach2
DDT	to		See attach2
TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%):	100.000000		

12. OTHER: PCBs if yes, concentration _ _____ ppm. PCBs regulated by 40 CFR 761 (_). Pyrophoric (_) Explosive (_)
Radioactive (_) Benzene if yes, concentration _ _____ ppm. NESHAP (_) Shock Sensitive (_) Oxidizer (_)
Carcinogen (_) Infectious (_) Other _____

13. If waste subject to the land ban & meets treatment standards, check here: _ & supply analytical results where applicable.

SHIPPING INFORMATION

14. PACKAGING: Bulk Solid (X) Bulk Liquid (_) Drum (_) Type/Size: TONS Other _____

15. ANTICIPATED ANNUAL VOLUME: 7 Units: TONS Shipping Frequency: ONE TIME

Sample Tracking Number: 4950754

SAMPLING INFORMATION

16a. Sample source (drum, lagoon, pond, tank, vat, etc.): _____

Date Sampled: _____ Sampler's Name/Company: _____

16b. Generator's Agent Supervising Sampling: _____ 17. (X) No sample required (See instructions.)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification.

Signature on original profile CS2563 (Signature) ELIZABETH CHEIN PROJ MGR GARRY STRUTERS ASSOC (Name and Title) 7/18/01 (Date)

Date Printed 07/31/01

Profile #
ARL CS2563

18. This is a Nonwastewater.

19. If this waste is subject to any California list restrictions enter the letter from below (either A or B.1) next to each restriction that is applicable:
___ HOCs. ___ PCBs. ___ Acid. ___ Metals. ___ Cyanides

Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF #	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none		C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED? Enter letter from below
				PERFORMANCE-BASED: Check as applicable		SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)	
		DESCRIPTION	NONE	268.41(a)	268.43(a)	268.42	
1	U060		X				D
2	U061		X				D
3							
4							
5							
6							
7							
8							
9							
0							

Management under the land disposal restrictions:
A. RESTRICTED WASTE REQUIRES TREATMENT

