APPENDIX F
CONSTRUCTION QUALITY ASSURANCE PLAN

TABLE OF CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS

ARAR	applicable or relevant and appropriate requirement
ASB	aeration stabilization basin
BMP	best management practice
BST	Bellingham Shipping Terminal
CAP	Cleanup Action Plan
CAWP	Cleanup Action Work Plan
CHASP	Construction Health and Safety Plan
CIH	Certified Industrial Hygienist
contractor	General Contractor
CQA	construction quality assurance
CQC	construction quality control
CQAO	Construction Quality Assurance Officer
CQAP	Construction Quality Assurance Plan
Ecology	Washington Department of Ecology
EDR	Engineering Design Report
EPP	Environmental Protection Plan
MTCA	Model Toxics Control Act
NPDES	National Pollutant Discharge Elimination System
Port	Port of Bellingham
Project	Whatcom Waterway Cleanup in Phase 1 Site Areas
PPE	personal protective equipment
QA	quality assurance
QC	quality control
SPI	sediment profile imaging
SWPPP	Stormwater Pollution Prevention Plan

1 INTRODUCTION

This Construction Quality Assurance Plan (CQAP) is one component of the Engineering Design Report (EDR) for the Port of Bellingham's (Port) Whatcom Waterway Cleanup in Phase 1 Site Areas (the Project). This document describes quality assurance and quality control (QA/QC) procedures to be implemented during cleanup action construction activities to ensure that construction activities meet design specifications, the objectives of the cleanup action, and the requirements set forth in regulatory permits.

The purpose of this CQAP is to detail the methods and approach to quality assurance during cleanup action construction activities in the project area, including compliance with applicable or relevant and appropriate requirements (ARARs). To accomplish this purpose, this document identifies the respective responsibilities of the Port and its selected General Contractor (contractor) during construction activities through a quality assurance program. Additionally, this CQAP describes the methods used to measure compliance with performance objectives.

2 REQUIRED CLEANUP ACTIONS

Construction activities for this Project will include cleanup actions within the Inner Waterway (Units 2A and 3B and portions of Unit 2C), the Log Pond (Unit 4), and a portion of the Bellingham Shipping Terminal (BST) (Unit 1C). The work to be performed in these areas is described in the 2015 Engineering Design Report prepared for Ecology by Anchor QEA. The construction project addressing these Phase 1 areas will include the following activities:

- **Inner Waterway areas (Units 2A and 3B and portions of Unit 2C):** Dredging and capping will be performed within portions of the Inner Waterway. This work will include remediation of the portion of Whatcom Waterway that overlaps with the Central Waterfront site (along the northern shoreline of Whatcom Waterway; referred to as the Central Waterfront Shoreline) and the Georgia-Pacific West Mill Site (along a portion of the southern shoreline of Whatcom Waterway; referred to as the Southern Shoreline). Cleanup in the Inner Waterway will also include some structure demolition and removal, replacement or removal of bulkheads in steep shoreline areas, and repair and replacement of some existing structures as necessary to accomplish the remediation.
- **Log Pond area (Unit 4):** A cap was placed within the Log Pond during 2000 as part of an Interim Remedial Action. Contingency actions are required to repair the cap edges. Work within the Log Pond includes shoreline engineered capping as necessary to repair these shoreline edges of the cap. Cleanup within the Log Pond will include stabilization of the shoreline located adjacent to the BST and some demolition of selected structures (e.g., timber piles) as necessary to complete the contingency actions.
- **Bellingham Shipping Terminal area (Unit 1C):** The BST is located within the Outer Waterway. This area includes sediment deposits with contaminant concentrations that are higher than those in other Unit 1C and adjacent areas. Remediation activities include dredging and upland disposal of contaminated sediments from a portion of Unit 1C. Additional activities include engineered capping of the transition slope area (from the Outer Waterway into the Inner Waterway).

The remainder of this CQAP is organized as follows:

- **Section 3 Definitions and Use of Terms** defines terms relative to this CQAP, which includes both contractor construction quality control (CQC) and construction quality assurance (CQA).
- **Section 4 Project Responsibilities and Qualifications** outlines responsibilities and qualifications of the Port, the contractor, key project personnel, and oversight agencies involved in the cleanup project, including the Washington Department of Ecology (Ecology) and other agencies.
- **Section 5 Quality Assurance Program** details each construction element, including debris and structure removal, dredging, transport and disposal, engineered capping, soil excavation and structures installation, and summarizes the specific inspection and verification activities that the Port will perform to verify that construction activities meet design specifications, the objectives of the cleanup action, and the requirements set forth in regulatory permits.
- **Section 6 Documentation and Reporting** addresses the requirements for pre-construction, during construction, and post-construction reporting.

3 DEFINITIONS AND USE OF TERMS

Construction quality control (CQC) and construction quality assurance (CQA) are defined as follows:

- The contractor is responsible for providing quality control for all construction activities. CQC is the system of inspections, progress surveying, and testing conducted by the contractor to monitor and control the characteristics of an item, service, removal, or installation in relation to design requirements. The CQC activities provide for collection of measurements of construction conditions.
- The Port is responsible for conducting quality assurance during the construction activities. CQA is the system of inspections and other means that provide the Port adequate confidence that materials, dredging, engineered capping, excavation, and installation activities meet or exceed design criteria and requirements. The CQA activities provide for collection of mutual and independent third-party measurements of construction conditions, as well as review and confirmation of the quality of data collected as part of the CQC activities.

In the context of this document, CQC refers to the following:

- Those actions taken by the contractor or its subcontractors to ensure compliance of the various components of the cleanup action activities with the requirements of the approved design.

In the context of this document, CQA refers to the following:

- Means and actions employed by the Port to independently assess conformity of the various components of the cleanup action activities with the requirements of the approved design.

4 PROJECT QA/QC RESPONSIBILITIES AND QUALIFICATIONS

The roles and responsibilities of the parties involved in the Project are described below, and refer to construction-related activities. Additionally, the qualifications required for the contractor's firm and key QC personnel are identified.

4.1 Washington Department of Ecology and Other Agencies

Ecology is the lead regulatory authority and is the agency responsible for overseeing and authorizing the cleanup actions described herein. In this capacity, Ecology will review information described in the EDR and this CQAP for consistency with the Cleanup Action Plan (CAP), the Consent Decree, and applicable state and federal laws and regulations. The Ecology Site Manager, or a designee, will provide construction oversight for Ecology, coordinate comments developed by Ecology and other agencies, and communicate agency observations with the Port. The Ecology Site Manager shall notify the Port if they identify any concerns during the implementation of the cleanup actions. The Port, or its designated representative, will propose response measures or recommendations, as appropriate, to the Ecology Site Manager. Ecology will make final decisions to resolve such issues or problems that may change the Project scope.

Ecology will coordinate with other state and local government, and federal agencies, as appropriate. Should other agencies provide input or concerns during construction activities, the Ecology Site Manager shall review and reconcile joint agencies concerns to communicate those to the Port. Ecology and the Port will work together to identify response actions, if determined necessary by Ecology and the Port.

4.2 Port of Bellingham

The Port is ultimately responsible for implementing the cleanup actions in accordance with the CAP and Consent Decree. The Port, or a designated representative, will implement the CQAP, conduct quality assurance of the contractor's work during construction, and be the point of contact with Ecology.

The construction project will be managed by the Port. The Port, or its designated representative, will be responsible for construction management and contract administration.

The Port will select and hire the contractor and, indirectly, the contractor's team (i.e., subcontractors specializing in various cleanup activities, including debris and structure removal, remedial dredging, transport and disposal of contaminated materials, engineered capping, soil excavation, and structure installation). The Port reviews all work products prepared by its contractors and consultants and takes responsibility for the actions of its employees, contractors, and consultants. The Port will communicate to the Ecology Site Manager any concerns that may arise during the implementation of the Phase 1 Cleanup Project construction activities, including any proposed remedies, if warranted to address unforeseen conditions.

4.2.1 Project Engineer

The Project Engineer is the primary representative from the Port's engineering design team and fulfills two main roles. First, the Project Engineer is responsible for preparing the design of the cleanup action such that successful implementation of the design will result in achieving the CAP and construction activity-specific objectives.

In addition, the Project Engineer will provide engineering support and construction inspection/observations to the Port, and act as the Construction Quality Assurance Officer (CQAO) during construction activities to assist with implementation of the cleanup actions in conformance with the Ecology-approved design documents. During implementation of the cleanup actions, potentially noncompliant construction activities will be referred to the Project Engineer. The Project Engineer is responsible for determining whether the potentially noncompliant construction is acceptable within the design specifications and project permits and approvals, unacceptable, or acceptable with a design modification. Ecology will have final authority to approve design modifications proposed by the Port.

4.2.2 Construction Quality Assurance Officer (CQAO)

The CQAO may be a Port employee, or designated representative, who will be responsible for overseeing the implementation of the CQAP, including monitoring construction performance for compliance with construction performance standards and design requirements during implementation of the cleanup actions. The CQAO will also be responsible for overseeing the CQA inspection and verification activities. The CQAO will

review the contractor's submitted documentation to verify that work completed by the contractor adheres to performance standards and design requirements. The CQAO will be familiar with the design specifications and drawings, permit conditions and regulatory approvals, and the contractor's construction activities to recognize deviations from the engineering design. The CQAO will also have the ability to manage and maintain the integrity of the data generated during cleanup actions.

The CQAO will be responsible for identifying those field conditions that may warrant deviation from the Ecology approved design. In such circumstances, the CQAO will coordinate with the Ecology Site Manager to identify and agree upon any necessary deviations to meet the overall objectives of the design. Any agreed-upon deviations will be documented in the weekly progress reports to Ecology.

The CQAO may use inspectors with the requisite expertise and experience to help perform the duties described above.

The CQAO will be identified by the Port prior to construction work starting. The CQAO will have experience managing cleanup action-related construction projects under the Model Toxics Control Act (MTCA) or similar (e.g., Comprehensive Environmental Response, Compensation, and Liability Act projects) that have similar quality assurance requirements. The CQAO will be required to have current health and safety training. Additionally, the CQAO will be sufficiently familiar with the construction specifications and drawings, permit conditions and regulatory approvals, and the construction operations to recognize deviations from the Ecology-approved design. The CQAO will also have the ability to manage and maintain the integrity of the data generated during the project. Additional inspectors may be used to help the CQAO. These inspectors will have experience inspecting construction activities for MTCA or similar type projects and will have current federal and state health and safety training.

4.3 General Contractor

The contractor will be responsible for implementing the cleanup actions by either self-performing cleanup actions or managing subcontractors who will do specific cleanup work.

The contractor is responsible for ensuring that all work conducted by its team complies with the construction specifications and drawings, and all permit conditions. The contractor is responsible for providing all necessary quality control and quality control documentation.

The Port will require in its design specification that the contractor develop pre-construction submittals (See Section 6) to describe how the contractor proposes to implement the cleanup work and how the contractor will provide CQC. Independent of the contractor's CQC Plan, the Port will implement this CQAP to verify that the cleanup actions are implemented in accordance with the final design.

The contractor will be required to assign key QC personnel to manage the tasks described above, including an on-site superintendent, QC supervisor, and health and safety manager.

4.3.1 General Contractor Qualifications

The contractor will be selected through a competitive process based on Washington State protocols anticipated to include evaluation of the responsible and responsive bidder (Revised Code of Washington (RCW) 43.19.1908).

The contractor will employ (as part of its permanent organization) senior, knowledgeable, and experienced personnel to oversee the Project. The journeyman operators, surveyors, and other contractor personnel performing key jobs must also have the demonstrated ability and skills to satisfactorily perform their respective assignments.

The contractor's QC Manager, and the contractor as a whole, must have documented qualifications and experience to perform independent checks on the contractor's operations as necessary to determine compliance with the contract provisions. These documented qualifications will be submitted to the Port for review and approval of the contractor's proposed QC Manager. Additionally, any subcontractors used in the work must have demonstrated to the satisfaction of the Port that they are qualified and have satisfactorily performed the type of work for which they will be engaged. However, responsibility for the subcontractor performance rests with the contractor. All contractor and subcontractor

personnel working on this project will be required to have current federal and state health and safety training, as applicable to the work they will be doing on this Project.

4.3.2 Contractor's On-site Superintendent

As a specifications requirement, the Port will require the contractor to identify its On-site Superintendent. The cleanup action work will be directed through the contractor's On-site Superintendent, who will be responsible for executing the work in full compliance with the final design, permit conditions, and regulatory approvals. The On-site Superintendent will work to resolve job-related problems and day-to-day project management. The On-site Superintendent may use one or more foremen to directly supervise the major construction activities. The On-site Superintendent will exercise supervision over subcontractors, if subcontractors are used.

4.3.3 Contractor's Quality Control Manager

As a specifications requirement, the Port will require the contractor to identify its QC Manager. The QC Manager will develop and implement the CQC Plan through which the contractor ensures compliance with the requirements of the final design, permit conditions, and regulatory approvals. The QC Manager will be the individual responsible for ensuring that the contractor and its subcontractors comply with the CQC Plan, and has the authority to act in all QC matters for the contractor.

4.3.4 Contractor's Health and Safety Manager

As a specifications requirement, the Port will require the contractor to identify its Health and Safety Manager. The Health and Safety Manager will be responsible for developing and implementing the Construction Health and Safety Plan (CHASP). The Health and Safety Manager will also be responsible for completing all contractor and subcontractor(s) workers' health and safety training, and implementing, daily enforcing, and monitoring the contractor's compliance with the site-specific CHASP.

4.3.5 Subcontractors

The contractor will either self-perform construction elements or contract with subcontractors to perform selected phases of the work for which they have special expertise.

The subcontractors are responsible to the contractor for the quality of their work, protection of the environment, CQC Plan, Environmental Protection Plan (EPP), and CHASP. The subcontractors' principals will each designate a job foreman with responsibility to see that the work is conducted in accordance with the contract requirements.

5 QUALITY ASSURANCE PROGRAM

The quality assurance program to be implemented during the Project is described in this section by construction activity. Specific construction activities to be implemented are described, along with specific performance objectives, performance criteria, quality assurance measures, inspection and verification activities, and contingency actions. Cleanup action construction elements include the following:

- Debris and structure removal
- Dredging, transport, and disposal
- Engineered capping
- Soil excavation
- Structural installation

For each construction activity, the Port or its designated representatives will inspect the contractor's work activities to ensure that the contractor is complying with the final design and permit requirements.

During the cleanup action implementation, the quality assurance process will progress as follows:

- The contractor will submit a CQC Plan as detailed in Section 6. The CQC Plan will be subject to the Port's approval before cleanup action work begins.
- The contractor will provide documentation to the CQAO to demonstrate that specific components of the final design have been properly implemented. The Port, in consultation with the CQAO, will determine whether the components of the cleanup actions are acceptable.
- The contractor and the CQAO will conduct inspection and verification activities (i.e., sampling, testing, and monitoring) to ensure that there is compliance with the approved design documents and that performance objectives have been met. The Port will have final approval authority for all such inspections and for verifying that corrective actions are implemented, if any are warranted.

The remainder of this section details each construction element and associated performance objectives and criteria, along with quality assurance measures and specific inspection and

verification activities that will be performed to confirm that performance objectives have been met.

5.1 Debris and Structure Removal

Phase 1 construction activities require the removal of various structures at the site to facilitate the cleanup actions. Structures that will be permanently removed include the following:

- The former Chevron dock
- The timber catwalk and associated piling, three mooring dolphins, piping and pipe support piling, debris, and the foam tank located adjacent to the clarifier bulkhead
- The row of timber pilings and dolphins located on the Central Waterfront shoreline
- Miscellaneous removal or cutoff of timber piles within the Inner Waterway and Log Pond areas
- A portion of an existing floating log boom from within the Log Pond area
- Removal of the clarifier bulkhead and portions of its foundation elements
- Removal of the clarifier and appurtenances
- Miscellaneous items of debris and trash located along the north and south shorelines

The following procedures will be implemented to ensure debris and materials are removed and disposed of properly.

5.1.1 Proper Handling of Debris and Waste Generated

Requirements for handling, recycling, and/or disposal of the debris and waste that are generated during the demolition activities will be detailed in the technical specifications. At a minimum, the contractor will be required to maintain the following best management practices (BMPs):

- Contain effluent water so it is not returned to the Whatcom Waterway
- Immediately remove or contain floating debris to be removed daily
- Maintain a silt curtain or floating boom around the demolition work area
- Maintain absorbent booms around the demolition work area to contain creosote and oil sheens resulting from the demolition activities
- Recycle or dispose of soil, debris, and wastes generated per state and local regulations

5.1.2 Ensuring Removal of Structures

To ensure that the structures have been adequately removed, the contractor will be required to keep a daily record of the materials removed from the site. These daily reports will be included as part of the Daily QC Report and will document the approximate location of the structures removed for that day, volume estimate of material removed, daily weight certifications of material removed from the site, and tonnage weight certifications of disposal records at the landfill or recycling facility. Daily visual observations by the Port's designated inspector will also be performed through demolition activities. Visual observations and compliance with the technical specifications and regulatory permits will be documented in the Daily QC Report.

Structures that are not removed completely (i.e., timber piles broken or cut at the mudline) will be documented in a set of as-built drawings maintained by the contractor.

5.1.3 Ensuring Proper Disposal of Debris

To ensure that the removed structures are being properly disposed of or recycled, as appropriate, the contractor will be required to submit waste manifest certificates for all materials that have been removed from the site. The retention of soil or debris on site for re-use or recycling shall be subject to written approval by the Port.

5.2 Dredging, Transport, and Disposal

Dredging of contaminated material will occur in the Inner Waterway and within the BST area located in the Outer Waterway.

It is anticipated that dredged material will be dredged via mechanical means, transported to a stockpiling facility for dewatering, and then transported for disposal by truck or rail from the stockpiling facility to a permitted Subtitle D landfill facility such as the Allied Waste landfill facility in Roosevelt, Washington, or the Waste Management landfill facilities located in Wenatchee, Washington, and Columbia Ridge, Oregon.

The following procedures will be implemented to ensure that dredging, transport, and disposal is in accordance with the final design.

5.2.1 Achieving Specified Dredging Elevations and Horizontal Extents

To ensure that the required dredging elevations are accurately determined, the contractor will be required to identify in its Construction Workplan, for review and approval by the Port and Ecology, its vertical and positioning control methods for the dredging equipment. An automatic electronic tide recording system will also be required for all dredging and surveying operations. The specifications will require the contractor to install surveyed in tide boards or gages at the site for contractor use during dredging activities.

The contractor must ensure that contaminated materials will be removed to the full horizontal and vertical extents as depicted on the construction drawings. To verify that the specified dredging elevations and horizontal extents have been met, the Port will either require the contractor to perform pre- and post-dredging QC bathymetric surveys, or will conduct the pre- and post-dredging bathymetric surveys using a third-party surveyor. The contractor will also be required to perform and submit daily progress surveys so that the Port can continuously monitor dredging progress and compliance with the specifications and drawings.

Additionally, the Port will perform QA inspection of the contractor's work and survey documentation to verify the dredging extents. This verification may be completed either by evaluating the contractor's daily QC progress surveys and positioning data or by conducting independent QA bathymetric surveys, or through a combination of both methods. If the Port determines that the contractor is not dredging at the specified elevations or in the correct location, the Port will immediately notify the contractor's superintendent to correct the situation. Any such direction and corrective action will be documented on that day's Daily QC Report.

5.2.2 Transport and Disposal of Dredged Materials

Dredged materials will be transported by scow or barge to an approved offloading facility (either on-site or off-site location if proposed by the contractor), where the contaminated materials will be stockpiled and dewatered in preparation for off-site disposal at one or more permitted Subtitle D landfill facilities for disposal or re-use as daily landfill cover. Once sufficiently dewatered, the dredged material will be transferred to land-based vehicles

(trucks or railcars) and hauled by road or rail to the permitted landfill facility. All trucks or railcars will be required to follow all applicable federal and state guidelines set for the hauling of contaminated dredged materials and debris. The Port will also inspect the contractor's activities to ensure that materials are transported to and disposed at the appropriate locations and facilities. The contractor will be required to submit certified weigh tickets and other waste manifest information to the Port to document the proper transport and disposal of the dredged materials and debris.

Debris that can be appropriately segregated from contaminated soils and sediments may be managed at appropriately permitted construction debris recycling or disposal facilities, subject to Port written approval. Port written approval is required for retention of any soils or debris on site for re-use or recycling.

At the conclusion of dredging and marine construction, the contractor will be required to remove all equipment and materials from the offloading area and will be required to return the area to its pre-construction conditions, including any cleanup or improvements that are necessary.

Specific design criteria and performance standards will be outlined in the construction plans and technical specifications. The Port will inspect the contractor's work activities to ensure that the contractor is complying with the final design and permit requirements.

5.2.2.1 Preventing Uncontrolled Releases of Dredged Materials

Assuming that regulatory permits will allow passive dewatering of the dredged material on the haul/transport barge while the barge is within the Project site, the contractor will be required to filter barge effluent to retain suspended solids and prevent release of suspended solids back into the Whatcom Waterway.

However, the contractor will be required to prevent any uncontrolled releases of dredged material into receiving waters during transport of the material from the dredging area to the offloading facility or during offloading activities. Scows or haul barges that transport dredged material to the offloading facility for disposal will be sealed to prevent leakage

during transport. Any barges or scows that do not seal properly will be removed from operation until satisfactory repairs are made. Overtopping of the scows or barges will not be allowed, so as to prevent dredged materials from spilling out over the scow or barge during transport and entering receiving waters.

At the offloading facility, the contractor will be required to install a spill prevention apron to prevent material spillage during the transfer of the dredged material from the scow or barge to the offloading facility. No transfer will be allowed to begin until the apron is approved by the Port and installed. Any spillage on the apron will be required to be removed as soon as practicable and disposed of properly. Any spillage outside of the enclosed offloading facility will be required to be promptly cleaned up, possibly including dredging of material that has spilled in receiving waters. The contractor will be required to control its handling and offloading of dredged sediment so that it is placed on land only within the offloading facility and no sediment is placed outside of the facility limits.

The Port will inspect the contractor's work activities to ensure that the contractor is complying with the final design and permit requirements.

5.2.2.2 Preventing Contamination of the Offloading Facility

To prevent contaminated materials or effluent water from contaminating the areas used for offloading, stockpiling, and other upland uses, the contractor will be required to fully contain the dredged material and prevent the uncontrolled runoff of dewatered or dredged material. Depending on the characteristics of the offloading facility that is used, this containment could be accomplished using impermeable liners, concrete barricades, a drainage sump, or other methods.

To ensure that waters surrounding the offloading area are not impacted by effluent from the storage and rehandling area, the contractor will be required to contain all free water and off-flow that drains out of the sediment while stockpiled on land. The contractor will be required to collect all water in a temporary containment facility or tank, test it, and treat it as necessary to meet water quality criteria before it is discharged through one of the following disposal options:

- The offloading site's stormwater system (subject to applicable permits)
- The City of Bellingham's sanitary sewer system (subject to an applicable discharge authorization)
- Off-site disposal facility (subject to applicable requirements)
- Other Ecology-approved stormwater discharge facility

The contractor will be responsible for preparing a Stormwater Pollution Prevention Plan (SWPPP) that meets applicable regulatory and permit requirements, and for documenting compliance with applicable permits and/or regulations for water treatment and discharge. Water generated on the Georgia-Pacific West mill site will be managed using the aeration stabilization basin (ASB) and the Port's National Pollutant Discharge Elimination System (NPDES) permit.

Upon completion of the dredging, the contractor will be required to remove all vestiges of dredged sediments and other contaminants from any and all areas used for sediment storage, stockpiling, offloading, or dewatering, and will be required to clean up the offloading area to the pre-project condition. The Port will inspect the contractor's work activities to ensure that the contractor is complying with the final design and permit requirements.

5.2.2.3 Suitability of Sediments for Hauling and Disposal

Before sediments are transported from the offloading facility, the contractor will be required to demonstrate that all sediments have passed the paint filter test to ensure that sediments have been sufficiently dewatered and do not contain free liquids, or provide documentation that they have received an exemption from the paint filter test. Certain Subtitle D Landfills have obtained exemptions from meeting the paint filter test. At the contractor's discretion, and if approved by the Port and Ecology, an additive may be mixed in with the sediment to bind available water and decrease the dewatering time.

5.3 Engineered Capping and Residuals Management Cover

Placement of an engineered cap and a residuals management cover is proposed as part of the cleanup action in the following areas:

- BST Outer Waterway: A residuals management cover is proposed to be placed over the dredging areas to manage dredging residuals.
- BST Outer Waterway Slope Transition: An engineered cap will be placed along the exposed slope at the transition from the Outer Waterway area to the Inner Waterway.
- Inner Waterway: Engineered capping is proposed along the Central Waterfront (north) shoreline and the south shoreline slopes of the Inner Waterway, and throughout the open-water areas in the Inner Waterway.
- Log Pond: Engineered capping is proposed along the shoreline edges as correction measures to contain exposed contaminants and prevent further cap and shoreline erosion.

The following QA procedures will be implemented to ensure that the cap material and placement are in accordance with the final design.

5.3.1 Verification of Import Material Quality

Import material used as capping material must meet chemical and physical (grain size) requirements that will be defined in the technical specifications. Before using an imported material, the contractor will be required to submit a Borrow Source Characterization Report for the material verifying its specified physical properties, chemical properties, and gradation. The contractor will be required to submit chemical testing results to ensure that key chemical constituents are below the cleanup levels listed in the CAP. Dioxin/furan concentrations in the cap or cover material must be below 2.0 nanograms per kilogram (ng/kg) Toxic Equivalents Quotient (TEQ) dry weight. Total mercury concentrations must be less than 0.10 mg/kg dry weight.

Individual delivery loads will be visually inspected by the Port to ensure that objectionable content, unsuitable coatings, or unsuitable materials (i.e., debris or organics) are not present and that the load complies with the general physical requirements of the technical specifications. If necessary, the Port may obtain representative samples for physical testing to confirm compliance with the gradation. The Port will have the right to refuse any loads,

in which case the contractor shall return the load and obtain an acceptable load in its place, at no additional cost to the Port.

5.3.2 Achieving Specified Thickness and Extent of Engineered Cap and Residuals Management Cover

To ensure that proper horizontal coverage and thickness of the engineered cap and residuals management cover are achieved, the contractor will be required to perform daily progress surveys of areas where cap or cover material was placed to allow daily verification of thickness and horizontal extents of the placed materials. The Port will perform QA inspection of the contractor's work and survey documentation to verify the placement extents. This verification may be completed either by evaluating the contractor's daily QC progress surveys and positioning data or by conducting independent QA bathymetric surveys, or through a combination of both methods.

The contractor will also be required to report, on a daily basis, the quantity (in-situ cubic yards and tons) of sand or gravel placed during that day, the area over which cap material as placed (verified by its daily progress surveys), and the cumulative volume and tonnage of material placed on the Project to that date. These quantities will be monitored by the Port so adequacy of the work can be continuously evaluated.

The Port may supplement these monitoring techniques by using other measurement methods, such as divers or sediment profile imaging (SPI), to directly observe the placed capping material and to ensure accurate horizontal extent and placement thickness. Divers could observe areas to determine if material coverage is consistent and if the required amount of capping material has been achieved, using probes or push cores to directly observe material cover thickness at selected, representative locations. SPI provides a visual picture of the sediment profile but is limited in penetration thickness.

Appendix G to the EDR describes monitoring activities to be performed under direction of the Port as part of the residuals management program in Unit 1C. These activities include collection of grab samples to assess the thickness and chemical composition of post-dredging residuals, and the collection of shallow subsurface sediment samples to verify that dredging

has reached the base of the contaminated sediment layer. After residuals management cover is placed, the chemical composition of the final surface will be assessed using grab sampling. Refer to Appendix G for more details regarding these grab sampling activities.

To verify that the specified placement thicknesses and horizontal extents have been met, the Port will either require the contractor to perform pre- and post-placement QC bathymetric surveys, or will conduct the pre- and post-placement bathymetric surveys using a third-party surveyor. The contractor will also be required to perform and submit daily progress surveys so that the Port can continuously monitor placement progress and compliance with the specifications and drawings. Where multiple layers are required for the engineered cap, post-placement bathymetric surveys will be performed after each layer has been placed.

If at any time it is determined that the contractor is not placing the engineered cap or cover materials in the correct location or to the prescribed minimum thickness, the contractor will be notified to correct the situation. Any such direction and corrective action will be documented on the Daily QC Report for that day's activities.

5.4 Soil Excavation and Backfill

As part of the cleanup actions, it is expected that upland soils will need to be excavated, with some requiring temporary stockpile and then backfilling with both clean and overburden soils. This is required to facilitate installation of shoreline sheetpile wall structures or other cleanup actions. For purposes of this report, these excavations have been identified according to the following three categories:

- Bank cut back in the upland
- Temporary soil excavation to support structure installation
- Environmental excavation for geotechnical or environmental reasons

Soils that are excavated to facilitate the cleanup actions will be subject to the following QC requirements during construction activities:

- Excavation location and quantity of material will be verified by the contractor using topographic survey and documented by the contractor on a set of as-built plans
- Material will be properly segregated

- Profiling will be performed to classify the material for either re-use or off-site landfill disposal or recycling
- For all material requiring removal and off-site landfill disposal, the contractor will be required to submit waste manifest certificates documenting their final disposal location
- Retention of soils or debris on-site for re-use is subject to the written approval of the Port

5.5 Structures Replacement and Installation

The cleanup actions in the Whatcom Waterway require removal and replacement of several existing structures to accomplish required cleanup actions. In addition, the installation of certain new structures is required as part of coordinated source control activities. Specifically, along portions of the Central Waterfront shoreline (north shoreline of the Whatcom Waterway), Ecology has required installation of containment walls that will address soil and groundwater source control requirements along the shoreline. Structure installation includes the following items:

- A sheetpile containment wall/bulkhead system with tie-backs or soil anchors will be placed around the Maple Street bulkhead to contain contaminated soils and groundwater located behind the existing concrete bulkhead at that location.
- A partially exposed containment wall system will be constructed along the shoreline between the Chevron property and the Maple Street Bulkhead.
- A partially exposed shoreline wall will be constructed in the area extending between the Maple Street bulkhead and the Meridian Pacific Property.
- Steel piling will replace existing creosote timber piles and dolphins to preserve existing Waterway functions and provide for equipment moorage during cleanup project activities.
- Fender piling at Maple Street bulkhead will be installed to protect the Maple Street bulkhead and whaler/tie-back system from vessel damage (which would compromise the wall integrity), and to replace existing creosote timber fender piling that must be removed to accomplish dredging and capping.
- An existing ramp and float system is located along the Central Waterfront shoreline and services the active boatyard. This existing float system will be temporarily

removed during completion of shoreline remediation work. Following completion of dredging and capping, the ramp and float system will be returned.

- A crane pad is located in the uplands, adjacent to the Central Waterfront Shoreline near the Maple Street bulkhead. The crane pad will need to be removed to permit completion of dredging, wall installation, and capping in this area. Replacement paving will be constructed in the upland upon completion of this work to support crane operations.

The following QA procedures will be implemented to ensure that the sheetpile walls and pipe piling are installed in accordance with the final design.

5.5.1 Verification of Steel Sheet Pile and Pipe Pile Quality

Steel sheetpiling must meet the requirements presented in the technical specifications. Before using any steel sheetpiling section or pipe pile, the contractor will be required to submit a Materials Data Sheet verifying that its specified physical and mechanical properties are in compliance with the technical specifications.

Individual delivery loads will be visually inspected by the Port to ensure that the products are not defective and comply with the general physical requirements of the technical specifications. The Port will have the right to refuse any sheetpile sections or pipe pile, in which case the contractor shall return those sections or pile and obtain acceptable ones in its place, at no additional cost to the Port.

5.5.2 Verification of Steel Sheet Pile and Pipe Pile Installation Location

The sheetpiling and pipe pile will be installed with pile driving equipment that conforms to the technical specifications.

Sheetpiles will be driven with the proper size hammer selected by the contractor and by approved methods so as not to subject the piles to damage and to ensure proper interlocking throughout their lengths. Temporary wales, templates, or guide structures shall be provided to ensure that the sheetpiles are placed and driven to the correct alignment. To ensure that

the steel sheetpiles are accurately placed, the contractor will be required to inspect the interlocked joints of driven piling that extend above the ground.

Pipe piles will be driven with the proper size hammer selected by the contractor and by approved methods as not to subject the piles to damage. Pile driving records will be required as part of the contractor's daily log to ensure that proper tip elevations are met. Additionally, the Port will require the contractor to conduct real-time monitoring of sheet-piling during installation to assess potential wall displacements, and to conduct a post-placement survey to document the final location of the piles placed.

5.5.3 Verification of Tieback Quality and Placement

As part of final project design, the Port will conduct a tie-back pull test to verify the tie-back capacity. The results of the pull test will be used to adjust the number and spacing of the tie-backs if necessary.

Tie-backs used for stabilization of the sheetpile wall must meet the requirements presented in the technical specifications. Before using any tie-backs, the contractor will be required to submit a Materials Data Sheet verifying that its specified properties are in compliance with the technical specifications.

Individual delivery loads will be visually inspected by the Port to ensure that the products are not defective and comply with the general physical requirements of the technical specifications. The Port will have the right to refuse any tie-back, in which case the contractor shall return those tie-backs and obtain acceptable new ones, at no additional cost to the Port.

Once the tie-backs have been installed, their actual locations will be documented on a set of as-built plans maintained by the contractor, and a pull test will be performed to ensure that proper strength has been achieved. The specific criteria for the pull test will be specified as part of the technical specifications.

5.6 Maintaining Water Quality Requirements during Clean-up Actions

The contractor will be required to meet water quality criteria established by Ecology at the site during all in-water clean-up actions activities. The contractor is responsible for providing BMPs to ensure that they comply with water quality criteria during all in-water construction activities. The Port will implement its own water quality monitoring program to monitor the contractor's in-water activities and to document water quality at the site during construction activities. The monitoring program will be conducted in compliance with project regulatory permits. The permits may require the contractor to employ specific BMPs during dredging to avoid and minimize impacts to water quality as a result of project activities.

6 DOCUMENTATION AND REPORTING

Documentation and reporting for CQA activities will include pre-construction documentation, construction documentation, and post-construction documentation as detailed below. The contractor and the CQAO will work closely on a daily basis during the cleanup action to complete the project as specified in the final design and to collect the documentation required. The following sections describe documentation that will be required throughout the cleanup action.

6.1 Pre-construction Documentation

The contractor will be required to submit a Cleanup Action Work Plan (CAWP) for review and approval by the Port. The CAWP will contain the following elements:

- Project Work Plan
- CQC Plan
- CHASP
- Construction EPP
- Construction Schedule
- Survey Control Plan

CQC procedures will be addressed in various elements of the contractor's CAWP. The Port will review and approve the CAWP prior to the contractor implementing cleanup actions. A brief description of the contents of each plan component of the CAWP is provided below.

6.1.1 Project Work Plan

The Project Work Plan will describe, in narrative form, the methods to be employed in the cleanup action, including equipment types, modes of operation, schedules, sequence of activities, and other aspects necessary to describe how and when the specified work will be performed. The Project Work Plan will have specific sections detailing how the following elements will be completed:

- Debris and structure removal
- Dredging, transport, and disposal
- Engineered capping and residuals management cover

- Soil excavation and backfill
- Structures installation

6.1.2 Construction Quality Control Plan

The CQC Plan will present the system through which the contractor ensures that construction activities are being implemented in compliance with the requirements of the contract plans and specifications and permit conditions, and specifically how the contractor will provide QC of its work activities. The CQC Plan will identify personnel, procedures, methods, instructions, inspections, records, and forms to be used in the CQC system. Specifically, the CQC Plan will include a description of procedures for maintaining and updating daily activity logs, procedures for reporting out-of-spec conditions, recordkeeping procedures for personnel, equipment maintenance and calibration, and daily and weekly reporting requirements.

The CQC Plan will identify the duties and responsibilities assigned by the contractor to the QC manager, its inspectors, and other key contractor team personnel, as needed to monitor the contractor's cleanup work activities. The CQC Plan will identify the chain of command for the contractor's QC team, including identification of responsibilities for each member, to ensure that any actions related to the quality of work will be executed in an accurate and expeditious manner.

6.1.3 Construction Health and Safety Plan

The contractor will submit its CHASP to the Port presenting the minimum health and safety requirements for job site activities and the measures and procedures to be employed for protection of personnel working at on-site and off-site locations for this work. The CHASP will also contain details of the contractor's chain of command and personnel responsibility for health and safety issues. The contractor will be required to employ a Certified Industrial Hygienist (CIH), whose proof of certification and resume will be submitted along with the CHASP, to produce the CHASP. The CHASP will cover the controls, work practices, personal protective equipment (PPE), and other health and safety requirements that will be implemented by the contractor in connection with the cleanup action construction activities.

The Port will review the CHASP but will not approve the CHASP, as health and safety is the contractor's responsibility.

6.1.4 Environmental Protection Plan

The contractor will be required to submit an EPP describing the environmental protection measures and monitoring activities that the contractor will implement to comply with technical specification requirements, permit conditions and all applicable federal, state, and local laws and regulations. The EPP will discuss preventing potential environmental releases as a result of the contractor operations, as well as monitoring, contingency, and corrective actions necessary to control potential releases. The EPP will address topics as required and discussed in Section 5, including, but not limited to, water quality, spill prevention, stormwater pollution, and temporary erosion and sedimentation control.

6.1.5 Construction Schedule

The contractor will be required to prepare and submit a detailed construction schedule in Gantt chart format for each construction element prior to construction. Periodic schedule updates will be submitted by the contractor following progress meetings.

6.1.6 Survey Control Plan

The contractor will be required to submit a Survey Control Plan prior to construction. The plan will detail the specific procedures, equipment, and personnel to be used for all landside and in-water surveying work. The plan will also discuss the contractor's quality control measures to verify survey results.

6.2 Construction Documentation

During construction activities, the contractor will be required to provide a variety of documentation to the Port and CQAO, including testing results of materials received, waste manifests for shipments of materials removed, survey results, and documentation of pay items completed.

The contractor will also maintain a daily log of activities, as described in Section 6.2.1. The CQAO will maintain a field report of daily activity and complete an internal weekly report. The contents of the report are described in Section 6.2.2. Weekly progress reports will be submitted to Ecology. Additional documentation is described in Sections 6.2.3 through 6.2.6. The records described in this section will be maintained in the project files.

All final construction documentation will be stamped, as appropriate, by licensed professionals. If, during the course of construction, modification of the final stamped and approved design is required, modifications will be documented in writing and stamped by a licensed engineer. Undocumented modifications of the design or other deviations from the approved design will not be permitted. Construction surveys, including as-built surveys, will be documented on drawings using the same datum, unit, and scale as the design drawings. Record drawings will allow for a direct visual assessment of the quality and completeness of construction.

The Port will coordinate with Ecology to determine appropriate information to submit to Ecology during construction, including water quality monitoring reports, and other progress reports.

6.2.1 Contractor's Daily Progress Report

During construction activities, the contractor shall prepare a Daily Progress Report that documents the contractor's cleanup action progress and quality control measures, and submit it to the Port and CQAO. The contractor's Daily Progress Report will record at a minimum:

- Cleanup action activities completed
- Changes to BMPs or environmental controls
- Quantities of materials delivered to the site
- Equipment used
- Weather conditions and sea state
- Quantities of dredged materials, soil excavation, and debris removed
- Quantities and breakdown of materials transported and disposed of
- Copy of daily progress surveys

- Results of any the contractor's quality control inspections, tests, or other monitoring activities
- Problems encountered and resolution of problems
- Any Port-authorized deviations from the final design

The Port and Ecology will decide on the frequency that Daily Progress Reports will be sent to Ecology.

6.2.2 Construction Quality Assurance Officer's Daily Report

The CQAO will maintain a daily field log to record observations, measurements, inspections completed, data received, communications with other members of the project team or Ecology, any water quality exceedances, additional environmental controls that were implemented, problems encountered, and resolutions. The daily field log will be supported by construction submittals received from the contractor, such as daily progress surveys and Daily QC Reports. Water quality results will also be separately recorded and reported as defined in the Water Quality Monitoring Plan (Anchor QEA 2015).

6.2.3 Contractor's Weekly Progress Reports

The contractor will be required to prepare a weekly progress report for submittal to the Port and CQAO. The Weekly Progress Report will summarize the work completed in the previous week, as reported in the Daily Progress Reports, and identify progress organized by activity:

- Debris and structure removal
  - Area worked (supported by contractor's log)
  - Volume of material removed (supported by contractor's log and waste manifest certificates)
  - Structures not completely removed (documented on as-built drawings)
  - Problems encountered
  - Corrective actions
- Dredging, transport, and disposal
  - Area worked (supported by contractor's log)

  - Volume of material removed (supported by contractor's log, progress surveys, and waste manifest certificates)
  - Daily progress surveys
  - Problems encountered
  - Corrective actions

- Engineered capping
  - Area worked (supported by contractor's log)
  - Weight and volume of material placed
  - Daily progress surveys
  - Problems encountered
  - Corrective actions

- Soil excavation and backfill
  - Area worked (supported by contractor's log)
  - Volume of material removed (supported by contractor's log and waste manifest certificates)
  - Area and volume of materials classified for re-use (supported by contractor's log)
  - Samples collected
  - Summary of analytical results
  - Daily progress surveys
  - Problems encountered
  - Corrective actions

- Structures installation
  - Area worked (supported by contractor's log)
  - Types of structures installed
  - Location of completed structures
  - Problems encountered
  - Corrective actions

6.2.4 Weekly Construction Meetings

The contractor, Port, and others as appropriate, will attend weekly progress meetings to discuss the previous week's work, anticipated work in the next week, health and safety

issues, environmental issues, and any corrective actions taken. The contractor will be responsible for conducting weekly construction meetings.

6.2.5 Import Material Characterization

Prior to any on-site placement of import materials, the contractor shall submit either a Borrow Site Characterization Report or Materials Data Sheet to the CQAO. The characterization report will include identification of the source (including a map documenting the origin of the material), site inspection, and material sample and characterization (physical and chemical testing, as specified) to ensure that the import material will uniformly meet the physical specifications of its intended use. The Materials Data Sheet will include the physical and mechanical properties of the material delivered to the site to ensure that it meets the requirements of the final design.

6.2.6 Post-construction Documentation

The First Amendment to the Consent Decree (Ecology, 2011) requires the Port to submit the Phase 1 As-Built Report to Ecology within 120 days of completion of construction activities. Ecology will then issue a Phase 1 Completion Letter after review and approval of the As-Built Report.

7 REFERENCES

Anchor QEA (Anchor QEA, LLC), 2015. *Water Quality Monitoring Plan*. Appendix L, Final Engineering Design Report, Whatcom Waterway Cleanup in Phase 1 Site Areas. Prepared for Port of Bellingham. February 2015.

APPENDIX G
COMPLIANCE MONITORING AND CONTINGENCY RESPONSE PLAN
WHATCOM WATERWAY CLEANUP IN PHASE 1 SITE AREAS

TABLE OF CONTENTS

List of Tables

List of Figures

LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	microgram per liter
ASB	Aerated Stabilization Basin
ASTM	ASTM International
BSL	bioaccumulation screening level
BST	Bellingham Shipping Terminal
CAP	Cleanup Action Plan
cm	centimeter
CMCRP	Compliance Monitoring and Contingency Response Plan
COC	chain of custody
CQAP	Construction Quality Assurance Plan
D/Fs	dioxins and furans
DQO	Data Quality Objectives
Ecology	Washington State Department of Ecology
EDR	Engineering Design Report
FC	Field Coordinator
GP	Georgia-Pacific
LDW	Lower Duwamish Waterway
mg/kg	milligrams per kilogram
MHHW	mean higher high water
MLLW	mean lower low water
MNR	monitored natural recovery
MTCA	Model Toxics Control Act
NAD	North American Datum
PDCR	Preliminary Design Conceptual Report
Port	Port of Bellingham
PSDDA	Puget Sound Dredged Disposal Authority
PSEP	Puget Sound Estuary Program
QA/QC	quality assurance/quality control
SAP	Sediment Analysis Plan
SCUM	Sediment Cleanup Users Manual
Site	Whatcom Waterway Site

SMARM	Sediment Management Annual Review Meeting
SMS	Sediment Management Standards
SQS	Sediment Quality Standard
SSSMGP	South State Street Manufactured Gas Plant
SVOC	semivolatile organic compound
USACE	U.S. Army Corps of Engineers
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife

1 INTRODUCTION

1.1 Purpose

This Compliance Monitoring and Contingency Response Plan (CMCRP) describes the performance and confirmation monitoring and associated contingency response actions that will be implemented after construction and cleanup within Phase 1 areas of the Whatcom Waterway Site (Site) in Bellingham, Washington. The CMCRP meets the requirements of the Consent Decree (Ecology 2007) as amended by the Washington State Department of Ecology (Ecology) with the First Amendment to the Consent Decree (Ecology 2011), and will be implemented in accordance with Washington Administrative Code (WAC) 173-340-410, Compliance Monitoring Requirements.

Compliance monitoring and contingency response actions within Phase 2 areas of the Site, described in the Preliminary Design Conceptual Report (PDCR; Anchor QEA 2012), will be addressed in a separate document. Phase 1 construction water quality protection monitoring will be performed as described in the Water Quality Monitoring Plan (Anchor QEA 2015b).

The purpose of this document is to describe the environmental monitoring activities that will be used to ensure that cleanup standards are met and long-term effectiveness of the cleanup is maintained.

Prior to implementation of the monitoring activities that are described herein, a Sampling and Analysis Plan will be drafted and submitted to Ecology and the Washington Department of Fish and Wildlife (WDFW) for review and approval. Prior to collection of crab tissue as described in Section 5.1, a scientific collection permit shall be obtained from WDFW.

1.2 Site Description

The Site is located within Bellingham Bay in Washington State (see Site Vicinity Map, Engineering Design Report [EDR] Figure 1). It includes sediments that have been impacted by contaminants historically released from industrial waterfront activities, including mercury discharges from the former Georgia-Pacific (GP) Corporation's chlor-alkali plant; wood waste and degradation products from historic log rafting activities; phenolic compounds from pulp mill wastewater discharges; and other industrial releases. Surface

sediment contamination from other historic industrial activities is commingled with Site contamination in several areas. Ecology has designated several other cleanup sites throughout the Bellingham Bay waterfront areas, including the Central Waterfront site, I&J Waterway site, Cornwall Avenue landfill site, the former South State Street Manufactured Gas Plant (SSSMGP) site, and the R.G. Haley site. The cleanup action for the Site is being coordinated with these separate site cleanups by the Port of Bellingham (Port) and Ecology.

The primary contaminant of concern for the Site cleanup is mercury. The chlor-alkali plant was constructed by GP in 1965 to produce chlorine and sodium hydroxide for use in bleaching and pulping wood fiber. The chlor-alkali plant discharged mercury-containing wastewater into the Whatcom Waterway during the late 1960s and 1970s. Mercury discharges from the chlor-alkali plant were subsequently reduced through source controls and wastewater treatment and were terminated with the closure of the facility in 1999. The remediation of the upland chlor-alkali plant site is being addressed under Model Toxics Control Act (MTCA) as the separate GP West cleanup site. The Site cleanup addresses contaminated marine sediments associated with the historical chlor-alkali plant discharges.

Dioxins and furans (D/Fs) are also known to be present in surface and subsurface sediments throughout most of Bellingham Bay. The full range of sources for these compounds in Bellingham Bay may include former combustion sources, former GP pulp and paper mill operations, former wood-treating facilities, historic and ongoing stormwater and wastewater discharges, and atmospheric deposition.
Ecology has conducted sampling and issued a final data report documenting the regional background concentrations of D/Fs in Bellingham Bay from these multiple sources. Regional background concentrations are reported in that document to be 15 ng/kg (Ecology 2015).

In addition, Ecology has revised the Sediment Management Standards (SMS) to consider regional background concentrations when establishing sediment cleanup levels.

These Ecology efforts could result in a future amendment to the Cleanup Action Plan (CAP; Ecology 2007) addressing D/Fs within the Site. Until then, reasonable and prudent measures

to address D/Fs as part of the monitoring plan have been incorporated into the cleanup action and associated monitoring requirements.

1.3 Required Cleanup Action

The required cleanup actions are described in the Preliminary Design Concept Report and are in compliance with the Consent Decree (Ecology 2007) as amended by 2011 (Ecology 2011). The 2011 Consent Decree changes reflect the updated information on D/Fs concentrations in sediments offshore of the shipping terminal and the need for inclusion of alternate disposal options for Units 1A/1B materials. In addition, 2011 changes to the Consent Decree include alternate management options for a portion of the sediments from Units 1C and 5B.

The cleanup action meets the requirements of the MTCA, the SMS, and the requirements of the Consent Decree. The amended cleanup action is consistent with the planned land use for the Site, including the Port's plans to continue deep-draft shipping and to convert the Aerated Stabilization Basin (ASB) (Unit 8) to a marina. The cleanup action is also consistent with Port and City plans for redevelopment of the 220-acre Waterfront District (consisting of the waterfront properties located between the Cornwall Avenue Landfill site and the I&J Waterway site) as described in the Draft Subarea Plan (Port and City 2010).

The design and implementation of the cleanup of the Site will be implemented in two cleanup phases, with two separate and independent construction projects, each addressing distinct areas of the Site. The construction project to be completed in Phase 1 site areas will include cleanup actions within the Inner Waterway (Units 2A and 3B), the Log Pond (Unit 4), and a portion of the Bellingham Shipping Terminal (BST) (Unit 1C). The work to be performed in these Phase 1 areas is described in more detail in the PDCR (Anchor QEA 2012) and in the EDR (Anchor QEA 2015a) and is illustrated in Figure 1. The work to be performed in these Phase 2 construction areas is described in more detail in the PDCR (Anchor QEA 2012) and EDR (Anchor QEA 2015a) and will be monitored under a separate Construction Quality Assurance Plan (CQAP) and CMCRP to be prepared as a part of the Phase 2 EDR.

In addition to construction areas, additional areas have been designated as monitored natural recovery (MNR) areas which currently meet site cleanup levels for mercury and which are subject to ongoing natural recovery processes further reducing concentrations of mercury and other chemicals including D/Fs. MNR is designated for Site Units 3A, 5A, 5C, 6A, 7, and 9, and those portions of 5B, 6B, and 6C that are currently meeting site cleanup levels.

1.4 Phase 1 Compliance Monitoring Requirements

As described above, compliance monitoring and contingency responses (if needed) will be implemented in accordance with WAC 173-340-410, Compliance Monitoring Requirements. The three types of compliance monitoring to be conducted are as follows:

- **Protection monitoring:** This type of monitoring is used to confirm that human health and the environment are adequately protected during the construction period of the cleanup action. As part of the Site Phase 1 cleanup activities, protection monitoring will encompass water quality monitoring to ensure water quality protection within the Site during dredging. Water quality monitoring for the Site is described in a separate Water Quality Monitoring Plan (Anchor QEA 2015b).
- **Performance monitoring:** Performance monitoring is used to confirm that the cleanup action has attained cleanup standards and other performance standards. Section 3 describes the physical, chemical, and bioassay performance monitoring activities to be conducted following completion of Phase 1 cleanup activities. Performance monitoring in Unit 1C will include sampling of post-dredging residuals and additional sampling to verify that dredging has achieved removal of contaminated sediments in Unit 1C. In all Phase 1 construction areas (including Unit 1C), performance monitoring will include physical integrity and sediment quality monitoring, after the completion of construction. Performance monitoring will include bathymetric surveys and surface sediment chemical analyses and will be conducted immediately after the completion of Phase 1 construction at the Site. Performance monitoring will also include crab and clam tissue monitoring and co-located porewater monitoring as described in Section 5.
- **Confirmation monitoring:** Confirmation monitoring is used to confirm the long-term effectiveness of the cleanup action once performance standards have been attained and to document continued compliance with cleanup levels in active remediation

areas, as well as in MNR areas. Section 4 describes the long-term confirmation monitoring to be performed following completion of the Phase 1 cleanup activities. Activities described in that section include physical integrity and sediment quality monitoring in the cap areas, and porewater monitoring within Site Unit 4 (the Log Pond). Confirmation monitoring in MNR areas includes surface and subsurface sediment quality monitoring. Confirmation monitoring will be initiated the year after Phase 1 construction is completed and is described in more detail below. Tissue monitoring is also to be performed as part of site confirmation monitoring and is described in Section 5.

2 PROJECT ROLES AND RESPONSIBILITIES

The monitoring described in this document will be managed by the Port. The Port, or its designated representatives, will be responsible for implementing the monitoring program. The Port will manage the contractor performing the required monitoring activities, including sediment, tissue, and porewater sampling. Some monitoring activities may also be performed by Port staff as appropriate.

The monitoring contractor's project manager will provide overall project coordination, including production of all project deliverables and administrative coordination to ensure timely and successful completion of the project. The Field Coordinator (FC) will supervise field collection of all samples and will also be responsible for positioning for sample collection accurately; recording sample locations, depths, and identification; ensuring conformance to sampling and handling requirements, including field decontamination procedures; physical evaluation and logging of samples; and completing chain of custody (COC) forms. The FC will be responsible for compliance with the Ecology-approved Sediment Analysis Plan (SAP) to be developed for the project. The FC will be responsible for the submittal of environmental samples to the designated laboratories for bioassay, chemical and physical analyses.

The Laboratory Project Manager at each laboratory will provide analytical support and will be responsible for providing certified, pre-cleaned sample containers and sample preservatives (as appropriate) and for ensuring that all chemical analyses meet the project Data Quality Objectives (DQOs) and other quality specifications of the SAP.

The Port will review all work products prepared by its contractors and consultants and will communicate to the Ecology project coordinator any concerns that may arise regarding the implementation of the Phase 1 monitoring activities.

3 PERFORMANCE MONITORING

As described in the sections below, performance monitoring will be conducted during and immediately following the construction season. Performance monitoring activities described in this section include: 1) post-dredging sampling in Unit 1C to verify the thickness and composition of dredging residuals and to verify that dredging has achieved full removal of target sediments; 2) physical surveys in all Phase 1 construction areas; and 3) surface sediment sampling in the Outer Waterway (Unit 1C) post-construction (year 0) after placement of residuals management cover to verify that surface sediment quality was achieved. Refer to Section 5 for performance monitoring activities involving collection and analysis of crab and clam tissue and co-located sediment porewater samples.

3.1 Post-dredge Sampling in Unit 1C

Dredging in Unit 1C is intended to achieve full removal of contaminated sediments from the base of the dredge prism. Dredging residuals are anticipated within the dredge prism, consistent with the evaluation described in Appendix A. As described in the CAP (Ecology 2007), post-dredging residual sediment contamination will include the use of best management practices. Consistent with the Appendix A evaluations, these practices include placement of clean sand cover.

Prior to the placement of clean sand cover, grab sampling will be performed to verify the thickness and composition of the dredge residuals layer and to verify that these are not substantially different than those in the Appendix A evaluation. Sampling will also be used to verify that dredging has achieved removal of mercury-contaminated sediments, by verifying the quality of the underlying sediment beneath the dredging residuals layer.

Surface and shallow subsurface sediment will be collected using a hydraulic Van Veen sampling device at the six locations shown in Figure 2. At each location, samples will be collected from the dredging residual layer, which is expected to be approximately 6 centimeters (cm) thick and consist of poorly consolidated materials. Samples will also be collected from the sediment underlying the residuals layer. These sediments will be collected from the base of the Van Veen sampler, approximately 10 to 20 cm below the dredging residuals layer.

The thickness of the residuals layer will be measured in the grab sample, and a subsample of this layer will be submitted for the sediment chemical analyses described below. The overlying material will then be removed from the Van Veen sampler to expose the underlying sediments. These are expected to consist of consolidated native sand materials. A sample of this material will be collected from the base of the sampler, approximately 10 to 20 cm below the contact with the dredging residuals layer. The sample will be collected and submitted for sediment chemical analyses described in the following section for verification that dredging has reached the base of chemical contamination.

The methods and quality assurance/quality control (QA/QC) procedures for Van Veen sampling will be defined in the project SAP. The SAP will be submitted along with the final EDR, and will be subject to Ecology review and approval prior to implementation of sampling activities. Table 1 lists the sampling locations, sample depths, and analyses.

3.1.1 Chemical Testing

The Unit 1C post-dredging samples will be analyzed for total solids, total organic carbon, mercury, and D/F. Analytical methods, DQOs, and performance criteria for these analytes will be documented in the project SAP. Mercury and D/F concentrations in the residuals layer and the thickness of the dredging residuals layer will be compared with expectations defined in Appendix A.

Mercury concentrations in samples of un-dredged sediment from beneath the dredging residuals will be compared to the Sediment Quality Standard (SQS) of 0.41 milligrams per kilogram (mg/kg).

3.1.2 Contingency Response Actions

Subject to and consistent with the provisions of the Consent Decree as amended, if the post-dredging sampling indicates that the thickness and/or chemical composition of the residuals layer are greater than evaluated in Appendix A, residuals management calculations will be repeated and the findings discussed with Ecology. If necessary to appropriately manage dredging residuals and comply with cleanup levels specified in the Consent Decree, contingency response actions could include increasing the minimum thickness of residuals

cover (i.e., from 6 inches to 12 inches) in appropriate areas, conducting a cleanup pass, or both.

If sampling of sediments beneath the residuals layer indicates the potential presence of "missed inventory," results shall be discussed with Ecology. Contingency response measures could include conducting follow-up sediment coring to verify the thickness of the missed inventory layer, initiation of cleanup pass dredging in appropriate areas, or adjustment of the residuals management cover thickness as described above.

3.2 Post-Construction (Year 0) Sampling

3.2.1 Physical Surveys

Physical surveys will be used as part of dredging, residuals management, and capping activities. Bathymetric surveys will be used to verify that dredging achieves required target elevations as defined in the EDR. The effectiveness of residuals cover placement in Unit 1C and the cap placement in Units 4 (Log Pond) and within Units 2A and 3B (Inner Waterway) at year 0 will be verified using bathymetric surveys. Survey methods will be defined in the project SAP, to be developed and approved by Ecology prior to implementation of the work. Bathymetric surveys will be used during construction to verify that dredging to target depths has been achieved, and also during post-construction to verify that the target thickness and extent of the armored cap in the Inner Waterway (Unit 2A/3B) and the residuals cover placement in the Outer Waterway (Unit 1C) have been achieved at the completion of Phase 1 construction activities.

Bathymetric surveying will be conducted in Whatcom Waterway to define the post-construction elevation. Surveys will be conducted by a licensed surveyor and will meet or exceed the accuracy standards for a U.S. Army Corps of Engineers (USACE) Navigation and Dredging Support Survey as referenced in the USACE Hydrographic Survey Manual, April 2004 Revision (USACE 2004). Additional details about bathymetric surveys will be defined in the project SAP.

3.2.2 Surface Sediment Quality

3.2.2.1 Sediment Collection

Surface sediment quality in the Outer Waterway (Unit 1C) will be monitored post-construction (year 0) to verify the surface sediment quality achieved after completion of dredging and residuals management. Surface sediment (0 to 12 cm biologically active zone) will be collected at six stations in Unit 1C using a hydraulic Van Veen sampling device (Figure 2).

Surface sampling will not be conducted at year 0 in other Phase 1 construction areas. Construction in these other areas includes placement of armoring over the sediment caps, which will preclude collection of surface sediments immediately following completion of construction.

The methods and QA/QC procedures for Van Veen sampling will be conducted consistent with the project SAP. Sufficient volume will be collected for both sediment chemical analyses described below and contingent bioassay tests, should they be necessary. Table 1 lists the sampling locations, sample depths, and analyses.

3.2.2.2 Sediment Chemistry

Surface sediment samples will be analyzed for total solids, total organic carbon, priority contaminants (mercury, semivolatile organic compounds [SVOCs]), and D/F as part of performance monitoring. Analytical methods, data quality objectives, and performance criteria for these analytes will be followed in accordance with those specified in project SAP. Priority contaminants will be compared to their respective SQS criteria. Mercury concentrations in surface sediment will also be compared to the site-specific bioaccumulation screening level of 1.2 mg/kg (RETEC 2006a; RETEC 2006b).

3.2.2.3 Contingent Bioassay Testing

If mercury or other priority contaminants exceed their respective SQS criteria, contingent bioassay testing will be initiated. Specifically, the following Puget Sound Estuary Program (PSEP) sediment bioassay tests will be performed if there are SQS criteria exceedances (PSEP 1995):

- 10-Day Acute Toxicity Amphipod Test (*Ampelisca abdita, Eohaustorius estuarius, or Rhepoxynius abronius,* depending on grain size of sediments to be tested*)*
- Larval Bivalve Development Test (*Mytilus galloprovincialis or Dendraster excentricus*)
- 20-Day Juvenile Polychaete Chronic Toxicity Test (*Neanthes arenaceodentata)*

Bioassay testing will be performed in accordance with PSEP protocols (PSEP 1995) by an Ecology-accredited laboratory and as updated during the Sediment Management Annual Review Meeting (SMARM) process. Methods for bioassay tests will be defined in the SAP. Final sediment test species will be selected in coordination with Ecology and based on grain size, salinity, and collection season prior to test initiation.

3.2.3 Contingency Response Actions

If there are exceedances of the SQS (as measured with chemical and/or confirmatory bioassay tests) or if mercury exceeds the bioaccumulation screening level (BSL), contingency response measures will be evaluated and discussed with Ecology. Initial actions would include sampling to verify results and the extent of exceedances. Contingency responses may then include assessment of appropriate corrective measures for the area of recontamination (e.g., increased monitoring, placement of additional residuals cover).

4 CONFIRMATION MONITORING

Confirmation monitoring will be initiated in the year following completion of construction in Phase 1 Site areas. Confirmation monitoring activities described in this section include: 1) physical integrity monitoring in capped areas; 2) surface sediment quality monitoring in capping, dredging, and MNR areas; 3) subsurface sediment quality monitoring in MNR areas; and 4) porewater monitoring within Unit 4 (Log Pond). This section also describes supplemental monitoring to be performed following extreme events. Refer to Section 5 for confirmation monitoring activities involving collection and analysis of crab and clam tissue, fish tissue, and co-located sediment porewater samples.

4.1 Physical Integrity Monitoring

Long-term monitoring of cap surfaces will be performed using bathymetric surveys to verify that cap integrity is being maintained, and that cap performance is not adversely affected by natural and anthropogenic forces.

Physical integrity monitoring will include bathymetric surveys in Phase 1 capping areas (Units 2A, 3B, 4, and the transition cap between Unit 1C and Unit 2C). Bathymetric surveys will also be performed to document conditions in the natural recovery area at the head of Whatcom Waterway (Unit 3A). Monitoring will occur at years 1, 3, 5, and 10 following completion of Phase 1 construction. Visual monitoring will also be performed in upper shoreline areas of the Inner Waterway (Units 2A and 3B) and the Log Pond (Unit 4) in parallel with the bathymetric surveys. The visual inspections will be used to document the condition of the bank armoring materials and exposed portions of containment structures above the line of Ordinary High Water.

Additional monitoring events may be performed, depending on the outcome of initial monitoring events (i.e., if the engineered caps have not been shown to be physically stable).

4.1.1 Bathymetric Survey Methods

Bathymetric surveying will be conducted in the units specified above to document changes in mudline elevations and compare current mudline elevations to those of previous surveys. Specifically, each confirmation survey will involve replication of prior survey transects. The

same transects will be used such that the mudline elevations along pre-defined transects can be compared over time. Surveys will be conducted by a licensed surveyor and will meet or exceed the accuracy standards for a USACE Navigation and Dredging Support Survey as referenced in the USACE Hydrographic Survey Manual, April 2004 Revision (USACE 2004). Additional details about bathymetric surveys will be defined in the project SAP.

4.1.2 Visual Inspection Methods

Visual inspections shall be used in conjunction with bathymetric surveys to assess the condition of upper bank areas along the north and south shorelines of the Whatcom Waterway (Units 2A and 3B) and in the Log Pond (Unit 4). Inspections shall include assessment of each of the following:

- Condition of cap and armor material above the line of Ordinary High Water and the top of bank
- Condition of exposed portions of containment structures and bulkheads
- Indications of settlement, seepage, or other conditions outside of the anticipated conditions

The project SAP will define specific locations of visual surveys to be performed in parallel with the bathymetric surveys, including a survey inspection form.

4.1.3 Contingency Response Actions

If significant reductions in mudline elevations are observed in engineered cap areas, then contingency response measures will include the collection of additional data (i.e., multi-beam bathymetry, direct inspection of caps, and sediment cores to confirm cap depth) to assess whether the elevation changes indicate potential cap erosion. (Elevation changes can also be caused by settling and consolidation which does not impact cap integrity.) In the event that cap erosion is identified, the extent of the cap erosion will be defined along with potentially applicable control options. Appropriate corrective measures will be discussed with Ecology and implemented as necessary to protect cap integrity. These corrective measures could include implementing changes to institutional controls or operating procedures, placement of additional cap material or armoring, or modifications to cap elevation through placement of new material.

If visual assessments indicate potential erosion of upper bank cap or armor material, or potential damage to containment structures, then contingency response measures may include the collection of follow-up information to assess the nature of any potential erosion or damage. Appropriate corrective measures will be discussed with Ecology and implemented as necessary to protect cap and containment structure integrity. These corrective measures could include implementing changes to institutional controls or operating procedures, placement of additional cap material or armoring, modifications to cap elevation through placement of new material or repair, or modification or replacement of the containment structures.

4.2 Surface Sediment Quality Monitoring

Surface sediment quality will be monitored to document the effectiveness of remediation in maintaining cleanup levels for site contaminants. Monitoring will also include testing for D/F compounds which are subject to ongoing and future source control measures throughout Bellingham Bay. Surface sediment will be collected from the top 12 cm of sediment at 11 locations within the Phase 1 remediation areas and 11 MNR locations throughout Bellingham Bay. Locations of the compliance monitoring surface sampling stations are depicted on Figure 3 and specified in Table 2. Consistent with Ecology expectations, surface sediment quality monitoring locations include sample stations placed near larger stormwater outfalls discharging to MNR or Phase 1 site areas (excepting outfall locations that discharge within areas subject to ongoing investigation as part of the I&J Waterway, RG Haley, Cornwall Avenue Landfill, or South State Street MGP sites).

Compliance monitoring will take place during Years 1, 3, 5, 10, 20, and 30 following completion of Phase I construction and will be conducted in the summer. Sampling will include collection of archived materials for bioassay testing in the event that site contaminants are detected in excess of the SQS.

4.2.1 Sampling and Analysis Approach

Surface sediment from all locations will be analyzed for SMS testing parameters including total solids, total organic carbon, metals, and SVOCs as presented in Table 2. Selected surface

sediment locations (more than 50% of monitoring locations) will be analyzed for D/Fs to supplement ongoing bay-wide monitoring programs being developed by Ecology.

Surface sediment (0 to 12 cm) will be collected at 22 stations using a hydraulic Van Veen or similar, sampling device. The methods and QA/QC procedures for surface sampling will be conducted as described in the project SAP, to be submitted to Ecology for review and approval prior to initiation of monitoring activities. Sufficient volume will be collected for sediment chemical analyses, potential re-analyses, and contingent bioassay tests. Contingent bioassay tests will be performed at stations where the SQS is exceeded for mercury or other compounds.

As requested by Ecology, the sample station located adjacent to the C Street outfall (Station P1CM-11-SS) will be monitored at both the 0 to 2 cm sampling interval, as well as the 0 to 12 cm interval described above. Chemical testing for the 0 to 2 cm interval will be the same as that for the 0 to 12 cm interval. The 0 to 12 cm sampling interval will be used to assess compliance with cleanup levels. The 0 to 2 cm sampling interval will provide additional information regarding potential trends in recent sedimentation.

Surface sediment results for the 0 to 12 cm sampling intervals will be compared to marine SQS after each round of monitoring. Mercury concentrations in these surface sediment samples will also be compared to the bioaccumulation screening level of 1.2 mg/kg.

4.2.2 Contingency Response Actions

If mercury or other site-associated contaminants exceed their respective SQS criteria in the 0 to 12 cm sample intervals, contingent bioassay testing will be initiated as described in Section 3.2.3 above.

If mercury exceeds the BSL, or if bioassay tests demonstrate significant toxicity in the 0 to 12 cm sampling intervals, contingency response measures will be evaluated and discussed with Ecology. Initial actions would include sampling to verify results and the extent of exceedances. Contingency responses may then include assessment of appropriate corrective measures for the area of recontamination (e.g., increased monitoring, targeted source control measures, modifications to institutional controls or operating procedures, augmentation or

repair of sediment caps, or additional dredging). If this evaluation indicates potential recontamination from stormwater sources, additional coordination will be conducted with Ecology and other parties responsible for stormwater management in order to determine appropriate response measures.

4.3 Subsurface Sediment Quality Monitoring

Subsurface sediment quality will be used in MNR areas to assess changes over time in the thickness of clean sediment cover overlying subsurface sediments containing elevated mercury concentrations. Subsurface sediment collection will be performed within three units and will be co-located with MNR surface sediment stations. Locations of the compliance monitoring subsurface sampling stations are depicted on Figure 3 (WW-MNR-03, WW-MNR-04, WW-MNR-07, and WW-MNR-08) and Table 2.

Subsurface sediment compliance monitoring will take place during Years 1, 10, 20, and 30 following completion of Phase I construction. Table 2 lists the sampling locations, sample depths, and analyses.

4.3.1 Sampling and Analysis Approach

Subsurface sediment will be collected using a vibratory core sampler (vibracore) penetrated to three feet below mudline. Sediment cores will be examined visually for evidence of deposition/erosion and sampled in 0.5-foot sections for total mercury analysis. Collection and processing of sediment cores will follow the procedures outlined in the project SAP.

4.3.2 Contingency Response Actions

Results of testing will be used to verify and update information on sediment deposition rates and assess any upward migration of mercury. Fluctuations in deposition rates may occur due to changes in regional sediment inputs (e.g., changes in runoff and sedimentation within the Nooksack River). Observed changes will be documented and evaluated along with surface sediment compliance monitoring data for the MNR areas. If surface sediment monitoring data indicate that MNR is not maintaining compliance with cleanup levels, then contingency response measures will be implemented as described in Section 4.2.2.

4.4 Porewater (Mini-Piezometer) Water Quality Monitoring

Porewater sampling will be used within Unit 4 (Log Pond) to assess groundwater as a source of potential sediment recontamination. This monitoring will be performed at two locations (WW-P1CM-03 and WW-P1CM-04) shown in Figure 3 and Table 2. These locations are between mean higher high water (MHHW) and mean lower low water (MLLW) adjacent to the GP West site containing elevated mercury concentrations in nearshore groundwater. Sampling will be performed to verify that porewater mercury concentrations in cap surface layers remain below those concentrations that could cause recontamination of surface sediments in excess of the SQS.

4.4.1 Frequency

Monitoring will be conducted during Years 1, 3, 5, and 10 after completion of the remedial action in Phase 1 areas. Sampling will be conducted during summer low tides, with an estimated tide elevation between MHHW and MLLW.

4.4.2 Sampling and Analysis Approach

Porewater sampling will be conducted using mini piezometers consisting of a 2-inch-long screen section positioned below the sediment surface. Samplers will be deployed by divers and sampled using a peristaltic pump or similar type pumping device. The porewater sampling methodology will be performed consistent with the porewater sampling methods used during the Whatcom Waterway pre-remedial design investigation conducted in 2008 as described in detail in the Pre-Remedial Design Investigation Work Plan (Anchor Environmental 2008). Porewater sampling will occur at the end of an outgoing (ebb) tide cycle to characterize porewater under worst case conditions.

Both total and dissolved low-level mercury as well as routine field parameters will be monitored at the well points in accordance with DQOs and performance criteria for these analytes as described in the project SAP.

4.4.3 Contingency Response Actions

After receipt of each round of monitoring, data will be evaluated to verify that porewater mercury concentrations remain below concentrations that would be expected to be

protective of sediment quality at the SQS. This evaluation will be performed using the site-specific mercury partitioning coefficient of 6,900 (log Kd of 3.8) and the current sediment SQS of 0.41 mg/kg (Aspect and Anchor QEA 2011). Using these assumptions, the dissolved total mercury concentrations below 0.0594 micrograms per liter (µg/L) in sediment porewater are expected to protect surface sediment quality at the SQS (Aspect and Anchor QEA 2011). If elevated porewater mercury concentrations are measured, these will be reviewed with Ecology along with available sediment monitoring data and groundwater monitoring data available for the adjacent GP West site. Additional porewater, groundwater, or surface sediment sampling may be performed to assist in data interpretation. If findings indicate that groundwater represents an ongoing potential source of recontamination, then potentially relevant source control measures will be identified. Contingency response measures could include groundwater treatment, diversion, or extraction. Such measures would be implemented as part of the GP West site cleanup or contingency response measures.

4.5 Supplemental Monitoring Following Extreme Events

In addition to the monitoring intervals prescribed in this document, supplemental monitoring may be performed after extreme events (e.g., significant earthquake events or tsunamis) or visible damage to the cap where necessary to verify that the cleanup action has not been adversely affected. The need for and the extent of supplemental monitoring will be identified by the Port in consultation with Ecology; supplemental monitoring activities could include some of the monitoring program elements described in this plan where necessary. For example, if a significant earthquake event caused sediment bed elevation changes within sediment cap and natural recovery areas, supplemental bathymetric surveys, shoreline inspections and/or surface sediment testing may be appropriate to ensure protectiveness and evaluate the need for additional contingency response measures. If supplemental monitoring activities are required, these will be specified in an addendum to this CMCRP, and the findings will be communicated to Ecology in a supplemental monitoring report.

5 TISSUE AND CO-LOCATED POREWATER MONITORING

This section presents tissue and co-located porewater monitoring activities to be conducted as part of performance and confirmation monitoring activities. This work includes the collection and analyses of crab tissue, clam tissue, sediment porewater, and fish tissue to meet the Project goals listed for each data type, as summarized in Table 3. Further details including the frequency, sampling and analysis approach, data analysis, and contingency response actions for each data type are provided in subsequent portions of this section, Figures 4 and 5, and Tables 4 and 5.

5.1 Crab Tissue Monitoring

Monitoring for mercury in Dungeness crab will be performed during both performance monitoring and confirmation monitoring. Tissue collection will include the locations and methods defined in Figures 4 and 5 and in Table 4.

Monitoring will be performed initially in Year 0, immediately following construction of the cleanup action in Phase 1 Site areas. Monitoring may be repeated during Years 1, 3, 5, and 10 if crab mercury concentrations are significantly elevated in comparison to crab tissue collected from a clean reference site. After each monitoring event, the crab tissue data will be reviewed. Monitoring will be discontinued once Site tissue concentrations are not statistically significantly greater than those in reference areas.

5.1.1 Frequency

Performance monitoring will be conducted in the spring and summer (from March 1 through July 15) immediately following remedial action activities in the Phase 1 Site areas (Year 0). Confirmation monitoring will include additional contingent monitoring events (at Year 1), as well as monitoring in Years 3, 5, and 10 following completion of construction in Phase 1 site areas. Monitoring will be discontinued once Site tissue concentrations are not significantly greater than those in reference areas, as confirmed using a statistical comparison (e.g., t-test).

5.1.2 Sampling and Analysis Approach

Performance tissue monitoring will be conducted using mature, harvestable, male Dungeness crabs. Crab will be collected using crab pots. Sampling locations within the Site include WW-MNR-03, WW-MNR-04, and WW-MNR-07, and reference areas in Samish Bay include WW-REF-01 and WW-REF-05. Coordinates are provided in Table 4 and sampling locations are shown in Figures 4 and 5.

Planned tissue analyses will be performed on test composites prepared using three discrete crab muscle tissue samples collected at each sampling station. Initial tissue analyses will include three Site samples and two reference area samples. A representative portion of each tissue composite sample will be submitted for mercury analysis. Individual crab tissue samples used to create the composite samples will be archived in case additional analyses are necessary.

Additional archive composite samples will also be prepared in the manner described above for potential analysis. These samples will include two Site samples collected from crab harvested at stations WW-MNR-03, WW-MNR-04, and WW-MNR-07 and three reference areas samples harvested from stations WW-REF-01 and WW-REF-05. These Site and reference area samples will be archived at the laboratory. These composite samples will be analyzed if necessary to support statistical comparison between the Site and reference area.

All sampling will comply with a scientific collection permit, which will be obtained from WDFW prior to collection of crab.

5.1.3 Data Analysis

Data analysis will include a concentration trend analysis of mercury in tissue concentrations between the Site and reference areas. This comparison will be performed using a statistical t-test. Detailed procedures for performing statistical analysis will be defined in the SAP.

During Years 0 and 1, mercury concentrations in crabs collected from the Site may be elevated over recent historical concentrations due to construction-related sediment disturbance. Long-term tissue concentrations (i.e., Years 3, 5, and 10) are expected to

continue to decrease due to the reduction in mercury concentrations associated with the cleanup action and ongoing natural recovery processes.

If initial testing results during Year 0 indicate tissue concentrations appear greater than tissue concentrations at the reference area, confirmation monitoring will be performed in subsequent years, including up to four monitoring events (i.e., at Years 1, 3, 5, and 10). If concentrations appear the same between the Site and the clean reference area during a monitoring event, archived crab tissue samples will be analyzed to provide a total of five Site and five reference area samples from that monitoring event. A statistical comparison will then be performed. Monitoring will be discontinued once Site tissue concentrations are not significantly greater than those in reference areas.

5.1.4 Contingency Response Actions

If potential data outliers are noted in data from the Site or reference areas, then analysis of archived individual tissue samples used to prepare each composite will be analyzed to verify sample results.

If crab tissue mercury concentrations at the Site are not statistically significantly greater than those measured at reference areas, crab monitoring will be discontinued.

If crab tissue mercury concentrations measured at the Site during Year 0 and/or Year 1 are statistically significantly elevated over recent historical concentrations, then these findings will be used along with subsequent monitoring events to estimate the level and duration of construction-related impacts on crab tissue quality.

If mercury levels in crabs collected from the Site during Years 3, 5, and 10 remain significantly elevated above recent historical crab tissue concentrations from the Site, these findings will be assessed in conjunction with surface sediment mercury concentration data and trends to determine the potential causes of the elevated tissue results. Contingency response actions for such elevated tissue concentrations may include: 1) expansion of the tissue testing program; or 2) if results appear to be caused by Site-related sediment contamination in excess of cleanup standards, identification of potentially applicable and

practicable source control measures, and/or implementation of contingency response measures to address areas of impacted sediments in cap or natural recovery areas as discussed in Section 4.2.2.

5.2 Clam Tissue Monitoring

Clam tissue monitoring will be conducted as part of performance monitoring and confirmation monitoring. Tissue collection will include the locations and methods defined in Figures 4 and 5 and in Table 4.

Monitoring will use a caged clam study approach at five stations within the Site (Figure 4) and five clean reference areas (Figure 5). Performance tissue monitoring for mercury will be conducted using caged clams placed immediately following remedial action activities (Year 0). If results of testing in Year 0 indicate tissue concentrations statistically significantly greater than at the reference site, confirmation monitoring will be performed in subsequent years, including up to four monitoring events (Years 1, 3, 5, and 10). After each event, the clam monitoring data will be reviewed. Monitoring will be discontinued once Site tissue concentrations are not significantly greater than those in reference areas as confirmed using a statistical comparison (e.g., t-test).

5.2.1 Frequency

Performance monitoring will be conducted immediately following remedial action activities (Year 0). This monitoring will take place during the period from March 1 to July 15 after completion of cleanup actions within the Phase 1 Site areas. If necessary, confirmation monitoring will be conducted during Years 1, 3, 5, and 10. Monitoring will be discontinued once Site tissue concentrations are not significantly greater than those in reference areas as confirmed using a statistical comparison.

5.2.2 Sampling and Analysis Approach

Performance and confirmation monitoring will be conducted using clams. The target clam species proposed for monitoring is *Venerupis japonica* (manila clam). *V. japonica* is recommended for in situ bioaccumulation testing using cages in both the ASTM Method E2122-02 and the *Draft Sediment Cleanup Users Manual (SCUM) II* guidance (Ecology 2013). In

addition, this species is local to the Pacific Northwest and is representative of regional edible clam contaminant concentrations and associated human health exposures because it accounts for 50% of the annual commercial landings of hard-shell clams in Washington State (WDFW 2014).

Sampling locations include five locations within the Site (WW-MNR-03, WW-MNR-04, WW-MNR-07, WW-P1CM-01, and WW-P1CM-07) and five reference areas in Samish Bay (WW-REF-01, WW-REF-02, WW-REF-03, WW-REF-04, and WW-REF-05). Coordinates are provided in Table 4 and sampling locations are shown in Figures 4 and 5.

Caged clams will be placed in cages at each sampling location. The design of the clam cages will be based on ASTM International (ASTM) Method E2122-02. The cages will be placed by divers and positioned so that the cages are pushed slightly into the sediment surface. The cages will be anchored in place and staked to facilitate identification and recovery. Three cages will be deployed at each station to optimize the likelihood that sufficient tissue can be collected for chemical analysis. This is necessary because caged clam recovery may be low due to predation or other causes of low survival, and cages can be lost due to burial or other disturbance.

Cages will be deployed for a minimum of 30 days to allow for equilibrium with the surrounding environment. Following the exposure period, clams will be retrieved, depurated (24 hours), and shucked. Soft body tissue samples will be composited from each cage separately and then an overall station composite will be created and analyzed for mercury. For each station, clam tissue composite samples from each of the three cages deployed will be archived in the event additional analyses are necessary.

5.2.3 Data Analysis

Tissue mercury concentrations measured in clams incubated within the Site sediments will be compared to those measured in samples placed at reference locations. This comparison will be performed using a statistical t-test. Detailed procedures for performing statistical analysis will be defined in the SAP. If Site tissue concentrations are statistically significantly greater than reference area tissue concentrations, the incremental tissue concentrations associated with the Site will be estimated.

If results of testing in Year 0 indicate tissue concentrations statistically significantly greater than tissue concentrations at the reference area, confirmation monitoring will be performed in subsequent years, including up to four monitoring events (i.e., at Years 1, 3, 5, and 10). After each event, the clam monitoring data will be reviewed. Monitoring will be discontinued once Site tissue concentrations are not significantly greater than those in reference areas.

5.2.4 Contingency Response Actions

If testing is unsuccessful due to predation or other field implementation problems, then alternative species may be employed during subsequent testing years. These could include use of a different species such as the mussel *Mytilus* sp., which has been widely tested in caging studies at many cleanup sites.

If potential data outliers are noted in the composite results from the Site or reference areas, then analysis of archived individual tissue samples used to prepare each composite will be analyzed to verify sample results.

If clam tissue mercury concentrations at the Site are not statistically significantly greater than those measured at reference areas, clam monitoring will be discontinued.

If clam tissue mercury concentrations measured at the Site during Year 0 are statistically significantly elevated over tissue concentrations at the reference area, these findings will be used along with subsequent monitoring events to estimate the level and duration of construction-related impacts on clam tissue quality.

If mercury levels measured in clam tissue collected from the Site during Years 3, 5, and 10 remain significantly greater than recent historical tissue concentrations, these data will be assessed in conjunction with surface sediment and porewater mercury concentrations and trends to assess causation for the elevated clam tissue results. Contingency response actions may include: 1) expansion of the tissue testing program; or 2) if results appear to be caused by Site-related sediment contamination in excess of cleanup standards, identification of potentially applicable and practicable source control measures, and/or implementation of

contingency response measures to address areas of impacted sediments in cap or natural recovery areas as discussed in Section 4.2.2.

5.3 Co-Located Porewater Monitoring

Section 4.4 includes confirmation porewater monitoring for mercury within Unit 4 (Log Pond). In addition, supplemental porewater monitoring will be performed at the locations where clam tissue monitoring is to be performed. That work will include five additional monitoring locations within the Site and five locations within clean reference areas of Samish Bay.

5.3.1 Frequency

Porewater monitoring will be conducted in parallel with clam tissue sampling immediately following remedial action activities (Year 0). This monitoring will take place during the period from March 1 to July 15 after completion of cleanup actions within the Phase 1 Site areas. If clam monitoring is performed in subsequent years (i.e., Years 1, 3, 5, and 10), then porewater monitoring will be conducted at these same locations and frequencies. This will allow the porewater data to be used to help interpret the clam tissue data.

5.3.2 Sampling and Analysis Approach

Performance monitoring will be conducted at five locations co-located with clam tissue monitoring within the Site (WW-MNR-03, WW-MNR-04, WW-MNR-07, WW-P1CM-01, and WW-P1CM-07) and five reference areas in Samish Bay (WW-REF-01, WW-REF-02, WW-REF-03, WW-REF-04, and WW-REF-05). Coordinates are provided in Table 4 and sampling locations are shown in Figures 4 and 5. Porewater sampling will be conducted using diver-assisted push point mini-piezometers, consisting of a 2-inch-long screen section positioned below the sediment surface. Samplers will be deployed by divers and sampled using a peristaltic pump or similar type pumping device. The porewater sampling methodology will be performed consistent with the porewater sampling methods used during the Whatcom Waterway pre-remedial design investigation conducted in 2008 as described in detail in the Pre-Remedial Design Investigation Work Plan (Anchor Environmental 2008).

Both total and dissolved (field filtered) low-level mercury, as well as routine field water quality parameters, will be monitored at the porewater locations in accordance with DQOs and performance criteria for these analytes, which will be described in the Project SAP.

5.3.3 Data Analysis

Analytical results from Site porewater samples will be statistically compared to concentrations measured in samples collected from the reference locations. This comparison will be performed using a statistical t-test. Detailed procedures for performing statistical analysis will be defined in the SAP.

Porewater mercury concentrations will provide additional information on the bioavailability of mercury and may support the interpretation of clam tissue data.

5.3.4 Contingency Response Actions

Based on previous findings of porewater testing conducted during the pre-remedial design investigations (Anchor QEA 2010), mercury concentrations within the Site are not expected to be significant. However, porewater monitoring will be conducted during each year when clam monitoring is performed.

If elevated porewater mercury concentrations are measured, these will be reviewed with Ecology along with available sediment monitoring data and clam tissue data to assess its potential significance. Contingency response measures for elevated clam tissue mercury concentrations are listed in Section 5.3.3.

5.4 Benthic Fish Tissue Monitoring

Confirmation monitoring will include measurement of mercury in benthic fish tissue at Year 3 during the spring or early summer (i.e., between March 1 and July 15). If tissue mercury concentrations are statistically significantly elevated above reference area tissue concentrations during Year 3 monitoring, fish tissue monitoring for mercury will be repeated in Year 5 and potentially during Year 10. After each event, the fish monitoring data will be reviewed. Monitoring will be discontinued once mercury concentrations in benthic fish

tissue collected from the Site are not significantly greater than those in reference areas as confirmed using a statistical comparison (e.g., t-test).

The monitoring will consist of field collection of fish using an otter trawl and will occur both at the Site and in the Samish Bay reference area. The primary benthic fish proposed for tissue sampling is English sole (*Parophrys vetulus;* family: Pleuronectidae), a common marine/estuarine benthivorous flatfish that prefers soft mud and sand substrates. Other flatfish in the Pleuronectidae family as well as starry flounder (*Platichthys stellatus*), another benthivorous flatfish that is common in estuaries, will be collected as alternative species if sufficient abundance of English sole cannot be collected. These flatfish species have similar trophic levels and can be exposed to chemicals in sediment through diet and direct contact with sediment.

The three trawls proposed for fish collection will be used to capture a representative sampling of fish exposed to the Site and reference area sediments. The home range of English sole was estimated in the Remedial Investigation/Feasibility Study (Hart Crowser 2000; RETEC 2006a) to be approximately 9 square kilometers. This is greater than the current area of the Site (approximately 3 square kilometers). Therefore, the five tissue composites representative of the Site and reference areas may include fish collected from any of the three trawl lines within the Site (Figure 4) or Samish Bay areas (Figure 5), respectively.[1]

5.4.1 Frequency

Confirmation monitoring will be conducted at Year 3. Benthic fish will be collected during the period from March through July.

If results from Year 3 confirmation monitoring demonstrate that tissue mercury concentrations are statistically significantly elevated at the Site in comparison to the

[1] Based on a detailed review of the available data on English sole life history, a 9-square kilometer home range (approximately 1.7-kilometer radius) estimate for English sole was used in Puget Sound to develop sediment disposal regulations for open-water areas (PSDDA 1988). The Puget Sound Dredged Disposal Authority (PSDDA) documents describe this value as a conservatively low estimate of the normal home range area for bottom fish in open-water regions.

reference area, then additional fish tissue collection will be performed, including potentially during Years 5, and 10 or until Site conditions are not statistically significantly elevated in comparison to the reference area.

5.4.2 Sampling and Analysis Approach

Otter trawls will be used to collect the target benthic fish species at three locations within the Site (passing through stations WW-MNR-03, WW-MNR-04, and WW-MNR-07) and at three locations within the Samish Bay reference area (passing through stations WW-REF-01, WW-REF-03, and WW-REF-05). Approximate trawl line locations are shown in Figures 4 and 5. Final trawl locations will be determined in coordination with the captain of the sampling vessel, and additional trawls may be conducted to acquire sufficient numbers of fish.

Benthic fish will be collected using a high-rise otter trawl. The Site trawl samples will be collected first so that it is possible to match the fish sample size classes with those collected from the Samish Bay reference area. As required by WDFW, specimens of non-target species will be identified to the lowest practical taxon and their numbers estimated. Special care will be taken to return non-target organisms to the water quickly, with minimal handling. Only English sole, pleuronectid flatfish, and starry founder will be retained.

Specimens of target species that do not meet size requirements will be counted, their lengths will be approximated, and they will be returned to the water. Target fish will be temporarily held in a live well on the boat until all three trawls are completed. Individual fish of the selected target species will be rinsed in water from the collection location to remove any foreign material from the external surface. Target fish will be measured for length and physically dispatched after wrapping the fish in aluminum foil. Each fish will be placed in a resealable plastic bag and placed on ice. A unique sample ID tag will be placed into the bag and the sample ID will also be written on the outside of the bag.

Five composite samples will be prepared for each test area (e.g., Whatcom Waterway or Samish Bay). English sole can live more than 10 years, and fish age and size can affect tissue chemical concentrations (Hart Crowser 2000). To help account for this confounding factor, the composite samples will be created to contain fish of similar sizes. The composite samples

will be prepared at the laboratory after review of the species and size data. The goal is to obtain enough fish to create five composite samples of five fish each. If fewer than 25 fish are collected at the Site or reference area, composites will be prepared using the available fish. The composite samples will consist of skin-off fillets prepared in the laboratory.

Laboratory analysis of the samples will consist of percent moisture, percent lipid content, and total mercury. Year 3 fish tissue samples will also be analyzed for dioxin/furan concentrations. All methods will be in accordance with Ecology and PSEP protocols. All sampling will comply with a scientific collection permit, which will be obtained from WDFW prior to collection of fish.

5.4.3 Data Analysis

Data analysis will include consideration of potential confounding factors. There are two confounding factors that apply to interpreting benthic fish data:

- **Variations with size and age:** Larger fish tend to have greater tissue burdens (Hart Crowser 2000). This confounding factor can be minimized by constructing fish tissue samples to group fish by size, to the extent practical. This has been considered in developing the sampling program design described above.
- **Timing of fish exposures:** Because the target benthic fish species live upwards of 10 years, fish collected during each monitoring event will express tissue concentrations incorporating both current and historical exposures. The influence of historical exposures will tend to decrease through time.

Assuming that fish of the same species and approximate size range can be collected from each area, fish tissue concentrations measured in samples collected from the Site will be compared to those from the reference area. Statistics for comparing fish from Site and reference areas will include using a paired t-test. If fish from multiple size classes were analyzed, the slopes and intercepts of the Site and reference area size-concentration regression lines will be compared. Detailed procedures for performing statistical analysis will be defined in the SAP.

If monitoring is performed at multiple time periods (e.g., Years 3, 5, and 10), then mercury concentration trends will be analyzed over time to the extent practical.

After each monitoring event, the data will be reviewed. Monitoring will be discontinued once mercury concentrations in benthic fish tissue collected from the Site are not statistically significantly greater than tissue concentrations measured in fish collected from reference areas.

5.4.4 Contingency Response Actions

If potential data outliers are noted in the composite fish tissue sampling results from the Site or reference areas, then analysis of archived individual tissue samples used to prepare each composite will be analyzed to verify sample results.

If benthic fish tissue mercury concentrations at the Site are not statistically significantly greater than those measured at reference areas, benthic fish monitoring will be discontinued.

If benthic fish tissue concentrations measured at the Site during Year 3 are statistically significantly elevated over reference area concentrations, then additional fish tissue collection may be performed during Years 5 and 10. If mercury concentrations measured in benthic fish tissue collected from the Site remain elevated over recent historical fish tissue mercury concentrations during Years 3, 5, and 10, these will be assessed in conjunction with surface sediment mercury concentration data and trends to determine the potential causes of the elevated tissue results. Contingency response actions for elevated tissue concentrations may include: 1) expansion of the tissue testing program; or 2) if results appear to be caused by Site-related sediment contamination in excess of cleanup standards, identification of potentially applicable and practicable source control measures, and/or implementation of contingency response measures to address areas of impacted sediments in cap or natural recovery areas as discussed in Section 4.2.2.

5.5 Pelagic Fish Tissue Monitoring

Pelagic fish, including salmon, may occur near the Site. However, the tissue quality in pelagic fish species is typically influenced less by localized sediment contamination than for benthic fish or shellfish due to differences in lifecycle, on-Site residence time, home range, and foraging behavior.

The home range of salmon species is very extensive relative to the localized nature of the Whatcom Waterway Site. In addition, historical comparisons of fish returning to the Nooksack River versus other regional rivers have found no difference in tissue mercury concentrations (Hart Crowser 2000).

At other Puget Sound cleanup sites, such as the Lower Duwamish Waterway (LDW) in Seattle, it was determined that returning adult salmon were exposed to site-related contaminants for a relatively short duration (de minimus on-Site residence time) as juveniles during outmigration and that the contribution of this short-term exposure to total adult body burdens is likely insignificant (O'Neill et al. 1998). Adult salmon were not considered receptors of concern for the LDW risk assessment conducted under the joint oversight of the U.S. Environmental Protection Agency and Ecology.

Based on these considerations and the similarity of salmon tissue mercury concentrations between fish from the Nooksack River and other watersheds (Hart Crowser 2000), the analysis of pelagic fish tissue will be implemented only if the Year 3 results of the benthic fish tissue monitoring show mercury concentrations statistically significantly elevated above reference area benthic fish tissue concentrations. If concentrations in benthic fish tissue are significantly elevated, Ecology may require monitoring of salmon tissue if that information (in conjunction with available data regarding the lifecycle, home range, and feeding behavior of salmon) suggests that the Site conditions could result in a potentially significant and measurable impact on pelagic fish tissue mercury concentrations.

If monitoring of salmon is performed, the sampling would consist of the collection of salmon using hook and line or net methods (i.e., purse seine). The WDFW SalmonScape[2] tool documents the presence of fall Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), and sockeye salmon (*O. nerka*) in the Lummi River, the Nooksack River, Whatcom Creek, and the Samish River. The selected species and sampling method would depend on fish availability and location at the time of sampling. Testing of sockeye salmon is preferred because these salmon make up a significant portion of the diets of local tribal

[2] SalmonScape is available at http://apps.wdfw.wa.gov/salmonscape/map.html.

seafood consumers as reported during recent surveys conducted by the Lummi Nation, and potential bycatch of Chinook salmon can be minimized.

5.5.1 Frequency

Monitoring of pelagic fish tissue will be conducted at up to three monitoring events, potentially including Years 3, 5, and 10. Confirmation monitoring of pelagic fish during Year 3 will be conducted if benthic fish tissue mercury concentrations during Year 3 are found to be statistically significantly elevated above reference area benthic fish tissue concentrations, and if Ecology determines that the benthic tissue concentrations suggest that the Site could significantly impact salmon tissue mercury concentrations (in consideration of available data regarding the lifecycle, home range, and feeding behavior of salmon). The determination of the need for pelagic monitoring in subsequent years will also be made relative to benthic fish tissue results. If benthic fish monitoring is terminated because tissue mercury concentrations from the Site are not statistically significantly greater than reference area tissue mercury concentrations, then pelagic fish monitoring will also be discontinued.

5.5.2 Sampling and Analysis Approach

Pelagic fish tissue monitoring, if performed, will be conducted by collecting five tissue composites from salmon collected within the Site. Five composite samples of salmon tissue will be similarly collected from Samish Bay.

Five composite samples from each area (Whatcom Waterway and Samish Bay) will be prepared by combining tissue from each of three fish. If fewer than 15 fish are collected at the Site or reference area, composites will be prepared using the available fish. The composite samples will consist of skin-off fillets prepared in the laboratory.

Laboratory analysis of the samples will consist of percent moisture, percent lipid content, and total mercury. All methods will be in accordance with Ecology and PSEP protocols.

All work will be conducted pursuant to the requirements of a scientific collection permit obtained from WDFW prior to collection of fish.

5.5.3 Data Analysis

Fish tissue mercury concentrations measured in samples collected at the Site will be compared to those from reference locations using a weight of evidence approach that applies direct comparison (i.e., graphical comparisons of monitoring data and supporting historical and regional data) and a statistical comparison. A t-test statistic would be used to compare fish from Site and reference areas. Literature data from other pelagic fish monitoring studies in Washington may also be considered. Detailed procedures for performing statistical analysis will be defined in the SAP.

If it is determined that additional (confirmation) monitoring events are necessary, mercury concentration trends will be analyzed.

5.5.4 Contingency Response Actions

Based on previous evaluations of salmon tissue mercury data from the Nooksack River and other watersheds and the understanding of the salmon home range, on-Site residence time, lifecycle, and foraging behavior, it is extremely unlikely that Site conditions would produce a measurable impact on salmon tissue mercury concentrations. If Site tissue concentrations are statistically significantly greater than reference area tissue concentrations, then the findings will be assessed in conjunction with the benthic fish, crab, clam, and surface sediment mercury concentrations and trends to determine the potential causes of the elevated tissue results.

Contingency response actions to elevated mercury concentrations in pelagic fish tissue may include: 1) expansion of the tissue testing program; or 2) if results appear to be caused by Site-related sediment contamination in excess of cleanup standards, identification of potentially applicable and practicable source control measures, and/or implementation of contingency response measures to address areas of impacted sediments in cap or natural recovery areas as discussed in Section 4.2.2.

6 REPORTING

All monitoring data from a given year will be summarized in a compliance monitoring report to be prepared and submitted to Ecology. Monitoring data will also be entered into EIM. The report will include copies of final survey data and any validated analytical data and will include the following sections:

- Site background and context for the current report
- Monitoring objective(s) and methods
- Method deviations in sampling and/or analysis from the Phase 1 CMCRP
- Results of monitoring, including data validation, bathymetric survey results, and sediment, porewater and/or tissue testing results
- Comparison of monitoring results to site cleanup levels and previous testing results
- Identification of any areas of concern, including any recommended contingency response measures or areas for supplemental testing

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TABLES

Table 1

Performance Monitoring Sampling Design

Site Unit	Station ID	Proposed Coordinates[1]		Sample Method	Surface Sampling	Additional Subsurface Testing	Sample ID	Analytical Testing	Archive[3]
		Easting	Northing					Chemistry[2]	
Unit 1C Sampling - After Dredging and Before Placement of Residuals Cover									
1C	WW-P1PM-01	1239124.4	640803.8	Van Veen grab	Apparent Residuals Layer (Typically 0-6 cm)	Undisturbed native sediment (10-20 cm below apparent residuals layer)	WW-P1PM-01-SS	TS, TOC, Mercury, Dioxin/Furans	8-oz.
	WW-P1PM-02	1239234.3	640694.7	Van Veen grab	Apparent Residuals Layer (Typically 0-6 cm)	Undisturbed native sediment (10-20 cm below apparent residuals layer)	WW-P1PM-02-SS	TS, TOC, Mercury, Dioxin/Furans	8-oz.
	WW-P1PM-03	1239478.9	641143.9	Van Veen grab	Apparent Residuals Layer (Typically 0-6 cm)	Undisturbed native sediment (10-20 cm below apparent residuals layer)	WW-P1PM-03-SS	TS, TOC, Mercury, Dioxin/Furans	8-oz.
	WW-P1PM-04	1239582.0	641030.2	Van Veen grab	Apparent Residuals Layer (Typically 0-6 cm)	Undisturbed native sediment (10-20 cm below apparent residuals layer)	WW-P1PM-02-SS	TS, TOC, Mercury, Dioxin/Furans	8-oz.
	WW-P1PM-05	1239813.3	641468.3	Van Veen grab	Apparent Residuals Layer (Typically 0-6 cm)	Undisturbed native sediment (10-20 cm below apparent residuals layer)	WW-P1PM-03-SS	TS, TOC, Mercury, Dioxin/Furans	8-oz.
	WW-P1PM-06	1239921.3	641363.3	Van Veen grab	Apparent Residuals Layer (Typically 0-6 cm)	Undisturbed native sediment (10-20 cm below apparent residuals layer)	WW-P1PM-04-SS	TS, TOC, Mercury, Dioxin/Furans	8-oz.

Site Unit	Station ID	Proposed Coordinates[1]		Sample Method	Surface Sampling	Additional Subsurface Testing	Sample ID	Analytical Testing	Archive[3]
		Easting	Northing					Chemistry[2]	
Unit 1C Sampling - After Placement of Residuals Cover									
1C	WW-P1PM-01	1239124.4	640803.8	Van Veen grab	0–12 cm	--	WW-P1PM-01-SS	TS, TOC, Mercury, Dioxin/Furans	Contingent Bioassays
	WW-P1PM-02	1239234.3	640694.7	Van Veen grab	0–12 cm	--	WW-P1PM-02-SS	TS, TOC, Mercury, Dioxin/Furans	Contingent Bioassays
	WW-P1PM-03	1239478.9	641143.9	Van Veen grab	0–12 cm	--	WW-P1PM-03-SS	TS, TOC, Mercury, Dioxin/Furans	Contingent Bioassays
	WW-P1PM-04	1239582.0	641030.2	Van Veen grab	0–12 cm	--	WW-P1PM-02-SS	TS, TOC, Mercury, Dioxin/Furans	Contingent Bioassays
	WW-P1PM-05	1239813.3	641468.3	Van Veen grab	0–12 cm	--	WW-P1PM-03-SS	TS, TOC, Mercury, Dioxin/Furans	Contingent Bioassays
	WW-P1PM-06	1239921.3	641363.3	Van Veen grab	0–12 cm	--	WW-P1PM-04-SS	TS, TOC, Mercury, Dioxin/Furans	Contingent Bioassays

Notes:

1. North American Datum 1983 (NAD83)/1998 (Washington State Plane NAD 83 Lambert Conformal North Zone Grid, Per the 1998 Adjustment)
2. Chemical testing: SMS = Sediment Management Standards, SVOC = semivolatile organic compound, TS = total solids, TOC = total organic carbon
3. Bioassays will be conducted if chemical concentrations exceed Sediment Quality Standards criteria but are below the site-specific mercury bioaccumulation screening level (archive pending chemistry results).

Table 2

Confirmation Monitoring Sample Design

Site Unit	Station ID	Proposed Coordinates[1]		Sample Media	Sample Method	Sampling Interval	Sample ID	Analytical Testing	Archive[4]
		Easting	Northing					Chemistry[2,3]	
Phase 1 Construction Areas									
1C	WW-P1CM-01	1239693.5	641212.3	Surface Sediment	Van Veen grab	0 to 12 cm	WW-P1CM-01-SS	SMS Metals, SVOC, TS, TOC	Contingent Bioassays
	WW-P1CM-02	1239872.1	641378.8	Surface Sediment	Van Veen grab	0 to 12 cm	WW-P1CM-02-SS	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays
4	WW-P1CM-03	1240532.8	641249.1	Surface Sediment	Van Veen grab	0 to 12 cm	WW-P1CM-03-SS	SMS Metals, SVOC, TS, TOC	Contingent Bioassays
	WW-P1CM-04	1240693.4	641391.5	Surface Sediment	Van Veen grab	0 to 12 cm	WW-P1CM-04-SS	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays
	WW-P1CM-05	1240815.9	641874.5	Surface Sediment	Van Veen grab	0 to 12 cm	WW-P1CM-05-SS	SMS Metals, SVOC, TS, TOC	Contingent Bioassays
2A	WW-P1CM-06	1241514.6	642837.3	Surface Sediment	Van Veen grab	0 to 12 cm	WW-P1CM-06-SS	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays
	WW-P1CM-07	1241343.7	642989.4	Surface Sediment	Van Veen grab	0 to 12 cm	WW-P1CM-07-SS	SMS Metals, SVOC, TS, TOC	Contingent Bioassays
	WW-P1CM-08	1241146.6	642800.0	Surface Sediment	Van Veen grab	0 to 12 cm	WW-P1CM-08-SS	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays
3B	WW-P1CM-09	1241712.8	643039.0	Surface Sediment	Van Veen grab	0 to 12 cm	WW-P1CM-09-SS	SMS Metals, SVOC, TS, TOC	Contingent Bioassays
	WW-P1CM-10	1241562.6	643186.2	Surface Sediment	Van Veen grab	0 to 12 cm	WW-P1CM-10-SS	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays

Site Unit	Station ID	Proposed Coordinates[1]		Sample Media	Sample Method	Sampling Interval	Sample ID	Analytical Testing	Archive[4]
		Easting	Northing					Chemistry[2,3]	
5C	WW-P1CM-11	1240846.6	642752.9	Surface Sediment	Van Veen grab	0 to 2 cm	WW-P1CM-11-SS-0-2	SMS Metals, SVOC, D/F, TS, TOC	--
				Surface Sediment	Van Veen grab	0 to 12 cm	WW-P1CM-11-SS-0-12	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays
4	WW-P1CM-03	1240532.8	641249.1	Porewater	Mini piezometer	0-1 ft below mudline	WW-P1CM-03-PW	Hg (total and dissolved)	--
	WW-P1CM-04	1240693.4	641391.5	Porewater	Mini piezometer	0-1 ft below mudline	WW-P1CM-04-PW	Hg (total and dissolved)	--
Monitored Natural Recovery Areas									
9	WW-MNR-01	1236589.3	641690.4	Surface Sediment	Van Veen grab	0 to 12 cm	WW-MNR-01-SS	SMS Metals, SVOC, TS, TOC	Contingent Bioassays
	WW-MNR-02	1236335.6	636672.7	Surface Sediment	Van Veen grab	0 to 12 cm	WW-MNR-02-SS	SMS Metals, SVOC, TS, TOC	Contingent Bioassays
	WW-MNR-03	1237324.4	643041.7	Surface Sediment	Van Veen grab	0 to 12 cm	WW-MNR-03-SS	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays
	WW-MNR-04	1237147.5	639909.2	Surface Sediment	Van Veen grab	0 to 12 cm	WW-MNR-04-SS	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays
7	WW-MNR-05	1237855.1	638100.7	Surface Sediment	Van Veen grab	0 to 12 cm	WW-MNR-05-SS	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays
5A	WW-MNR-06	1239218.4	642296.7	Surface Sediment	Van Veen grab	0 to 12 cm	WW-MNR-06-SS	SMS Metals, SVOC, TS, TOC	Contingent Bioassays
	WW-MNR-07	1238791.5	641463.6	Surface Sediment	Van Veen grab	0 to 12 cm	WW-MNR-07-SS	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays
9	WW-MNR-08	1239014.4	639146.3	Surface Sediment	Van Veen grab	0 to 12 cm	WW-MNR-08-SS	SMS Metals, SVOC, TS, TOC	Contingent Bioassays
6C	WW-MNR-09	1240195.7	640238.4	Surface Sediment	Van Veen grab	0 to 12 cm	WW-MNR-09-SS	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays

Site Unit	Station ID	Proposed Coordinates[1]		Sample Media	Sample Method	Sampling Interval	Sample ID	Analytical Testing	Archive[4]
		Easting	Northing					Chemistry[2,3]	
3A	WW-MNR-10	1241817.6	643425.6	Surface Sediment	Van Veen grab	0 to 12 cm	WW-MNR-10-SS	SMS Metals, SVOC, TS, TOC	Contingent Bioassays
	WW-MNR-11	1241959.2	643284.6	Surface Sediment	Van Veen grab	0 to 12 cm	WW-MNR-11-SS	SMS Metals, SVOC, D/F, TS, TOC	Contingent Bioassays
9	WW-MNR-03	1237324.4	643041.7	Subsurface Sediment	Vibracore	0-0.5 ft	WW-MNR-03-VC-0-0.5	Hg	--
						0.5-1 ft	WW-MNR-03-VC-0.5-1	Hg	--
						1-1.5 ft	WW-MNR-03-VC-1-1.5	Hg	--
						1.5-2 ft	WW-MNR-03-VC-1.5-2	Hg	--
						2-2.5 ft	WW-MNR-03-VC-2-2.5	Hg	--
						2.5-3 ft	WW-MNR-03-VC-2.5-3	Hg	--
	WW-MNR-04	1237147.5	639909.2	Subsurface Sediment	Vibracore	0-0.5 ft	WW-MNR-04-VC-0-0.5	Hg	--
						0.5-1 ft	WW-MNR-04-VC-0.5-1	Hg	--
						1-1.5 ft	WW-MNR-04-VC-1-1.5	Hg	--
						1.5-2 ft	WW-MNR-04-VC-1.5-2	Hg	--
						2-2.5 ft	WW-MNR-04-VC-2-2.5	Hg	--
						2.5-3 ft	WW-MNR-04-VC-2.5-3	Hg	--

Site Unit	Station ID	Proposed Coordinates[1]		Sample Media	Sample Method	Sampling Interval	Sample ID	Analytical Testing	Archive[4]
		Easting	Northing					Chemistry[2,3]	
5A	WW-MNR-07	1237667.4	642701.6	Subsurface Sediment	Vibracore	0-0.5 ft	WW-MNR-07-VC-0-0.5	Hg	--
						0.5-1 ft	WW-MNR-07-VC-0.5-1	Hg	--
						1-1.5 ft	WW-MNR-07-VC-1-1.5	Hg	--
						1.5-2 ft	WW-MNR-07-VC-1.5-2	Hg	--
						2-2.5 ft	WW-MNR-07-VC-2-2.5	Hg	--
						2.5-3 ft	WW-MNR-07-VC-2.5-3	Hg	--
9	WW-MNR-08	1238791.5	641463.6	Subsurface Sediment	Vibracore	0-0.5 ft	WW-MNR-08-VC-0-0.5	Hg	--
						0.5-1 ft	WW-MNR-08-VC-0.5-1	Hg	--
						1-1.5 ft	WW-MNR-08-VC-1-1.5	Hg	--
						1.5-2 ft	WW-MNR-08-VC-1.5-2	Hg	--
						2-2.5 ft	WW-MNR-08-VC-2-2.5	Hg	--
						2.5-3 ft	WW-MNR-08-VC-2.5-3	Hg	--

Notes:
1. North American Datum 1983 (NAD83)/1998 (Washington State Plane NAD 83 Lambert Conformal North Zone Grid, Per the 1998 Adjustment)
2. Chemical testing: SMS = Sediment Management Standards, SVOC = semivolatile organic compound, TS = total solids, TOC = total organic carbon, D/F = dioxins and furans, Hg = total mercury
3. Total and dissolved mercury will be analyzed using low level mercury methods (modified 7470)
4. Bioassays will be conducted if chemical concentrations exceed Sediment Quality Standards criteria but are below the site-specific bioaccumulation screening level (archive pending chemistry results)

cm = centimeter
ft = foot

Table 3

Summary of Tissue Monitoring and Goals

Matrix	Type of Monitoring	Goals of Monitoring
Crab Tissue	Performance and Confirmation	• Measure mercury concentrations in crab tissue immediately after Phase 1 cleanup activities, including potential temporal impacts associated with the Phase 1 construction. • Compare crab tissue data quality with tissue from a clean reference site. • If performance monitoring indicates elevated mercury concentrations in tissue collected from the Site, evaluate mercury concentrations and trends in crab tissue over time after Phase 1 cleanup implementation. • Use information to inform resource agencies, the Lummi Nation, and stakeholders regarding potential Site-related effects on crab tissue quality.
Clam Tissue	Performance and confirmation	• Measure mercury concentrations in clam tissue immediately after Phase 1 cleanup activities. • Compare clam tissue data quality with tissue from a clean reference site. • If performance monitoring indicates elevated mercury concentrations in tissue collected from the Site, evaluate mercury concentrations and trends in clam tissue over time after Phase 1 cleanup implementation. • Use information to inform resource agencies, the Lummi Nation, and stakeholders regarding potential Site-related effects on clam tissue quality.
Co-Located Porewater	Performance and confirmation	• Document mercury concentrations in sediment bioactive zone samples from areas used for clam testing. • Provide information that can be used (along with bulk sediment testing data) to help interpret the results of tissue testing data for clams.

Matrix	Type of Monitoring	Goals of Monitoring
Benthic Fish Tissue	Confirmation	• Measure mercury concentrations in benthic fish tissue and compare to benthic fish tissue data quality from a clean reference site. • If confirmation monitoring indicates elevated mercury concentrations in tissue collected from the Site, evaluate mercury concentrations and trends in fish tissue over time after Phase 1 cleanup. • Use information to inform resource agencies, the Lummi Nation, and stakeholders regarding potential Site-related effects on benthic fish tissue quality. • Also measure dioxin/furan concentrations in benthic fish tissue and compare to benthic fish tissue data quality from a clean reference site. Provide these data to Ecology to support the evaluation of regional background concentrations of dioxin/furan compounds in Bellingham Bay.
Pelagic Fish Tissue	Confirmation	• To be conducted only if analysis of benthic fish indicates a potential for Site-related sediment contamination to measurably impact tissue mercury concentrations in pelagic species. The goal of contingent testing would be to evaluate concentrations of mercury in pelagic fish (i.e., salmon) caught from within the Site. • Compare pelagic fish tissue data quality with tissue from a clean reference site and available literature data. • If performance monitoring indicates elevated concentrations of Site-related mercury in pelagic fish tissue concentrations, evaluate long-term trends in mercury concentrations in pelagic fish caught from within the Site. • Use information to inform resource agencies, the Lummi Nation, and stakeholders regarding potential Site-related effects on pelagic fish tissue quality.

Table 4

Confirmation Monitoring for Crab, Clams, and Co-Located Porewater

Site Unit	Station ID	Proposed Coordinates[1]		Sample Media	Sample Method	Sampling Interval	Sample ID	Analytical Testing	Archive
		Easting	Northing					Chemistry[2]	
Phase 1 Site Areas									
1C	WW-P1CM-01	1239693.5	641212.3	Clam Tissue	Clam cage	3 composited tissue samples	WW-P1CM-01-CL	Hg, lipids	individual clam tissue
				Porewater	Mini piezometer	0-0.5 ft below mudline	WW-P1CM-01-PW	Total and dissolved Hg	--
2A	WW-P1CM-07	1241343.7	642989.4	Clam Tissue	Clam cage	3 composited tissue samples	WW-P1CM-07-CL	Hg, lipids	individual clam tissue
				Porewater	Mini piezometer	0-0.5 ft below mudline	WW-P1CM-07-PW	Total and dissolved Hg	--
9	WW-MNR-03	1237324.4	643041.7	Male Dungeness muscle	Crab traps	3 composited tissue samples	WW-MNR-03-CM	Hg, lipids	individual crab tissue
				Clam Tissue	Clam cage	3 composited tissue samples	WW-MNR-03-CL	Hg, lipids	individual clam tissue
				Porewater	Mini piezometer	0-0.5 ft below mudline	WW-MNR-03-PW	Total and dissolved Hg	--
	WW-MNR-04	1237147.5	639909.2	Male Dungeness muscle	Crab traps	3 composited tissue samples	WW-MNR-04-CM	Hg, lipids	individual crab tissue
				Clam Tissue	Clam cage	3 composited tissue samples	WW-MNR-04-CL	Hg, lipids	individual clam tissue
				Porewater	Mini piezometer	0-0.5 ft below mudline	WW-MNR-04-PW	Total and dissolved Hg	--

Site Unit	Station ID	Proposed Coordinates[1]		Sample Media	Sample Method	Sampling Interval	Sample ID	Analytical Testing	Archive
		Easting	Northing					Chemistry[2]	
5A	WW-MNR-07	1238791.5	641463.6	Male Dungeness muscle	Crab traps	3 composited tissue samples	WW-MNR-07-CM	Hg, lipids	individual crab tissue
				Clam Tissue	Clam cage	3 composited tissue samples	WW-MNR-07-CL	Hg, lipids	individual clam tissue
				Porewater	Mini piezometer	0-0.5 ft below mudline	WW-MNR-07-PW	Total and dissolved Hg	--
Reference Areas (Samish Bay)									
Ref	WW-REF-01	1228731.9	581840.5	Male Dungeness muscle	Crab traps	3 composited tissue samples	WW-REF-01-CM	Hg, lipids	individual crab tissue
				Clam Tissue	Clam cage	3 composited tissue samples	WW-REF-01-CL	Hg, lipids	individual clam tissue
				Porewater	Mini piezometer	0-0.5 ft below mudline	WW-REF-01-PW	Total and dissolved Hg	--
	WW-REF-02	1228771.6	580602.7	Clam Tissue	Clam cage	3 composited tissue samples	WW-REF-02-CL	Hg, lipids	individual clam tissue
				Porewater	Mini piezometer	0-0.5 ft below mudline	WW-REF-02-PW	Total and dissolved Hg	--
	WW-REF-03	1232815.4	585637.6	Clam Tissue	Clam cage	3 composited tissue samples	WW-REF-03-CL	Hg, lipids	individual clam tissue
				Porewater	Mini piezometer	0-0.5 ft below mudline	WW-REF-03-PW	Total and dissolved Hg	--

Site Unit	Station ID	Proposed Coordinates[1]		Sample Media	Sample Method	Sampling Interval	Sample ID	Analytical Testing	Archive
		Easting	Northing					Chemistry[2]	
Ref	WW-REF-04	1232822.0	583482.7	Clam Tissue	Clam cage	3 composited tissue samples	WW-REF-04-CL	Hg, lipids	individual clam tissue
				Porewater	Mini piezometer	0-0.5 ft below mudline	WW-REF-04-PW	Total and dissolved Hg	--
	WW-REF-05	1236802.7	587226.8	Male Dungeness muscle	Crab traps	3 composited tissue samples	WW-REF-05-CM	Hg, lipids	individual crab tissue
				Clam Tissue	Clam cage	3 composited tissue samples	WW-REF-05-CL	Hg, lipids	individual clam tissue
				Porewater	Mini piezometer	0-0.5 ft below mudline	WW-REF-05-PW	Total and dissolved Hg	--

Notes:
1. North American Datum 1983 (NAD83)/1998 (Washington State Plane NAD 83 Lambert Conformal North Zone Grid, Per the 1998 Adjustment)
2. Chemical testing: Hg = total mercury; total and dissolved mercury will be analyzed using low-level mercury methods (modified 7470)

CL = clam tissue
CM = crab muscle tissue
ft = foot
PW = porewater
Ref = reference

Table 5

Confirmation Monitoring for Benthic Fish (Sole or Flounder)

Area	Collection Method	Preparation Method	Number of Samples per Area	Sample ID	Analytical Testing	Archive
					Chemistry[2]	
Phase 1 Site Areas	Trawl	Composite of 3 discrete samples of fillet)	5 composites collected from the Site (any of the 3 trawl lines)	WW-PICM-COMP-BF	Hg, lipids, dioxin/furans [2,3]	individual fish tissue
Reference Area	Trawl	Composite of 3 discrete samples of fillet	5 composites collected from Samish Bay (any of 3 trawl lines)	WW-REF-COMP-BF	Hg, lipids, dioxin/furans [2,3]	individual fish tissue

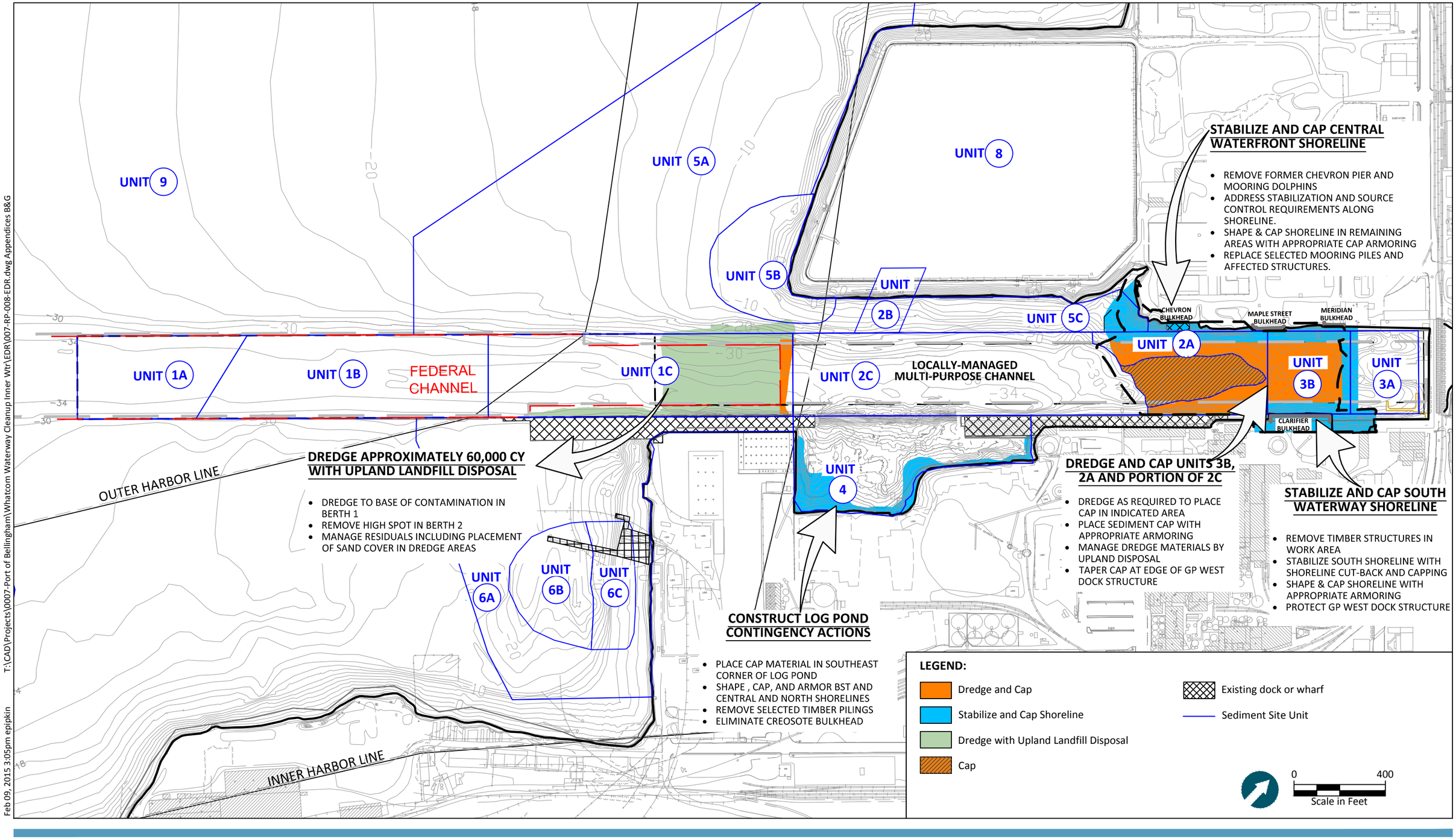
Notes:

1. North American Datum 1983 (NAD83)/1998 (Washington State Plane NAD 83 Lambert Conformal North Zone Grid, Per the 1998 Adjustment)
2. Chemical testing: Hg = total mercury; total and dissolved mercury will be analyzed using low-level mercury methods (modified 7470)
3. Testing for dioxin/furans to be performed during Year 3 to help inform Ecology's ongoing evaluation of dioxin/furan regional background concentrations in Bellingham Bay.

BF = benthic fish tissue

ft = foot

FIGURES



T:\CAD\Projects\0007-Port of Bellingham\Whatcom Waterway Cleanup Inner Wtr\EDR\007-RP-008-EDR.dwg Appendices B&G
Feb 09, 2015 3:05pm epipkin

SOURCE: Figure 6-5 of Exhibit 1 of the First Amendment to the Whatcom Waterway Site Consent Decree (2011).
HORIZONTAL DATUM: Washington State Plane North, NAD 83 Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

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Figure 1
Construction Project for Phase 1 Areas
Appendix G - Compliance Monitoring and Contingency Response Plan
Whatcom Waterway Cleanup in Phase Site 1 Areas - Final EDR

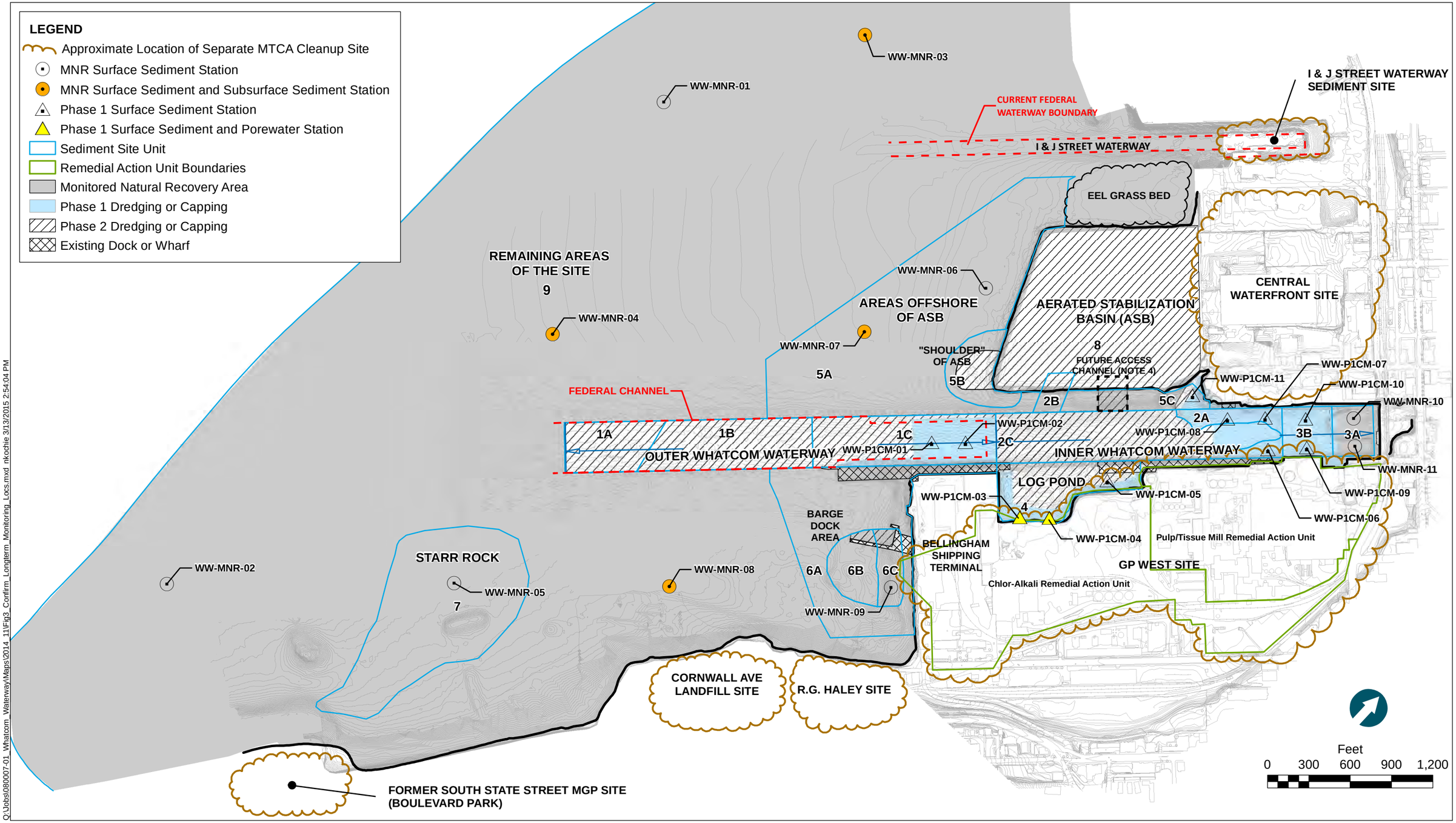
Q:\Jobs\080007-01 Whatcom Waterway\Maps\2010 01\PRDI\Fig15 PRDI Unit1C Sed Hg.mxd epipkin 02/17/2010 8:45 AM

ANCHOR QEA

Notes:
1. Sediment Site Units and boundaries source: Figure 4-6, Cleanup Action Plan, Whatcom Waterway Site, September 2007.
2. Horizontal datum: Washington State Plane North, NAD 27/98.
3. Aerial photo taken in 2004.

Feet
0 75 150 225 300

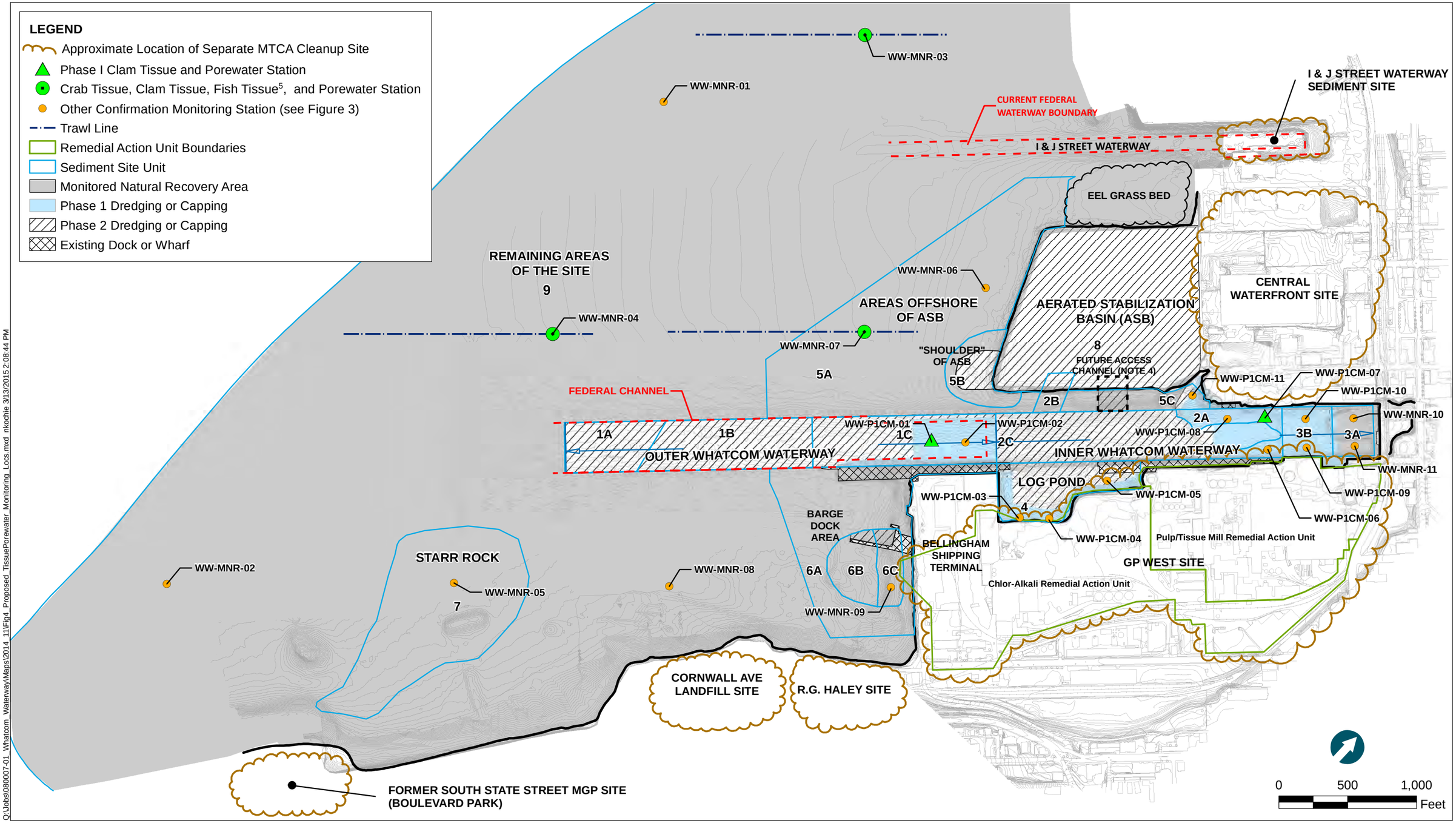
Figure 2
Performance Monitoring Surface Sediment Sampling Locations
Appendix G - Compliance Monitoring and Contingency Response Plan
Whatcom Waterway Cleanup in Phase 1 Site Areas - Final EDR



Q:\Jobs\080007-01_Whatcom_Waterway\Maps\2014_11\Fig3_Confirm_Longterm_Monitoring_Locs.mxd nkochie 3/13/2015 2:54:04 PM

NOTES:
1. Site units are shown based on those in Figure 2-3 Cleanup Action Plan, Whatcom Waterway Site, September 2007. Unit 9 boundary updated based on PRDI findings.
2. Horizontal datum: Washington State Plane North, NAD 83 Feet.
3. Vertical datum: Mean Lower Low Water (MLLW).
4. Unit 2B was established in the Cleanup Action Plan based on the anticipated marina access channel location. This location will be adjusted during final design.
5. Refer to Figure 4 for tissue monitoring and co-located porewater monitoring stations.
6. Remedial Action Unit (RAU) boundaries were defined in the Final Cleanup Action Plan for the GP West Pulp and Tissue Remedial Action Unit (Aspect 2014).

Figure 3
Confirmation (Long-Term) Monitoring Sampling Locations
Appendix G - Compliance Monitoring and Contingency Response Plan
Whatcom Waterway Cleanup Phase 1 in Site Areas - Final EDR



Q:\Jobs\080007-01_Whatcom_Waterway\Maps\2014_11\Fig4_Proposed_TissuePorewater_Monitoring_Locs.mxd mkochie 3/13/2015 2:08:44 PM

NOTES:
1. Site units are shown based on those in Figure 2-3 Cleanup Action Plan, Whatcom Waterway Site, September 2007. Unit 9 boundary updated based on Pre-remedial Design Investigation findings.
2. Horizontal datum: Washington State Plane North, North American Datum 1983 (NAD83) Feet.
3. Vertical datum: Mean Lower Low Water (MLLW).
4. Unit 2B was established in the Cleanup Action Plan based on the anticipated marina access channel location. This location will be adjusted during final design.
5. These stations represent target areas in which fish will be collected. Actual locations will be dependent upon abundance and collection methods at the time of sampling. Otter trawl methods will be used for benthic fish tissue (i.e., English sole or starry flounder).
6. Contingent collection of pelagic fish (sockeye salmon) will be performed at a location within the site boundary.
7. Remedial Action Unit (RAU) boundaries were defined in the Final Cleanup Action Plan for the GP West Pulp and Tissue Remedial Action Unit (Aspect 2014).

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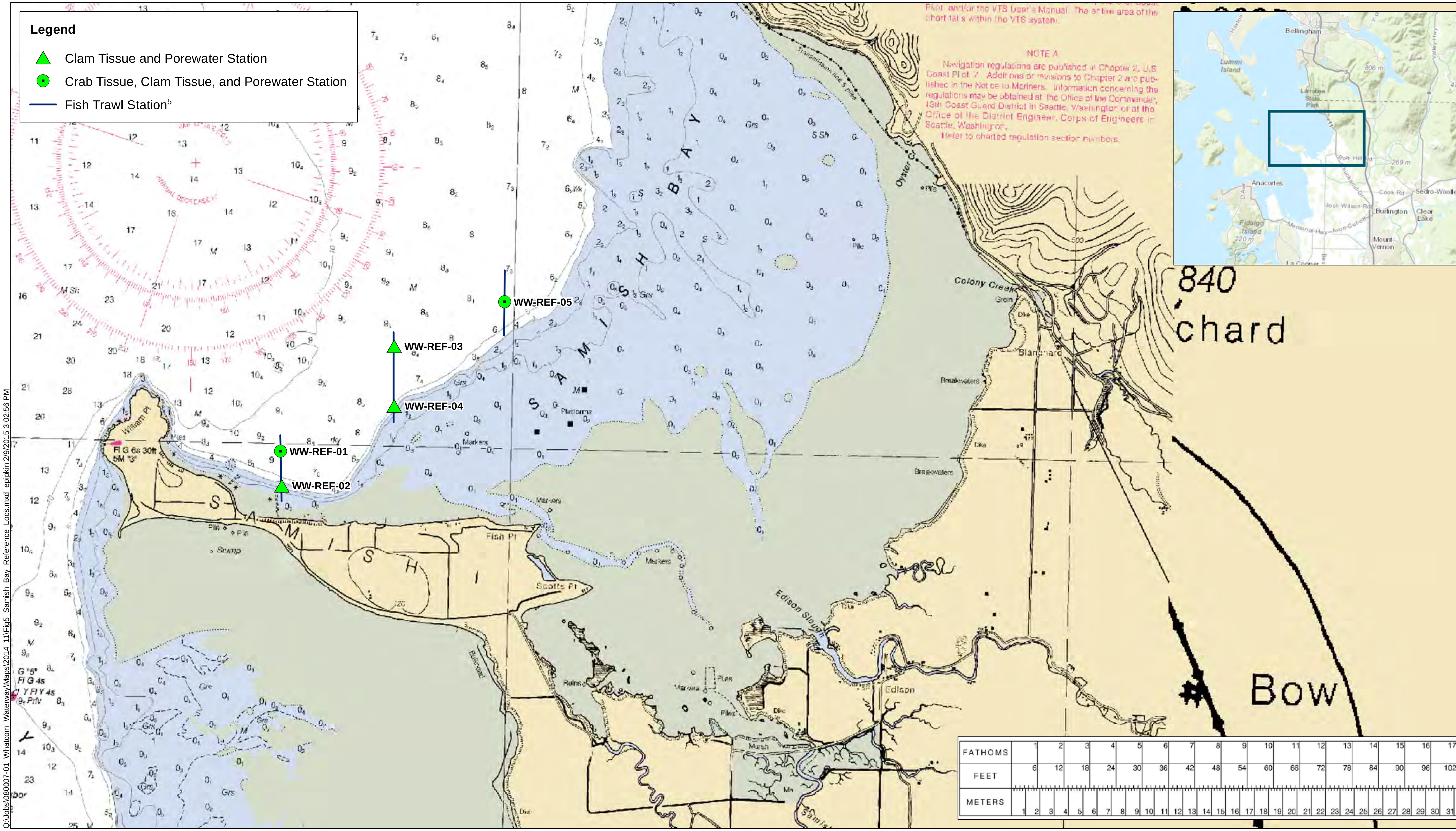
Figure 4
Proposed Locations for Tissue and Co-Located Porewater Monitoring
Appendix G - Compliance Monitoring and Contingency Response Plan
Whatcom Waterway Cleanup Phase 1 in Site Areas - Final EDR



Q:\Jobs\080007-01_Whatcom_Waterway\Maps\2014_11\Fig5_Samish_Bay_Reference_Locs.mxd epipkin 2/9/2015 3:02:56 PM

NOTES:
1. Site units are shown based on those in Figure 2-3 Cleanup Action Plan, Whatcom Waterway Site, September 2007. Unit 9 boundary updated based on Pre-remedial Design Investigation findings.
2. Horizontal datum: Washington State Plane North, North American Datum 1983 (NAD83) Feet.
3. Vertical datum: Mean Lower Low Water (MLLW).
4. Fish trawl locations are approximate. Actual locations will be dependent upon abundances observed during the monitoring effort.
5. Crab station locations may be adjusted based on field conditions encountered.

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Figure 5
Reference Area Sampling Locations
Appendix G - Compliance Monitoring and Contingency Response Plan
Whatcom Waterway Cleanup Phase 1 in Site Areas - Final EDR

APPENDIX H
CENTRAL WATERFRONT SUPPLEMENTAL INVESTIGATION

(Attachments are available on CD from Ecology)

TABLE OF CONTENTS

List of Tables

List of Figures

List of Attachments

ACRONYMS/ABBREVIATIONS

Ecology	Washington State Department of Ecology
EDD	electronic data deliverable
MS/MSD	matrix spike/matrix spike duplicate
PRDI	Pre-Remedial Design Investigation
QA	quality assurance
QC	quality control
RI/FS	Remedial Investigation/Feasibility Study
TPH	total petroleum hydrocarbon
Waterway	Whatcom Waterway

1 INTRODUCTION

As part of the development of the Whatcom Waterway (Waterway) Engineering Design Report and review of existing Central Waterfront Remedial Investigation/Feasibility Study (RI/FS) documents, information needs were identified regarding shoreline soil and groundwater quality in areas along the northern shoreline of the Waterway. This shoreline area is located within both the Waterway site (because of the presence of mercury in impacted subsurface sediments) and the Central Waterfront site (because of the presence of petroleum impacted soils and groundwater, as well as sediments contaminated with boatyard-associated contaminants). The Washington State Department of Ecology (Ecology) specifically identified the need for two types of data:

- Supplemental data to document current groundwater and porewater quality in portions of the shoreline area that lacked sufficient data
- Information regarding soil quality where capping or stabilization of the shoreline may include limited areas of shoreline excavation

This appendix identifies the methods used to collect the field data and summarizes results to address the above-described data gaps. The work described in this document will also be used to inform the Waterway design effort and will be incorporated into the Central Waterfront RI/FS, which is currently undergoing Ecology review.

2 INVESTIGATION METHODS

To address the identified data gaps, field efforts included four distinct types of sampling: porewater, seeps, groundwater, and test pit/soil sampling. Field methods closely followed the Pre-Remedial Design Investigation (PRDI) Work Plan Addendum for the Waterway and RI/FS Work Plan Addendum No. 3 for the Central Waterfront Site (Work Plan) (Anchor QEA 2012a). Sampling locations were initially identified during on-site inspections conducted jointly with Ecology, and only minor modifications to the locations were required in the field, particularly with the test pit locations. The following sections describe the methods employed for each type of sampling.

2.1 Porewater Sampling

Porewater samples were collected at six locations along the Central Waterfront shoreline (Figures H-1 and H-2) to document the presence or absence of petroleum (gasoline, diesel, and motor-oil range hydrocarbons) and related constituents (benzene, toluene, ethylbenzene, and xylenes [BTEX]) in porewater below the current ordinary high water mark.

Porewater samples were collected during low-tide conditions using a temporary stainless steel shielded drive point piezometer (Solinst Model 615 S) with a 12 centimeter-long screen. Access was accomplished with a small boat and via the adjacent riprap slope. Porewater collection began after field parameters (pH, conductivity, temperature, total dissolved solids, salinity, dissolved oxygen, and oxidation reduction potential) had stabilized. Field parameters typically stabilized within 12 to 15 minutes after purging began; however, a couple of exceptions occurred during sampling: First, CW-PW-04 required 44 minutes to purge and the piezometer needed to be flushed with distilled water to clean silt off of the screen; a limited volume of water was available from CW-PW-05 and parameters did not stabilize prior to collection. Second, the piezometer at sampling location CW-PW-06 had to be re-driven three times to get adequate water for sampling. Attachment 1 includes field forms completed during sample collection that document these situations and include the field parameter measurements.

2.2 Seep Sampling

During low-tide inspections conducted jointly with Ecology, two small groundwater seeps were identified that appeared suitable for seep water sampling. These seep locations (CW-SP-01 and -02) are shown on Figures H-1 and H-2. The first location is within the face of the wooden bulkhead beneath the Chevron dock structure, and the second is located at the base of the existing Colony Wharf concrete bulkhead just north of Maple Street.

Anchor QEA field personnel collected seep water directly into sample bottles from the point of discharge during low tide. Soil at CW-SP-01was moved to create a small hole for water collection, but the discharge was allowed to run clear before the sample was collected. The seep at CW-SP-02 had limited discharge volume, so a reduced number of sample bottles were collected and no field parameters were measured. Additionally, field staff was unable to remove all of the air bubbles from sample CW-SP-02 for volatiles. Neither of these however, impacted the laboratory's ability to provide validated sample results.

2.3 Groundwater Sampling

Groundwater sampling was performed by field staff at four existing monitoring wells: CWMW-65C, CWMW-18, CWMW-2, and MW-1B (Figures H-1 and H-2). Groundwater samples from CWMW-65C, CWMW-18, and CWMW-2 were collected to provide information about groundwater quality in the area immediately upgradient of the seep and porewater sampling locations. The MW-1B sample was collected to document water quality in the area immediately upgradient of the Maple Street barge ramp.

Groundwater was sampled using low-flow methods (peristaltic pump with dedicated tubing) during low-tide conditions. Prior to sampling, the depth to water was measured and recorded on the field forms. Monitoring wells were then purged and groundwater was allowed to equilibrate (recharge). Groundwater quality parameters were measured using a water quality field meter and field parameters were allowed to stabilize prior to sampling. Once field-measured groundwater quality parameters stabilized, groundwater was sampled. Times for stabilization ranged from 24 to 48 minutes and parameter measurements are recorded on the field forms (Attachment 1).

2.4 Test Pits and Soil Sampling

Field staff collected soil samples from test pits to provide additional information about the extent and source of soil contamination in the upland portion of Central Waterfront, specifically in the southwest corner of the former Chevron property. Information about the presence of subsurface debris was also noted and will be used to aid in potential remedial design for this portion of the shoreline.

Nine test pits were dug with a backhoe at the locations shown in Figures H-3 and H-4. These locations were adjusted slightly from the original proposed locations in the Work Plan (Anchor QEA 2012a) during sampling based on surface access and the presence of large debris in the subsurface. No test pits were excavated below the high water line. Excavated soil was backfilled into the original test pits and compacted using the backhoe bucket.

Test pit logs are provided in Attachment 1 and describe observations regarding soil conditions and associated lithology at each location. Soils observed in each test pit were logged by the field geologist, including the soil type, presence of debris, and indications of the presence of hydrocarbon contamination, such as sheens, stained soil, or odors. Soil grab samples were field screened for potential hydrocarbon contamination using photoionization detector (PID) headspace screening and sheen-tests. Ten soil samples were selected for chemical analysis, with collection of one or two grab soil samples from each test pit based on field screening observations. If no evidence of petroleum contamination was observed, a sample was collected in the observed groundwater fluctuation zone.

2.5 Field Quality Control Samples

Field quality assurance/quality control (QA/QC) samples were collected to evaluate the precision and accuracy of the field samples and laboratory analysis. Field QA/QC samples consisted of two blind field duplicates, two trip blanks, and two rinsate blanks. One blind field duplicate was collected for porewater and one for soil:

- CW-PW-53-070512 (Duplicate of CW-PW-03): Collected 7/5/12
- CW-TP-54-8-9 (Duplicate of CW-TP-04-8-9): Collected 7/2/12

2.6 Analytical Methods

A total of 12 individual water samples (porewater, seeps, and groundwater) and 10 individual soil samples, plus two field duplicates, were collected during the sampling event. All samples were submitted for laboratory analysis at Analytical Resources, Inc. in Seattle, Washington.

The following analyses were performed for primary, duplicate, and laboratory matrix spike/matrix spike duplicate (MS/MSD) surface water samples.

- NWTPH-G and BTEX by EPA 8021
- NWTPH-Dx with and without silica gel cleanup

The total petroleum hydrocarbon (TPH)-Dx analyses were performed with and without silica gel cleanup to account for the differentiation of polar (i.e., biogenic) and non-polar (i.e., petroleum) extractable hydrocarbons. TPH-Dx concentrations analyses without silica gel cleanup may overestimate the concentration of petroleum hydrocarbons in the sample as the analys3s also measures polar non-petroleum hydrocarbons produced by bacteria or degradation of plant material. A further discussion of the impacts of silica gel cleanup with respect to the sampling efforts can be found in the Silica Gel Cleanup Memo (Anchor QEA 2012b).

A Level IV data package was produced for each analytical group in electronic data deliverable (EDD) format. Analytical laboratory reports can be found in Attachment 2. Following laboratory analysis, all EDD packages were validated by Laboratory Data Consultants, Inc. (LDC), a third-party data validator. Data validation was performed on an analytical batch basis using the laboratory calibration and QC measurements, as well as the associated field samples. Validated data reports can be found in Attachment 3.

3 RESULTS

3.1 General

Figures H-1 through H-4 display the analytical results for benzene, TPH-G, TPH-Dx (diesel and motor oil ranges) and Tables H-1 through H-4 present a full summary of all analytes that were evaluated. Site-specific screening levels were used where applicable for review of results.

Measured TPH along the shoreline discharging to the Waterway was limited to one porewater exceedence of the site-specific surface water screening level for benzene and detection of motor oil-range TPH (with silica gel cleanup) at the same location (CW-PW-05). One groundwater sample collected somewhat upstream of this location (MW-1B) also exceeded the site-specific surface water screening level for benzene, indicating potential connection between the uplands and porewater in this general area.

In general, results of test pits were consistent with historic data. The results of previous sampling events are shown on Figures H-3 and H-4 with color coded keys to visually display relative levels of petroleum contamination. These figures show that additional information was needed to further delineate the extreme western portion of the site; however, in areas where previous explorations were conducted (e.g., CW-TP-09), the results from this study are consistent with previous investigations. Test pit samples had a number of exceedences of site-specific screening levels in upland areas for TPH-G and TPH-Dx, primarily diesel, but also motor oil fractions at one location.

As discussed previously, TPH-Dx samples were analyzed both with and without silica gel cleanup. Based on a separate memorandum (Anchor QEA 2012b) describing the impacts of interference from non-petroleum hydrocarbons Ecology has approved the application of silica gel cleanup on all TPH-Dx samples; however, to provide a complete data set, both sets of results are reported in this data report and displayed on Figures H-2 and H-4. A separate memorandum has been developed to provide rationale for using TPH-Dx analyses with the silica gel cleanup at the site.

3.2 Media

The following sections discuss the results of each medium sampled individually.

3.2.1 Porewater Sampling

Results of the porewater sampling were generally below the site-specific screening level for benzene. Exceptions to this include one sample at CW-PW-05. Motor-oil range TPH was also detected at this location using silica gel cleanup (Figure H-1). This is the only water sample with detected TPH-Dx when silica gel cleanup was used.

3.2.2 Seep Sampling

Both of the two seep samples collected were non-detect for all constituents once silica gel cleanup was applied to the TPH-Dx analysis.

3.2.3 Groundwater Sampling

Groundwater samples also had relatively low measured levels of analyzed constituents. Benzene, TPH-G, and TPH-Dx with silica gel cleanup results were all well below screening levels, with the majority also being non-detect. The lone exception was MW-1B, where benzene was above the screening level, but both diesel and motor oil range constituents were not detected with silica gel cleanup. These results are consistent with historical data and the historical presence of a gasoline plume in this general area of the site.

3.2.4 Test Pit and Soil Sampling

Test pit excavation depths ranged from 6.5 to 11.5 feet and each test pit encountered the groundwater table, typically at or near the bottom of the excavation depth. Groundwater typically was encountered at approximately 8 to 9 feet below the ground surface, except in CW-TP-06 where groundwater was encountered at 6.5 feet. It should be noted that CW-TP-06 was excavated in the vicinity of the shoreline where concrete debris has been removed for high-tide barge loading and, as such, the ground surface is at a lower elevation relative to the ground surface at the other test pits. All test pits experienced caving at or near the waterline and this limited the overall depth of excavation.

Evidence of petroleum contamination was observed in every test pit except for CW-TP-06. Petroleum contamination observations generally consisted of strong hydrocarbon-like odor and observed droplets of a brown product-like substance at the majority of the test pits except CW-TP-08, where a moderate sheen was observed, and CW-TP-06, where no evidence of petroleum contamination was observed. Visual observations typically indicated that petroleum contamination was most evident at or near the groundwater interface, but in several cases extended upwards to 4 to 6 feet below the ground surface, where a trace to moderate petroleum-like odor was observed. This observation only occurred in test pits where the contamination at depth was the greatest.

One soil sample was collected in each test pit in the vicinity of the observed groundwater elevation, with the exception of CW-TP-09, where one sample was collected above the observed groundwater elevation and one below, as both of these samples exhibited signs of petroleum contamination. Sample results generally correlate with field observations, in that analytical results exceed site-specific screening levels in test pit sample locations where observations indicated a significant presence of petroleum contamination (e.g., strong sheen and product-like material observed). In general, CW-TP-01, 02, 03, 05, and 09 had measured petroleum contamination, both gasoline and diesel ranges, above screening levels. CW-TP-07 only had an exceedence for TPH-G, but no TPH-Dx or benzene, and CW-TP-04 only had an exceedence as part of the field duplicate, while the parent sample was below the screening level. It should also be noted that the silica gel cleanup for TPH-Dx samples did not consistently reduce analytical values as observed with the water samples and, in several cases, the samples with the silica gel cleanup increased.

Almost all of the test pits encountered debris, particularly in the upper several feet. In most cases, the debris was not present in the bottom several feet of the test pits and undisturbed soils were encountered. Test pits CW-TP-07 and 09 had the deepest debris encountered, down to more than 6 feet below ground surface. Debris consisted of concrete, bricks, and other construction-related debris, such as old conduit, garbage bags, and plastic sheeting.

4 IMPLICATIONS FOR WHATCOM WATERWAY REMEDIAL DESIGN

Based on the results of this and previous explorations, additional measures will need to be included as part of the Waterway remedial design to address contaminant migration from the Central Waterfront site to the Waterway. Results of this investigation did not identify significant contamination migrating to the Waterway, but showed that contamination is present in the upland portion of the site and minor contamination is currently migrating to the Waterway. At a minimum, the potential for erosion of upland soils to the waterway should be addressed. Additional measures to consider include the movement of residual petroleum product from Central Waterfront to the Waterway.

5 REFERENCES

Anchor QEA (Anchor QEA, LLC), 2012a. Pre-Remedial Design Investigation Work Plan Addendum Whatcom Waterway Site and RI/FS Work Plan Addendum No. 3 Central Waterfront Site. Letter to Lucille T. McInerney, P.E. and Brian Sato, P.E. Toxics Cleanup Program Department of Ecology, July 2, 2012.

Anchor QEA, 2012b. *Silica Gel Protocol for the Determination of Total Petroleum Hydrocarbons at the Central Waterfront Site*. Memorandum to Brian Sato, Department of Ecology. Prepared for the Port of Bellingham. September 12, 2012.

TABLES

Table H-1
Summary of Porewater Sampling Results

Parameter	Method	Location ID Sample ID Sample Date Sample Type	CW-PW-01 CW-PW-01-070412 7/4/2012 Porewater	CW-PW-02 CW-PW-02-070412 7/4/2012 Porewater	CW-PW-03 CW-PW-03-070512 7/5/2012 Porewater	CW-PW-03 CW-PW-53-070512 7/5/2012 Field Duplicate	CW-PW-04 CW-PW-04-070512 7/5/2012 Porewater	CW-PW-05 CW-PW-05-070412 7/4/2012 Porewater	CW-PW-06 CW-PW-06-070612 7/6/2012 Porewater
		Screening Level							
Volatile Organics (µg/L)									
Benzene		24	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**66**	0.05 U
Ethylbenzene			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.32**	0.05 U
m,p-Xylene			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**1.5**	0.1 U
o-Xylene			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Toluene			0.05 U	0.05 U	0.05 U	0.05 U	**0.25**	**1.9**	**0.23**
Total Xylene (U = 1/2)			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**1.52**	0.1 U
Total Petroleum Hydrocarbons (µg/L)									
Gasoline Range Hydrocarbons	NWTPHG		30 U	30 U	30 U	30 U	**60**	**180**	30 U
Diesel Range Hydrocarbons - with silica gel cleanup	NWTPHDx		100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	200 UJ	200 UJ
Motor Oil Range - with silica gel cleanup	NWTPHDx		200 U	**330**	200 U	200 U	200 U	**1100**	400 U
Diesel Range Hydrocarbons - No silica gel cleanup	NWTPHDx		100 U	**470**	**440**	**450**	**740**	**1400**	**440**
Motor Oil Range - No silica gel cleanup	NWTPHDx		200 U	**570**	**250**	**240**	**250**	**1600**	**610**

Notes:
Bold = Detected result
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit

Table H-2
Summary of Seep Sampling Results

Parameter	Method	Location ID Sample ID Sample Date Sample Type	CW-SP-01 CW-SP-01-070512 7/5/2012 Seep	CW-SP-02 CW-SP-02-070412 7/4/2012 Seep
		Screening Level		
Volatile Organics (µg/L)				
Benzene		24	0.05 U	0.05 U
Ethylbenzene			0.05 U	0.05 U
m,p-Xylene			0.1 U	0.1 U
o-Xylene			0.05 U	0.05 U
Toluene			0.05 U	0.05 U
Total Xylene (U = 1/2)			0.1 U	0.1 U
Total Petroleum Hydrocarbons (µg/L)				
Gasoline Range Hydrocarbons	NWTPHG		**70**	30 U
Diesel Range Hydrocarbons - with silica gel cleanup	NWTPHDx		100 UJ	200 UJ
Motor Oil Range - with silica gel cleanup	NWTPHDx		200 U	400 U
Diesel Range Hydrocarbons - No silica gel cleanup	NWTPHD		**960**	20 U
Motor Oil Range - No silica gel cleanup	NWTPHD		**250**	630 U

Notes:

Bold = Detected result

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Table H-3
Summary of Groundwater Sampling Results

Parameter	Method	Location ID Sample ID Sample Date Sample Type	CWMW-18 CWMW-18-070612 7/6/2012 Groundwater Well	CWMW-2 CWMW-2-070612 7/6/2012 Groundwater Well	CWMW-65C CWMW-65C-070612 7/6/2012 Groundwater Well	MW-1B MW-1B-070612 7/6/2012 Groundwater Well
		Screening Level				
Volatile Organics (µg/L)						
Benzene		24	0.05 U	0.05 U	0.05 U	**200**
Ethylbenzene			**0.55**	**0.74**	0.05 U	**2.9**
m,p-Xylene			**0.2**	0.1 U	0.1 U	**2.8**
o-Xylene			0.05 U	0.05 U	0.05 U	**0.36**
Toluene			0.05 U	0.05 U	0.05 U	**3**
Total Xylene (U = 1/2)			**0.23**	0.1 U	0.1 U	**3.16**
Total Petroleum Hydrocarbons (µg/L)						
Gasoline Range Hydrocarbons	NWTPHG		**360**	**460**	30 U	**130**
Diesel Range Hydrocarbons - with silica gel cleanup	NWTPHDx		100 UJ	100 UJ	100 UJ	**18 J**
Motor Oil Range - with silica gel cleanup	NWTPHDx		200 U	200 U	200 U	200 U
Diesel Range Hydrocarbons - No silica gel cleanup	NWTPHD		**1400**	**1300**	**690**	**1200**
Motor Oil Range - No silica gel cleanup	NWTPHD		**220**	**270**	**350**	200 U

Notes:

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Table H-4
Summary of Soil Sampling Results

Parameter	Method	Location ID Sample ID Sample Date Depth Sample Type	CW-TP-01 CW-TP-01-8-9 7/6/2012 8 - 9 ft Soil	CW-TP-02 CW-TP-02-8.2-9.2 7/6/2012 8.2 - 9.2 ft Soil	CW-TP-03 CW-TP-03-7-8 7/6/2012 7 - 8 ft Soil	CW-TP-04 CW-TP-04-8-9 7/2/2012 8 - 9 ft Soil	CW-TP-04 CW-TP-54-8-9 7/2/2012 8 - 9 ft Field Duplicate	CW-TP-05 CW-TP-05-7-8 7/6/2012 7 - 8 ft Soil	CW-TP-06 CW-TP-06-5.5-6.5 7/2/2012 5.5 - 6.5 ft Soil	CW-TP-07 CW-TP-07-9-10 7/2/2012 9 - 10 ft Soil	CW-TP-08 CW-TP-08-7-8 7/2/2012 7 - 8 ft Soil	CW-TP-09 CW-TP-09-6.3-7.3 7/2/2012 6.3 - 7.3 ft Soil	CW-TP-09 CW-TP-09-10-11 7/2/2012 10 - 11 ft Soil
		MTCA Method A - Unrestricted											
Volatile Organics (mg/kg)													
Benzene		0.014	0.0086 U	0.340 U	0.410 U	**0.011**	**0.0019**	0.300 U	0.0009 U	0.0007 U	**0.0011**	0.0006 U	0.0006 U
Ethylbenzene			**0.01**	0.340 U	0.410 U	0.0013 U	0.0011 U	0.300 U	0.0009 U	0.0007 U	0.0006 U	0.0006 U	0.0006 U
m,p-Xylene			**0.03**	0.340 U	0.410 U	0.0013 U	0.0011 U	0.300 U	0.0009 U	0.0007 U	**0.0014**	0.0006 U	0.0006 U
o-Xylene			**0.032**	0.340 U	0.410 U	0.0013 U	0.0011 U	0.300 U	0.0009 U	0.0007 U	0.0006 U	0.0006 U	0.0006 U
Toluene			**0.03**	0.340 U	0.410 U	0.0013 U	0.0011 U	0.300 U	0.0009 U	0.0007 U	**0.0017**	0.0006 U	0.0006 U
Total Xylene (U = 1/2)			**0.062**	0.340 U	0.410 U	0.0013 U	0.0011 U	0.300 U	0.0009 U	0.0007 U	**0.0017**	0.0006 U	0.0006 U
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline Range Hydrocarbons	NWTPHG	30	**1400**	**800**	**750**	**26**	**900**	**980**	6.1 U	**380**	**23**	**1800**	**330**
Diesel Range Hydrocarbons - with silica gel cleanup	NWTPHDx	2000	**11000**	**5700**	**4100**	**530**	**580**	**4200**	6.1 U	**840**	**140**	**27000**	**14000**
Motor Oil Range - with silica gel cleanup	NWTPHDx	2000	**940**	**570**	**450**	**70**	**82**	**490**	12 U	**140**	**85**	**3200**	**1700**
Diesel Range Hydrocarbons - No silica gel cleanup	NWTPHD	2000	**12000**	**6600**	**5300**	**670**	**760**	**5000**	6.1 U	**1200**	**230**	**34000**	**18000**
Motor Oil Range - No silica gel cleanup	NWTPHD	2000	**1400**	**880**	**840**	**120**	**140**	**800**	12 U	**240**	**210**	**5200**	**2900**

Notes:

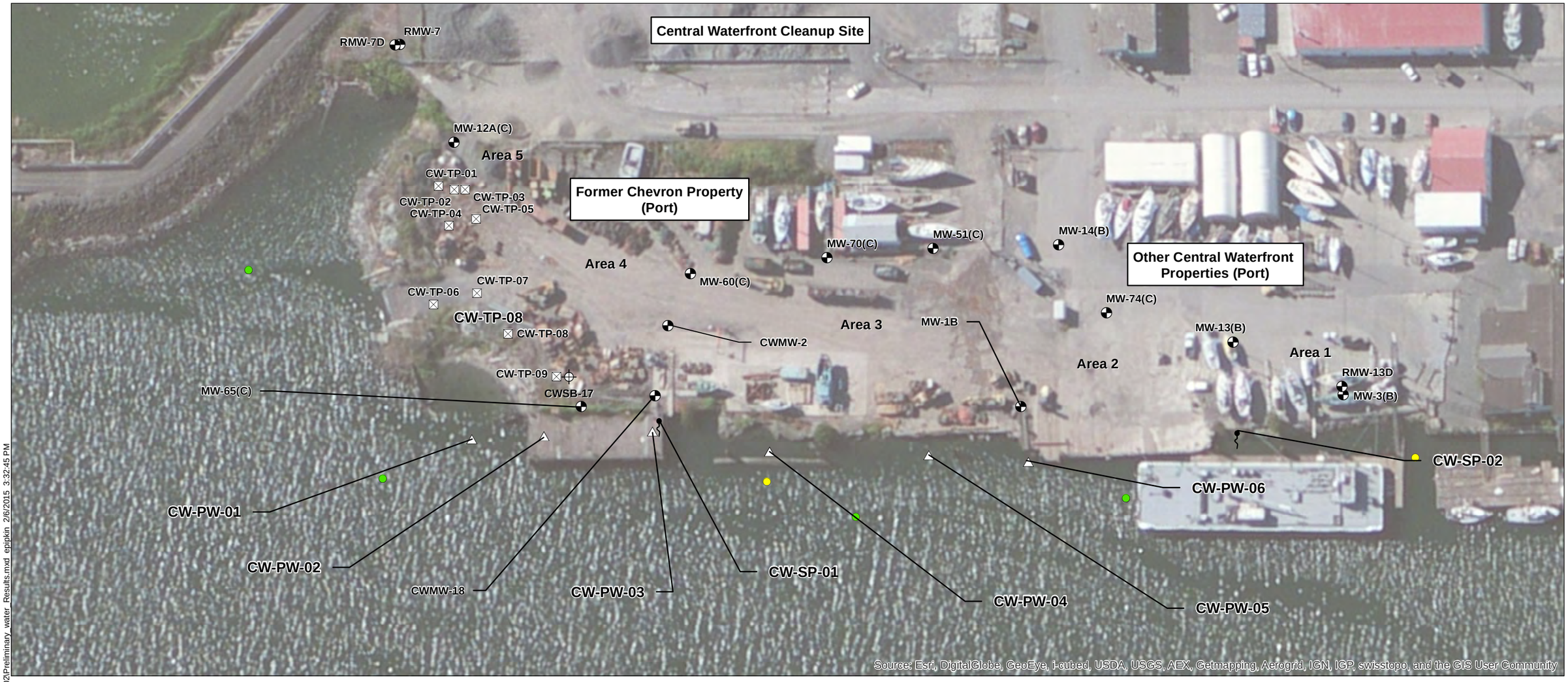
Detected concentration is greater than MTCA Method A Unrestricted screening level

Reporting Limit above most stringent benzene screening industrial level for saturated soil due to analytical instrument interference

Bold = Detected result

U = Compound analyzed, but not detected above detection limit

FIGURES



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△ Pore Water Sample Location

Seep Sample Location

☒ Soil Test Pit Location

Groundwater Monitoring Well

Previous Soil Boring (2012)

Bioassay

Pass

Fail SQS

Notes:

1. Results presented in µg/L for Benzene and mg/L for TPH-G
2. Bold indicates a detected concentration
3. U = Non-detect (Reporting Limit listed)
4. Exceeds site specific surface water screening level for Benzene (24 µg/L) based on vapor intrusion, industrial land use
5. TPH-G = Total Petroleum Hydrocarbons - Gasoline Range
6. Aerial photo provided by ESRI.

Feet

0 75 150

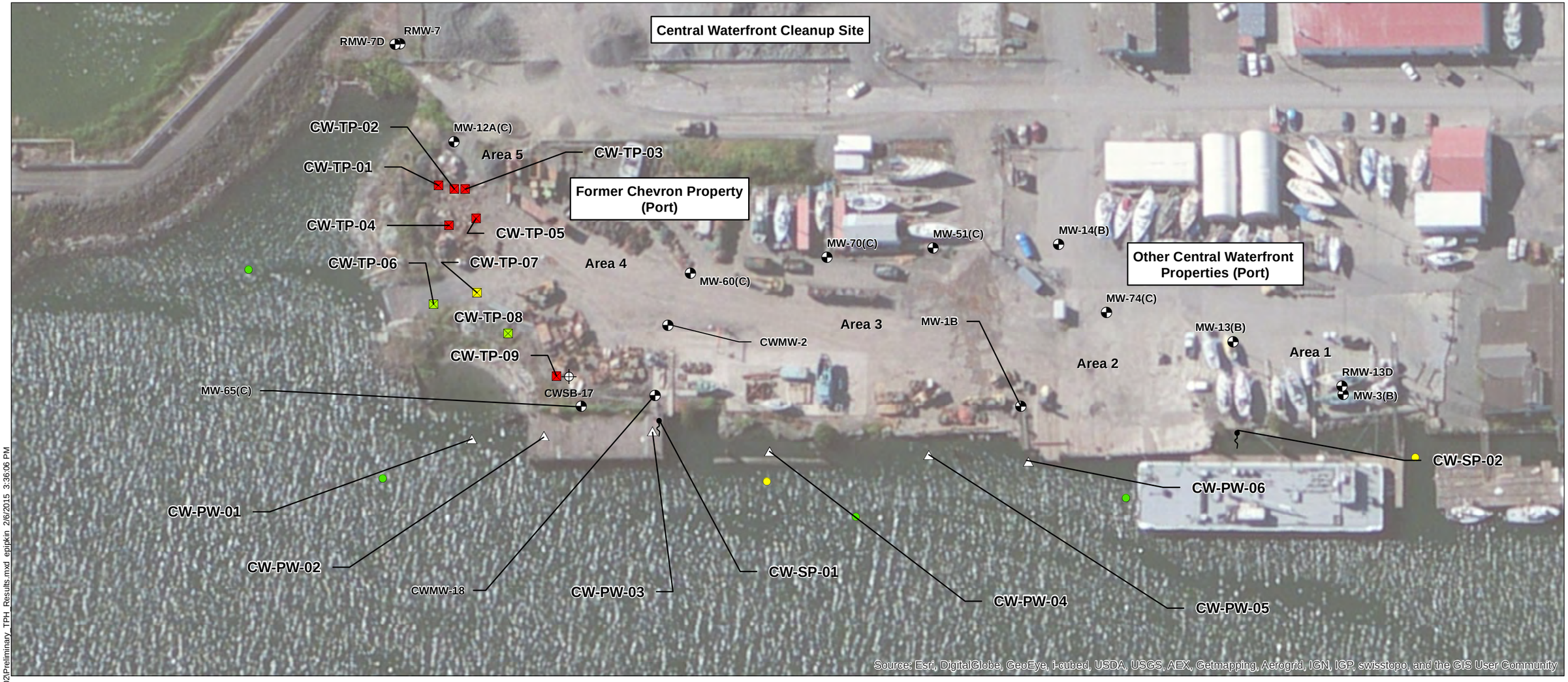
ANCHOR QEA

Figure H-1

Preliminary Groundwater, Seep, and Porewater Results: Benzene and TPH-G

Appendix H - Central Waterfront Investigation

Whatcom Waterway Cleanup in Phase 1 Site Areas - Final EDR



△ Pore Water Sample Location

Seep Sample Location

Soil Test Pit Location - No Visual Observations of Petroleum Impacts

Soil Test Pit Location - Limited Observations of Petroleum Impacts

Soil Test Pit Location - Visual Observations of Petroleum Impacts

Groundwater Monitoring Well

Previous Soil Boring (2012)

Bioassay

Pass

Fail SQS

Notes:
1. Analyzed with silica gel cleanup
2. Analyzed without silica gel cleanup
3. Results presented in µg/L (ppb)
4. **Bold** indicates a detected concentration
5. TPH-Dx = Total Petroleum Hydrocarbons - extended diesel range
6. Diesel = Diesel range hydrocarbons
7. MO = Motor oil range hydrocarbons
8. Y = Analytical error during extraction (higher reporting limit)
9. U = Non-detect (reporting limit listed)
10. Aerial photo provided by ESRI.

Feet
0 75 150

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ANCHOR QEA

Figure H-2
Preliminary Groundwater, Seep, and Porewater Results: TPH-Dx
Appendix H - Central Waterfront Investigation
Whatcom Waterway Cleanup in Phase 1 Site Areas - Final EDR

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☒ July 2012 Test Pit Location

◒ Groundwater Monitoring Well

Historic Soil Borings and TPH-G Results (mg/kg)

- < 100
- 100 - 1,000
- 1,000 - 5,000
- > 5,000

Notes:

1. **Bold** indicates a detected concentration
2. U = Non-detect (Reporting Limit listed)
3. Exceeds site specific screening level for soil (Benzene = 0.014 mg/kg; TPH-G = 30 mg/kg)
4. Reporting limit above most stringent benzene screening industrial level for saturated soil due to analytical instrument interference
5. Source of Historical TPH-G data: AECOM, 2012
6. TPH-G = Total Petroleum Hydrocarbons - Gasoline Range
7. Aerial photo provided by ESRI.

Feet

0 75 150

ANCHOR QEA

Figure H-3

Preliminary Soil Results: Benzene and TPH-G

Appendix H - Central Waterfront Investigation

Whatcom Waterway Cleanup in Phase 1 Site Areas - Final EDR

July 2012 Test Pit Location

Groundwater Monitoring Well

Historic Soil Borings and TPH-Dx Results (mg/kg)

- < 2,000
- 2,000 - 5,000
- 5,000 - 10,000
- > 10,000

Notes:

1. Analyzed with silica gel cleanup
2. Analyzed without silica gel cleanup
3. Results presented in mg/kg (ppm)
4. **Bold** indicates a detected concentration
5. U = Non-detect (Reporting Limit listed)
6. Exceeds site specific surface water screening level for TPH-Dx in soil (2,000 mg/kg for Diesel + MO)
7. TPH-Dx = Total Petroleum Hydrocarbons - extended diesel range
8. Diesel = Diesel range hyrdocarbons
9. MO = Motor oil range hydrocarbons
10. Source of historical TPH-Dx data: AECOM, 2012
11. Aerial photo provided by ESRI.

Feet

0 75 150

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ANCHOR QEA

Figure H-4
Preliminary Soil Results: TPH-Dx
Appendix H - Central Waterfront Investigation
Whatcom Waterway Cleanup in Phase 1 Site Areas - Final EDR

ATTACHMENT 1
FIELD SAMPLING DATA FORMS

FIELD SAMPLING DATA SHEET

ANCHOR QEA

1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** CW-PW-01

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** CW-PW-01-072412

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLDY		CLOUDY		RAIN				

TEMPERATURE: °F 75. °C [Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
/ /	:	.	---	.	---	.	X 1	POREWATER
/ /	:	.	---	.	---	.	X 3	.

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
VOA Glass	7/24/12	14:50	B	3	40 ml	HCl	YES	NO	—	X
Amber Glass	〃	〃	〃	2	250, 500, 1L	(None) (HCl) (H_2SO_4)	YES	NO	—	X
	/ /	:			250, 500, 1L		YES	NO		
	/ /	:			250, 500, 1L		YES	NO		
Total Bottles (include duplicate count):				5						

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (TPH-Gx)
AMBER - Glass	(PAH) (TPH-HCID) (Oil &Grease) (TPH-Dx w/Silica Gel Cleanup) (TPH-Dx w/o Silica Gel Cleanup)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)

WATER QUALITY DATA Purge Start Time: 14:40

Meas.	Time	Cum. Volume	DTW(ft TOC)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality
1	0:03	—	—	7.64	32403	16.59	21.05	20.27	1.22	-132.0	clear, colorless
2	0:06	—	—	7.63	32794	16.63	21.33	20.57	0.92	-135.1	↓ ↓
3	0:09	—	—	7.65	32431	16.57	21.09	20.33	0.77	-140.8	↓ ↓
4	:										
5	:	SEAWATER PARAMETERS ON BOTTOM									
6	:			8.14	27247	14.90	17.67	16.67	10.31	-17.2	
7	:										
8	:										
9	:										
10	:										
11	:										
12	:										
13	:										
14	:										

[gallons or liters] [Clarity, Color]

Comments: Sample Type: (Porewater) Seep Groundwater

Coordinates:

Approximate Elevation: **-5.55 ft**

SAMPLER: Matt Wilson / Isha Labodie (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** CW-PW-02

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** CW-PW-02-070412

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY	PRTLY CLDY	CLOUDY	RAIN					**TEMPERATURE:**	°F 75 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW	[Water Column x Gal/ft] Volume (gal)
/ /	:	.	---	.	---	.	X 1 POREWATER
/ /	:	.	---	.	---	.	X 3 .

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA Sample Depth:

Bottle Type	Date	Time	Method §	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	[√ if used] √
VOA Glass	7 04/12	13:00	B	3	40 ml	HCl	YES	NO	—	✓
Amber Glass	7 04/12	13:00	↓	1	250, 500, 1L	(None) (HCl) (H_2SO_4)	YES	NO	—	✓
	/ /	:			250, 500, 1L		YES	NO		
	/ /	:			250, 500, 1L		YES	NO		

Total Bottles (include duplicate count): 4

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (TPH-Gx)
AMBER - Glass	(PAH) (TPH-HCID) (Oil &Grease) (TPH-Dx w/Silica Gel Cleanup) (TPH-Dx w/o Silica Gel Cleanup)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)

WATER QUALITY DATA Purge Start Time: 13 00

Meas.	Time Min	Cum. Volume	DTW(ft TOC)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality
1	0 :03	~300 ml	—	7.62	29944	14.00	19.49	18.64	1.00	-149.9	sl. cloudy, l gray tint
2	0 :06	~600 ml	—	7.59	29564	14.16	19.21	18.32	0.66	-164.7	↓ ↓
3	0 :09	~900 ml	—	7.59	29007	14.17	18.84	17.93	0.61	-172.7	clear, colorless
4	:										
5	:	SEAWATER PARAMETERS at SURFACE									
6	:			8.04	4178	17.61	2.723	2.22	10.87	-8.3	
7	:										
8	:										
9	:										
10	:										
11	:										
12	:										
13	:										
14	:										

[gallons or liters] [Clarity, Color]

Comments: Sample Type: (Porewater) Seep Groundwater

Coordinates:

Approximate Elevation: ~~-6.21 ft~~

SAMPLER: Matt Wilson / Julia Labadie
(PRINTED NAME)

(SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA
1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** CW-PW-03

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** CW-PW-03-070512

DUP ID: CW-PW-53-070512 (1200)

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLDY		CLOUDY		RAIN			**TEMPERATURE:**	°F 75 . °C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
/ /	:	.	---	.	---	.	X 1	POREWATER
/ /	:	.	---	.	---	.	X 3	.

Gal/ft = (dia./2)^2 x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
VOA Glass	07/05/12	11:55	B	3	40 ml	HCl	YES	NO	—	✓
Amber Glass	07/05/12	√:	B	2	250, 500, 1L	(None) (HCl) (H_2SO_4)	YES	NO	—	✓
	/ /	:			250, 500, 1L		YES	NO		
	/ /	:			250, 500, 1L		YES	NO		

Total Bottles (include duplicate count): 5 (10)

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (TPH-Gx)
AMBER - Glass	(PAH) (TPH-HCID) (Oil &Grease) (TPH-Dx w/Silica Gel Cleanup) (TPH-Dx w/o Silica Gel Cleanup)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)

WATER QUALITY DATA Purge Start Time: 11 49

Meas.	Time	Cum. Volume	DTW(ft TOC)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality
1	0:03	—	—	7.66	23348	13.72	15.10	14.08	0.92	-136.7	clear, colorless
2	0:06	—	—	7.64	22905	13.64	14.87	13.85	0.38	-166.2	↓ ✓
3	0:09	—	—	7.63	22257	13.57	14.45	13.42	0.33	-176.1	↓ ↓
4	0:12	—	—	7.63	21650	13.56	14.05	13.02	0.39	-187.7	↓ ↓
5	:										
6	:	Sea water parameters at surface.									
7	:			7.97	53995	16.94	3.475	2.89	10.15	17.6	
8	:										
9	:										
10	:										
11	:										
12	:										
13	:										
14	:										

[gallons or liters] [Clarity, Color]

Comments: Sample Type: (Porewater) Seep Groundwater

Coordinates:

Approximate Elevation: -8.41 ft

SAMPLER: Matt Wilson / Julia Labadie (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** CW-PW-04

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** CW-PW-04-070512

DUP ID:

WIND FROM:	N	(NE)	E	SE	S	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	(SUNNY)		PRTLY CLDY		CLOUDY		RAIN		**TEMPERATURE:**	°F 75 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
/ /	:	.	---	.	---	.	X 1	POREWATER
/ /	:	.	---	.	---	.	X 3	.

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA Sample Depth:

Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	[√ if used] √
VOA Glass	7/05/12	13:30	B	3	40 ml (HCl)	YES	NO	—	✓
Amber Glass	/ ✓	✓	✓	2	250, 500, 1L (None) (HCl) (H_2SO_4)	YES	NO	—	✓
	/ /	:			250, 500, 1L	YES	NO		
	/ /	:			250, 500, 1L	YES	NO		

Total Bottles (include duplicate count): 5

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (TPH-Gx)
AMBER - Glass	(PAH) (TPH-HCID) (Oil &Grease) (TPH-Dx w/Silica Gel Cleanup) (TPH-Dx w/o Silica Gel Cleanup)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)

WATER QUALITY DATA Purge Start Time: 13:00

Meas.	Time	Cum. Volume [gallons or liters]	DTW(ft TOC)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality [Clarity, Color]
1	0:03	—	—	7.72	4670	23.18	3.699	3.14	—	-137.8	cloudy, dark gray
2	0:06			7.93	4039	23.30	2.918	2.67	—	-137.0	↓ ✓
3	0:09	—	—	—	—	—	—	—	—	—	—
4	0:12	—	—	8.09	6905	23.50	4.491	3.79	7.89	-148.4	sl. cloudy, brown tint
5	0:15	—	—	8.12	6953	22.71	4.579	3.82	8.12	-153.7	↓ ↓
6	0:18	(1) —	—	7.07	6150	14.25	3.970	3.34	0.41	-215.3	↓ ↓
7	0:21	800ml	—	6.99	5813	14.22	3.777	3.17	0.28	-229.8	clear, lt grey tint
8	0:24	1400ml	—	6.98	5660	14.14	3.680	3.08	0.34	-242.5	↓ ↓
9	0:27	1800ml	—	6.99	5677	14.11	3.690	3.09	0.46	-246.2	↓ ✓
10	:										
11	:	Seawater parameters in 1 foot of water on bottom									
12	:	—	—	7.56	4280	18.58	2.780	2.28	8.80	-130.7	—
13	:										
14	:										

Comments: Sample Type: (Porewater) Seep Groundwater

Coordinates:

Approximate Elevation: -7.07 ft

① Flushed screen with 150 ml of distilled water - then removed at least 10 times that volume

SAMPLER: Matt Wilson / Erica Laboda (PRINTED NAME)

(SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA
1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** CW-PW-05

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** CW-PW-05-070412

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY	PRTLY CLDY	CLOUDY	RAIN					**TEMPERATURE:**	°F 70 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
/ /	:	.	---	.	---	.	X 1	PORE WATER
/ /	:	.	---	.	---	.	X 3	.

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA Sample Depth:

Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	[√ if used] √
VOA Glass	7/04/12	11:55	B	1	40 ml	HCl	YES	NO	—	✓
Amber Glass	7/04/12	↓:	↓	1	250, 500, 1L	(None) (HCl) (H_2SO_4)	YES	NO	—	✓
	/ /	:			250, 500, 1L		YES	NO		
	/ /	:			250, 500, 1L		YES	NO		

Total Bottles (include duplicate count): 2

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (TPH-Gx)
AMBER - Glass	(PAH) (TPH-HCID) (Oil &Grease) (TPH-Dx w/Silica Gel Cleanup) (TPH-Dx w/o Silica Gel Cleanup)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)

WATER QUALITY DATA Purge Start Time: 10 : 14

Meas.	Time min	Cum. Volume [gallons or liters]	DTW(ft TOC)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality [Clarity, Color]
1	0:06	100 ml	—	8.08	9544	21.88	6.209	5.37	8.83	-176.1	black, opaque
2	0:19	125 ml	—	8.33	11599	23.15	7.540	6.62	7.15	-68.9	↓ ↓
3	0:38	200 ml	—	7.63	7836	19.13	5.083	4.34	10.09	-88.1	black, opaque
4	0:44	300 ml	—	7.96	6388	19.83	4.133	3.47	7.02	-66.4	↓ ↓
5	:										clear, ~~colorless~~ slight dark gray tint
6	:										
7	:										
8	:										
9	:										
10	:										
11	:										
12	:										
13	:										
14	:										

Comments: Sample Type: (Porewater) Seep Groundwater

limited volume could not get zero headspace.

Coordinates: 1241270.79 E ~~6 ft~~ 643036.53 N

Approximate Elevation: -3.92 ft

SAMPLER: Matt Wilson / Julia Labadie (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA
1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** CW-PW-06

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** CWPW-06-070612

DUP ID:

WIND FROM: N NE (E) SE S SW W NW (LIGHT) MEDIUM HEAVY

WEATHER: (SUNNY) PRTLY CLDY CLOUDY RAIN **TEMPERATURE:** °F 70 . °C [Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW	[Water Column x Gal/ft] Volume (gal)
/ /	:	.	---	.	---	.	X 1 POREWATER
/ /	:	.	---	.	---	.	X 3 .

Gal/ft = (dia./2)² x 0.163: 1" = 0.041; 2" = 0.163; 3" = 0.367; 4" = 0.653; 6" = 1.469; 10" = 4.080; 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
VOA Glass	7/06/12	17:20	B	2 40 ml	(HCl)	(YES)	(NO)	—	✓
Amber Glass	//	:		1 250, 500, 1L	(None) (HCl) (H_2SO_4)	(YES)	(NO)	—	✓
	/ /	:		250, 500, 1L		YES	NO		
	/ /	:		250, 500, 1L		YES	NO		

Total Bottles (include duplicate count): (3)

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (TPH-Gx)
AMBER - Glass	(PAH) (TPH-HCID) (Oil & Grease) (TPH-Dx w/Silica Gel Cleanup) (TPH-Dx w/o Silica Gel Cleanup)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)

7/05 7/06

WATER QUALITY DATA Purge Start Time: 10:06 1701

Meas.	Time	Cum. Volume	DTW(ft TOC)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality
7/5/12 1	:	SEAWATER PARAMETERS CW D FROM									
2	— :	—	—	7.82	42350	12.20	27.53	27.18	7.45	71.9	—
3	0 :03	—	—	7.75	41747	13.92	27.12	27.09	6.14	10.8	slightly lt gray fine
4	0 :06	—	—	7.77	41389	14.36	26.90	26.55	5.91	-1.4	↓ ↓
5	0 :09	—	—	7.80	41480	14.79	26.95	26.61	6.17	-2.8	↓ ↓
6	0 :12	—	—	7.82	41485	14.81	26.99	26.66	6.36	-7.5	↓ ↓
7	0 :15	We Moved, drove screen again and restarted - did not make water									
8	(1) :	—	—	7.78	41488	13.11	26.94	26.54	7.43	44.9	May be screen clogged?
7/6/12 9	0 :03	—	—	7.97	19735	18.69	13.02	12.03	9.15	-70.7	clear, colorless
10	0 :06	—	—	7.68	22891	20.53	14.94	13.95	9.20	-81.7	↓ ↓
11	0 :09	—	—	7.59	24603	20.93	16.07	15.09	9.05	-87.7	↓ ↓
12	0 :12	—	—	7.48	26404	21.05	17.38	16.32	8.96	-87.6	↓ ↓
13	0 :15			7.41	28743	21.14	18.75	17.87	8.95	-85.6	↓ ↓
(1) 14	~~0 :18~~	—	—	7.87	41933	12.72	27.26	26.89	7.86	18.3	—

[gallons or liters] [Clarity, Color]

Comments: Sample Type: (Porewater) Seep Groundwater

(1) Seawater parameters

Coordinates:

Approximate Elevation: **-11.16 ft**

SAMPLER: Matt Wilson / Julia Labodie

(PRINTED NAME)

(SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA
1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** CW-SP-01

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** CW-SP-01-070512

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	(W)	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	(SUNNY)	PRTLY CLDY	CLOUDY	RAIN					**TEMPERATURE:**	°F 75.	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product [Product Thickness]	DT-Water [Water Column]	DTP-DTW	DTB-DTW		Volume (gal) [Water Column x Gal/ft]
/ /	:	.	---	.	---	.	X 1	SEEP
/ /	:	.	---	.	---	.	X 3	.

Gal/ft = (dia./2)^2 x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) ~~Waterra~~ (B) Peristaltic Pump (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA

Bottle Type	Date	Time	Method §	Amount	Volume mL	Preservative [circle]	Ice	Filter	Sample Depth: pH	[√ if used] √
VOA Glass	7/05/12	12:10	D	3	40 ml	HCl	YES	NO	—	X
Amber Glass	7/05/12	√:	D	2	250, 500, 1L	(None) (HCl) (H_2SO_4)	YES	NO	—	X
	/ /	:			250, 500, 1L		YES	NO		
	/ /	:			250, 500, 1L		YES	NO		
Total Bottles (include duplicate count):				5						

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (TPH-Gx)
AMBER - Glass	(PAH) (TPH-HCID) (Oil &Grease) (TPH-Dx w/Silica Gel Cleanup) (TPH-Dx w/o Silica Gel Cleanup)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)

WATER QUALITY DATA Purge Start Time: 11 : 50

Meas.	Time	Cum. Volume [gallons or liters]	DTW(ft TOC)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality [Clarity, Color]
1	:	—	—	6.72	5321	13.08	3.459	2.89	2.65	-157.4	clear, colorless
2	:										
3	:										
4	:										
5	:										
6	:										
7	:										
8	:										
9	:										
10	:										
11	:										
12	:										
13	:										
14	:										

Comments: Sample Type: (Circle one:) Porewater (Seep) Groundwater

Proposed Coordinates: 1241097.82 E 642906.50

Approximate Elevation: -2.17 ft

Dug hole at base of seep waited for water to run clear and collected sample

Moderate rainbow sheen in sediment and water at ~~seep~~ station 1 on shoreline about 5 feet from seep.

SAMPLER: Matt Wilson / Julia Labadie (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** CW-SP-02

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** CW-SP-02-070412

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	(W)	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	(SUNNY)	PRTLY CLDY	CLOUDY	RAIN							

TEMPERATURE: °F 70 . °C [Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
/ /	:	.	---	.	---	.	X 1	SEEP
/ /	:	.	---	.	---	.	X 3	.

Gal/ft = (dia./2)^2 x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
VOA Glass	7/04/12	09:10	D	1	40 ml	HCl	YES	NO	—	X
Amber Glass	//	:		1	250, 500, 1L	(None) (HCl) (H_2SO_4)	YES	NO	—	X
	/ /	:			250, 500, 1L		YES	NO		
	/ /	:			250, 500, 1L		YES	NO		
Total Bottles (include duplicate count):				2						

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (TPH-Gx)
AMBER - Glass	(PAH) (TPH-HCID) (Oil &Grease) (TPH-Dx w/Silica Gel Cleanup) (TPH-Dx w/o Silica Gel Cleanup)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)

WATER QUALITY DATA Purge Start Time: NA

Meas.	Time	Cum. Volume [gallons or liters]	DTW(ft TOC)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality [Clarity, Color]
1	:										
2	:	NOT Enough volume for parameters.									
3	:										
4	:										
5	:										
6	:										
7	:										
8	:										
9	:										
10	:										
11	:										
12	:										
13	:										
14	:										

Comments: Sample Type: (Circle one:) Porewater (Seep) Groundwater Coordinates: ~~1241429.76 E~~ ~~643189.27 N~~

Approximate Elevation: ~~-2.41 ft~~

limited sample volume
Took 40 minutes to fill one 40ml VOA vial → & collected drips out of rocks into sample containers.

SAMPLER: Matt Wilson / Julia Labadie (PRINTED NAME) (SIGNATURE)

could not get zero headspace in vial. Tried 6 times.

FIELD SAMPLING DATA SHEET

ANCHOR QEA

1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** ~~CW-MW-2~~ CW-MW-65(C)

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** CW-MW-65C-070612

DUP ID:

WIND FROM:	N	NE	(E)	SE	S	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	(SUNNY)	PRTLY CLDY	CLOUDY	RAIN	**TEMPERATURE:**	°F 70 .	°C [Circle appropriate units]				

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
7/06/12	11:29	13.98	---	5.95	---	8.03	X 1	1.40
/ /	:	.	---	.	---	.	X 3	4.20

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | (2" = 0.163) | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (circled) (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA Sample Depth:

Bottle Type	Date	Time	Method §	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√ [√ if used]
VOA Glass	7/06/12	12:10	B	3	(40 ml)	(HCl)	(YES)	(NO)	—	√
Amber Glass	↓	↓	B	2	250, (500), 1L	(None) (HCl) (H_2SO_4)	(YES)	(NO)	—	√
	/ /	:			250, 500, 1L		YES	NO		
	/ /	:			250, 500, 1L		YES	NO		

Total Bottles (include duplicate count): 5

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) **(BTEX)** **(TPH-Gx)**
	AMBER - Glass	(PAH) (TPH-HCID) (Oil &Grease) (TPH-Dx w/Silica Gel Cleanup) **(TPH-Dx w/o Silica Gel Cleanup)**
	GREEN - Poly	(Total Cyanide) (Free Cyanide) (Weak and Dissociable Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)

WATER QUALITY DATA Purge Start Time: 11:30 Purge Type: Low Flow

Meas.	Elapsed Time min	Cum. Volume L	DTW(ft TOC)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality
1	0:03	~~700 ml~~ 0.2L	6.01	6.45	3249	13.61	2.109	1.71	1.03	76.3	clear, colorless
2	0:06	0.5L	6.00	6.34	3200	13.32	2.079	1.68	0.99	64.5	clear, L pale tint
3	0:09	0.9L	6.00	6.32	3173	13.74	2.058	1.66	—	53.9	↓ ↓
4	0:12	1.2L	6.13	6.32	3136	13.16	2.037	1.65	2.74	44.0	↓ ↓
5	0:15	1.7L	6.13	6.32	3103	13.07	2.017	1.63	3.85	36.5	↓ ↓
6	0:18	2.4L	6.17	6.33	3046	12.98	1.976	1.59	2.93	22.1	↓ ↓
7	0:21	2.9L	6.18	6.33	2997	12.94	1.947	1.57	1.79	10.9	↓ ↓
8	0:24	3.45L	6.19	6.34	2955	12.91	1.918	1.54	1.36	-1.1	↓ ↓
9	0:27	4.1	6.20	6.34	2908	12.90	1.893	1.53	1.35	76.6	↓ ↓
10	0:30	4.8	6.21	6.35	2878	12.95	1.873	1.51	1.20	-28.2	clear, colorless
11	0:33	5.4	6.19	6.36	2815	13.02	1.828	1.47	0.95	-44.4	↓ ↓
12	0:36	6.0	6.17	6.37	2817	13.10	1.834	1.47	0.83	-52.8	↓ ↓
13	0:39	6.6	6.19	6.37	2835	13.18	1.842	1.47	0.96	-56.8	↓ ↓
14	:										

[gallons or liters] [Clarity, Color]

Comments: Sample Type: (Circle one:) Porewater / Seep / (Groundwater) Coordinates: Elevation:

-0.65 ft correction

SAMPLER: Matt Wilson / Julia Labadie (PRINTED NAME) [signature] (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** CW-MW-18

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** CW-MW-18-070612

DUP ID:

WIND FROM: N | NE | (E) | SE | S | SW | W | NW | (LIGHT) | MEDIUM | HEAVY

WEATHER: (SUNNY) | PRTLY CLDY | CLOUDY | RAIN **TEMPERATURE:** °F 75 . °C [Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
7/06/12	12:19	15.05	---	~~5.74~~ 6.06	---	8.99	X 1	1.56
/ /	:	.	---	.	---	.	X 3	4.69

Gal/ft = (dia./2)² x 0.163 (1" = 0.041) 2" = 0.163 3" = 0.367 4" = 0.653 6" = 1.469 10" = 4.080 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
VOA Glass	7/06/12	12:40	B	3	40 ml	HCl	YES	NO	—	✓
Amber Glass	/ /	:		2	250, 500, 1L	(None) (HCl) (H_2SO_4)	YES	NO	—	✓
	/ /	:			250, 500, 1L		YES	NO		
	/ /	:			250, 500, 1L		YES	NO		
Total Bottles (include duplicate count):				5						

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (TPH-Gx)
AMBER - Glass	(PAH) (TPH-HCID) (Oil &Grease) (TPH-Dx w/Silica Gel Cleanup) (TPH-Dx w/o Silica Gel Cleanup)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)

WATER QUALITY DATA Purge Start Time: 12:20 PURGE TYPE (circle): Low Flow; 3x Purge; Well Dry

Meas.	Time elapsed min	Cum. Volume [gallons or liters]	DTW(ft TOC)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality [Clarity, Color]
1	0:03	0.4L	6.15	6.28	1015	15.58	0.660	0.51	1.62	-144.4	clear, colorless ②
2	0:06	0.9L	6.15	6.27	1017	15.58	0.661	0.51	1.23	-138.0	↓ ↓
3	0:09	1.0L ①	~~6.74~~	—	—	—	—	—	—	—	↓ ↓
4	0:12	1.4L	6.18	6.29	1013	15.44	0.659	0.50	0.95	-169.2	↓ ↓
5	0:15	2.0	6.19	6.27	1017	15.48	0.661	0.51	0.58	-180.4	↓ ↓
6	0:18	2.6	6.19	6.28	1016	15.40	0.660	0.51	0.60	-185.2	↓ ↓
7	0:21	3.1	6.19	6.28	1015	15.40	0.660	0.51	0.55	-189.3	↓ ↓
8	0:24	3.65	6.19	6.28	1014	15.39	0.659	0.50	0.59	-191.6	↓ ↓
9	:										
10	:										
11	:										
12	:										
13	:										
14	:										

Comments: Sample Type: Porewater Proposed Coordinates: 1241090.12 E 642925.4 N ② water has moderate HC-like odor (petroleum-like)

-0.45' correction factor Seep Elevation: 12.75 ft

Groundwater ① Tubing came disconnected at P-pump.