B.1 RESTRICTED WASTE TREATED TO 268.40 STANDARDS

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

B.5 RESTRICTED WASTES TREATED TO ALTERNATE SOIL STANDARD

B.6 RESTRICTED WASTES TREATED TO ALTERNATE DEBRIS STANDARD

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

21. Is this waste a soil or debris? No: _ Yes. Soil: X Yes. Debris: _____

22. Specific Gravity Range: _____ to _____

23. Indicate the range of each: Units

Cyanides: _ None to _____ _____ Type (free, total, amenable, etc.) _____

Cyanides: _ None to _____ _____ Type (free, total, amenable, etc.) _____

Sulfides: _ None to _____ _____ Type _____

Optional
Phenolics: _ None to _____ _____

24. Identify the waste color VAREIS . DOT physical state Solid .

and physical appearance SOLID

Date Printed 07/31/01

Profile #
ARL CS2563

25. COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION

TOTAL

Beryllium as Be _____ ppm

Potassium as K _____ ppm

Sodium as Na _____ ppm

Bromine as Br _____ %

Chlorine as Cl _____ %

Fluorine as F _____ %

Sulfur as S _____ %

26. RECLAMATION, FUELS or INCINERATION PARAMETERS (Provide if information is available)

RANGE

A. Heat Value (Btu/lb): _____-_____

B. Water: _____

C. Viscosity (cps): _____@_____F _ 100 F _ 150 F

D. Ash: _____ %

E. Settleable solids: _____ %

F. Vapor Pressure @ STP (mm/Hg): ____

G. Is this waste a pumpable liquid? Yes _ No _

H. Can this waste be heated to improve flow? Yes _ No _

I. Is this waste soluble in water? Yes _ No _

J. Particle size: Will the solid portion of this waste pass through a 1/8 inch screen? Yes _ No _

27. TRANSPORTATION INFORMATION

A. Is this a DOT Hazardous Material? Yes X No _

B. Proper Shipping Name. . . . . : HAZARDOUS WASTE, SOLID, N.O.S

and Additional Description if required: (DDE, DDT, DDD)
U060, U061

C. DOT Regulations: North America Hazard Class: 9 Misc.Hazardous Mat'l I.D. NA3077 Packing Group: III

D. CERCLA Reportable Quantity (RQ) and units (Lb, Kg): _____

E. Non-Bulk code 213 Bulk code 240

F. Special Provisions B54 ___ ___ ___ ___ ___

G. Labels Required CLASS 9 _____ _____

28. SPECIAL HANDLING INFORMATION

_____

_____

_____

_____

_ Material Safety Data Sheets Attached

29. OTHER INFORMATION

_____

_____

_____

_____

_____

30. CHEMICAL WASTE MANAGEMENT CERTIFICATION

Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

Date Printed 07/31/01

Profile #
ARL CS2563

31. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

METALS	TCLP Information: Check only ONE for each constituent Use units: ppm, mg/l				TCLP Data	TCA or TOTAL Use units: ppm, mg/l, mg/kg or percent			
						California List			
	Less Than	TC Regulated Level	Equal or More	Waste No.	TCLP Actual	Less Than	Regulated Level	Equal or More	Actual
Arsenic as As	X	5.0 mg/l		D004			500 mg/l		
Barium as Ba	X	100.0 mg/l		D005					
Cadmium as Cd	X	1.0 mg/l		D006			100 mg/l		
Chromium tot Cr	X	5.0 mg/l		D007					
Lead as Pb	X	5.0 mg/l		D008			500 mg/l		
Mercury as Hg	X	.2 mg/l		D009			20 mg/l		
Selenium as Se	X	1.0 mg/l		D010			100 mg/l		
Silver as Ag	X	5.0 mg/l		D011					
Nickel as Ni							134 mg/l		
Thallium as Tl							130 mg/l		
Chromium Hex							500 mg/l		
Antimony									
Beryllium									
Copper									
Vanadium									
Zinc									

Date Printed 07/31/01

Profile #
ARL CS2563

32. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

ORGANICS	TCLP Information: Check only ONE for each constituent				TCLP Data	TCA or TOTAL Use units: ppm, mg/l or %
	Less Than	Regulated Level	Equal or More	Waste No.	TCLP Analytical Test Results Use units: ppm or mg/l	
Benzene	X	0.5 mg/l		D018		
Carbon Tetrachloride	X	0.5 mg/l		D019		
Chlordane	X	0.03 mg/l		D020		
Chlorobenzene	X	100.0 mg/l		D021		
Chloroform	X	6.0 mg/l		D022		
m-Cresol	X	200 mg/l		D024		
o-Cresol	X	200.0 mg/l		D023		
p-Cresol	X	200.0 mg/l		D025		
Cresol	X	200.0 mg/l		D026		
2.4-D	X	10.0 mg/l		D016		
1.4 Dichlorobenzene	X	7.5 mg/l		D027		
1.2-Dichloroethane	X	0.5 mg/l		D028		
1.1-Dichloroethylene	X	0.7 mg/l		D029		
2.4-Dinitrotoluene	X	0.13 mg/l		D030		
Endrin	X	.02 mg/l		D012		
Heptachlor. & Hydroxide	X	0.008 mg/l		D031		
Hexachloro-1.3 Butadiene	X	0.5 mg/l		D033		
Hexachlorobenzene	X	0.13 mg/l		D032		
Hexachloroethane	X	3.0 mg/l		D034		
Lindane	X	0.4 mg/l		D013		
Methoxychlor	X	10.0 mg/l		D014		
Methyl Ethyl Ketone	X	200.0 mg/l		D035		
Nitrobenzene	X	2.0 mg/l		D036		
Pentachlorophenol	X	100.0 mg/l		D037		
Pyridine	X	5.0 mg/l		D038		
Tetrachloroethylene	X	0.7 mg/l		D039		
Toxaphene	X	0.5 mg/l		D015		
2.4.5-TP Silvex	X	1.0 mg/l		D017		
Trichloroethylene	X	0.5 mg/l		D040		
2.4.5-Trichlorophenol	X	400.0 mg/l		D041		
2.4.6-Trichlorophenol	X	2.0 mg/l		D042		
Vinyl Chloride	X	0.2 mg/l		D043		

Date Printed 07/31/01

Profile #
ARL CS2563

ATTACHMENT 2

CHEMICAL COMPOSITION: Additional constituents NOT included on page 1 of the Waste Profile

Constituents	Range		Unit Description
COMMENTS		to	
FPT-LDR-UHC-SUBPART CC EXEMPT-LANFILL X 4.		to	
LDR SHOULD SAY "D" UNDER 10X RULE FOR SOILS-MUST BE SIGNED		to	

Date Printed 07/31/01

Profile #
ARL CS2563

MISCELLANEOUS PROFILE FIELDS

Selling Region Lab: CWL
Master Profile No.: ____
Sales Office. . . : PDX
Location Orig. . .: ARL
Profile Expires . : 7/26/02
Approved. . . . . : 7/31/01
Signed Profile Present: Y Change Pending: _ Waste Status: A
Site (DCS) Status: 1 WASTE APPROVED
Prof. Tracking No: 4950754

Fuels Approval.: _
Pumpable Liquid Exact: ___ % OR Range: ___ - ___ %
Type of Pump. .: _____
Additional Anticipated Vol: _____ Per: _ Unit Code/Des: ___ _____

Handling Codes: __ _____ __ _____
__ _____ __ _____
__ _____ __ _____

EPA Data: Status Code: C Tax Code. .: 2
Permit No: _____ Expr. Date.: _____ Volume. . .: _____
Certificate of Destruction or Disposal Required ? _ Project # : ____
DOT Properties: Inhalation: _ Dermal: _ Oral: _ Flammable: _ Health: _

Percent Taxable: _____ No. of Labels. . .:
Transhipment Dest .: ___ Download Generator: I435525
Material Class.: _ DCS Generator #...: 4501435525
Treatment Codes: D80 ___ ___ ___ ___ ___
Process Codes .: 3P ___ ___ ___ ___ ___ ___ ___ ___
Schedule Category : DLFB
Schedule Interval : _____
Listed Solvent Waste: _ Hal. Org. Compounds.: _ RCRA Reactive. . . .: _
Etiologic. . . . . .: _ Water Reactive . . .: _ Pesticide Mfg. Waste: _
Ignition Screen : ___ Gas Evolution : ___ Wet Zone . . . . . .: _
Self-heating cube sz ____ Vapor Concentration _____ Boiling Point F ___
Is Gas Ignitable? _ Corrosive to Steel or Aluminum _ Organic Peroxide _
Chemical Family Name _____

GENERATOR FROM PAGE 1

Business Name	USEPA ID	Rltn	Contract in Place	at	Expires on	Evergreen Contract
US ARMY	WA7210020924	G	_	___	_____	_

ADDITIONAL BUSINESSES

Business Name	USEPA ID	Rltn	Contract in Place	at	Expires on	Evergreen Contract
GARRY STRUTHERS ASSOCIATES INC	N/A	I	Y	ARL	_____	Y

ADDITIONAL PROFILE COMMENTS

Cat	Comment	Cat	Comment

SUPPLEMENTAL FIELDS

Field	Value
SUBCC	EXEMPT
DESWO	A69
MGTCD	M132
FRMCD	B301

Date Printed 7/31/01

Profile Change History

Profile #
ARL CS2563

This section lists comments describing changes made to the profile.

Profile Change Comments	Date	User
CWL/CS2563 Entire profile copied to ARL/CS2563	7/26/01	WM0225LCS
CWL/CS2563 Core Profile Info copied to ARL/CS2563	7/31/01	WM0225NH2
PROFILE APPROVED. ENTRY COMPLETE.	7/31/01	WM0225NH2
CWL/CS2563 Change Log copied to ARL/CS2563	7/31/01	WM0225NH2
CWL/CS2563 Entire profile copied to ARL/CS2563	7/31/01	WM0225NH2

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 359746 NDR Form Approved. OMB No. 2050-0039. CWMI

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WA7210020924 Manifest Document No. 00007
2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
US ARMY DEPT: CAMP BONNEVILLE
23201 NE PLUSS RD
VANCOUVER WA 98682-9735
4. Generator's Phone (360) 694-0332