SAMPLER: Matt Wilson / Julia Haberlie

(PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** CW-MW-2

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** CWMW-2-070612

DUP ID:

WIND FROM:	N	NE	(E)	SE	S	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	(SUNNY)		PRTLY CLDY		CLOUDY		RAIN		**TEMPERATURE:**	°F 75 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
7/06/12	13:00	38.26	---	6.86	---	31.40	X 1	5.46
/ /	:	.	---	.	---	.	X 3	16.39

Gal/ft = $(dia./2)^2 \times 0.163$ 1" = 0.041 (2" = 0.163) 3" = 0.367 4" = 0.653 6" = 1.469 10" = 4.080 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
VOA Glass	7/06/12	13:40	B	3 (40 ml)	(HCl)	(YES)	(NO)	—	✓
Amber Glass	//	//	//	2 (250, 500, 1L)	(None) (HCl) (H_2SO_4)	(YES)	(NO)	—	✓
	/ /	:		250, 500, 1L		YES	NO		
	/ /	:		250, 500, 1L		YES	NO		

Total Bottles (include duplicate count): 5

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (TPH-Gx)
AMBER - Glass	(PAH) (TPH-HCID) (Oil &Grease) (TPH-Dx w/Silica Gel Cleanup) (TPH-Dx w/o Silica Gel Cleanup)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)

WATER QUALITY DATA Purge Start Time: 13:01 PURGE TYPE (circle): (Low Flow); 3x Purge; Well Dry

Meas.	Time	Cum. Volume	DTW(ft TOC)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality
1	0:03	0.4	7.55	—	—	—	—	—	—	—	—
2	0:06	0.7	7.82	7.38	2401	15.18	1.556	1.24	1.10	-216.3	sl. cloudy, dark gray ~~pekt~~ tint
3	0:09	1.0	8.05	—	—	—	—	—	—	—	↓ ↓
4	0:12	1.25	8.13	7.20	1716	15.84	1.114	0.87	0.53	-254.1	↓ ↓
5	0:15	1.5	8.17	7.19	1779	15.82	1.158	0.91	0.58	-265.2	↓ ↓
6	0:18	1.75	8.23	7.14	1350	15.78	0.871	0.67	0.73	-257.1	↓ ↓
7	0:21	2.0	8.27	7.14	1410	15.63	0.915	0.71	0.60	-267.6	sl. cloudy, l. gray tint
8	0:24	2.3	8.28	7.14	1465	15.61	0.953	0.74	0.48	-264.3	↓ ↓
9	0:27	2.5	8.26	7.12	1314	15.96	0.857	0.66	0.45	-266.3	↓ ↓
10	0:30	2.7	8.20	7.13	1479	16.02	0.959	0.74	0.46	-273.3	↓ ↓
11	0:33	2.95	8.25	7.14	1515	15.84	0.983	0.76	0.34	-273.0	↓ ↓
12	0:36	3.2	8.24	7.14	1499	15.94	0.975	0.76	0.38	-266.3	↓ ↓
13	:										
14	:										

[gallons or liters] [Clarity, Color]

Comments: Sample Type: Porewater Seep (Groundwater) Proposed Coordinates: 1241060.16 E 642671.04 N Elevation: 13.01 ft

SAMPLER: Matt Wilson / Julia Labadie (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA
1605 Cornwall Avenue
Bellingham, WA 98225
Office: (360) 733-4311 Fax: (360) 733-4312

PROJECT NAME: Whatcom Waterway -Supplemental Shoreline Inv. **STATION ID:** MW-1(B)

SITE ADDRESS: C Street, Central Waterfront, Bellingham, WA **BLIND ID:** MW-1B-070612

DUP ID:

WIND FROM:	N	NE	(E)	SE	S	SW	W	NW	LIGHT	(MEDIUM)	HEAVY
WEATHER:	(SUNNY)	PRTLY CLDY		CLOUDY		RAIN			**TEMPERATURE:**	° F	° C

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Circle appropriate units] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
7/06/12	14:05	14.32	---	7.30	---	7.07	X 1	1.14
/ /	:	.	---	.	---	.	X 3	3.43

Gal/ft = (dia./2)^2 x 0.163 | 1" = 0.041 | (2" = 0.163) | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer (D) Grab (E)

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
VOA Glass	7/06/12	15:00	B	3 (40 ml)	(HCl)	(YES)	(NO)	—	✓
Amber Glass	//	:		2 (250, 500, 1L)	(None) (HCl) (H_2SO_4)	(YES)	(NO)	—	✓
	/ /	:		250, 500, 1L		YES	NO		
	/ /	:		250, 500, 1L		YES	NO		

Total Bottles (include duplicate count): 5

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (TPH-Gx)
AMBER - Glass	(PAH) (TPH-HCID) (Oil &Grease) (TPH-Dx w/Silica Gel Cleanup) (TPH-Dx w/o Silica Gel Cleanup)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)

WATER QUALITY DATA Purge Start Time: 14:06 PURGE TYPE (circle): (Low Flow); 3x Purge; Well Dry

Meas.	Time	Cum. Volume (Liters)	DTW(ft TOC) (1)	pH	E Cond (µS/cm)	Temp °C	TDS (g/L)	Salinity (ppt)	DO (mg/l)	ORP (mV)	Water Quality
1	0:03	0.25	7.55	7.05	6184	15.67	4.015	3.38	3.03	-294.4	clear, colorless
2	0:06	0.5	7.65	7.04	6146	15.57	3.998	3.37	1.97	-298.4	↓ ↓
3	0:09	0.8	7.74	7.03	6107	15.46	3.967	3.34	1.06	-292.4	↓ slight yellow tint
4	0:12	0.95	7.68	7.04	6122	15.65	3.980	3.35	0.83	-299.0	↓ ↓
5	0:15	1.25	7.77	7.03	6079	15.83	3.923	3.30	0.68	-302.6	↓ ↓
6	0:18	1.5	7.77	7.03	6031	15.87	3.934	3.30	0.53	-295.5	↓ ↓
7	0:21	1.75	7.82	7.03	6031	15.68	3.926	3.30	0.58	-306.8	↓ ↓
8	0:24	2.0	7.87	—	—	—	—	—	—	—	↓ ↓
9	0:27	2.4	7.98	7.04	6038	15.99	3.926	3.30	0.49	-309.2	↓ ↓
10	0:30	2.6	8.00	7.04	6035	16.23	3.926	3.30	0.46	-310.0	↓ ↓
11	0:33	2.8	8.10	7.04	6035	16.26	3.925	3.30	~~0.41~~	-296.1	↓ ↓
12	0:36	3.0	8.12	7.05	6043	16.03	3.923	3.31	0.42	-295.5	↓ ↓
13	0:39	3.25	8.14	7.04	6040	15.90	3.929	3.31	—	-295.7	↓ ↓
14	0:42	3.5	8.14	7.05	6024	16.29	3.919	3.30	0.34	-310.1	↓ ↓
	0:45	3.7	8.16	7.06	6037	16.23	3.926	3.30	0.36	-295.4	
	0:48	4.0	8.15	7.06	6013	16.08	3.909	3.29	0.36	-301.3	

[gallons or liters] [Clarity, Color]

Comments: Sample Type: Porewater Seep (Groundwater) Proposed Coordinates: 1241295.92 E 643110.95 N

-0.48 ft correction factor Elevation: 11.84 ft

(1) Difficult to get an accurate DTW reading - many false readings.

SAMPLER: Matt Wilson / Julia Labalie (PRINTED NAME) (SIGNATURE)

ANCHOR QEA

SOIL TEST PIT LOG

PROJECT NAME Central Waterfront RI/FS
PROJECT NUMBER 120007-01
FIELD PERSONNEL: Julia Labadie / Matt Wilson
EXCAVATION CONTRACTOR Ultratank Services
EXCAVATION METHOD Backhoe
NORTHING _____ EASTING _____

TEST PIT # CW-TP-01
DATE 7/6/2012
TIME 1040
TOTAL DEPTH 9.2
SHEET 1 OF 1
Attempt 1 of 1

SAMPLING METHOD	SAMPLE NUMBER	SHEEN TEST[1]	VOC Headspace (ppm)	Sample Interval	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of test pit / LITHOLOGIC DESCRIPTION
by chisel & bucket	CW-TP01-8-9	HS	102	8-9	0-9		0-9.2': Damp, medium dense dark gray to brown, gravelly, m-c SAND. No odor. Gravels are subrounded to subangular. Occasional brick fragments and anthropogenic debris (bottles, cans, wires). @1.5': Large (1'-long) pieces of wood. @3': 8"-long chunk of concrete. @4': Grades to light brown, silty, slightly gravelly. No odor. @6.5' Grades to light gray, very silty, moderate HC-like odor. @7.5': Grades to black and dark gray, m-c SAND, wet. Moderate metallic sheen and ~~faint~~ strong HC-like odor. Groundwater at 8.5' @8.5': Grades to heavy metallic sheen with moderate brown blebs on grains and in pooled water. Occasional shell hash.
					9.2		End of test pit @ 9.2' (test pit caving quickly)

Notes: 1. Sheen Test: NS = No sheen, SS = Slight sheen, MS = Moderate sheen, HS= Heavy sheen
2. No O = No discernible odor

ANCHOR QEA

SOIL TEST PIT LOG

PROJECT NAME Central Waterfront RI/FS
PROJECT NUMBER 120007-01
FIELD PERSONNEL: Julia Labadie / Matt Wilson
EXCAVATION CONTRACTOR Ultratank Services
EXCAVATION METHOD Backhoe
NORTHING _____ EASTING _____

TEST PIT # CW-TP-02
DATE 7/6/2012
TIME 0945
TOTAL DEPTH 9.2'
SHEET 1 OF 1
Attempt 1 of

SAMPLING METHOD	SAMPLE NUMBER	SHEEN TEST[1]	VOC Headspace (ppm)	Sample Interval	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of test pit / LITHOLOGIC DESCRIPTION
backhoe bucket	CW-TP-02-8.2-9.2	MS HS	94.8	8.2-9.2	0-9	A	0-9.2': Dry, medium dense gray to brown, gravelly, f-c SAND. Gravels are angular to subangular (Fill). Trace brick fragments. No odor. @1' metal wire. @3.5' Grades to light brown, slightly silty, slightly gravelly. @6': Grades to light gray, very silty, trace gravel. Damp to moist. Moderate HC-like odor. @7': Grades to moist, dark gray, m-c SAND. Strong HC-like odor. Moderate metallic sheen on grains. Trace gravel and anthropogenic debris (plastic, wire, tile fragments). Groundwater @ 8.5'. @8.2': Grades to occasional shell fragments, wet. Moderate metallic sheen on grains and in pooling water. Occasional brown webs in pooling water. Brown staining on all sample vials due to product. End of test pit @ 9.2' (due to caving).

Notes: 1. Sheen Test: NS = No sheen, SS = Slight sheen, MS = Moderate sheen, HS= Heavy sheen
2. No O = No discernible odor

ANCHOR QEA

SOIL TEST PIT LOG

PROJECT NAME Central Waterfront RI/FS
PROJECT NUMBER 120007-01
FIELD PERSONNEL: Julia Labadie / Matt Wilson
EXCAVATION CONTRACTOR Ultratank Services
EXCAVATION METHOD Backhoe
NORTHING _____ EASTING _____

TEST PIT # CW-TP-03
DATE 7/6/2012
TIME 0850
TOTAL DEPTH 8.2'
SHEET 1 OF 1
Attempt 1 of 1

Field location of test pit

SAMPLING METHOD	SAMPLE NUMBER	SHEEN TEST[1]	VOC Headspace (ppm)	Sample Interval	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	LITHOLOGIC DESCRIPTION
Grab from bucket	CW-TP-03-7-8	HS	4.0	7-8'	0 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10	SP	0-8.2': Dry, medium dense, gray to brown, gravelly, f-C SAND. Gravels are angular to subangular. @1': Trace brick fragments. @4' Grades to damp, gray, slightly silty, slightly gravelly. Trace HC-like odor. @5.3': Grades to moderate HC-like odor. @6': Grades to black and dark gray, strong HC-like odor, moderate metallic sheen on grains. @6.5': Grades to ~~wet~~ moist, heavy sheen with occasional brown blebs. @7' Grades to black m-C SAND, strong HC-like odor, wet, heavy metallic sheen ~~and~~ with moderate brown blebs. End of test pit @ 8.2' (due to pit caving) Water @ base of pit has heavy metallic sheen and brown blebs.

Notes: 1. Sheen Test: NS = No sheen, SS = Slight sheen, MS = Moderate sheen, HS= Heavy sheen
2. No O = No discernible odor

ANCHOR QEA

SOIL TEST PIT LOG

PROJECT NAME Central Waterfront RI/FS
PROJECT NUMBER 120007-01
FIELD PERSONNEL: Julia Labadie / Matt Wilson
EXCAVATION CONTRACTOR Ultratank Services
EXCAVATION METHOD Backhoe
NORTHING _____ EASTING _____

TEST PIT # CW-TP-04
DATE 7/2/2012
TIME 1445
TOTAL DEPTH 9.1'
SHEET 1 OF 1
ATT. 1 of 1

Field location of test pit

SAMPLING METHOD	SAMPLE NUMBER	SHEEN TEST[1]	VOC Headspace (ppm)	Sample Interval	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	LITHOLOGIC DESCRIPTION
backhoe bucket	CW-TP-04-8-9 CW-TP-54-8-9	MS-HS	46.2	8-9 8-9	1 2 3 4 5 6 7 8 9 10 11 12 3 4 5 6 7 8 9 0		0-2: Dry, loose, gray, gravelly, SAND (fill) @2' on shore-side of pit: 1'-thick concrete layer. 2-4': Med. Dense, damp, brown, slightly gravelly, slightly silty, m-c, SAND. @3': electric cords/cables and broken PVC pipe, brick fragments @4': Slight HC like odor 4-6': Stiff, moist, blue-gray, slightly sandy, slightly f-m gravelly, SILT, trace clay (till like). Moderate to strong HC-like odor 6-9.1': Dark gray, med. dense, moist, slightly gravelly, m-c SAND. Moderate to strong HC-like odor. Slight metallic sheen Water pooling (GW) @ base of pit has a moderate to heavy rainbow sheen and moderate dark brown globs. End of test pit @ 9.1' (pit caving) @ 8.2': Grades to very silty, trace gravel

Notes: 1. Sheen Test: NS = No sheen, SS = Slight sheen, MS = Moderate sheen, HS= Heavy sheen
2. No O = No discernible odor

Field duplicate @ this station.
Had to "track off" (toward road) ~2' when we hit concrete.

ANCHOR QEA

SOIL TEST PIT LOG

PROJECT NAME Central Waterfront RI/FS
PROJECT NUMBER 120007-01
FIELD PERSONNEL: Julia Labadie / Matt Wilson
EXCAVATION CONTRACTOR Ultratank Services
EXCAVATION METHOD Backhoe
NORTHING _____ EASTING _____

TEST PIT # CW-TP-05
DATE 0755
TIME 7/6/2012
TOTAL DEPTH ~~0755~~ 8.5
SHEET 1 OF 1
HH 1 of 1

SAMPLING METHOD	SAMPLE NUMBER	SHEEN TEST[1]	VOC Headspace (ppm)	Sample Interval	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of test pit / LITHOLOGIC DESCRIPTION
Backhoe bucket	CW-TP-05-7-8	HS	23.0	7-8	0–8.5		0-8.5' Dry, med/m dense, gray to brown gravelly, f-c SAND. Gravels are angular to subangular (fill). No odor. @4.2' Grades to slightly gravelly, grays. Slight HC-like odor. @4.5': 1"-long piece of wood. Occasional anthropogenic debris (plastic). @5' Substantial wood fragments. Grades to moderate HC-like odor. @6' Grades to damp, strong HC-like odor. @7' Grades to moist. Moderate metallic sheen. moderate shell hash. @7.5': Glass bottles, ceramic fragments. Groundwater @8.2' @8': Heavy sheen and ~~SEE~~ substantial blebs of product (brown) in pooled water at base of pit. End of test pit @ 8.5' – pit caving quickly below GW.

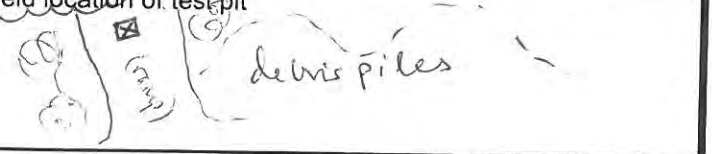
Notes: 1. Sheen Test: NS = No sheen, SS = Slight sheen, MS = Moderate sheen, HS= Heavy sheen
2. No O = No discernible odor

ANCHOR QEA

SOIL TEST PIT LOG

PROJECT NAME Central Waterfront RI/FS
PROJECT NUMBER 120007-01
FIELD PERSONNEL: Julia Labadie / Matt Wilson
EXCAVATION CONTRACTOR Ultratank Services
EXCAVATION METHOD Backhoe
NORTHING _____ EASTING _____

TEST PIT # CW-TP-06
DATE 7/2/2012
TIME 0815
TOTAL DEPTH 6.5'
SHEET 1 OF 1
Att. 1 of 1

SAMPLING METHOD	SAMPLE NUMBER	SHEEN TEST[1]	VOC Headspace (ppm) PID	Sample Interval (ft bgs)	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	LITHOLOGIC DESCRIPTION
backhoe bucket					0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		Field location of test pit: 
							0-4.5 Dry, loose, f-c gravelly, m-c SAND. Gravels are subrounded to subangular. Occasional cobbles (rounded). No odor.
							@ 3' Grades to damp, med. dense, slightly silty, light orange-brown.
							@ 4.5-5.5' Damp dense, brown sandy, gravelly, SILT (till). No odor.
	CW-TP-06-5.5-6.5	NS	0.0	5.5-6.5			5.5-6.5 Moist medium dense, brown, slightly gravelly, m-c SAND. No odor @ 6.5': 1" x 0.5" piece of wood (decomposing).
							@ Groundwater @ 6.5'
							Groundwater pooling @ bottom of pit has trace rainbow sheen.
							End of test pit @ 6.5' (pit caving)

Sample is just above water table at "smear zone".

Notes: 1. Sheen Test: NS = No sheen, SS = Slight sheen, MS = Moderate sheen, HS= Heavy sheen
2. No O = No discernible odor

Sample taken from backhoe bucket.

ANCHOR QEA

SOIL TEST PIT LOG

PROJECT NAME Central Waterfront RI/FS
PROJECT NUMBER 120007-01
FIELD PERSONNEL: Julia Labadie / Matt Wilson
EXCAVATION CONTRACTOR Ultratank Services
EXCAVATION METHOD Backhoe
NORTHING _____ EASTING _____

TEST PIT # CW-TP-07
DATE 7/2/2012
TIME 1020
TOTAL DEPTH 10.1'
SHEET 1 OF 1
Att. 1 of 1

SAMPLING METHOD	SAMPLE NUMBER	SHEEN TEST[1]	VOC Headspace (ppm)	Sample Interval	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	LITHOLOGIC DESCRIPTION
					1		0-0.5': Dry, loose, gray, angular, m-c gravel, No odor. (FILL)
					2		0.5-10.1': Dry, loose, brown, slightly gravelly, m-c, SAND. No odor!
					3		@2.5' plastic garbage bag (black).
					4		@4' Trace shell fragments.
					5		@5' bottle cap, piece of plastic, wood fragments
backhoe bucket					6		
backhoe bucket	CW-TP-07-6.5-7.5	MS	12.2	6.5-7.5	7		@6.5': Grades to occasional shell fragments, ~~dense~~, moist, pocket of f. gravel.
					8		@6.5' cord/cables sticking out of side of pit
	CW-TP-07-9-10	HS	13.1	9-10	9		@7.3': Grades to gray m-c SAND, moderate HC-like odor.
					10		Groundwater @7.5' - water pooling at base of pit has a moderate rainbow sheen and brown-colored foam.
					11		
					2		@9': Grades to strong HC-like odor and heavy metallic sheen. Trace brown blebs (product) in soil and on water surface.
					3		
					4		
					5		End of test pit @ 10.1'
					6		(pit caving in quickly)
					7		
					8		
					9		
					0		

Notes: 1. Sheen Test: NS = No sheen, SS = Slight sheen, MS = Moderate sheen, HS= Heavy sheen
2. No O = No discernible odor

ANCHOR QEA

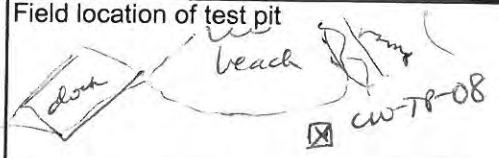
SOIL TEST PIT LOG

PROJECT NAME Central Waterfront RI/FS
PROJECT NUMBER 120007-01
FIELD PERSONNEL: Julia Labadie / Matt Wilson
EXCAVATION CONTRACTOR Ultratank Services
EXCAVATION METHOD Backhoe
NORTHING _____ EASTING _____

TEST PIT # CW-TP-08
DATE 7/2/2012
TIME 1345
TOTAL DEPTH 8.1'
SHEET 1 OF 1
Att. 1 of 1

SAMPLING METHOD	SAMPLE NUMBER	SHEEN TEST[1]	VOC Headspace (ppm)	Sample Interval	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	LITHOLOGIC DESCRIPTION
backhoe bucket	CW-TP-08-7-8	SS	0.1	7-8	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0		0-8.1': Loose, dry, brown, slightly gravelly, m-c, SAND. No odor @4': piece of plastic sheeting sticking out of pit wall @5' Grades to damp. @6' Grades to moist. @7.5' Grades to gray, trace ltc-like odor. Slight rainbow sheen on water surface. End of test pit @ 8.1' (pit caving quickly)

Field location of test pit



Notes: 1. Sheen Test: NS = No sheen, SS = Slight sheen, MS = Moderate sheen, HS= Heavy sheen
2. No O = No discernible odor

ANCHOR QEA

SOIL TEST PIT LOG

PROJECT NAME Central Waterfront RI/FS
PROJECT NUMBER 120007-01
FIELD PERSONNEL: Julia Labadie / Matt Wilson
EXCAVATION CONTRACTOR Ultratank Services
EXCAVATION METHOD Backhoe
NORTHING _____ EASTING _____

TEST PIT # CW-TP-09
DATE 7/2/2012
TIME 1230
TOTAL DEPTH 11.5
SHEET 1 OF 1

Alt. 1 of 1

SAMPLING METHOD	SAMPLE NUMBER	SHEEN TEST[1]	VOC Headspace (ppm)	Sample Interval	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	LITHOLOGIC DESCRIPTION
							Field location of test pit
backhoe bucket	CW-TP-09-6.3-7.3 moderate brown to substantial blebs	MS-HS	65.1	6.3-7.3	6 7		0-1': Dry, loose, gray, m-GRAVEL (FILL). No odor. 1-2' Damp, loose, light brown w/ black mottling, slightly F-m gravelly m-c SAND. No odor. @5.9' Grades to moist @6': Metal conduit at edge of pit to strong 6.5' @7' Grades to black, moderate HC-like odor, slight metallic sheen. Moderate to substantial brown blebs (product) on grains @7.5' grades to heavy sheen metallic and heavy odor. Substantial brown blebs.
	CW-TP-09-10-11	HS	39.4	10-11	10		
					11		End of test pit @ 11.5' (pit caving quickly)

Notes: 1. Sheen Test: NS = No sheen, SS = Slight sheen, MS = Moderate sheen, HS= Heavy sheen
2. No O = No discernible odor

ATTACHMENT 2
ANALYTIC LABORATORY REPORTS

Table of Contents: ARI Job VB50

Client: Anchor QEA, LLC

Project: 080007-01.02 Central Waterfront Site RI

BC

Signature

July-17-2012

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 18, 2012

Cindy Fields
Anchor QEA
720 Olive Way, Suite 1900
Seattle, WA 98101

RE: Client Project: Central Waterfront Site RI
ARI Job No.: VB50

Dear Cindy:

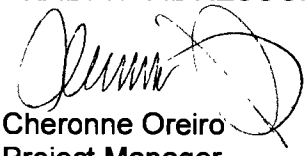
Please find enclosed the Chain of Custody records (COCs), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.



Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile VB50

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: VB50

Chain of Custody Record & Laboratory Analysis Request

gr

ARI Assigned Number: VB50	Turn-around Requested: Standard (15 day)	Page: ~~4~~ 4 of 5	
ARI Client Company: Anchor QEA, LLC	Phone: (206) 903-3394	Date: 7/06/2012	Ice Present?
Client Contact: Attn Cindy Fields	labdata@anchorqea.com	No. of Coolers:	Cooler Temps:
Client Project Name: Central Waterfront Site RI			
Client Project #:	Samplers: JL, MW		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: NWTPH-Dx	NWTPH-Gx	BTEX						Notes/Comments
													Perform all NWTPH-Dx with and without silica gel cleanup.
CW-PW-01-070412	7/04/12	1450	W	5	X	X	X						
CW-PW-02-070412	7/04/12	1300	W	4	X	X	X						
CW-PW-03-070512	7/05/12	1155	W	~~5~~ 6	X	X	X						
CW-PW-53-070512	7/05/12	1200	W	5	X	X	X						
CW-PW-04-070512	7/05/12	1330	W	5	X	X	X						
CW-PW-05-070412	7/04/12	1155	W	2	X	X	X						Limited volume ① - see note
CW-PW-06-070612	7/06/12	1720	W	3	X	X	X						Limited volume
CW-TB	—	—	W	1		X	X						trip blank

Comments/Special Instructions	Relinquished by: (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by: (Signature)
① Could not get zero headspace in 1 or more bottles of VOC sample.	Printed Name: Matt Wilson	Printed Name: Jennifer Mills	Printed Name	Printed Name:
	Company: Anchor QEA	Company: ARI	Company:	Company:
	Date & Time: 7/07/12 1030	Date & Time: 7/7/12 1130	Date & Time:	Date & Time

VB50 : SOC

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: VB50	Turn-around Requested: Standard (15-day)	Page: 5 of 5	
ARI Client Company: Anchor QEA, LLC	Phone: (206) 903-3394	Date: 7/06/2012	Ice Present?
Client Contact: Cindy Fields : labdata@anchorqea.com		No. of Coolers:	Cooler Temps:
Client Project Name: Central Waterfront Site RI			
Client Project #:	Samplers: JL, MW		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No Containers	NWTPH-Dx	NWTPH-Gx	NWTPH	BTEX					Notes/Comments
					Analysis Requested								
CWMW-2-070612	7/6/12	1340	W	5	X	X		X					Perform NWTPH-Dx with and without silica gel cleanup ①-see note
CWMW-18-070612	7/6/12	1240	W	5	X	X		X					
CW-MW-65C-070612	7/6/12	1210	W	5	X	X		X					
MW-1B-070612	7/6/12	1500	W	5	X	X		X					①-see note
CW-SP-01-070512	7/5/12	1210	W	5	X	X		X					
CW-SP-02-070412	7/4/12	0910	W	2	X	X		X					Limited volume ①-see note
CW-W-RB-070212	7/2/12	1640	W	5	X	X		X					rinsate blank
CW-TP-RB-070212	7/2/12	1620	W	5	X	X		X					rinsate blank
CW-TB	—	—	W	1		X		X					trip blank

Comments/Special Instructions	Relinquished by (Signature)	Received by: (Signature)	Relinquished by (Signature)	Received by (Signature)
①: Could not get zero headspace in VOC sample. (in 1 or more bottles)	Printed Name: Anchor QEA	Printed Name: Jennifer Mills	Printed Name.	Printed Name.
	Company: Matt Wilson	Company: ARI	Company:	Company:
	Date & Time: 7/07/12 1030	Date & Time: 7/7/12 1030	Date & Time.	Date & Time.

VB50 : SSSH

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anchor Project Name: Central Waterfront Si & RI

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No.: VB50 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry): 2.0 2.9 0.3 1.9

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90411619

Cooler Accepted by: JM Date: 7/8/12 7/7/12 Time: 1030

· ***Complete custody forms and attach all shipping documents***

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs Baggies (Foam Block) Paper Other:		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	(NO)
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI.	NA	6/26/12	

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JM Date: 7/7/12 Time: 1100

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

CW-PW-03 = pb in 1004 MW-1B = lg in 1003

CW-PW-04 = pb in 2003

CMMW-18 = sm in 1003

By: JM Date: 7/7/12

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• •	• • •	• • •

Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: VB50

ANALYTICAL
RESOURCES
INCORPORATED

Case Narrative

Client: Anchor QEA
Project: Central Waterfront Site RI
ARI Job No.: VB50

Sample receipt

Fifteen water samples and two trip blanks were received on July 7, 2012 under ARI job VB50. The cooler temperatures measured by IR thermometer following ARI SOP were 0.3, 1.9, 2.0, and 2.9°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

NWTPH-Dx

The samples were initially extracted and analyzed within the method recommended holding times. After initial sample analysis, the extracts were acid/silica cleaned and re-analyzed. Both sets of results have been reported.

The extract for sample **CW-SP-02-070412** was contaminated during the initial analysis on 7/10/12. The sample extract was acid/silica cleaned before re-analysis could take place. No sample volume remained for re-extraction. Both Diesel and Motor Oil range reporting limits have been raised and "Y" flagged on the initial analysis. No further corrective action was taken.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

BETX/NWTPH-Gx

The samples were analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: VB50
Client: Anchor QEA, LLC
Project Event: 080007-01.02
Project Name: Central Waterfront Site RI

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	CW-PW-01-070412	VB50A	12-12889	Water	07/04/12 14:50	07/07/12 10:30
2.	CW-PW-02-070412	VB50B	12-12890	Water	07/04/12 13:00	07/07/12 10:30
3.	CW-PW-03-070512	VB50C	12-12891	Water	07/05/12 11:55	07/07/12 10:30
4.	CW-PW-53-070512	VB50D	12-12892	Water	07/05/12 12:00	07/07/12 10:30
5.	CW-PW-04-070512	VB50E	12-12893	Water	07/05/12 13:30	07/07/12 10:30
6.	CW-PW-05-070412	VB50F	12-12894	Water	07/04/12 11:55	07/07/12 10:30
7.	CW-PW-06-070612	VB50G	12-12895	Water	07/06/12 17:20	07/07/12 10:30
8.	CW-TB	VB50H	12-12896	Water	07/04/12	07/07/12 10:30
9.	CWMW-2-070612	VB50I	12-12897	Water	07/06/12 13:40	07/07/12 10:30
10.	CWMW-18-070612	VB50J	12-12898	Water	07/06/12 12:40	07/07/12 10:30
11.	CWMW-65C-070612	VB50K	12-12899	Water	07/06/12 12:10	07/07/12 10:30
12.	MW-1B-070612	VB50L	12-12900	Water	07/06/12 15:00	07/07/12 10:30
13.	CW-SP-01-070512	VB50M	12-12901	Water	07/05/12 12:10	07/07/12 10:30
14.	CW-SP-02-070412	VB50N	12-12902	Water	07/04/12 09:10	07/07/12 10:30
15.	CW-W-RB-070212	VB50O	12-12903	Water	07/02/12 16:40	07/07/12 10:30
16.	CW-TP-RB-070212	VB50P	12-12904	Water	07/02/12 16:20	07/07/12 10:30
17.	CW-TB	VB50Q	12-12905	Water	07/02/12	07/07/12 10:30
18.	CW-PW-01-070412	VB50R	12-12923	Water	07/04/12 14:50	07/07/12 10:30
19.	CW-PW-02-070412	VB50S	12-12924	Water	07/04/12 13:00	07/07/12 10:30
20.	CW-PW-03-070512	VB50T	12-12925	Water	07/05/12 11:55	07/07/12 10:30
21.	CW-PW-53-070512	VB50U	12-12926	Water	07/05/12 12:00	07/07/12 10:30
22.	CW-PW-04-070512	VB50V	12-12927	Water	07/05/12 13:30	07/07/12 10:30
23.	CW-PW-05-070412	VB50W	12-12928	Water	07/04/12 11:55	07/07/12 10:30
24.	CW-PW-06-070612	VB50X	12-12929	Water	07/06/12 17:20	07/07/12 10:30
25.	CWMW-2-070612	VB50Y	12-12930	Water	07/06/12 13:40	07/07/12 10:30
26.	CWMW-18-070612	VB50Z	12-12931	Water	07/06/12 12:40	07/07/12 10:30
27.	CWMW-65C-070612	VB50AA	12-12932	Water	07/06/12 12:10	07/07/12 10:30
28.	MB-1B-070612	VB50AB	12-12933	Water	07/06/12 15:00	07/07/12 10:30
29.	CW-SP-01-070512	VB50AC	12-12934	Water	07/05/12 12:10	07/07/12 10:30
30.	CW-SP-02-070412	VB50AD	12-12935	Water	07/04/12 09:10	07/07/12 10:30
31.	CW-W-RB-070212	VB50AE	12-12936	Water	07/02/12 16:40	07/07/12 10:30
32.	CW-TP-RB-070212	VB50AF	12-12937	Water	07/02/12 16:20	07/07/12 10:30

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Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q — Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

Analytical Resources,Incorporated
Analytical Chemists and Consultants

Quality Control Criteria
Total Petroleum Hydrocarbons
(Diesel & Motor Oil)

Analysis Code	Analyte[5]	DL[1]	LOD[1]	LOQ[2] ppm	Spike % Recovery Control Limits[3]			RPD[4]
					LCS	MB/LCS Surrogate	Sample Surrogate	
HCIWVX	NWTPH-HCID – Water Samples	--	--	0.50 [7]	--	--	50-150	≤ 40
HCISVX	NWTPH-HCID – Solid Samples	--	--	50 [7]	--	--	50-150	
Aqueous Samples – No Extract Clean-up – Separatory Funnel Extraction – 500 to 1.0 mL								
DIESWI	DRO – NWTPH-Dext (C_{12}-C_{24})	0.022	0.05	0.1	64-112	50-150	50-150	≤ 40
AK2WSI	DRO – AK102 (C_{10}-C_{25})	0.022	0.05	0.1	75-125 [6]	60-120	50-150	
OILWSI	RRO – NWTPH-Dext (C_{24}-C_{38})	0.044	0.1	0.2	64-112	50-150	50-150	
AK3WSI	RRO – AK103 (C_{25}-C_{36})	0.030 [9]	0.1	0.2	60-120 [6]	60-120	50-150	
Aqueous Samples – With Acid and/or Silica Gel Clean-up – Separatory Funnel Extraction – 500 to 1.0 mL								
DIESWI	DRO – NWTPH-Dext (C_{12}-C_{24})	0.039	0.05	0.1	61-104	50-150	50-150	≤ 40
AK2WSI	DRO – AK102 (C_{10}-C_{25})	0.042	0.05	0.1	75-125 [6]	60-120	50-150	
OILWSI	RRO – NWTPH-Dext (C_{24}-C_{38})	0.010	0.1	0.2	61-104	50-150	50-150	
AK3WSI	RRO – AK103 (C_{25}-C_{36})	0.030 [8]	0.1	0.2	60-120 [6]	60-120	50-150	
Solid Matrix Samples – No Extract Clean-up – Microwave Extraction – 10 g to 1 mL								
DIESMI	DRO – NWTPH-Dext (C_{12}-C_{24})	1.35	2.5	5	62-119	50-150	50-150	≤ 40
DIESMI	DRO – NWTPH-Dext Jet A	2.22[11]	2.5	5	60 – 130[8]	50-150	50-150	
AK2SMI	DRO – AK102 (C_{10}-C_{25})	2.43	2.5	5	75-125 [6]	60-120	50-150	
OILSMI	RRO – NWTPH-Dext (C_{24}-C_{38})	2.48	5	10	62-119	50-150	50-150	
AK3SMI	RRO – AK103 (C_{25}-C_{36})	0.665 [9]	5	10	60-120 [6]	60-120	50-150	
Solid Matrix Samples – With Acid and/or Silica Gel Clean-up – Microwave Extraction – 10 g to 1 mL								
DIESMI	DRO – NWTPH-Dext (C_{12}-C_{24})	1.28	2.5	5	60-108	50-150	50-150	≤ 40
AK2SMI	DRO – AK102 (C_{10}-C_{25})	2.06	2.5	5	75-125 [6]	60-120	50-150	
OILSMI	RRO – NWTPH-Dext (C_{24}-C_{38})	1.57	5	10	60-108	50-150	50-150	
AK3SMI	RRO – AK103 (C_{25}-C_{36})	0.665 [10]	5	10	60-120 [6]	60-120	50-150	

(1) DL (Detection Limit) and LOD (Limit of Detection) as defined in ARI SOP 1018S.
(2) Limit of Quantitation as defined in ARI SOP 1018S. The spike concentration used to determine the DL and the concentration of the lowest standard used to calibrate the GC-FID instrument.
(3) All surrogate recovery limits are specified in the published methods (AK102, AK103 & NWTPH-Dext). The surrogate standard is *o*-Terphenyl.
(4) Acceptance criteria for the relative percent difference (RPD) between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then $RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} x100$
(5) DRO = Diesel Range Organics and RRO = Residual Range Organics as defined in the methods referenced in footnote 3.
(6) Method specified LCS acceptance limits.
(7) Method specified reporting limits
(8) Default LCS control limits pending calculation of historic limits
(9) MDL study QD55 completed 2/12/10
(10) MDL study QD35 completed 1/29/10
(11) LOD Study UI44 completed 2/28/12

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Quality Control Criteria
Gasoline and BTEX

Method	Analyte	DL[1]	LOD[1]	LOQ[1]	Spike % Recovery Control Limits			RPD[3]
					LCS	MB/LCS Surrogate	Sample Surrogate	
Aqueous Samples 5 mL purge volume (DL, LOD & LOQ values in µg/L (ppb) for BTEX and mg/L (ppm) for gasoline								
NWTPH-G	Toluene – Naphthalene	0.057	0.125	0.25	75 – 124	--	--	≤ 40
8015B	2-methylpentane – 1,2,4-Trimethylbenzene	0.031	0.125	0.25	75 – 124	--	--	
WA-TPH-G	Toluene – nC_{12})	0.087	0.125	0.25	75 – 124	--	--	
AK-101	nC_6 – nC_{12}	0.032	0.050	0.10	75 – 124	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	**80 - 120**	**80** - 120	
	Bromobenzene	--	--	--	--	**80 - 120**	**80** - 120	
8021B	Benzene	0.094	0.5	1.0	73 – **120**	--	--	≤ 40
8021B	Toluene	0.113	0.5	1.0	73 – **120**	--	--	
8021B	Ethylbenzene	0.117	0.5	1.0	69 – **120**	--	--	
8021B	m/p-Xylene	0.265	1.0	2.0	72 – **120**	--	--	
8021B	o-Xylene	0.136	0.5	1.0	73 – **120**	--	--	
8021B	MTBE	0.412	0.5	1.0	30 – 182	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	79 – **120**	**80 - 120**	
	Bromobenzene	--	--	--	--	79 – **120**	**80 - 120**	
Solid Samples - (DL, LOD & LOQ values in µg/kg (ppb) for BTEX and mg/kg (ppm) for gasoline								
NWTPH-G	Toluene – Naphthalene	1.66	2.5	5	74 – 124	--	--	≤ 40
8015B	2-methylpentane – 1,2,4-Trimethylbenzene	1.57	2.5	5	74 – 124	--	--	
WA-TPH-G	Toluene – nC_{12})	1.54	2.5	5	74 – 124	--	--	
AK-101	nC_6 – nC_{12}	1.84	2.5	5	74 – 124	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	**80 - 120**	66-123	
	Bromobenzene	--	--	--	--	**80 - 120**	62-130	
8021B	Benzene	4.59	12.5	25	72 – **120**	--	--	≤ 40
8021B	Toluene	7.13	12.5	25	72 – **120**	--	--	
8021B	Ethylbenzene	4.98	12.5	25	71 – **120**	--	--	
8021B	m/p-Xylene	11.9	25.0	50	72 – **120**	--	--	
8021B	o-Xylene	6.23	12.5	25	72 – **120**	--	--	
8021B	MTBE	3.82	12.5	25	40 – 163	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	80 – **120**	68 – 124	
	Bromobenzene	--	--	--	--	77 – **120**	62 – 134	

(1) Detection Limit (DL), Limit of Detection (LOD) and Limit of Quantitation (LOQ) as defined in ARI SOP 1018S.
(2) Highlighted control limits (bold font) are adjusted from the calculated values as follows:
a) Highlighted control limits (**bold font**) adjusted to demonstrate that ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.
b) Control limits for analytes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.
(3) Acceptance criteria for the relative percent difference (RPD) between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} x100$$

TPHD Analysis
Report and Summary QC Forms

ARI Job ID: VB50

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID-Silica and Acid Cleaned
Extraction Method:
Page 1 of 2

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI

Matrix: Water
Data Release Authorized: MW
Reported: 07/13/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
MB-070912	Method Blank	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12889	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		80.3%
VB50A	CW-PW-01-070412	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12889	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		72.5%
VB50B	CW-PW-02-070412	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12890	HC ID: **RRO**		FID3B	1.0	**Motor Oil Range**	**0.20**	**0.33**
					o-Terphenyl		76.3%
VB50C	CW-PW-03-070512	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12891	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		79.6%
VB50D	CW-PW-53-070512	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12892	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		82.6%
VB50E	CW-PW-04-070512	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12893	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		76.2%
VB50F	CW-PW-05-070412	07/09/12	07/11/12	1.00	Diesel Range	0.20	< 0.20 U
12-12894	HC ID: **MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**0.40**	**1.1**
					o-Terphenyl		82.7%
VB50G	CW-PW-06-070612	07/09/12	07/11/12	1.00	Diesel Range	0.20	< 0.20 U
12-12895	HC ID: ---		FID3B	1.0	Motor Oil Range	0.40	< 0.40 U
					o-Terphenyl		81.6%
VB50I	CWMW-2-070612	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12897	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		85.6%
VB50J	CWMW-18-070612	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12898	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		85.8%
VB50K	CWMW-65C-070612	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12899	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		80.8%
VB50L	MW-1B-070612	07/09/12	07/11/12	1.00	**Diesel Range**	**0.10**	**0.18**
12-12900	HC ID: **DIESEL**		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		81.3%
VB50M	CW-SP-01-070512	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12901	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		83.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID-Silica and Acid Cleaned
Extraction Method:
Page 2 of 2

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI

Matrix: Water
Data Release Authorized:
Reported: 07/13/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
VB50N	CW-SP-02-070412	07/09/12	07/11/12	1.00	Diesel Range	0.20	< 0.20 U
12-12902	HC ID: ---		FID3B	1.0	Motor Oil Range	0.40	< 0.40 U
					o-Terphenyl		68.1%
VB50O	CW-W-RB-070212	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12903	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		81.1%
VB50P	CW-TP-RB-070212	07/09/12	07/11/12	1.00	Diesel Range	0.10	< 0.10 U
12-12904	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		73.1%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI

Client ID	OTER	TOT OUT
MB-070912	80.3%	0
LCS-070912	84.3%	0
LCSD-070912	94.1%	0
CW-PW-01-070412	72.5%	0
CW-PW-02-070412	76.3%	0
CW-PW-03-070512	79.6%	0
CW-PW-53-070512	82.6%	0
CW-PW-04-070512	76.2%	0
CW-PW-05-070412	82.7%	0
CW-PW-06-070612	81.6%	0
CWMW-2-070612	85.6%	0
CWMW-18-070612	85.8%	0
CWMW-65C-070612	80.8%	0
MW-1B-070612	81.3%	0
CW-SP-01-070512	83.7%	0
CW-SP-02-070412	68.1%	0
CW-W-RB-070212	81.1%	0
CW-TP-RB-070212	73.1%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 12-12889 to 12-12904

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned **Sample ID: LCS-070912**
Page 1 of 1 **LCS/LCSD**

Lab Sample ID: LCS-070912 QC Report No: VB50-Anchor QEA, LLC
LIMS ID: 12-12889 Project: Central Waterfront Site RI
Matrix: Water
Data Release Authorized: Date Sampled: 07/04/12
Reported: 07/13/12 Date Received: 07/07/12

Date Extracted LCS/LCSD: 07/09/12 Sample Amount LCS: 500 mL
LCSD: 500 mL
Date Analyzed LCS: 07/11/12 17:02 Final Extract Volume LCS: 1.0 mL
LCSD: 07/11/12 17:21 LCSD: 1.0 mL
Instrument/Analyst LCS: FID/AAR Dilution Factor LCS: 1.00
LCSD: FID/AAR LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.26	3.00	75.3%	2.54	3.00	84.7%	11.7%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	84.3%	94.1%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: VB50
Matrix: Water
Project: Central Waterfront Site RI
Date Received: 07/07/12

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
12-12889-070912MB1	Method Blank	500 mL	1.00 mL	07/09/12
12-12889-070912LCS1	Lab Control	500 mL	1.00 mL	07/09/12
12-12889-070912LCSD1	Lab Control Dup	500 mL	1.00 mL	07/09/12
12-12889-VB50A	CW-PW-01-070412	500 mL	1.00 mL	07/09/12
12-12890-VB50B	CW-PW-02-070412	500 mL	1.00 mL	07/09/12
12-12891-VB50C	CW-PW-03-070512	500 mL	1.00 mL	07/09/12
12-12892-VB50D	CW-PW-53-070512	500 mL	1.00 mL	07/09/12
12-12893-VB50E	CW-PW-04-070512	500 mL	1.00 mL	07/09/12
12-12894-VB50F	CW-PW-05-070412	250 mL	1.00 mL	07/09/12
12-12895-VB50G	CW-PW-06-070612	250 mL	1.00 mL	07/09/12
12-12897-VB50I	CWMW-2-070612	500 mL	1.00 mL	07/09/12
12-12898-VB50J	CWMW-18-070612	500 mL	1.00 mL	07/09/12
12-12899-VB50K	CWMW-65C-070612	500 mL	1.00 mL	07/09/12
12-12900-VB50L	MW-1B-070612	500 mL	1.00 mL	07/09/12
12-12901-VB50M	CW-SP-01-070512	500 mL	1.00 mL	07/09/12
12-12902-VB50N	CW-SP-02-070412	250 mL	1.00 mL	07/09/12
12-12903-VB50O	CW-W-RB-070212	500 mL	1.00 mL	07/09/12
12-12904-VB50P	CW-TP-RB-070212	500 mL	1.00 mL	07/09/12

TPH METHOD BLANK SUMMARY

BLANK NO.: VB50MBW1

Lab Name: ANALYTICAL RESOURCES INC
Client: ANCHOR QEA, LLC.

SDG No.: VB50
Project No.: CENTRAL WATERFRONT SITE

Date Extracted: 07/09/12
Matrix: LIQUID

Date Analyzed : 07/11/12
Instrument ID : FID3B

Time Analyzed : 1642

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	VB50LCSW1	VB50LCSW1	07/11/12
02	VB50LCSDW1	VB50LCSDW1	07/11/12
03	CW-PW-01-070	VB50A	07/11/12
04	CW-PW-02-070	VB50B	07/11/12
05	CW-PW-03-070	VB50C	07/11/12
06	CW-PW-53-070	VB50D	07/11/12
07	CW-PW-04-070	VB50E	07/11/12
08	CW-PW-05-070	VB50F	07/11/12
09	CW-PW-06-070	VB50G	07/11/12
10	CWMW-2-07061	VB50I	07/11/12
11	CWMW-18-0706	VB50J	07/11/12
12	CWMW-65C-070	VB50K	07/11/12
13	MW-1B-070612	VB50L	07/11/12
14	CW-SP-01-070	VB50M	07/11/12
15	CW-SP-02-070	VB50N	07/11/12
16	CW-W-RB-0702	VB50O	07/11/12
17	CW-TP-RB-070	VB50P	07/11/12
18			
19			
20			
21			
22			
23			
24			
25			
26			

FORM IV TPH

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR QEA, LLC.

Instrument: FID3B.I Project: CENTRAL WATERFRONT SITE

Calibration Date: 22-JUN-2012 SDG No.: VB50

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	13732	13761	13881	14161	13675	12990	13700	2.8
AK Diesel	16736	16504	16407	16745	16158	15375	16321	3.1
OR Diesel	16926	16689	16516	16850	16246	15461	16448	3.3
Cal Diesel	16703	16477	16384	16717	16130	15348	16293	3.1
o-Terph	20700	17668	18717	19054	18635	17820	18765	5.8

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (3.904-6.546)
AK Diesel C10-C25 (3.103-6.698)
OR Diesel C10-C28 (3.103-7.126)
Cal Diesel C10-C24 (3.103-6.546)

Calibration Files	Analysis Time
0622b004.d	22-JUN-2012 09:22
0622b005.d	22-JUN-2012 09:41
0622b006.d	22-JUN-2012 10:01
0622b007.d	22-JUN-2012 10:21
0622b008.d	22-JUN-2012 10:41
0622b009.d	22-JUN-2012 11:00

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR QEA, LLC.

Instrument: FID3B.I Project: ENTRAL WATERFRONT SITE

Calibration Date: 08-JUN-2012 SDG No.: VB50

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	10521	9771	9885	9545	9801	10239	9960	3.6
Triac Surr	18711	15806	16033	15777	16151	*****	16496	7.6

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
0608b011.d	08-JUN-2012 08:02
0608b012.d	08-JUN-2012 08:20
0608b013.d	08-JUN-2012 08:39
0608b014.d	08-JUN-2012 08:59
0608b015.d	08-JUN-2012 09:18
0608b016.d	08-JUN-2012 09:37

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 22-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 11-JUL-2012
SDG No.: VB50

Analysis Time: 15:45
Lab ID: DIESEL #3

Instrument: FID3B.I
Lab File Name: 0711b029.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3367309	245.8	250	-1.7
AK102 (C10-C25)	4081634	250.1	250	0.0
Terphenyl	774685	41.3	45	-8.3

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 08-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 11-JUL-2012
SDG No.: VB50

Analysis Time: 16:04
Lab ID: MOIL #3

Instrument: FID3B.I
Lab File Name: 0711b030.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	4796330	481.8	500	-3.6	
AK103 (C25-C36)	4359367	635.7	500	27.1	<-
n-Triacontane	729056	44.2	45	-1.8	

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 22-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 11-JUL-2012
SDG No.: VB50

Analysis Time: 19:52
Lab ID: DIESEL #4

Instrument: FID3B.I
Lab File Name: 0711b042.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3506419	255.9	250	2.4
AK102 (C10-C25)	4299777	263.5	250	5.4
Terphenyl	816820	43.5	45	-3.3

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 08-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 11-JUL-2012
SDG No.: VB50

Analysis Time: 20:11
Lab ID: MOIL #4

Instrument: FID3B.I
Lab File Name: 0711b043.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	4872300	489.4	500	-2.1	
AK103 (C25-C36)	4441217	647.6	500	29.5	<-
n-Triacontane	754255	45.7	45	1.6	

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 08-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 12-JUL-2012
SDG No.: VB50

Analysis Time: 23:21
Lab ID: MOIL #5

Instrument: FID3B.I
Lab File Name: 0711b053.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	4835403	485.7	500	-2.9	
AK103 (C25-C36)	4388960	640.0	500	28.0	<-
n-Triacontane	757893	45.9	45	2.1	

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

SDG No.: VB50 Project: CENTRAL WATERFRONT SITE

Instrument ID: FID3B GC Column: RTX-1

Run Date: 07/11/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.57 TRIAC: 7.39

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01	DIESEL	DIESEL #3	07/11/12	1545	5.57	7.39
02	MOIL	MOIL #3	07/11/12	1604	5.57	7.39
03	ZZZZZ	ZZZZZ	07/11/12	1623	5.57	7.39
04	VB50MBW1	VB50MBW1	07/11/12	1642	5.57	7.39
05	VB50LCSW1	VB50LCSW1	07/11/12	1702	5.57	7.39
06	VB50LCSDW1	VB50LCSDW1	07/11/12	1721	5.57	7.39
07	CW-PW-01-070	VB50A	07/11/12	1740	5.56	7.39
08	CW-PW-02-070	VB50B	07/11/12	1759	5.57	7.39
09	CW-PW-03-070	VB50C	07/11/12	1818	5.57	7.39
10	CW-PW-53-070	VB50D	07/11/12	1837	5.57	7.39
11	CW-PW-04-070	VB50E	07/11/12	1855	5.57	7.39
12	CW-PW-05-070	VB50F	07/11/12	1914	5.57	7.39
13	CW-PW-06-070	VB50G	07/11/12	1933	5.57	7.39
14	DIESEL	DIESEL #4	07/11/12	1952	5.57	7.39
15	MOIL	MOIL #4	07/11/12	2011	5.57	7.39
16	CWMW-2-07061	VB50I	07/11/12	2030	5.57	7.39
17	CWMW-18-0706	VB50J	07/11/12	2049	5.57	7.39
18	CWMW-65C-070	VB50K	07/11/12	2108	5.56	7.39
19	MW-1B-070612	VB50L	07/11/12	2127	5.57	7.39
20	CW-SP-01-070	VB50M	07/11/12	2146	5.57	7.39
21	CW-SP-02-070	VB50N	07/11/12	2205	5.56	7.39
22	CW-W-RB-0702	VB50O	07/11/12	2224	5.57	7.39
23	CW-TP-RB-070	VB50P	07/11/12	2243	5.56	7.39
24	DIESEL	DIESEL #5	07/11/12	2302	5.57	7.39
25	MOIL	MOIL #5	07/12/12	2321	5.57	7.39

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

8

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

SDG No.: VB50 Project: CENTRAL WATERFRONT SITE

Instrument ID: FID3B GC Column: RTX-1

Run Date: 06/08/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.57 TRIAC: 7.40

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RINSE	06/08/12	0458	5.57	7.40
02	RT	RT	06/08/12	0516	5.57	7.40
03	IB	IB	06/08/12	0534	5.57	7.40
04	ZZZZZ	DIESEL 50	06/08/12	0552	5.57	7.40
05	ZZZZZ	DIESEL 100	06/08/12	0610	5.57	7.39
06	ZZZZZ	DIESEL 250	06/08/12	0629	5.57	7.40
07	ZZZZZ	DIESEL 500	06/08/12	0647	5.58	7.40
08	ZZZZZ	DIESEL 1000	06/08/12	0706	5.59	7.41
09	ZZZZZ	DIESEL 2500	06/08/12	0724	5.61	7.40
10	ZZZZZ	DIESEL ICV	06/08/12	0743	5.57	7.40
11	ZZZZZ	MOIL 100	06/08/12	0802	5.57	7.39
12	ZZZZZ	MOIL 250	06/08/12	0820	5.56	7.40
13	ZZZZZ	MOIL 500	06/08/12	0839	5.58	7.40
14	ZZZZZ	MOIL 1000	06/08/12	0859	5.57	7.41
15	ZZZZZ	MOIL 2500	06/08/12	0918	5.57	7.42
16	ZZZZZ	MOIL 5000	06/08/12	0937	5.57	7.45
17	ZZZZZ	MOIL ICV	06/08/12	0956	5.57	7.40

	QC LIMITS
TERPH = o-terph	(+/- 0.05 MINUTES)
TRIAC = Triacon Surr	(+/- 0.05 MINUTES)

* Values outside of QC limits.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02

Matrix: Water

Date Received: 07/07/12

Data Release Authorized: MW
Reported: 07/13/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
MB-070912	Method Blank	07/09/12	07/10/12	1.00	Diesel Range	0.10	< 0.10 U
12-12923	HC ID: ---		FID4A	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		85.6%
VB50R	CW-PW-01-070412	07/09/12	07/10/12	1.00	Diesel Range	0.10	< 0.10 U
12-12923	HC ID: ---		FID4A	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		80.0%
VB50S	CW-PW-02-070412	07/09/12	07/10/12	1.00	**Diesel Range**	**0.10**	**0.47**
12-12924	HC ID: **DRO/RRO**		FID4A	1.0	**Motor Oil Range**	**0.20**	**0.57**
					o-Terphenyl		77.8%
VB50T	CW-PW-03-070512	07/09/12	07/10/12	1.00	**Diesel Range**	**0.10**	**0.44**
12-12925	HC ID: **DIESEL/MOTOR OIL**		FID4A	1.0	**Motor Oil Range**	**0.20**	**0.25**
					o-Terphenyl		83.8%
VB50U	CW-PW-53-070512	07/09/12	07/10/12	1.00	**Diesel Range**	**0.10**	**0.45**
12-12926	HC ID: **DIESEL/MOTOR OIL**		FID4A	1.0	**Motor Oil Range**	**0.20**	**0.24**
					o-Terphenyl		81.1%
VB50V	CW-PW-04-070512	07/09/12	07/10/12	1.00	**Diesel Range**	**0.10**	**0.74**
12-12927	HC ID: **DIESEL/RRO**		FID4A	1.0	**Motor Oil Range**	**0.20**	**0.25**
					o-Terphenyl		76.0%
VB50W	CW-PW-05-070412	07/09/12	07/10/12	1.00	**Diesel Range**	**0.20**	**1.4**
12-12928	HC ID: **DIESEL/MOTOR OIL**		FID4A	1.0	**Motor Oil Range**	**0.40**	**1.6**
					o-Terphenyl		83.8%
VB50X	CW-PW-06-070612	07/09/12	07/10/12	1.00	**Diesel Range**	**0.20**	**0.44**
12-12929	HC ID: **DRO/RRO**		FID4A	1.0	**Motor Oil Range**	**0.40**	**0.61**
					o-Terphenyl		83.1%
VB50Y	CWMW-2-070612	07/09/12	07/10/12	1.00	**Diesel Range**	**0.10**	**1.3**
12-12930	HC ID: **DIESEL/RRO**		FID4A	1.0	**Motor Oil Range**	**0.20**	**0.27**
					o-Terphenyl		87.6%
VB50Z	CWMW-18-070612	07/09/12	07/10/12	1.00	**Diesel Range**	**0.10**	**1.4**
12-12931	HC ID: **DIESEL/RRO**		FID4A	1.0	**Motor Oil Range**	**0.20**	**0.22**
					o-Terphenyl		82.0%
VB50AA	CWMW-65C-070612	07/09/12	07/10/12	1.00	**Diesel Range**	**0.10**	**0.69**
12-12932	HC ID: **DRO/RRO**		FID4A	1.0	**Motor Oil Range**	**0.20**	**0.35**
					o-Terphenyl		84.9%
VB50AB	MB-1B-070612	07/09/12	07/10/12	1.00	**Diesel Range**	**0.10**	**1.2**
12-12933	HC ID: **DIESEL**		FID4A	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		83.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02

Matrix: Water

Date Received: 07/07/12

Data Release Authorized: MW
Reported: 07/13/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
VB50AC	CW-SP-01-070512	07/09/12	07/10/12	1.00	**Diesel Range**	**0.10**	**0.96**
12-12934	HC ID: **DIESEL/RRO**		FID4A	1.0	**Motor Oil Range**	**0.20**	**0.25**
					o-Terphenyl		86.4%
VB50AD	CW-SP-02-070412	07/09/12	07/10/12	1.00	Diesel Range	0.20	< 0.20 Y
12-12935	HC ID: **RRO**		FID4A	1.0	Motor Oil Range	0.63	< 0.63 Y
					o-Terphenyl		73.8%
VB50AE	CW-W-RB-070212	07/09/12	07/10/12	1.00	Diesel Range	0.10	< 0.10 U
12-12936	HC ID: ---		FID4A	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		89.1%
VB50AF	CW-TP-RB-070212	07/09/12	07/10/12	1.00	Diesel Range	0.10	< 0.10 U
12-12937	HC ID: ---		FID4A	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		81.6%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02

Client ID	OTER	TOT OUT
MB-070912	85.6%	0
LCS-070912	84.7%	0
LCSD-070912	86.9%	0
CW-PW-01-070412	80.0%	0
CW-PW-02-070412	77.8%	0
CW-PW-03-070512	83.8%	0
CW-PW-53-070512	81.1%	0
CW-PW-04-070512	76.0%	0
CW-PW-05-070412	83.8%	0
CW-PW-06-070612	83.1%	0
CWMW-2-070612	87.6%	0
CWMW-18-070612	82.0%	0
CWMW-65C-070612	84.9%	0
MB-1B-070612	83.6%	0
CW-SP-01-070512	86.4%	0
CW-SP-02-070412	73.8%	0
CW-W-RB-070212	89.1%	0
CW-TP-RB-070212	81.6%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 12-12923 to 12-12937

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-070912
LCS/LCSD

Lab Sample ID: LCS-070912
LIMS ID: 12-12923
Matrix: Water
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 07/09/12
Date Analyzed LCS: 07/10/12 13:56
LCSD: 07/10/12 14:18
Instrument/Analyst LCS: FID4A/AAR
LCSD: FID4A/AAR

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.41	3.00	80.3%	2.45	3.00	81.7%	1.6%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	84.7%	86.9%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: VB50
Matrix: Water
Project: Central Waterfront Site RI
Date Received: 07/07/12

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
12-12903-VB50O	CW-W-RB-070212	500 mL	1.00 mL	07/09/12
12-12904-VB50P	CW-TP-RB-070212	500 mL	1.00 mL	07/09/12
12-12923-070912MB1	Method Blank	500 mL	1.00 mL	07/09/12
12-12923-070912LCS1	Lab Control	500 mL	1.00 mL	07/09/12
12-12923-070912LCSD1	Lab Control Dup	500 mL	1.00 mL	07/09/12
12-12923-VB50R	CW-PW-01-070412	500 mL	1.00 mL	07/09/12
12-12924-VB50S	CW-PW-02-070412	500 mL	1.00 mL	07/09/12
12-12925-VB50T	CW-PW-03-070512	500 mL	1.00 mL	07/09/12
12-12926-VB50U	CW-PW-53-070512	500 mL	1.00 mL	07/09/12
12-12927-VB50V	CW-PW-04-070512	500 mL	1.00 mL	07/09/12
12-12928-VB50W	CW-PW-05-070412	250 mL	1.00 mL	07/09/12
12-12929-VB50X	CW-PW-06-070612	250 mL	1.00 mL	07/09/12
12-12930-VB50Y	CWMW-2-070612	500 mL	1.00 mL	07/09/12
12-12931-VB50Z	CWMW-18-070612	500 mL	1.00 mL	07/09/12
12-12932-VB50AA	CWMW-65C-070612	500 mL	1.00 mL	07/09/12
12-12933-VB50AB	MB-1B-070612	500 mL	1.00 mL	07/09/12
12-12934-VB50AC	CW-SP-01-070512	500 mL	1.00 mL	07/09/12
12-12935-VB50AD	CW-SP-02-070412	250 mL	1.00 mL	07/09/12
12-12936-VB50AE	CW-W-RB-070212	500 mL	1.00 mL	07/09/12
12-12937-VB50AF	CW-TP-RB-070212	500 mL	1.00 mL	07/09/12

TPH METHOD BLANK SUMMARY

BLANK NO.

VB50MBW1

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

SDG No.: VB50 Project No.: CENTRAL WATERFRONT SITE

Date Extracted: 07/09/12 Matrix: LIQUID

Date Analyzed : 07/10/12 Instrument ID : FID4A

Time Analyzed : 1313

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	VB50LCSW1	VB50LCSW1	07/10/12
02	VB50LCSDW1	VB50LCSDW1	07/10/12
03	CW-PW-01-070	VB50R	07/10/12
04	CW-PW-02-070	VB50S	07/10/12
05	CW-PW-03-070	VB50T	07/10/12
06	CW-PW-53-070	VB50U	07/10/12
07	CW-PW-04-070	VB50V	07/10/12
08	CW-PW-05-070	VB50W	07/10/12
09	CW-PW-06-070	VB50X	07/10/12
10	CWMW-2-07061	VB50Y	07/10/12
11	CWMW-18-0706	VB50Z	07/10/12
12	CWMW-65C-070	VB50AA	07/10/12
13	MB-1B-070612	VB50AB	07/10/12
14	CW-SP-01-070	VB50AC	07/10/12
15	CW-SP-02-070	VB50AD	07/10/12
16	CW-W-RB-0702	VB50AE	07/10/12
17	CW-TP-RB-070	VB50AF	07/10/12
18			
19			
20			
21			
22			
23			
24			
25			
26			

FORM IV TPH

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC.

Instrument: FID4A.I
Project: CENTRAL WATERFRONT SIT

Calibration Date: 10-JUL-2012
SDG No.: VB50

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	15764	15034	14470	13671	14439	14524	14650	4.8
AK Diesel	18717	17811	17107	16132	16972	17054	17299	5.1
OR Diesel	19617	18217	17496	16231	17061	17134	17626	6.6
Cal Diesel	18371	17508	16984	16049	16896	16994	17134	4.5
o-Terph	21761	20224	20295	19224	20353	*****	20371	4.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges :
WA Diesel C12-C24 (4.114-7.579)
AK Diesel C10-C25 (3.227-7.829)
OR Diesel C10-C28 (3.227-8.527)
Cal Diesel C10-C24 (3.227-7.579)

Calibration Files	Analysis Time
0710a007.d	10-JUL-2012 09:22
0710a008.d	10-JUL-2012 09:44
0710a011.d	10-JUL-2012 10:48
0710a010.d	10-JUL-2012 10:27
0710a012.d	10-JUL-2012 11:10
0710a013.d	10-JUL-2012 11:31

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client:ANCHOR QEA, LLC.

Instrument: FID4A.I

Project:CENTRAL WATERFRONT SITE

Calibration Date: 12-JUN-2012

SDG No.: VB50

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	11845	13246	13189	12254	12177	12701	12569	4.6
Triac Surr	21428	18681	19369	18317	17635	*****	19086	7.6

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
0612a020.d	12-JUN-2012 17:01
0612a021.d	12-JUN-2012 17:22
0612a022.d	12-JUN-2012 17:44
0612a023.d	12-JUN-2012 18:06
0612a024.d	12-JUN-2012 18:27
0612a025.d	12-JUN-2012 18:49

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC.

ICal Date: 10-JUL-2012
Project: CENTRAL WATERFRONT

CCal Date: 10-JUL-2012
SDG No.: VB50

Analysis Time: 12:14
Lab ID: DIESEL #2

Instrument: FID4A.I
Lab File Name: 0710a015.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3430143	234.1	250	-6.3
AK102 (C10-C25)	4032106	233.1	250	-6.8
Terphenyl	862117	42.3	45	-6.0

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC.

ICal Date: 12-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 10-JUL-2012
SDG No.: VB50

Analysis Time: 12:36
Lab ID: MOIL #2

Instrument: FID4A.I
Lab File Name: 0710a016.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	6488904	516.3	500	3.3	
AK103 (C25-C36)	5413653	634.1	500	26.8	<-
OR. MOIL (C28-C40)	5359059	709.6	500	41.9	
CRUDE(Tol-C40)	7803707	1033.2	500	106.6	
n-Triacontane	851298	44.6	45	-0.9	

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36
OR M.Oil C28-C40

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC.

ICal Date: 10-JUL-2012
Project: CENTRAL WATERFRONT

CCal Date: 10-JUL-2012
SDG No.: VB50

Analysis Time: 17:11
Lab ID: DIESEL #3

Instrument: FID4A.I
Lab File Name: 0710a028.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3456692	236.0	250	-5.6
AK102 (C10-C25)	4047306	234.0	250	-6.4
Terphenyl	861618	42.3	45	-6.0

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC.

ICal Date: 12-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 10-JUL-2012
SDG No.: VB50

Analysis Time: 17:32
Lab ID: MOIL #3

Instrument: FID4A.I
Lab File Name: 0710a029.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	6503269	517.4	500	3.5	
AK103 (C25-C36)	5520943	646.6	500	29.3	<-
OR. MOIL (C28-C40)	5447031	721.2	500	44.2	
CRUDE(Tol-C40)	7815997	1034.9	500	107.0	
n-Triacontane	874084	45.8	45	1.8	

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36
OR M.Oil C28-C40

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC.

ICal Date: 10-JUL-2012
Project: CENTRAL WATERFRONT

CCal Date: 10-JUL-2012
SDG No.: VB50

Analysis Time: 20:44
Lab ID: DIESEL #4

Instrument: FID4A.I
Lab File Name: 0710a038.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3441918	234.9	250	-6.0
AK102 (C10-C25)	4036241	233.3	250	-6.7
Terphenyl	866166	42.5	45	-5.5

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC.

ICal Date: 12-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 10-JUL-2012
SDG No.: VB50

Analysis Time: 21:05
Lab ID: MOIL #4

Instrument: FID4A.I
Lab File Name: 0710a039.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	6812018	542.0	500	8.4	
AK103 (C25-C36)	5842414	684.3	500	36.9	<-
OR. MOIL (C28-C40)	5806494	768.8	500	53.8	
CRUDE(Tol-C40)	8351036	1105.7	500	121.1	
n-Triacontane	891666	46.7	45	3.8	

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36
OR M.Oil C28-C40

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client:ANCHOR QEA, LLC.

SDG No.:VB50 Project: CENTRAL WATERFRONT SITE

Instrument ID: FID4A GC Column: RTX-1

Run Date: 06/12/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 6.10 TRIAC: 8.98

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RT	06/12/12	1346	6.10	8.98
02		IB	06/12/12	1408	6.10	8.98
03		DIESEL 50	06/12/12	1429	6.10	8.97
04		DIESEL 100	06/12/12	1451	6.10	8.97
05		DIESEL 250	06/12/12	1512	6.11	8.99
06		DIESEL 500	06/12/12	1534	6.11	8.99
07		DIESEL 1000	06/12/12	1555	6.13	8.98
08		DIESEL 2500	06/12/12	1617	6.16*	8.97
09		DIESEL ICV	06/12/12	1639	6.10	8.99
10		MOIL 100	06/12/12	1701	6.10	8.96
11		MOIL 250	06/12/12	1722	6.10	8.97
12		MOIL 500	06/12/12	1744	6.10	8.98
13		MOIL 1000	06/12/12	1806	6.10	8.99
14		MOIL 2500	06/12/12	1827	6.10	9.01
15		MOIL 5000	06/12/12	1849	6.10	9.05*
16		MOIL ICV	06/12/12	1910	6.10	8.97

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

SDG No.: VB50 Project: CENTRAL WATERFRONT SITE

Instrument ID: FID4A GC Column: RTX-1

Run Date: 07/10/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 6.08 TRIAC: 8.96

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01	DIESEL	DIESEL #2	07/10/12	1214	6.08	8.97
02	MOIL	MOIL #2	07/10/12	1236	6.08	8.97
03	VB50MBW1	VB50MBW1	07/10/12	1313	6.09	8.98
04	VB50MBW1	VB50MBW1	07/10/12	1334	6.08	8.98
05	VB50LCSW1	VB50LCSW1	07/10/12	1356	6.09	8.97
06	VB50LCSDW1	VB50LCSDW1	07/10/12	1418	6.09	8.97
07	CW-PW-01-070	VB50R	07/10/12	1439	6.08	8.97
08	CW-PW-02-070	VB50S	07/10/12	1501	6.09	8.97
09	CW-PW-03-070	VB50T	07/10/12	1523	6.09	8.97
10	CW-PW-53-070	VB50U	07/10/12	1545	6.09	8.97
11	CW-PW-04-070	VB50V	07/10/12	1606	6.09	8.97
12	CW-PW-05-070	VB50W	07/10/12	1628	6.09	8.97
13	CW-PW-06-070	VB50X	07/10/12	1650	6.09	8.97
14	DIESEL	DIESEL #3	07/10/12	1711	6.09	8.97
15	MOIL	MOIL #3	07/10/12	1732	6.08	8.97
16	CWMW-2-07061	VB50Y	07/10/12	1754	6.09	8.97
17	CWMW-18-0706	VB50Z	07/10/12	1815	6.09	8.96
18	CWMW-65C-070	VB50AA	07/10/12	1836	6.09	8.96
19	MB-1B-070612	VB50AB	07/10/12	1858	6.09	8.97
20	CW-SP-01-070	VB50AC	07/10/12	1919	6.09	8.97
21	CW-SP-02-070	VB50AD	07/10/12	1940	6.09	8.97
22	CW-W-RB-0702	VB50AE	07/10/12	2001	6.09	8.97
23	CW-TP-RB-070	VB50AF	07/10/12	2022	6.09	8.96
24	DIESEL	DIESEL #4	07/10/12	2044	6.09	8.96
25	MOIL	MOIL #4	07/10/12	2105	6.09	8.96

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

8

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

SDG No.: VB50 Project: CENTRAL WATERFRONT SITE

Instrument ID: FID4A GC Column: RTX-1

Run Date: 07/10/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 6.08 TRIAC: 8.96

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RINSE	07/10/12	0714	6.07	8.97
02		RT	07/10/12	0735	6.08	8.96
03		IB	07/10/12	0756	6.08	8.96
04		DIESEL #1	07/10/12	0818	6.08	8.94
05		MOIL #1	07/10/12	0839	6.08	8.96
06		AK103 #1	07/10/12	0901	6.08	8.96
07		DIESEL 50	07/10/12	0922	6.08	8.96
08		DIESEL 100	07/10/12	0944	6.08	8.95
09		DIESEL 250	07/10/12	1006	6.08	8.94
10		DIESEL 500	07/10/12	1027	6.09	8.95
11		DIESEL 250	07/10/12	1048	6.08	8.95
12		DIESEL 1000	07/10/12	1110	6.11	8.95
13		DIESEL 2500	07/10/12	1131	6.13*	8.94

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

TPHG/BETX Analysis
Report and Summary QC Forms

ARI Job ID: VB50

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: CW-PW-01-070412**
TPHG by Method NWTPHG **SAMPLE**

Lab Sample ID: VB50A
LIMS ID: 12-12889
Matrix: Water
Data Release Authorized:
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/04/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 20:44
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	GAS ID
71-43-2	Benzene	0.05	< 0.05 U	
108-88-3	Toluene	0.05	< 0.05 U	
100-41-4	Ethylbenzene	0.05	< 0.05 U	
179601-23-1	m,p-Xylene	0.10	< 0.10 U	
95-47-6	o-Xylene	0.05	< 0.05 U	
	Gasoline Range Hydrocarbons	0.03	< 0.03 U	---

BETX Surrogate Recovery

Trifluorotoluene	99.6%
Bromobenzene	108%

Gasoline Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	109%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG

Sample ID: CW-PW-02-070412
SAMPLE

Lab Sample ID: VB50B
LIMS ID: 12-12890
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/04/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 21:13
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	0.05	< 0.05 U	
108-88-3	Toluene	0.05	< 0.05 U	
100-41-4	Ethylbenzene	0.05	< 0.05 U	
179601-23-1	m,p-Xylene	0.10	< 0.10 U	
95-47-6	o-Xylene	0.05	< 0.05 U	
				GAS ID
	Gasoline Range Hydrocarbons	0.03	< 0.03 U	---

BETX Surrogate Recovery

Trifluorotoluene	98.2%
Bromobenzene	108%

Gasoline Surrogate Recovery

Trifluorotoluene	99.6%
Bromobenzene	109%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: CW-PW-03-070512**
TPHG by Method NWTPHG **SAMPLE**

Lab Sample ID: VB50C
LIMS ID: 12-12891
Matrix: Water
Data Release Authorized:
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/05/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 21:42
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	GAS ID
71-43-2	Benzene	0.05	< 0.05 U	
108-88-3	Toluene	0.05	< 0.05 U	
100-41-4	Ethylbenzene	0.05	< 0.05 U	
179601-23-1	m,p-Xylene	0.10	< 0.10 U	
95-47-6	o-Xylene	0.05	< 0.05 U	
	Gasoline Range Hydrocarbons	0.03	< 0.03 U	---

BETX Surrogate Recovery

Trifluorotoluene	100%
Bromobenzene	106%

Gasoline Surrogate Recovery

Trifluorotoluene	102%
Bromobenzene	106%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: CW-PW-53-070512
SAMPLE

Lab Sample ID: VB50D
LIMS ID: 12-12892
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/05/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 22:11
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	GAS ID
71-43-2	Benzene	0.05	< 0.05 U	
108-88-3	Toluene	0.05	< 0.05 U	
100-41-4	Ethylbenzene	0.05	< 0.05 U	
179601-23-1	m,p-Xylene	0.10	< 0.10 U	
95-47-6	o-Xylene	0.05	< 0.05 U	
	Gasoline Range Hydrocarbons	0.03	< 0.03 U	---

BETX Surrogate Recovery

Trifluorotoluene	95.5%
Bromobenzene	103%

Gasoline Surrogate Recovery

Trifluorotoluene	96.5%
Bromobenzene	104%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG

Sample ID: CW-PW-04-070512
SAMPLE

Lab Sample ID: VB50E
LIMS ID: 12-12893
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/05/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 17:19
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	0.05	< 0.05 U	
108-88-3	**Toluene**	**0.05**	**0.25**	
100-41-4	Ethylbenzene	0.05	< 0.05 U	
179601-23-1	m,p-Xylene	0.10	< 0.10 U	
95-47-6	o-Xylene	0.05	< 0.05 U	
	Gasoline Range Hydrocarbons	**0.03**	**0.06**	GAS ID **GAS/GRO**

BETX Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	102%

Gasoline Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	102%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: CW-PW-05-070412
SAMPLE

Lab Sample ID: VB50F
LIMS ID: 12-12894
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/04/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 17:48
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	
71-43-2	**Benzene**	**0.05**	**66**	
108-88-3	**Toluene**	**0.05**	**1.9**	
100-41-4	**Ethylbenzene**	**0.05**	**0.32**	
179601-23-1	**m,p-Xylene**	**0.10**	**1.5**	
95-47-6	o-Xylene	0.05	< 0.05 U	
				GAS ID
	Gasoline Range Hydrocarbons	**0.03**	**0.18**	**GAS**

BETX Surrogate Recovery

Trifluorotoluene	104%
Bromobenzene	107%

Gasoline Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	107%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: CW-PW-06-070612**
TPHG by Method NWTPHG **SAMPLE**

Lab Sample ID: VB50G
LIMS ID: 12-12895
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/06/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 22:40
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	0.05	< 0.05 U
108-88-3	**Toluene**	**0.05**	**0.23**
100-41-4	Ethylbenzene	0.05	< 0.05 U
179601-23-1	m,p-Xylene	0.10	< 0.10 U
95-47-6	o-Xylene	0.05	< 0.05 U

			GAS ID
	Gasoline Range Hydrocarbons	0.03	< 0.03 U ---

BETX Surrogate Recovery

Trifluorotoluene	102%
Bromobenzene	113%

Gasoline Surrogate Recovery

Trifluorotoluene	104%
Bromobenzene	113%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: CW-TB**
TPHG by Method NWTPHG **SAMPLE**

Lab Sample ID: VB50H
LIMS ID: 12-12896
Matrix: Water
Data Release Authorized:
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/04/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 18:17
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	0.05	< 0.05 U
108-88-3	Toluene	0.05	< 0.05 U
100-41-4	Ethylbenzene	0.05	< 0.05 U
179601-23-1	m,p-Xylene	0.10	< 0.10 U
95-47-6	o-Xylene	0.05	< 0.05 U

			GAS ID
Gasoline Range Hydrocarbons	0.03	< 0.03 U	---

BETX Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	103%

Gasoline Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	103%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: CWMW-2-070612
SAMPLE

Lab Sample ID: VB50I
LIMS ID: 12-12897
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/06/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 23:10
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	0.05	< 0.05 U	
108-88-3	Toluene	0.05	< 0.05 U	
100-41-4	**Ethylbenzene**	**0.05**	**0.74**	
179601-23-1	m,p-Xylene	0.10	< 0.10 U	
95-47-6	o-Xylene	0.05	< 0.05 U	
	Gasoline Range Hydrocarbons	**0.03**	**0.46**	GAS ID **GRO**

BETX Surrogate Recovery

Trifluorotoluene	94.5%
Bromobenzene	102%

Gasoline Surrogate Recovery

Trifluorotoluene	95.7%
Bromobenzene	103%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: CWMW-18-070612**
TPHG by Method NWTPHG **SAMPLE**

Lab Sample ID: VB50J
LIMS ID: 12-12898
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/06/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 23:39
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	0.05	< 0.05 U
108-88-3	Toluene	0.05	< 0.05 U
100-41-4	**Ethylbenzene**	**0.05**	**0.55**
179601-23-1	**m,p-Xylene**	**0.10**	**0.20**
95-47-6	o-Xylene	0.05	< 0.05 U

			GAS ID
	Gasoline Range Hydrocarbons	**0.03**	**0.36** ---

BETX Surrogate Recovery

Trifluorotoluene	99.3%
Bromobenzene	103%

Gasoline Surrogate Recovery

Trifluorotoluene	99.6%
Bromobenzene	106%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: CWMW-65C-070612**
TPHG by Method NWTPHG **SAMPLE**

Lab Sample ID: VB50K
LIMS ID: 12-12899
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/06/12
Date Received: 07/07/12

Date Analyzed: 07/16/12 00:08
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	0.05	< 0.05 U	
108-88-3	Toluene	0.05	< 0.05 U	
100-41-4	Ethylbenzene	0.05	< 0.05 U	
179601-23-1	m,p-Xylene	0.10	< 0.10 U	
95-47-6	o-Xylene	0.05	< 0.05 U	
	Gasoline Range Hydrocarbons	0.03	< 0.03 U	GAS ID ---

BETX Surrogate Recovery

Trifluorotoluene	98.4%
Bromobenzene	103%

Gasoline Surrogate Recovery

Trifluorotoluene	98.9%
Bromobenzene	105%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: MW-1B-070612**
TPHG by Method NWTPHG **SAMPLE**

Lab Sample ID: VB50L
LIMS ID: 12-12900
Matrix: Water
Data Release Authorized:
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/06/12
Date Received: 07/07/12

Date Analyzed: 07/16/12 00:37
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	
71-43-2	**Benzene**	**0.05**	**200 E**	
108-88-3	**Toluene**	**0.05**	**3.0**	
100-41-4	**Ethylbenzene**	**0.05**	**2.9**	
179601-23-1	**m,p-Xylene**	**0.10**	**2.8**	
95-47-6	**o-Xylene**	**0.05**	**0.36**	
				GAS ID
	Gasoline Range Hydrocarbons	**0.03**	**1.3**	**GAS/GRO**

BETX Surrogate Recovery

Trifluorotoluene	110%
Bromobenzene	113%

Gasoline Surrogate Recovery

Trifluorotoluene	110%
Bromobenzene	113%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: MW-1B-070612**
TPHG by Method NWTPHG **DILUTION**

Lab Sample ID: VB50L
LIMS ID: 12-12900
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/06/12
Date Received: 07/07/12

Date Analyzed: 07/16/12 14:19
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 5.00

CAS Number	Analyte	RL	Result	
71-43-2	**Benzene**	**0.25**	**200**	
108-88-3	**Toluene**	**0.25**	**3.0**	
100-41-4	**Ethylbenzene**	**0.25**	**2.6**	
179601-23-1	**m,p-Xylene**	**0.50**	**2.4**	
95-47-6	o-Xylene	0.25	< 0.25 U	
	Gasoline Range Hydrocarbons	**0.15**	**1.1**	GAS ID **GAS/GRO**

BETX Surrogate Recovery

Trifluorotoluene	92.8%
Bromobenzene	95.9%

Gasoline Surrogate Recovery

Trifluorotoluene	94.0%
Bromobenzene	97.0%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: CW-SP-01-070512
SAMPLE

Lab Sample ID: VB50M
LIMS ID: 12-12901
Matrix: Water
Data Release Authorized:
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/05/12
Date Received: 07/07/12

Date Analyzed: 07/16/12 01:07
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	0.05	< 0.05 U
108-88-3	Toluene	0.05	< 0.05 U
100-41-4	Ethylbenzene	0.05	< 0.05 U
179601-23-1	m,p-Xylene	0.10	< 0.10 U
95-47-6	o-Xylene	0.05	< 0.05 U
	Gasoline Range Hydrocarbons	**0.03**	**0.07**

GAS ID
GRO

BETX Surrogate Recovery

Trifluorotoluene	92.6%
Bromobenzene	96.4%

Gasoline Surrogate Recovery

Trifluorotoluene	93.7%
Bromobenzene	97.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: CW-SP-02-070412**
TPHG by Method NWTPHG **SAMPLE**

Lab Sample ID: VB50N
LIMS ID: 12-12902
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/04/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 18:47
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	0.05	< 0.05 U
108-88-3	Toluene	0.05	< 0.05 U
100-41-4	Ethylbenzene	0.05	< 0.05 U
179601-23-1	m,p-Xylene	0.10	< 0.10 U
95-47-6	o-Xylene	0.05	< 0.05 U

			GAS ID
	Gasoline Range Hydrocarbons	0.03	< 0.03 U ---

BETX Surrogate Recovery

Trifluorotoluene	98.4%
Bromobenzene	100%

Gasoline Surrogate Recovery

Trifluorotoluene	99.4%
Bromobenzene	101%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: CW-W-RB-070212**
TPHG by Method NWTPHG **SAMPLE**

Lab Sample ID: VB50O
LIMS ID: 12-12903
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/02/12
Date Received: 07/07/12

Date Analyzed: 07/16/12 02:34
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	0.05	< 0.05 U	
108-88-3	Toluene	0.05	< 0.05 U	
100-41-4	Ethylbenzene	0.05	< 0.05 U	
179601-23-1	m,p-Xylene	0.10	< 0.10 U	
95-47-6	o-Xylene	0.05	< 0.05 U	
	Gasoline Range Hydrocarbons	0.03	< 0.03 U	GAS ID ---

BETX Surrogate Recovery

Trifluorotoluene	95.6%
Bromobenzene	100%

Gasoline Surrogate Recovery

Trifluorotoluene	97.3%
Bromobenzene	102%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: CW-TP-RB-070212**
TPHG by Method NWTPHG **SAMPLE**

Lab Sample ID: VB50P
LIMS ID: 12-12904
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/02/12
Date Received: 07/07/12

Date Analyzed: 07/16/12 03:04
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	0.05	< 0.05 U	
108-88-3	Toluene	0.05	< 0.05 U	
100-41-4	Ethylbenzene	0.05	< 0.05 U	
179601-23-1	m,p-Xylene	0.10	< 0.10 U	
95-47-6	o-Xylene	0.05	< 0.05 U	
	Gasoline Range Hydrocarbons	0.03	< 0.03 U	GAS ID ---

BETX Surrogate Recovery

Trifluorotoluene	90.6%
Bromobenzene	93.4%

Gasoline Surrogate Recovery

Trifluorotoluene	92.0%
Bromobenzene	95.1%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: CW-TB**
TPHG by Method NWTPHG **SAMPLE**

Lab Sample ID: VB50Q
LIMS ID: 12-12905
Matrix: Water
Data Release Authorized:
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: 07/02/12
Date Received: 07/07/12

Date Analyzed: 07/15/12 19:16
Instrument/Analyst: PID1/JGR

Purge Volume: 15. mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	0.05	< 0.05 U
108-88-3	Toluene	0.05	< 0.05 U
100-41-4	Ethylbenzene	0.05	< 0.05 U
179601-23-1	m,p-Xylene	0.10	< 0.10 U
95-47-6	o-Xylene	0.05	< 0.05 U

			GAS ID
	Gasoline Range Hydrocarbons	0.03	< 0.03 U ---

BETX Surrogate Recovery

Trifluorotoluene	98.7%
Bromobenzene	101%

Gasoline Surrogate Recovery

Trifluorotoluene	99.8%
Bromobenzene	102%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ANALYTICAL RESOURCES INCORPORATED

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: VB50
Matrix: Water

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA

Client ID	TFT	BBZ	TOT OUT
MB-071512	95.9%	99.9%	0
LCS-071512	109%	105%	0
LCSD-071512	110%	108%	0
CW-PW-01-070412	101%	109%	0
CW-PW-02-070412	99.6%	109%	0
CW-PW-03-070512	102%	106%	0
CW-PW-53-070512	96.5%	104%	0
CW-PW-04-070512	101%	102%	0
CW-PW-05-070412	103%	107%	0
CW-PW-06-070612	104%	113%	0
CW-TB	101%	103%	0
CWMW-2-070612	95.7%	103%	0
CWMW-18-070612	99.6%	106%	0
CWMW-65C-070612	98.9%	105%	0
MB-071612	101%	104%	0
LCS-071612	104%	99.8%	0
LCSD-071612	108%	105%	0
MW-1B-070612	110%	113%	0
MW-1B-070612 DL	94.0%	97.0%	0
CW-SP-01-070512	93.7%	97.5%	0
CW-SP-02-070412	99.4%	101%	0
CW-W-RB-070212	97.3%	102%	0
CW-TP-RB-070212	92.0%	95.1%	0
CW-TB	99.8%	102%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 12-12889 to 12-12905

FORM II TPHG

ANALYTICAL RESOURCES INCORPORATED

BETX WATER SURROGATE RECOVERY SUMMARY

ARI Job: VB50
Matrix: Water

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA

Client ID	TFT	BBZ	TOT OUT
MB-071512	95.6%	98.8%	0
LCS-071512	105%	104%	0
LCSD-071512	107%	108%	0
CW-PW-01-070412	99.6%	108%	0
CW-PW-02-070412	98.2%	108%	0
CW-PW-03-070512	100%	106%	0
CW-PW-53-070512	95.5%	103%	0
CW-PW-04-070512	101%	102%	0
CW-PW-05-070412	104%	107%	0
CW-PW-06-070612	102%	113%	0
CW-TB	101%	103%	0
CWMW-2-070612	94.5%	102%	0
CWMW-18-070612	99.3%	103%	0
CWMW-65C-070612	98.4%	103%	0
MB-071612	100%	104%	0
LCS-071612	99.0%	98.1%	0
LCSD-071612	104%	104%	0
MW-1B-070612	110%	113%	0
MW-1B-070612 DL	92.8%	95.9%	0
CW-SP-01-070512	92.6%	96.4%	0
CW-SP-02-070412	98.4%	100%	0
CW-W-RB-070212	95.6%	100%	0
CW-TP-RB-070212	90.6%	93.4%	0
CW-TB	98.7%	101%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(79-120)	(80-120)
(BBZ) = Bromobenzene	(79-120)	(80-120)

Log Number Range: 12-12889 to 12-12905

FORM II BETX

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: LCS-071512**
Page 1 of 1 **LAB CONTROL SAMPLE**

Lab Sample ID: LCS-071512 QC Report No: VB50-Anchor QEA, LLC
LIMS ID: 12-12889 Project: Central Waterfront Site RI
Matrix: Water Event: NA
Data Release Authorized: Date Sampled: NA
Reported: 07/17/12 Date Received: NA

Date Analyzed LCS: 07/15/12 12:06 Purge Volume: 15. mL
LCSD: 07/15/12 12:35
Instrument/Analyst LCS: PID1/JGR Dilution Factor LCS: 1.0
LCSD: PID1/JGR LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	3.74	3.70	101%	3.56	3.70	96.2%	4.9%
Toluene	39.0	39.6	98.5%	37.5	39.6	94.7%	3.9%
Ethylbenzene	11.6	11.6	100%	11.2	11.6	96.6%	3.5%
m,p-Xylene	42.5	42.5	100%	41.2	42.5	96.9%	3.1%
o-Xylene	19.2	19.2	100%	18.5	19.2	96.4%	3.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	105%	107%
Bromobenzene	104%	108%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: LCS-071512
LAB CONTROL SAMPLE

Lab Sample ID: LCS-071512
LIMS ID: 12-12889
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 07/15/12 12:06
LCSD: 07/15/12 12:35
Instrument/Analyst LCS: PID1/JGR
LCSD: PID1/JGR

Purge Volume: 15. mL
Dilution Factor LCS: 1.0
LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.01	1.00	101%	0.95	1.00	95.0%	6.1%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	109%	110%
Bromobenzene	105%	108%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
Page 1 of 1

Sample ID: LCS-071612
LAB CONTROL SAMPLE

Lab Sample ID: LCS-071612
LIMS ID: 12-12900
Matrix: Water
Data Release Authorized:
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 07/16/12 12:51
LCSD: 07/16/12 13:21
Instrument/Analyst LCS: PID1/JGR
LCSD: PID1/JGR

Purge Volume: 15. mL

Dilution Factor LCS: 1.0
LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	3.38	3.70	91.4%	3.38	3.70	91.4%	0.0%
Toluene	35.9	39.6	90.7%	35.6	39.6	89.9%	0.8%
Ethylbenzene	10.7	11.6	92.2%	10.6	11.6	91.4%	0.9%
m,p-Xylene	39.9	42.5	93.9%	39.3	42.5	92.5%	1.5%
o-Xylene	17.7	19.2	92.2%	17.8	19.2	92.7%	0.6%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	99.0%	104%
Bromobenzene	98.1%	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: LCS-071612
LAB CONTROL SAMPLE

Lab Sample ID: LCS-071612
LIMS ID: 12-12900
Matrix: Water
Data Release Authorized: MW
Reported: 07/17/12

QC Report No: VB50-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: NA
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 07/16/12 12:51
LCSD: 07/16/12 13:21
Instrument/Analyst LCS: PID1/JGR
LCSD: PID1/JGR

Purge Volume: 15. mL
Dilution Factor LCS: 1.0
LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	0.93	1.00	93.0%	0.92	1.00	92.0%	1.1%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	104%	108%
Bromobenzene	99.8%	105%

BETX/GAS METHOD BLANK SUMMARY

BLANK NO.: MB0715S1

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project No.: CENTRAL WATERFRONT SITE

Date Analyzed : 07/15/12 Matrix: WATER

Time Analyzed : 1304 Instrument ID : PID1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	LCS0715S1	LCS0715	07/15/12
02	LCSD0715S1	LCSD0715	07/15/12
03	CW-PW-04-070	VB50E	07/15/12
04	CW-PW-05-070	VB50F	07/15/12
05	CW-TB	VB50H	07/15/12
06	CW-SP-02-070	VB50N	07/15/12
07	CW-TB	VB50Q	07/15/12
08	CW-PW-01-070	VB50A	07/15/12
09	CW-PW-02-070	VB50B	07/15/12
10	CW-PW-03-070	VB50C	07/15/12
11	CW-PW-53-070	VB50D	07/15/12
12	CW-PW-06-070	VB50G	07/15/12
13	CWMW-2-07061	VB50I	07/15/12
14	CWMW-18-0706	VB50J	07/15/12
15	CWMW-65C-070	VB50K	07/16/12
16	MW-1B-070612	VB50L	07/16/12
17	CW-SP-01-070	VB50M	07/16/12
18	CW-W-RB-0702	VB50O	07/16/12
19	CW-TP-RB-070	VB50P	07/16/12
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: MB-071512**
TPHG by Method NWTPHG **METHOD BLANK**

Lab Sample ID: MB-071512 QC Report No: VB50-Anchor QEA, LLC
LIMS ID: 12-12889 Project: Central Waterfront Site RI
Matrix: Water Event: NA
Data Release Authorized: MW Date Sampled: NA
Reported: 07/17/12 Date Received: NA

Date Analyzed: 07/15/12 13:04 Purge Volume: 15. mL
Instrument/Analyst: PID1/JGR Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	GAS ID
71-43-2	Benzene	0.05	< 0.05 U	
108-88-3	Toluene	0.05	< 0.05 U	
100-41-4	Ethylbenzene	0.05	< 0.05 U	
179601-23-1	m,p-Xylene	0.10	< 0.10 U	
95-47-6	o-Xylene	0.05	< 0.05 U	
	Gasoline Range Hydrocarbons	0.03	< 0.03 U	---

BETX Surrogate Recovery

Trifluorotoluene	95.6%
Bromobenzene	98.8%

Gasoline Surrogate Recovery

Trifluorotoluene	95.9%
Bromobenzene	99.9%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

4

BETX/GAS METHOD BLANK SUMMARY

BLANK NO.