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: ENVIRO/CON
6. US EPA ID Number: WAD988516829
C. State Transporter's ID
D. Transporter's Phone 800-887-4206

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CWMNW, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
10. US EPA ID Number: ORD089452353
G. State Facility's ID
H. Facility's Phone (541)454-2643

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. HAZARDOUS WASTE, SOLID, N.O.S, 9, NA3077, III, (DDE, DDT, DDD), U060, U061	X	001	DT	15120	P	U060, U061
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a. CS2563 SOIL CNTING PESTICIDE(DDE, DDT, DDD)

K. Handling Codes for Wastes Listed Above
15,120P 7.5GT
L12

15. Special Handling Instructions and Additional Information
a. CS2563 2000 ERG#171
EMERGENCY CONTACT#(800)424-9300(WMI Contract)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name	Signature	Month	Day	Year
STEVE HARTING	Steve Harting	09	17	01

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
ROGER THRASHER		09	17	01

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space
weight changed by driver NDR 9-17-01

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Nicola D Rouska	Nicola D. Rouska	09	17	01

Style CF 17 LABELMASTER® (800) 621-5808 www.labelmaster.com

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete.

ORIGINAL-RETURN TO GENERATOR

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15

RECEIVED
SEP 24 2001
Garry Struthers Assoc., Inc.

WM

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

US ARMY
ATTN: MANIFEST SECTION
WA7210020924
23201 NE PLUSS RD
VANCOUVER WA 98682-9735

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. has received waste material from US ARMY on 09/17/01 as described on [State Manifest or Uniform] Hazardous Waste Manifest number 00001.

Profile Number: CS2563
CWM Tracking ID: 35974601
Process: LANDFILL
Treatment Date: 09/17/01

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the date listed above.

LYNN MURRILL
RECORDS MANAGER
Certificate # 92074
09/20/01

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 3597746 NDR CWMI

Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

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WA7210020924	00007		

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23201 NE PLUSS RD.
VANCOUVER WA 98682-9735
4. Generator's Phone (360) 694-0332

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B. State Generator's ID

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C. State Transporter's ID
D. Transporter's Phone: 800-887-4206

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8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
CWMNW, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
10. US EPA ID Number: ORD089452353
G. State Facility's ID
H. Facility's Phone: (541)454-2643

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a. HAZARDOUS WASTE, SOLID, N.O.S, 9, NA3077, III, (DDE, DDT, DDD), U060, U061	X	001	DT	15120	P	U060, U061
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a. CS2563 SOIL CNTING PESTICIDE(DDE, DDT, DDD)

K. Handling Codes for Wastes Listed Above
15,120P 7.56T

15. Special Handling Instructions and Additional Information
a. CS2563 2000 ERG#171

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Printed/Typed Name	Signature	Month Day Year
STEVE HARTUNG	Steve Hartung	09/17/01

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
ROGER THRASHER		09/17/01

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space
weight changed by driver NDR 9-17-01

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Printed/Typed Name	Signature	Month Day Year
Nicole D Rouska	Nicole D. Rouska	09/17/01