0716MBS1

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR

SDG No.: VB50

Project No.: CENTRAL WATERFRONT

Date Analyzed : 07/16/12

Matrix: WATER

Time Analyzed : 1350

Instrument ID : PID1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	0716LCSS1	0716LCS	07/16/12
02	0716LCSDS1	0716LCSD	07/16/12
03	MW-1B-070612	VB50L	07/16/12
04			
05			
06			
07			
08			
09			
10			
11			
12			
13			
14			
15			
16			
17			
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29			
30			

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod **Sample ID: MB-071612**
TPHG by Method NWTPHG **METHOD BLANK**

Lab Sample ID: MB-071612 QC Report No: VB50-Anchor QEA, LLC
LIMS ID: 12-12900 Project: Central Waterfront Site RI
Matrix: Water Event: NA
Data Release Authorized: MW Date Sampled: NA
Reported: 07/17/12 Date Received: NA

Date Analyzed: 07/16/12 13:50 Purge Volume: 15. mL
Instrument/Analyst: PID1/JGR Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	0.05	< 0.05 U	
108-88-3	Toluene	0.05	< 0.05 U	
100-41-4	Ethylbenzene	0.05	< 0.05 U	
179601-23-1	m,p-Xylene	0.10	< 0.10 U	
95-47-6	o-Xylene	0.05	< 0.05 U	
				GAS ID
	Gasoline Range Hydrocarbons	0.03	< 0.03 U	---

BETX Surrogate Recovery

Trifluorotoluene	100%
Bromobenzene	104%

Gasoline Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	104%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

6a
GAS INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR QEA

Instrument/Det: PID1.I/RTX 502-2 FID Project: CENTRAl WATERFRONT

Calibration Date: 14-JUL-2012 SDG No.: VB50

Gas Range	RF1 .03	RF2 0.10	RF3 0.25	RF4 1.0	RF5 2.5	RF6 5.0	Ave RF	%RSD
WA Gas	1402800	1087418	995937	923401	1055168	1043782	1084751	15.3
AK Gas	1882833	1898975	1797178	1607190	1778704	1736909	1783632	6.0
NW Gas	1595842	1118879	1031251	964287	1100829	1086734	1149637	19.6
Cal Gas	2644767	2326933	2173141	1960387	2186424	2135297	2237825	10.3
8015Gas	2486383	2362185	2217573	1989000	2203702	2149347	2234698	7.7

Surrogates Rel. Rec.	RF1 22	RF2 44	RF3 67	RF4 100	RF5 133	RF6 178	Ave RF	%RSD

<- Indicates %RSD outside limits
Surrogate areas are not included in RF calculation.

Quant Ranges : WA Gas Toluene - nC12
AK Gas nC6 - nC10
NW Gas Toluene - Naphthalene
Cal Gas nC6 - nC12
8015 Gas 2-Methylpentane - 1,2,4-Trimethylbenzene

Calibration Files	Analysis Time
0714a003.d	14-JUL-2012 09:01
0714a004.d	14-JUL-2012 09:30
0714a005.d	14-JUL-2012 10:00
0714a006.d	14-JUL-2012 10:29
0714a007.d	14-JUL-2012 10:58
0714a008.d	14-JUL-2012 11:28

BETX INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VPCC0713-2 Project No.: CENTRAL WATERFRONT

Instrument/Det: PID1 /RTX 502-2 PID Calibration Date: 07/13/12

COMPOUND	CALIBRATION FACTORS 0.08	0.25	1	5	25	MEAN	%RSD
Benzene	962	852	835	809	746		
Toluene	1012	812	754	740	687		
Ethylbenzene	725	704	677	671	625		
M/P-Xylene	800	748	742	736	690		
O-Xylene	625	580	564	560	524		
MTBE	116	127	128	121			
TFT(Surr)	52	51	50	47	48		
BB(Surr)	83	86	87	85	84		

Calibration Files

/chem3/pid1.i/vpcc0713-2.b/0713a005.d
/chem3/pid1.i/vpcc0713-2.b/0713a006.d
/chem3/pid1.i/vpcc0713-2.b/0713a007.d
/chem3/pid1.i/vpcc0713-2.b/0713a008.d
/chem3/pid1.i/vpcc0713-2.b/0713a009.d
/chem3/pid1.i/vpcc0713-2.b/0713a010.d
/chem3/pid1.i/vpcc0713-2.b/0713a011.d

BETX INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VPCC0713-2 Project No.: CENTRAL WATERFRONT SITE

Instrument/Det: PID1 /RTX 502-2 PID Calibration Date: 07/13/12

	CALIBRATION FACTORS						
COMPOUND	50	100	MEAN	%RSD			
Benzene	733	778	816	9.53			
Toluene	684	720	773	14.80			
Ethylbenzene	616	647	666	6.01			
M/P-Xylene	671	689	725	6.19			
O-Xylene	519	546	560	6.46			
MTBE	122	131	206	4.42			
TFT(Surr)	47	47	49	4.16			
BB(Surr)	85	84	85	1.65			

BETX CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project No.: CENTRAL WATERFRONT SITE

Instrument/Det: PID1/RTX 502-2 PID Calibration Date: 07/15/12

Init. Calib. Date(s): 07/13/12 Calib. File: 0715A002.D

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng/mL)	NOM AMOUNT (ng/mL)	%D
Benzene	7.05	7.00	7.10	4.556	5.000	-8.9
Toluene	9.91	9.87	9.97	4.359	5.000	-12.8
Ethylbenzene	12.81	12.76	12.86	4.610	5.000	-7.8
M/P-Xylene	12.97	12.92	13.02	9.212	10.00	-7.9
O-Xylene	13.92	13.89	13.95	4.537	5.000	-9.3
MTBE	4.58	4.53	4.63	5.267	5.000	5.3
TFT(Surr)	7.89	7.84	7.94	98.28	100.0	-1.7
BB(Surr)	15.41	15.36	15.46	98.74	100.0	-1.3

FORM VII BETX

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR QEA, LLC

ICal Date: 14-Jul-2012 Project: CENTRAL WATERFRONT

CCal Date: 15-JUL-2012 SDG No.: VB50

Lab File Name: 0715a003.d Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	1109904	1.02	1.00	2.3
AKGas (C6-C10)	1953430	1.10	1.00	9.5
NWGas (Tol-Nap)	1160496	1.01	1.00	0.9
8015B (2MP-TMB)	2411357	1.08	1.00	7.9

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 14-Jul-2012
Project: CENTRAL WATERFRONT

CCal Date: 15-JUL-2012
SDG No.: VB50

Lab File Name: 0715a003.d
Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	63346	113.1	100.0	13.1
Bromoflrbenz	19170	107.2	100.0	7.2

FORM VII-Surr

BETX CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project No.: CENTRAL WATERFRONT SITE

Instrument/Det: PID1/RTX 502-2 PID Calibration Date: 07/15/12

Init. Calib. Date(s): 07/13/12 Calib. File: 0715A012.D

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng/mL)	NOM AMOUNT (ng/mL)	%D
Benzene	7.05	7.00	7.10	4.811	5.000	-3.8
Toluene	9.91	9.87	9.97	4.625	5.000	-7.5
Ethylbenzene	12.81	12.76	12.86	4.862	5.000	-2.8
M/P-Xylene	12.97	12.92	13.02	9.849	10.00	-1.5
O-Xylene	13.92	13.89	13.95	4.878	5.000	-2.4
MTBE	4.58	4.53	4.63	5.356	5.000	7.1
TFT(Surr)	7.89	7.84	7.94	99.90	100.0	-0.1
BB(Surr)	15.41	15.36	15.46	102.6	100.0	2.6

FORM VII BETX

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 14-Jul-2012
Project: CENTRAL WATERFRONT

CCal Date: 15-JUL-2012
SDG No.: VB50

Lab File Name: 0715a013.d
Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	1058735	0.98	1.00	-2.4
AKGas (C6-C10)	1856762	1.04	1.00	4.1
NWGas (Tol-Nap)	1104129	0.96	1.00	-4.0
8015B (2MP-TMB)	2292839	1.03	1.00	2.6

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

FORM VII-GAS

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 14-Jul-2012
Project: CENTRAL WATERFRONT

CCal Date: 15-JUL-2012
SDG No.: VB50

Lab File Name: 0715a013.d
Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	59648	106.1	100.0	6.1
Bromoflrbenz	18281	101.5	100.0	1.5

BETX CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project No.: CENTRAL WATERFRONT SITE

Instrument/Det: PID1/RTX 502-2 PID Calibration Date: 07/15/12

Init. Calib. Date(s): 07/13/12 Calib. File: 0715A019.D

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng/mL)	NOM AMOUNT (ng/mL)	%D
Benzene	7.05	7.00	7.10	5.042	5.000	0.8
Toluene	9.92	9.87	9.97	4.862	5.000	-2.8
Ethylbenzene	12.81	12.76	12.86	5.093	5.000	1.9
M/P-Xylene	12.97	12.92	13.02	10.23	10.00	2.3
O-Xylene	13.92	13.89	13.95	5.131	5.000	2.6
MTBE	4.58	4.53	4.63	5.838	5.000	16.8
TFT(Surr)	7.89	7.84	7.94	94.80	100.0	-5.2
BB(Surr)	15.41	15.36	15.46	98.92	100.0	-1.1

FORM VII BETX

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR QEA, LLC

ICal Date: 14-Jul-2012 Project: CENTRAL WATERFRONT

CCal Date: 15-JUL-2012 SDG No.: VB50

Lab File Name: 0715a020.d Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	1005938	0.93	1.00	-7.3
AKGas (C6-C10)	1723500	0.97	1.00	-3.4
NWGas (Tol-Nap)	1050022	0.91	1.00	-8.7
8015B (2MP-TMB)	2132888	0.95	1.00	-4.6

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR QEA, LLC

ICal Date: 14-Jul-2012 Project: CENTRAL WATERFRONT

CCal Date: 15-JUL-2012 SDG No.: VB50

Lab File Name: 0715a020.d Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	57958	103.0	100.0	3.0
Bromoflrbenz	18027	101.6	100.0	1.6

BETX CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project No.: CENTRAL WATERFRONT SITE

Instrument/Det: PID1/RTX 502-2 PID Calibration Date: 07/16/12

Init. Calib. Date(s): 07/13/12 Calib. File: 0715A031.D

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng/mL)	NOM AMOUNT (ng/mL)	%D	
Benzene	7.05	7.00	7.10	5.044	5.000	0.9	
Toluene	9.92	9.87	9.97	4.879	5.000	-2.4	
Ethylbenzene	12.81	12.76	12.86	5.072	5.000	1.4	
M/P-Xylene	12.97	12.92	13.02	10.14	10.00	1.4	
O-Xylene	13.92	13.89	13.95	5.092	5.000	1.8	
MTBE	4.58	4.53	4.63	6.288	5.000	25.8	<-
TFT(Surr)	7.89	7.84	7.94	94.70	100.0	-5.3	
BB(Surr)	15.41	15.36	15.46	102.4	100.0	2.4	

FORM VII BETX

7a

GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA, LLC

ICal Date: 14-Jul-2012

Project: CENTRAL WATERFRONT

CCal Date: 16-JUL-2012

SDG No.: VB50

Lab File Name: 0715a032.d

Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	980730	0.90	1.00	-9.6
AKGas (C6-C10)	1632009	0.91	1.00	-8.5
NWGas (Tol-Nap)	1023307	0.89	1.00	-11.0
8015B (2MP-TMB)	2032777	0.91	1.00	-9.0

* Surrogate areas are subtracted from Total Area

<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 14-Jul-2012
Project: CENTRAL WATERFRONT

CCal Date: 16-JUL-2012
SDG No.: VB50

Lab File Name: 0715a032.d
Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	55658	99.3	100.0	-0.7
Bromoflrbenz	17732	101.3	100.0	1.3

BETX CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project No.: CENTRAL WATERFRONT SITE

Instrument/Det: PID1/RTX 502-2 PID Calibration Date: 07/16/12

Init. Calib. Date(s): 07/13/12 Calib. File: 0715A035.D

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng/mL)	NOM AMOUNT (ng/mL)	%D	
Benzene	7.05	7.00	7.10	5.107	5.000	2.1	
Toluene	9.92	9.87	9.97	4.897	5.000	-2.1	
Ethylbenzene	12.81	12.76	12.86	5.116	5.000	2.3	
M/P-Xylene	12.97	12.92	13.02	10.23	10.00	2.3	
O-Xylene	13.92	13.89	13.95	5.176	5.000	3.5	
MTBE	4.58	4.53	4.63	6.264	5.000	25.3	<-
TFT(Surr)	7.89	7.84	7.94	90.13	100.0	-9.9	
BB(Surr)	15.41	15.36	15.46	100.0	100.0	0.0	

FORM VII BETX

7a

GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA, LLC

ICal Date: 14-Jul-2012

Project: CENTRAL WATERFRONT

CCal Date: 16-JUL-2012

SDG No.: VB50

Lab File Name: 0715a036.d

Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	994720	0.92	1.00	-8.3
AKGas (C6-C10)	1620224	0.91	1.00	-9.2
NWGas (Tol-Nap)	1039894	0.90	1.00	-9.5
8015B (2MP-TMB)	2021625	0.90	1.00	-9.5

* Surrogate areas are subtracted from Total Area

<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 14-Jul-2012
Project: CENTRAL WATERFRONT

CCal Date: 16-JUL-2012
SDG No.: VB50

Lab File Name: 0715a036.d
Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	57095	101.3	100.0	1.3
Bromoflrbenz	18392	103.9	100.0	3.9

FORM VII-Surr

BETX CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project No.: CENTRAL WATERFRONT SITE

Instrument/Det: PID1/RTX 502-2 PID Calibration Date: 07/16/12

Init. Calib. Date(s): 07/13/12 Calib. File: 0716A007.D

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng/mL)	NOM AMOUNT (ng/mL)	%D
Benzene	7.06	7.01	7.11	4.919	5.000	-1.6
Toluene	9.92	9.87	9.97	4.778	5.000	-4.4
Ethylbenzene	12.81	12.76	12.86	5.003	5.000	0.1
M/P-Xylene	12.97	12.93	13.03	10.09	10.00	0.9
O-Xylene	13.92	13.90	13.96	4.964	5.000	-0.7
MTBE	4.58	4.52	4.62	6.224	5.000	24.5
TFT(Surr)	7.89	7.84	7.94	99.57	100.0	-0.4
BB(Surr)	15.42	15.37	15.47	99.62	100.0	-0.4

FORM VII BETX

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR

ICal Date: 14-Jul-2012 Project: CENTRAL WATERFRONT

CCal Date: 16-JUL-2012 SDG No.: VB50

Lab File Name: 0716a008.d Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	992815	0.92	1.00	-8.5
AKGas (C6-C10)	1795751	1.01	1.00	0.7
NWGas (Tol-Nap)	1034071	0.90	1.00	-10.1
8015B (2MP-TMB)	2220748	0.99	1.00	-0.6

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR

ICal Date: 14-Jul-2012 Project: CENTRAL WATERFRONT

CCal Date: 16-JUL-2012 SDG No.: VB50

Lab File Name: 0716a008.d Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	69334	108.9	100.0	8.9
Bromoflrbenz	18135	103.7	100.0	3.7

BETX CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project No.: CENTRAL WATERFRONT SITE

Instrument/Det: PID1/RTX 502-2 PID Calibration Date: 07/16/12

Init. Calib. Date(s): 07/13/12 Calib. File: 0716A013.D

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng/mL)	NOM AMOUNT (ng/mL)	%D
Benzene	7.06	7.01	7.11	4.767	5.000	-4.7
Toluene	9.92	9.87	9.97	4.720	5.000	-5.6
Ethylbenzene	12.81	12.76	12.86	4.931	5.000	-1.4
M/P-Xylene	12.97	12.93	13.03	9.857	10.00	-1.4
O-Xylene	13.92	13.90	13.96	4.892	5.000	-2.2
MTBE	4.58	4.52	4.62	5.725	5.000	14.5
TFT(Surr)	7.89	7.84	7.94	93.98	100.0	-6.0
BB(Surr)	15.42	15.37	15.47	99.09	100.0	-0.9

FORM VII BETX

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR

ICal Date: 14-Jul-2012 Project: CENTRAL WATERFRONT

CCal Date: 16-JUL-2012 SDG No.: VB50

Lab File Name: 0716a014.d Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	1065915	0.98	1.00	-1.7
AKGas (C6-C10)	1846963	1.04	1.00	3.6
NWGas (Tol-Nap)	1110876	0.97	1.00	-3.4
8015B (2MP-TMB)	2283670	1.02	1.00	2.2

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR

ICal Date: 14-Jul-2012 Project: CENTRAL WATERFRONT

CCal Date: 16-JUL-2012 SDG No.: VB50

Lab File Name: 0716a014.d Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	57683	101.3	100.0	1.3
Bromoflrbenz	17891	99.4	100.0	-0.6

BETX/GAS ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project: CENTRAL WATERFRONT SITE

Instrument ID: PID1 GC Detector: RTX 502-2 PID

Run Date: 07/15/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

METHOD SURROGATE RT
S1 : 7.89 S2 : 15.41

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	S1 #	S2 RT	S2 #
01	ZZZZZ	ZZZZZ	07/15/12	0940	7.89		15.41	
02	RT+BCAL	RT+BCAL	07/15/12	1009	7.89		15.41	
03	GCAL#1	GCAL#1	07/15/12	1038	7.89		15.41	
04	LCS0715S1	LCS0715	07/15/12	1108	7.89		15.41	
05	LCSD0715S1	LCSD0715	07/15/12	1137	7.89		15.41	
06	ZZZZZ	ZZZZZ	07/15/12	1206	7.89		15.41	
07	ZZZZZ	ZZZZZ	07/15/12	1235	7.89		15.41	
08	MB0715S1	MB0715	07/15/12	1304	7.89		15.41	
09	ZZZZZ	ZZZZZ	07/15/12	1432				
10	ZZZZZ	ZZZZZ	07/15/12	1502				
11	ZZZZZ	ZZZZZ	07/15/12	1551	7.89		15.42	
12	BCAL#2	BCAL#2	07/15/12	1620	7.89		15.41	
13	GCAL#2	GCAL#2	07/15/12	1650	7.89		15.41	
14	CW-PW-04-070	VB50E	07/15/12	1719	7.89		15.41	
15	CW-PW-05-070	VB50F	07/15/12	1748	7.89		15.41	
16	CW-TB	VB50H	07/15/12	1817	7.89		15.41	
17	CW-SP-02-070	VB50N	07/15/12	1847	7.89		15.41	
18	CW-TB	VB50Q	07/15/12	1916	7.89		15.41	
19	BCAL#3	BCAL#3	07/15/12	1945	7.89		15.41	
20	GCAL#3	GCAL#3	07/15/12	2014	7.89		15.41	
21	CW-PW-01-070	VB50A	07/15/12	2044	7.89		15.41	
22	CW-PW-02-070	VB50B	07/15/12	2113	7.89		15.41	
23	CW-PW-03-070	VB50C	07/15/12	2142	7.89		15.41	
24	CW-PW-53-070	VB50D	07/15/12	2211	7.89		15.41	
25	CW-PW-06-070	VB50G	07/15/12	2240	7.89		15.41	
26	CWMW-2-07061	VB50I	07/15/12	2310	7.89		15.41	
27	CWMW-18-0706	VB50J	07/15/12	2339	7.89		15.41	
28	CWMW-65C-070	VB50K	07/16/12	0008	7.89		15.41	
29	MW-1B-070612	VB50L	07/16/12	0037	7.89		15.41	
30	CW-SP-01-070	VB50M	07/16/12	0107	7.89		15.41	
31	BCAL#4	BCAL#4	07/16/12	0136	7.89		15.41	
32	GCAL#4	GCAL#4	07/16/12	0205	7.89		15.41	

QC LIMITS

S1 = TFT(Surr) (+/- 0.05 MINUTES)
S2 = BB(Surr) (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII-2 BETX

BETX/GAS ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project: CENTRAL WATERFRONT SITE

Instrument ID: PID1 GC Detector: RTX 502-2 PID

Run Date: 07/16/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

METHOD SURROGATE RT
S1 : 7.89 S2 : 15.41

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	S1 #	S2 RT	S2 #
01	CW-W-RB-0702	VB50O	07/16/12	0234	7.89		15.41	
02	CW-TP-RB-070	VB50P	07/16/12	0304	7.89		15.41	
03	BCAL#5	BCAL#5	07/16/12	0333	7.89		15.41	
04	GCAL#5	GCAL#5	07/16/12	0402	7.89		15.42	

QC LIMITS

S1 = TFT(Surr) (+/- 0.05 MINUTES)
S2 = BB(Surr) (+/- 0.05 MINUTES)

* Values outside of QC limits.

BETX/GAS ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project: CENTRAL WATERFRONT SITE

Instrument ID: PID1 GC Detector: RTX 502-2 PID

Run Date: 07/16/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

	METHOD SURROGATE RT S1 : 7.89 S2 : 15.42					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	ZZZZZ	ZZZZZ	07/16/12	0715	7.89	15.41
02	ZZZZZ	ZZZZZ	07/16/12	0813	7.89	15.41
03	ZZZZZ	ZZZZZ	07/16/12	0945	7.89	15.42
04	ZZZZZ	ZZZZZ	07/16/12	1014	7.89	15.42
05	ZZZZZ	ZZZZZ	07/16/12	1043	7.89	15.41
06	RT+BCAL	RT+BCAL	07/16/12	1153	7.89	15.42
07	GCAL	GCAL	07/16/12	1222	7.89	15.42
08	0716LCSS1	0716LCS	07/16/12	1251	7.89	15.42
09	0716LCSDS1	0716LCSD	07/16/12	1321	7.89	15.42
10	0716MBS1	0716MB	07/16/12	1350	7.89	15.42
11	MW-1B-070612	VB50L	07/16/12	1419	7.89	15.42
12	BCAL#2	BCAL#2	07/16/12	1449	7.89	15.42
13	GCAL#2	GCAL#2	07/16/12	1518	7.89	15.42
14	ZZZZZ	ZZZZZ	07/16/12	1604		15.42

QC LIMITS

S1 = TFT(Surr) (+/- 0.05 MINUTES)

S2 = BB(Surr) (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII-2 BETX

BETX/GAS ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB50 Project: CENTRAL WATERFRONT SITE

Instrument ID: PID1 GC Detector: RTX 502-2 FID

Run Date: 07/16/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

METHOD SURROGATE RT
S1 : 7.88 S2 : 15.41

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	S1 #	S2 RT	S2 #
01	ZZZZZ	ZZZZZ	07/16/12	0715	7.88		15.41	
02	ZZZZZ	ZZZZZ	07/16/12	0813	7.88		15.41	
03	ZZZZZ	ZZZZZ	07/16/12	0945	7.88		15.41	
04	ZZZZZ	ZZZZZ	07/16/12	1014	7.88		15.41	
05	ZZZZZ	ZZZZZ	07/16/12	1043	7.88		15.41	
06	RT+BCAL	RT+BCAL	07/16/12	1153	7.88		15.41	
07	GCAL	GCAL	07/16/12	1222	7.88		15.41	
08	0716LCSS1	0716LCS	07/16/12	1251	7.88		15.41	
09	0716LCSDS1	0716LCSD	07/16/12	1321	7.88		15.41	
10	0716MBS1	0716MB	07/16/12	1350	7.88		15.41	
11	MW-1B-070612	VB50L	07/16/12	1419	7.88		15.41	
12	BCAL#2	BCAL#2	07/16/12	1449	7.88		15.41	
13	BCAL#2	GCAL#2	07/16/12	1518	7.88		15.41	
14	ZZZZZ	ZZZZZ	07/16/12	1604			15.41	

QC LIMITS

S1 = TFT(Surr) (+/- 0.07 MINUTES)
S2 = BB(Surr) (+/- 0.07 MINUTES)

* Values outside of QC limits.

FORM VIII-2 BETX

TPHD Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: VB50

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

NWTPHD / NWHCID –Water
Separatory Funnel (3510C) (SOP # 3311S)

Preparation Test TPHD/HCID # 1(DIEWSI) — In-House (0.25-0.50ppm)

ARI Job No(s) VB5ϕ — Page 1 of 1 — Batch set up by: JH

Bottle #	Extraction Requirements	Volume Extracted	DryVap Module # Y/N	Acid/Silica Clean (1:1) (1mL) Y/N	Final Effective Volume (After Initial Run)	Volume to Lab	Comments	Verify Client ID
M 07/09/12	VB5ϕ MBW	500mL	# Y/N	(1:1) Y/N	1mL	1mL	See Analyst Notes	M 07/09/12
	SBW	500mL	# Y/N	(1:1) Y/N	1mL	1mL		
	SBW Dup.	500mL	# Y/N	(1:1) Y/N	1mL	1mL		
	~~QLS~~	~~500mL~~	# Y/N	(1:1) Y/N	~~1mL~~	~~1mL~~		
#4	VB5ϕ R (A)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		Analyst/Date
#4	S (B)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		KD 80-85°C Y/N
#5	T (C)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		RR 07/10/12
#4	U (D)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		
#4	V (E)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		
#2	W (F)	~~500mL~~ 250mL	# Y/N	(1:1) Y/N	1mL	1mL		
#3	X (G)	~~500mL~~ 250mL	# Y/N	(1:1) Y/N	1mL	1mL		
#4	Y (I)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		
#4	Z (J)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		Analyst/Date
#4	AA (K)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		Turbo Vap 1 2 3
#4	AB (L)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		
#4	AC (M)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		
#2	AD (N)	~~500mL~~ 250mL	# Y/N	(1:1) Y/N	1mL	1mL		
#4	AE (Q)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		
#4	AF (P)	500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
Analyst/Date	M 07/09/12			7-11-12	7-11-12	7-11-12		JZ 7/10/12 Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	O2(1947-2)	450µg/mL	100µL	9/28/12	M 07/09/12	WW
Spike	11(1963-2)	15000µg/mL	100µL	4/09/13	M 07/09/12	WW
~~QLS Spike~~	~~18( )~~	~~1000µg/mL~~	~~50µL~~			

Extraction Time: 14:05

SPECIAL INSTRUCTIONS: 1. Add Surr/Spk. 2. Acidify with 1 pipet of 1:1 Sulfuric Acid. 3. Check pH. 4. Extract 2X with 30mL DCM.

5. DryVap or KD at 80°. 6. TurboVap if KD. Acid/Silica Clean-ups? Y N (See Notes) 8. Vial in DCM.

Archive Y N

3014F

VB5ϕ 600105

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: VB50 Client ID: Anchor QEA, LLC

Parameter: TPHD A/S Client Project: Central Waterfront Site RI

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Other (Details)=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

(NWTPHD) / NWHCID –Water
Separatory Funnel (3510C) (SOP # 3311S)

Preparation Test (TPHD)/HCID # 1(DIEWSI) In-House (0.25-0.50ppm)
ARI Job No(s) VB5ϕ Page 1 of 1 Batch set up by: ~~JB~~

Bottle #	Extraction Requirements	Volume Extracted	DryVap Module # Y/(N)	Acid/Silica Clean (1:1) (1mL) (Y)/~~N~~	Final Effective Volume After Initial Run	Volume to Lab	Comments	Verify Client ID
M 07/09/12	VB5ϕ MBW	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL	See Analyst Notes	M 07/09/12
↓	SBW	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
	SBW Dup.	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
↓	~~QLS~~	~~500mL~~	# Y/N	(1:1) Y/N	~~1mL~~	~~1mL~~		
#4	VB5ϕ R (A)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		Analyst/Date
#4	S (B)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		KD 80-85°C (Y)/N
#5	T (C)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		RR 07/10/12
#4	U (D)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
#4	V (E)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
#2	W (F)	~~500mL~~ 250mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
#3	X (G)	~~500mL~~ 250mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
#4	Y (I)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
#4	Z (J)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		Analyst/Date
#4	AA (K)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		Turbo Vap 1 (2) 3
#4	AB (L)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
#4	AC (M)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
#2	AD (N)	~~500mL~~ 250mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
#4	AE (Q)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
#4	AF (P)	500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
		500mL	# Y/(N)	(1:1) Y/N	1mL	1mL		
Analyst/Date	M 07/09/12							JSZ 7/10/12 Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	O2(1947-2)	450µg/mL	100µL	9/28/12	M 07/09/12	WW
Spike	11 (1965-2)	15000µg/mL	100µL	4/09/13	M 07/09/12	WW
~~QLS Spike~~	~~18 ( )~~	~~1000µg/mL~~	~~50µL~~			
Extraction Time: 14:05						

SPECIAL INSTRUCTIONS: 1. Add Surr/Spk. 2. Acidify with 1 pipet of 1:1 Sulfuric Acid. 3. Check pH. 4. Extract 2X with 30mL DCM.
5. DryVap or (KD at 80°). 6. TurboVap if KD. 7. (Acid/Silica Clean-ups? Y) N See Notes 8. Vial in DCM. VB50:00107

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: VB50 Client ID: Anchor QEA, LLC

Parameter: TPHD Client Project: Central Waterfront site RI

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☒ Turbid/Color= E(V) BRIGHT YELLOW, G(X), K(AA), L(AB) LIGHT YELLOW. D(U), F(W) LIGHT TAN.	M. 07/09/12
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☒ Emulsions (%)= (A)R=10%, (B)S=10%, (C)T=25%, (D)U=60%, (E)V=25%, (F)W=10%, (K)AA=60% L)AB=25%	07/09/12
☐ Other (Details)=	
☒ Other Notes/Comments= (Note problems, concerns, corrective actions). TPHD extracts will be returned from GC for cleanup= after initial run. R-AF = No cleanups A-P = Acid/Silica Gel cleaned F, G N ARE ON 250mL, = W, X, AD. SAMPLE V REQUIRED CENTRIFUGE TO BREAK UP EMULSIONS. OTHERSAMPLES BROKE UP W/ REPOUR.	JH 7/09/12 M. 07/09/12

TPHD Raw Data
Initial Calibration

ARI Job ID: VB50

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Diesel / AK102

GC Initial Calibration Notes

ARI SOP: **403S**(PCB) **405S**(Herb) (**407S**(TPH-D)) **409S**(HCID) **412S**(PCP) **423S**(Pest)
427S(Dir Inj) **428S**(EPH) **Other**

Instrument: FID-3A (FID-3B) FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Curve Date(s): ~~7t~~ 6/22/12 Internal Standard ID N/A Expiration —

Endrin/DDT Breakdown <15%? YES / NO / NA

ICV Exceeding ±20%? (Diesel: YES / NO) (AK102: YES / NO)

ICal Meets %RSD & r^2 Criteria (YES) / NO

ICV Exceeding ±30%? YES / (Diesel / NO)

Manual Integrations for ICal? (YES) / NO

Linear Fits Used? YES / (NO)

Minimum Response S/N Met (YES) / NO

Quadratic Fits Used? YES / (NO)

Calibration Points Dropped? YES / (NO)

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
76	1972-1	9/28/12	Shell	1977-3	9/28/12

Detail problems, corrective actions and/or other pertinent information below:

Analyst: [signature] **Date:** 7/12/12

Reviewer: [signature] **Date:** 7.12.12

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-JUN-2004 11:52
End Cal Date : 22-JUN-2012 11:00
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : Falcon
Method file : /chem3/fid3b.i/20120622.b/ftphfid3b.m
Cal Date : 10-Jul-2012 08:10 monicah
Curve Type : Average

Compound	0.000e+00 Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
	0.000e+00 Level 7	0 000e+00 Level 8	0 000e+00 Level 9	0 000e+00 Level 10	0 000e+00 Level 11	0.000e+00 Level 12		
	0 000e+00 Level 13							
$ 8 o-terph	+++++	20700	17668	18717	19054	18635		
	17820	+++++	+++++	+++++	+++++	+++++		
	+++++						18765	5.811
$ 15 Triacon Surr	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	18711	15806	16033	15777	16151		
	+++++						16496	7.568

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120622.b/0622b002.d
Method: /chem3/fid3b.i/20120622.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/11/2012
Macro: FID:3B062212

ARI ID: RT
Client ID:
Injection: 22-JUN-2012 08:43
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.292	0.000	668883	373835	GAS (Tol-C12)	1469232	66.42
C8	1.574	0.000	332298	276879	DIESEL (C12-C24)	1548657	113.04
C10	3.103	0.000	370573	231162	M.OIL (C24-C38)	1832522	184.06
C12	3.904	0.000	268528	188109	AK-102 (C10-C25)	2073545	127.05
C14	4.502	0.000	284543	208274	AK-103 (C25-C36)	1642656	239.52
C16	5.020	0.000	310925	234916			
C18	5.469	0.000	390779	233131			
C20	5.864	0.000	347392	233573			
C22	6.220	0.000	385547	242383			
C24	6.546	0.000	441387	253094			
C25	6.698	0.000	563194	341908			
C26	6.845	0.000	432078	258288			
C28	7.126	0.000	416824	256437	FUEL OIL(C10-C24)	2072351	142.20
C32	7.634	0.000	388585	247243			
C34	7.866	0.000	335120	217657			
Filter Peak	7.799	0.000	17016	20860			
C36	8.087	0.000	261030	196373	BUNKERC (C10-C38)	3904872	807.75
o-terph	5.569	0.000	1302237	800441	JET-A (C10-C18)	1298126	90.15
Triacon Surr	7.392	0.000	1111905	764271			

Range Times: NW Diesel(3.954 - 6.596) NW Gas(1.242 - 3.954) NW M.Oil(6.596 - 8.393)
AK102(3.053 - 6.648) AK103(6.648 - 8.137) Jet A(3.053 - 5.519)

Surrogate	Area	Amount	%Rec
o-Terphenyl	800441	42.7	94.8
Triacontane	764271	46.3	103.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120622.b/0622b002.d

Date : 22-JUN-2012 08:43

Client ID:

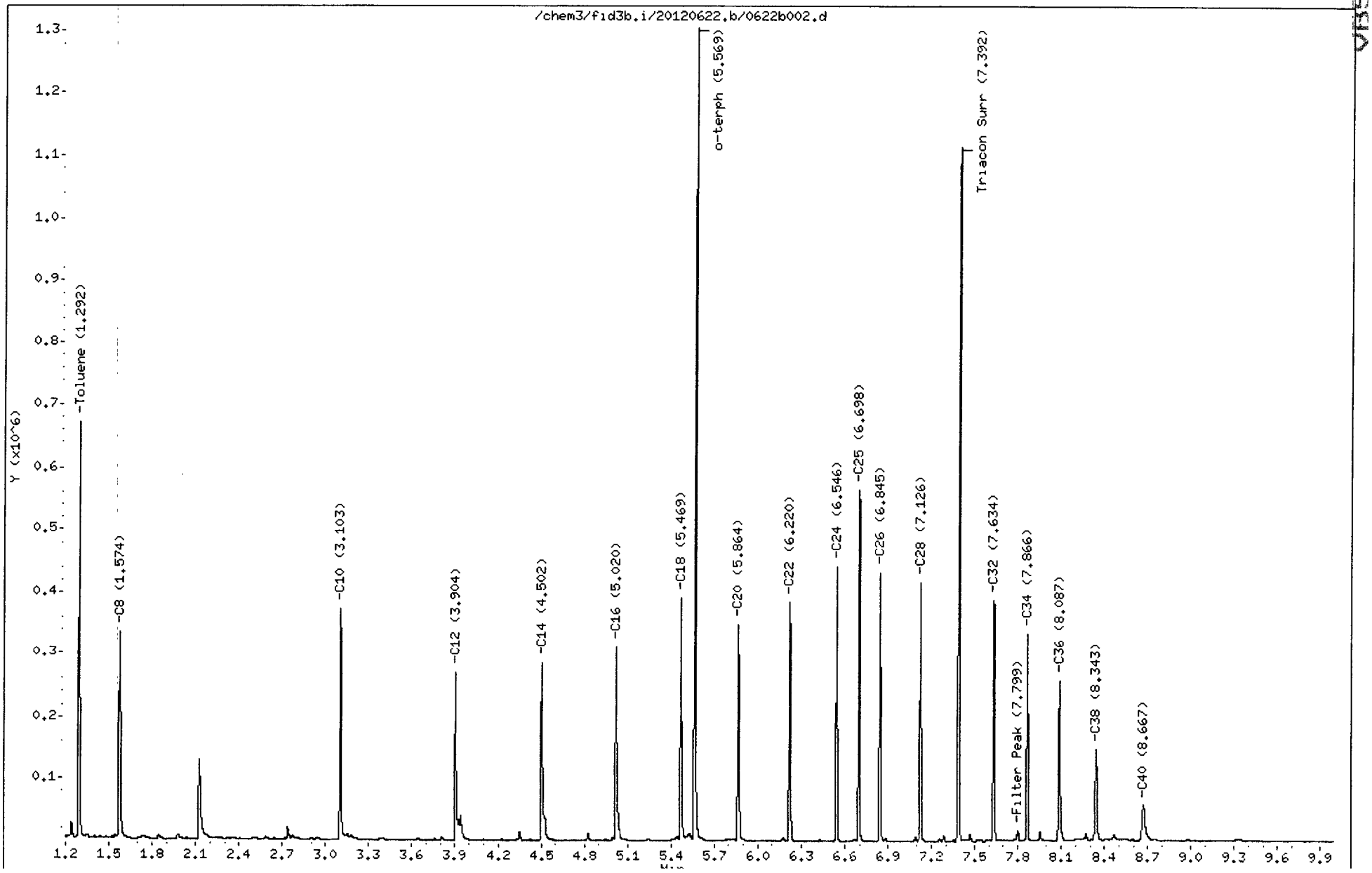
Sample Info: RT

Instrument: fid3b.i

Operator: MH

Column phase: RTX-1

Column diameter: 0.25



MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120622.b/0622b003.d
Method: /chem3/fid3b.i/20120622.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/11/2012
Macro: FID:3B062212

ARI ID: IB
Client ID:
Injection: 22-JUN-2012 09:03
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.288	-0.004	7839	7337	GAS (Tol-C12)	347775	15.72
C8	1.590	0.016	17189	29483	DIESEL (C12-C24)	89428	6.53
C10	3.110	0.007	1762	1952	M.OIL (C24-C38)	176531	17.73
C12	3.906	0.002	660	193	AK-102 (C10-C25)	145875	8.94
C14	4.503	0.000	282	98	AK-103 (C25-C36)	145448	21.21
C16	5.005	-0.015	459	440			
C18	5.468	-0.002	449	432			
C20	5.865	0.001	527	173			
C22	6.218	-0.002	158	43			
C24	6.547	0.002	251	188			
C25	6.703	0.005	57	18			
C26	6.841	-0.004	204	120			
C28	7.131	0.005	1701	1192	FUEL OIL(C10-C24)	145709	10.00
C32	7.639	0.005	13137	11297			
C34	7.867	0.001	1703	1475			
Filter Peak	7.801	0.001	13246	13526			
C36	8.084	-0.003	2347	1505	BUNKERC (C10-C38)	322240	66.66
o-terph	5.568	-0.001	1249129	822884	JET-A (C10-C18)	105880	7.35
Triacon Surr	7.392	0.000	1108728	770032			

Range Times: NW Diesel(3.954 - 6.596) NW Gas(1.242 - 3.954) NW M.Oil(6.596 - 8.393)
AK102(3.053 - 6.648) AK103(6.648 - 8.137) Jet A(3.053 - 5.519)

Surrogate	Area	Amount	%Rec
o-Terphenyl	822884	43.9	97.4
Triacontane	770032	46.7	103.7

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120622.b/0622b003.d

Date : 22-JUN-2012 09:03

Client ID:

Sample Info: IB

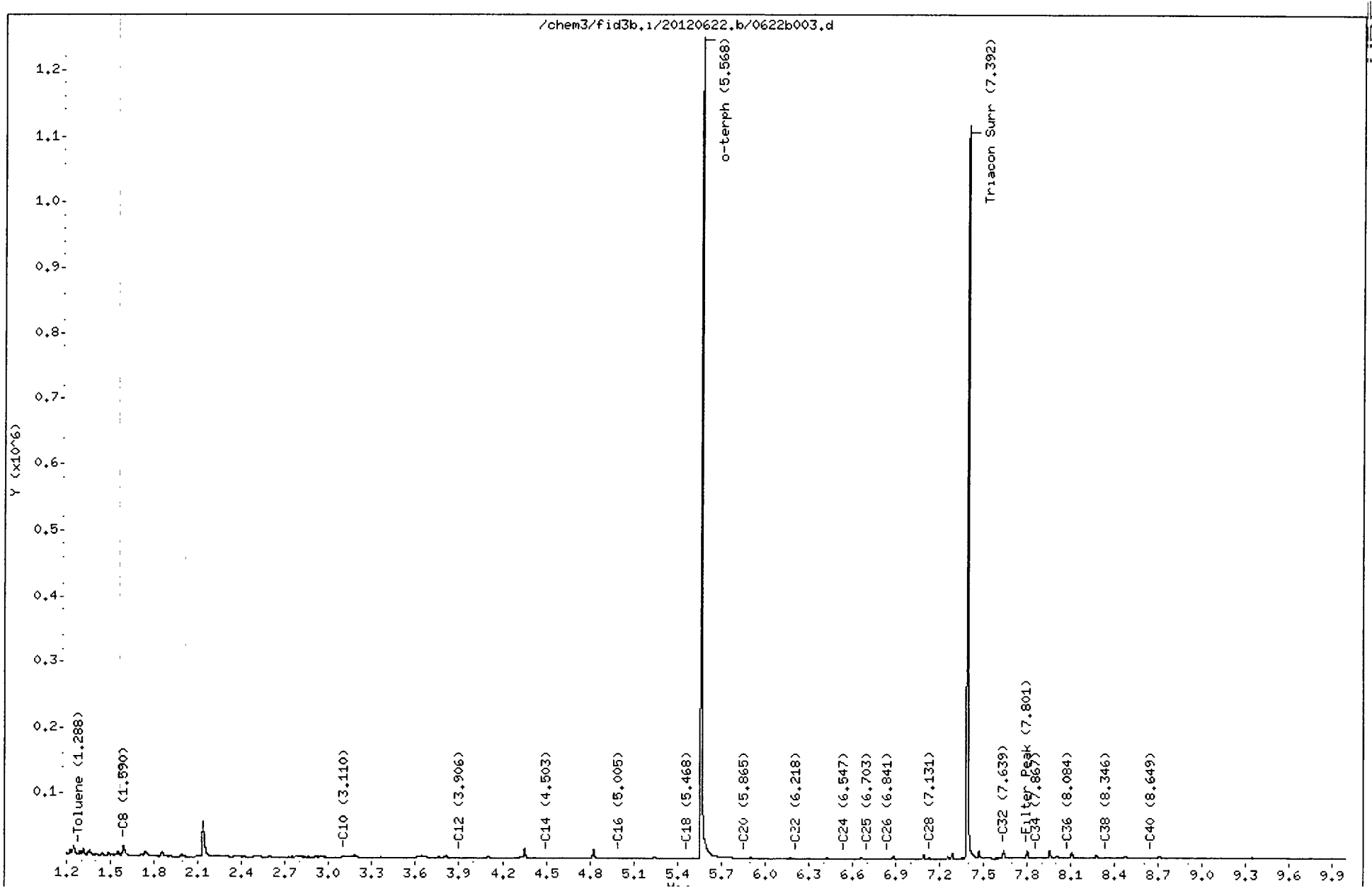
Instrument: fid3b.i

Operator: MH

Column phase: RTX-1

Column diameter: 0.25

VB50:0015



MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120622.b/0622b004.d
Method: /chem3/fid3b.i/20120622.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/11/2012
Macro: FID:3B062212

ARI ID: DIESEL 50
Client ID:
Injection: 22-JUN-2012 09:22
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.289	-0.003	10845	10695	GAS (Tol-C12)	468228	21.17
C8	1.591	0.017	16096	26184	DIESEL (C12-C24)	686595	50.12
C10	3.108	0.005	4345	4913	M.OIL (C24-C38)	99131	9.96
C12	3.907	0.003	3052	2823	AK-102 (C10-C25)	836785	51.27
C14	4.498	-0.004	4815	1209	AK-103 (C25-C36)	74336	10.84
C16	5.024	0.004	15732	24278			
C18	5.471	0.002	15009	16466			
C20	5.875	0.011	9132	13411			
C22	6.216	-0.003	1798	881			
C24	6.548	0.002	701	482			
C25	6.697	-0.002	268	170			
C26	6.842	-0.002	181	105			
C28	7.128	0.003	27	6	FUEL OIL(C10-C24)	835171	57.31
C32	7.639	0.005	7862	6359			
C34	7.867	0.001	1036	832			
Filter Peak	7.800	0.001	8987	8842			
C36	8.085	-0.001	1525	1214	BUNKERC (C10-C38)	934302	193.27
o-terph	5.564	-0.005	229725	186299	JET-A (C10-C18)	663580	46.09
Triacon Surr	7.388	-0.005	137	29			

Range Times: NW Diesel(3.954 - 6.596) NW Gas(1.242 - 3.954) NW M.Oil(6.596 - 8.393)
AK102(3.053 - 6.648) AK103(6.648 - 8.137) Jet A(3.053 - 5.519)

Surrogate	Area	Amount	%Rec
o-Terphenyl	186299	9.9	22.1
Triacontane	29	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.1/20120622.b/0622b004.d

Date : 22-JUN-2012 09:22

Client ID:

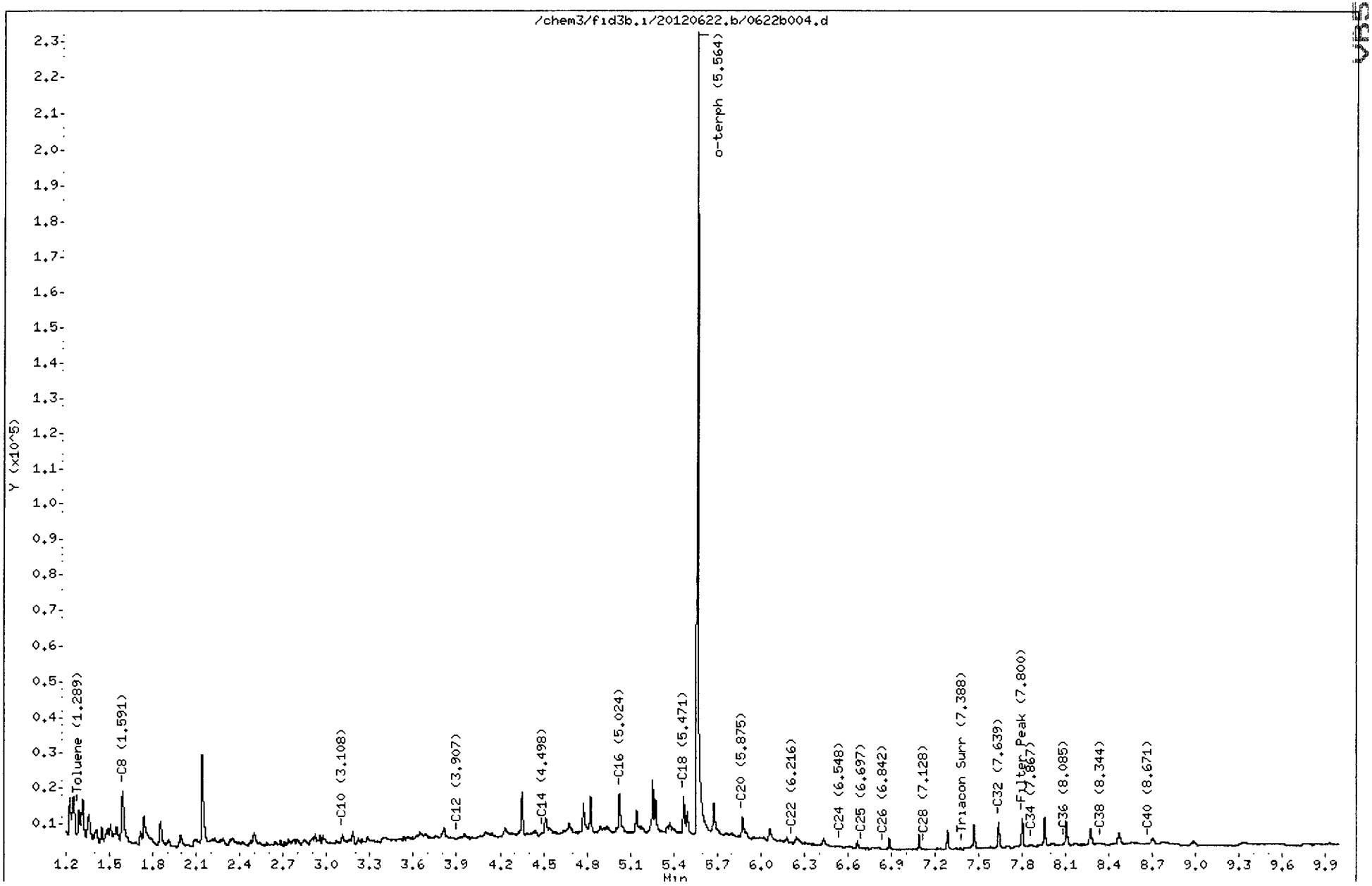
Sample Info: DIESEL 50

Instrument: fid3b.1

Operator: MH

Column phase: RTX-1

Column diameter: 0.25



MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120622.b/0622b005.d
Method: /chem3/fid3b.i/20120622.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/11/2012
Macro: FID:3B062212

ARI ID: DIESEL 100
Client ID:
Injection: 22-JUN-2012 09:41
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.293	0.001	15406	15150	GAS (Tol-C12)	708528	32.03
C8	1.557	-0.017	6112	7550	DIESEL (C12-C24)	1376067	100.44
C10	3.110	0.007	8806	9152	M.OIL (C24-C38)	114802	11.53
C12	3.914	0.010	8920	15181	AK-102 (C10-C25)	1650440	101.12 M
C14	4.508	0.006	20813	33241	AK-103 (C25-C36)	92215	13.45
C16	5.021	0.002	37700	39453			
C18	5.468	-0.001	38615	32620			
C20	5.868	0.004	23764	27265			
C22	6.230	0.011	8027	13032			
C24	6.546	0.001	1293	589			
C25	6.698	0.000	546	134			
C26	6.838	-0.006	357	261			
C28	7.127	0.002	36	10	FUEL OIL(C10-C24)	1647687	113.06
C32	7.639	0.005	13208	9861			
C34	7.866	0.000	1089	1410			
Filter Peak	7.801	0.002	12248	10913			
C36	8.103	0.016	7985	7680	BUNKERC (C10-C38)	1762490	364.58
o-terph	5.565	-0.004	520044	318015	JET-A (C10-C18)	1264946	87.85
Triacon Surr	7.392	0.000	117	31			

Range Times: NW Diesel(3.954 - 6.596) NW Gas(1.242 - 3.954) NW M.Oil(6.596 - 8.393)
AK102(3.053 - 6.648) AK103(6.648 - 8.137) Jet A(3.053 - 5.519)

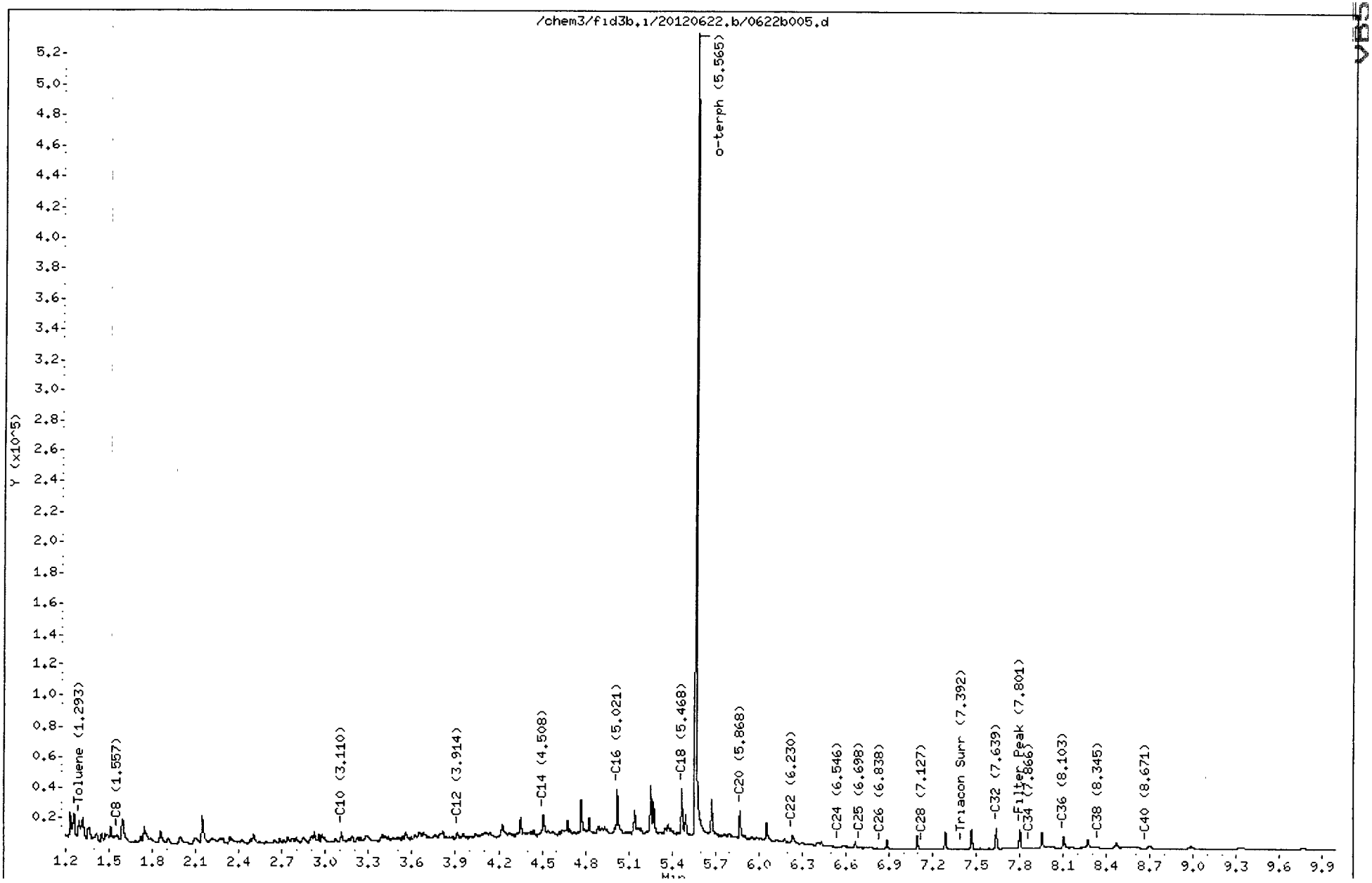
Surrogate	Area	Amount	%Rec
o-Terphenyl	318015	16.9	37.7
Triacontane	31	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120622.b/0622b005.d
Date : 22-JUN-2012 09:41
Client ID:
Sample Info: DIESEL 100

Instrument: fid3b.i

Operator: MH
Column phase: RTX-1
Column diameter: 0.25



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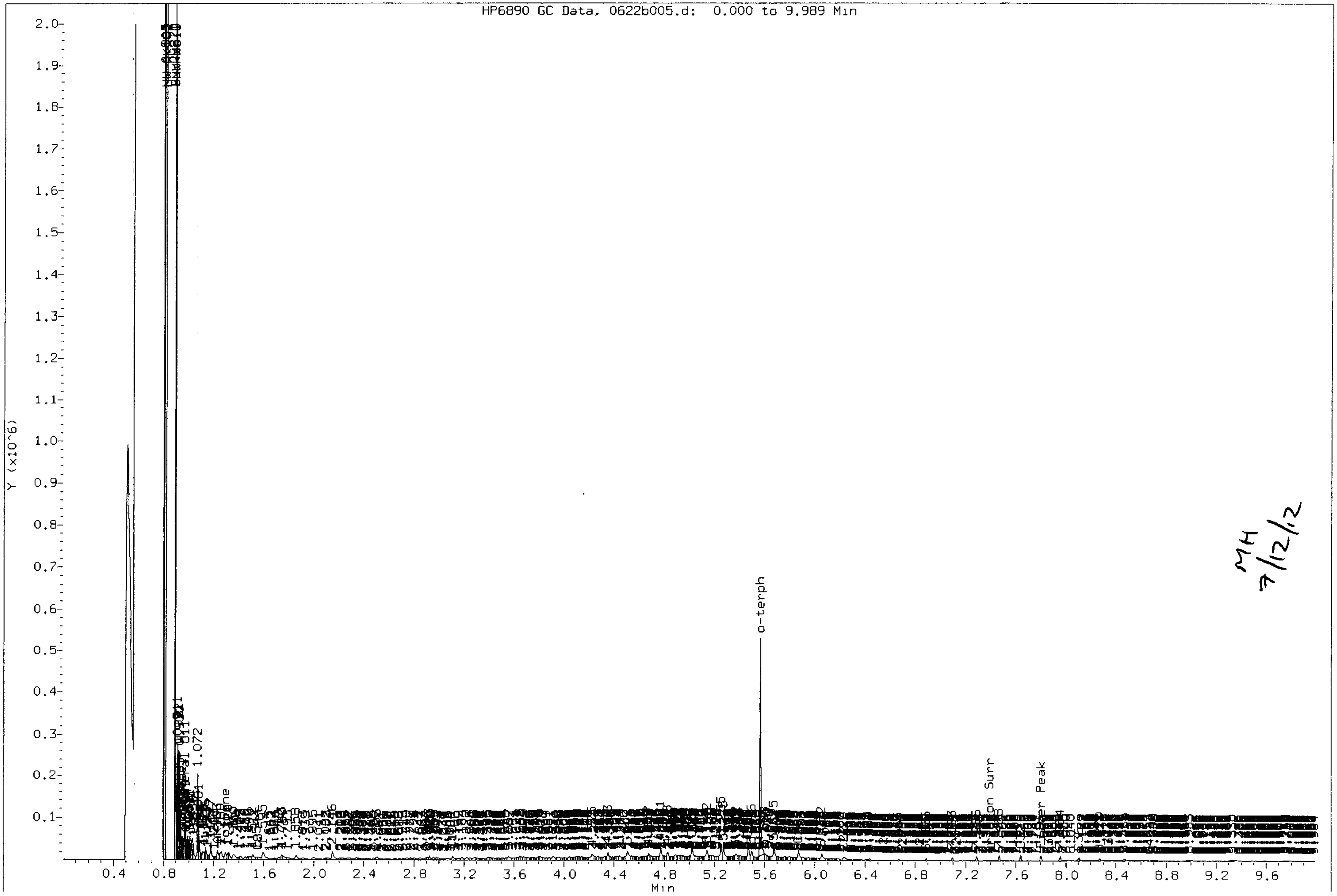
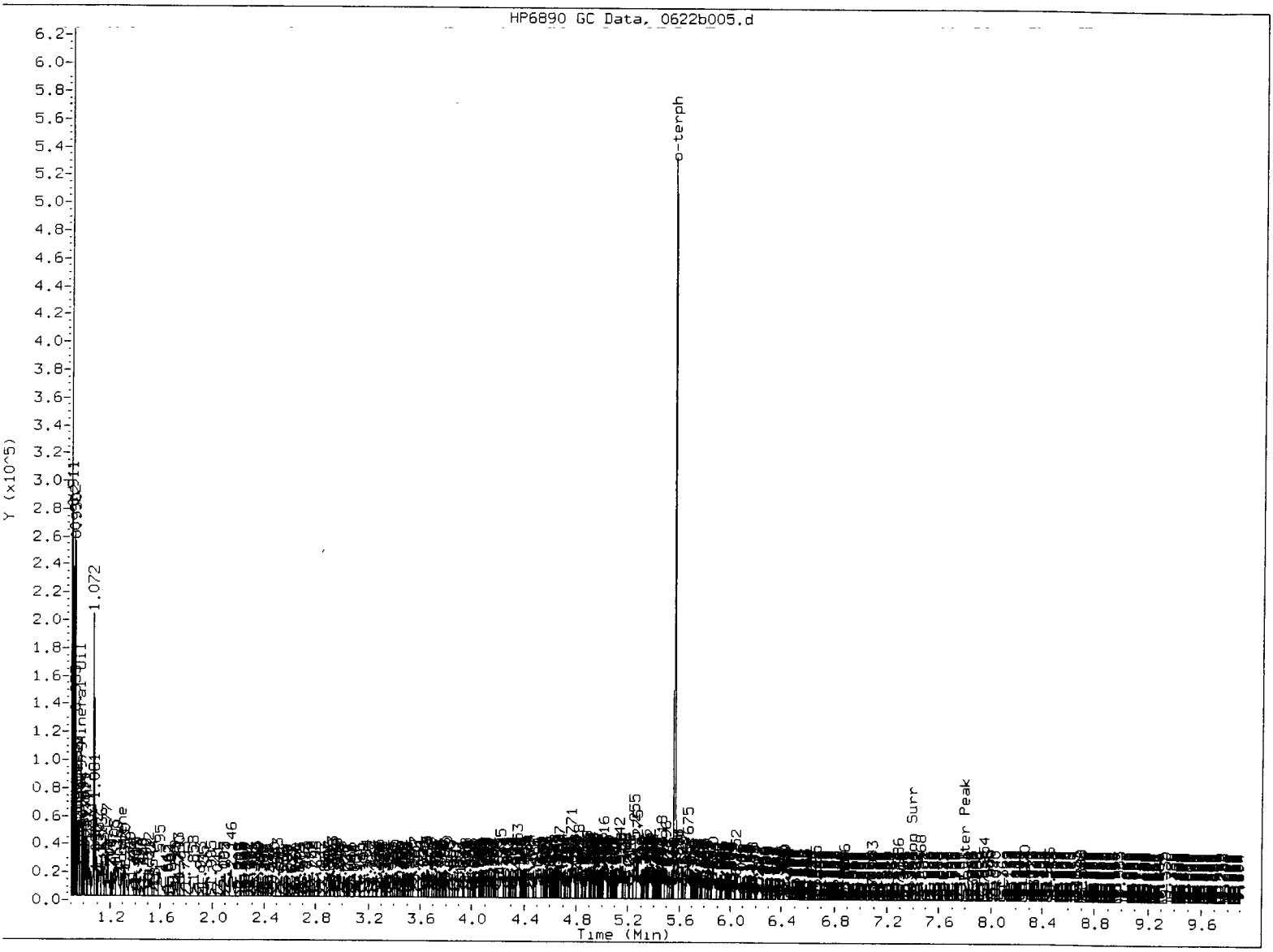
Injection Date: 22-JUN-2012 09:41
Instrument: fid3b.i
Client Sample ID:



FID:3B-2C/RTX-1 DIESEL 100 FID:3B SIGNAL



MANUAL INTEGRATION

~~X~~ 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/12/12

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120622.b/0622b006.d
Method: /chem3/fid3b.i/20120622.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/11/2012
Macro: FID:3B062212

ARI ID: DIESEL 250
Client ID:
Injection: 22-JUN-2012 10:01
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.293	0.000	14705	14744	GAS (Tol-C12)	1188219	53.71
C8	1.575	0.001	4376	3362	DIESEL (C12-C24)	3470198	253.30
C10	3.110	0.007	25260	20378	M.OIL (C24-C38)	104313	10.48
C12	3.907	0.003	34701	38550	AK-102 (C10-C25)	4101764	251.32 M
C14	4.503	0.001	66853	77287	AK-103 (C25-C36)	80718	11.77
C16	5.019	-0.001	115632	90407			
C18	5.469	-0.001	105538	88541			
C20	5.864	-0.001	74912	61583			
C22	6.221	0.002	34225	33784			
C24	6.547	0.002	3107	663			
C25	6.700	0.002	1423	825			
C26	6.842	-0.003	708	436			
C28	7.132	0.006	209	101	FUEL OIL(C10-C24)	4095878	281.04
C32	7.641	0.007	7432	5696			
C34	7.863	-0.003	786	154			
Filter Peak	7.801	0.002	8300	7880			
C36	8.078	-0.008	915	198	BUNKERC (C10-C38)	4200191	868.84
o-terph	5.571	0.002	1393470	842277	JET-A (C10-C18)	3110893	216.05
Triacon Surr	7.402	0.010	169	114			

Range Times: NW Diesel(3.954 - 6.596) NW Gas(1.242 - 3.954) NW M.Oil(6.596 - 8.393)
AK102(3.053 - 6.648) AK103(6.648 - 8.137) Jet A(3.053 - 5.519)

Surrogate	Area	Amount	%Rec
o-Terphenyl	842277	44.9	99.7
Triacontane	114	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

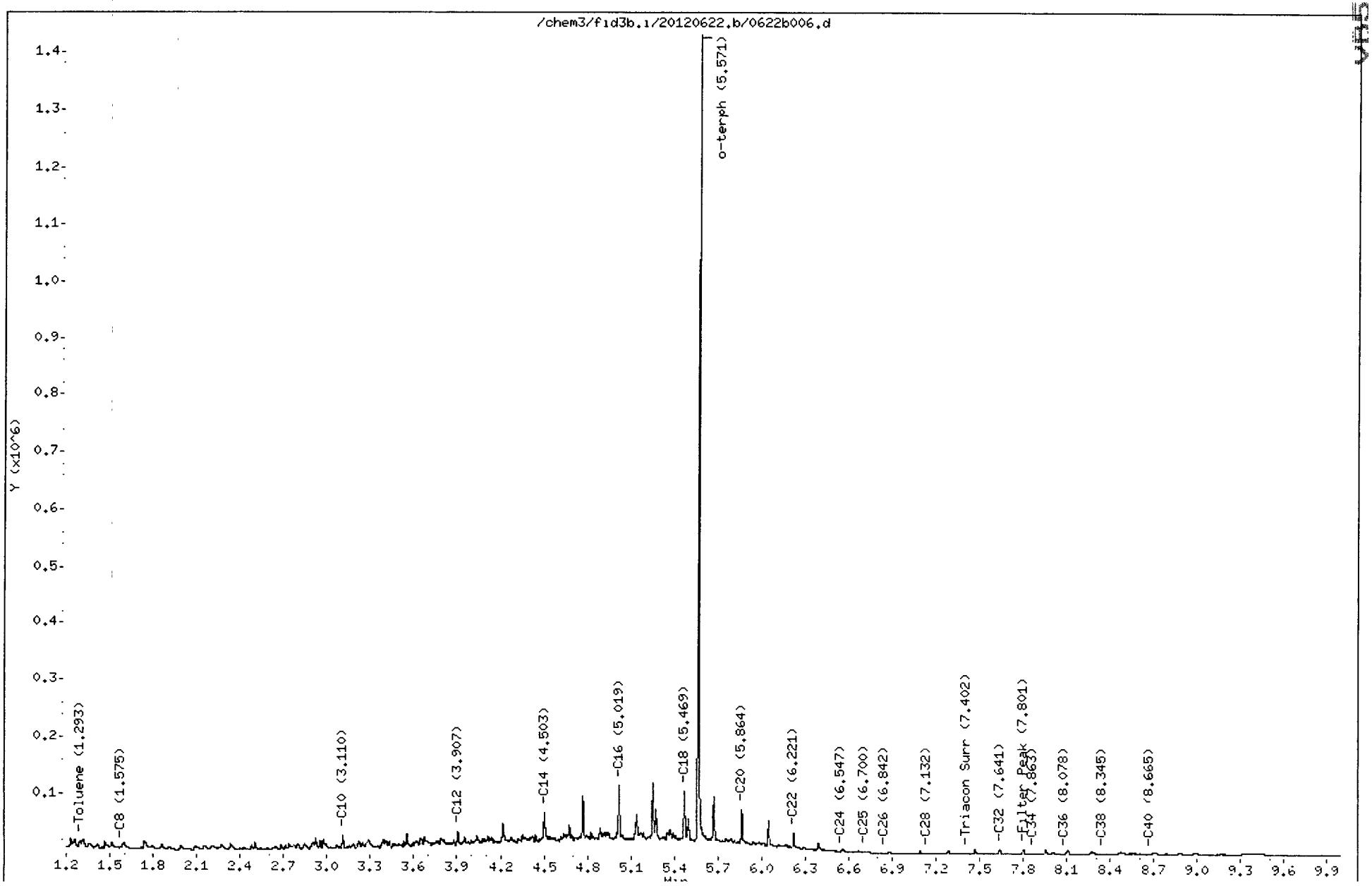
Data File: /chem3/fid3b.1/20120622.b/0622b006.d
Date : 22-JUN-2012 10:01
Client ID:
Sample Info: DIESEL 250

Instrument: fid3b.1

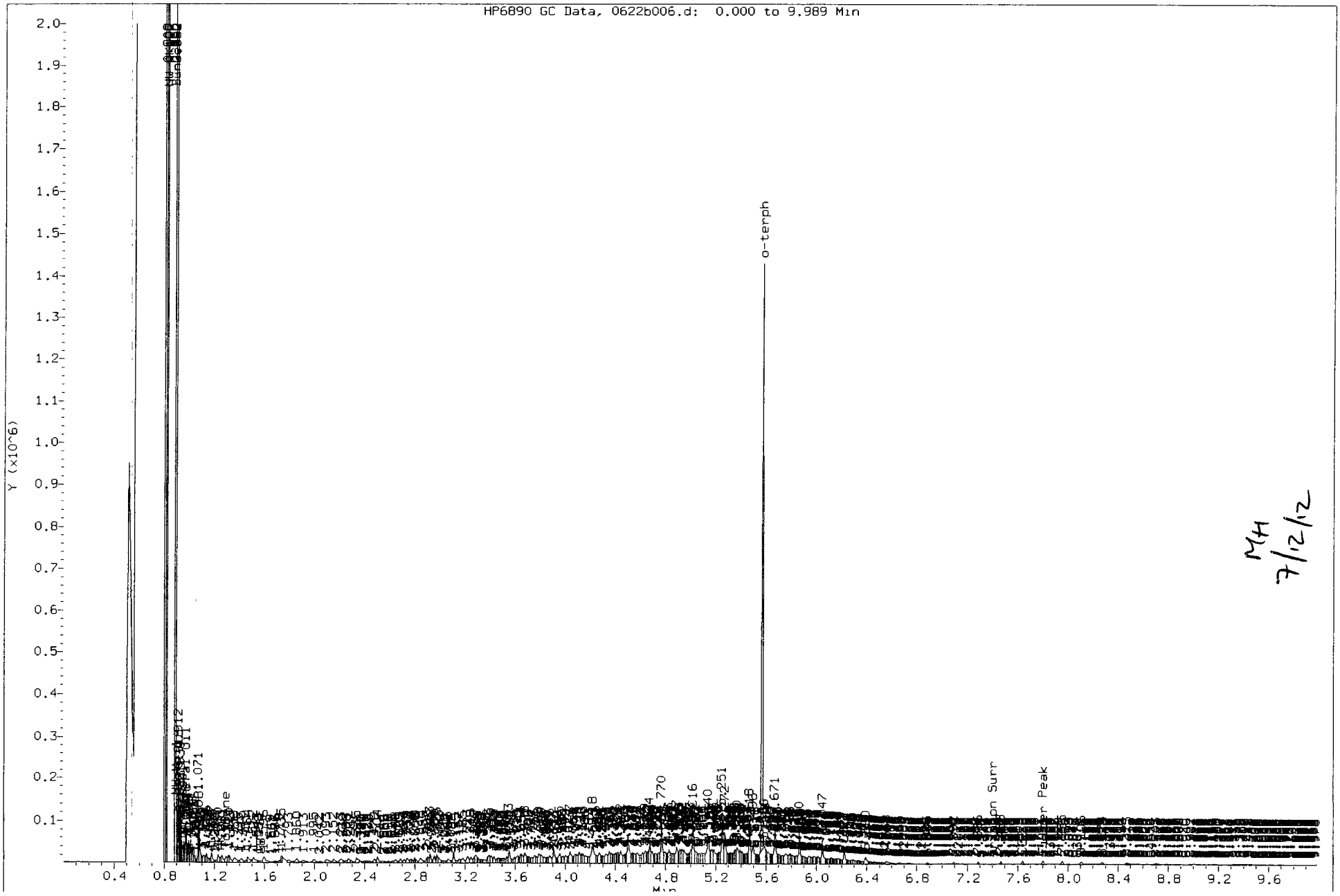
Operator: MH
Column diameter: 0.25

Column phase: RTX-1

VHS0 : 001123



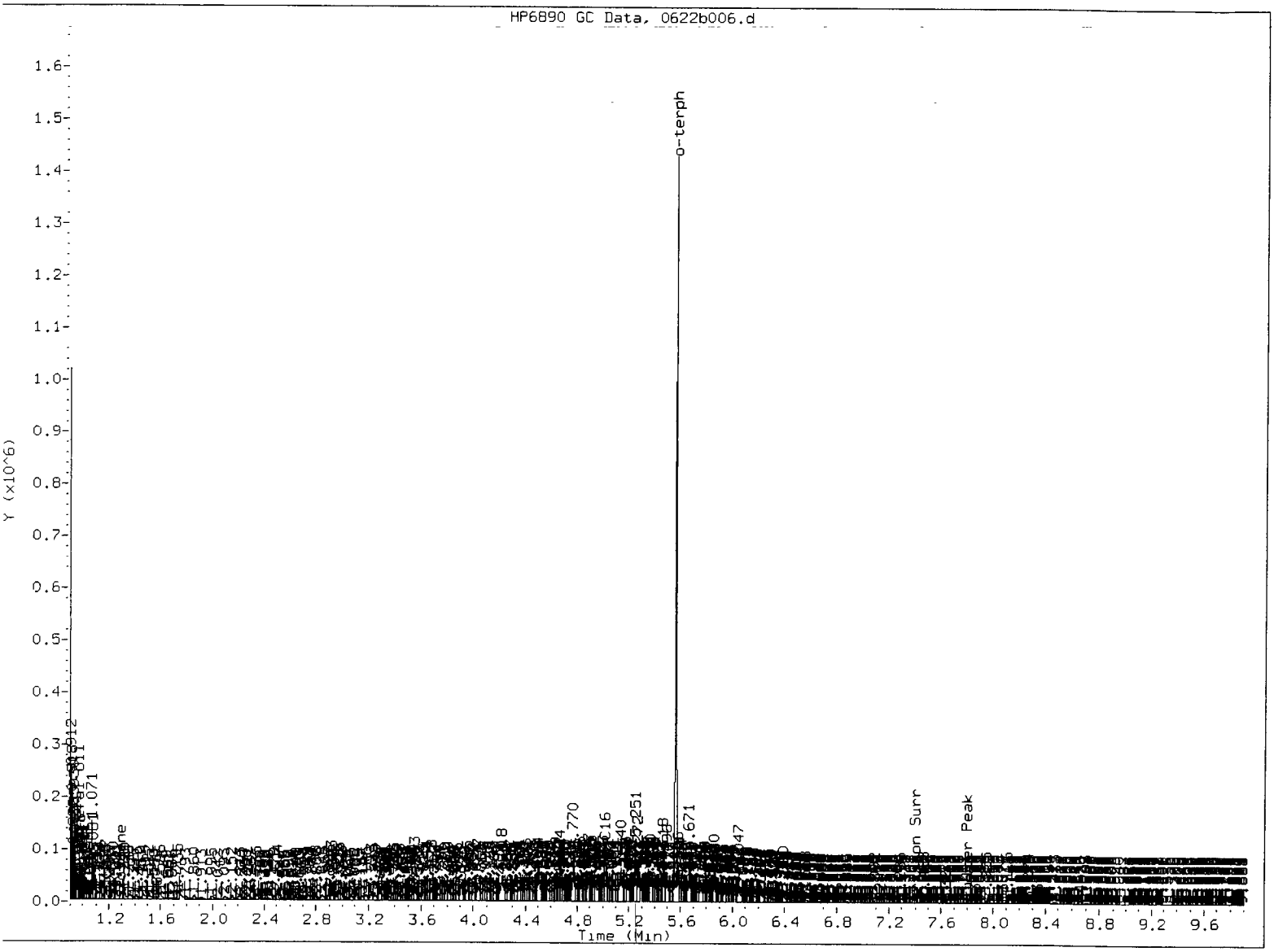
Data File: /chem3/fid3b.i/20120622.b/0622b006.d
Injection Date: 22-JUN-2012 10:01
Instrument: fid3b.i
Client Sample ID:



MH
7/12/12

VBSA-001214

FID:3B-2C/RTX-1 DIESEL 250 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/12/12

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120622.b/0622b007.d
Method: /chem3/fid3b.i/20120622.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/11/2012
Macro: FID:3B062212

ARI ID: DIESEL 500
Client ID:
Injection: 22-JUN-2012 10:21
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.298	0.006	17132	17621	GAS (Tol-C12)	2199965	99.45
C8	1.579	0.005	6150	5186	DIESEL (C12-C24)	7080495	516.82
C10	3.110	0.007	54671	40835	M.OIL (C24-C38)	131017	13.16
C12	3.907	0.003	85122	83006	AK-102 (C10-C25)	8372254	512.97 M
C14	4.502	0.000	151395	149080	AK-103 (C25-C36)	100852	14.71
C16	5.020	0.000	247671	191623			
C18	5.471	0.002	209331	205187			
C20	5.865	0.001	153481	129419			
C22	6.221	0.002	79301	75118			
C24	6.551	0.005	16129	22863			
C25	6.696	-0.002	2962	754			
C26	6.846	0.001	1383	803			
C28	7.132	0.006	366	85	FUEL OIL(C10-C24)	8358531	573.52
C32	7.641	0.007	6831	5213			
C34	7.870	0.004	584	814			
Filter Peak	7.801	0.001	6909	6614			
C36	8.074	-0.012	1001	178	BUNKERC (C10-C38)	8489548	1756.13
o-terph	5.579	0.009	2255533	1714837	JET-A (C10-C18)	6364672	442.02
Triacon Surr	7.406	0.013	171	139			

Range Times: NW Diesel(3.954 - 6.596) NW Gas(1.242 - 3.954) NW M.Oil(6.596 - 8.393)
AK102(3.053 - 6.648) AK103(6.648 - 8.137) Jet A(3.053 - 5.519)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1714837	91.4	203.1
Triacontane	139	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120622.b/0622b007.d

Date : 22-JUN-2012 10:21

Client ID:

Sample Info: DIESEL 500

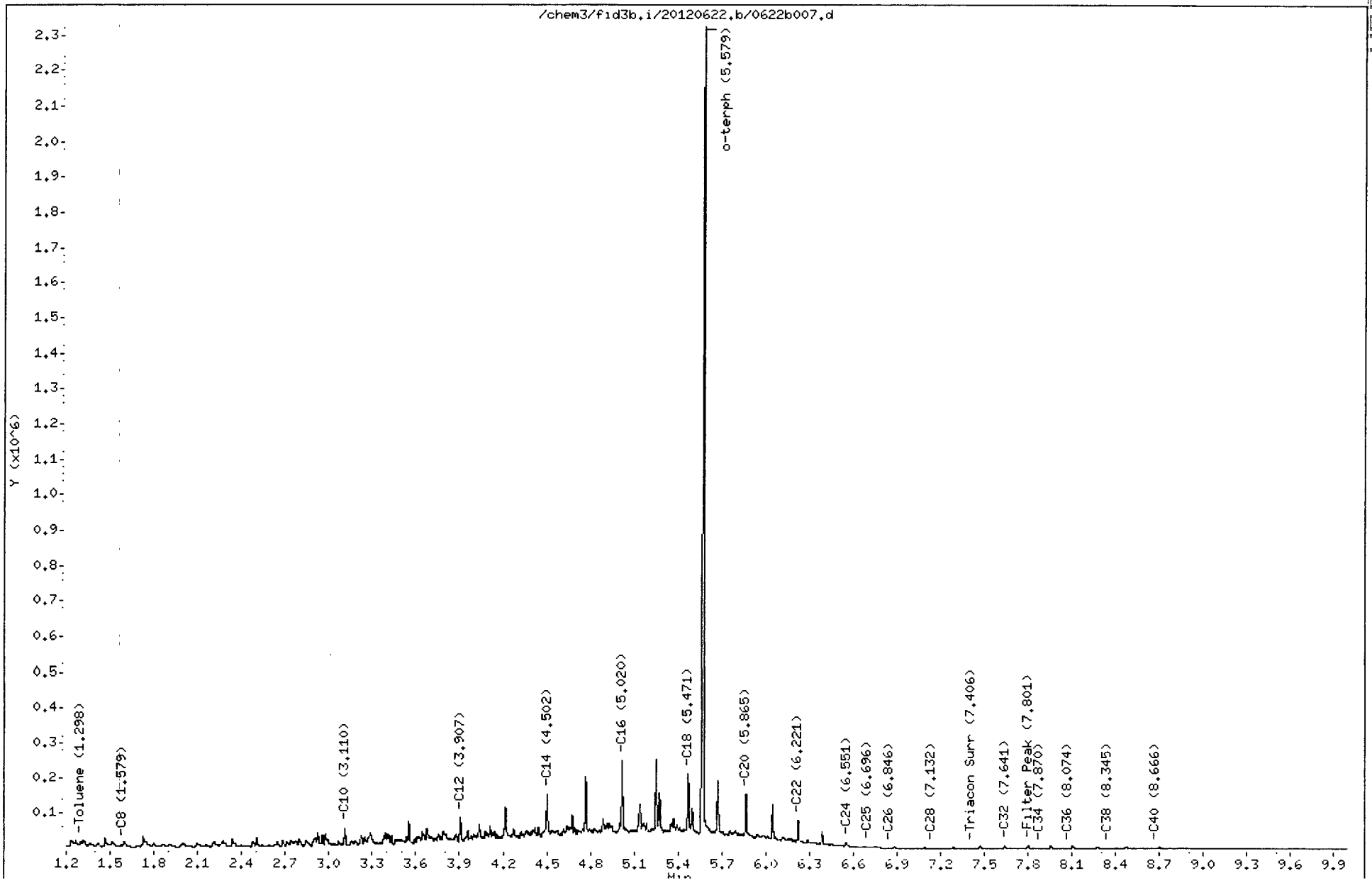
Instrument: fid3b.i

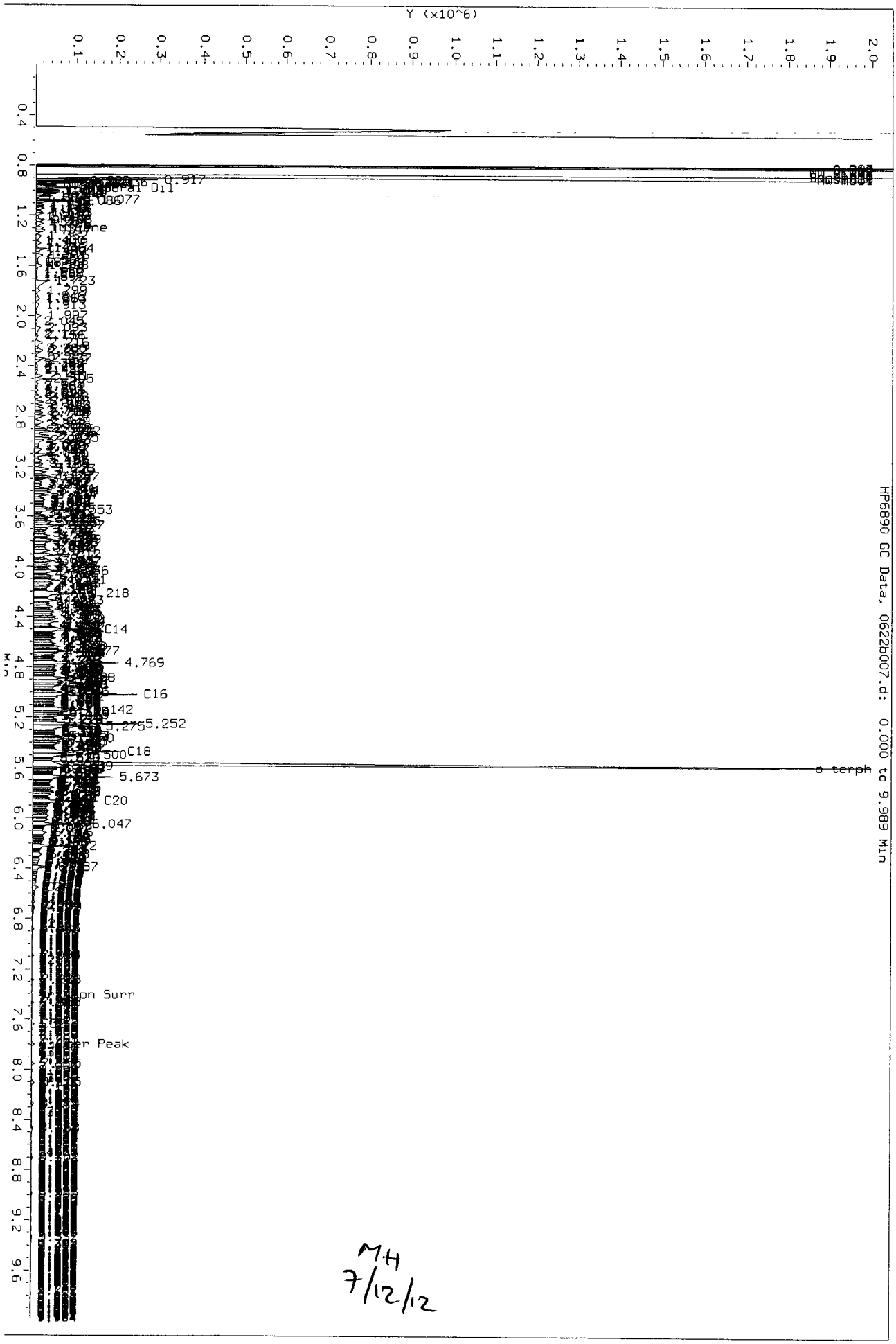
Operator: MH

Column phase: RTX-1

Column diameter: 0.25

VB50:0012.7

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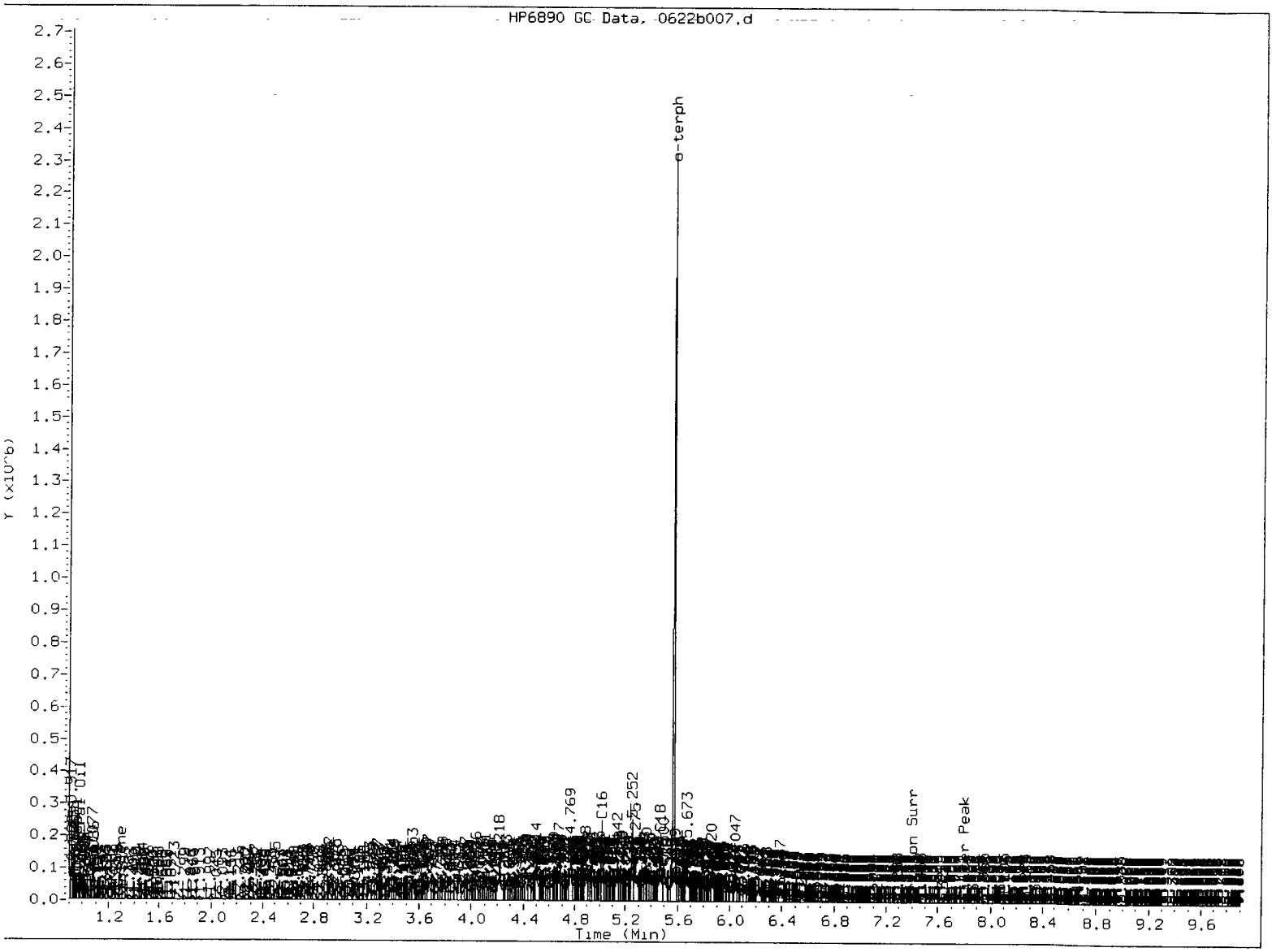
Injection Date: 22-JUN-2012 10:21
Instrument: fid3b.i
Client Sample ID:
Y (x10^6)
HP6890 GC Data, 0622b007.d: 0.000 to 9.989 Min
o terph
C14
4.769
C16
5.252
C18
5.673
C20
6.047
Min
7/12/12

FID:3B-2C/RTX-1 DIESEL 500 FID:3B SIGNAL



MANUAL INTEGRATION

~~1~~. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/12/12

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120622.b/0622b008.d
Method: /chem3/fid3b.i/20120622.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/11/2012
Macro: FID:3B062212

ARI ID: DIESEL 1000
Client ID:
Injection: 22-JUN-2012 10:41
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.307	0.015	19810	19807	GAS (Tol-C12)	4047037	182.94
C8	1.573	-0.002	5041	3222	DIESEL (C12-C24)	13674580	998.14
C10	3.109	0.006	118801	80169	M.OIL (C24-C38)	176014	17.68
C12	3.906	0.002	178247	144814	AK-102 (C10-C25)	16158226	990.03 M
C14	4.503	0.001	285902	225768	AK-103 (C25-C36)	134252	19.58
C16	5.021	0.001	452239	362700			
C18	5.473	0.004	369610	405289			
C20	5.866	0.001	316232	245651			
C22	6.220	0.000	160981	133161			
C24	6.546	0.000	40218	39909			
C25	6.704	0.006	13991	17993			
C26	6.846	0.002	2753	700			
C28	7.129	0.003	512	321	FUEL OIL(C10-C24)	16129768	1106.75
C32	7.638	0.004	6910	5209			
C34	7.867	0.001	563	854			
Filter Peak	7.801	0.001	7932	6790			
C36	8.074	-0.013	672	197	BUNKERC (C10-C38)	16305782	3372.98
o-terph	5.587	0.018	3283528	3354260	JET-A (C10-C18)	12299861	854.22
Triacon Surr	7.402	0.010	172	109			

Range Times: NW Diesel(3.954 - 6.596) NW Gas(1.242 - 3.954) NW M.Oil(6.596 - 8.393)
AK102(3.053 - 6.648) AK103(6.648 - 8.137) Jet A(3.053 - 5.519)

Surrogate	Area	Amount	%Rec
o-Terphenyl	3354260	178.7	397.2
Triacontane	109	0.0	0.0

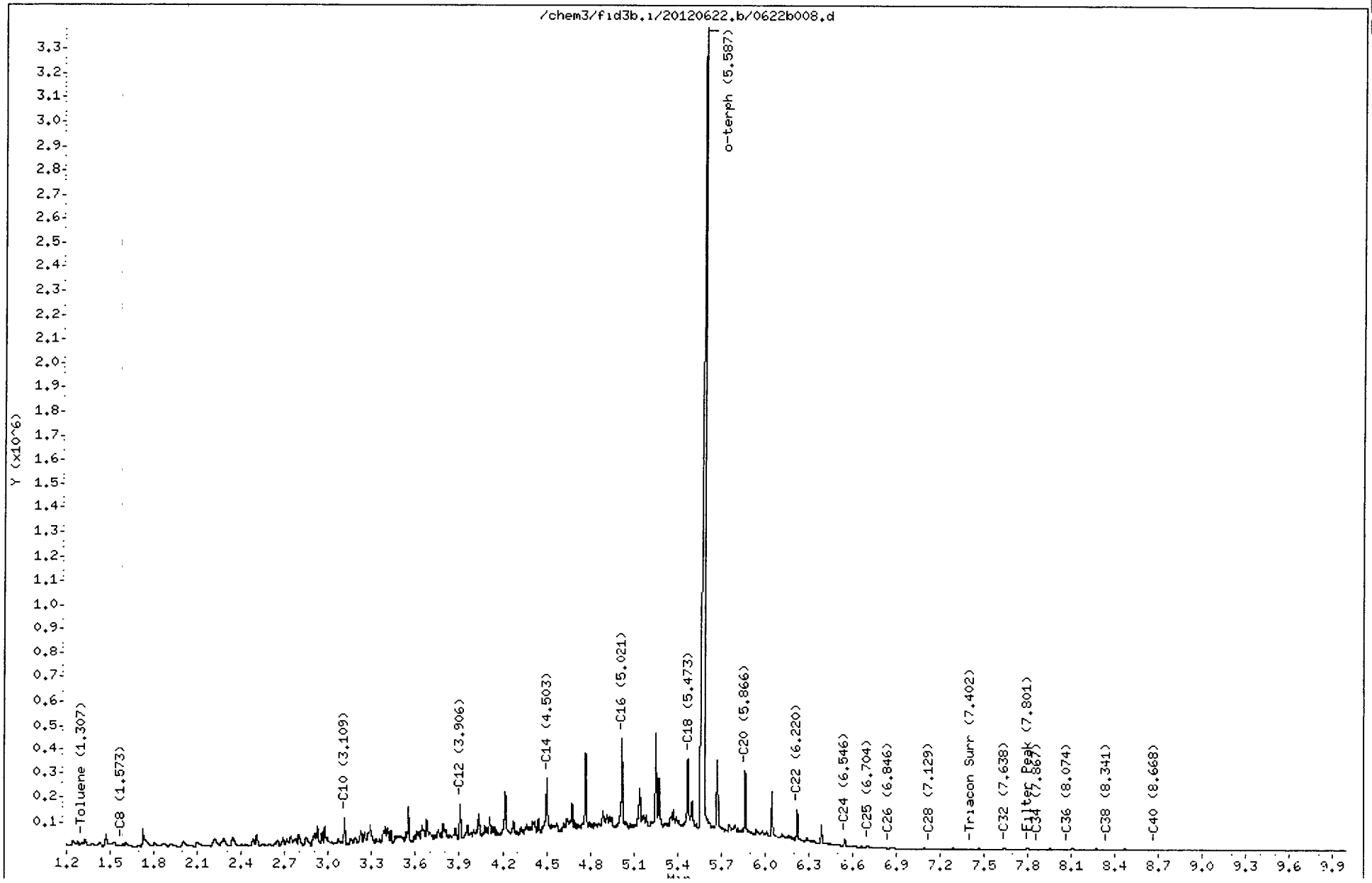
Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.1/20120622.b/0622b008.d
Date : 22-JUN-2012 10:41
Client ID:
Sample Info: DIESEL 1000

Instrument: fid3b.1

Operator: MH
Column phase: RTX-1
Column diameter: 0.25

VR50:001131



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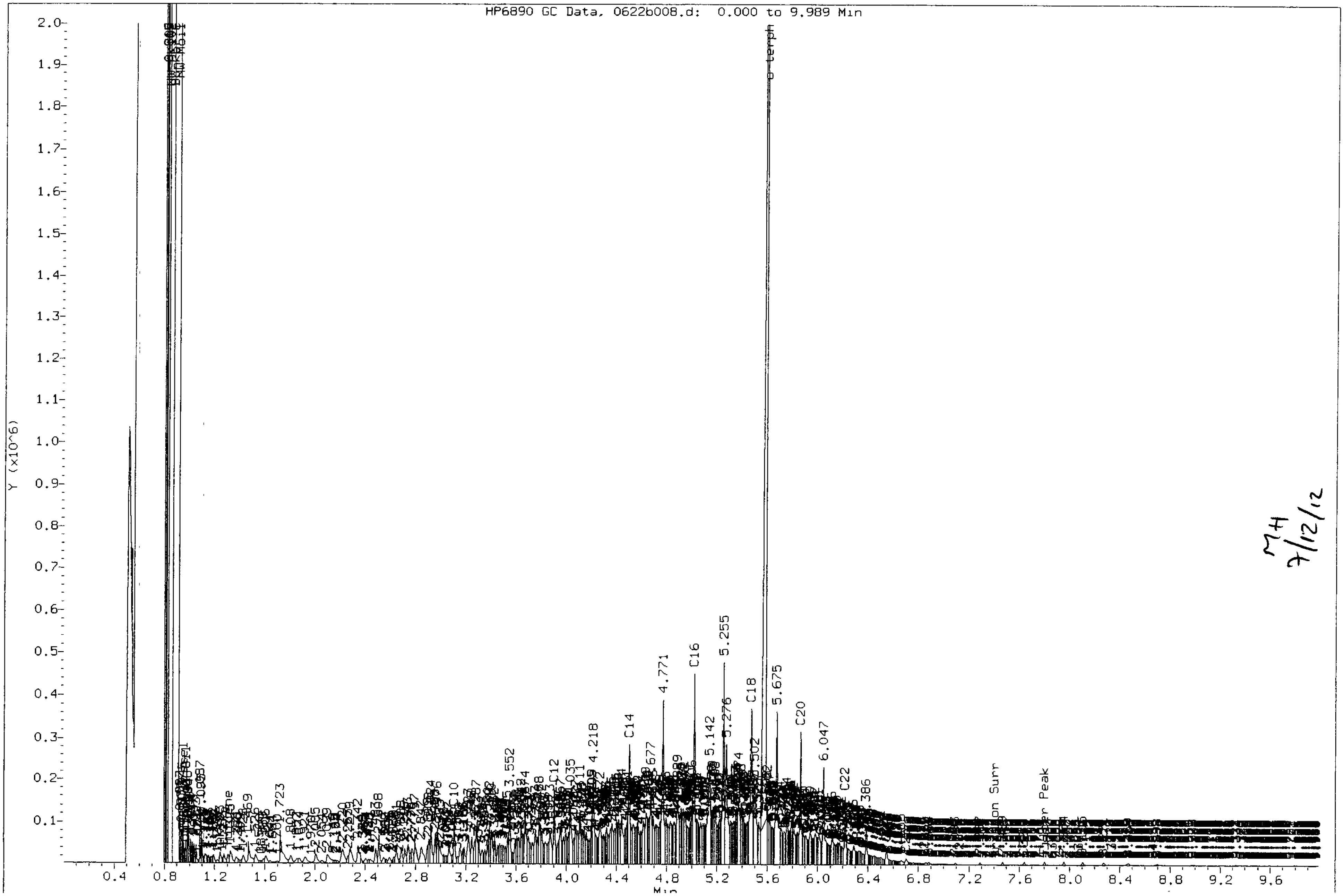
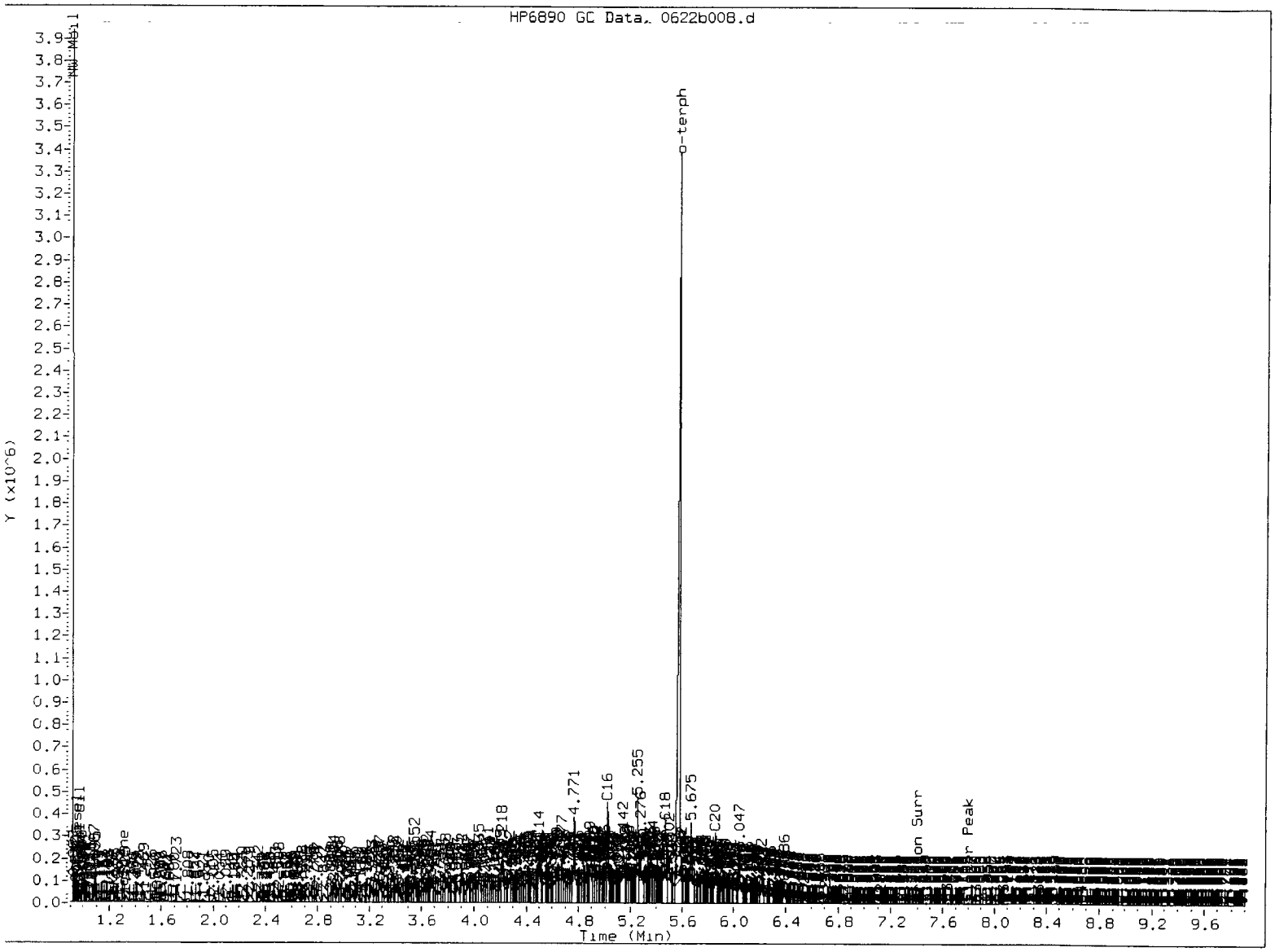
Injection Date: 22-JUN-2012 10:41
Instrument: fid3b.i
Client Sample ID:



MH
7/12/12

FID:3B-2C/RTX-1 DIESEL 1000 FID:3B SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/12/12

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120622.b/0622b009.d
Method: /chem3/fid3b.i/20120622.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/11/2012
Macro: FID:3B062212

ARI ID: DIESEL 2500
Client ID:
Injection: 22-JUN-2012 11:00
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.291	-0.001	16857	8124	GAS (Tol-C12)	9431052	426.32
C8	1.589	0.014	8703	7204	DIESEL (C12-C24)	32474578	2370.41
C10	3.100	-0.003	49629	32734	M.OIL (C24-C38)	344743	34.63
C12	3.910	0.006	412325	379971	AK-102 (C10-C25)	38436863	2355.06 M
C14	4.509	0.006	680879	684089	AK-103 (C25-C36)	264569	38.58
C16	5.028	0.008	960949	924351			
C18	5.463	-0.006	308572	239711			
C20	5.871	0.006	703348	632371			
C22	6.223	0.003	394986	305439			
C24	6.545	0.000	104590	89506			
C25	6.698	0.000	42843	44964			
C26	6.850	0.005	14452	18939			
C28	7.124	-0.002	1175	465	FUEL OIL(C10-C24)	38370366	2632.80
C32	7.641	0.007	9039	6297			
C34	7.865	-0.001	322	212			
Filter Peak	7.802	0.003	9405	6968			
C36	8.088	0.001	637	472	BUNKERC (C10-C38)	38715109	8008.52
o-terph	5.603	0.033	5451396	8018828	JET-A (C10-C18)	29031959	2016.25
Triacon Surr	7.395	0.003	127	18			

Range Times: NW Diesel(3.954 - 6.596) NW Gas(1.242 - 3.954) NW M.Oil(6.596 - 8.393)
AK102(3.053 - 6.648) AK103(6.648 - 8.137) Jet A(3.053 - 5.519)

Surrogate	Area	Amount	%Rec
o-Terphenyl	8018828	427.3	949.6
Triacontane	18	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120622.b/0622b009.d

Date : 22-JUN-2012 11:00

Client ID:

Sample Info: DIESEL 2500

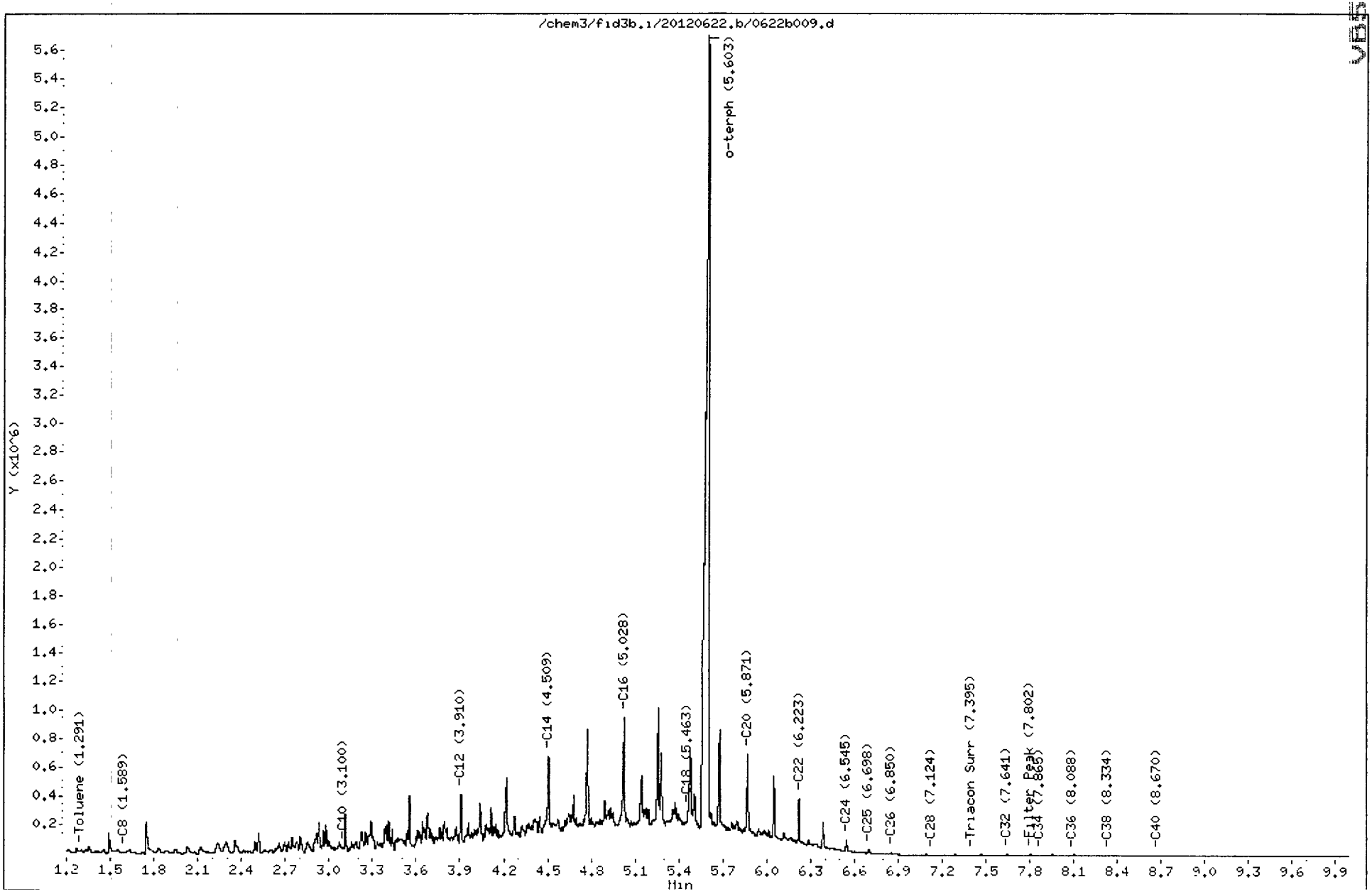
Column phase: RTX-1

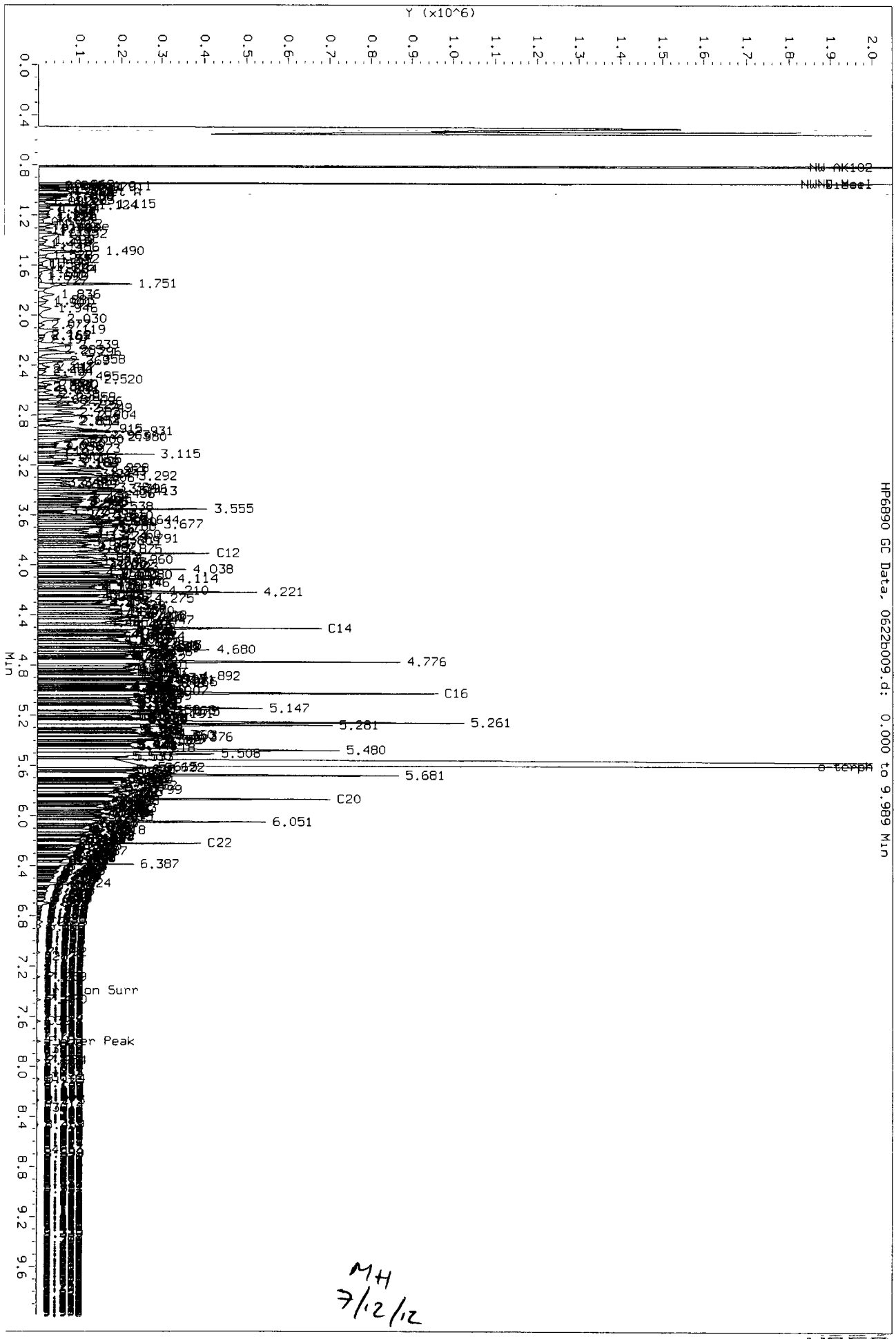
Instrument: fid3b.i

Operator: MH

Column diameter: 0.25

VB50:00135



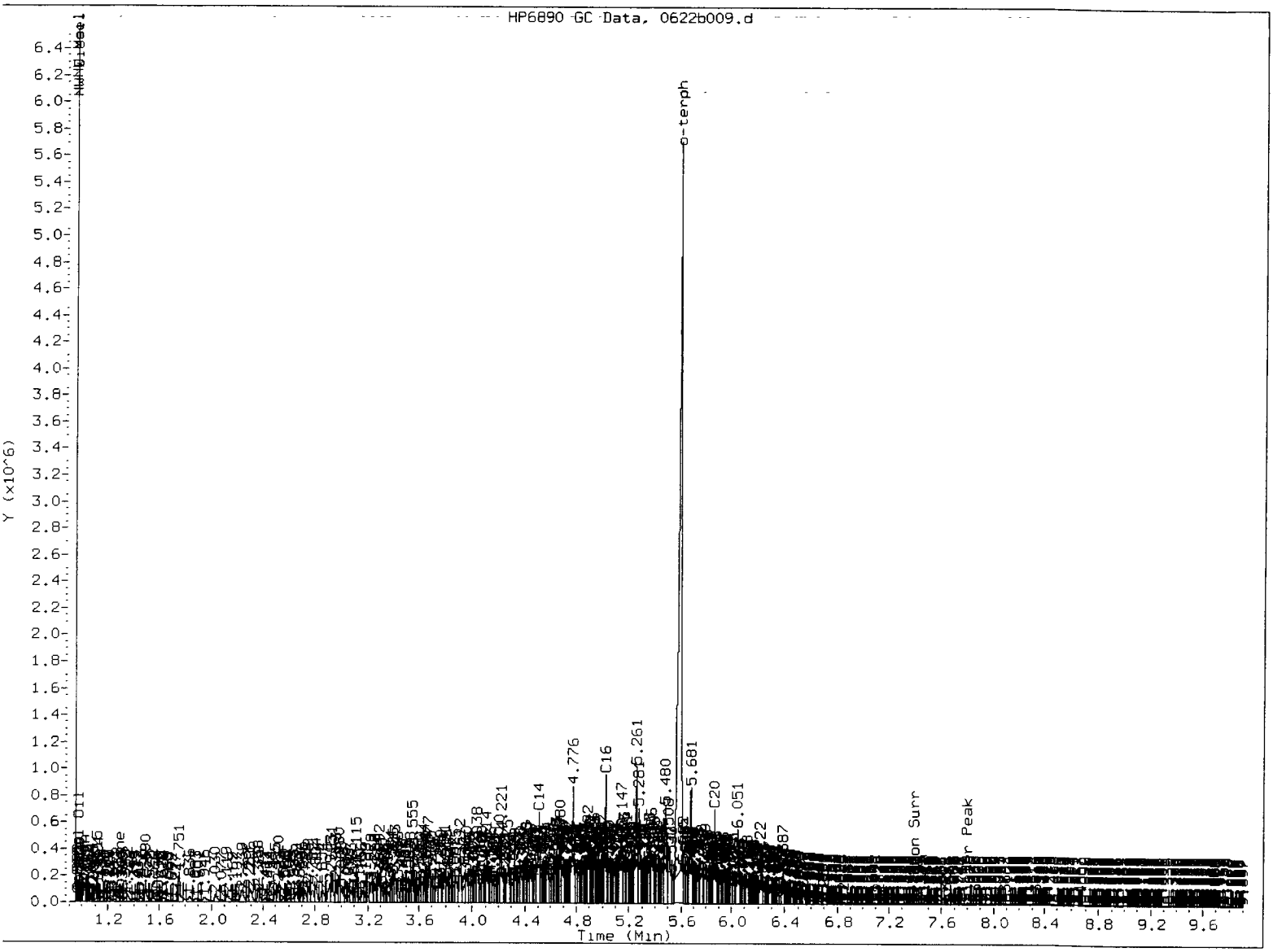


Data File: /chem3/fid3b.i/20120622.b/0622b009.d
Injection Date: 22-JUN-2012 11:00
Instrument: fid3b.i
Client Sample ID:

HP6890 GC Data, 0622b009.d: 0.000 to 9.989 Min

MH
7/12/12

FID:3B-2C/RTX-1 DIESEL 2500 FID:3B SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/12/12

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120622.b/0622b010.d
Method: /chem3/fid3b.i/20120622.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/11/2012
Macro: FID:3B062212

ARI ID: DIESEL ICV
Client ID:
Injection: 22-JUN-2012 11:20
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.286	-0.006	19971	19145	GAS (Tol-C12)	1363459	61.63	
C8	1.569	-0.005	4304	3801	DIESEL (C12-C24)	2688284	196.23	
C10	3.106	0.003	50949	36903	M.OIL (C24-C38)	82473	8.28	
C12	3.907	0.003	50233	49292	AK-102 (C10-C25)	3493734	214.06	M
C14	4.505	0.002	63828	86298	AK-103 (C25-C36)	61646	8.99	
C16	5.020	0.000	72582	74200				
C18	5.470	0.000	63577	53526				
C20	5.866	0.001	40899	33233				
C22	6.224	0.004	15331	16756				
C24	6.547	0.001	2067	528				
C25	6.696	-0.003	1196	869				
C26	6.838	-0.006	707	438				
C28	7.122	-0.004	114	71	FUEL OIL(C10-C24)	3488746	239.38	
C32	7.640	0.006	5604	4199				
C34	7.865	-0.001	653	268				
Filter Peak	7.801	0.001	6568	5790				
C36	8.075	-0.012	854	169	BUNKERC (C10-C38)	3571218	738.73	
o-terph	5.570	0.000	1288873	694290	JET-A (C10-C18)	2777437	192.89	
Triacon Surr	7.387	-0.005	22	4				

Range Times: NW Diesel(3.954 - 6.596) NW Gas(1.242 - 3.954) NW M.Oil(6.596 - 8.393)
AK102(3.053 - 6.648) AK103(6.648 - 8.137) Jet A(3.053 - 5.519)

Surrogate	Area	Amount	%Rec
o-Terphenyl	694290	37.0	82.2
Triacontane	4	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120622.b/0622b010.d

Date : 22-JUN-2012 11:20

Client ID:

Sample Info: DIESEL ICV

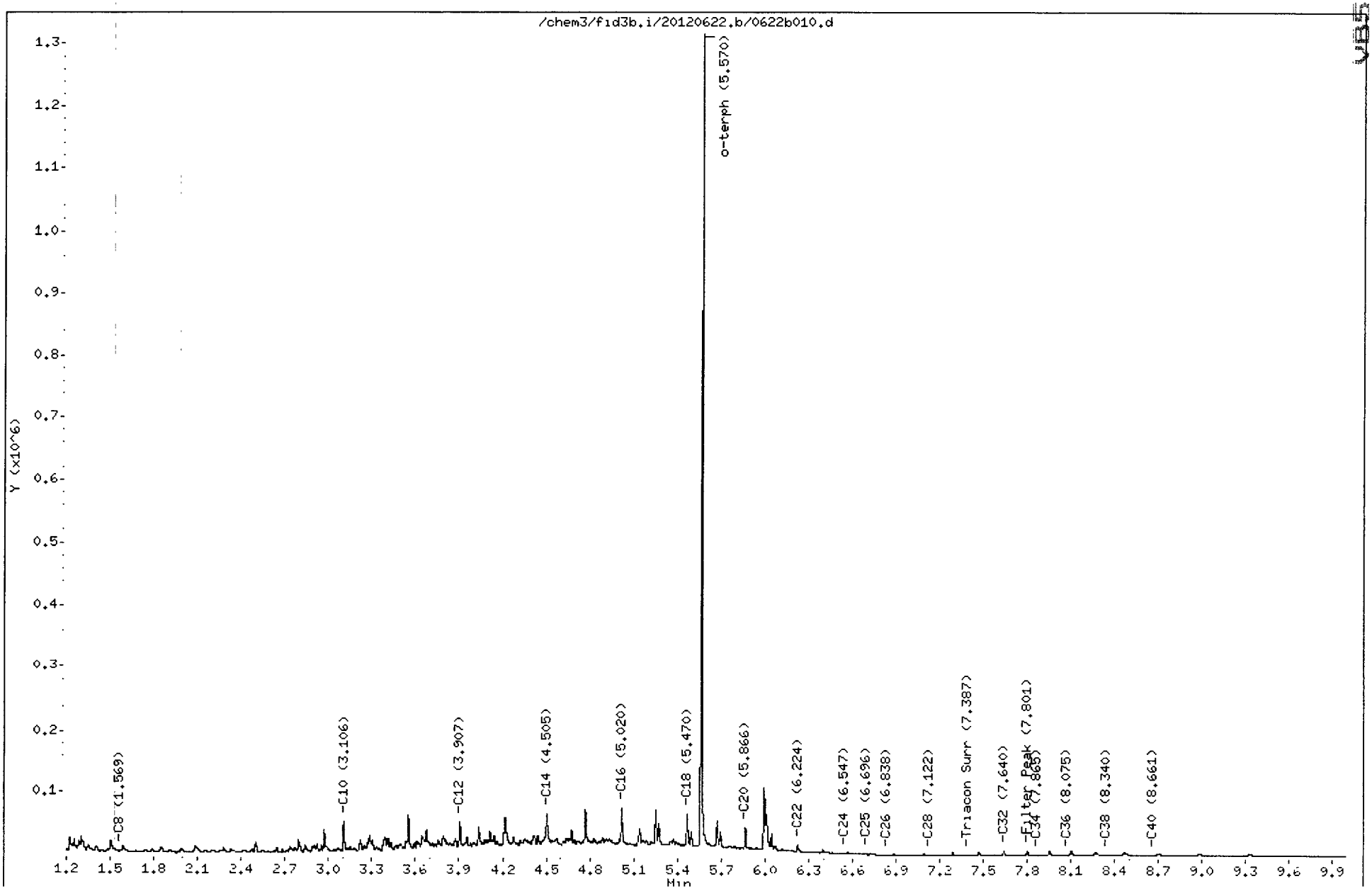
Instrument: fid3b.i

Operator: MH

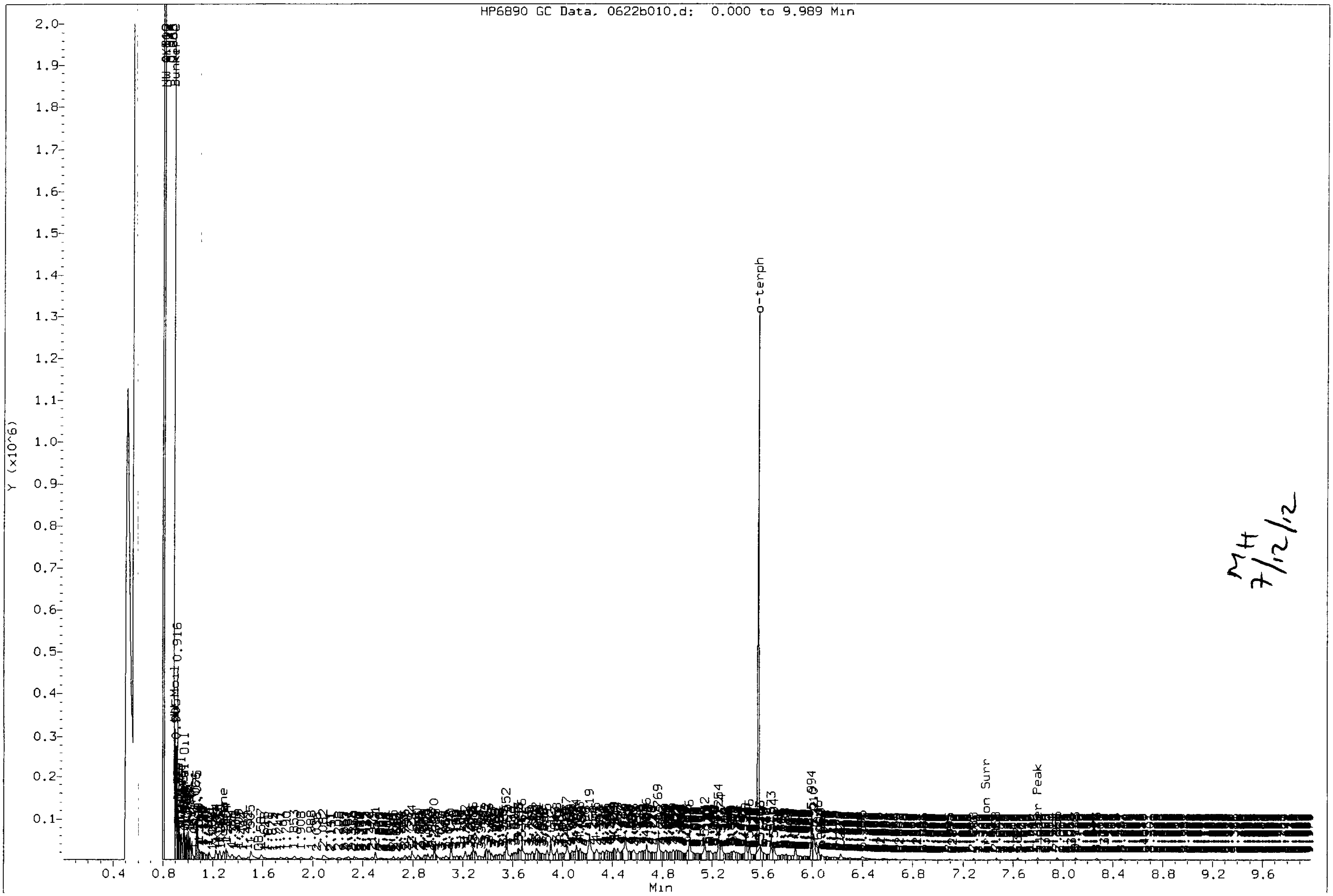
Column phase: RTX-1

Column diameter: 0.25

VB50:00139

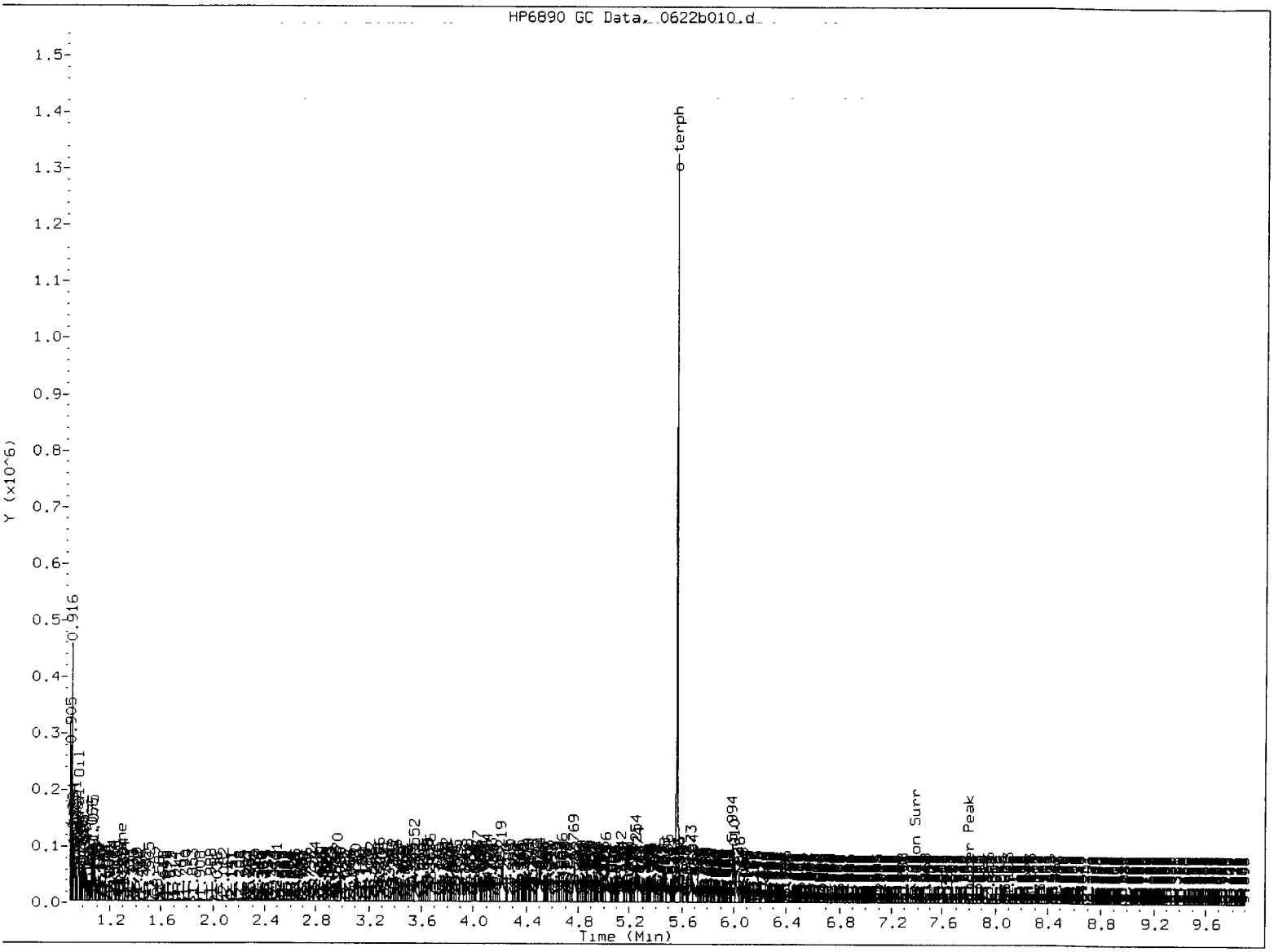


Data File: /chem3/fid3b.i/20120622.b/0622b010.d
Injection Date: 22-JUN-2012 11:20
Instrument: fid3b.i
Client Sample ID:



VB50:00140

FID:3B-2C/RTX-1 DIESEL ICV FID:3B SIGNAL



MANUAL INTEGRATION

~~1~~. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/12/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid3b.i/20120622.b/ftphfid3b.m
Batch File: /chem3/fid3b.i/20120622.b
Inst ID: fid3b.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	0622b004	0622b005	0622b006	0622b007	0622b008	0622b009
INJ.DATE:	22-JUN-2012	22-JUN-2012	22-JUN-2012	22-JUN-2012	22-JUN-2012	22-JUN-2012
INJ.TIME:	09:22	09:41	10.01	10:21	10:41	11:00

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Toluene	1 289	1.293	1.293	1.298	1 307	1.291	1 292	1.192-1 392	1 295	0.007
35 Mineral Oil	0 969	0 973	0.973	0.979	0.971	0.973	0.972	0 922-1 022	0.973	0.003
2 C8	1 591	1.557	1 575	1.579	1.573	1.589	1.574	1 474-1 674	1.577	0.012
3 C10	3.108	3.110	3.110	3.110	3.109	3 100	3.103	3.053-3.153	3.108	0.004
4 C12	3.907	3.914	3.907	3 907	3.906	3 910	3 904	3.854-3.954	3.908	0.003
5 C14	4 498	4.508	4.503	4.502	4 503	4.509	4 502	4.452-4 552	4 504	0.004
6 C16	5.024	5.021	5.019	5.020	5.021	5.028	5 020	4.970-5.070	5.022	0.003
7 C18	5.471	5.468	5 469	5.471	5.473	5.463	5.469	5 419-5.519	5 469	0.004
$ 8 o-terph	5 564	5.565	5.571	5.579	5.587	5 603	5.569	5 519-5.619	5.578	0.015
9 C20	5.875	5.868	5 864	5 865	5.866	5 871	5 864	5 814-5.914	5 868	0.004
10 C22	6.216	6.230	6.221	6.221	6.220	6 223	6.220	6.170-6.270	6.222	0.005
11 C24	6.548	6 546	6.547	6.551	6.546	6.545	6 546	6.496-6.596	6.547	0.002
12 C25	6.697	6 698	6.700	6.696	6.704	6.698	6 698	6.648-6.748	6.699	0 003
13 C26	6 842	6.838	6.842	6.846	6.846	6.850	6 845	6.795-6.895	6.844	0 004
14 C28	7.128	7.127	7.132	7.132	7.129	7.124	7.126	7 076-7 176	7.129	0.003
$ 15 Triacon Surr	7.388	7.392	7 402	7.406	7.402	7 395	7.392	7.342-7.442	7 397	0 007
16 C32	7 639	7.639	7.641	7 641	7.638	7.641	7.634	7.584-7.684	7 640	0.001

Reviewer 1 MH Date: 7/12/12
Reviewer 2 _____ Date: _____

GCS_SS142

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid3b.i/20120622.b/ftphfid3b.m
Batch File: /chem3/fid3b.i/20120622.b
Inst ID: fid3b.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
17 C34	7 867	7 866	7.863	7 870	7 867	7.865	7 866	7.816-7.916	7 866	0 002
18 Filter Peak	7 800	7.801	7.801	7 801	7 801	7.802	7 799	7.699-7.899	7.801	0.001
19 C36	8.085	8.103	8.078	8.074	8.074	8.088	8 087	8.037-8.137	8.084	0 011
20 C38	8.344	8.345	8.345	8.345	8.341	8.334	8.343	8 293-8 393	8 342	0 005
21 C40	8 671	8.671	8 665	8.666	8.668	8 670	8 667	8 617-8.717	8.669	0 002
29 NW Diesel	0 951	0 947	0 947	0.953	0.950	0 948	0 948	0 898-0 998	0.949	0.003
34 Jet A	1 034	1 024	1 023	1.028	1.026	1.020	1 027	0.977-1.077	1.026	0.005
30 NW Moil	0 898	0.888	0.900	0.894	0 902	0.943	0 899	0.849-0.949	0.904	0.020
31 NW AK102	0 818	0 814	0.821	0.830	0 826	0.813	0.827	0.777-0 877	0.820	0.007
32 Bunker C	0.883	0.885	0.878	0.874	0.863	+++++	0.878	0.828-0.928	0.876	0.009
33 AK103	1 226	1.230	1 249	1 236	1.244	1.251	1.240	1.190-1 290	1.239	0.010

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Diesel / AK-102
(M. Oil)

GC Initial Calibration Notes

ARI SOP: **403S**(PCB) **405S**(Herb) (**407S**(TPH-D)) **409S**(HCID) **412S**(PCP) **423S**(Pest)
427S(Dir Inj) **428S**(EPH) **Other**

Instrument: FID-3A (FID-3B) FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Curve Date(s): 6/8/12 Internal Standard ID N/A Expiration —

Endrin/DDT Breakdown <15%? YES / NO / NA

ICV Exceeding ±20%? Diesel AK102/MO:1 (YES) / (NO)

ICal Meets %RSD & r^2 Criteria (YES) / NO

ICV Exceeding ±30%? YES / (NO) Diesel

Manual Integrations for ICal? (YES) / NO

Linear Fits Used? YES / (NO)

Minimum Response S/N Met (YES) / NO

Quadratic Fits Used? YES / (NO)

Calibration Points Dropped? YES / (NO)

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
76	1972-1	9/28/12	Shell	1977-3	9/28/12
Chevron	1971-3	11/23/12	Valvoline	1977-1	11/23/12

Detail problems, corrective actions and/or other pertinent information below:

Analyst: _____ **Date:** 6/12/12

Reviewer: _____ **Date:** 6/12/12

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: 20120608

Instrument: FID3B.I Project: MOIL 5000

Calibration Date: 08-JUN-2012 SDG No.: UX27

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	10521	9771	9885	9545	9801	10239	9960	3.6
Triac Surr	18711	15806	16033	15777	16151	*****	16496	7.6

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
0608b011.d	08-JUN-2012 08:02
0608b012.d	08-JUN-2012 08:20
0608b013.d	08-JUN-2012 08:39
0608b014.d	08-JUN-2012 08:59
0608b015.d	08-JUN-2012 09:18
0608b016.d	08-JUN-2012 09:37

MH 6/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120608.b/0608b011.d
Method: /chem3/fid3b.i/20120608.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 06/11/2012
Macro: FID:3B060812

ARI ID: MOIL 100
Client ID: MOIL 100
Injection: 08-JUN-2012 08:02
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.282	-0.004	46369	43555	GAS (Tol-C12)	1149034	36.03
C8	1.560	-0.009	7875	6149	DIESEL (C12-C24)	193125	15.78
C10	3.099	-0.004	6079	1553	M.OIL (C24-C38)	1052070	105.67
C12	3.905	-0.001	2778	1487	AK-102 (C10-C25)	439284	27.89
C14	4.502	-0.003	1043	539	AK-103 (C25-C36)	934240	136.23
C16	5.022	0.000	208	109			
C18	5.473	0.000	36	17			
C20	5.869	0.002	298	100			
C22	6.221	-0.003	1413	893			
C24	6.547	-0.002	5581	1274			
C25	6.704	0.001	7448	2884			
C26	6.845	-0.003	8833	3770			
C28	7.128	-0.002	10854	4513			
C32	7.636	-0.002	12801	4894			
C34	7.871	0.002	12169	4658	CREOSOT (C8-C22)	112863	17.65
Filter Peak	7.807	0.002	15620	14057			
C36	8.087	-0.004	9004	3572			
o-terph	5.568	-0.002	30	13	JET-A (C10-C18)	304171	21.12
Triacon Surr	7.394	-0.003	241690	168403			

Range Times: NW Diesel(3.956 - 6.599) NW Gas(1.237 - 3.956) NW M.Oil(6.599 - 8.399)
AK102(3.053 - 6.653) AK103(6.653 - 8.141) Jet A(3.053 - 5.523)

Surrogate	Area	Amount	%Rec
o-Terphenyl	13	0.0	0.0
Triacontane	168403	10.2	22.7

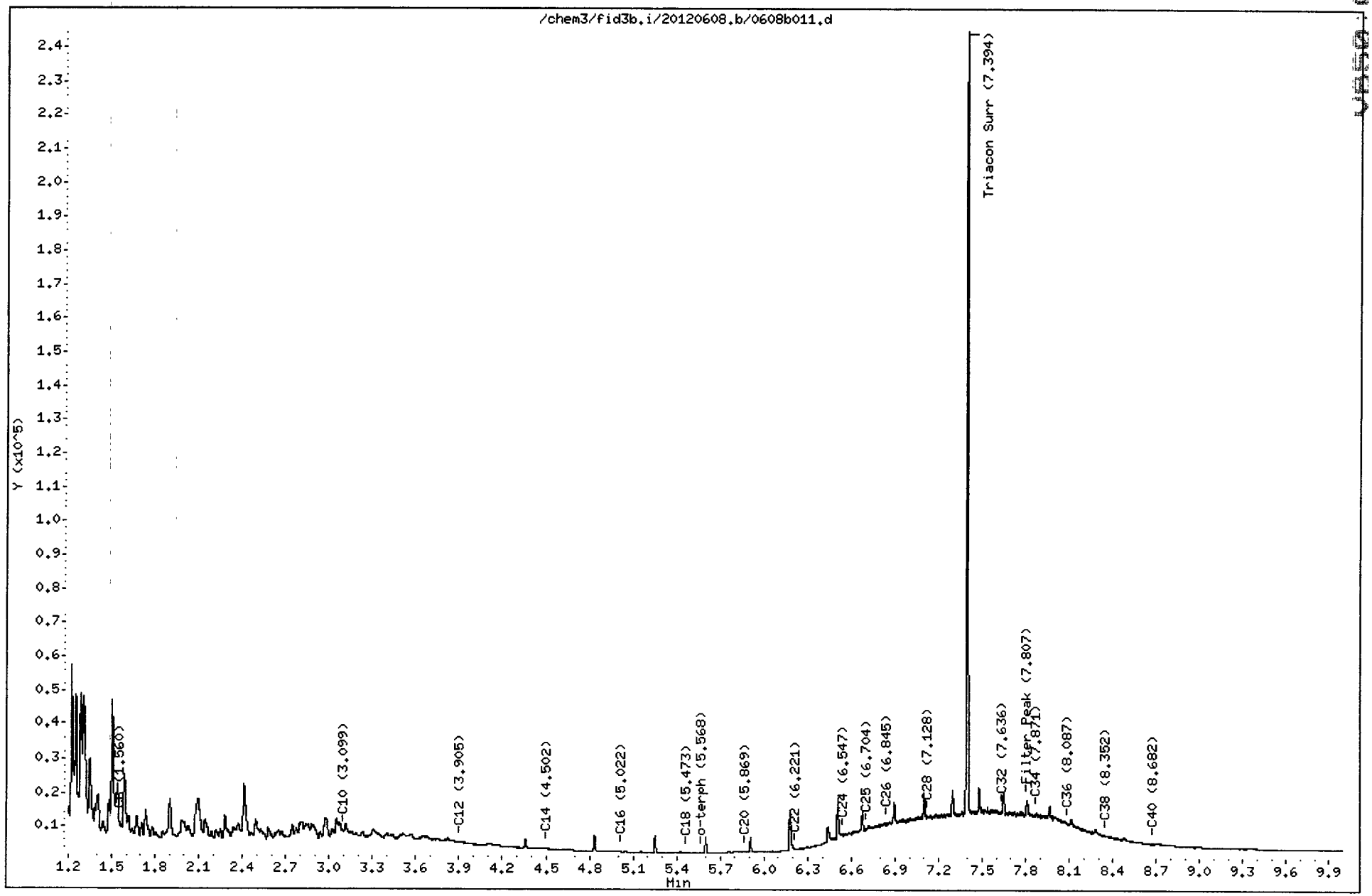
Analyte	RF	Curve Date
o-Terph Surr	16490.5	08-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	31888.5	08-FEB-2012
Diesel	12238.0	08-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	15753.0	08-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Creosote	6396.0	17-JAN-2009

Data File: /chem3/fid3b.i/20120608.b/0608b011.d
Date : 08-JUN-2012 08:02
Client ID: MOIL 100
Sample Info: MOIL 100

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



MH 6/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120608.b/0608b012.d
Method: /chem3/fid3b.i/20120608.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 06/11/2012
Macro: FID:3B060812

ARI ID: MOIL 250
Client ID: MOIL 250
Injection: 08-JUN-2012 08:20
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.286	-0.001	48887	44365	GAS (Tol-C12)	1136519	35.64
C8	1.566	-0.003	8080	6740	DIESEL (C12-C24)	291888	23.85
C10	3.102	-0.002	6143	1332	M.OIL (C24-C38)	2442767	245.36
C12	3.909	0.003	2906	909	AK-102 (C10-C25)	570812	36.24
C14	4.503	-0.002	1011	160	AK-103 (C25-C36)	2204199	321.41 M
C16	5.023	0.001	179	74			
C18	5.475	0.002	44	19			
C20	5.867	-0.001	618	378			
C22	6.222	-0.002	2868	1011			
C24	6.548	-0.002	12191	2873			
C25	6.702	-0.001	18236	14837			
C26	6.849	0.000	20062	5912			
C28	7.129	-0.001	26909	22930			
C32	7.640	0.001	31328	8647			
C34	7.868	-0.002	27790	4878	CREOSOT (C8-C22)	123151	19.25
Filter Peak	7.808	0.002	30713	23099			
C36	8.092	0.001	20245	6356			
o-terph	5.564	-0.007	50	12	JET-A (C10-C18)	307368	21.35
Triacon Surr	7.396	-0.002	579494	355643			

Range Times: NW Diesel(3.956 - 6.599) NW Gas(1.237 - 3.956) NW M.Oil(6.599 - 8.399)
AK102(3.053 - 6.653) AK103(6.653 - 8.141) Jet A(3.053 - 5.523)

Surrogate	Area	Amount	%Rec
o-Terphenyl	12	0.0	0.0
Triacontane	355643	21.6	47.9

Analyte	RF	Curve Date
o-Terph Surr	16490.5	08-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	31888.5	08-FEB-2012
Diesel	12238.0	08-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	15753.0	08-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Creosote	6396.0	17-JAN-2009

Data File: /chem3/fid3b.i/20120608.b/0608b012.d

Date : 08-JUN-2012 08:20

Client ID: MOIL 250

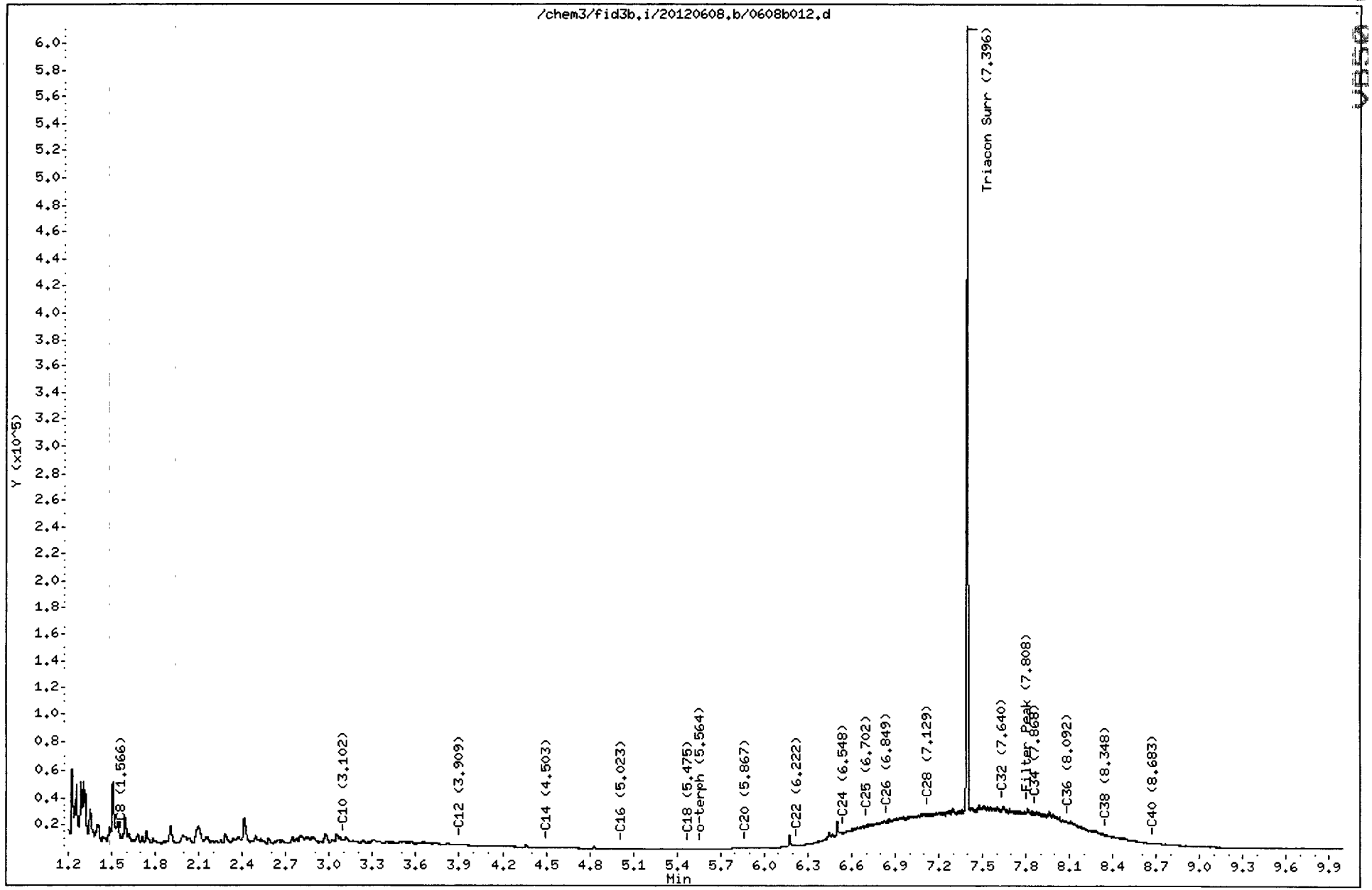
Sample Info: MOIL 250

Instrument: fid3b.i

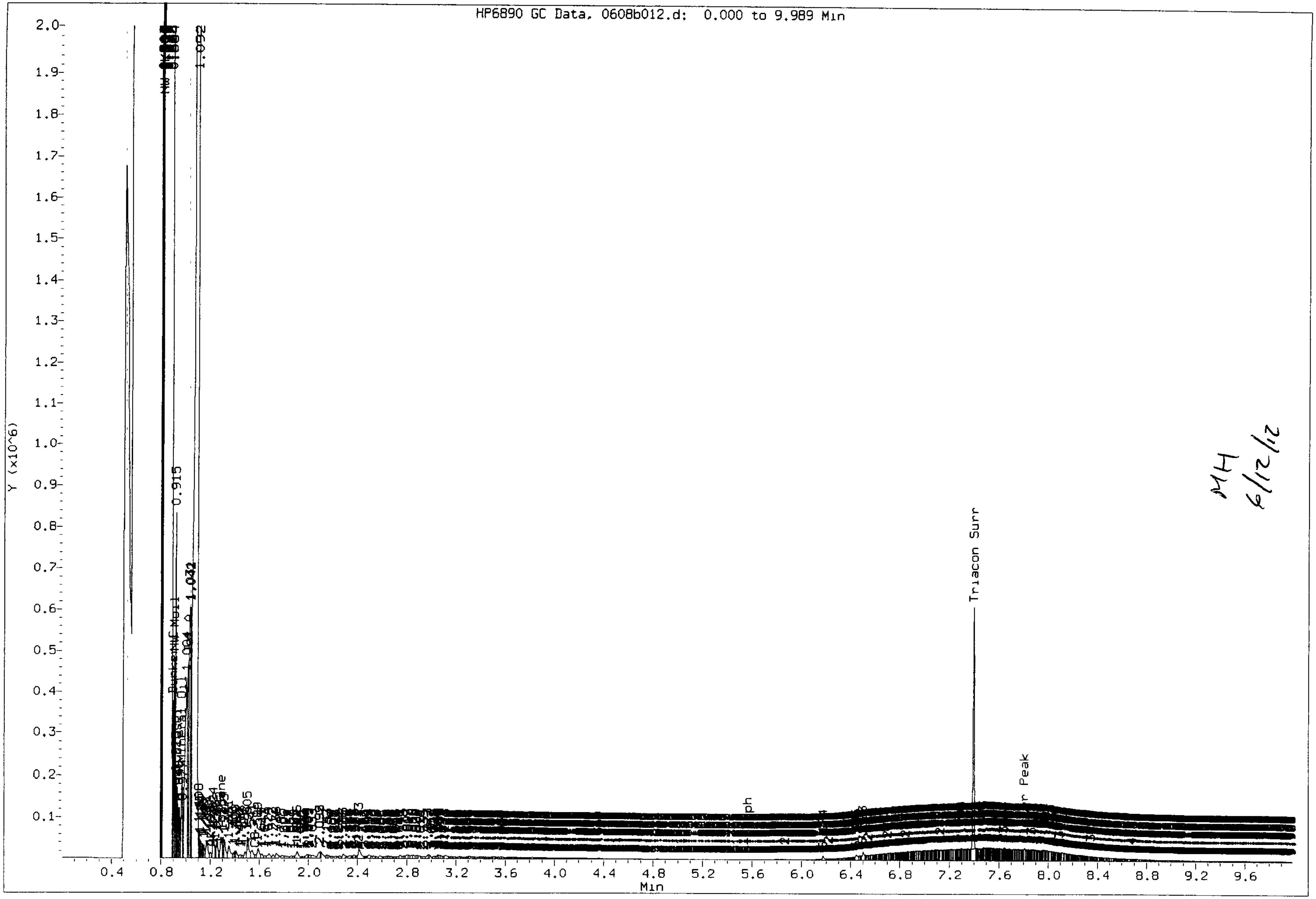
Operator: MH

Column phase: RTX-1

Column diameter: 0.25

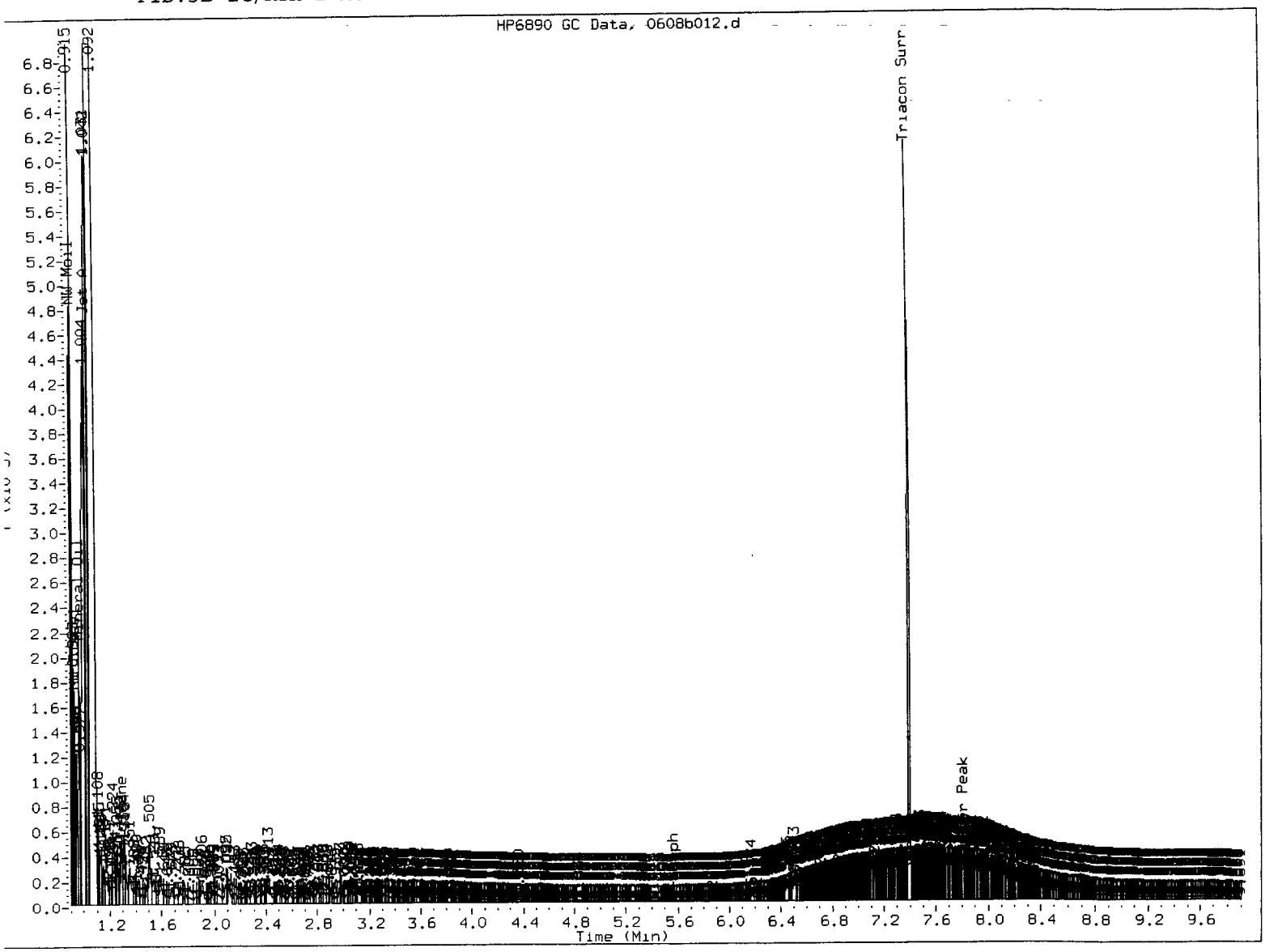


Data File: /chem3/fid3b.i/20120608.b/0608b012.d
Injection Date: 08-JUN-2012 08:20
Instrument: fid3b.i
Client Sample ID: MOIL 250



MH
6/12/12

FID:3B-2C/RTX-1 MOIL 250 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/12/12

MH 6/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120608.b/0608b013.d
Method: /chem3/fid3b.i/20120608.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 06/11/2012
Macro: FID:3B060812

ARI ID: MOIL 500
Client ID: MOIL 500
Injection: 08-JUN-2012 08:39
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.286	-0.001	49840	44897	GAS (Tol-C12)	1118035	35.06
C8	1.566	-0.002	7989	6574	DIESEL (C12-C24)	505052	41.27
C10	3.113	0.010	8700	7988	M.OIL (C24-C38)	4942506	496.43
C12	3.901	-0.005	2964	2057	AK-102 (C10-C25)	835904	53.06
C14	4.508	0.003	1049	765	AK-103 (C25-C36)	4431128	646.13 M
C16	5.023	0.001	170	39			
C18	5.470	-0.002	127	26			
C20	5.865	-0.003	1318	1700			
C22	6.222	-0.002	5623	1852			
C24	6.548	-0.001	25343	16896			
C25	6.704	0.001	35017	20169			
C26	6.853	0.004	42531	28243			
C28	7.130	0.000	53707	33134			
C32	7.637	-0.001	61350	14088			
C34	7.868	-0.002	55402	23808	CREOSOT (C8-C22)	171790	26.86
Filter Peak	7.801	-0.005	58104	25967			
C36	8.092	0.001	40907	30073			
o-terph	5.577	0.007	522	520	JET-A (C10-C18)	301286	20.92
Triacon Surr	7.402	0.005	1034991	721504			

Range Times: NW Diesel(3.956 - 6.599) NW Gas(1.237 - 3.956) NW M.Oil(6.599 - 8.399)
AK102(3.053 - 6.653) AK103(6.653 - 8.141) Jet A(3.053 - 5.523)

Surrogate	Area	Amount	%Rec
o-Terphenyl	520	0.0	0.1
Triacontane	721504	43.7	97.2

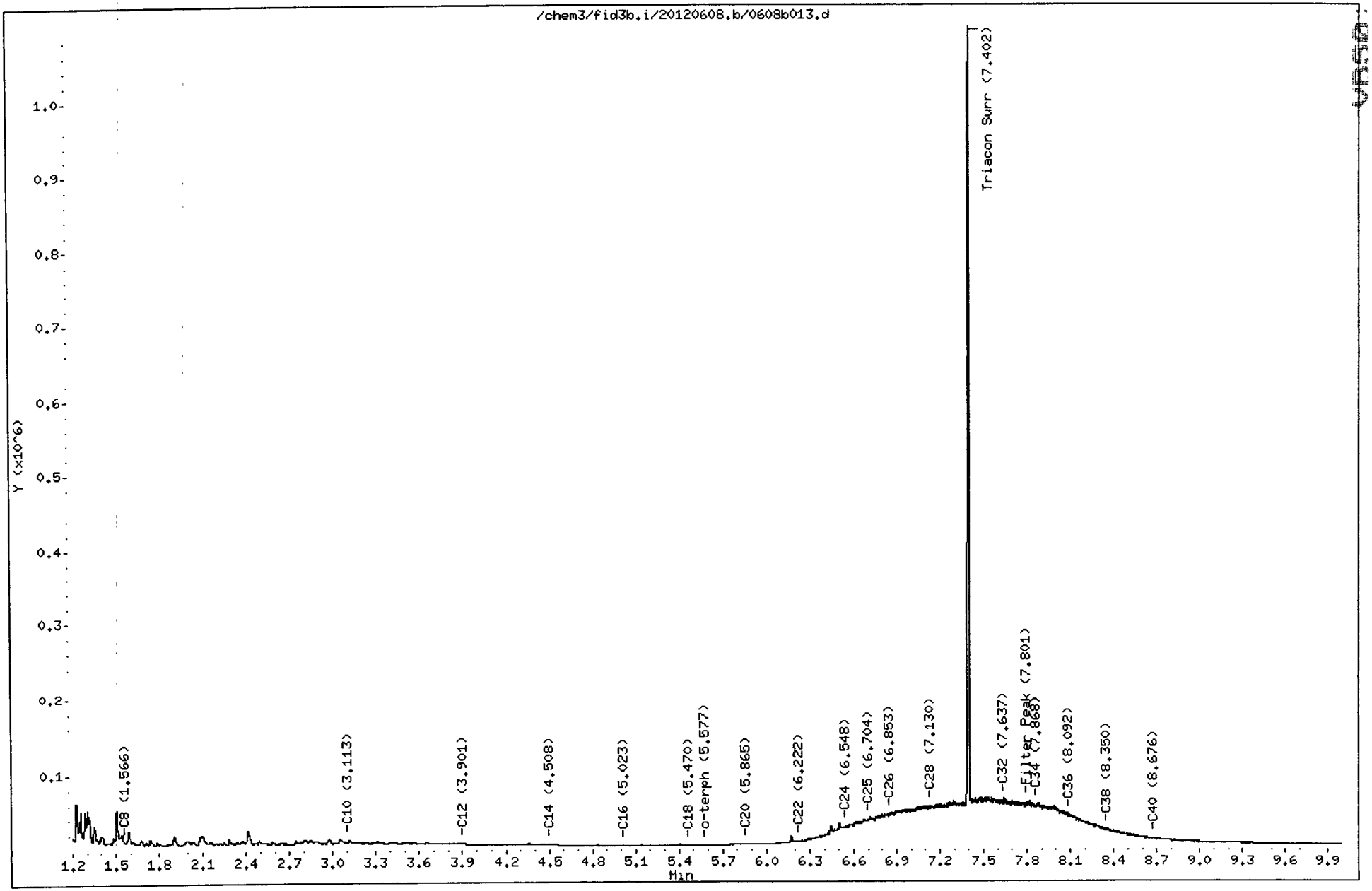
Analyte	RF	Curve Date
o-Terph Surr	16490.5	08-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	31888.5	08-FEB-2012
Diesel	12238.0	08-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	15753.0	08-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Creosote	6396.0	17-JAN-2009

Data File: /chem3/fid3b.i/20120608.b/0608b013.d
Date : 08-JUN-2012 08:39
Client ID: MOIL 500
Sample Info: MOIL 500

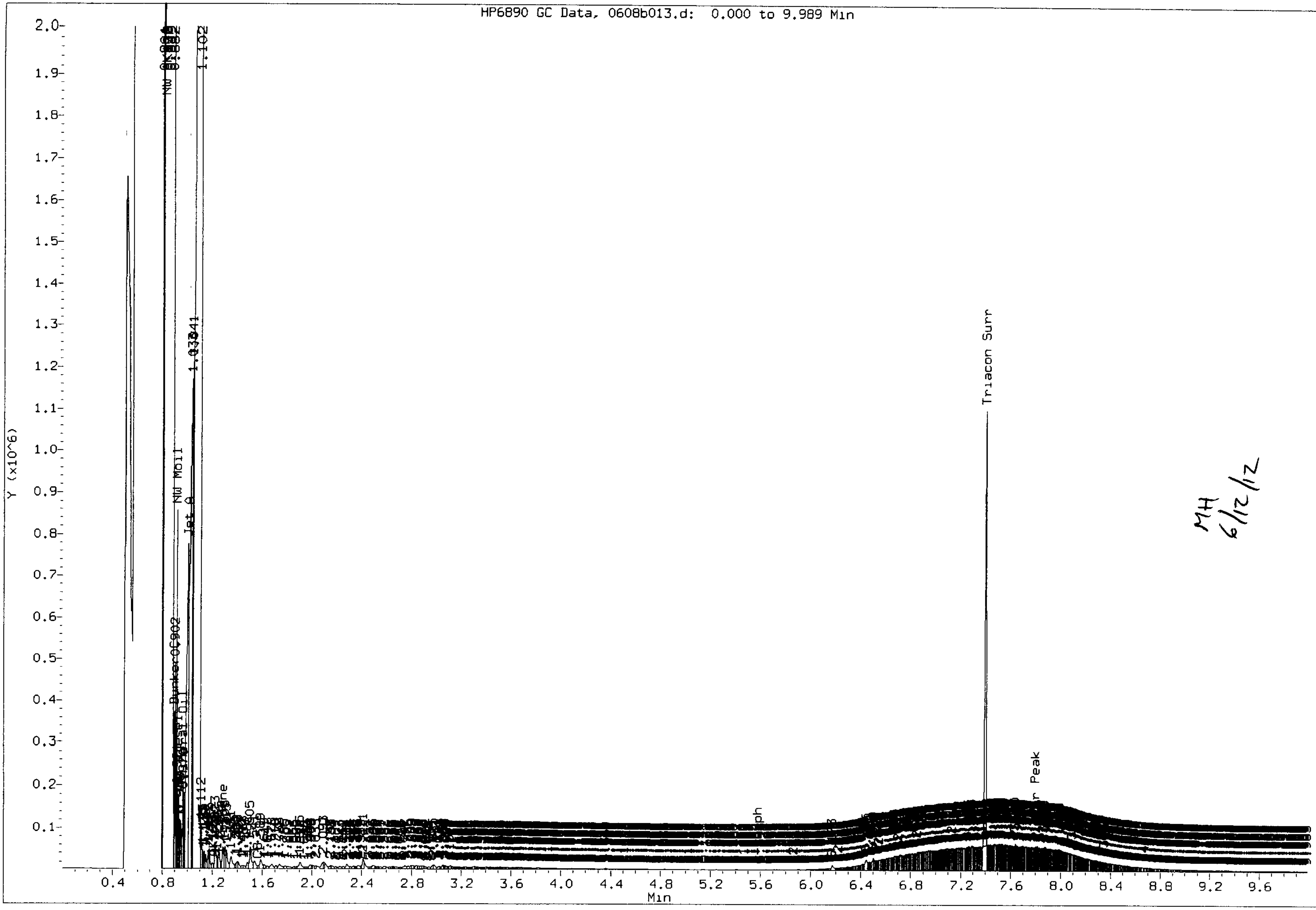
Instrument: fid3b.i

Operator: MH
Column diameter: 0.25

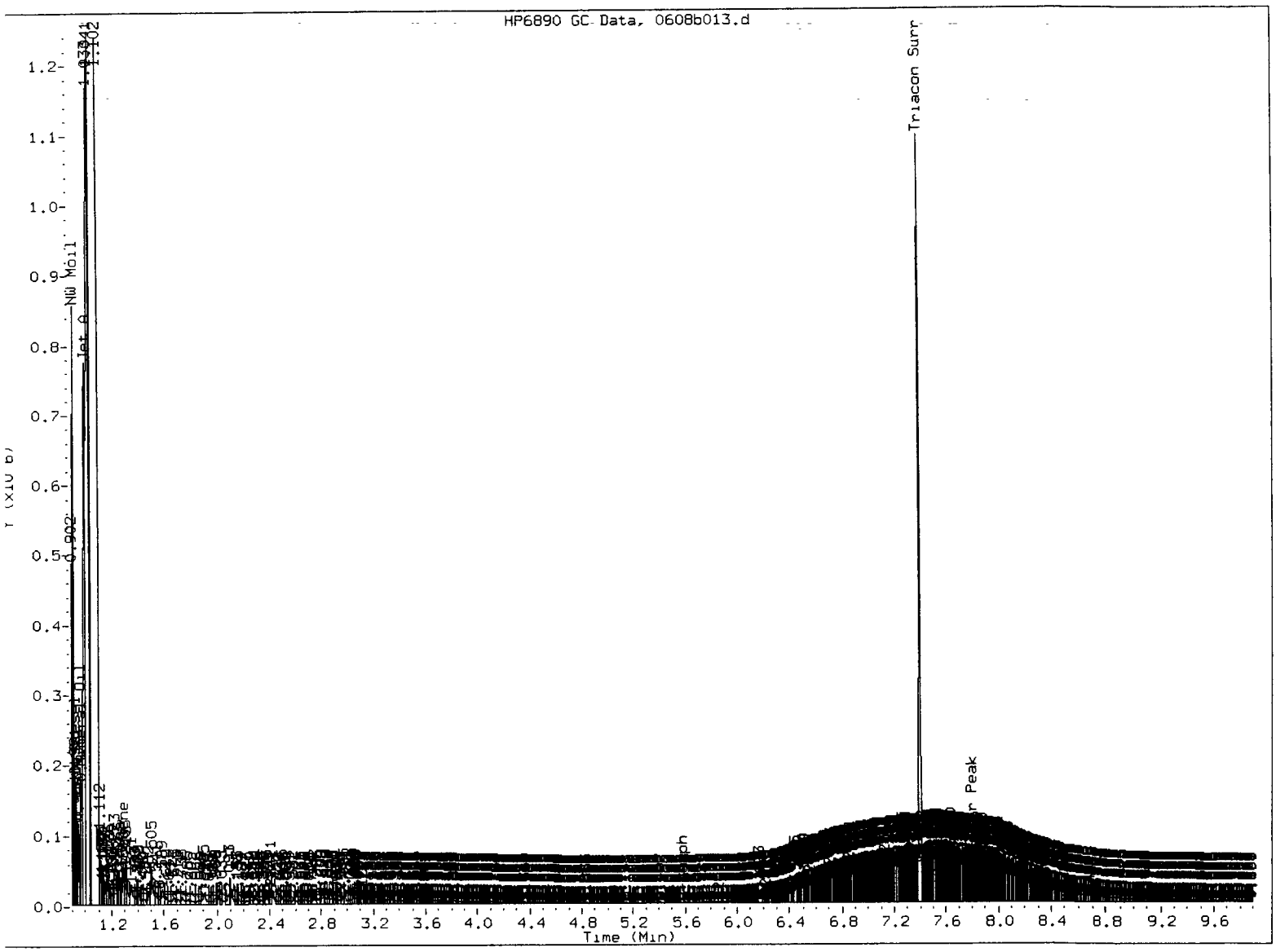
Column phase: RTX-1



Data File: /chem3/fid3b.i/20120608.b/0608b013.d
Injection Date: 08-JUN-2012 08:39
Instrument: fid3b.i
Client Sample ID: MOIL 500



FID:3B-2C/RTX-1 MOIL 500 FID:3B SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/12/12

MH 6/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120608.b/0608b014.d
Method: /chem3/fid3b.i/20120608.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 06/11/2012
Macro: FID:3B060812

ARI ID: MOIL 1000
Client ID: MOIL 1000
Injection: 08-JUN-2012 08:59
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.282	-0.005	46151	46285	GAS (Tol-C12)	1135331	35.60
C8	1.560	-0.008	7798	5419	DIESEL (C12-C24)	942954	77.05
C10	3.096	-0.007	6205	2572	M.OIL (C24-C38)	9544604	958.68
C12	3.904	-0.002	3055	2392	AK-102 (C10-C25)	1372385	87.12
C14	4.500	-0.005	1146	582	AK-103 (C25-C36)	8593702	1253.09 M
C16	5.022	0.000	201	56			
C18	5.475	0.002	369	339			
C20	5.867	-0.001	2403	1627			
C22	6.225	0.001	11415	3528			
C24	6.548	-0.002	49672	12624			
C25	6.702	-0.001	69556	22627			
C26	6.853	0.004	82434	17865			
C28	7.129	-0.001	102140	16105			
C32	7.637	-0.002	120943	34709			
C34	7.869	0.000	104918	12341	CREOSOT (C8-C22)	263188	41.15
Filter Peak	7.804	-0.002	110377	32761			
C36	8.089	-0.002	76674	41932			
o-terph	5.573	0.003	793	919	JET-A (C10-C18)	326914	22.70
Triacon Surr	7.408	0.010	1719404	1419935			

Range Times: NW Diesel(3.956 - 6.599) NW Gas(1.237 - 3.956) NW M.Oil(6.599 - 8.399)
AK102(3.053 - 6.653) AK103(6.653 - 8.141) Jet A(3.053 - 5.523)

Surrogate	Area	Amount	%Rec
o-Terphenyl	919	0.1	0.1
Triacontane	1419935	86.1	191.3

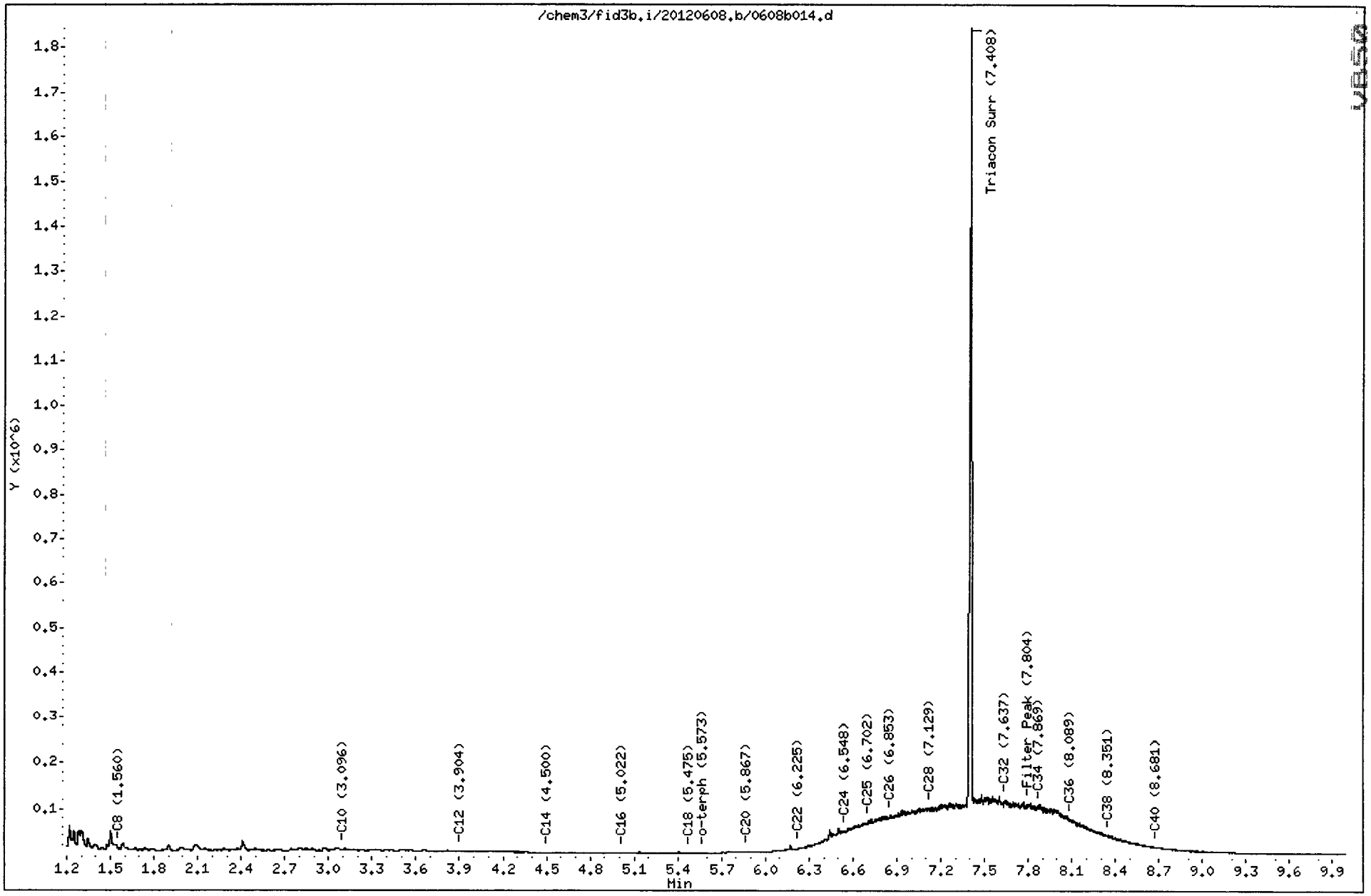
Analyte	RF	Curve Date
o-Terph Surr	16490.5	08-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	31888.5	08-FEB-2012
Diesel	12238.0	08-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	15753.0	08-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Creosote	6396.0	17-JAN-2009

Data File: /chem3/fid3b.i/20120608.b/0608b014.d
Date : 08-JUN-2012 08:59
Client ID: MOIL 1000
Sample Info: MOIL 1000

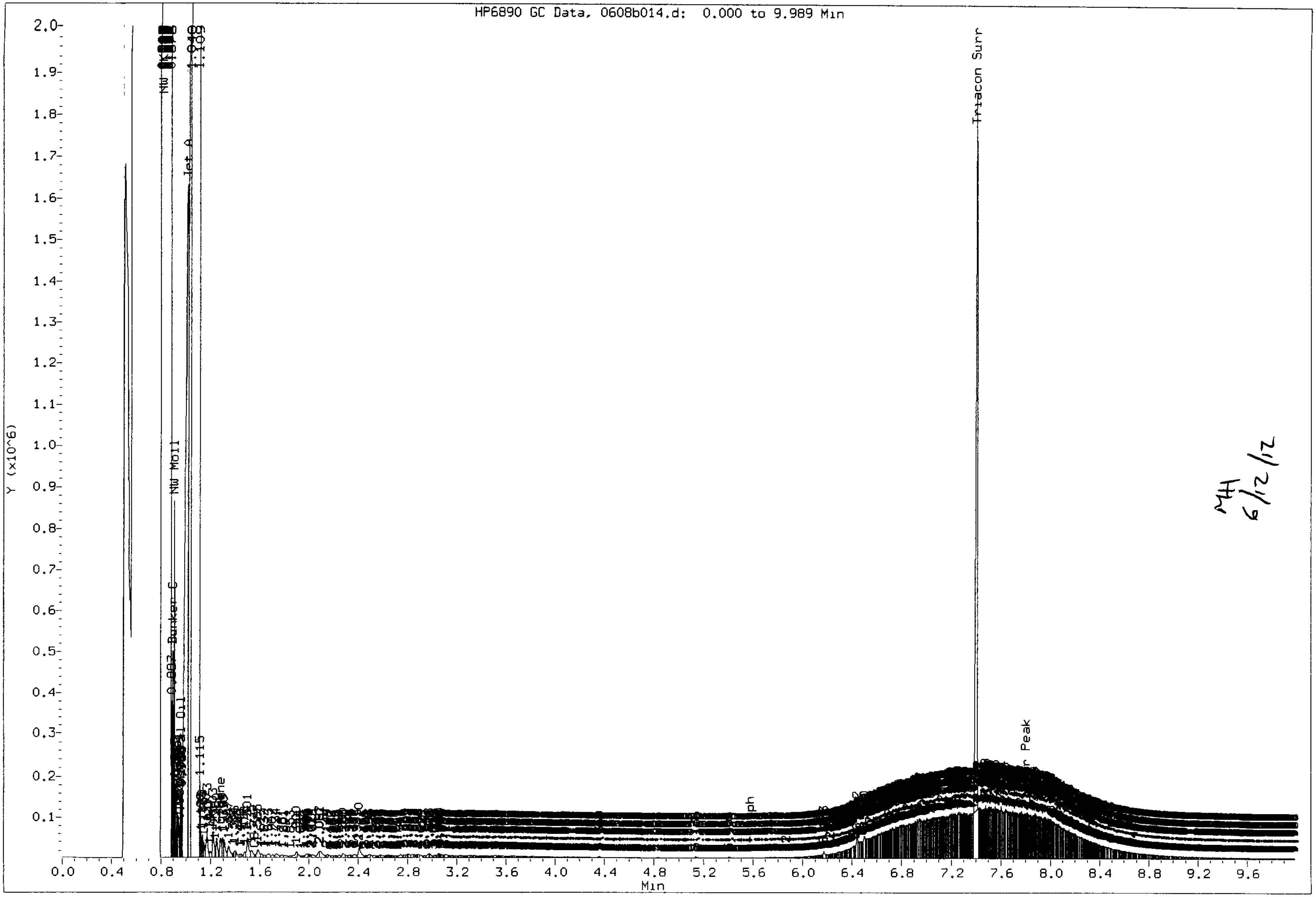
Column phase: RTX-1

Instrument: fid3b.i

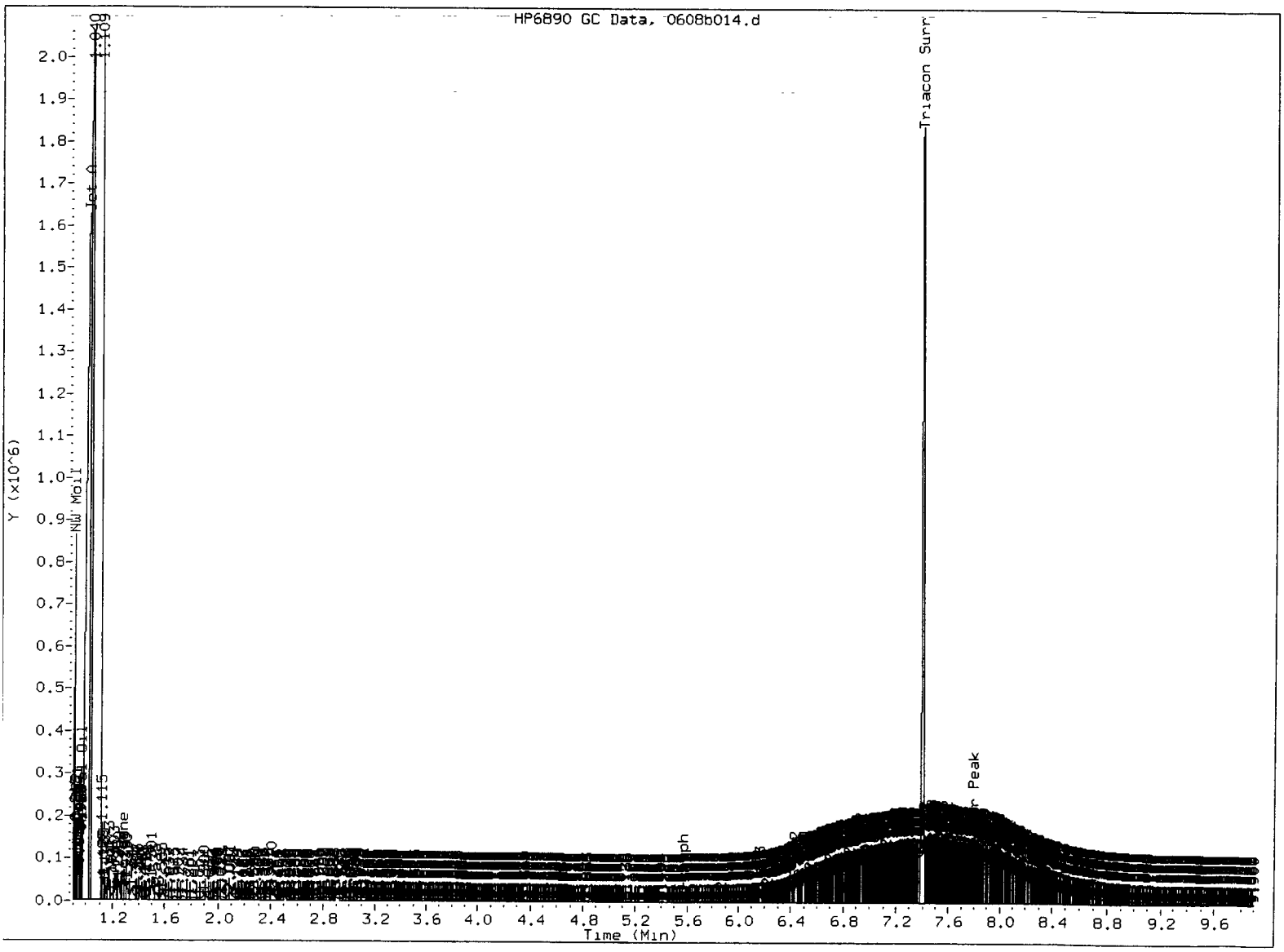
Operator: MH
Column diameter: 0.25



Data File: /chem3/fid3b.i/20120608.b/0608b014.d
Injection Date: 08-JUN-2012 08:59
Instrument: fid3b.i
Client Sample ID: MOIL 1000



FID:3B-2C/RTX-1 MOIL 1000 FID:3B SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/12/12

MH
6/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120608.b/0608b015.d
Method: /chem3/fid3b.i/20120608.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 06/11/2012
Macro: FID:3B060812

ARI ID: MOIL 2500
Client ID: MOIL 2500
Injection: 08-JUN-2012 09:18
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.280	-0.007	17224	10123	GAS (Tol-C12)	1075790	33.74
C8	1.573	0.004	8157	7141	DIESEL (C12-C24)	2299814	187.92
C10	3.114	0.011	7895	13181	M.OIL (C24-C38)	24501557	2460.98
C12	3.906	0.000	2650	419	AK-102 (C10-C25)	3022089	191.84
C14	4.507	0.002	1097	681	AK-103 (C25-C36)	22423632	3269.70 M
C16	5.021	-0.001	328	204			
C18	5.473	0.000	1445	1795			
C20	5.867	-0.001	6464	6001			
C22	6.223	-0.001	27725	7149			
C24	6.549	0.000	126899	32533			
C25	6.704	0.001	176860	31379			
C26	6.849	0.000	219270	92973			
C28	7.129	-0.001	259744	45555			
C32	7.639	0.001	294270	52140			
C34	7.873	0.003	266821	52128	CREOSOT (C8-C22)	602442	94.19
Filter Peak	7.807	0.001	288759	97727			
C36	8.090	-0.002	185555	107066			
o-terph	5.570	-0.001	2392	3041	JET-A (C10-C18)	329951	22.91
Triacon Surr	7.424	0.027	3155769	3634086			

Range Times: NW Diesel(3.956 - 6.599) NW Gas(1.237 - 3.956) NW M.Oil(6.599 - 8.399)
AK102(3.053 - 6.653) AK103(6.653 - 8.141) Jet A(3.053 - 5.523)

Surrogate	Area	Amount	%Rec
o-Terphenyl	3041	0.2	0.4
Triacontane	3634086	220.3	489.6

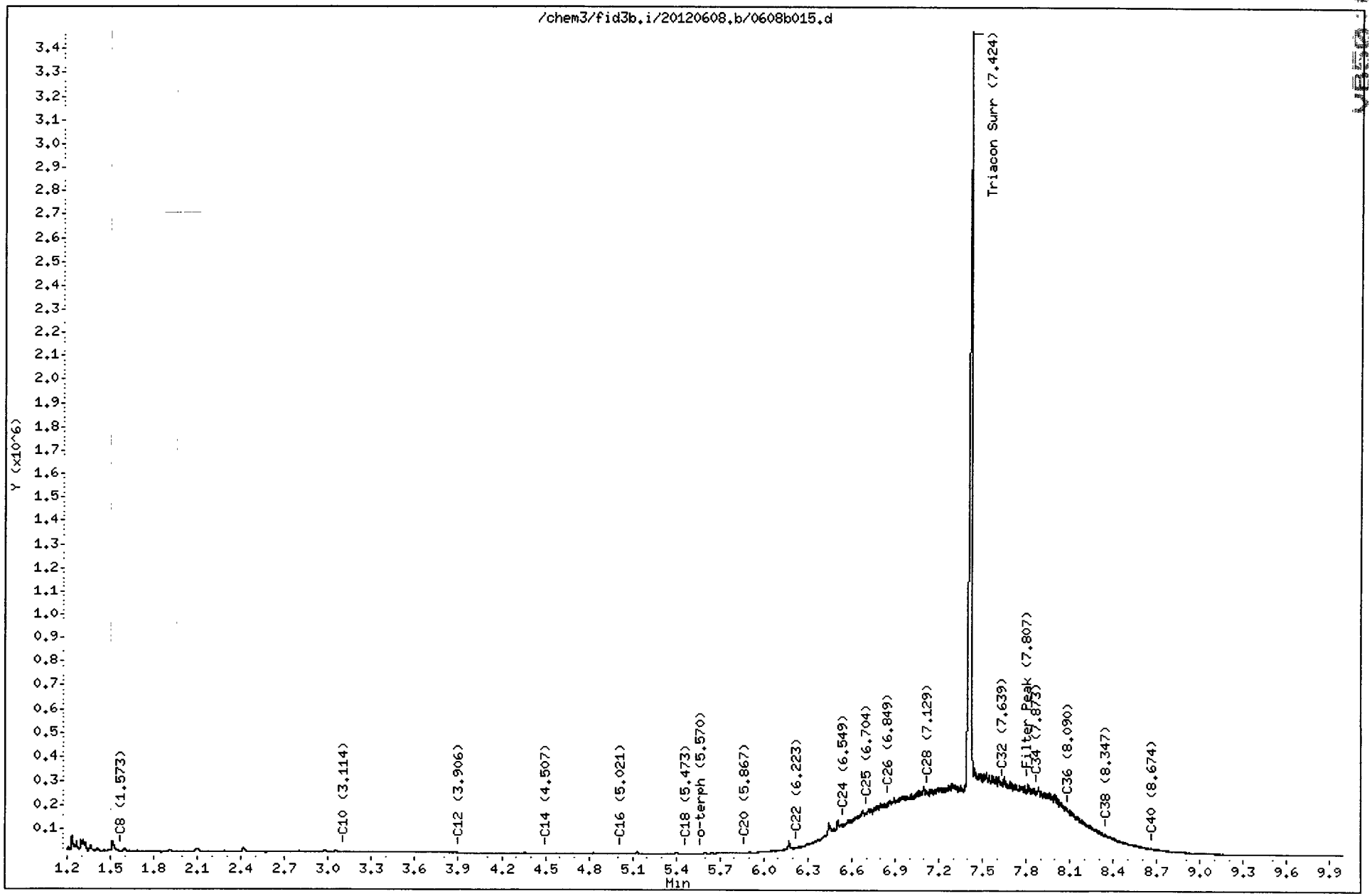
Analyte	RF	Curve Date
o-Terph Surr	16490.5	08-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	31888.5	08-FEB-2012
Diesel	12238.0	08-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	15753.0	08-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Creosote	6396.0	17-JAN-2009

Data File: /chem3/fid3b.i/20120608.b/0608b015.d
Date : 08-JUN-2012 09:18
Client ID: MOIL 2500
Sample Info: MOIL 2500

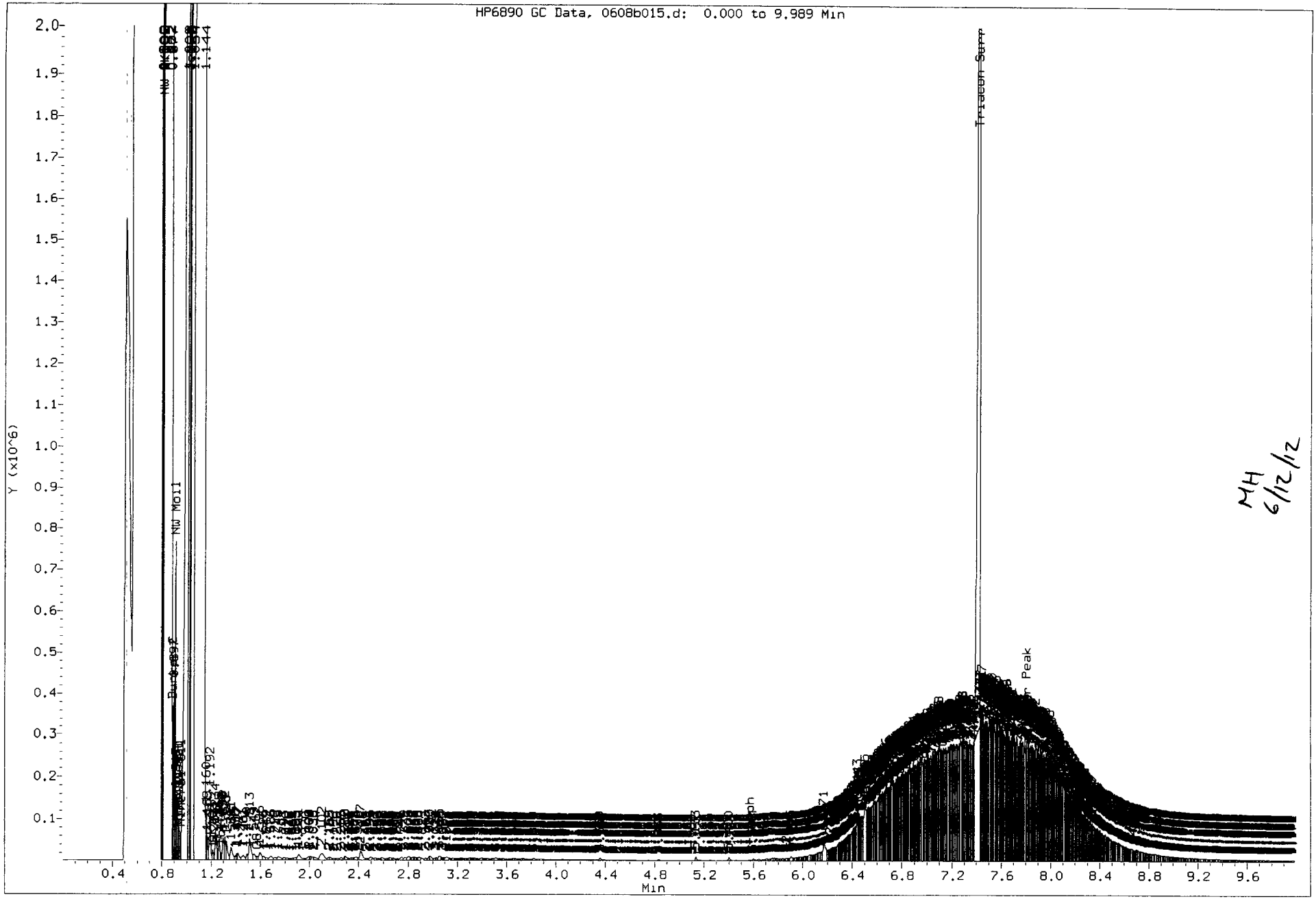
Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



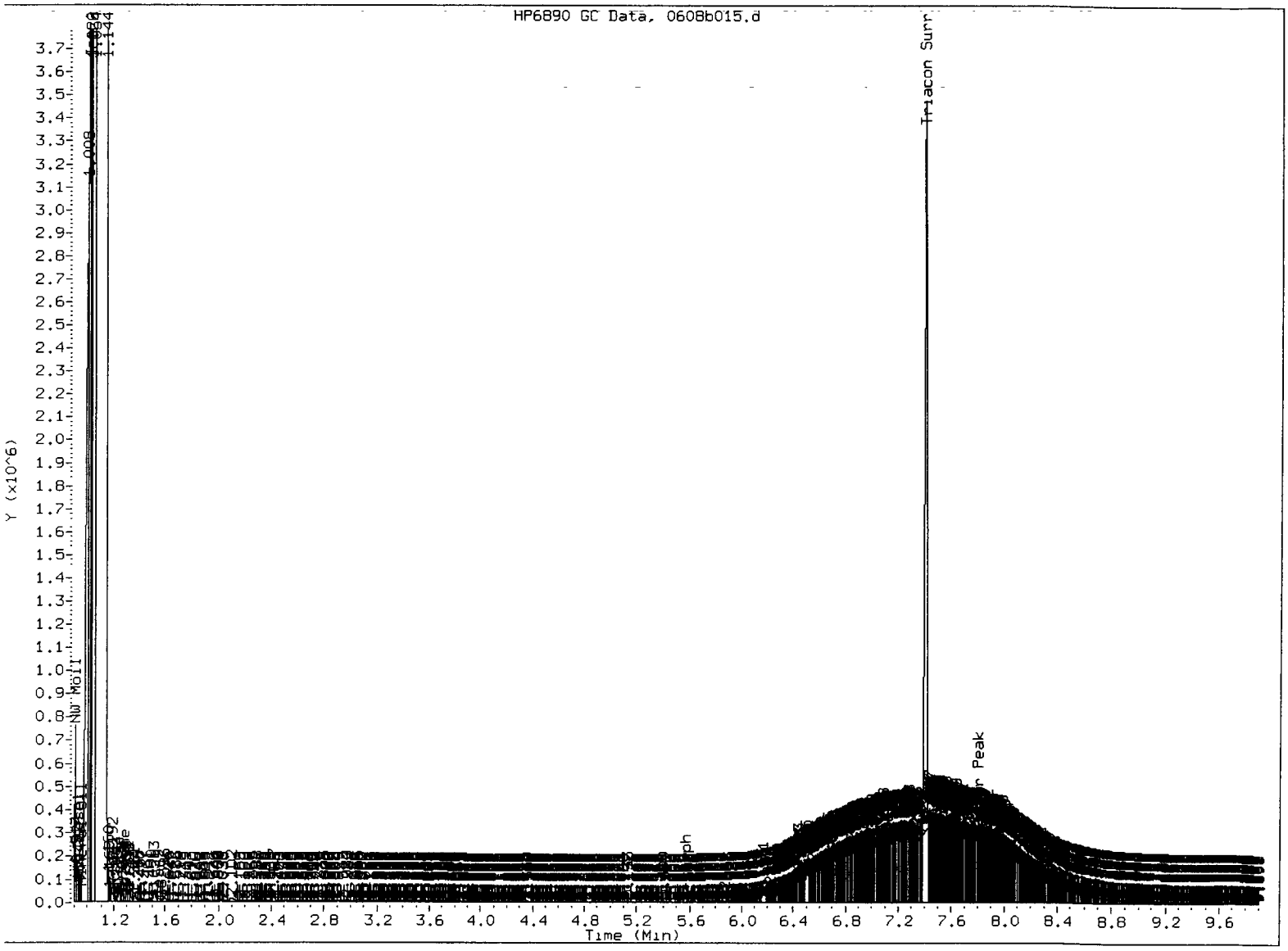
Data File: /chem3/fid3b.i/20120608.b/0608b015.d
Injection Date: 08-JUN-2012 09:18
Instrument: fid3b.i
Client Sample ID: MOIL 2500