GENERATOR

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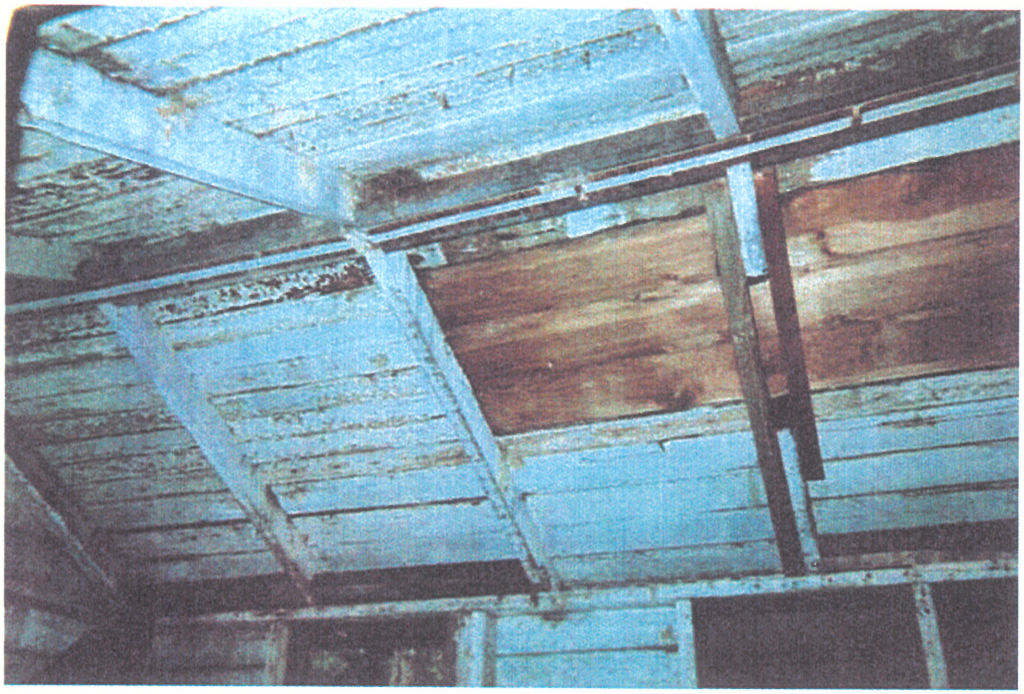
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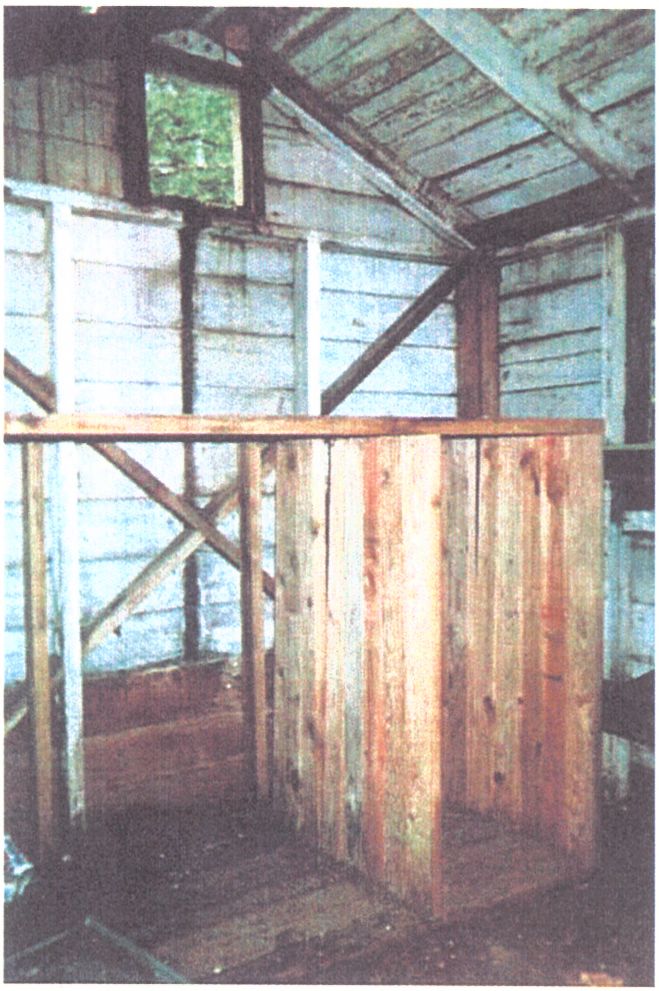
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- Pesticide Building #4126