MH 6/12/12

VB550 : 99162

FID:3B-2C/RTX-1 MOIL 2500 FID:3B SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/12/12

MH
6/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120608.b/0608b016.d
Method: /chem3/fid3b.i/20120608.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 06/11/2012
Macro: FID:3B060812

ARI ID: MOIL 5000
Client ID: MOIL 5000
Injection: 08-JUN-2012 09:37
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.291	0.004	16827	9344	GAS (Tol-C12)	1040318	32.62
C8	1.578	0.010	8826	7775	DIESEL (C12-C24)	5196673	424.63
C10	3.099	-0.004	5328	1770	M.OIL (C24-C38)	51192969	5141.92
C12	3.906	0.000	1989	1020	AK-102 (C10-C25)	6578154	417.58
C14	4.505	0.000	669	383	AK-103 (C25-C36)	47753445	6963.17 M
C16	5.023	0.001	671	673			
C18	5.472	0.000	3302	4642			
C20	5.865	-0.003	14350	12689			
C22	6.223	0.000	67567	24830			
C24	6.548	-0.001	294308	96116			
C25	6.704	0.001	400191	101674			
C26	6.849	0.000	476284	142608			
C28	7.130	0.000	611963	299508			
C32	7.641	0.003	644753	138296			
C34	7.866	-0.003	534948	203870	CREOSOT (C8-C22)	1235977	193.24
Filter Peak	7.803	-0.002	577393	422748			
C36	8.090	-0.001	312287	78142			
o-terph	5.566	-0.004	5399	6480	JET-A (C10-C18)	345880	24.02
Triacon Surr	7.446	0.049	5106105	7594323			

Range Times: NW Diesel(3.956 - 6.599) NW Gas(1.237 - 3.956) NW M.Oil(6.599 - 8.399)
AK102(3.053 - 6.653) AK103(6.653 - 8.141) Jet A(3.053 - 5.523)

Surrogate	Area	Amount	%Rec
o-Terphenyl	6480	0.4	0.9
Triacontane	7594323	460.4	1023.1

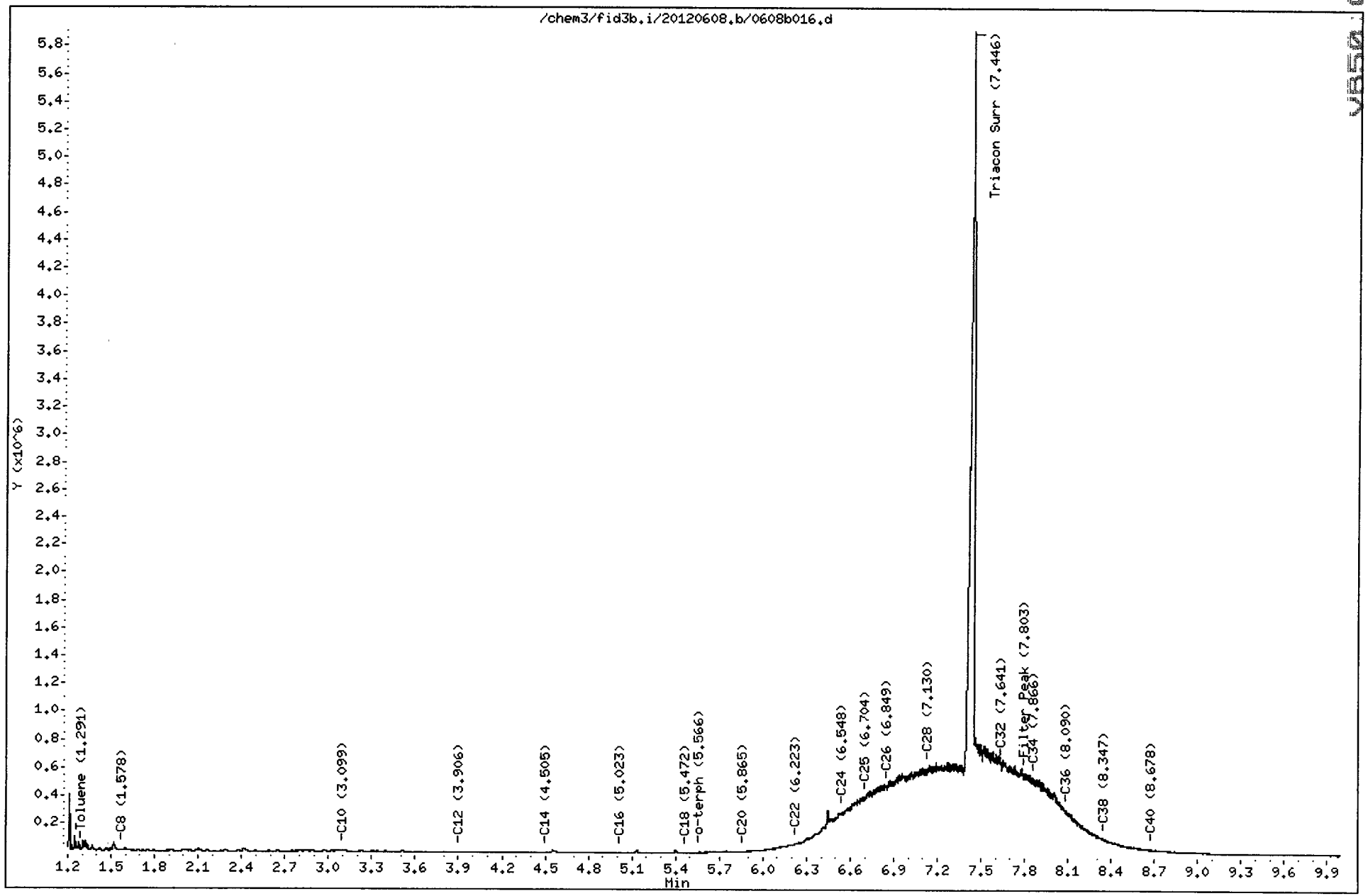
Analyte	RF	Curve Date
o-Terph Surr	16490.5	08-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	31888.5	08-FEB-2012
Diesel	12238.0	08-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	15753.0	08-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Creosote	6396.0	17-JAN-2009

Data File: /chem3/fid3b.i/20120608.b/0608b016.d
Date : 08-JUN-2012 09:37
Client ID: MOIL 5000
Sample Info: MOIL 5000

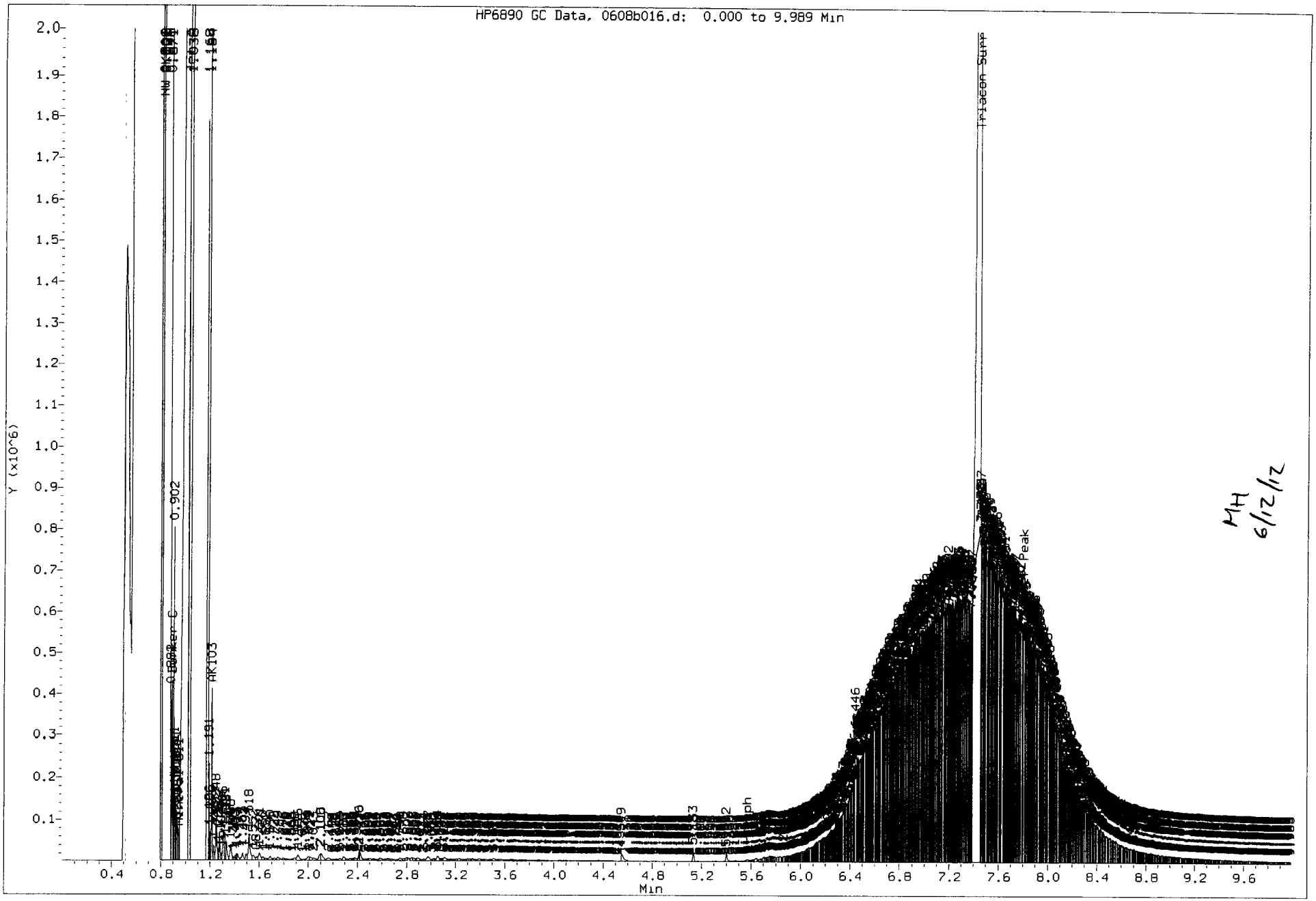
Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



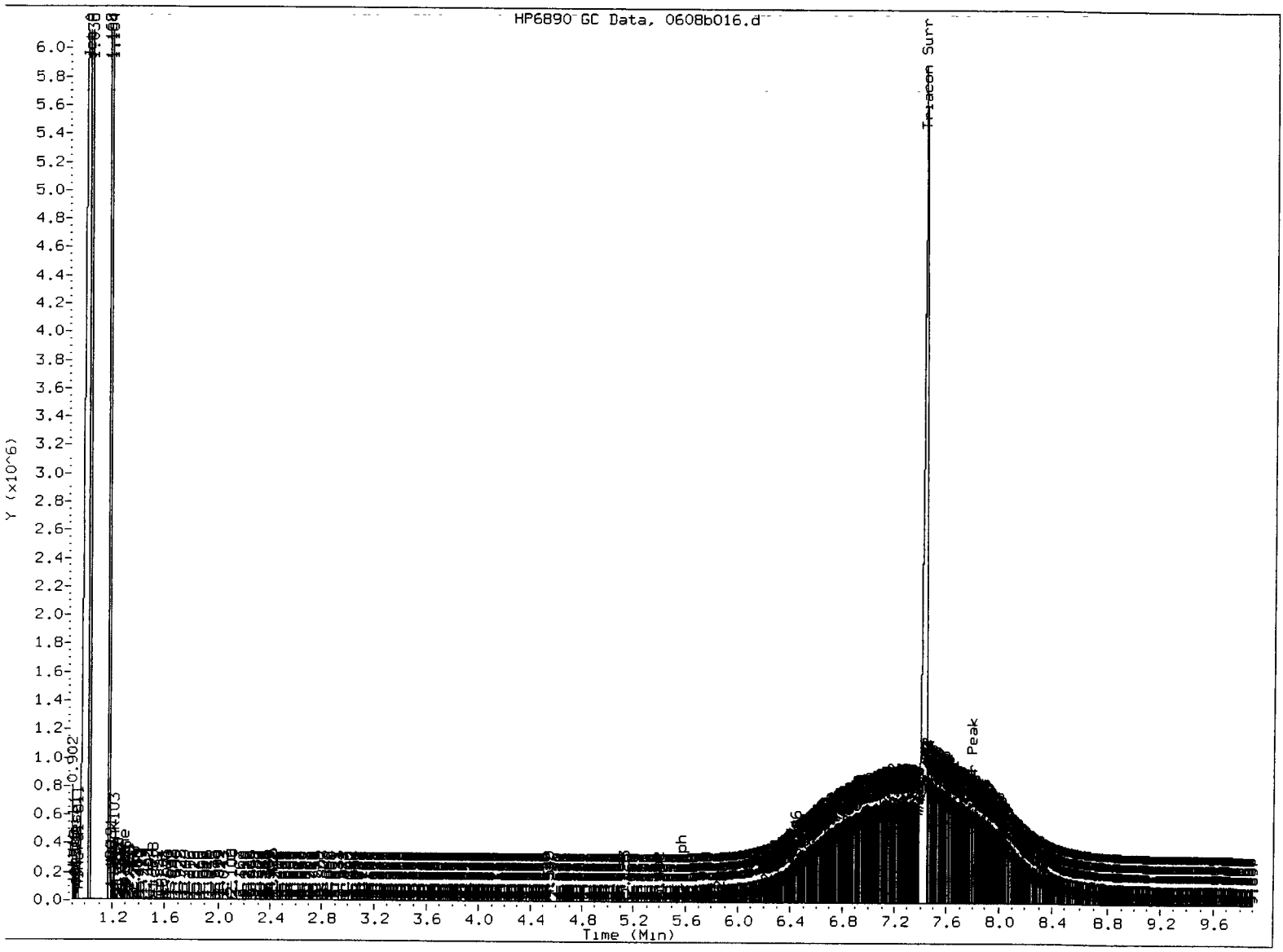
Data File: /chem3/fid3b.i/20120608.b/0608b016.d
Injection Date: 08-JUN-2012 09:37
Instrument: fid3b.i
Client Sample ID: MOIL 5000



MH 6/12/12

V8560 : 001165

FID:3B-2C/RTX-1 MOIL 5000 FID:3B SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/12/12

MH
6/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120608.b/0608b017.d
Method: /chem3/fid3b.i/20120608.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 06/11/2012
Macro: FID:3B060812

ARI ID: MOIL ICV
Client ID: MOIL ICV
Injection: 08-JUN-2012 09:56
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.291	0.004	35125	37940	GAS (Tol-C12)	972811	30.51
C8	1.545	-0.023	12026	18131	DIESEL (C12-C24)	608114	49.69
C10	3.103	0.000	5193	814	M.OIL (C24-C38)	4830046	485.14
C12	3.911	0.005	2811	1592	AK-102 (C10-C25)	910987	57.83
C14	4.504	-0.001	1213	943	AK-103 (C25-C36)	4291454	625.76 M
C16	5.020	-0.002	778	379			
C18	5.479	0.007	197	160			
C20	5.870	0.003	1217	607			
C22	6.224	0.000	7719	3871			
C24	6.549	0.000	26793	14077			
C25	6.701	-0.002	34511	6779			
C26	6.850	0.001	39944	6208			
C28	7.129	-0.001	47987	12985			
C32	7.639	0.001	60708	9436			
C34	7.870	0.001	56182	35786	CREOSOT (C8-C22)	216984	33.93
Filter Peak	7.805	-0.001	58757	25561			
C36	8.092	0.001	44231	12996			
o-terph	5.573	0.003	252	206	JET-A (C10-C18)	287506	19.97
Triacon Surr	7.398	0.001	1009763	669662			

Range Times: NW Diesel(3.956 - 6.599) NW Gas(1.237 - 3.956) NW M.Oil(6.599 - 8.399)
AK102(3.053 - 6.653) AK103(6.653 - 8.141) Jet A(3.053 - 5.523)

Surrogate	Area	Amount	%Rec
o-Terphenyl	206	0.0	0.0
Triacontane	669662	40.6	90.2

Analyte	RF	Curve Date
o-Terph Surr	16490.5	08-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	31888.5	08-FEB-2012
Diesel	12238.0	08-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	15753.0	08-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Creosote	6396.0	17-JAN-2009

Data File: /chem3/fid3b.i/20120608.b/0608b017.d

Date : 08-JUN-2012 09:56

Client ID: MOIL ICV

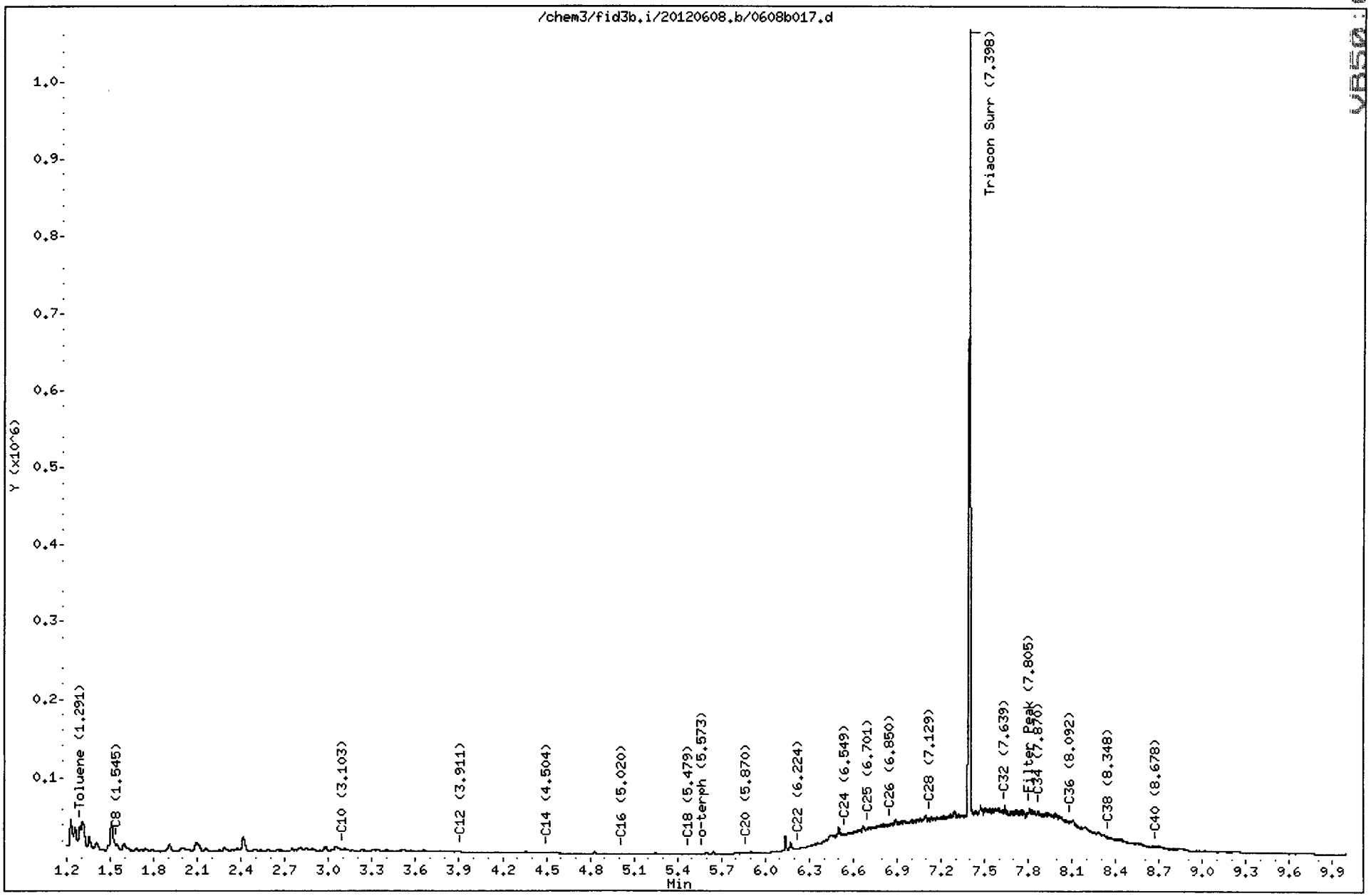
Sample Info: MOIL ICV

Instrument: fid3b.i

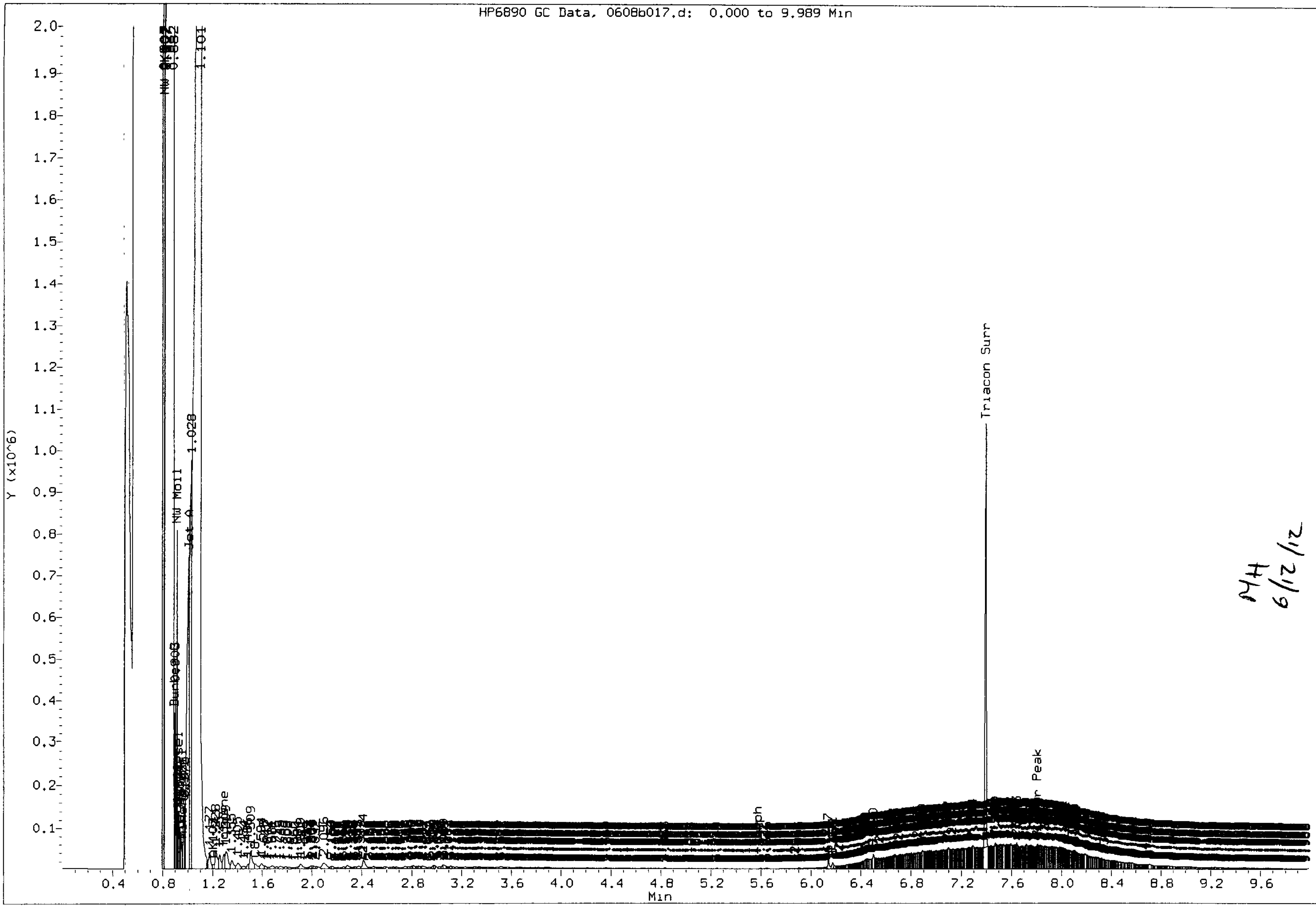
Operator: MH

Column phase: RTX-1

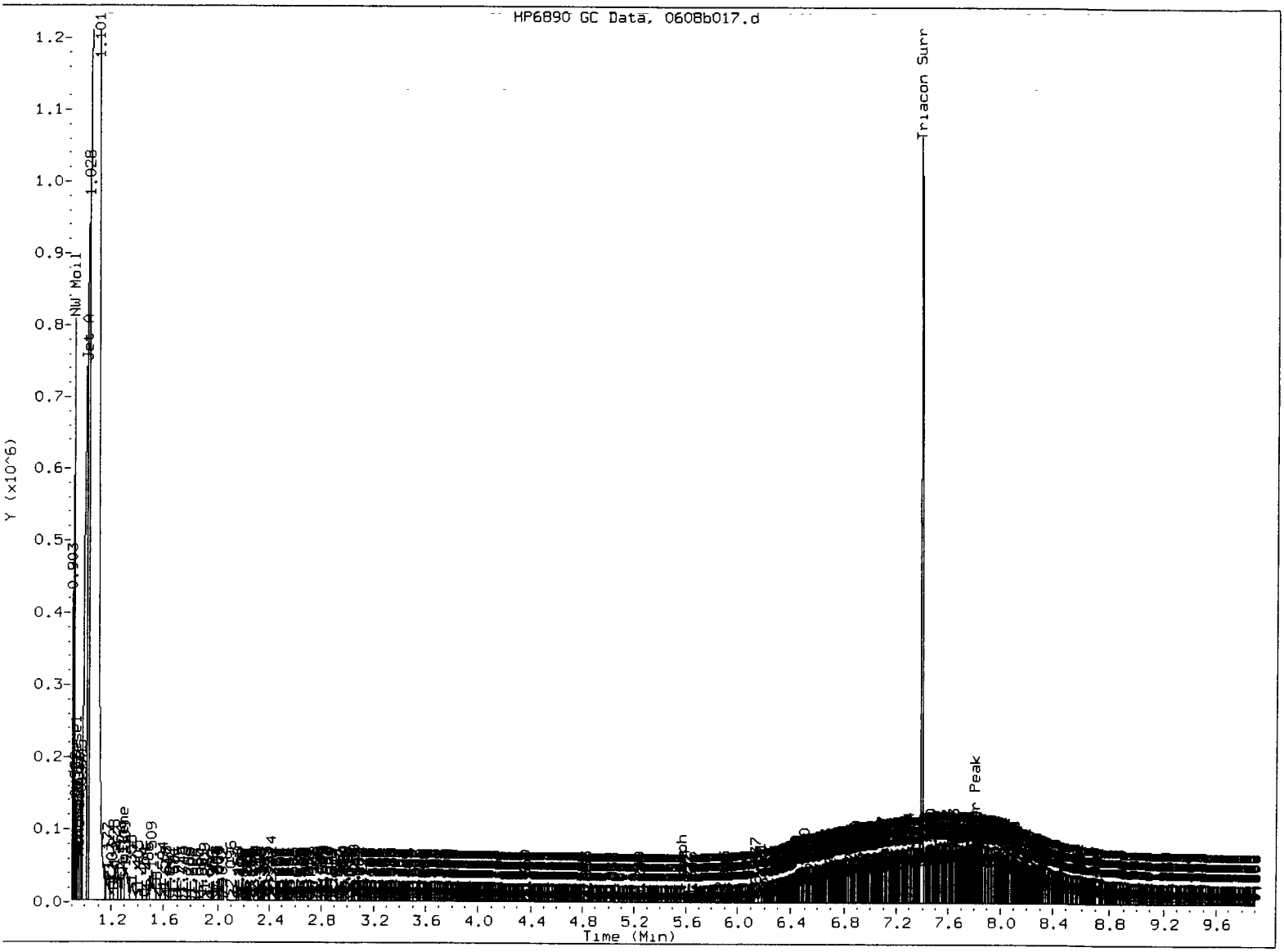
Column diameter: 0.25



Data File: /chem3/fid3b.i/20120608.b/0608b017.d
Injection Date: 08-JUN-2012 09:56
Instrument: fid3b.i
Client Sample ID: MOIL ICV



FID:3B-2C/RTX-1 MOIL ICV FID:3B SIGNAL



MANUAL INTEGRATION

X. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/12/12

VBSOA 12/19/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid3b.i/20120608.b/ftphfid3b.m
Batch File: /chem3/fid3b.i/20120608.b
Inst ID: fid3b.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	0608b011	0608b012	0608b013	0608b014	0608b015	0608b016
INJ.DATE	08-JUN-2012	08-JUN-2012	08-JUN-2012	08-JUN-2012	08-JUN-2012	08-JUN-2012
INJ TIME.	08.02	08 20	08:39	08 59	09.18	09.37

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	1 Toluene	1 282	1.286	1 286	1.282	1.280	1 291	1 287	1.187-1.387	1.285	0.004
	35 Mineral Oil	0 963	0 966	0 965	0.963	0.954	0.949	0.964	0.914-1.014	0.960	0.007
	2 C8	1 560	1 566	1 566	1.560	1 573	1 578	1 569	1.469-1.669	1 567	0.007
	3 C10	3.099	3.102	3.113	3 096	3 114	3 099	3 103	3 053-3.153	3 104	0 008
	4 C12	3.905	3.909	3 901	3 904	3 906	3.906	3 906	3 856-3.956	3 905	0 003
	5 C14	4.502	4 503	4 508	4 500	4.507	4 505	4.505	4 455-4 555	4 504	0.003
	6 C16	5.022	5.023	5 023	5.022	5 021	5 023	5.022	4.972-5.072	5 022	0.001
	7 C18	5.473	5.475	5.470	5.475	5.473	5 472	5.473	5 423-5.523	5 473	0.002
$	8 o-terph	5.568	5.564	5 577	5 573	5.570	5 566	5.570	5.520-5.620	5.570	0.005
	9 C20	5.869	5 867	5.865	5.867	5.867	5.865	5.868	5.818-5.918	5 867	0 002
	10 C22	6.221	6 222	6.222	6.225	6.223	6.223	6 224	6 174-6.274	6 223	0.001
	11 C24	6.547	6.548	6 548	6 548	6 549	6 548	6 549	6.499-6 599	6 548	0 001
	12 C25	6 704	6.702	6.704	6 702	6.704	6 704	6 703	6.653-6 753	6 703	0 001
	13 C26	6.845	6.849	6 853	6.853	6.849	6.849	6 849	6 799-6 899	6 850	0.003
	14 C28	7 128	7.129	7 130	7 129	7.129	7.130	7.130	7.080-7 180	7.129	0.001
$	15 Triacon Surr	7.394	7 396	7.402	7.408	7.424	7.446	7 397	7.347-7 447	7 412	0 020
	16 C32	7 636	7 640	7 637	7.637	7.639	7.641	7.638	7 588-7.688	7.638	0 002

Reviewer 1 MH Date: 6/12/12

Reviewer 2 [signature] Date: 6/14/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid3b.i/20120608.b/ftphfid3b.m
Batch File: /chem3/fid3b.i/20120608.b
Inst ID: fid3b.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
17 C34	7 871	7 868	7.868	7.869	7 873	7 866	7.870	7.820-7.920	7.869	0 002
18 Filter Peak	7 807	7 808	7.801	7 804	7 807	7 803	7.806	7.706-7 906	7.805	0 003
19 C36	8.087	8.092	8.092	8.089	8.090	8 090	8 091	8.041-8 141	8 090	0.002
20 C38	8.352	8 348	8.350	8.351	8 347	8.347	8 349	8 299-8.399	8 349	0.002
21 C40	8.682	8 683	8.676	8 681	8 674	8.678	8 679	8 629-8 729	8.679	0 004
29 NW Diesel	0 928	0 931	0 928	0 931	0 933	0 927	0.929	0 879-0 979	0.930	0.002
34 Jet A	1 013	1.019	1.003	1.016	1.020	1.016	1.018	0 968-1 068	1.014	0 006
30 NW Moil	0 912	0.905	0 913	0.906	0.908	0 911	0.910	0.860-0 960	0 909	0.003
31 NW AK102	0.818	0 813	0.823	0 817	0.813	0.815	0.817	0.767-0.867	0.816	0 004
32 Bunker C	0 893	0 896	0 894	0.896	0 889	0.891	0 892	0 842-0 942	0 893	0.003
33 AK103	1 220	1.211	1 211	1 219	1 212	1 212	1 212	1 162-1 262	1 214	0 004

Diesel/AK102
M.O:1

Analytical Resources, Incorporated
Analytical Chemists and Consultants

GC Initial Calibration Notes

ARI SOP: **403S**(PCB) **405S**(Herb) **407S**(TPH-D) **409S**(HCID) **412S**(PCP) **423S**(Pest)
427S(Dir Inj) **428S**(EPH) **Other**

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Curve Date(s): 6/12/12 Internal Standard ID N/A Expiration —

Endrin/DDT Breakdown <15%? YES / NO / NA ICV Exceeding ±20%? Diesel Mo:l/AK0 YES / NO

ICal Meets %RSD & r^2 Criteria YES / NO ICV Exceeding ±30%? YES / NO

Manual Integrations for ICal? YES / NO Linear Fits Used? YES / NO

Minimum Response S/N Met YES / NO Quadratic Fits Used? YES / NO

high surr points
Calibration Points Dropped? YES / NO

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
76	1972-1	9/28/12	Shell	1977-3	9/28/12
Chevron	1971-3	11/23/12	Valvoline	1977-1	9/11/23/12

Detail problems, corrective actions and/or other pertinent information below:
high point of Surr RT shifted due to saturation. high points dropped out.

Analyst: [signature] **Date:** 6/13/12

Reviewer: [signature] **Date:** 6/13/12

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: 20120612

Instrument: FID4A.I Project:

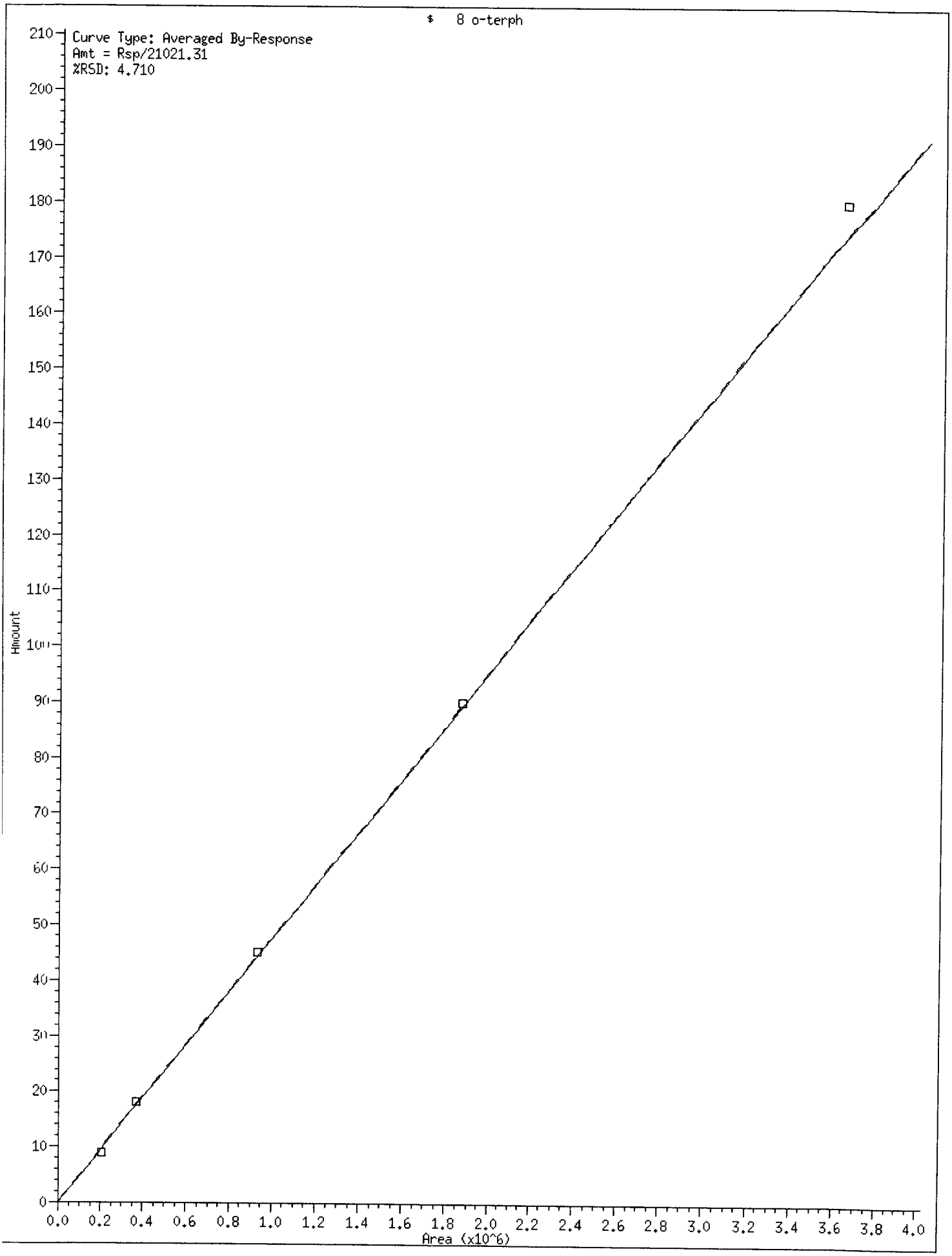
Calibration Date: 12-JUN-2012 SDG No.: 20120612

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	15022	15527	14852	14856	14449	15194	14983	2.4
AK Diesel	17772	18204	17525	17509	17030	17889	17655	2.3
OR Diesel	17905	18320	17622	17592	17109	17970	17753	2.3
Cal Diesel	17731	18159	17472	17455	16984	17840	17607	2.3
o-Terph	22764	20509	20691	20800	20342	*****	21021	4.7

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (4.130-7.608)
AK Diesel C10-C25 (3.244-7.853)
OR Diesel C10-C28 (3.244-8.551)
Cal Diesel C10-C24 (3.244-7.608)

Calibration Files	Analysis Time
0612a013.d	12-JUN-2012 14:29
0612a014.d	12-JUN-2012 14:51
0612a015.d	12-JUN-2012 15:12
0612a016.d	12-JUN-2012 15:34
0612a017.d	12-JUN-2012 15:55
0612a018.d	12-JUN-2012 16:17


$ 8 o-terph
Curve Type: Averaged By-Response
Amt = Rsp/21021.31
%RSD: 4.710
Amount
Area (x10^6)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
3.6
3.8
4.0

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2004 08:49
End Cal Date : 12-JUN-2012 18:49
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : Falcon
Method file : /chem3/fid4a.i/20120612.b/ftphfid4a.m
Cal Date : 13-Jun-2012 07:39 monicah
Curve Type : Average

Compound	0.000e+00 Level 1	0 000e+00 Level 2	0.000e+00 Level 3	0 000e+00 Level 4	0 000e+00 Level 5	0.000e+00 Level 6	0.000e+00 Level 7	0.000e+00 Level 8	0.000e+00 Level 9	0 000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	___ RRF	% RSD	
20 C38	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
21 C40	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
$ 8 o-terph	+++++	22764	20509	20691	20800	20342	+++++	+++++	+++++	+++++	+++++	+++++	21021	4.710	

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a011.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: RT
Client ID:
Injection: 12-JUN-2012 13:46
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.420	0.000	196178	147123	GAS (Tol-C12)	1277006	84.89
C8	1.701	0.000	134630	240315	DIESEL (C12-C24)	1595474	106.49
C10	3.247	0.000	168470	169632	M.OIL (C24-C38)	2079339	165.43
C12	4.131	0.000	225114	188032	AK-102 (C10-C25)	2116529	119.88
C14	4.806	0.000	345453	252288	AK-103 (C25-C36)	1778011	208.25
C16	5.392	0.000	466491	255175			
C18	5.959	0.000	416409	259366			
C20	6.528	0.000	367355	256728	JET-A (C10-C18)	1301339	87.68
C22	7.078	0.000	348896	252943	MIN.OIL (C24-C38)	2079339	154.70
C24	7.602	0.000	345162	257842			
C25	7.855	0.000	442814	345014			
C26	8.095	0.000	336502	260976			
C28	8.550	0.000	347793	261430			
C32	9.373	0.000	325401	269458			
C34	9.755	0.000	320319	281921			
Filter Peak	9.996	0.000	1003	2474	CREOSOT (C12-C22)	1322959	360.07
C36	10.128	0.000	348129	294051			
C38	10.491	0.000	288180	272964			
C40	10.846	0.000	251103	254646			
o-terph	6.103	0.000	1112209	885155			
Triacon Surr	8.983	0.000	805699	816325			

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	885155	42.1	93.6
Triacontane	816325	42.8	95.0

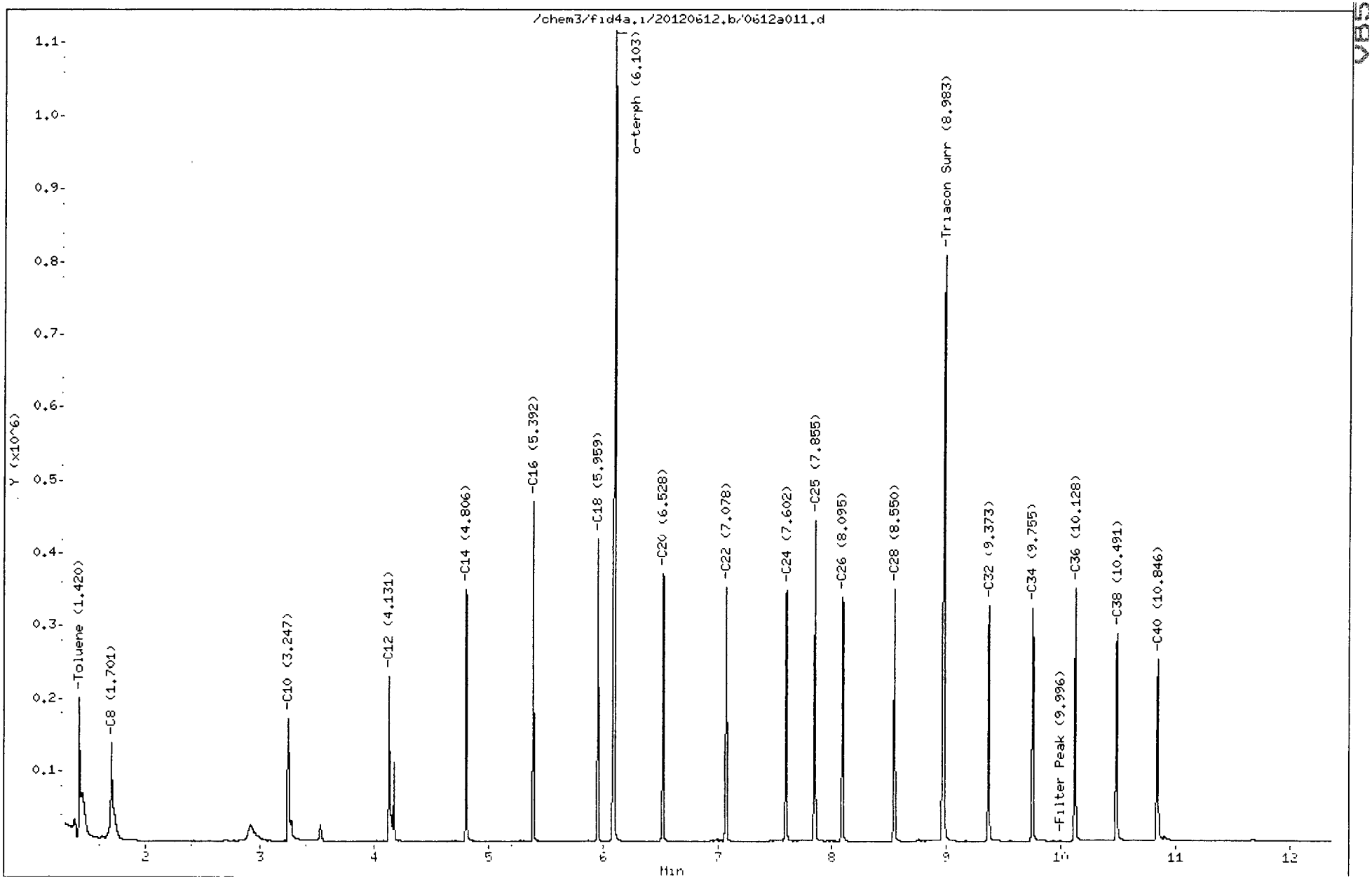
Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a011.d
Date : 12-JUN-2012 13:46
Client ID:
Sample Info: RT

Instrument: fid4a.i

Operator: MH
Column phase: RTX-1
Column diameter: 0.25

VBSG : 001 75



MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a012.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: IB
Client ID:
Injection: 12-JUN-2012 14:08
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.378	-0.041	88974	159635	GAS (Tol-C12)	251304	16.70
C8	1.704	0.003	2433	3908	DIESEL (C12-C24)	40309	2.69
C10	3.240	-0.007	385	236	M.OIL (C24-C38)	63207	5.03
C12	4.141	0.011	394	1283	AK-102 (C10-C25)	60758	3.44
C14	4.795	-0.011	286	517	AK-103 (C25-C36)	44459	5.21
C16	5.391	-0.001	392	839			
C18	5.955	-0.004	443	491			
C20	6.521	-0.007	386	471	JET-A (C10-C18)	44489	3.00
C22	7.072	-0.006	210	259	MIN.OIL (C24-C38)	63207	4.70
C24	7.611	0.009	88	85			
C25	7.843	-0.011	131	135			
C26	8.093	-0.003	103	132			
C28	8.545	-0.005	542	626			
C32	9.357	-0.016	702	1232			
C34	9.728	-0.027	707	1558			
Filter Peak	9.988	-0.008	870	1553	CREOSOT (C12-C22)	38972	10.61
C36	10.132	0.004	721	806			
C38	10.484	-0.007	1468	3685			
C40	10.850	0.005	1736	4080			
o-terph	6.103	0.000	1124617	911476			
Triacon Surr	8.981	-0.002	824217	855640			

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	911476	43.4	96.4
Triacontane	855640	44.8	99.6

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b.'0612a012.d

Date : 12-JUN-2012 14:08

Client ID:

Sample Info: IB

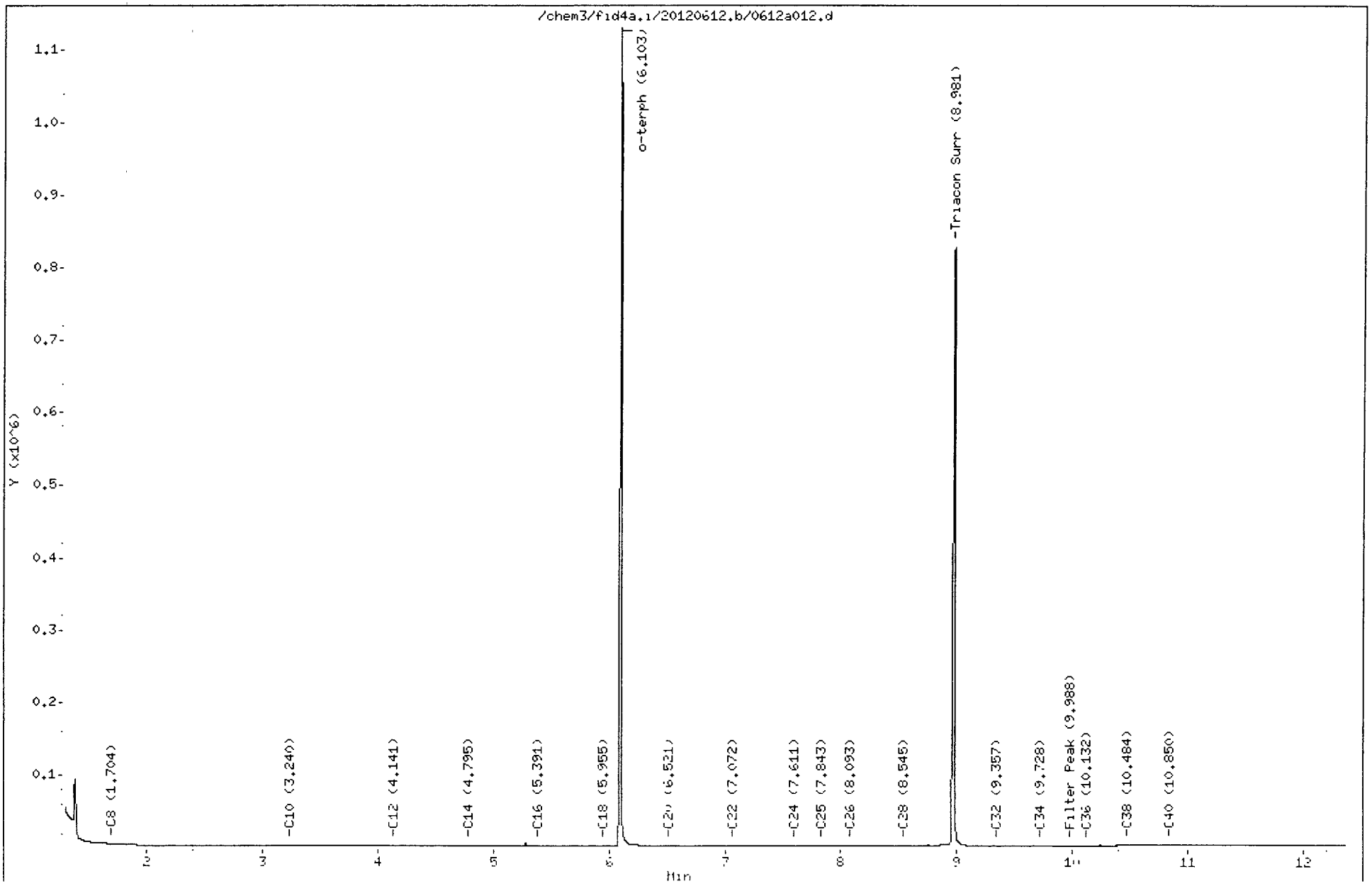
Column phase: PTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25

VR50:00181



MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a013.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: DIESEL 50
Client ID:
Injection: 12-JUN-2012 14:29
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.431	0.012	697	1015	GAS (Tol-C12)	204552	13.60
C8	1.710	0.009	556	1183	DIESEL (C12-C24)	751091	50.13
C10	3.248	0.001	4773	4219	M.OIL (C24-C38)	36901	2.94
C12	4.137	0.006	9439	8685	AK-102 (C10-C25)	888781	50.34
C14	4.809	0.002	14034	16888	AK-103 (C25-C36)	19996	2.34
C16	5.392	0.000	24545	20638			
C18	5.957	-0.002	21107	20901			
C20	6.531	0.004	9907	17947	JET-A (C10-C18)	690356	46.51
C22	7.092	0.014	3534	12352	MIN.OIL (C24-C38)	36901	2.75
C24	7.595	-0.007	510	383			
C25	7.849	-0.006	349	181			
C26	8.091	-0.005	145	89			
C28	8.527	-0.023	35	55			
C32	9.367	-0.006	84	69			
C34	9.761	0.006	225	104			
Filter Peak	9.989	-0.007	503	942	CREOSOT (C12-C22)	729481	198.54
C36	10.135	0.007	469	321			
C38	10.481	-0.010	982	2020			
C40	10.872	0.026	1622	5138			
o-terph	6.096	-0.006	232374	204880			
Triacon Surr	8.971	-0.011	32	27			

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	204880	9.7	21.7
Triacontane	27	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a013.d

Date : 12-JUN-2012 14:29

Client ID:

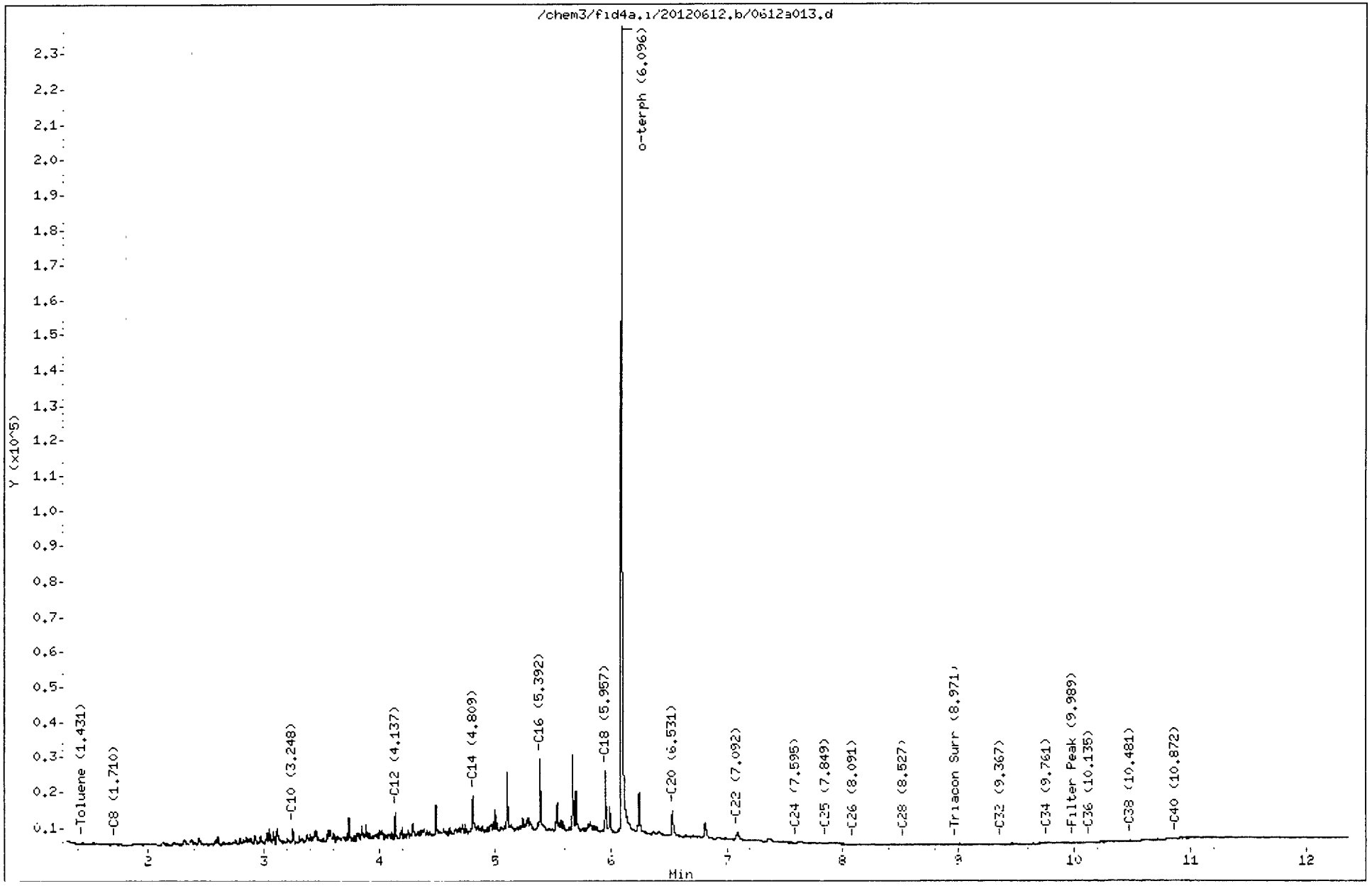
Sample Info: DIESEL 50

Column phase: RTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25



MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a014.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: DIESEL 100
Client ID:
Injection: 12-JUN-2012 14:51
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.435	0.016	917	1427	GAS (Tol-C12)	394838	26.25
C8	1.703	0.002	763	675	DIESEL (C12-C24)	1543957	103.05
C10	3.248	0.001	10030	8279	M.OIL (C24-C38)	42548	3.39
C12	4.132	0.002	21713	17289	AK-102 (C10-C25)	1820447	103.11 M
C14	4.805	-0.001	32420	27003	AK-103 (C25-C36)	24096	2.82
C16	5.391	-0.001	54620	41011			
C18	5.955	-0.003	45609	40994			
C20	6.526	-0.002	26800	33997	JET-A (C10-C18)	1359687	91.61
C22	7.084	0.006	9328	23055	MIN.OIL (C24-C38)	42548	3.17
C24	7.585	-0.017	940	455			
C25	7.851	-0.004	603	388			
C26	8.093	-0.002	266	146			
C28	8.540	-0.010	55	25			
C32	9.379	0.006	76	50			
C34	9.762	0.007	189	143			
Filter Peak	9.988	-0.009	497	905	CREOSOT (C12-C22)	1493472	406.48 M
C36	10.122	-0.006	419	206			
C38	10.482	-0.009	979	1702			
C40	10.856	0.011	1458	2644			
o-terph	6.097	-0.005	552642	369169			
Triacon Surr	8.973	-0.009	30	25			

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	369169	17.6	39.0
Triacontane	25	0.0	0.0

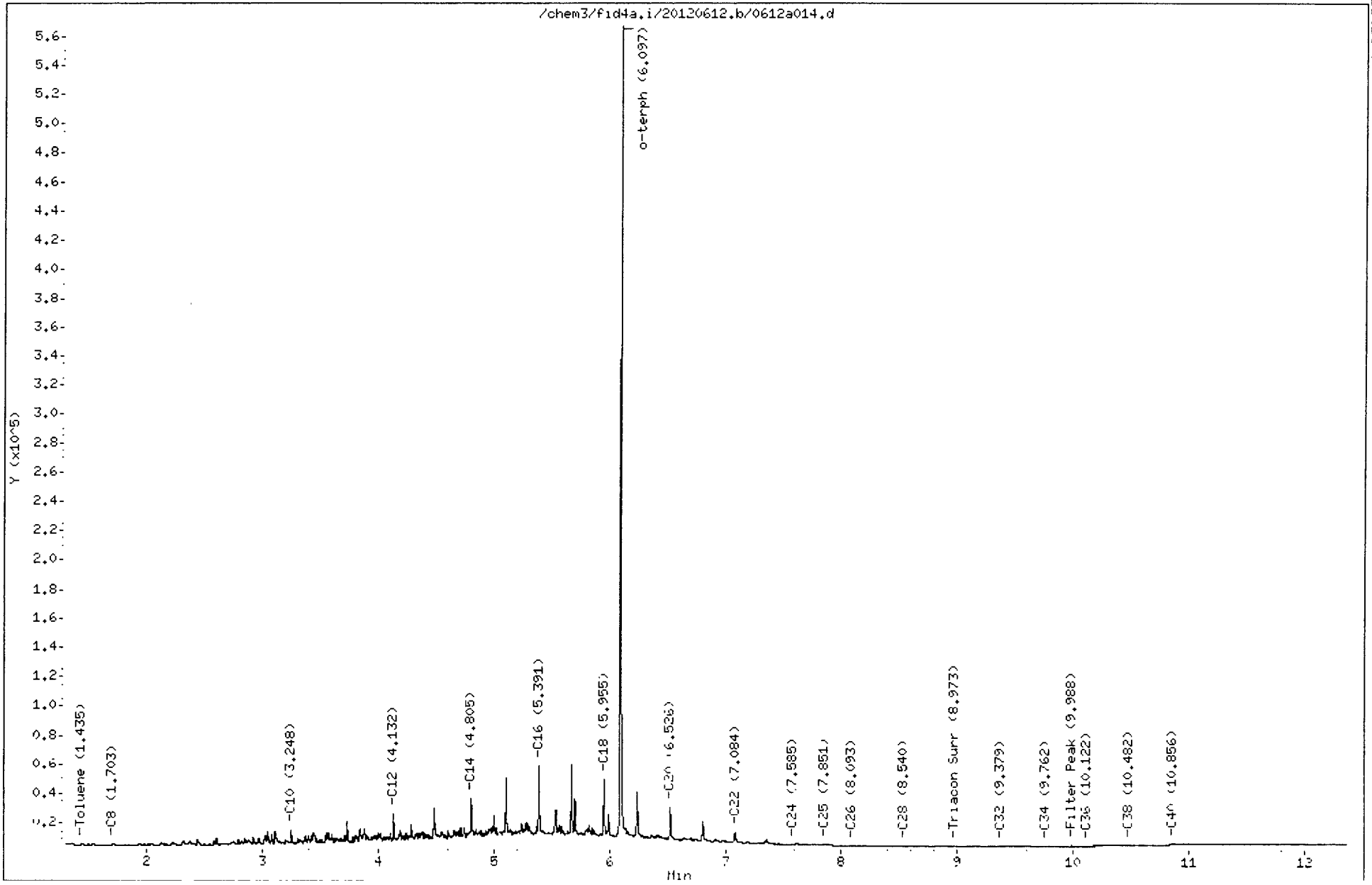
Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a014.d
Date : 12-JUN-2012 14:51
Client ID:
Sample Info: DIESEL 100

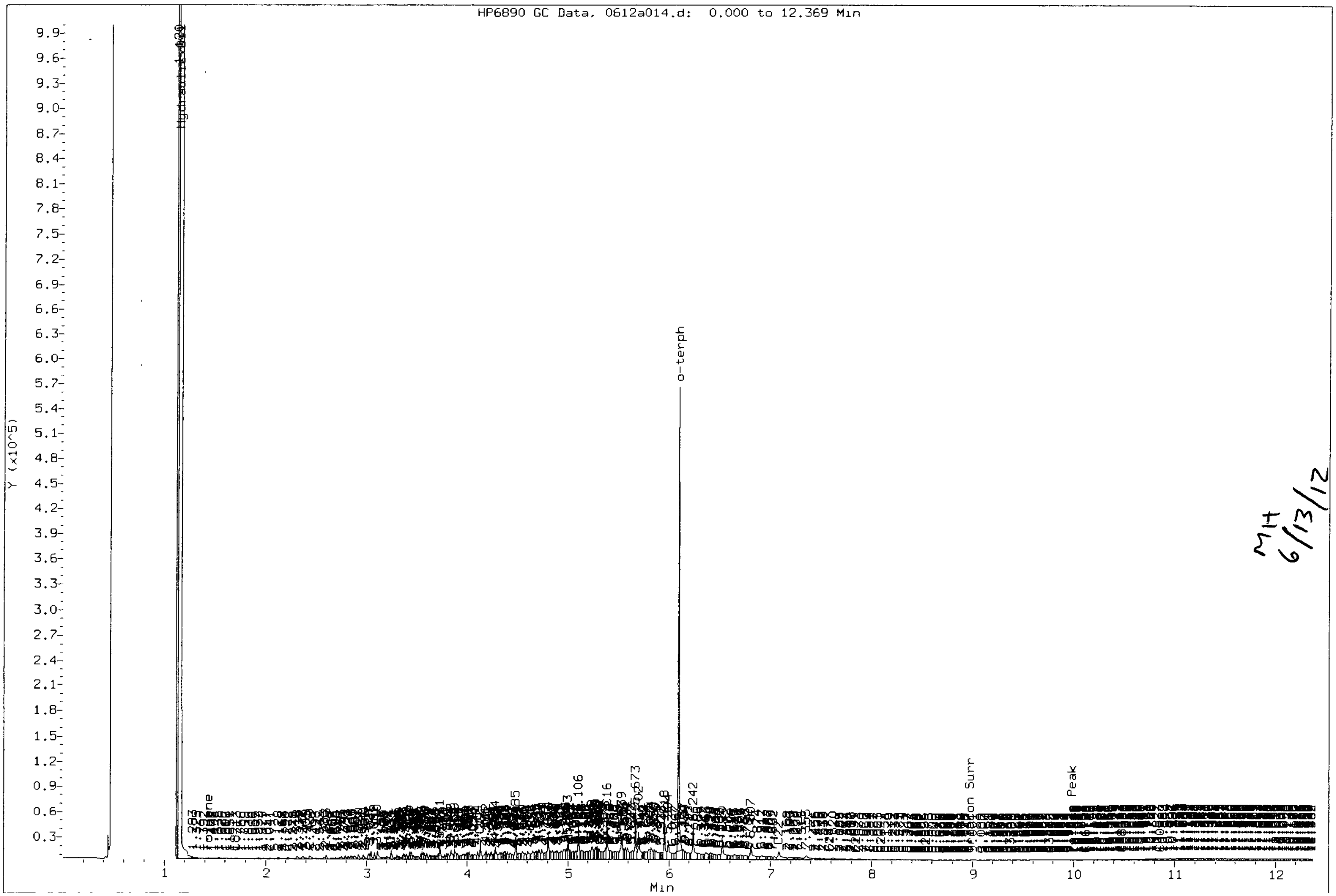
Instrument: fid4a.i

Operator: MH
Column phase: RTX-1
Column diameter: 0.25

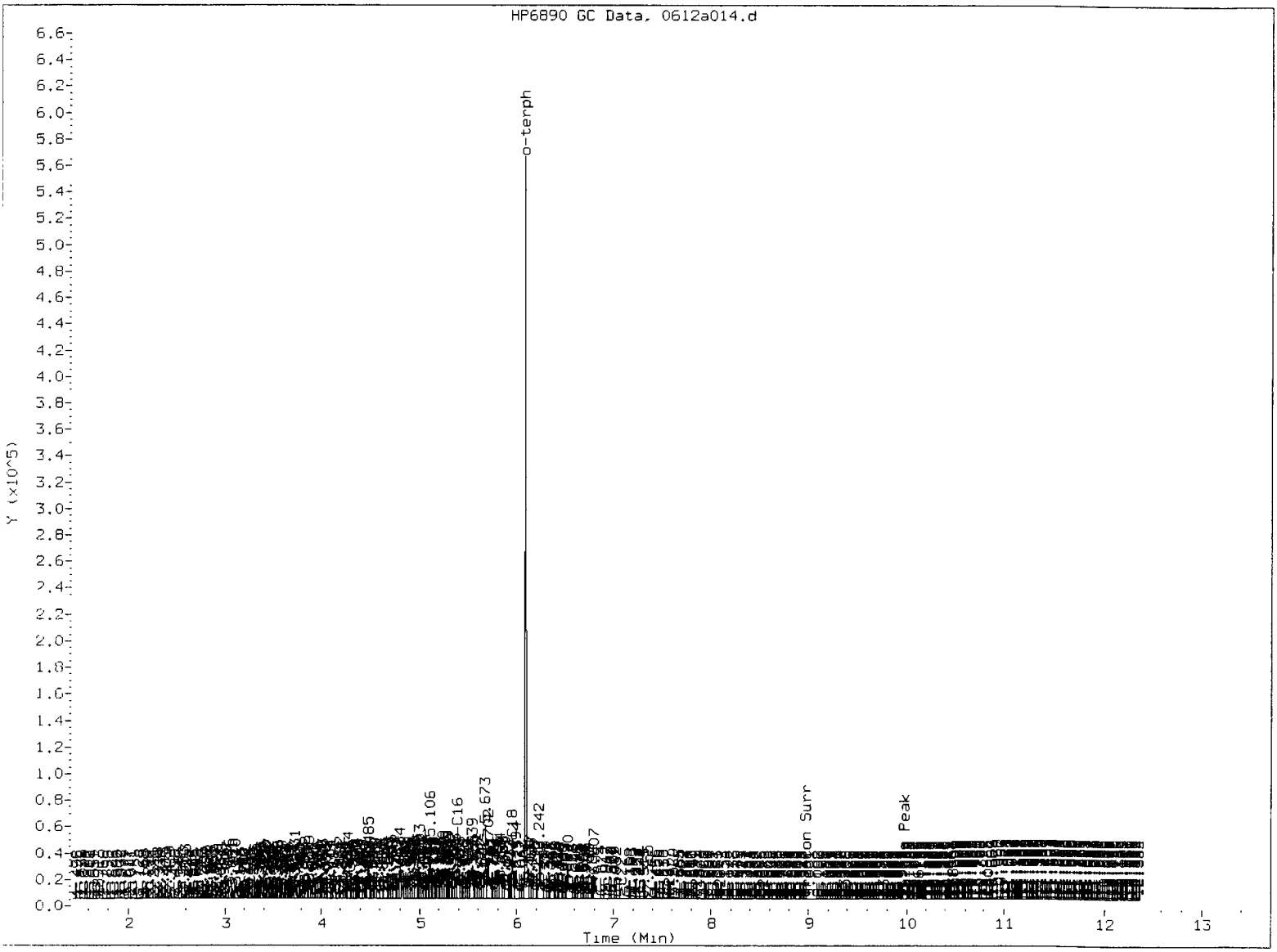
VB50 00185



Data File: /chem3/fid4a.i/20120612.b/0612a014.d
Injection Date: 12-JUN-2012 14:51
Instrument: fid4a.i
Client Sample ID:



FID:4A-2C/RTX-1 DIESEL 100 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a015.d ARI ID: DIESEL 250
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 12-JUN-2012 15:12
Operator: MH
Report Date: 06/13/2012 Dilution Factor: 1
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.400	-0.020	519	1200	GAS (Tol-C12)	936286	62.24	
C8	1.712	0.011	1665	1276	DIESEL (C12-C24)	3713066	247.82	
C10	3.246	-0.001	24861	20302	M.OIL (C24-C38)	60397	4.81	
C12	4.129	-0.002	58917	41935	AK-102 (C10-C25)	4381283	248.16	M
C14	4.803	-0.004	85753	66838	AK-103 (C25-C36)	33715	3.95	
C16	5.389	-0.003	132009	99137				
C18	5.956	-0.003	109623	99897				
C20	6.525	-0.003	70098	63423	JET-A (C10-C18)	3291041	221.74	
C22	7.077	-0.002	30515	40734	MIN.OIL (C24-C38)	60397	4.49	
C24	7.609	0.007	5580	13997				
C25	7.868	0.013	2387	8030				
C26	8.089	-0.006	586	261				
C28	8.550	0.000	108	59				
C32	9.379	0.006	47	20				
C34	9.764	0.009	159	114				
Filter Peak	9.984	-0.013	461	843	CREOSOT (C12-C22)	3586781	976.22	M
C36	10.143	0.015	378	666				
C38	10.479	-0.011	887	2443				
C40	10.860	0.015	1355	3014				
o-terph	6.105	0.002	1179898	931079				
Triacon Surr	8.991	0.009	759	1354				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	931079	44.3	98.4
Triacontane	1354	0.1	0.2

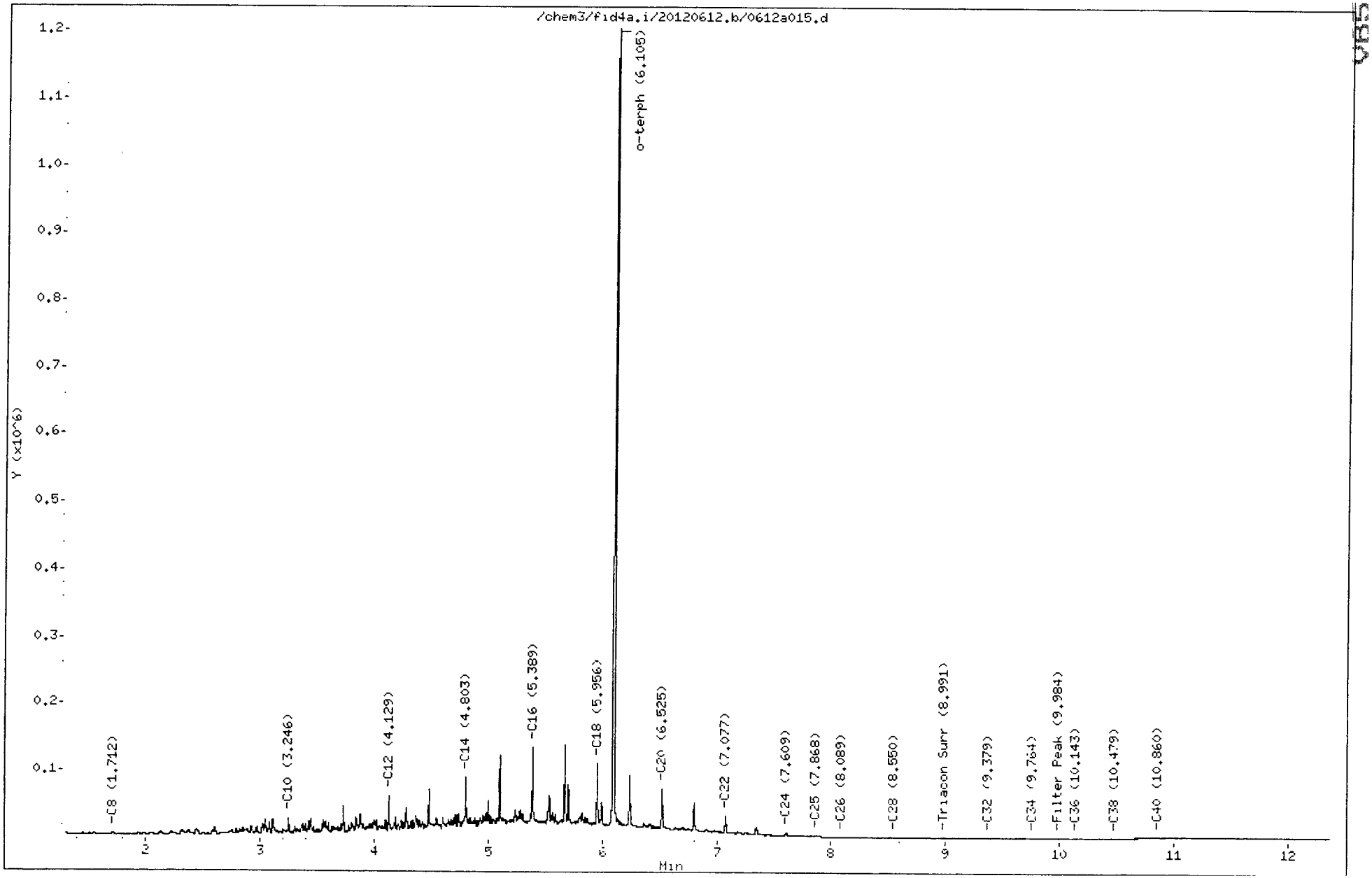
Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a015.d
Date : 12-JUN-2012 15:12
Client ID:
Sample Info: DIESEL 250

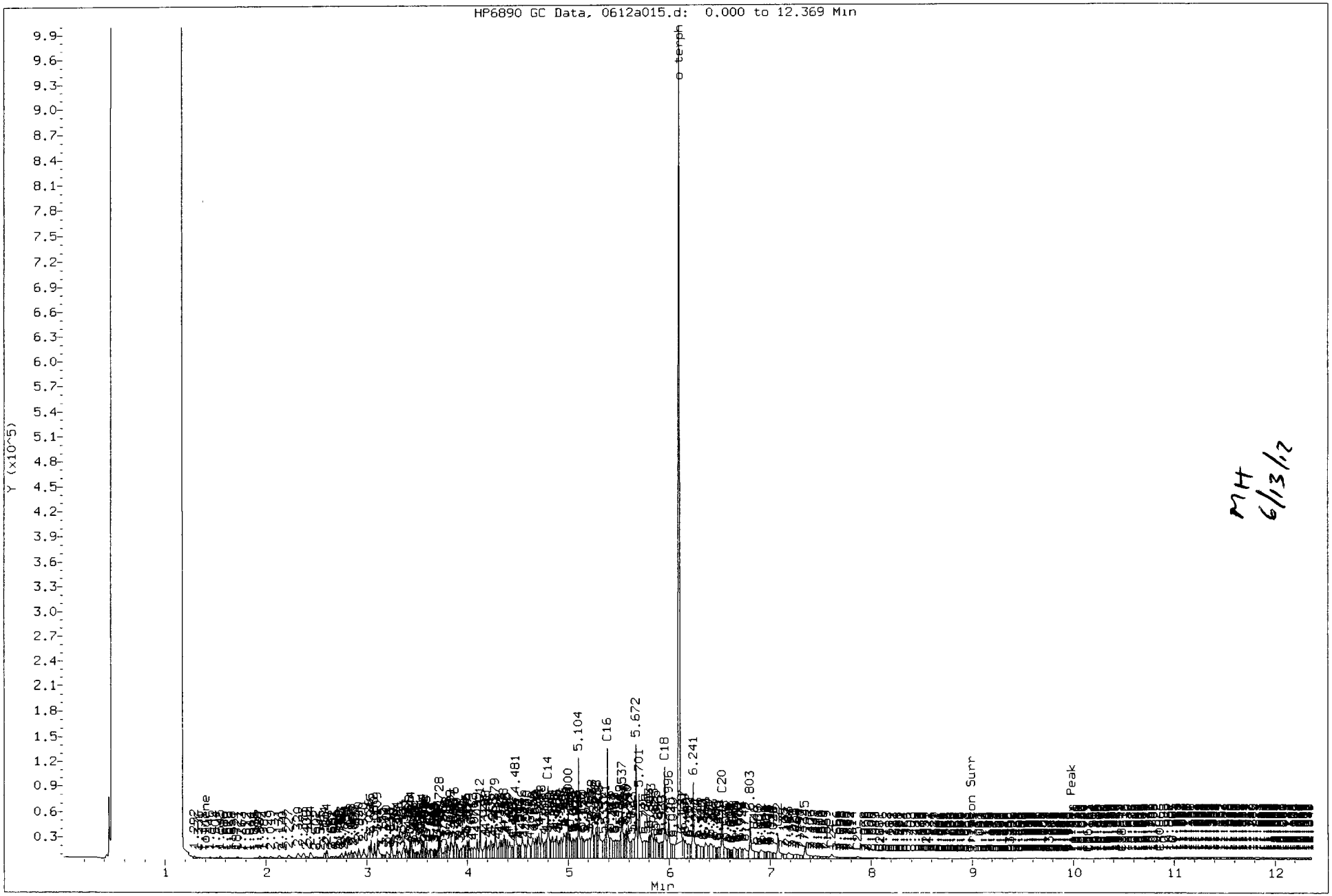
Column phase: RTX-1

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25



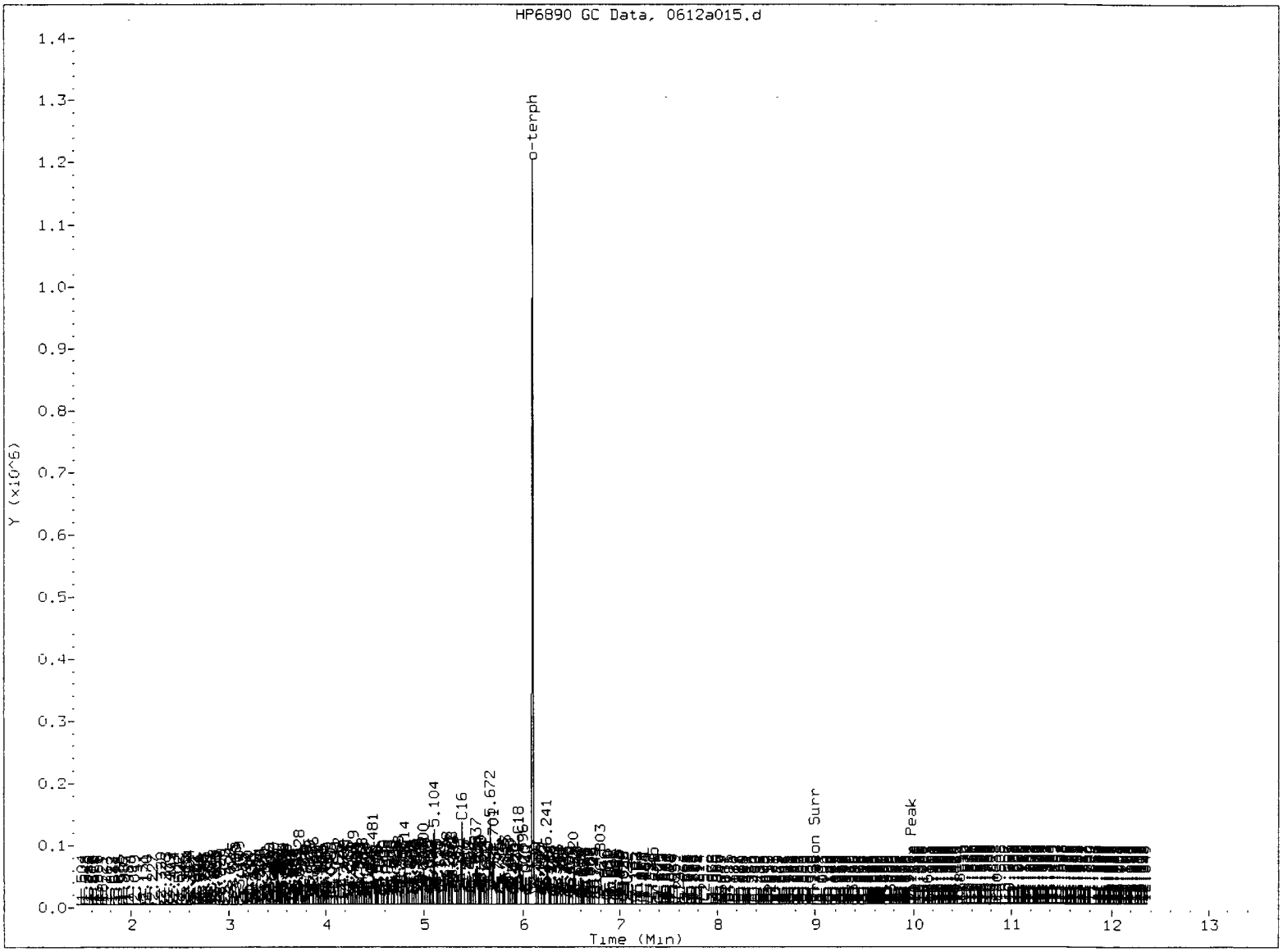
Data File: /chem3/fid4a.i/20120612.b/0612a015.d
Injection Date: 12-JUN-2012 15:12
Instrument: fid4a.i
Client Sample ID:



MH 6/13/12

VB50:061908

FID:4A-2C/RTX-1 DIESEL 250 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a016.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: DIESEL 500
Client ID:
Injection: 12-JUN-2012 15:34
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.404	-0.015	589	1329	GAS (Tol-C12)	1858496	123.54
C8	1.722	0.021	3339	5529	DIESEL (C12-C24)	7427910	495.76
C10	3.246	-0.001	48876	40873	M.OIL (C24-C38)	87764	6.98
C12	4.127	-0.004	117509	83614	AK-102 (C10-C25)	8754276	495.85 M
C14	4.802	-0.004	168951	125096	AK-103 (C25-C36)	50136	5.87
C16	5.391	-0.002	268605	197891			
C18	5.958	0.000	210081	188169			
C20	6.525	-0.003	144495	149628	JET-A (C10-C18)	6595182	444.36
C22	7.075	-0.003	67846	77242	MIN.OIL (C24-C38)	87764	6.53
C24	7.605	0.003	13169	25260			
C25	7.860	0.006	5097	14907			
C26	8.107	0.011	1898	7069			
C28	8.544	-0.006	220	98			
C32	9.377	0.004	27	18			
C34	9.765	0.010	118	45			
Filter Peak	10.001	0.005	441	620	CREOSOT (C12-C22)	7182838	1954.96 M
C36	10.129	0.001	305	206			
C38	10.490	-0.001	640	1041			
C40	10.843	-0.002	1162	714			
o-terph	6.114	0.011	1860705	1872023			
Triacon Surr	8.990	0.007	1593	2618			

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1872023	89.1	197.9
Triacontane	2618	0.1	0.3

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/f1d4a.1/20120612.b/0612a016.d

Date : 12-JUN-2012 15:34

Client ID:

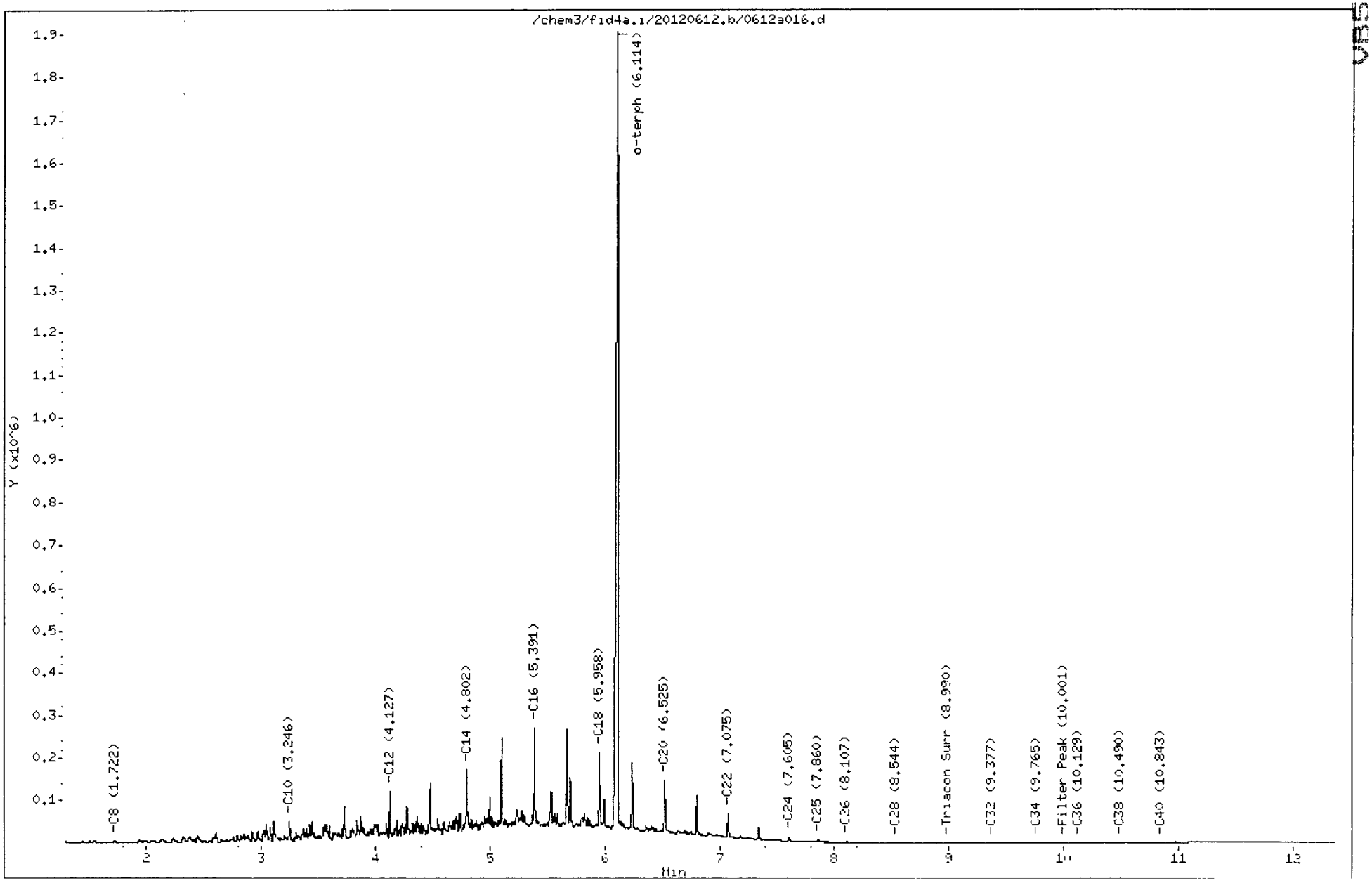
Sample Info: DIESEL 500

Instrument: f1d4a.1

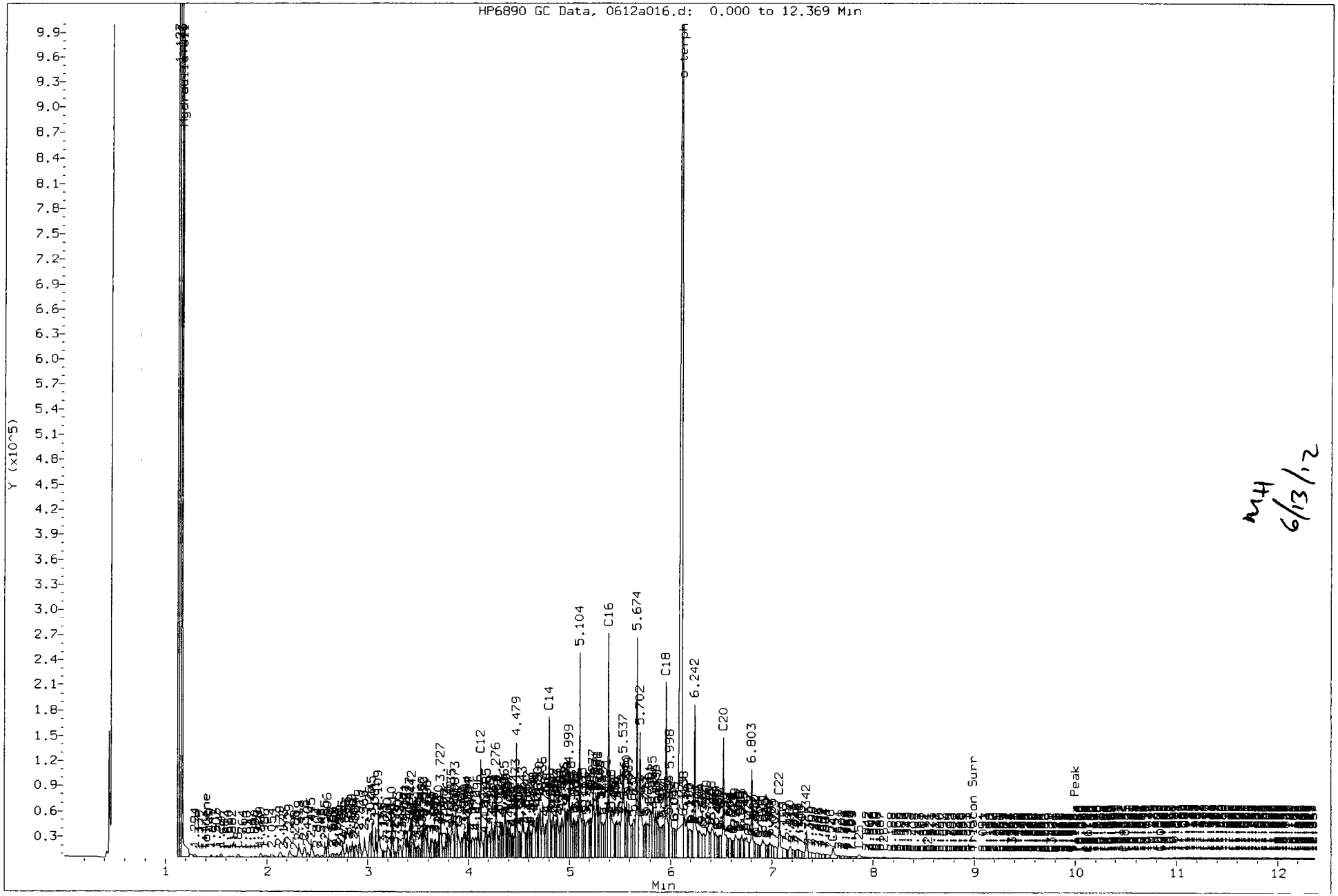
Operator: MH

Column phase: RTX-1

Column diameter: 0.25



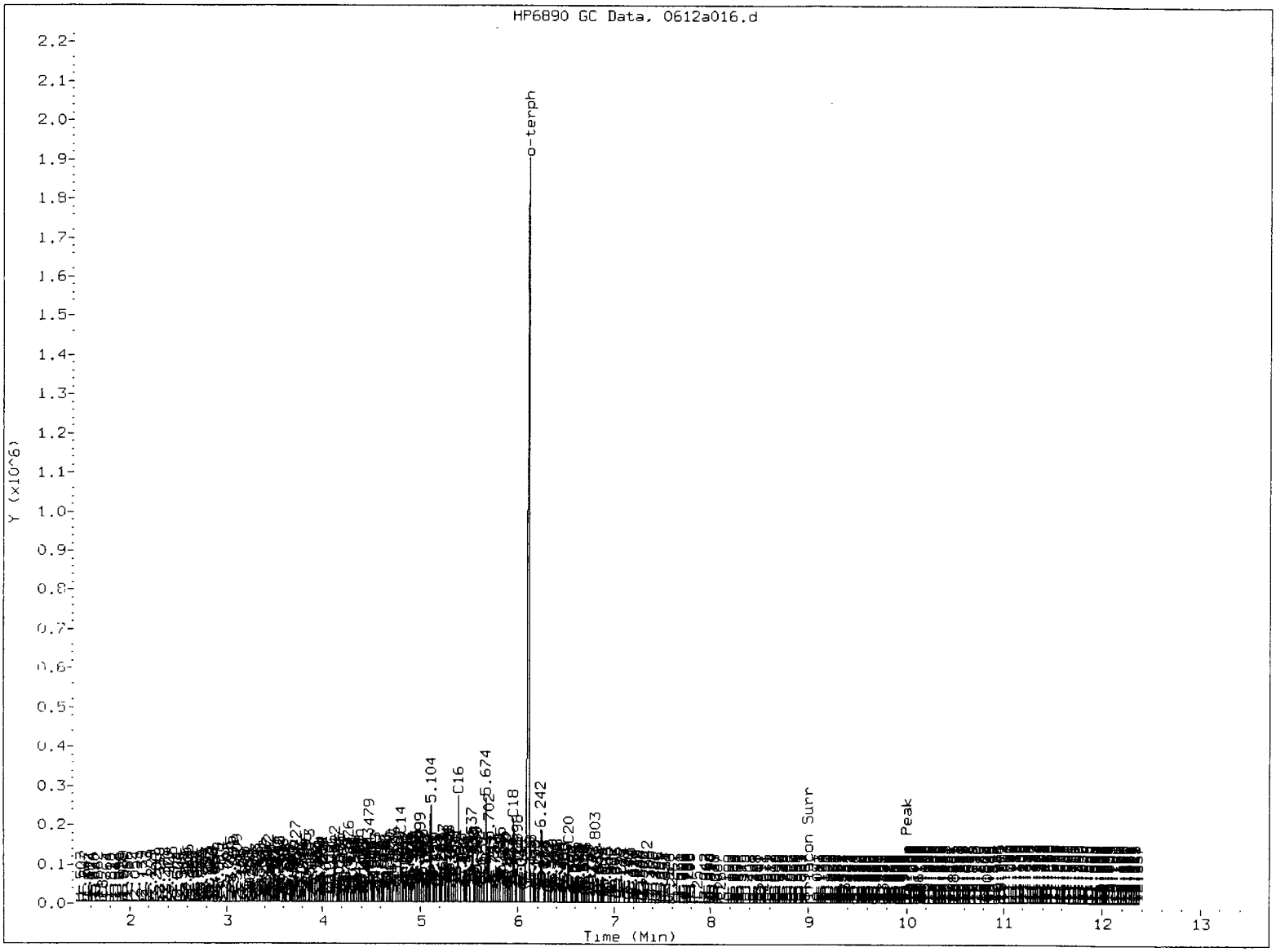
Data File: /chem3/fid4a.i/20120612.b/0612a016.d
Injection Date: 12-JUN-2012 15:34
Instrument: fid4a.i
Client Sample ID:



MH 6/13/12

VB50:001514

FID:4A-2C/RTX-1 DIESEL 500 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a017.d ARI ID: DIESEL 1000
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 12-JUN-2012 15:55
Operator: MH
Report Date: 06/13/2012 Dilution Factor: 1
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.411	-0.008	817	2063	GAS (Tol-C12)	3631861	241.42	
C8	1.721	0.020	5035	9762	DIESEL (C12-C24)	14449429	964.39	
C10	3.247	0.000	95542	91702	M.OIL (C24-C38)	146003	11.62	
C12	4.126	-0.004	222827	162807	AK-102 (C10-C25)	17030041	964.60	M
C14	4.803	-0.003	329805	255776	AK-103 (C25-C36)	88972	10.42	
C16	5.392	0.000	492330	385209				
C18	5.962	0.004	358429	379751				
C20	6.528	0.000	273694	300510	JET-A (C10-C18)	12874006	867.40	
C22	7.076	-0.003	142463	147522	MIN.OIL (C24-C38)	146003	10.86	
C24	7.600	-0.002	30927	41157				
C25	7.855	0.000	10877	25171				
C26	8.101	0.006	4100	10930				
C28	8.543	-0.007	454	231				
C32	9.358	-0.014	18	5				
C34	9.769	0.014	113	213				
Filter Peak	9.991	-0.005	612	856	CREOSOT (C12-C22)	13963936	3800.59	M
C36	10.129	0.001	293	187				
C38	10.485	-0.006	993	1955				
C40	10.851	0.005	1220	1622				
o-terph	6.127	0.024	2741142	3661524				
Triacon Surr	8.982	0.000	3356	5491				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	3661524	174.2	387.1
Triacontane	5491	0.3	0.6

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a017.d

Date : 12-JUN-2012 15:55

Client ID:

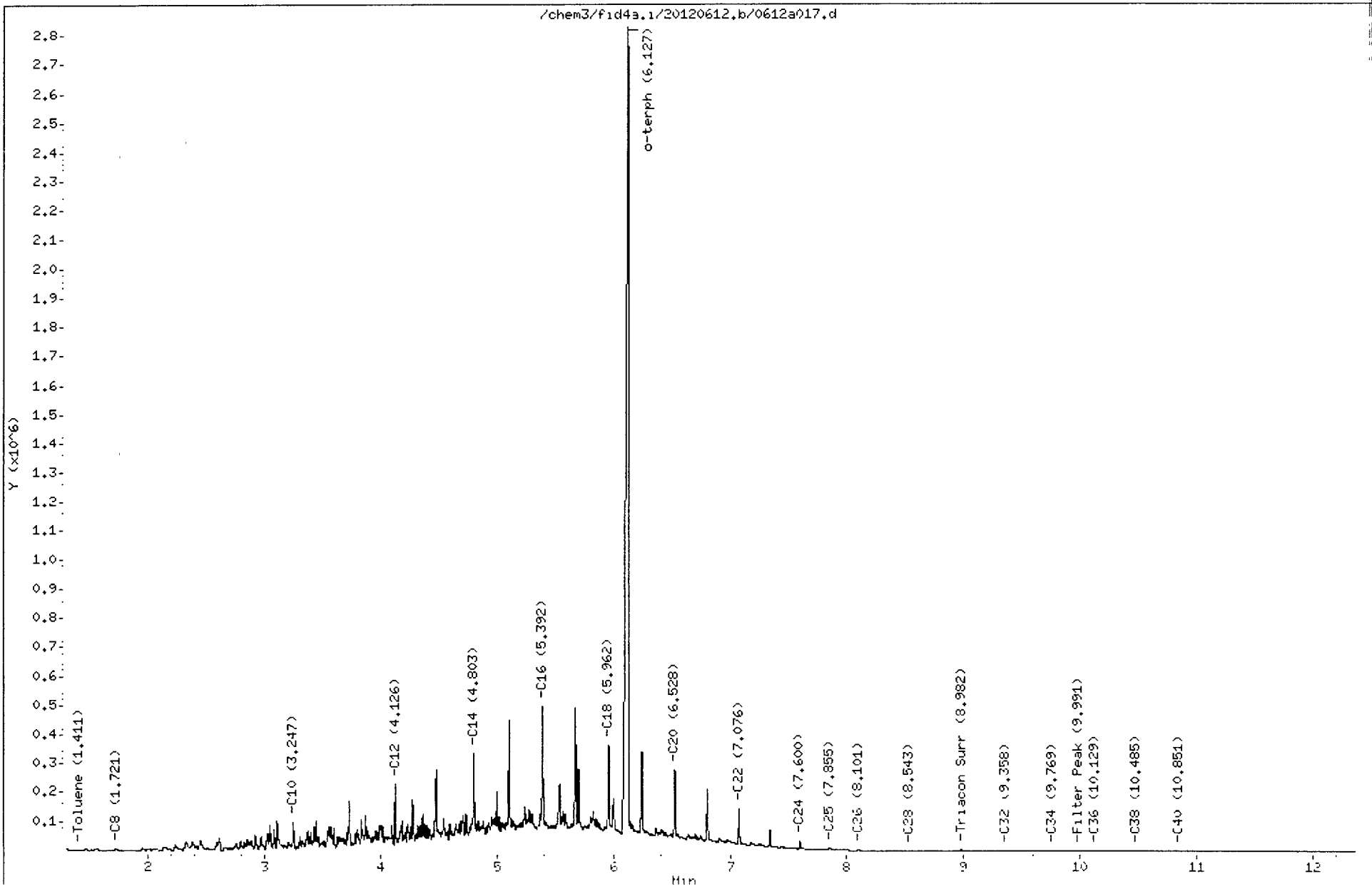
Sample Info: DIESEL 1000

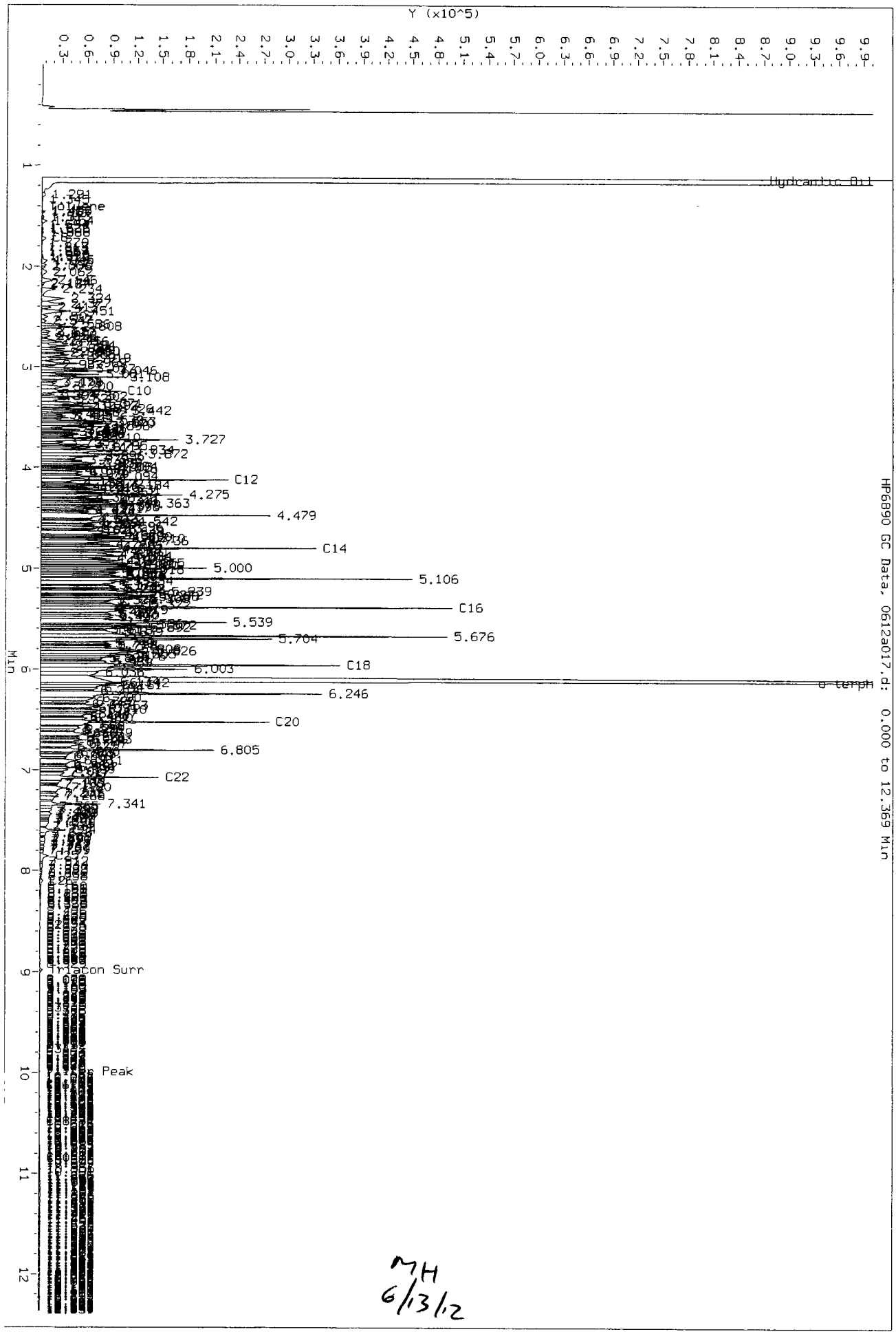
Column phase: RTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25



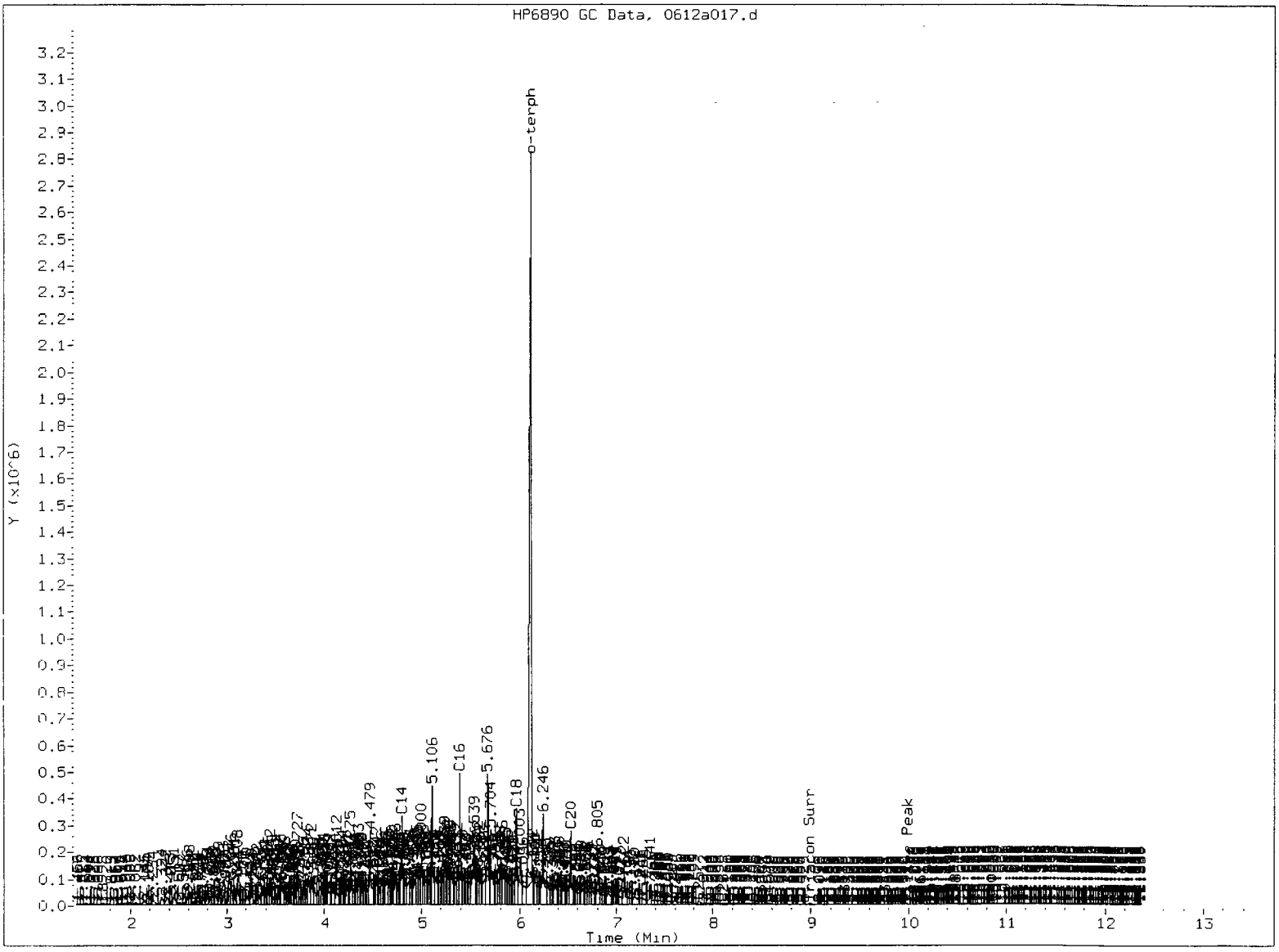


Data File: /chem3/fid4a.i/20120612.b/0612a017.d
Injection Date: 12-JUN-2012 15:55
Instrument: fid4a.i
Client Sample ID:

HP6890 GC Data, 0612a017.d: 0.000 to 12.369 Min

MH
6/13/12

FID:4A-2C/RTX-1 DIESEL 1000 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a018.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: DIESEL 2500
Client ID:
Injection: 12-JUN-2012 16:17
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.427	0.007	1322	1754	GAS (Tol-C12)	9533743	633.73
C8	1.686	-0.015	5218	6890	DIESEL (C12-C24)	37958657	2533.45
C10	3.256	0.009	232824	238496	M.OIL (C24-C38)	375749	29.89
C12	4.130	-0.001	530186	431435	AK-102 (C10-C25)	44722567	2533.14 M
C14	4.809	0.003	706350	1086066	AK-103 (C25-C36)	217462	25.47
C16	5.403	0.010	992280	1067197			
C18	5.940	-0.018	206096	105068			
C20	6.538	0.010	621210	673442	JET-A (C10-C18)	32802253	2210.10
C22	7.082	0.004	348182	340196	MIN.OIL (C24-C38)	375749	27.96
C24	7.601	-0.001	94149	90114			
C25	7.851	-0.004	36714	68688			
C26	8.095	-0.001	13164	23105			
C28	8.556	0.006	1900	2452			
C32	9.379	0.007	118	143			
C34	9.754	-0.002	94	126			
Filter Peak	9.980	-0.016	829	957	CREOSOT (C12-C22)	36703146	9989.55 M
C36	10.140	0.012	217	123			
C38	10.501	0.011	550	172			
C40	10.837	-0.009	1107	1568			
o-terph	6.156	0.053	4550796	9700401			
Triacon Surr	8.973	-0.010	11262	14908			

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	9700401	461.5	1025.5
Triacontane	14908	0.8	1.7

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a018.d

Date : 12-JUN-2012 16:17

Client ID:

Sample Info: DIESEL 2500

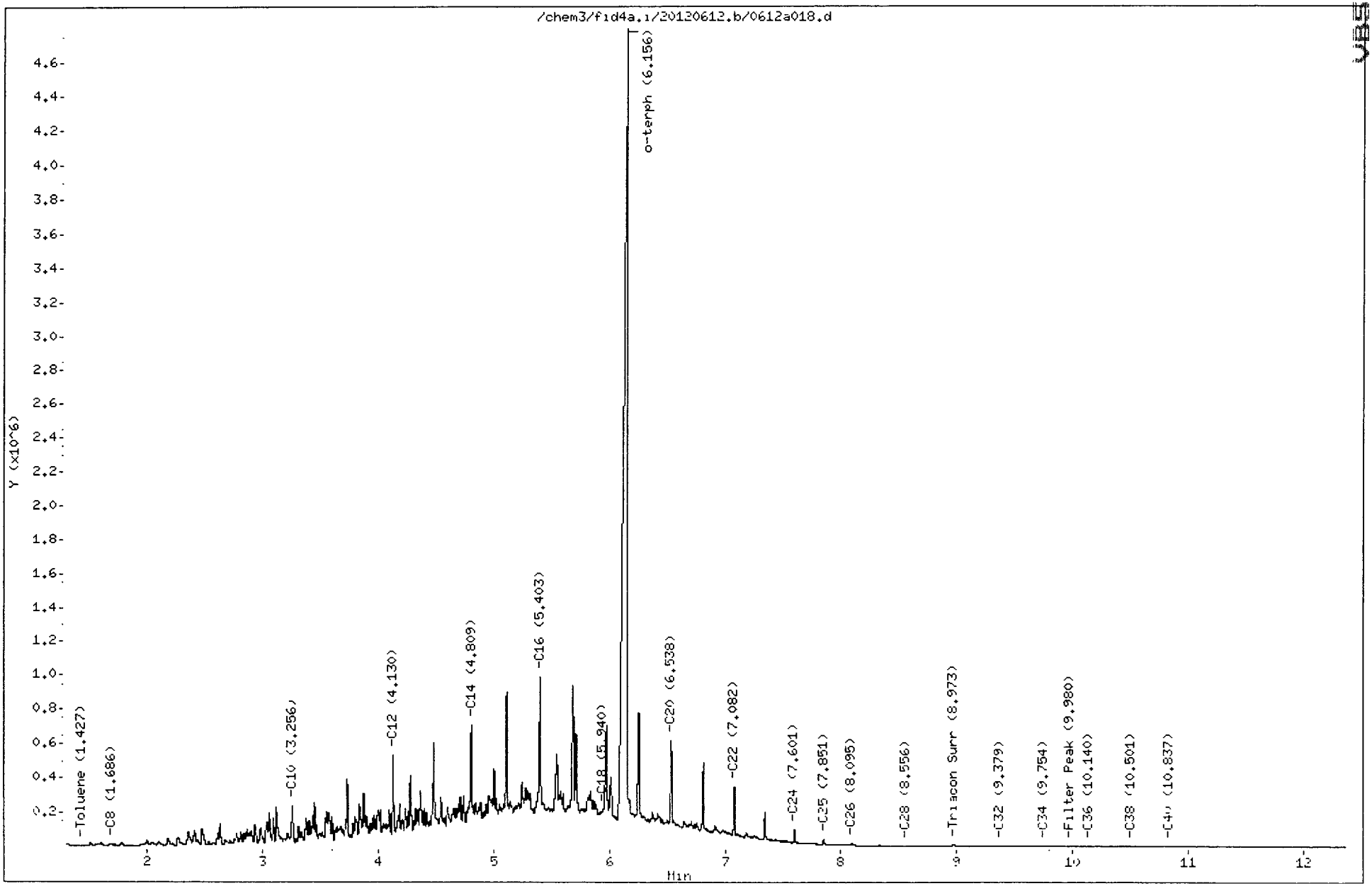
Column phase: RTX-1

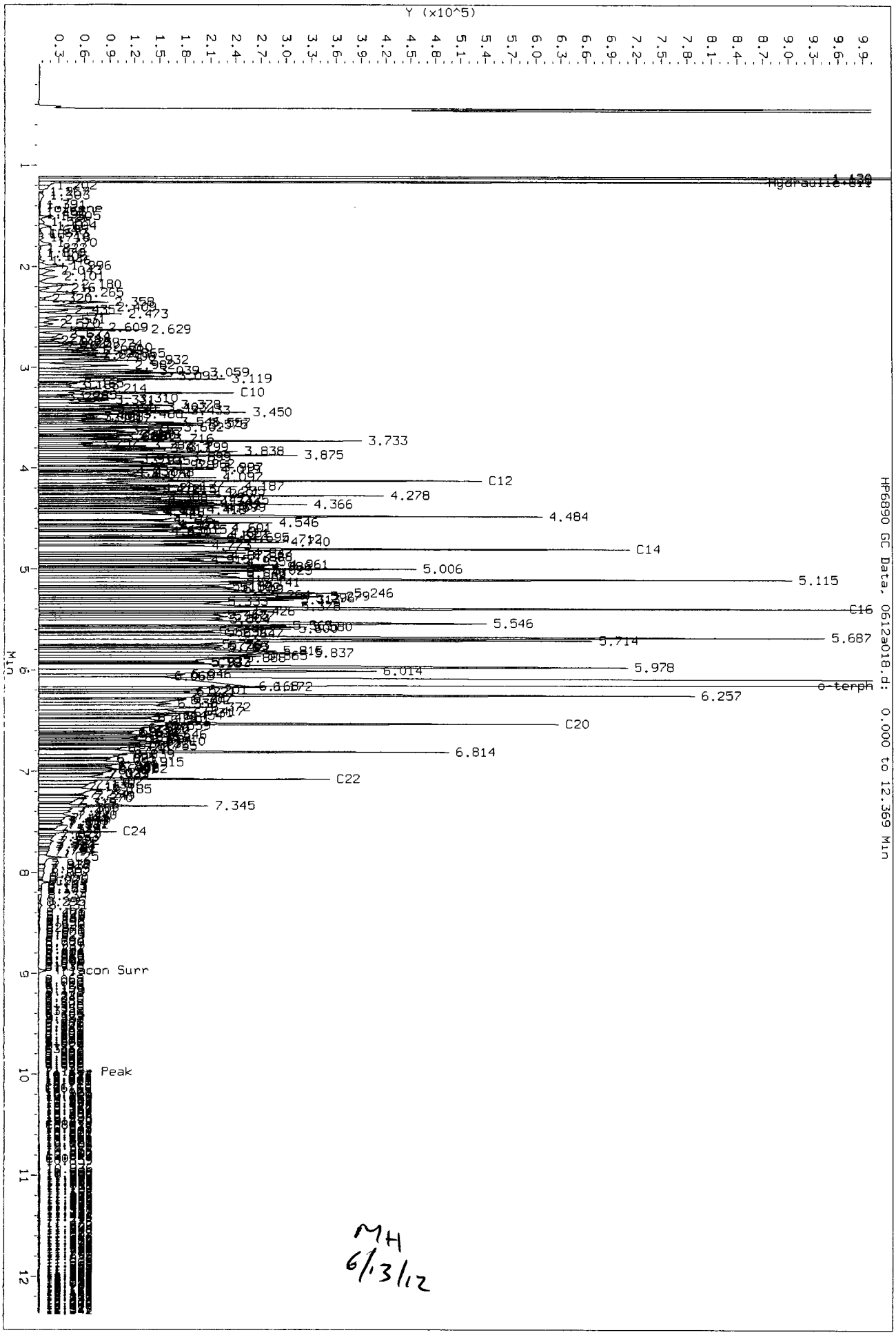
Instrument: fid4a.i

Operator: MH

Column diameter: 0.25

VBS0:00201

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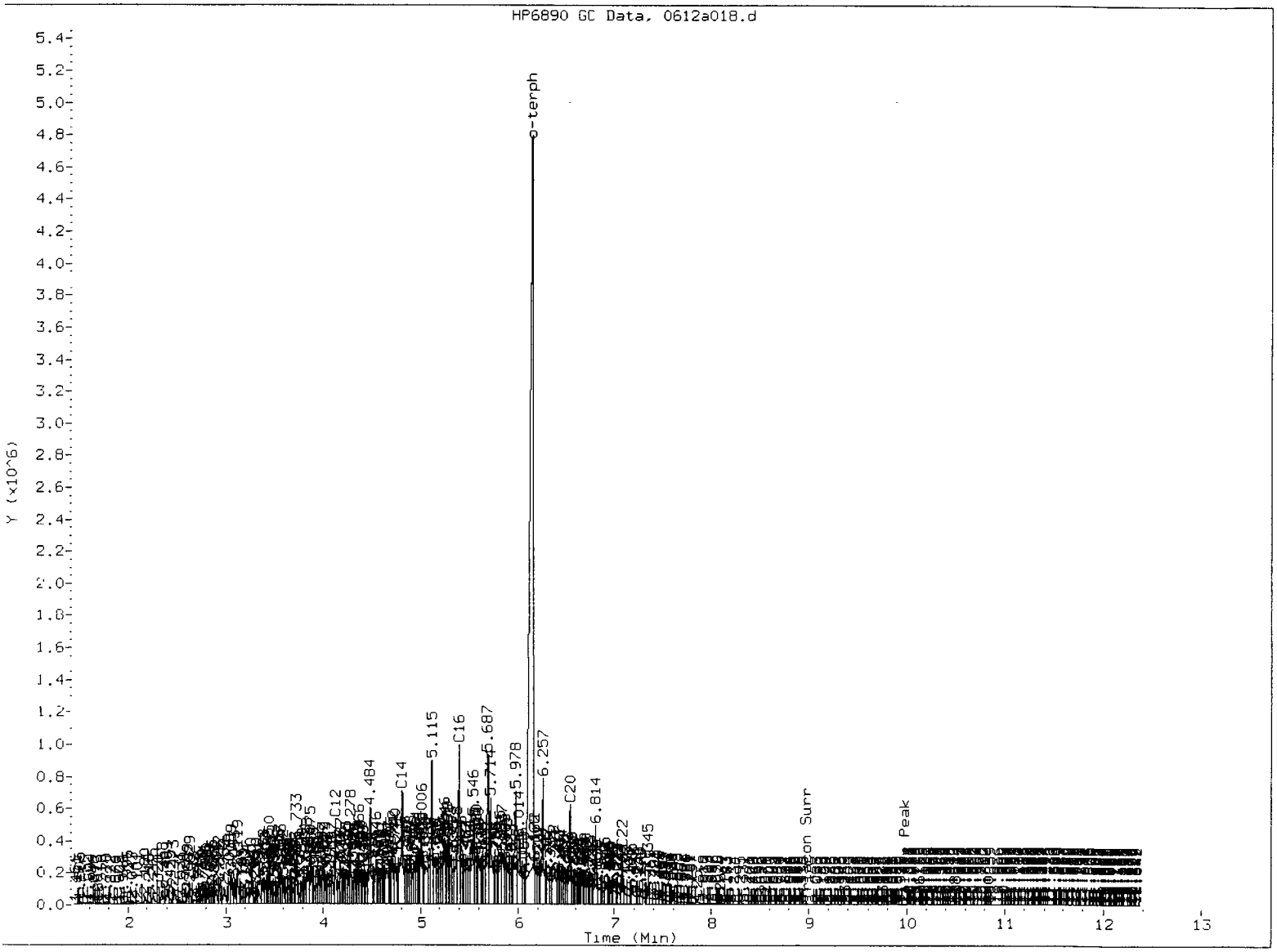
Data File: /chem3/fid4a.i/20120612.b/0612a018.d
Injection Date: 12-JUN-2012 16:17
Instrument: fid4a.i
Client Sample ID:
HP6890 GC Data, 0612a018.d: 0.000 to 12.369 Min
Min
Hydraulic Oil
C10
3.450
3.733
3.875
C12
4.278
4.366
4.484
4.546
C14
5.006
5.115
C16
5.546
5.687
5.714
5.837
5.978
6.014
o-terph
6.257
C20
6.814
C22
7.345
C24
Recon Surr
Peak

MH
6/13/12

FID:4A-2C/RTX-1 DIESEL 2500 FID:4A SIGNAL



MANUAL INTEGRATION

X Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a019.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: DIESEL ICV
Client ID:
Injection: 12-JUN-2012 16:39

Dilution Factor: 1

6/13/12

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.423	0.004	1339	1160	GAS (Tol-C12)	1054773	70.11	
C8	1.702	0.001	2216	4140	DIESEL (C12-C24)	2818632	188.12	75.25%
C10	3.246	-0.001	41498	40772	M.OIL (C24-C38)	51866	4.13	
C12	4.128	-0.002	79163	50474	AK-102 (C10-C25)	3628975	205.55	M 82.27%
C14	4.803	-0.003	79651	83683	AK-103 (C25-C36)	31971	3.74	
C16	5.390	-0.002	88370	75257				
C18	5.955	-0.003	63047	57084				
C20	6.523	-0.005	37900	39307	JET-A (C10-C18)	2853247	192.24	
C22	7.079	0.000	12619	24952	MIN.OIL (C24-C38)	51866	3.86	
C24	7.615	0.013	3453	8827				
C25	7.868	0.014	1995	5117				
C26	8.089	-0.007	482	122				
C28	8.551	0.001	111	81				
C32	9.380	0.007	68	125				
C34	9.766	0.011	158	241				
Filter Peak	9.993	-0.003	279	59	CREOSOT (C12-C22)	2751290	748.82	M
C36	10.124	-0.004	377	234				
C38	10.510	0.020	839	2262				
C40	10.844	-0.002	1443	1518				
o-terph	6.103	0.000	1036131	743827				
Triacon Surr	8.987	0.005	481	826				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	743827	35.4	78.6
Triacontane	826	0.0	0.1

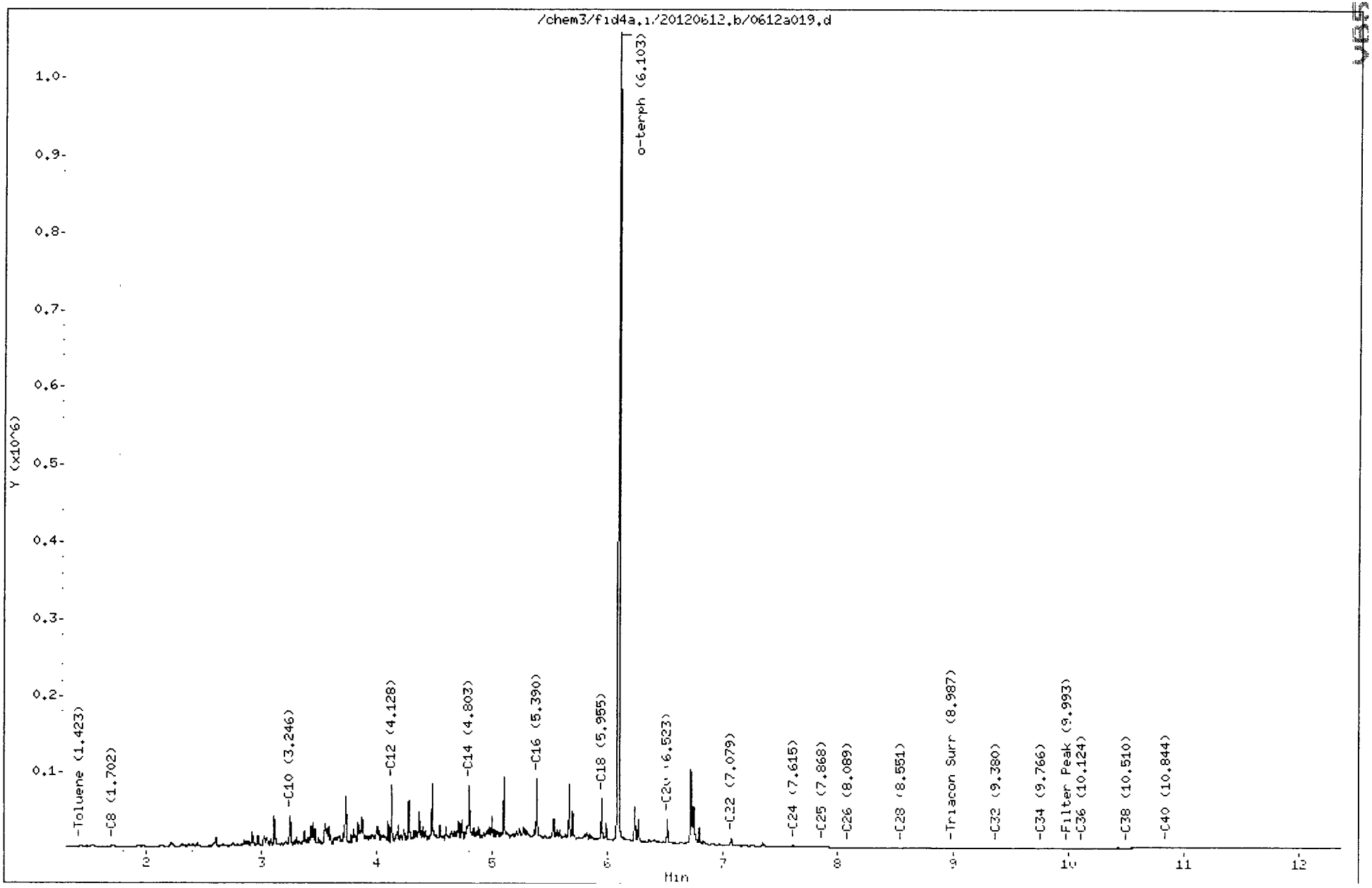
Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a019.d
Date : 12-JUN-2012 16:39
Client ID:
Sample Info: DIESEL ICV

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: PTX-1



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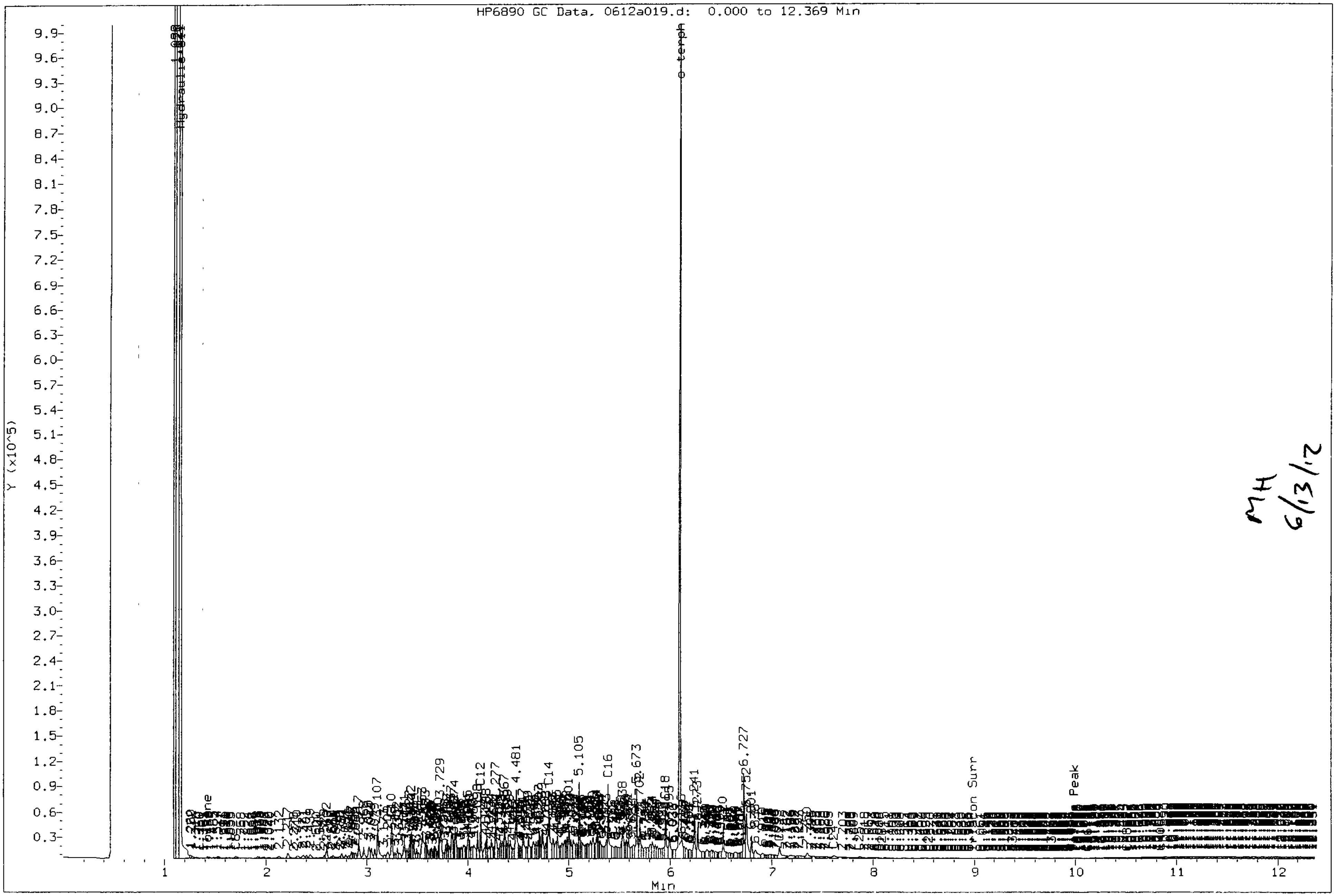
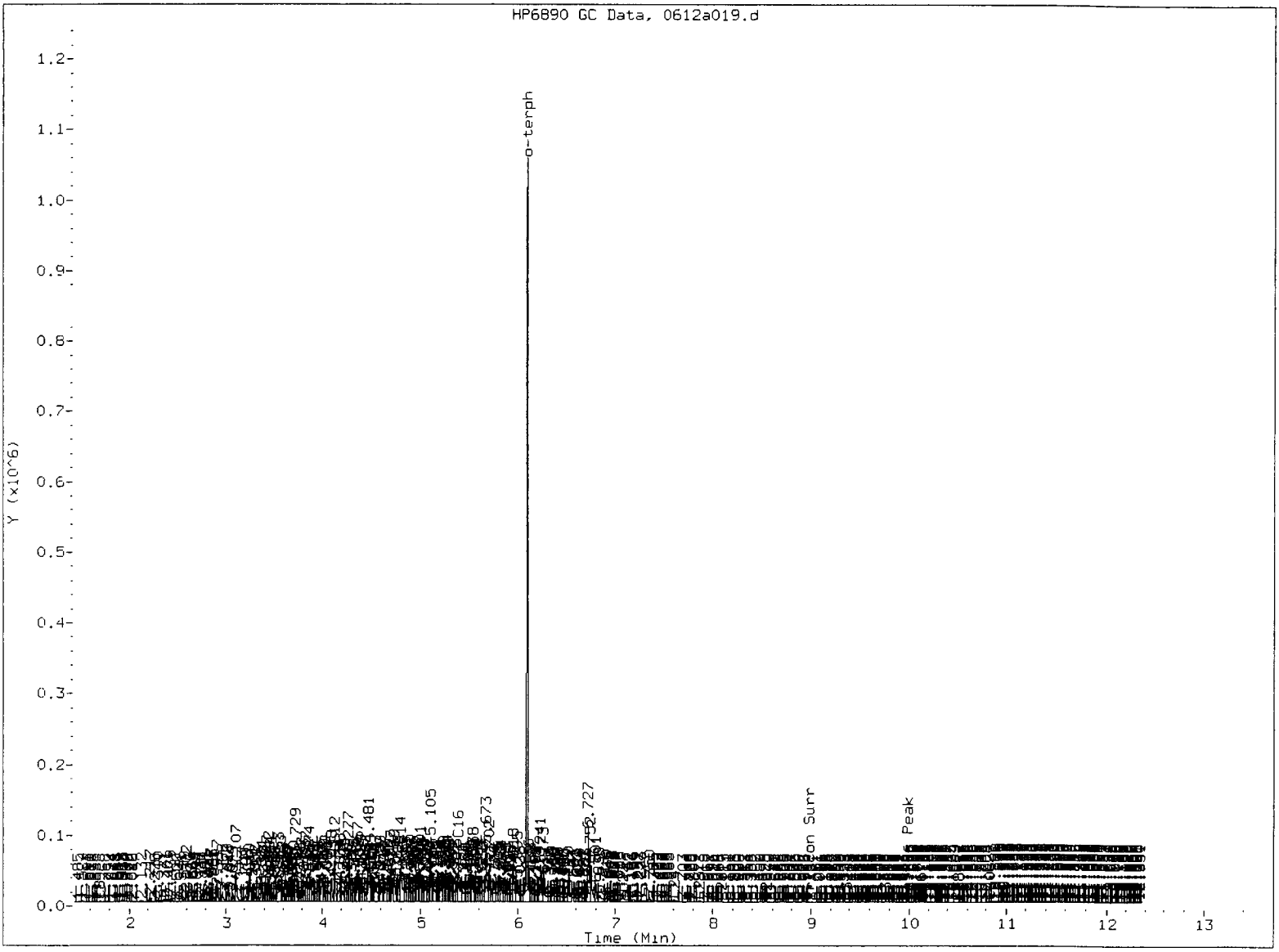
Injection Date: 12-JUN-2012 16:39
Instrument: fid4a.i
Client Sample ID:



MH
6/13/12

VB50:00206

FID:4A-2C/RTX-1 DIESEL ICV FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20120612.b
Inst ID: fid4a.i

ID	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME.	0612a013	0612a014	0612a015	0612a016	0612a017	0612a018
INJ.DATE:	12-JUN-2012	12-JUN-2012	12-JUN-2012	12-JUN-2012	12-JUN-2012	12-JUN-2012
INJ.TIME:	14 29	14:51	15·12	15:34	15.55	16·17

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	1 Toluene	1.431	1.435	1.400	1 404	1.411	1.427	1.420	1.320-1.520	1.418	0.015
	40 Mineral Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1 050	+++++	+++++
	39 Creosote	+++++	+++++	+++++	+++++	+++++	+++++	0.546	0.496-0.596	+++++	+++++
	36 JetA	+++++	+++++	+++++	+++++	+++++	+++++	0.787	0.737-0.837	+++++	+++++
	37 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	0.718	0.668-0 768	+++++	+++++
	38 Hydraulic Oil	1 129	1.146	+++++	1.164	1.135	1.167	1.165	1 115-1 215	1.148	0 017
	2 C8	1 710	1 703	1.712	1.722	1 721	1.686	1.701	1 601-1.801	1 709	0 013
	3 C10	3 248	3.248	3.246	3.246	3 247	3.256	3 247	3.197-3.297	3.249	0 004
	4 C12	4 137	4.132	4 129	4.127	4.126	4.130	4 131	4.081-4.181	4.130	0.004
	5 C14	4.809	4.805	4 803	4.802	4.803	4.809	4 806	4 756-4.856	4 805	0.003
	6 C16	5.392	5.391	5 389	5.391	5.392	5 403	5 392	5.342-5.442	5.393	0.005
	7 C18	5.957	5 955	5.956	5 958	5 962	5 940	5.959	5.909-6 009	5.955	0.008
$	8 o-terph	6.096	6 097	6.105	6.114	6 127	6.156	6 103	6.053-6 153	6.116	0 023
	9 C20	6.531	6 526	6.525	6 525	6.528	6.538	6 528	6 478-6.578	6.529	0.005
	10 C22	7.092	7.084	7.077	7 075	7.076	7 082	7.078	7.028-7.128	7.081	0 007
	11 C24	7.595	7.585	7.609	7 605	7.600	7.601	7.602	7.552-7 652	7.599	0 009
	12 C25	7 849	7 851	7.868	7.860	7.855	7 851	7 855	7.805-7 905	7 856	0.007

Reviewer 1 MH Date: 6/13/12

Reviewer 2 Date: 6/13/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20120612.b
Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
13 C26	8 091	8 093	8.089	8.107	8 101	8.095	8.095	8 045-8.145	8 096	0.007
14 C28	8 527	8 540	8 550	8 544	8 543	8 556	8 550	8.500-8.600	8.543	0 010
$ 15 Triacon Surr	8 971	8 973	8.991	8.990	8 982	8 973	8 983	8.933-9.033	8 980	0 009
16 C32	9.367	9 379	9.379	9.377	9 358	9 379	9 373	9 323-9.423	9.373	0 009
17 C34	9.761	9.762	9.764	9.765	9 769	9.754	9.755	9.705-9.805	9.763	0.005
18 Filter Peak	9.989	9.988	9.984	10 001	9 991	9 980	9.996	9.896-10.096	9.989	0.007
19 C36	10.135	10 122	10 143	10 129	10.129	10.140	10.128	10.078-10.178	10 133	0 008
20 C38	10 481	10 482	10 479	10.490	10.485	10 501	10.491	10 441-10.541	10 486	0 008
21 C40	10.872	10.856	10.860	10 843	10.851	10.837	10.846	10 796-10.896	10.853	0.013
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1 050	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.687	0.637-0.737	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0 660	0 610-0.710	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0 950-1 050	+++++	+++++
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0 950-1 050	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	0 612	0.562-0.662	+++++	+++++

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: 20120612

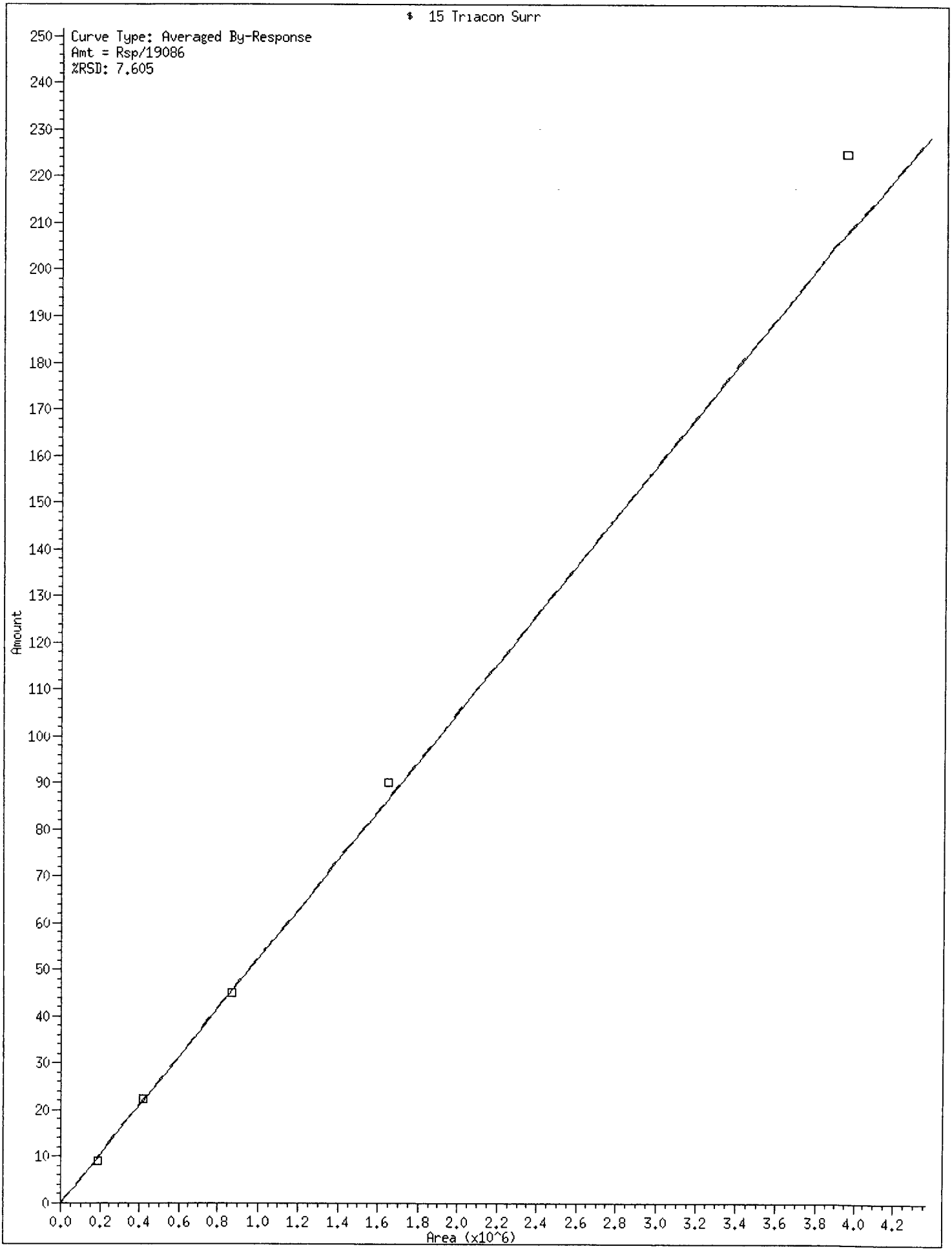
Instrument: FID4A.I Project:

Calibration Date: 12-JUN-2012 SDG No.: 20120612

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	11845	13246	13189	12254	12177	12701	12569	4.6
Triac Surr	21428	18681	19369	18317	17635	*****	19086	7.6

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
0612a020.d	12-JUN-2012 17:01
0612a021.d	12-JUN-2012 17:22
0612a022.d	12-JUN-2012 17:44
0612a023.d	12-JUN-2012 18:06
0612a024.d	12-JUN-2012 18:27
0612a025.d	12-JUN-2012 18:49


$ 15 Triacon Surr
Curve Type: Averaged By-Response
Amt = Rsp/19086
%RSD: 7.605
Amount
Area (x10^6)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
3.6
3.8
4.0
4.2

VB50 : 00211

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2004 08:49
End Cal Date : 12-JUN-2012 18:49
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : Falcon
Method file : /chem3/fid4a.i/20120612.b/ftphfid4a.m
Cal Date : 13-Jun-2012 07:39 monicah
Curve Type : Average

Compound	0.000e+00 Level 1	0 000e+00 Level 2	0.000e+00 Level 3	0 000e+00 Level 4	0.000e+00 Level 5	0 000e+00 Level 6	RRF	% RSD
	0.000e+00 Level 7	0.000e+00 Level 8	0 000e+00 Level 9	0.000e+00 Level 10	0 000e+00 Level 11	0 000e+00 Level 12		
$ 15 Triacon Surr	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	21428	18681	19369	18317	17635	19086	7.605

MH 6/13/12

Analytical Resources, Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a020.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: MOIL 100
Client ID:
Injection: 12-JUN-2012 17:01
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.370	-0.050	10317	20950	GAS (Tol-C12)	25859	1.72
C8	1.686	-0.015	369	392	DIESEL (C12-C24)	110296	7.36
C10	3.254	0.007	239	490	M.OIL (C24-C38)	1184454	94.24
C12	4.138	0.008	197	167	AK-102 (C10-C25)	160912	9.11
C14	4.804	-0.002	179	111	AK-103 (C25-C36)	982219	115.04
C16	5.400	0.008	89	146			
C18	5.967	0.008	85	131			
C20	6.523	-0.005	210	183	JET-A (C10-C18)	23630	1.59
C22	7.081	0.003	972	643	MIN.OIL (C24-C38)	1184454	88.12
C24	7.599	-0.003	3765	1768			
C25	7.864	0.010	5475	9383			
C26	8.104	0.009	6212	10086			
C28	8.554	0.004	7436	11306			
C32	9.371	-0.002	8569	3530			
C34	9.749	-0.006	8755	7682			
Filter Peak	10.005	0.008	8562	5639	CREOSOT (C12-C22)	34310	9.34
C36	10.130	0.002	8271	4253			
C38	10.488	-0.002	7542	7888			
C40	10.850	0.004	6873	2841			
o-terph	6.103	0.000	277	335			
Triacon Surr	8.961	-0.022	224936	192856			

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	335	0.0	0.0
Triacontane	192856	10.1	22.5

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

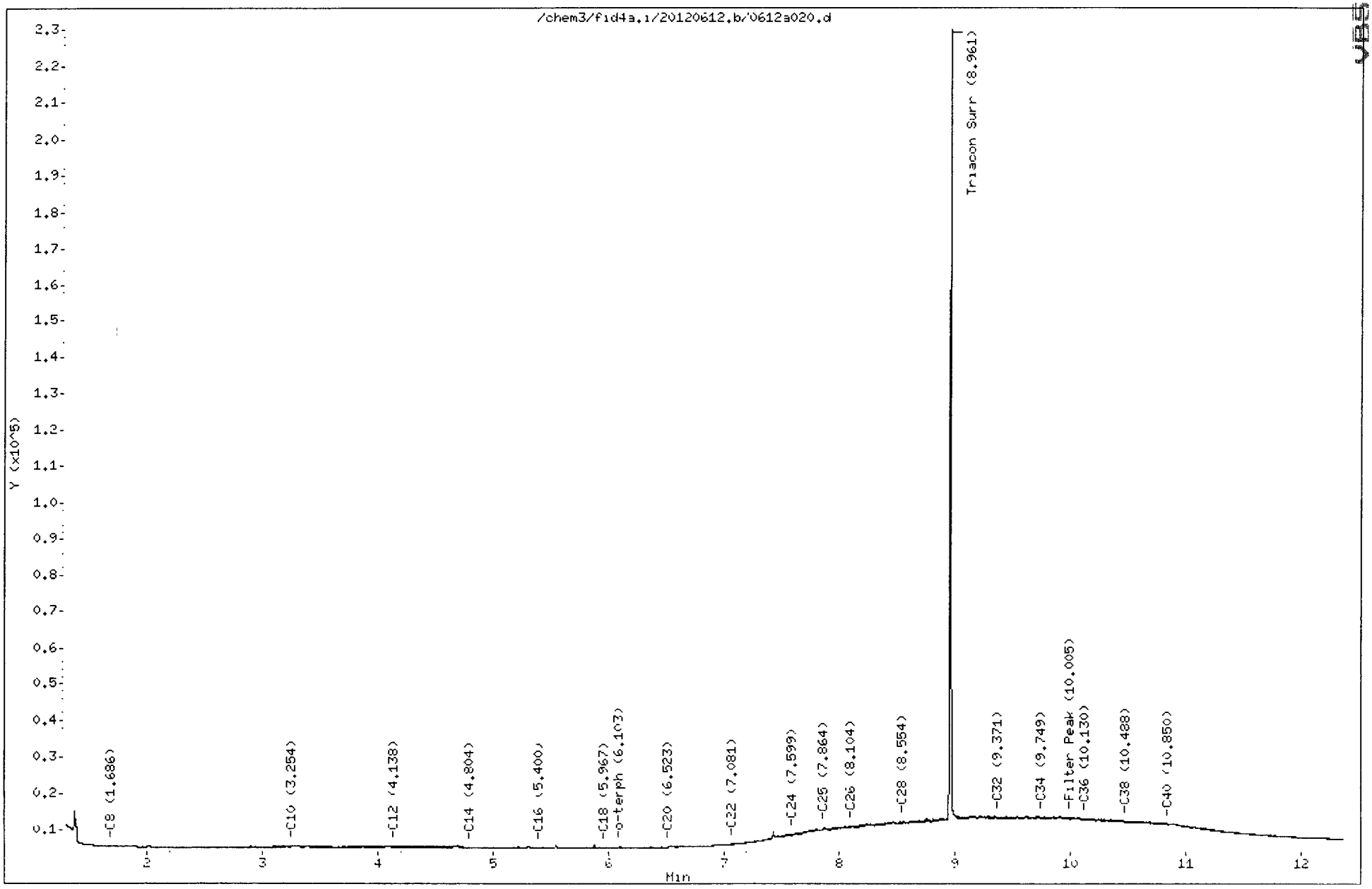
Data File: /chem3/fid4a.i/20120612.b/0612a020.d
Date : 12-JUN-2012 17:01
Client ID:
Sample Info: MOIL 100

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1

VB50:0621 1



MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a021.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: MOIL 250
Client ID:
Injection: 12-JUN-2012 17:22
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.374	-0.046	22974	49617	GAS (Tol-C12)	79411	5.28
C8	1.724	0.023	458	921	DIESEL (C12-C24)	274748	18.34
C10	3.254	0.007	313	724	M.OIL (C24-C38)	3317765	263.96
C12	4.138	0.008	256	434	AK-102 (C10-C25)	410925	23.28
C14	4.796	-0.010	201	252	AK-103 (C25-C36)	2787082	326.43 M
C16	5.386	-0.006	115	149			
C18	5.958	0.000	170	149			
C20	6.524	-0.003	593	1041	JET-A (C10-C18)	27554	1.86
C22	7.076	-0.003	2536	940	MIN.OIL (C24-C38)	3317765	246.85 M
C24	7.599	-0.003	9963	6829			
C25	7.858	0.004	13664	9657			
C26	8.089	-0.006	15996	16938			
C28	8.551	0.001	19115	6394			
C32	9.376	0.003	22473	23859			
C34	9.760	0.004	23100	21478			
Filter Peak	9.994	-0.003	22383	22354	CREOSOT (C12-C22)	73545	20.02
C36	10.121	-0.007	21645	25330			
C38	10.488	-0.003	19082	22138			
C40	10.845	-0.001	16104	11663			
o-terph	6.100	-0.003	282	507			
Triacon Surr	8.971	-0.012	519766	420312			

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	507	0.0	0.1
Triacontane	420312	22.0	48.9

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a021.d

Date : 12-JUN-2012 17:22

Client ID:

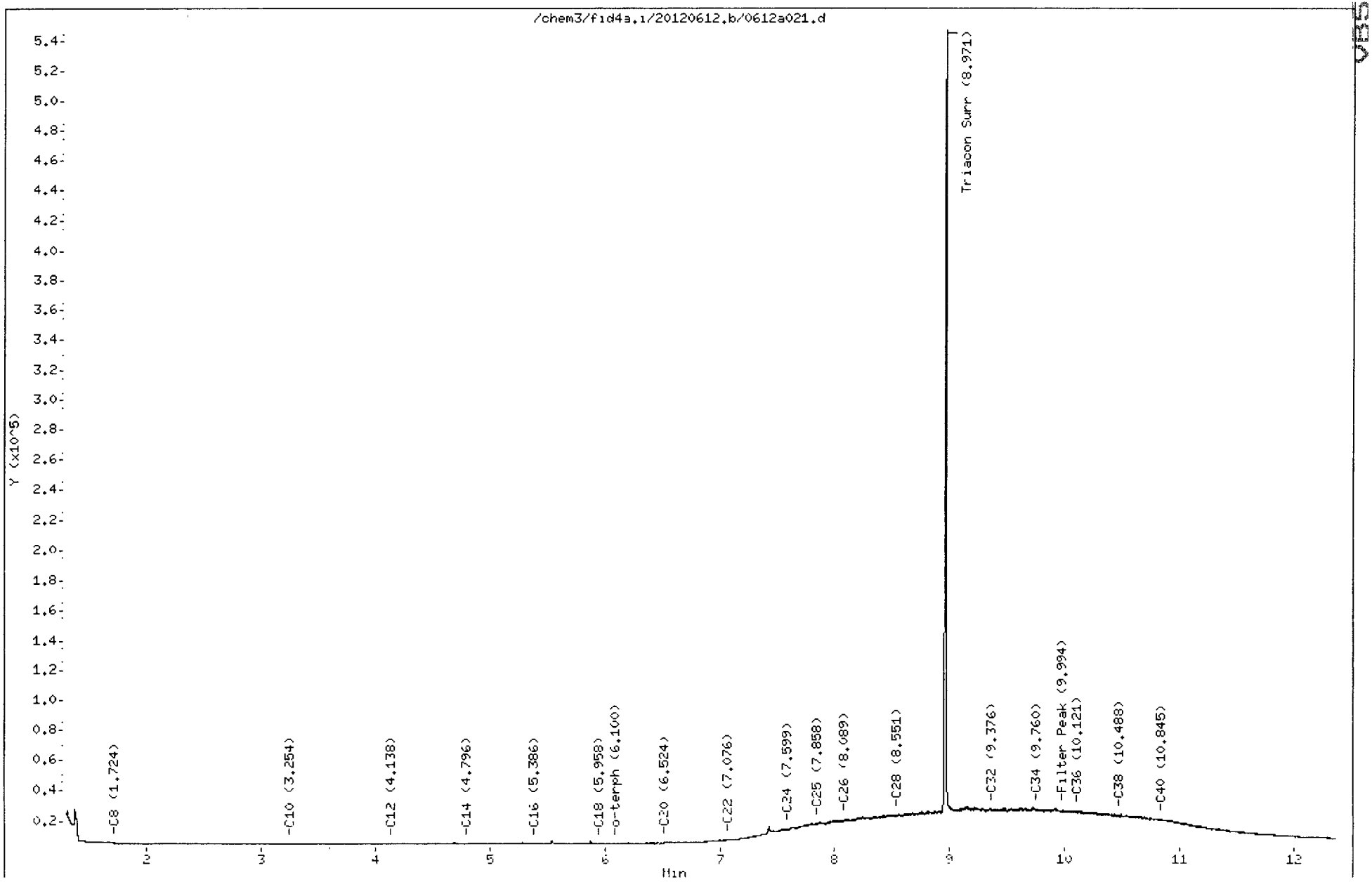
Sample Info: MOIL 250

Instrument: fid4a.i

Operator: MH

Column phase: RTX-1

Column diameter: 0.25



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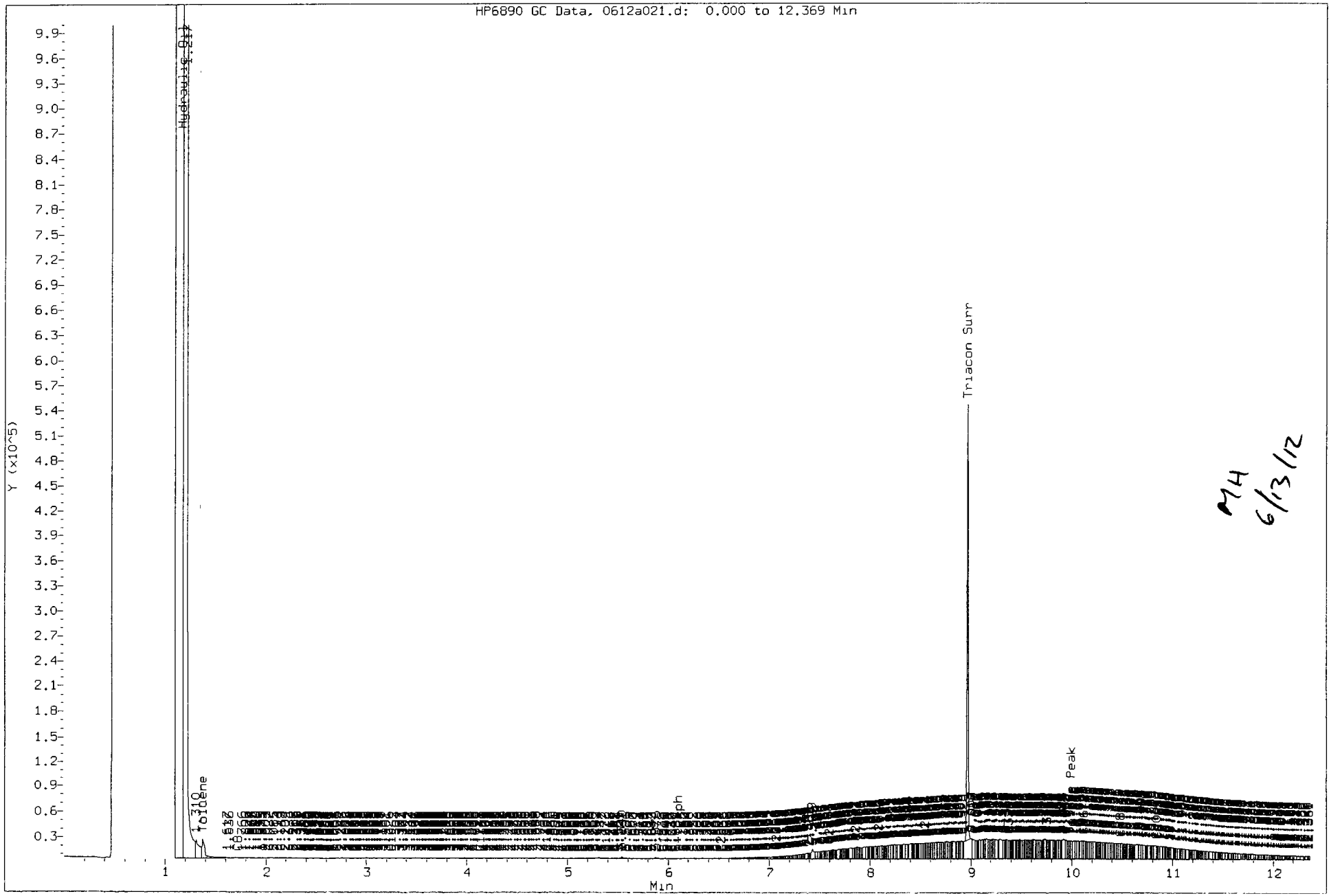
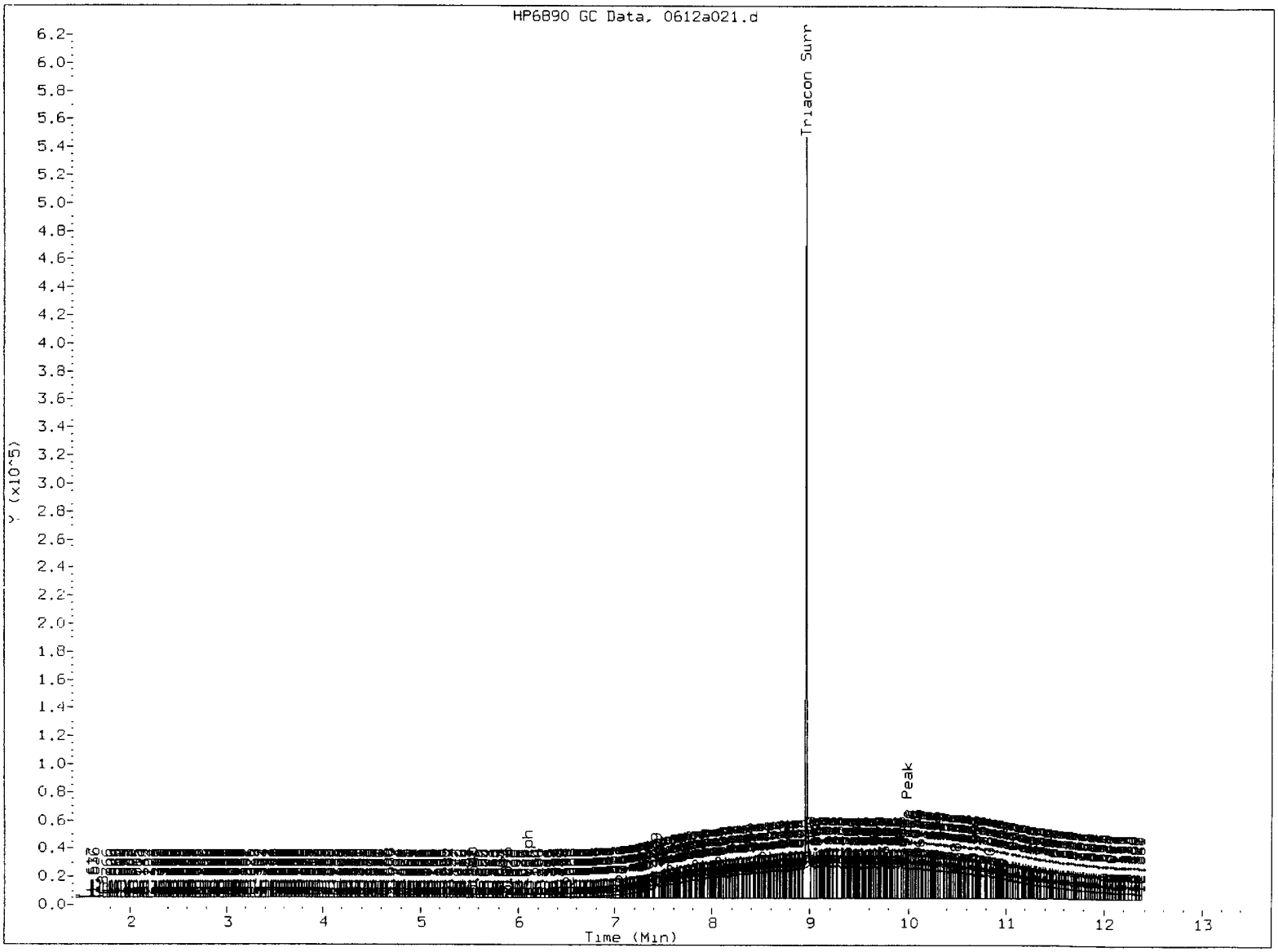
Injection Date: 12-JUN-2012 17:22
Instrument: fid4a.i
Client Sample ID:



VB50.0021

MH 6/13/12

FID:4A-2C/RTX-1 MOIL 250 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: _____

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a022.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: MOIL 500
Client ID:
Injection: 12-JUN-2012 17:44

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.382	-0.038	39432	59445	GAS (Tol-C12)	117067	7.78	
C8	1.708	0.007	572	1464	DIESEL (C12-C24)	575727	38.43	
C10	3.254	0.007	451	1080	M.OIL (C24-C38)	6604896	525.49	
C12	4.126	-0.005	267	185	AK-102 (C10-C25)	809175	45.83	
C14	4.793	-0.013	223	357	AK-103 (C25-C36)	5572034	652.62	M
C16	5.382	-0.011	156	198				
C18	5.956	-0.003	327	589				
C20	6.522	-0.005	1232	2936	JET-A (C10-C18)	32383	2.18	
C22	7.078	-0.001	5381	5260	MIN.OIL (C24-C38)	6604896	491.41	M
C24	7.596	-0.006	19978	16406				
C25	7.857	0.003	27678	9845				
C26	8.098	0.003	32776	17104				
C28	8.552	0.002	38618	22812				
C32	9.367	-0.006	48212	62292				
C34	9.745	-0.010	49160	40280				
Filter Peak	9.999	0.003	44584	65599	CREOSOT (C12-C22)	142397	38.76	
C36	10.124	-0.004	44339	53132				
C38	10.491	0.000	37077	42861				
C40	10.839	-0.007	31920	31322				
o-terph	6.099	-0.003	516	1114				
Triacon Surr	8.985	0.002	829441	871597				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1114	0.1	0.1
Triacontane	871597	45.7	101.5

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.1/20120612.b/0612a022.d

Date : 12-JUN-2012 17:44

Client ID:

Sample Info: MOIL 500

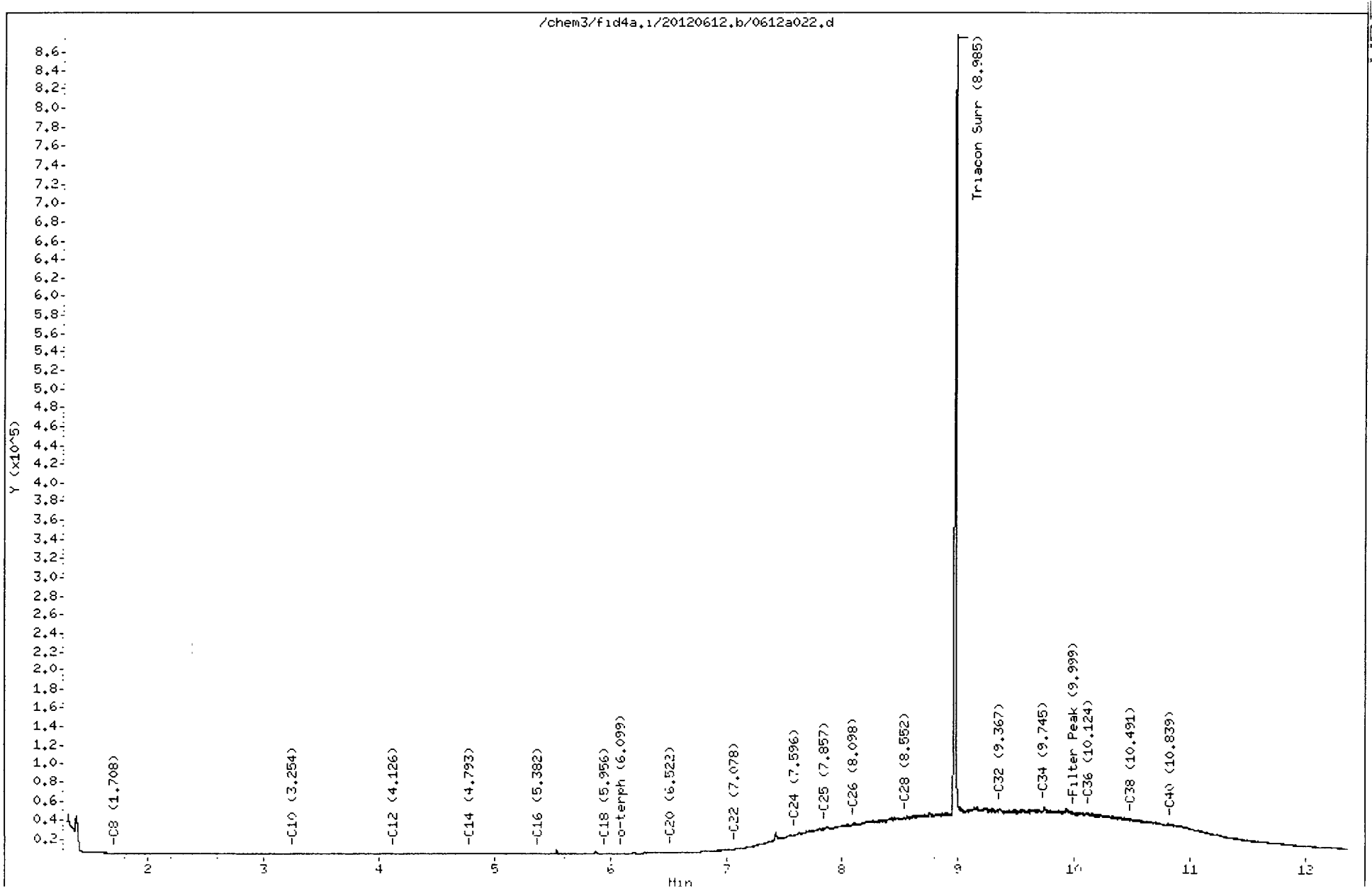
Instrument: fid4a.1

Operator: MH

Column phase: RTX-1

Column diameter: 0.25

VB56 : 66226



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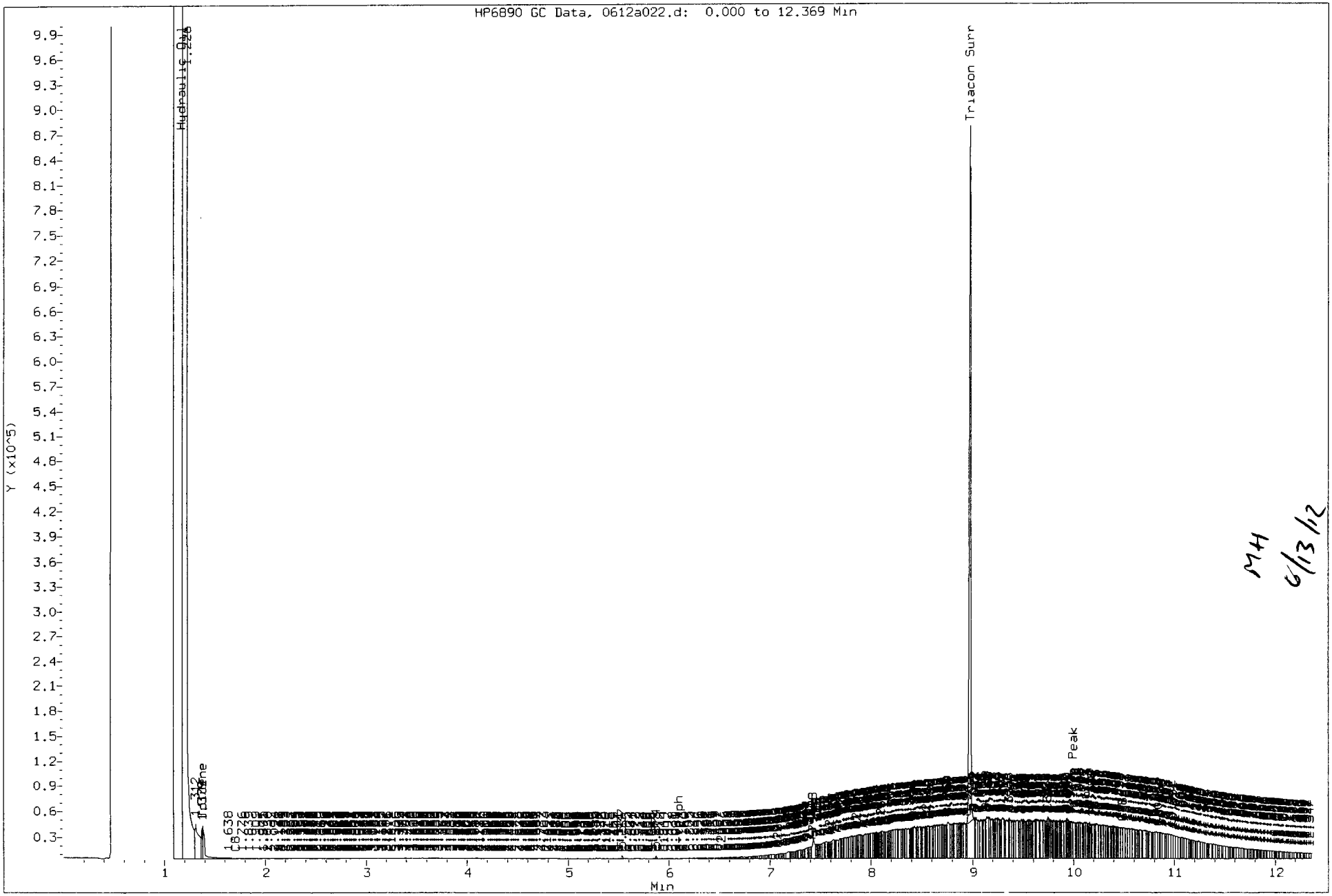
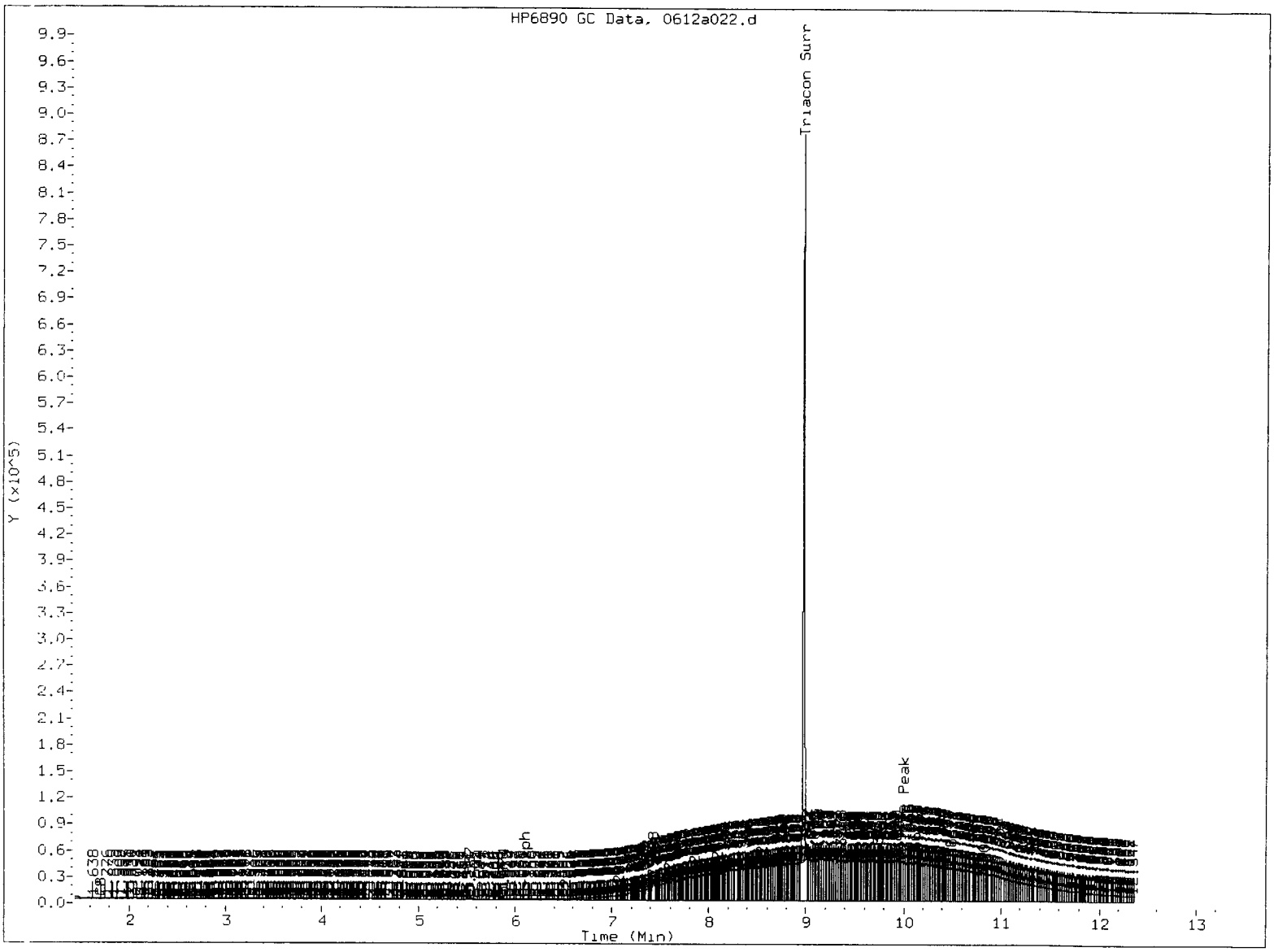
Injection Date: 12-JUN-2012 17:44
Instrument: fid4a.i
Client Sample ID:



MH 6/13/12

VB50:060221

FID:4A-2C/RTX-1 MOIL 500 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a023.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: MOIL 1000
Client ID:
Injection: 12-JUN-2012 18:06
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.368	-0.052	54327	108918	GAS (Tol-C12)	34811	2.31	
C8	1.701	0.000	487	474	DIESEL (C12-C24)	1058363	70.64	
C10	3.250	0.003	699	1224	M.OIL (C24-C38)	12253504	974.90	
C12	4.120	-0.010	385	719	AK-102 (C10-C25)	1466919	83.09	
C14	4.790	-0.016	266	449	AK-103 (C25-C36)	10357749	1213.14	M
C16	5.381	-0.012	182	238				
C18	5.958	-0.001	557	1292				
C20	6.524	-0.003	2320	2862	JET-A (C10-C18)	46387	3.13	
C22	7.070	-0.008	9626	5035	MIN.OIL (C24-C38)	12253504	911.67	M
C24	7.600	-0.002	38326	41266				
C25	7.854	-0.001	52793	61581				
C26	8.097	0.001	60211	31898				
C28	8.555	0.005	74237	28915				
C32	9.375	0.003	88518	27805				
C34	9.750	-0.006	93785	145643				
Filter Peak	9.993	-0.003	81647	66578	CREOSOT (C12-C22)	264607	72.02	
C36	10.126	-0.002	79749	25140				
C38	10.492	0.002	70441	101356				
C40	10.844	-0.002	57877	57445				
o-terph	6.098	-0.005	909	2520				
Triacon Surr	8.994	0.012	1330960	1648539				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2520	0.1	0.3
Triacontane	1648539	86.4	191.9

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a023.d

Date : 12-JUN-2012 18:06

Client ID:

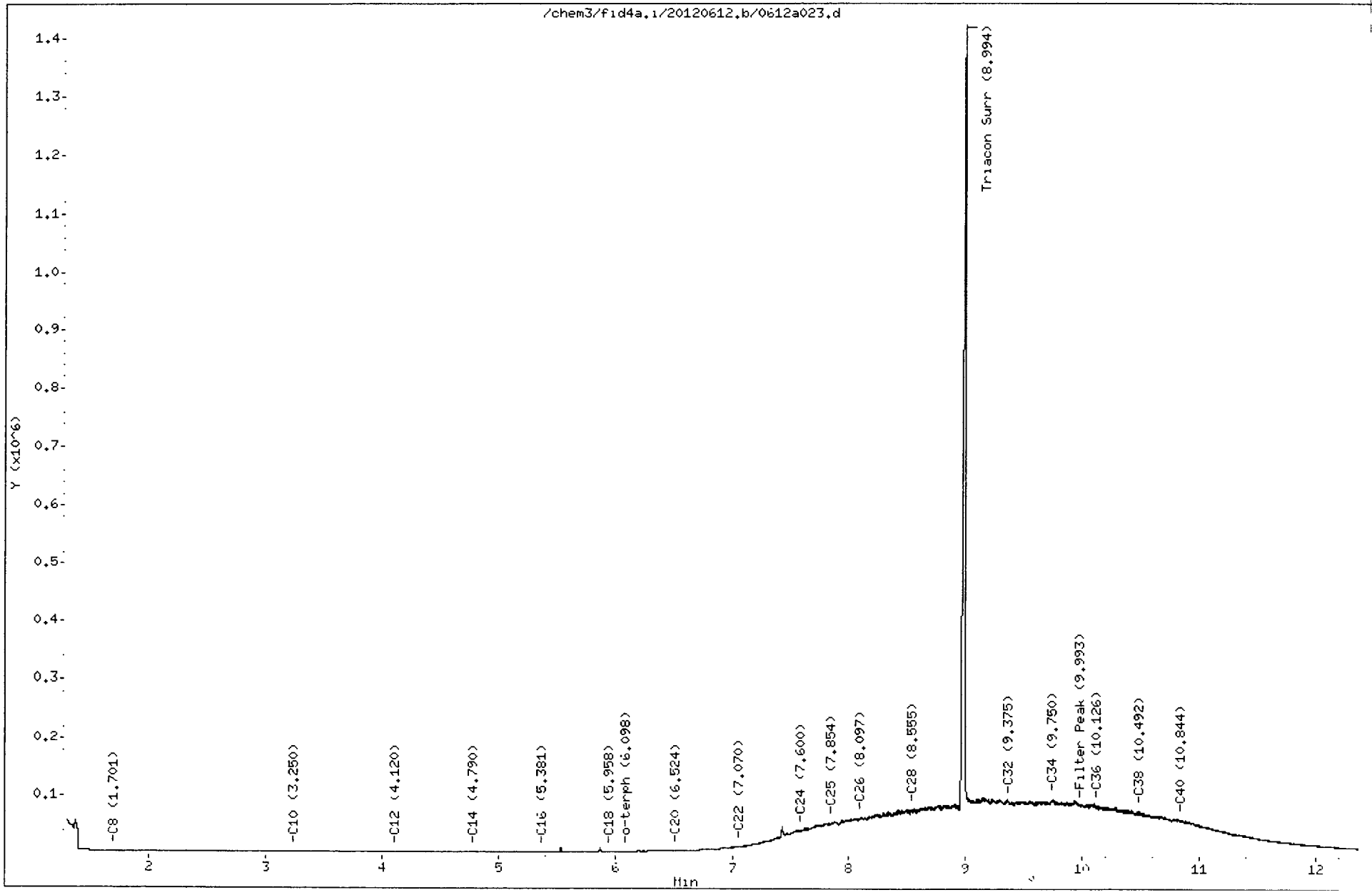
Sample Info: MOIL 1000

Column phase: RTX-1

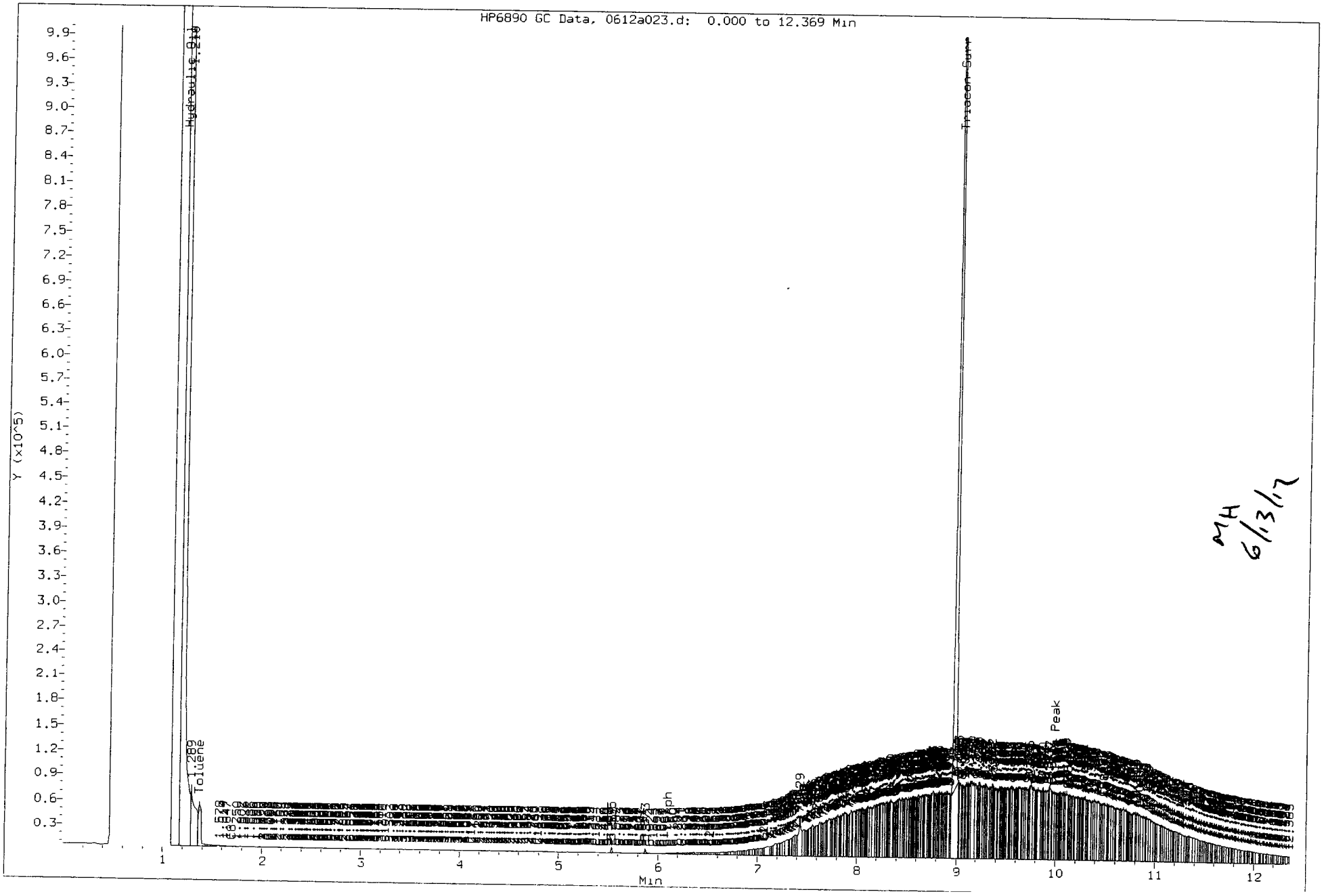
Instrument: fid4a.i

Operator: MH

Column diameter: 0.25



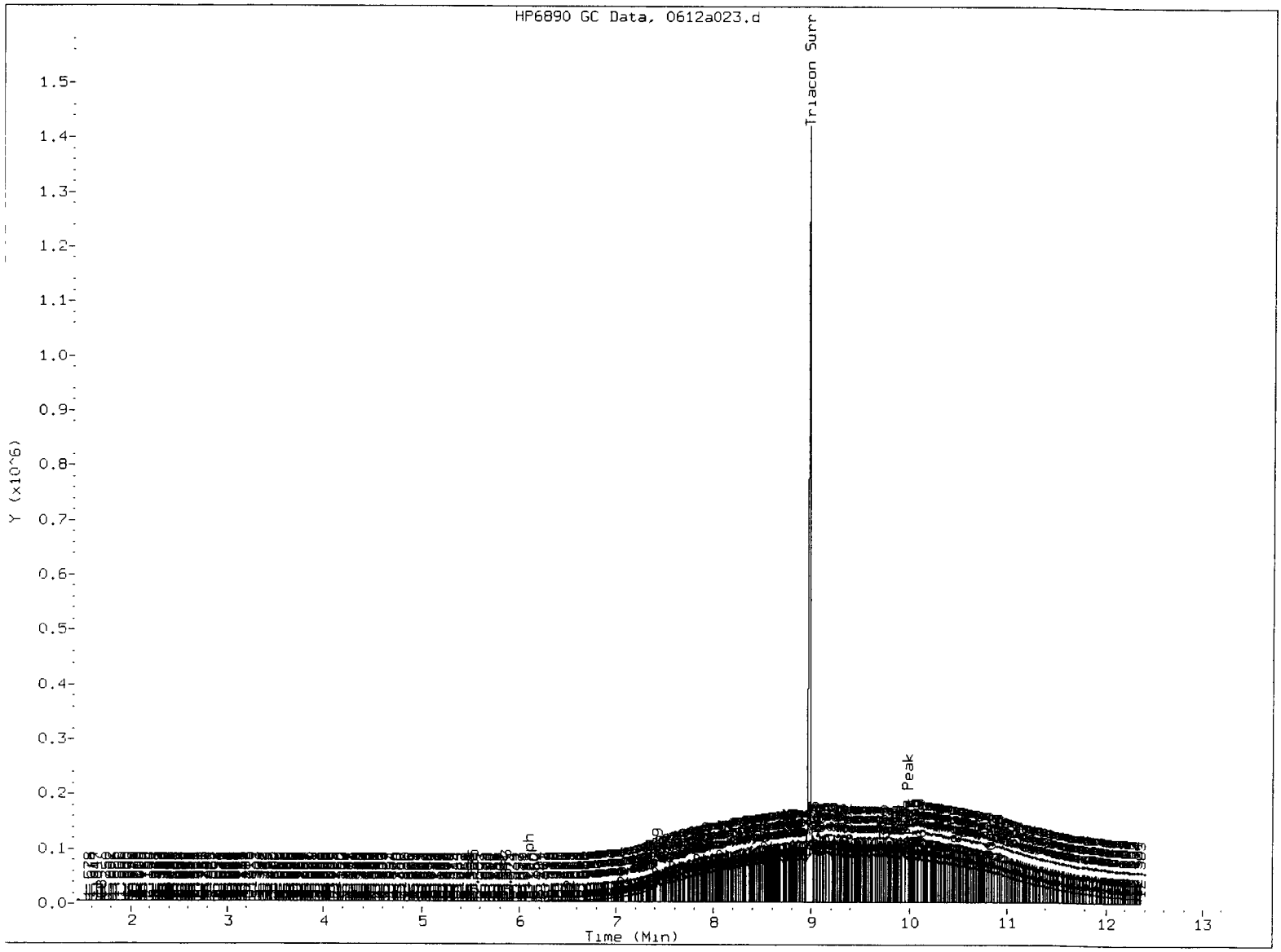
Data File: /chem3/fid4a.i/20120612.b/0612a023.d
Injection Date: 12-JUN-2012 18:06
Instrument: fid4a.i
Client Sample ID:



MH 6/13/12

VBSG-000225

FID:4A-2C/RTX-1 MOIL 1000 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a024.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: MOIL 2500
Client ID:
Injection: 12-JUN-2012 18:27
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.377	-0.042	105913	136831	GAS (Tol-C12)	174104	11.57	
C8	1.694	-0.007	468	962	DIESEL (C12-C24)	2563578	171.10	
C10	3.245	-0.002	1905	1992	M.OIL (C24-C38)	30573725	2432.47	
C12	4.131	0.000	485	791	AK-102 (C10-C25)	3580281	202.79	
C14	4.804	-0.002	386	644	AK-103 (C25-C36)	25782422	3019.73	M
C16	5.388	-0.004	469	711				
C18	5.957	-0.002	1485	3553				
C20	6.524	-0.003	5926	10338	JET-A (C10-C18)	90616	6.11	
C22	7.078	-0.001	24289	16728	MIN.OIL (C24-C38)	30573725	2274.72	M
C24	7.603	0.001	94112	130795				
C25	7.860	0.005	126946	98844				
C26	8.094	-0.001	147509	112325				
C28	8.540	-0.010	181816	266077				
C32	9.383	0.010	217624	260132				
C34	9.745	-0.010	221867	335667				
Filter Peak	9.999	0.003	202825	143435	CREOSOT (C12-C22)	665870	181.23	
C36	10.131	0.003	195817	159467				
C38	10.491	0.000	165735	256208				
C40	10.849	0.004	121039	76137				
o-terph	6.098	-0.005	2353	7930				
Triacon Surr	9.013	0.031	2205982	3967902				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	7930	0.4	0.8
Triacontane	3967902	207.9	462.0

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

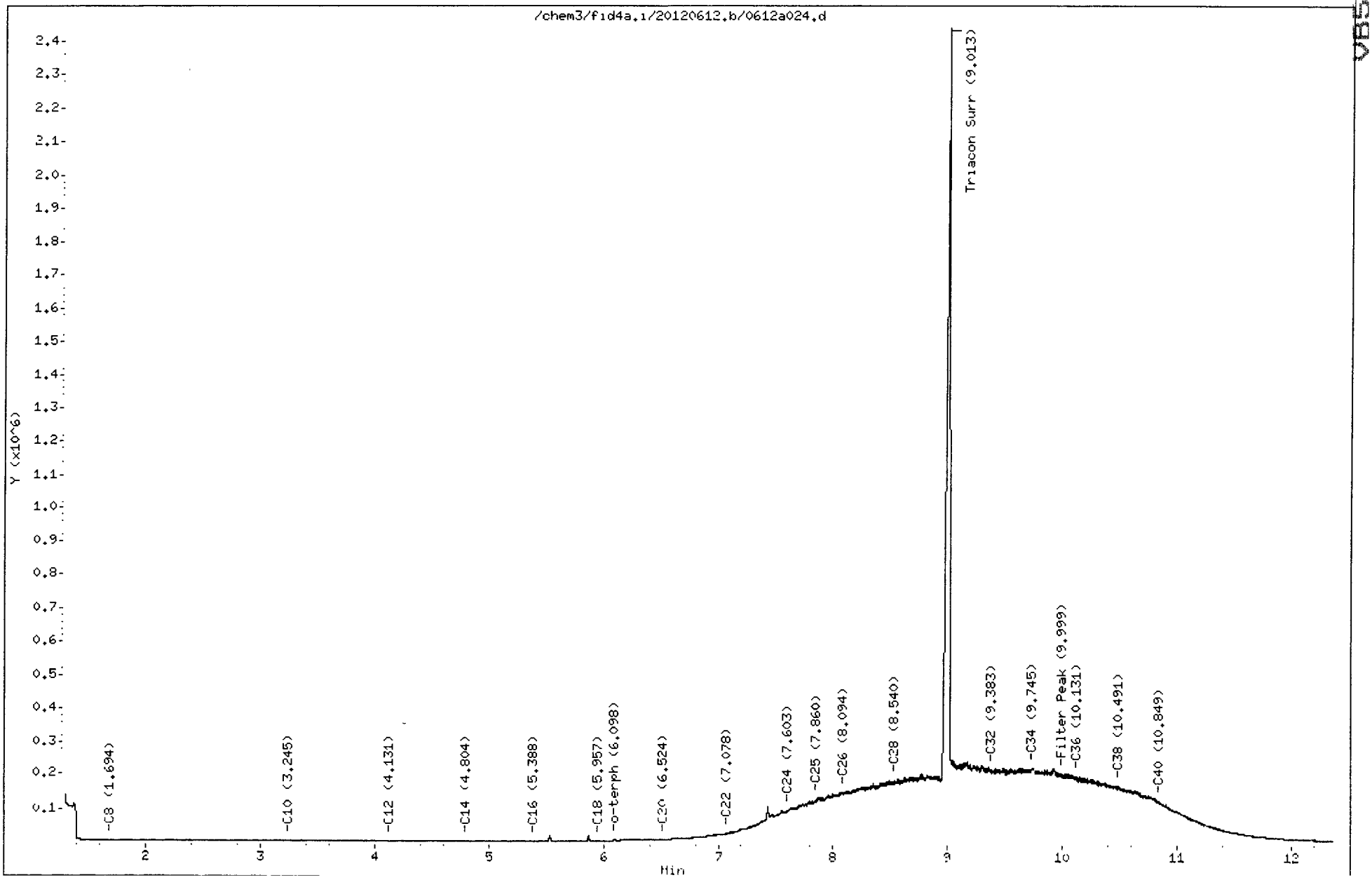
Data File: /chem3/fid4a.1/20120612.b/0612a024.d
Date : 12-JUN-2012 18:27
Client ID:
Sample Info: MOIL 2500