- Pesticide Building #4126



- Pesticide Building #4126



- Pesticide Building #4126



- Pesticide Building #4126



- Pesticide Building #4126



- Pesticide Building #4126 - demolition



- Pesticide Building #4126 - demolition



- Pesticide Building #4126 – demolition stockpile



- Pesticide Building #4126 - demolition



- Pesticide Building #4126 - excavation



- Pesticide Building #4126 - excavation



- Pesticide Building #4126 - excavation



- Pesticide Building #4126 - site restoration



- Pesticide Building #4126 - site restoration at pesticide soil stockpile



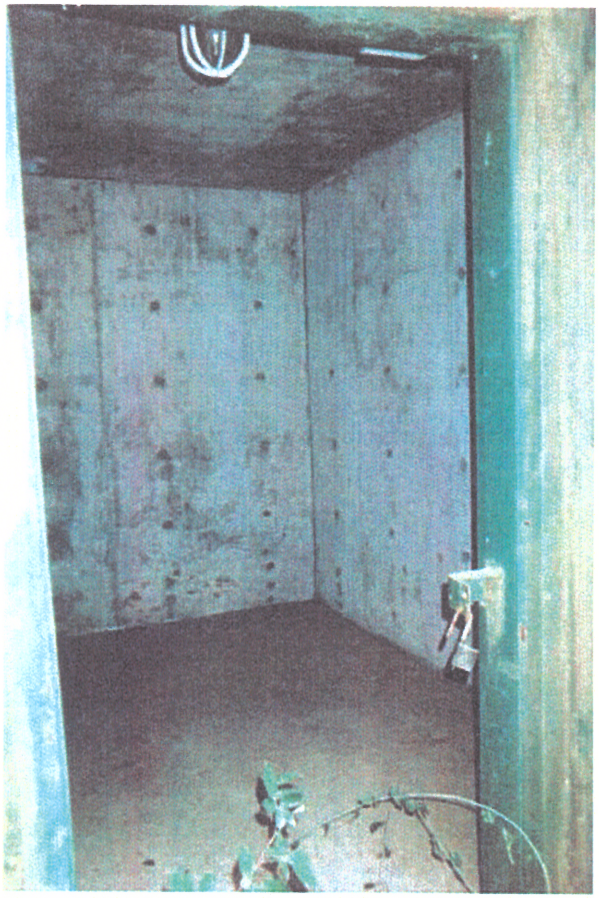
- Pesticide Building #4126 - site restoration at wood stockpile



- Ammunition Bunker #2953

- Ammunition Bunker #2953





- Ammunition Bunker #2953

- Ammunition Bunker #2953





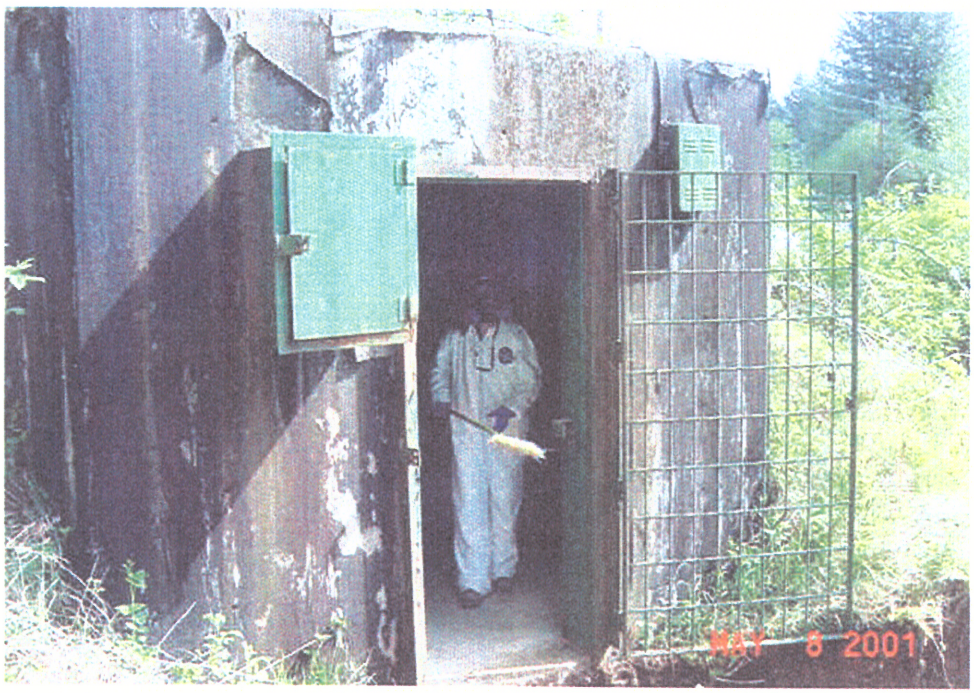
- Ammunition Bunker #2953 - excavation



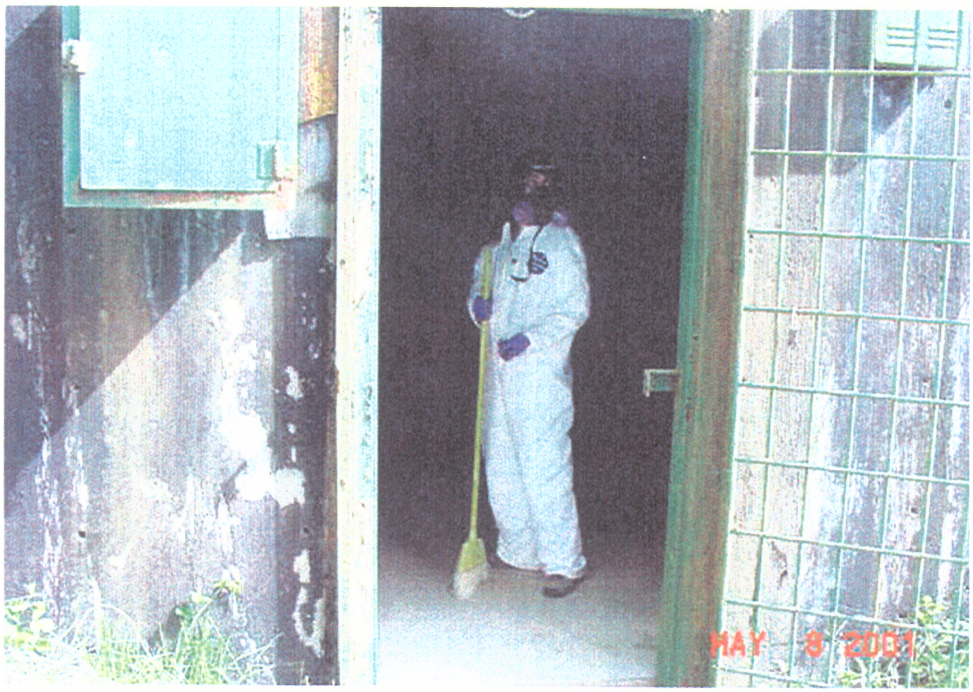
- Ammunition Bunker #2953 - excavation



- Ammunition Bunker #2953 - excavation



- Ammunition Bunker #2953 - cleaning



- Ammunition Bunker #2953 - cleaning



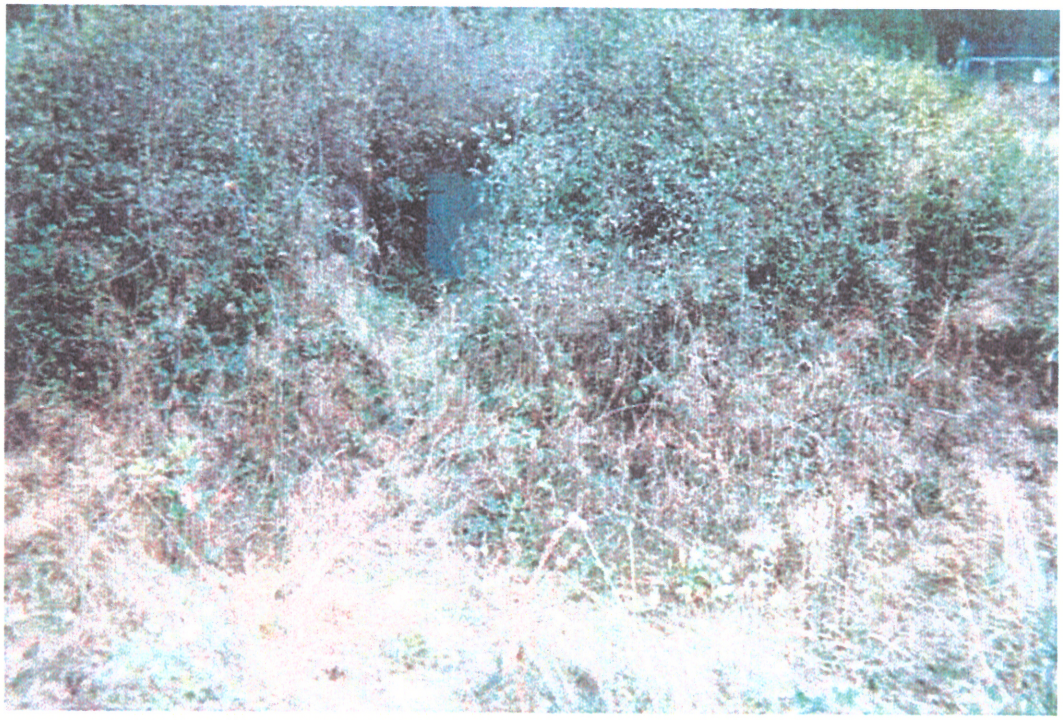
- Ammunition Bunker #2953 - stockpile



- Ammunition Bunker #2953 - site restoration



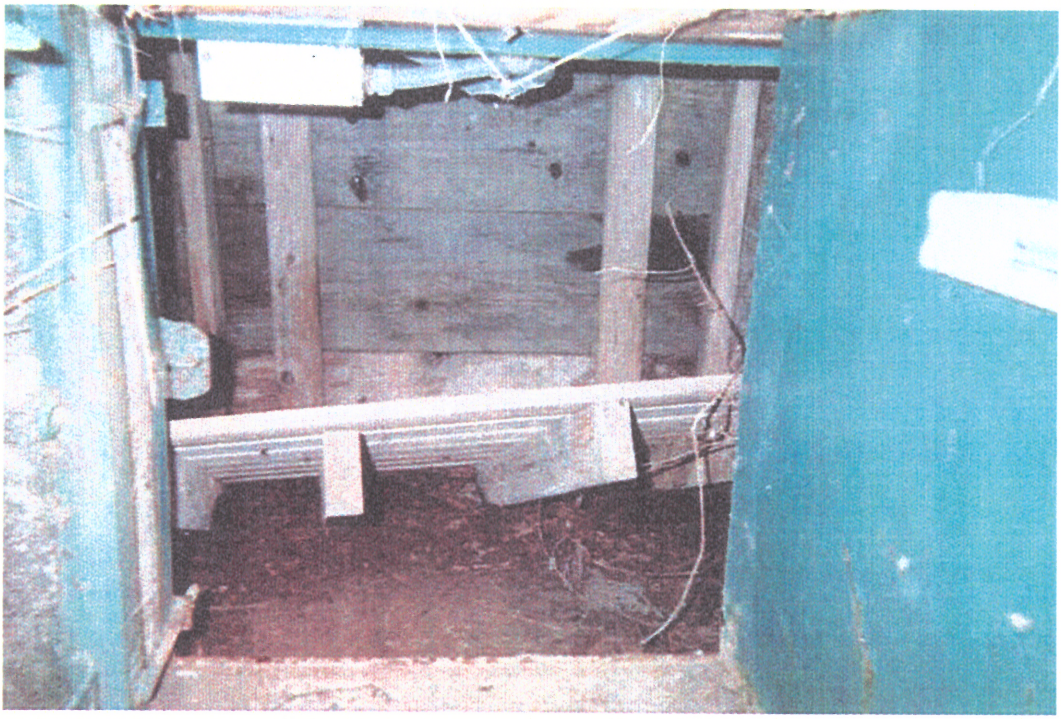
- Ammunition Bunker #2953 - site restoration



- Ammunition Bunker #2951



- Ammunition Bunker #2951



- Ammunition Bunker #2951



- Ammunition Bunker #2951 - excavation



- Ammunition Bunker #2951 - excavation



- Ammunition Bunker #2951 - site restoration



- Ammunition Bunker #2951 - site restoration



- Ammunition Bunker #2950



- Ammunition Bunker #2950



- Ammunition Bunker #2950 - excavation



- Ammunition Bunker #2950 - excavation



- Ammunition Bunker #2950 - cleaning



- Ammunition Bunker #2950/ #2951 - stockpile



- Ammunition Bunker #2950 - site restoration



- Ammunition Bunker #2950/ #2951 – site restoration at stockpile