Instrument: fid4a.1

Operator: MH
Column diameter: 0.25

Column phase: RTX-1

VB50 : 06228



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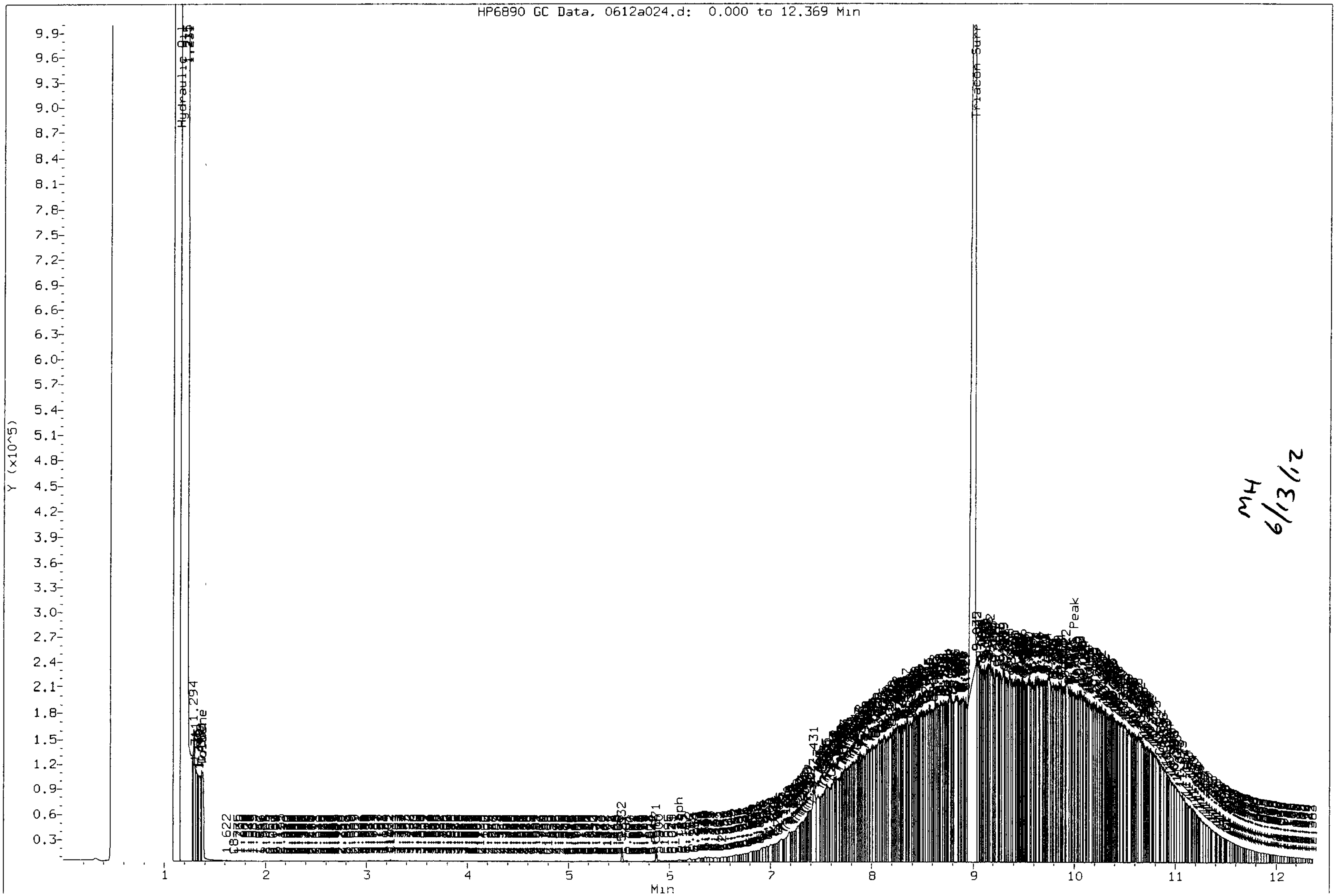
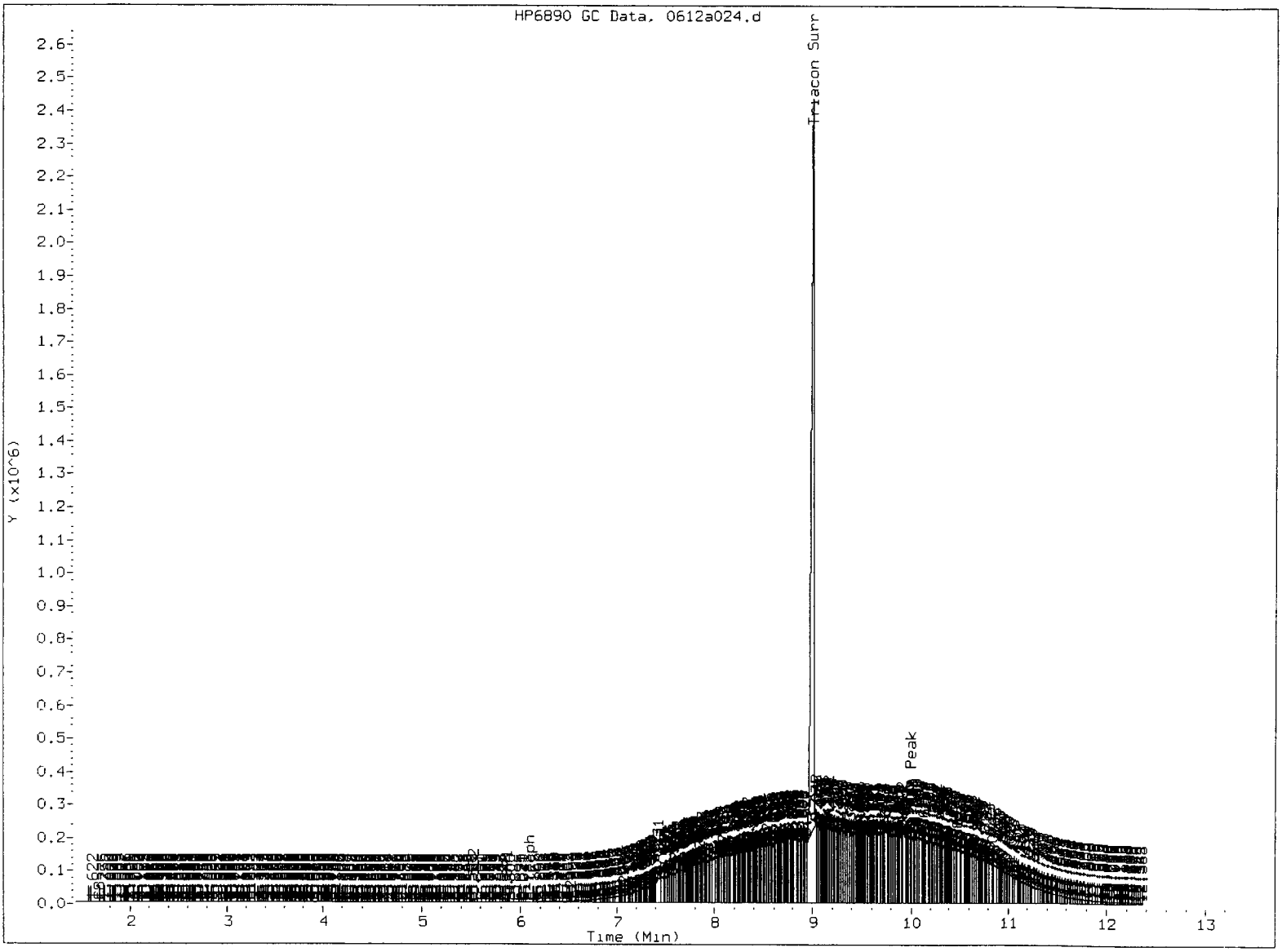
Injection Date: 12-JUN-2012 18:27
Instrument: fid4a.i
Client Sample ID:



FID:4A-2C/RTX-1 MOIL 2500 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a025.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: MOIL 5000
Client ID:
Injection: 12-JUN-2012 18:49
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.415	-0.004	2648	2026	GAS (Tol-C12)	420880	27.98	
C8	1.700	-0.001	390	902	DIESEL (C12-C24)	5414043	361.35	
C10	3.244	-0.003	3946	3864	M.OIL (C24-C38)	63875612	5082.00	
C12	4.130	0.000	628	1399	AK-102 (C10-C25)	7599472	430.44	
C14	4.816	0.010	587	885	AK-103 (C25-C36)	54672681	6403.45	M
C16	5.400	0.007	825	1689				
C18	5.958	0.000	3372	8468				
C20	6.525	-0.002	12670	20437	JET-A (C10-C18)	174133	11.73	
C22	7.069	-0.009	49787	26211	MIN.OIL (C24-C38)	63875612	4752.41	M
C24	7.608	0.006	198361	156870				
C25	7.853	-0.002	267798	134476				
C26	8.100	0.004	314147	105468				
C28	8.551	0.001	382854	427523				
C32	9.374	0.002	476383	184471				
C34	9.758	0.003	467971	290730				
Filter Peak	9.995	-0.001	423070	208420	CREOSOT (C12-C22)	1396766	380.16	
C36	10.122	-0.006	413640	365496				
C38	10.489	-0.001	286298	488144				
C40	10.855	0.009	108562	145333				
o-terph	6.095	-0.008	5475	17635				
Triacon Surr	9.051	0.069	3255229	8345674				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	17635	0.8	1.9
Triacontane	8345674	437.3	971.7

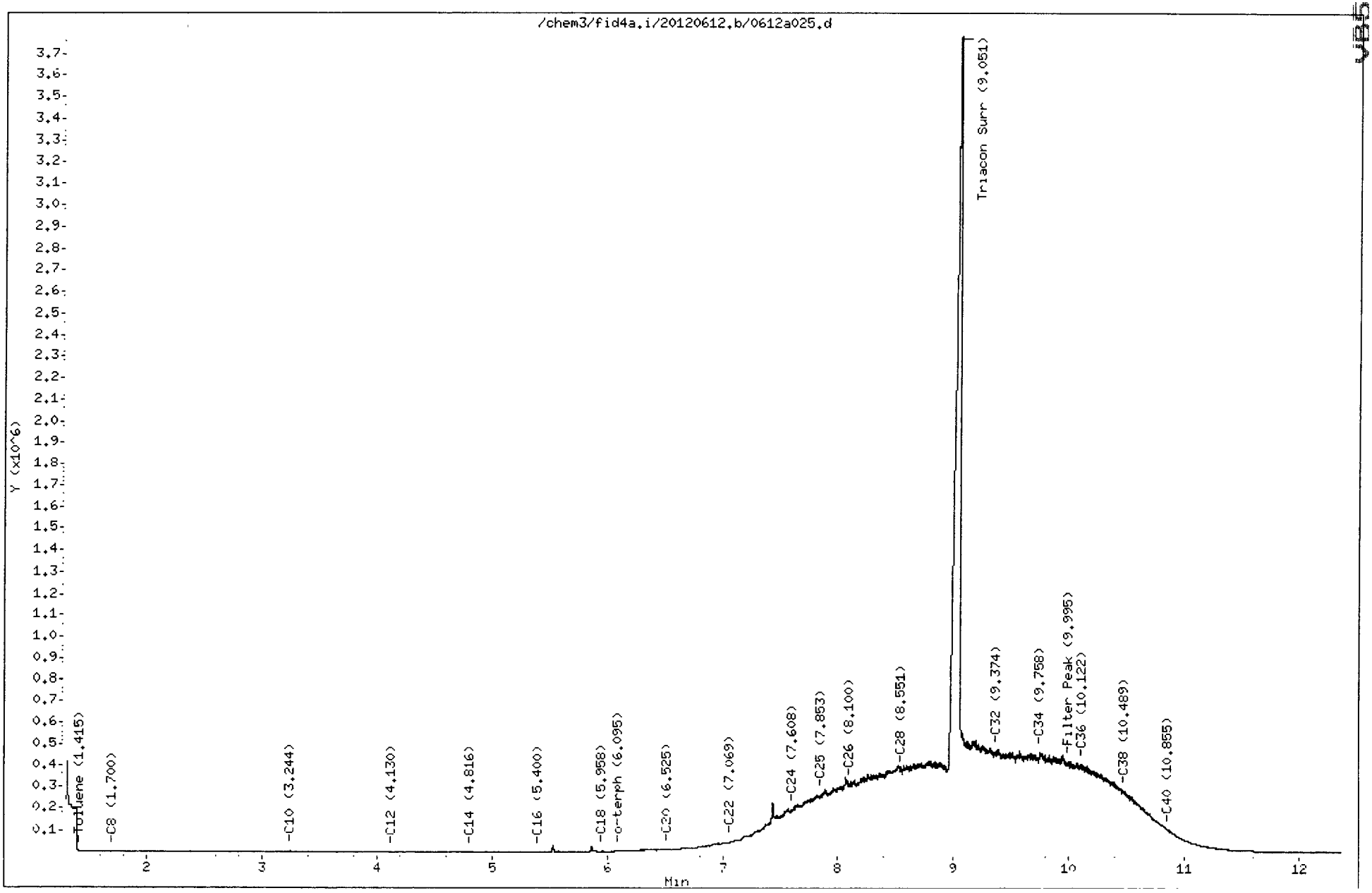
Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a025.d
Date : 12-JUN-2012 18:49
Client ID:
Sample Info: MOIL 5000

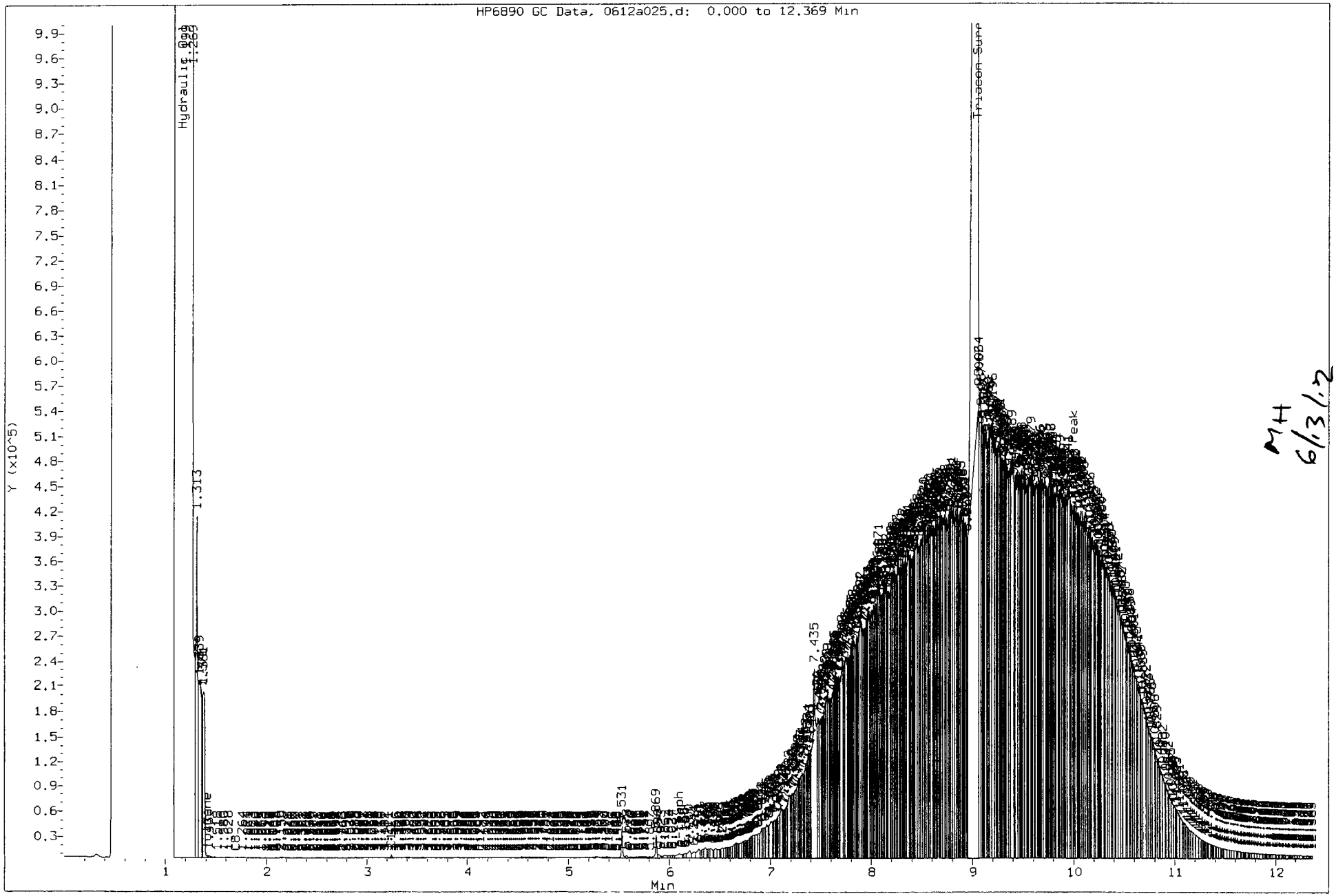
Instrument: fid4a.i

Operator: MH
Column phase: RTX-1
Column diameter: 0.25

VB50-002232



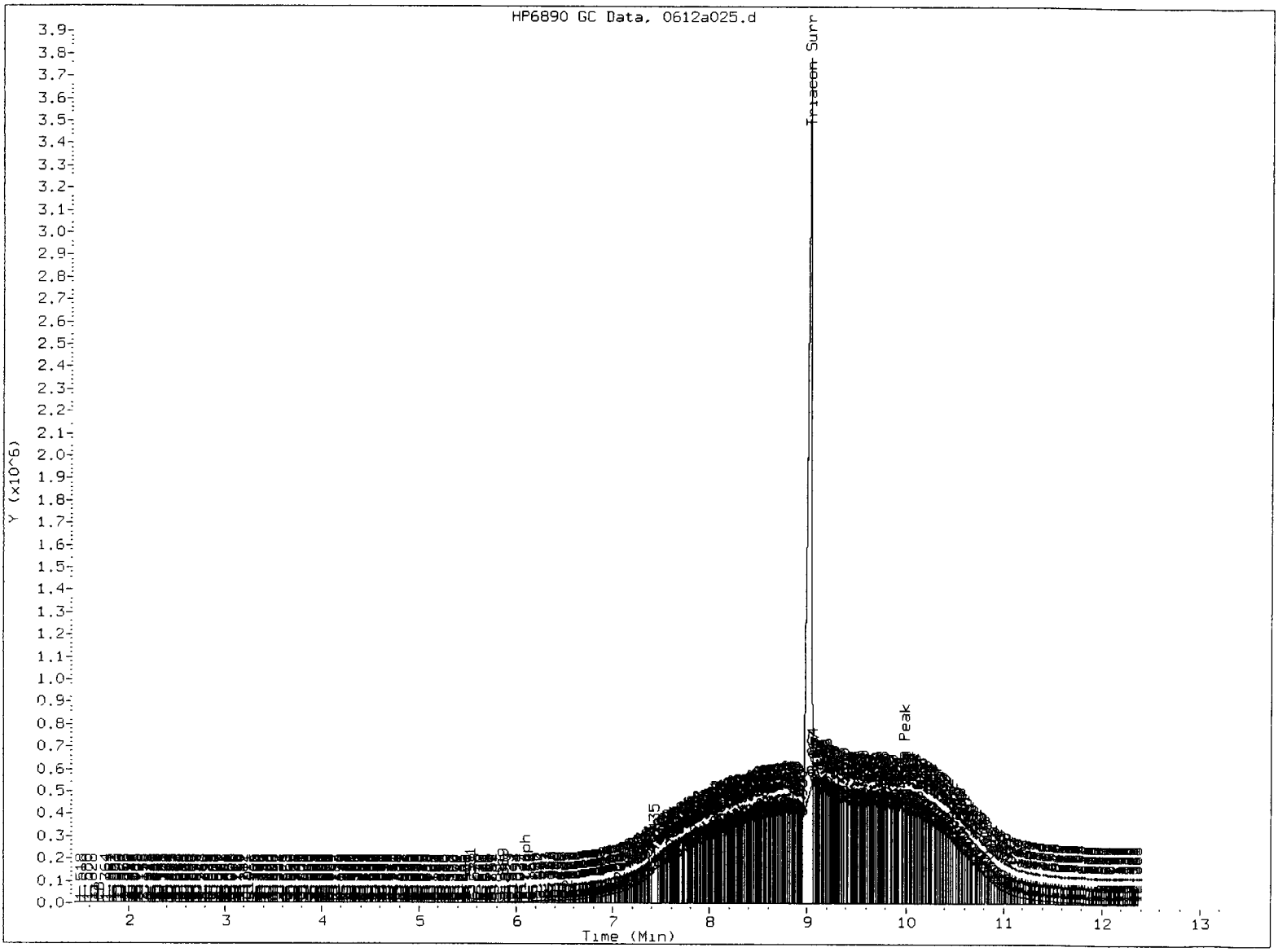
Data File: /chem3/fid4a.i/20120612.b/0612a025.d
Injection Date: 12-JUN-2012 18:49
Instrument: fid4a.i
Client Sample ID:



VB50:002283

MH 6/13/12

FID:4A-2C/RTX-1 MOIL 5000 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a026.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: MOIL ICV
Client ID:
Injection: 12-JUN-2012 19:10
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.435	0.015	1695	7253	GAS (Tol-C12)	87042	5.79
C8	1.712	0.011	316	419	DIESEL (C12-C24)	651584	43.49
C10	3.252	0.005	421	849	M.OIL (C24-C38)	6123590	487.20
C12	4.130	0.000	264	414	AK-102 (C10-C25)	886976	50.24
C14	4.795	-0.011	196	278	AK-103 (C25-C36)	5072025	594.05 M
C16	5.393	0.001	450	784			
C18	5.959	0.000	361	460			
C20	6.527	0.000	1314	1964	JET-A (C10-C18)	29675	2.00
C22	7.086	0.008	7010	12092	MIN.OIL (C24-C38)	6123590	455.60 M
C24	7.600	-0.002	20121	19733			
C25	7.853	-0.002	25635	20690			
C26	8.093	-0.002	28903	19175			
C28	8.551	0.001	34278	15504			
C32	9.364	-0.009	42756	28475			
C34	9.752	-0.003	44010	21691			
Filter Peak	10.004	0.007	43656	30953	CREOSOT (C12-C22)	176797	48.12
C36	10.122	-0.006	41987	11586			
C38	10.483	-0.008	38261	22625			
C40	10.837	-0.009	31170	53882			
o-terph	6.099	-0.003	442	878			
Triacon Surr	8.971	-0.011	743437	653756			

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

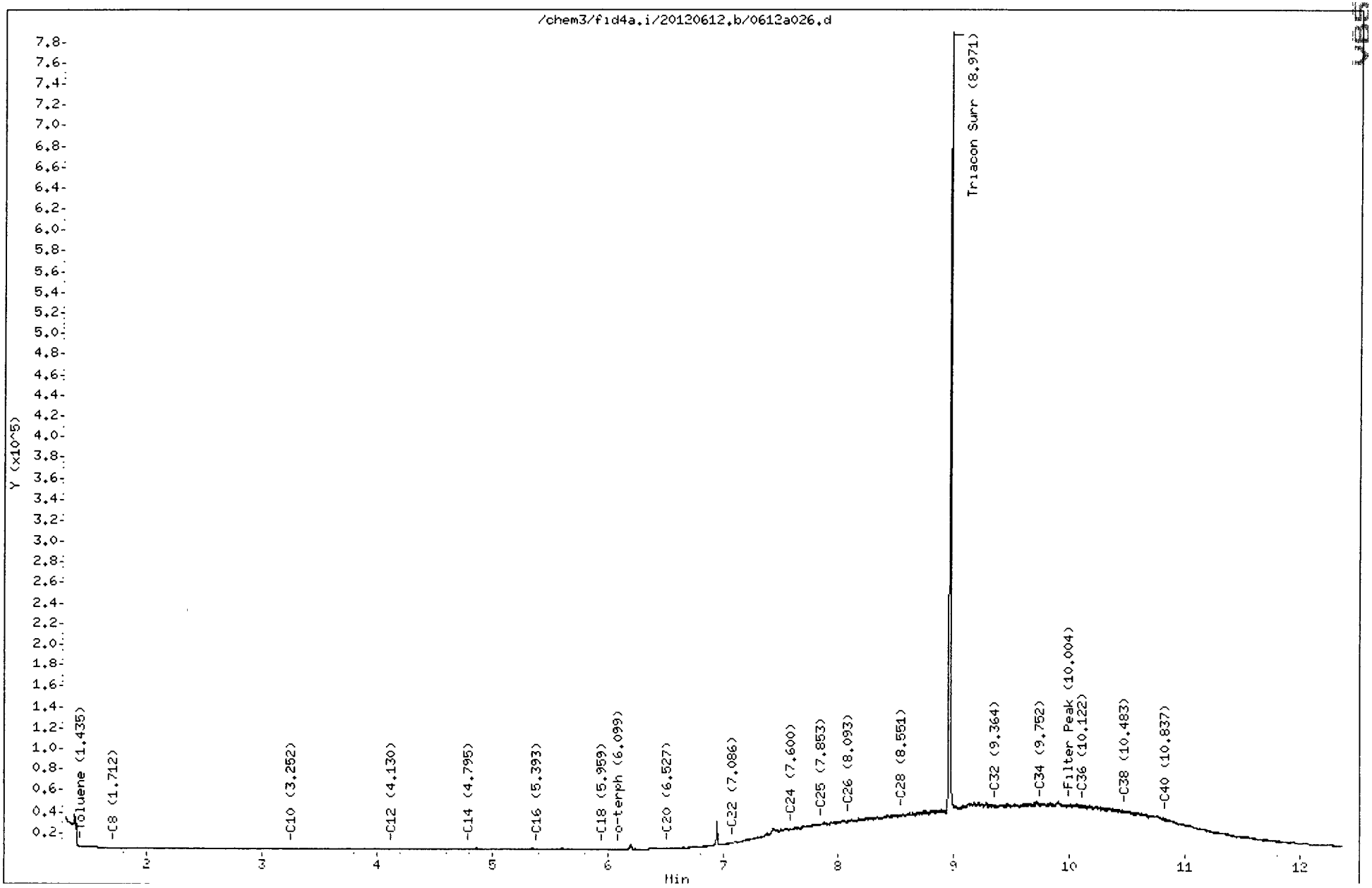
Surrogate	Area	Amount	%Rec
o-Terphenyl	878	0.0	0.1
Triacontane	653756	34.3	76.1

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

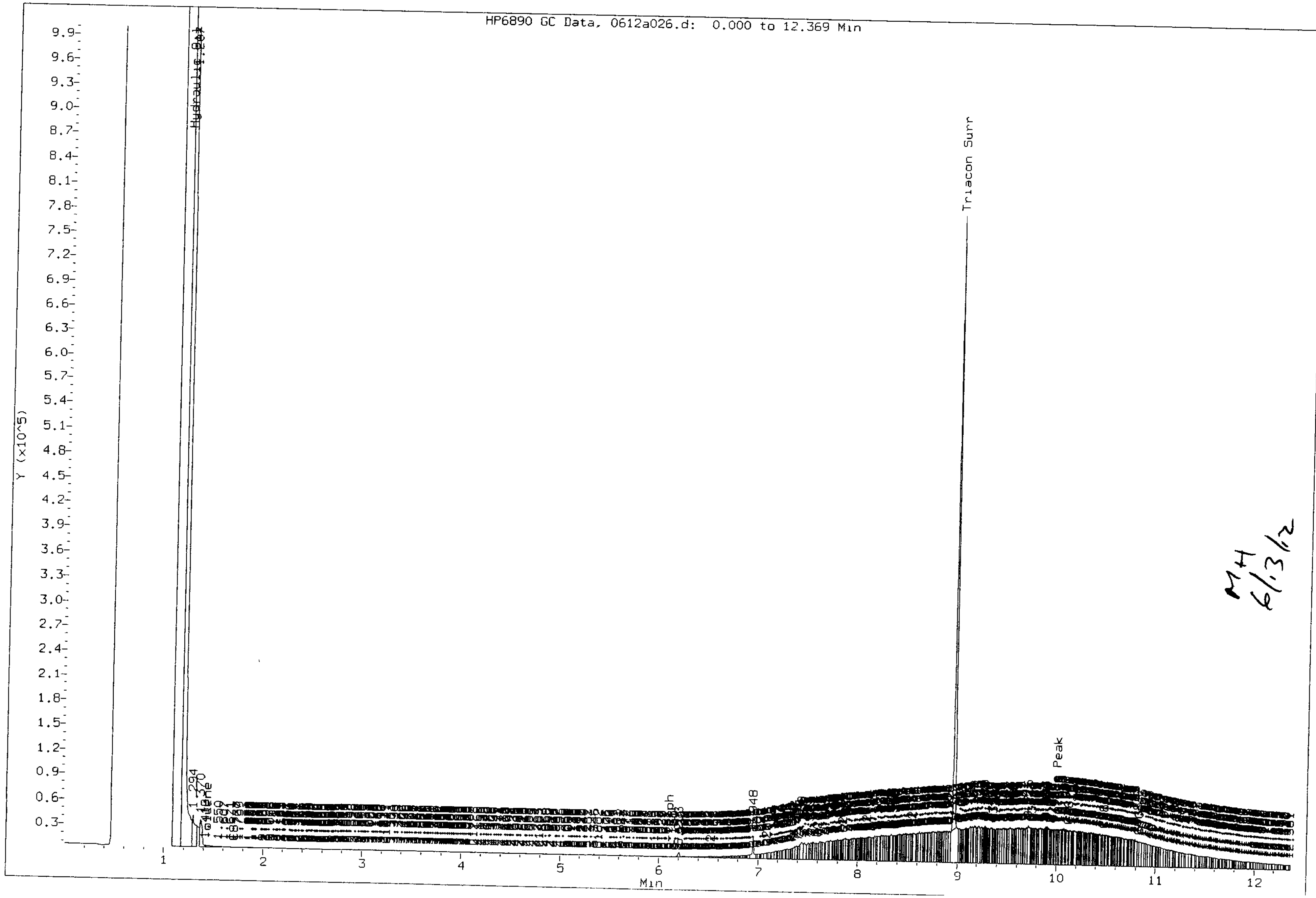
Data File: /chem3/fid4a.i/20120612.b/0612a026.d
Date : 12-JUN-2012 19:10
Client ID:
Sample Info: MOIL ICV

Instrument: fid4a.i

Operator: MH
Column phase: RTX-1
Column diameter: 0.25



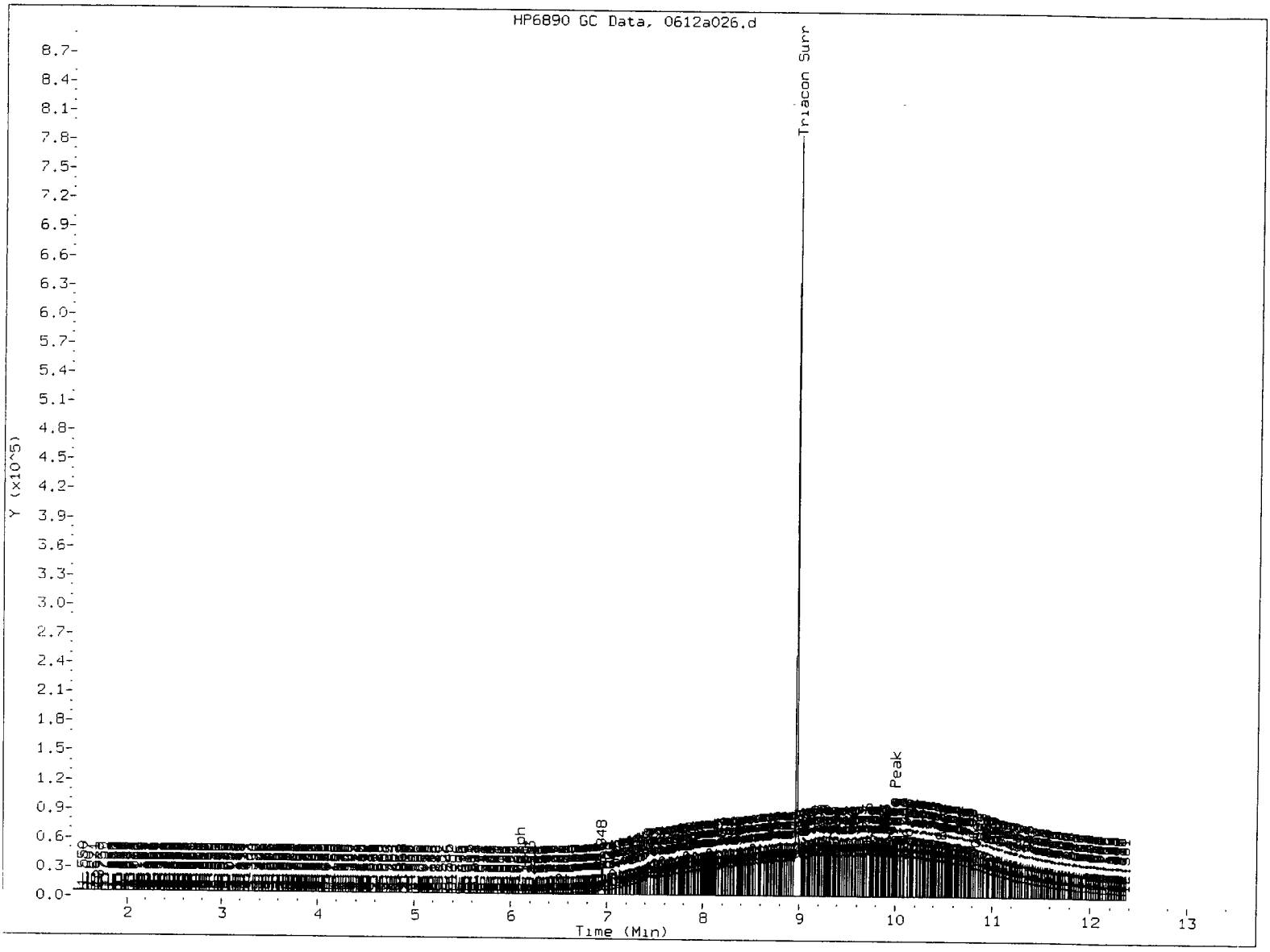
Data File: /chem3/fid4a.i/20120612.b/0612a026.d
Injection Date: 12-JUN-2012 19:10
Instrument: fid4a.i
Client Sample ID:



MH
6/13/12

FID:4A-2C/RTX-1 MOIL ICV

FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20120612.b
Inst ID: fid4a.i

ID.	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME	0612a020	0612a021	0612a022	0612a023	0612a024	0612a025
INJ DATE:	12-JUN-2012	12-JUN-2012	12-JUN-2012	12-JUN-2012	12-JUN-2012	12-JUN-2012
INJ.TIME:	17:01	17 22	17:44	18 06	18:27	18.49

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	1 Toluene	1 370	1.374	1 382	1.368	1.377	1.415	1.420	1 320-1 520	1.381	0.018
	40 Mineral Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1 050	+++++	+++++
	39 Creosote	+++++	+++++	+++++	+++++	+++++	+++++	0 546	0.496-0 596	+++++	+++++
	36 JetA	+++++	+++++	+++++	+++++	+++++	+++++	0.787	0.737-0.837	+++++	+++++
	37 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	0.718	0.668-0 768	+++++	+++++
	38 Hydraulic Oil	1 165	1.169	1 171	1.164	1.156	1.169	1.165	1 115-1.215	1 165	0 005
	2 C8	1 686	1 724	1.708	1.701	1 694	1 700	1.701	1 601-1.801	1 702	0.013
	3 C10	3.254	3.254	3 254	3.250	3.245	3.244	3.247	3 197-3.297	3.250	0 005
	4 C12	4 138	4 138	4.126	4 120	4 131	4 130	4.131	4 081-4.181	4 131	0.007
	5 C14	4 804	4.796	4 793	4 790	4 804	4 816	4.806	4.756-4 856	4 801	0 009
	6 C16	5.400	5 386	5 382	5 381	5 388	5.400	5.392	5.342-5 442	5 389	0 009
	7 C18	5 967	5.958	5.956	5 958	5.957	5 958	5.959	5.909-6.009	5.959	0 004
$	8 o-terph	6.103	6.100	6 099	6 098	6 098	6 095	6.103	6.053-6.153	6.099	0 003
	9 C20	6.523	6 524	6.522	6.524	6.524	6 525	6.528	6.478-6.578	6 524	0.001
	10 C22	7 081	7.076	7.078	7.070	7.078	7 069	7.078	7.028-7.128	7 075	0.005
	11 C24	7.599	7 599	7 596	7 600	7.603	7.608	7.602	7.552-7.652	7 601	0 004
	12 C25	7 864	7 858	7 857	7.854	7 860	7 853	7 855	7 805-7.905	7.858	0 004

Reviewer 1 MH Date: 6/13/12
Reviewer 2 Date: 6/13/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20120612.b
Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
13 C26	8 104	8.089	8 098	8 097	8.094	8.100	8.095	8 045-8.145	8.097	0.005
14 C28	8 554	8 551	8.552	8.555	8.540	8 551	8.550	8.500-8.600	8.551	0 005
$ 15 Triacon Surr	8.961	8 971	8.985	8 994	9.013	9.051	8.983	8.933-9.033	8 996	0.033
16 C32	9 371	9.376	9 367	9.375	9.383	9 374	9.373	9.323-9 423	9.374	0.005
17 C34	9.749	9 760	9.745	9.750	9.745	9.758	9 755	9 705-9.805	9.751	0.006
18 Filter Peak	10 005	9.994	9 999	9.993	9 999	9 995	9 996	9 896-10 096	9 998	0 004
19 C36	10 130	10.121	10.124	10.126	10 131	10.122	10 128	10.078-10.178	10 125	0.004
20 C38	10 488	10.488	10.491	10.492	10.491	10 489	10 491	10.441-10 541	10.490	0.002
21 C40	10.850	10 845	10.839	10.844	10 849	10.855	10 846	10.796-10.896	10 847	0.006
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1 000	0 950-1 050	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0 687	0.637-0.737	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.660	0.610-0.710	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	1 000	0.950-1.050	+++++	+++++
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0 950-1.050	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	0.612	0.562-0.662	+++++	+++++

TPHD Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: VB50

GC Analyst Notes / Corrective Action Log

ARI Project ID: VB50 Client ID: Anchor QEA, LLC.

ARI SOP: **403S**(PCB) **405S**(Herb) **407S**(TPH-D) **409S**(HCID) **412S**(PCP) **423S**(Pest)
427S(Dir Inj) **428S**(EPH) **432S**(EDB) **Other**

Parameter(s): NS cleaned, 500mL/1mL FV

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7

Dates: Curve: Analysis Start: 7/11/2012

Endrin/DDT Breakdown <15%? YES / NO / NA
Method Blank In Control? YES / NO
ICal Meets RF & %RSD Criteria? YES / NO
LCS/LCSD Recovery In Control? YES / NO
CCal Meets RF & %RSD Criteria? YES / NO
Surrogate Recovery In Control? YES / NO
Manual Integrations for ICal? YES / NO
Manual Integrations for Samples? YES / NO
Internal Standard Meets Criteria? YES / NO / NA
Special Analysis Criteria Met? YES / NO / NA
Lvl 4 RDP

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

Additional Details on Reverse: Yes / No

Analyst: **Date:** 7/13/2012

Reviewer: **Date:** 7/13

GC LOG SUMMARY FOR DATABATCH - /chem3/fid3b.i/20120711.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	11-JUL-2012 06:43	0711b001.d	1	RINSE	
2	11-JUL-2012 07:02	0711b002.d	1	RT	
3	11-JUL-2012 07:21	0711b003.d	1	IB	
4	11-JUL-2012 07:41	0711b004.d	1	DIESEL #1	
5	11-JUL-2012 08:00	0711b005.d	1	MOIL #1	
6	11-JUL-2012 08:19	0711b006.d	1	AK103 #1	
7	11-JUL-2012 08:38	0711b007.d	100	VB25E	
8	11-JUL-2012 08:57	0711b008.d	5	VB25F	
9	11-JUL-2012 09:17	0711b009.d	5	VB25G	
10	11-JUL-2012 09:36	0711b010.d	5	VB25H	
11	11-JUL-2012 09:55	0711b011.d	5	VB25I	
12	11-JUL-2012 10:15	0711b012.d	10	VB24M	FD-13 DUP
13	11-JUL-2012 10:34	0711b013.d	10	VB24O	FD-15
14	11-JUL-2012 10:54	0711b014.d	100	VB24T	FD-20
15	11-JUL-2012 11:14	0711b015.d	10	VB24T	FD-20
16	11-JUL-2012 11:34	0711b016.d	1	DIESEL #2	Passes
17	11-JUL-2012 11:53	0711b017.d	1	MOIL #2	
18	11-JUL-2012 12:13	0711b018.d	1	AK103 #2	
19	11-JUL-2012 12:32	0711b019.d	5	VB25J	
20	11-JUL-2012 12:51	0711b020.d	1	VB25K	
21	11-JUL-2012 13:10	0711b021.d	1	VB25O	
22	11-JUL-2012 13:30	0711b022.d	1	VB25P	
23	11-JUL-2012 13:49	0711b023.d	1	VB25Q	
24	11-JUL-2012 14:08	0711b024.d	1	VB25R	
25	11-JUL-2012 14:28	0711b025.d	100	VB25S	
26	11-JUL-2012 14:47	0711b026.d	1	VB66MBW1	Don't
27	11-JUL-2012 15:06	0711b027.d	1	VB66LCSW1	
28	11-JUL-2012 15:25	0711b028.d	1	VB66A	
29	11-JUL-2012 15:45	0711b029.d	1	DIESEL #3	Passes
30	11-JUL-2012 16:04	0711b030.d	1	MOIL #3	
31	11-JUL-2012 16:23	0711b031.d	1	AK103 #3	
32	11-JUL-2012 16:42	0711b032.d	1	VB50MBW1	
33	11-JUL-2012 17:02	0711b033.d	1	VB50LCSW1	
34	11-JUL-2012 17:21	0711b034.d	1	VB50LCSDW1	
35	11-JUL-2012 17:40	0711b035.d	1	VB50A	
36	11-JUL-2012 17:59	0711b036.d	1	VB50B	
37	11-JUL-2012 18:18	0711b037.d	1	VB50C	
38	11-JUL-2012 18:37	0711b038.d	1	VB50D	
39	11-JUL-2012 18:55	0711b039.d	1	VB50E	
40	11-JUL-2012 19:14	0711b040.d	1	VB50F	
41	11-JUL-2012 19:33	0711b041.d	1	VB50G	
42	11-JUL-2012 19:52	0711b042.d	1	DIESEL #4	Passes
43	11-JUL-2012 20:11	0711b043.d	1	MOIL #4	
44	11-JUL-2012 20:30	0711b044.d	1	VB50I	
45	11-JUL-2012 20:49	0711b045.d	1	VB50J	
46	11-JUL-2012 21:08	0711b046.d	1	VB50K	
47	11-JUL-2012 21:27	0711b047.d	1	VB50L	
48	11-JUL-2012 21:46	0711b048.d	1	VB50M	
49	11-JUL-2012 22:05	0711b049.d	1	VB50N	
50	11-JUL-2012 22:24	0711b050.d	1	VB50O	

GC LOG SUMMARY FOR DATABATCH - /chem3/fid3b.i/20120711.b p2

	Inject Date/Time	Filename	DF	LabID	ClientID
51	11-JUL-2012 22:43	0711b051.d	1	VB50P	
52	11-JUL-2012 23:02	0711b052.d	1	DIESEL #5	Passes
53	12-JUL-2012 23:21	0711b053.d	1	MOIL #5	
54	12-JUL-2012 23:40	0711b054.d	1	VB38MBW1	
55	12-JUL-2012 23:59	0711b055.d	1	VB38LCSW1	
56	12-JUL-2012 00:18	0711b056.d	1	VB38LCSDW1	Dont
57	12-JUL-2012 00:37	0711b057.d	1	VB38A	
58	12-JUL-2012 00:56	0711b058.d	1	VB38B	
59	12-JUL-2012 01:15	0711b059.d	1	VB38C	
60	12-JUL-2012 01:34	0711b060.d	1	VB38D	
61	12-JUL-2012 01:53	0711b061.d	1	DIESEL #6	Passes
62	12-JUL-2012 02:12	0711b062.d	1	MOIL #6	
63	12-JUL-2012 02:31	0711b063.d	1	VB16MBS1	
64	12-JUL-2012 02:50	0711b064.d	1	VB16LCSS1	
65	12-JUL-2012 03:09	0711b065.d	1	VB16A	
66	12-JUL-2012 03:28	0711b066.d	1	VB16B	
67	12-JUL-2012 03:47	0711b067.d	1	VB16BMS	
68	12-JUL-2012 04:06	0711b068.d	1	VB16BMSD	
69	12-JUL-2012 04:25	0711b069.d	10	VB16C	

Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/12/2012

Data file: /chem3/fid3b.i/20120711.b/0711b016.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/12/2012
Macro: FID:3B062212

ARI ID: DIESEL #2
Client ID:
Injection: 11-JUL-2012 11:34
Dilution Factor: 1

FID:3B RESULTS

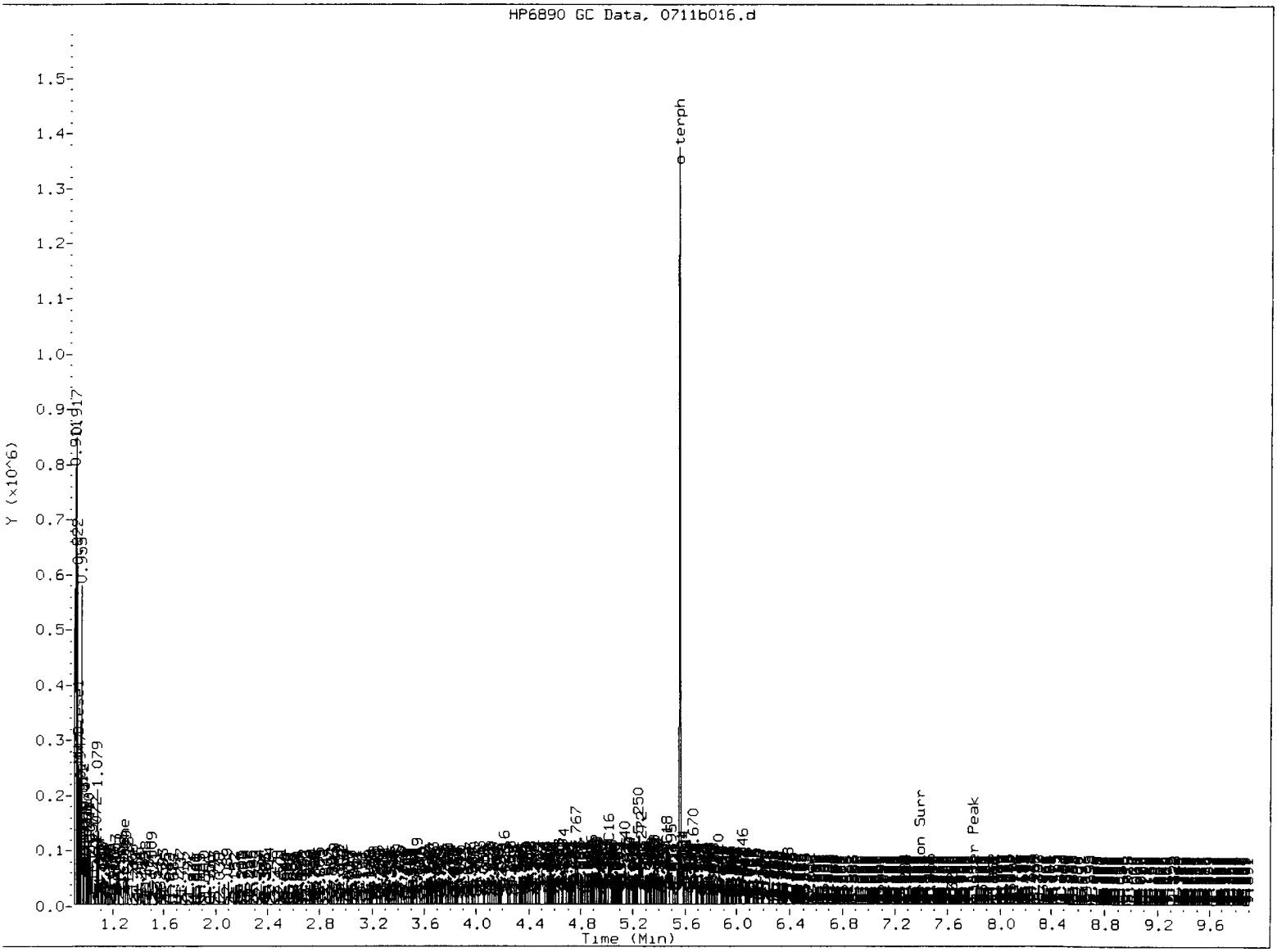
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.291	0.007	32209	31361	GAS (Tol-C12)	1531610	69.23	
C8	1.573	0.008	6071	5781	DIESEL (C12-C24)	3538242	258.27	
C10	3.105	0.004	25538	22967	M.OIL (C24-C38)	94940	9.54	
C12	3.905	0.002	35179	41825	AK-102 (C10-C25)	4249010	260.34	M
C14	4.502	0.000	61954	86834	AK-103 (C25-C36)	69654	10.16	
C16	5.017	-0.001	111574	92760				
C18	5.468	0.001	107193	84001				
C20	5.863	0.000	73688	63657				
C22	6.219	0.001	31467	36122				
C24	6.540	-0.002	2938	1074				
C25	6.694	-0.001	1300	205				
C26	6.842	0.000	584	423				
C28	7.121	0.000	33	11	FUEL OIL(C10-C24)	4242931	291.13	
C32	7.638	0.008	4408	3765				
C34	7.863	0.001	876	522				
Filter Peak	7.798	-0.001	4921	5647				
C36	8.082	-0.002	1348	580	BUNKERC (C10-C38)	4337871	897.32	
o-terph	5.568	0.001	1325874	774247	JET-A (C10-C18)	3240483	225.05	
Triacon Surr	7.391	0.002	112	35				

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	774247	41.3	91.7
Triacontane	35	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 DIESEL #2 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

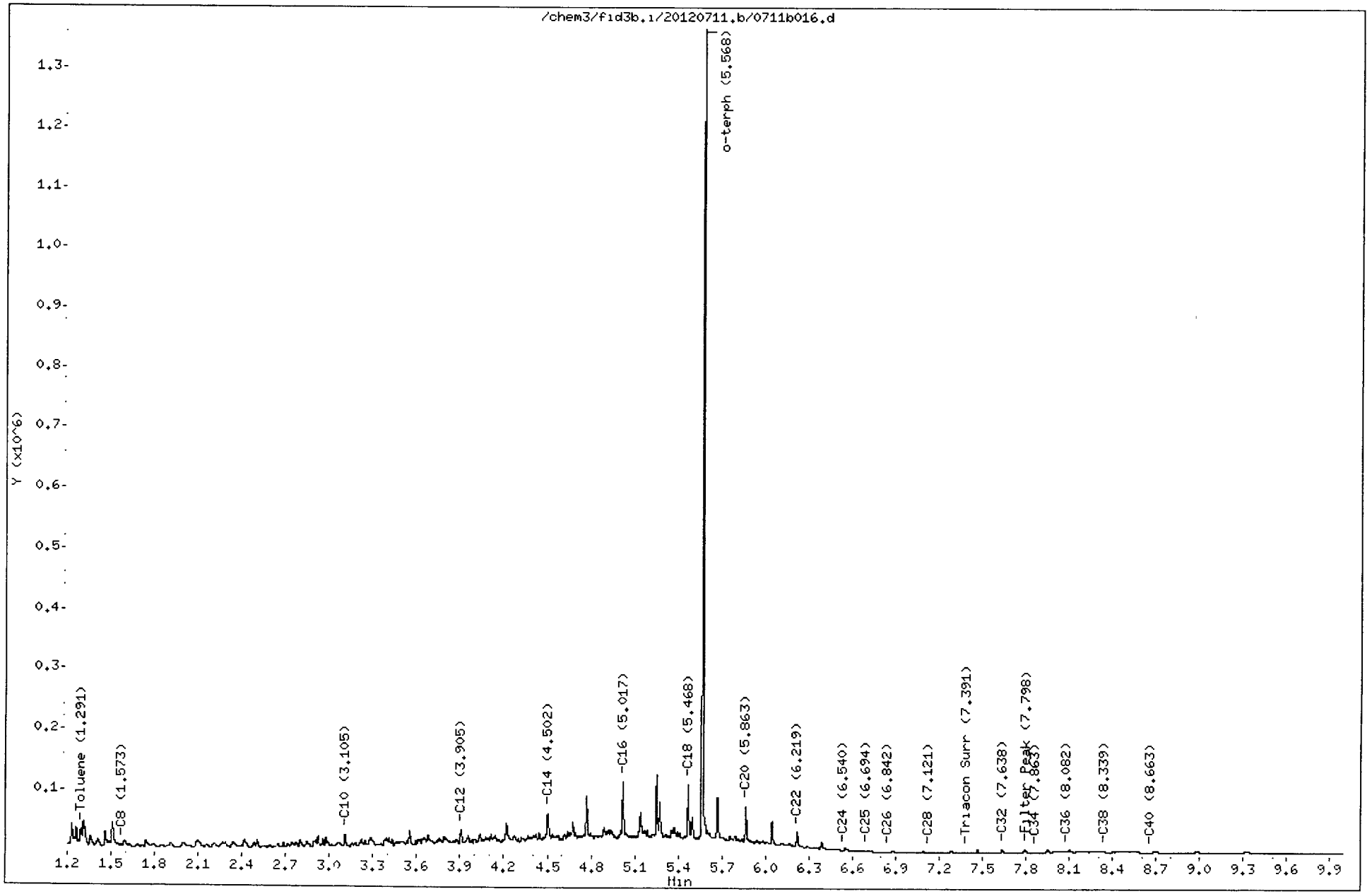
Analyst: _____ Date: _____

Data File: /chem3/fid3b.1/20120711.b/0711b016.d
Date : 11-JUL-2012 11:34
Client ID:
Sample Info: DIESEL #2

Column phase: RTX-1

Instrument: fid3b.1

Operator: MH
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/12/2012

Data file: /chem3/fid3b.i/20120711.b/0711b017.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/12/2012
Macro: FID:3B062212

ARI ID: MOIL #2
Client ID:
Injection: 11-JUL-2012 11:53
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.286	0.003	35582	30733	GAS (Tol-C12)	706827	31.95
C8	1.567	0.002	5188	4297	DIESEL (C12-C24)	531788	38.82
C10	3.106	0.005	3617	2241	M.OIL (C24-C38)	5145588	516.83
C12	3.907	0.004	1461	669	AK-102 (C10-C25)	766463	46.96
C14	4.501	-0.001	504	324	AK-103 (C25-C36)	4653596	678.56 M
C16	5.020	0.002	80	20			
C18	5.470	0.002	215	92			
C20	5.862	-0.001	1292	366			
C22	6.221	0.003	6860	5230			
C24	6.542	0.000	28834	7802			
C25	6.695	0.000	40491	19928			
C26	6.840	-0.002	45192	8828			
C28	7.118	-0.004	56589	36711	FUEL OIL(C10-C24)	652598	44.78
C32	7.637	0.006	78723	86999			
C34	7.863	0.001	53842	16813			
Filter Peak	7.800	0.001	73449	62949			
C36	8.083	-0.001	39643	19284	BUNKERC (C10-C38)	5798186	1199.40
o-terph	5.571	0.004	762	675	JET-A (C10-C18)	164658	11.44
Triacon Surr	7.394	0.004	1144109	750360			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	675	0.0	0.1
Triacontane	750360	45.5	101.1

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b017.d

Date : 11-JUL-2012 11:53

Client ID:

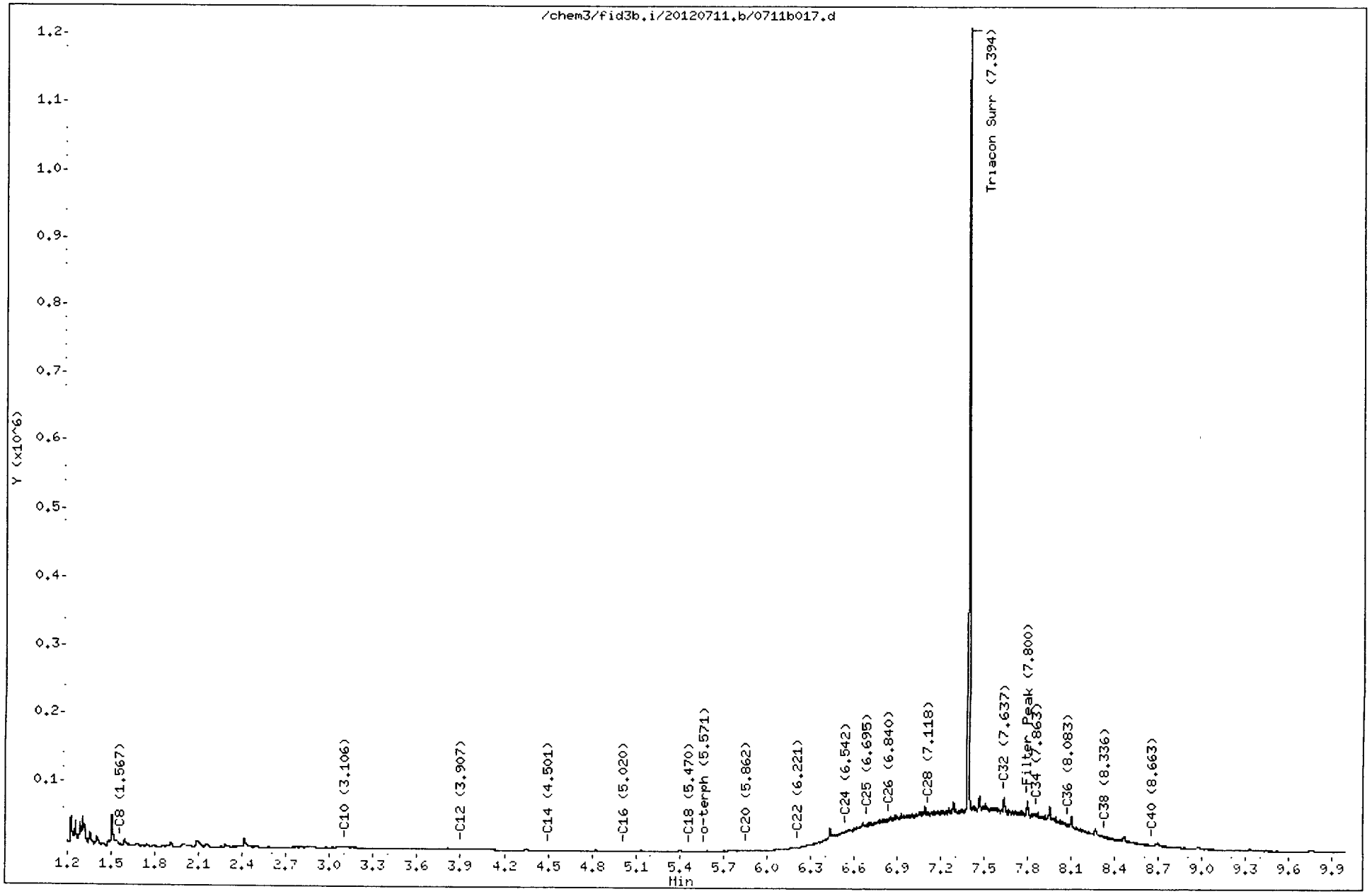
Sample Info: MOIL #2

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/12/2012

Data file: /chem3/fid3b.i/20120711.b/0711b029.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/12/2012
Macro: FID:3B062212

ARI ID: DIESEL #3
Client ID:
Injection: 11-JUL-2012 15:45
Dilution Factor: 1

FID:3B RESULTS

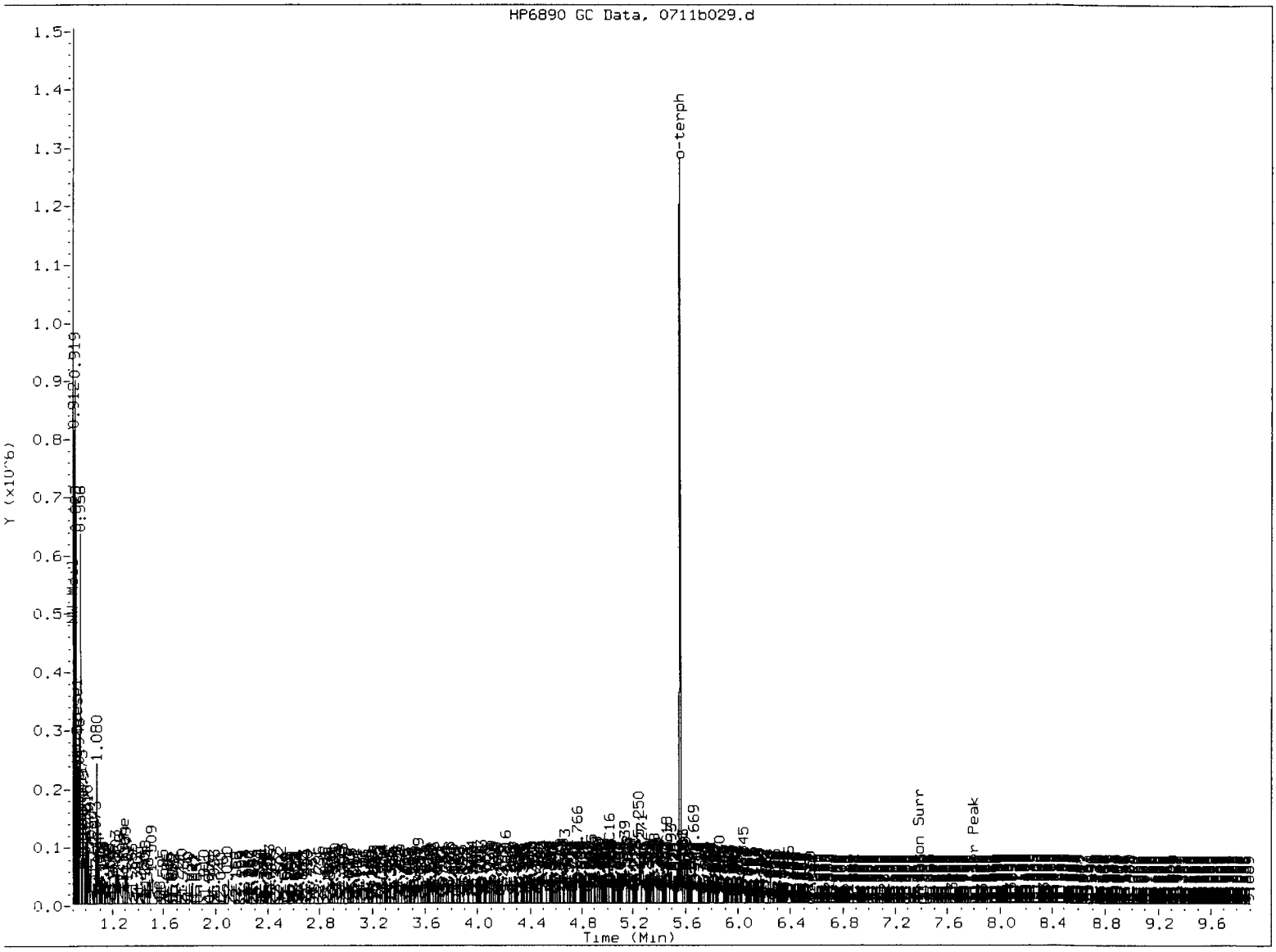
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.291	0.007	33399	32496	GAS (Tol-C12)	1601485	72.39	
C8	1.574	0.009	6089	5945	DIESEL (C12-C24)	3367309	245.79	
C10	3.107	0.006	26154	23383	M.OIL (C24-C38)	79119	7.95	
C12	3.904	0.002	32773	40091	AK-102 (C10-C25)	4081634	250.08	M
C14	4.501	0.000	59312	72827	AK-103 (C25-C36)	53727	7.83	
C16	5.017	-0.002	104172	85990				
C18	5.466	-0.001	98402	84440				
C20	5.863	0.001	67647	64942				
C22	6.220	0.002	31380	33782				
C24	6.535	-0.006	2817	555				
C25	6.694	-0.001	1301	252				
C26	6.844	0.001	554	205				
C28	7.122	0.001	44	14	FUEL OIL(C10-C24)	4075554	279.65	
C32	7.637	0.007	1625	1506				
C34	7.861	-0.001	737	262				
Filter Peak	7.797	-0.002	2261	3008				
C36	8.083	-0.001	1312	442	BUNKERC (C10-C38)	4154673	859.43	
o-terph	5.568	0.001	1254221	774685	JET-A (C10-C18)	3131934	217.51	
Triacon Surr	7.388	-0.002	115	17				

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	774685	41.3	91.7
Triacontane	17	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 DIESEL #3 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

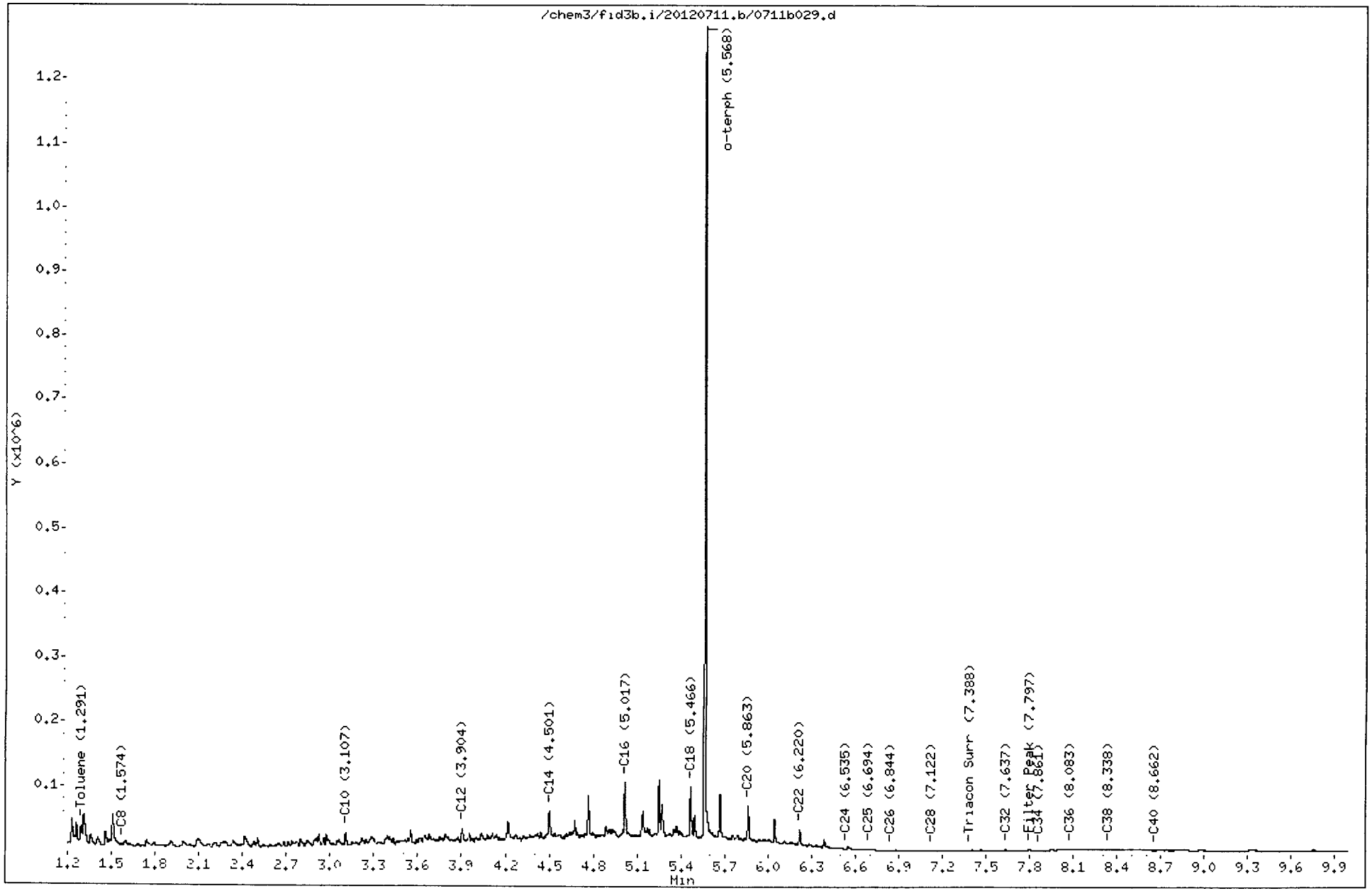
Analyst: _____ Date: _____

Data File: /chem3/fid3b.i/20120711.b/0711b029.d
Date : 11-JUL-2012 15:45
Client ID:
Sample Info: DIESEL #3

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/12/2012

Data file: /chem3/fid3b.i/20120711.b/0711b030.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/12/2012
Macro: FID:3B062212

ARI ID: MOIL #3
Client ID:
Injection: 11-JUL-2012 16:04
Dilution Factor: 1

FID:3B RESULTS

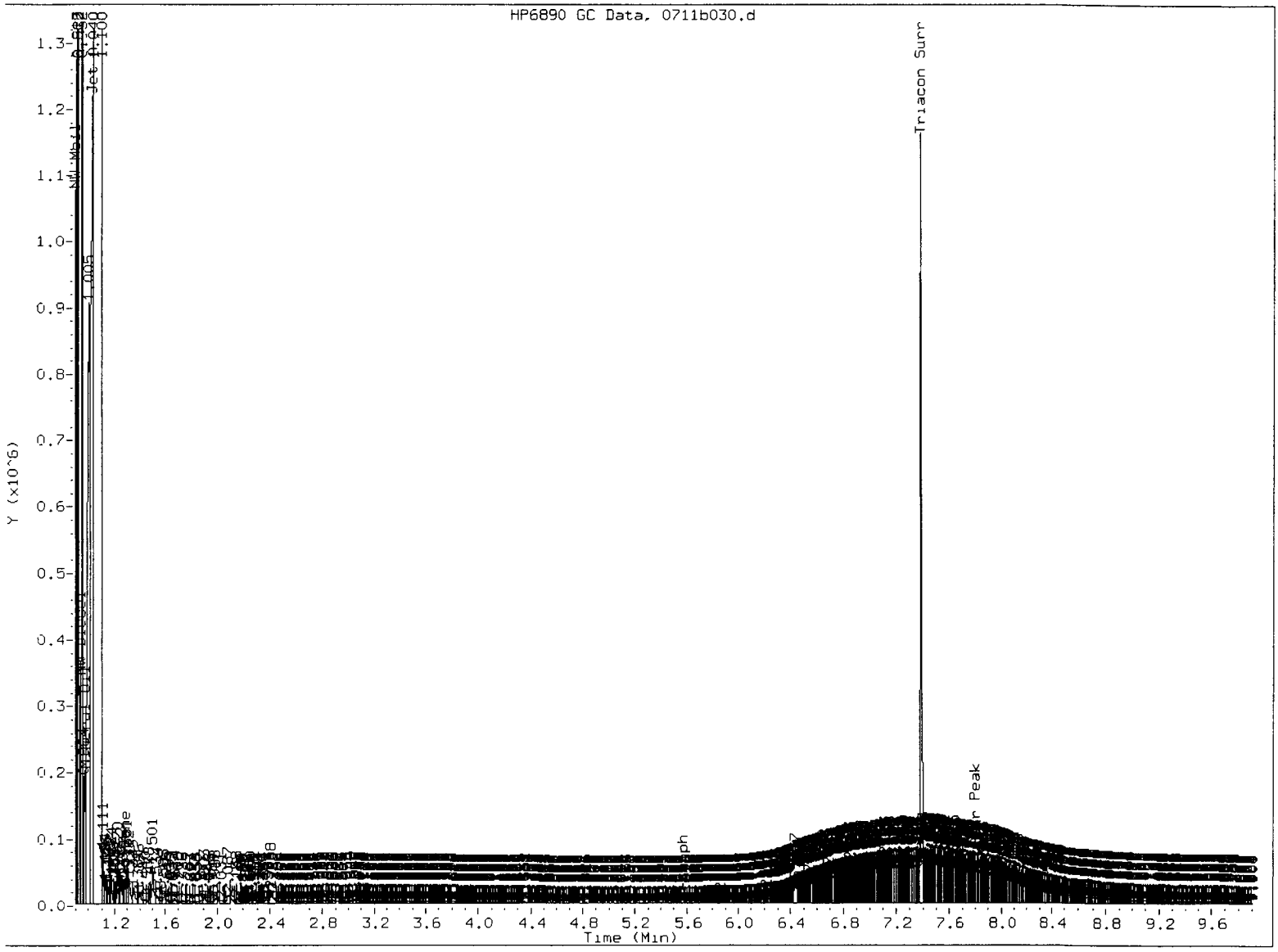
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.283	0.000	38451	29500	GAS (Tol-C12)	787979	35.62
C8	1.562	-0.003	5341	5049	DIESEL (C12-C24)	538820	39.33
C10	3.096	-0.004	3916	997	M.OIL (C24-C38)	4796330	481.75
C12	3.906	0.004	1908	1164	AK-102 (C10-C25)	790502	48.43
C14	4.500	-0.001	732	188	AK-103 (C25-C36)	4359367	635.66 M
C16	5.020	0.002	157	67			
C18	5.465	-0.002	195	138			
C20	5.862	0.000	1222	488			
C22	6.218	0.001	6730	1712			
C24	6.543	0.001	28434	9918			
C25	6.693	-0.002	39336	17408			
C26	6.848	0.006	48047	26660			
C28	7.120	-0.001	55896	14102	FUEL OIL(C10-C24)	691748	47.46
C32	7.631	0.001	56465	13303			
C34	7.863	0.001	50885	17589			
Filter Peak	7.800	0.002	52442	8258			
C36	8.084	0.000	35497	13668	BUNKERC (C10-C38)	5488078	1135.25
o-terph	5.572	0.005	971	916	JET-A (C10-C18)	211893	14.72
Triacon Surr	7.394	0.005	1101340	729056			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	916	0.0	0.1
Triacontane	729056	44.2	98.2

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 MOIL #3 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

Analyst: _____ Date: _____

Data File: /chem3/fid3b.1/20120711.b/0711b030.d

Date : 11-JUL-2012 16:04

Client ID:

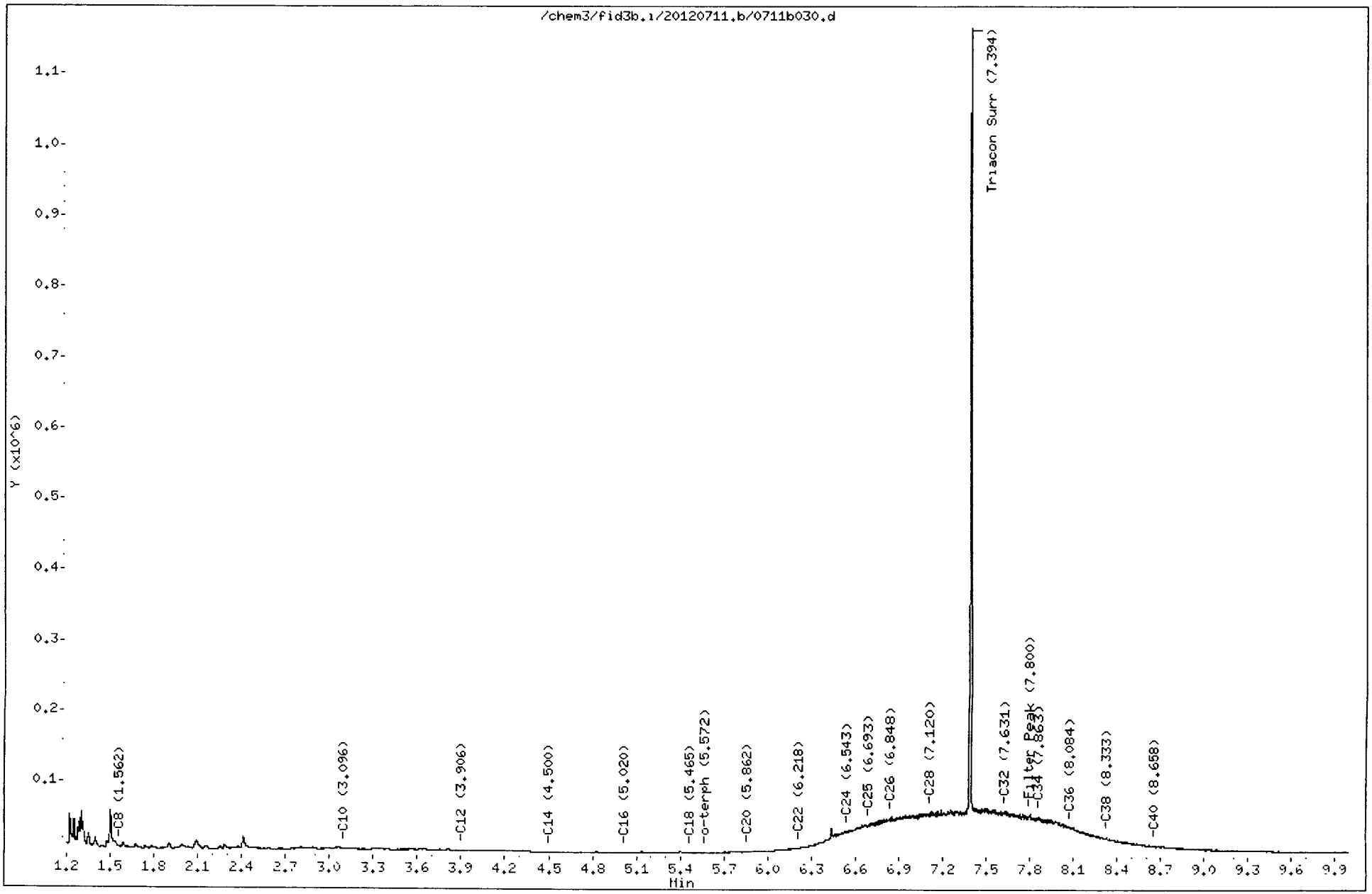
Sample Info: MOIL #3

Column phase: RTX-1

Instrument: fid3b.1

Operator: MH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/13/2012

Data file: /chem3/fid3b.i/20120711.b/0711b032.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50MBW1
Client ID:
Injection: 11-JUL-2012 16:42
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.281	-0.003	37731	33486	GAS (Tol-C12)	853276	38.57
C8	1.560	-0.005	5539	5389	DIESEL (C12-C24)	96297	7.03 JV
C10	3.098	-0.003	3960	943	M.OIL (C24-C38)	109625	11.01 JV
C12	3.905	0.003	2146	1440	AK-102 (C10-C25)	258526	15.84
C14	4.499	-0.002	920	272	AK-103 (C25-C36)	82912	12.09
C16	5.016	-0.002	322	206			
C18	5.468	0.000	79	23			
C20	5.859	-0.003	277	157			
C22	6.219	0.001	172	45			
C24	6.547	0.005	95	29			
C25	6.697	0.002	67	9			
C26	6.844	0.001	201	111			
C28	7.126	0.005	812	854	FUEL OIL(C10-C24)	258375	17.73
C32	7.636	0.006	2418	2071			
C34	7.869	0.007	1455	1149			
Filter Peak	7.799	0.000	2984	3383			
C36	8.082	-0.002	2161	1419	BUNKERC (C10-C38)	368000	76.12
o-terph	5.566	-0.001	1045658	677941	JET-A (C10-C18)	228642	15.88
Triacon Surr	7.391	0.002	1046779	672836			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	677941	36.1	80.3
Triacontane	672836	40.8	90.6

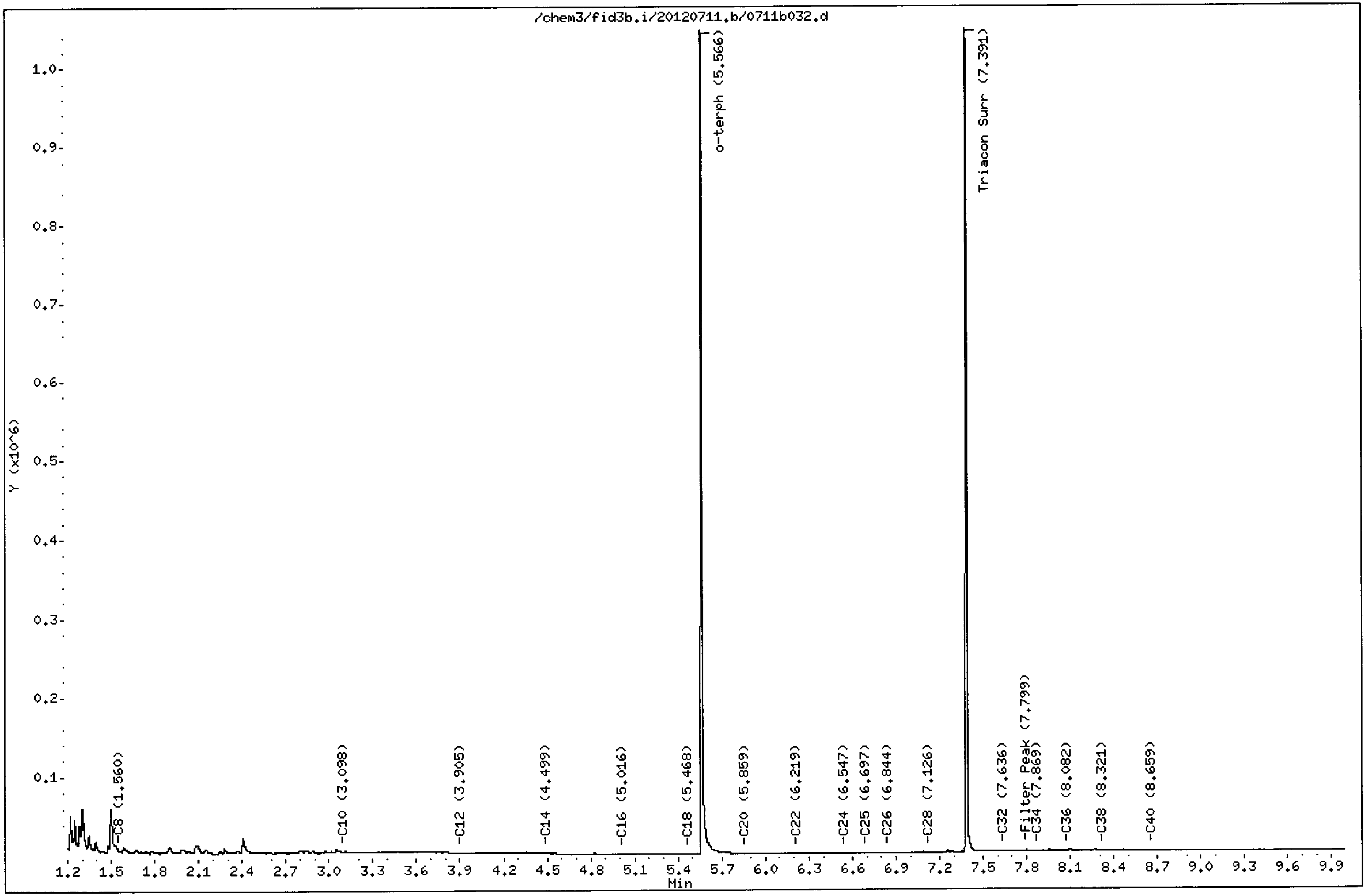
Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b032.d
Date : 11-JUL-2012 16:42
Client ID:
Sample Info: VB50MBW1

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/13/2012

Data file: /chem3/fid3b.i/20120711.b/0711b033.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50LCSW1
Client ID:
Injection: 11-JUL-2012 17:02
Dilution Factor: 1

FID:3B RESULTS

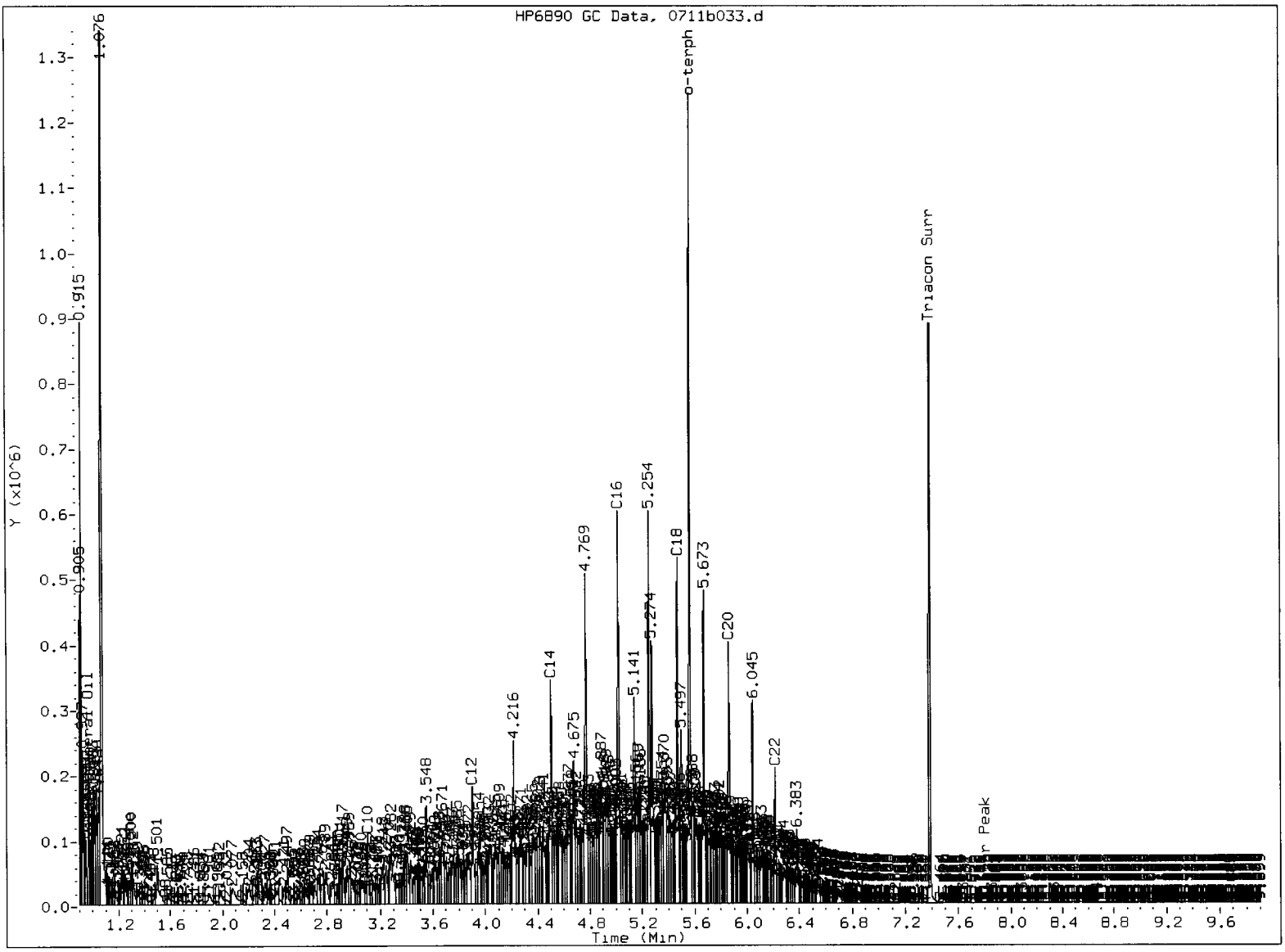
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.283	0.000	38502	33629	GAS (Tol-C12)	3995282	180.60	
C8	1.566	0.001	8820	8221	DIESEL (C12-C24)	15489388	1130.61	75.4%R
C10	3.104	0.003	106012	76627	M.OIL (C24-C38)	166193	16.69	LCL
C12	3.904	0.002	179491	164958	AK-102 (C10-C25)	17926672	1098.38	M
C14	4.502	0.001	342696	283025	AK-103 (C25-C36)	123739	18.04	
C16	5.020	0.002	601911	469569				
C18	5.471	0.004	528325	446760				
C20	5.864	0.001	400533	305319				
C22	6.217	0.000	207662	165724				
C24	6.542	0.001	54238	50517				
C25	6.697	0.002	19835	24515				
C26	6.845	0.003	7672	9388				
C28	7.127	0.005	1664	1445	FUEL OIL(C10-C24)	17895896	1227.93	
C32	7.638	0.007	1151	1065				
C34	7.859	-0.003	509	313				
Filter Peak	7.798	-0.001	1478	1937				
C36	8.085	0.001	890	825	BUNKERC (C10-C38)	18062089	3736.28	
o-terph	5.570	0.003	1117791	711786	JET-A (C10-C18)	13412605	931.50	
Triacon Surr	7.390	0.000	889166	653899				

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	711786	37.9	84.3
Triacontane	653899	39.6	88.1

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 VB50LCSW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

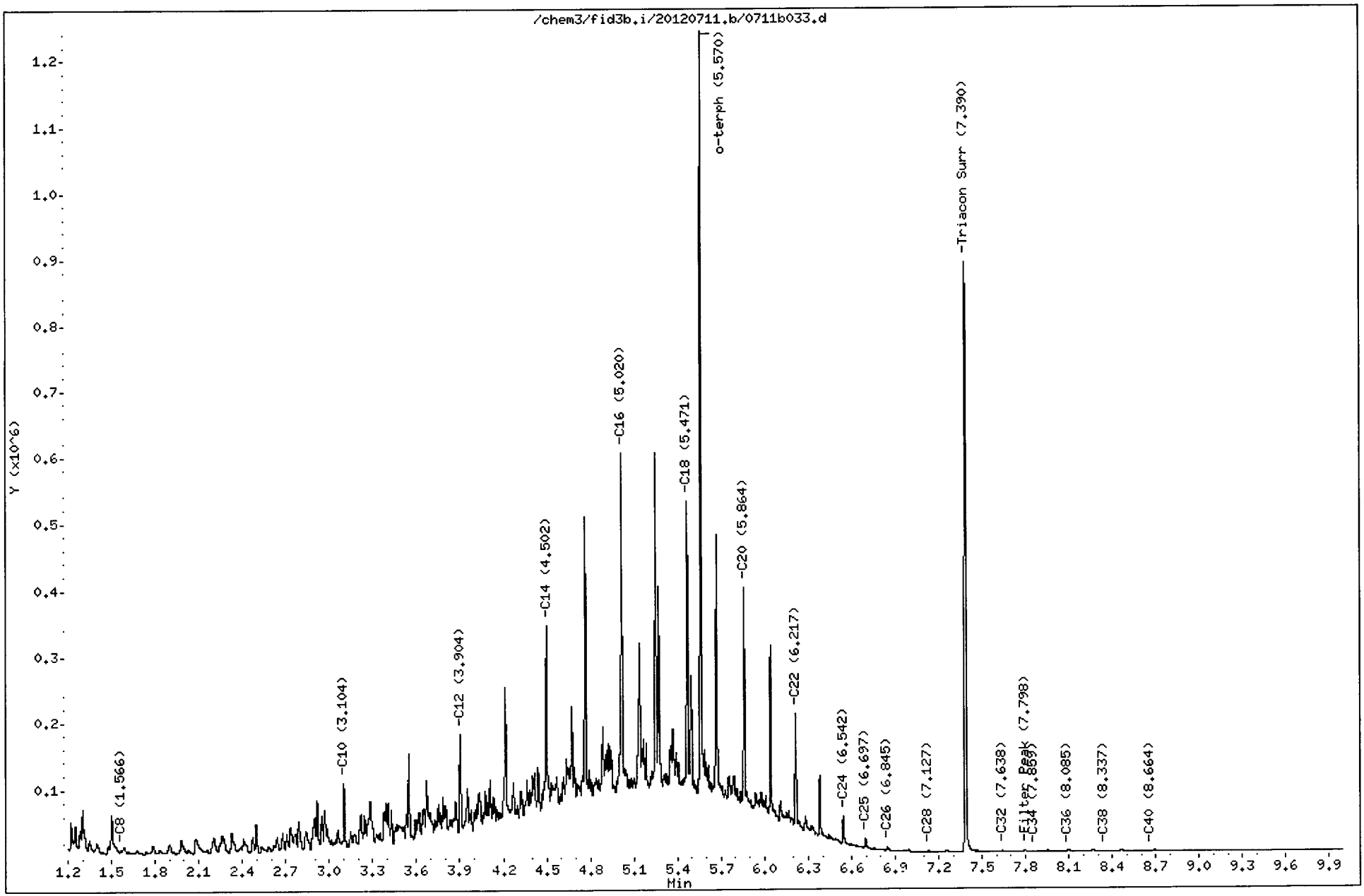
Analyst: AR Date: 7/13/2012

Data File: /chem3/fid3b.i/20120711.b/0711b033.d
Date : 11-JUL-2012 17:02
Client ID:
Sample Info: VB50LCSW1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/13/2012

Data file: /chem3/fid3b.i/20120711.b/0711b034.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50LCSDW1
Client ID:
Injection: 11-JUL-2012 17:21
Dilution Factor: 1

FID:3B RESULTS

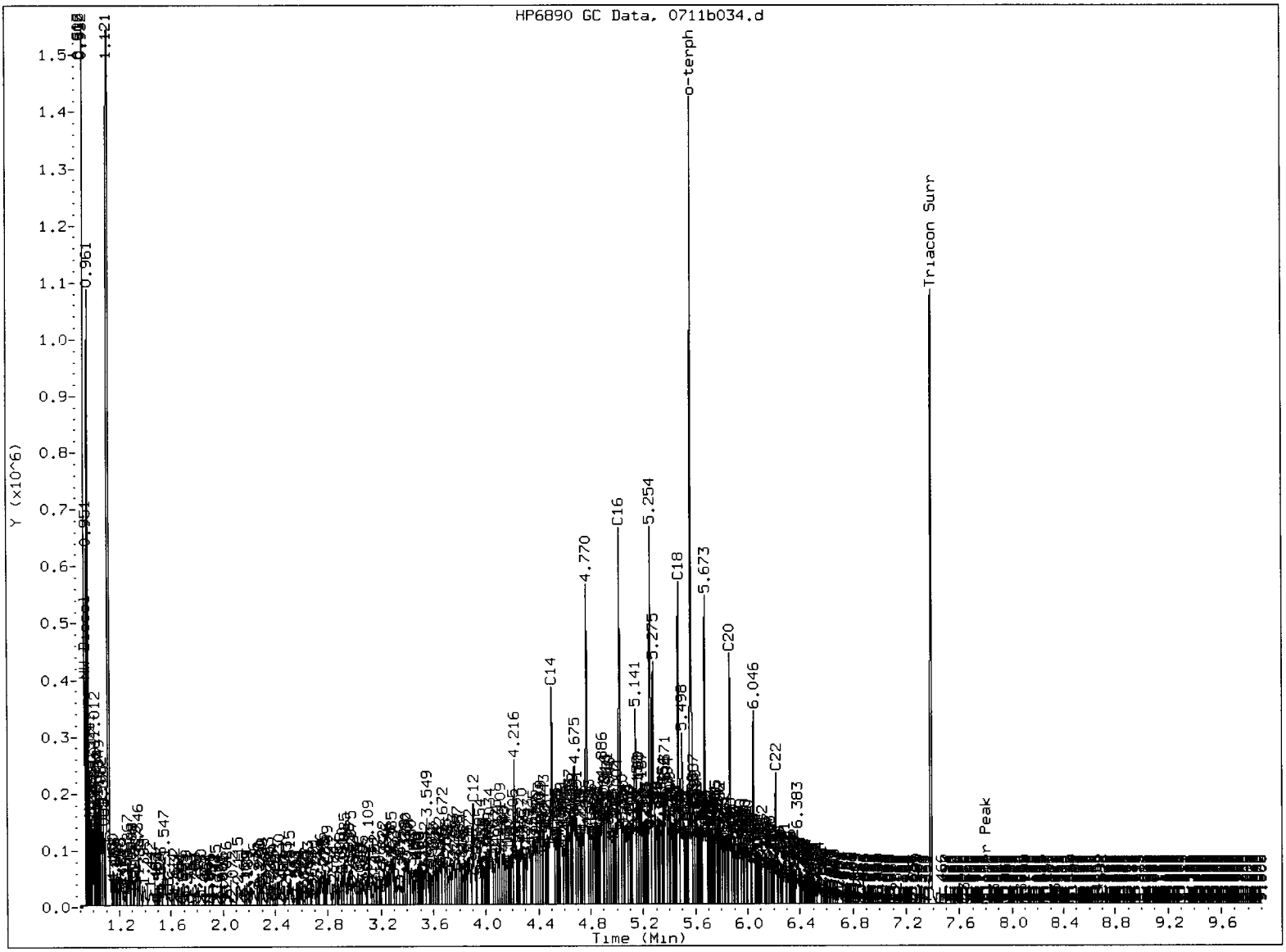
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.286	0.003	27152	11308	GAS (Tol-C12)	4373530	197.70
C8	1.583	0.018	14275	20893	DIESEL (C12-C24)	17423976	1271.82 84.8%R
C10	3.095	-0.006	22669	14741	M.OIL (C24-C38)	187122	18.79 LR
C12	3.904	0.002	177648	168045	AK-102 (C10-C25)	19920098	1220.52 M
C14	4.502	0.001	382341	465843	AK-103 (C25-C36)	140105	20.43
C16	5.021	0.002	663764	487466			
C18	5.471	0.004	567504	459581			
C20	5.865	0.003	441829	331571			
C22	6.218	0.000	231491	171653			
C24	6.543	0.001	56850	52953			
C25	6.697	0.002	23483	27515			
C26	6.847	0.005	8929	11715			
C28	7.126	0.005	1729	1624	FUEL OIL(C10-C24)	19883366	1364.30
C32	7.637	0.006	1812	1493			
C34	7.866	0.004	357	222			
Filter Peak	7.799	0.000	2256	2098			
C36	8.079	-0.005	664	282	BUNKERC (C10-C38)	20070488	4151.74
o-terph	5.570	0.003	1287407	794265	JET-A (C10-C18)	14676806	1019.30
Triacon Surr	7.391	0.001	1083354	731689			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	794265	42.3	94.1
Triacontane	731689	44.4	98.6

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 VB50LCSDW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

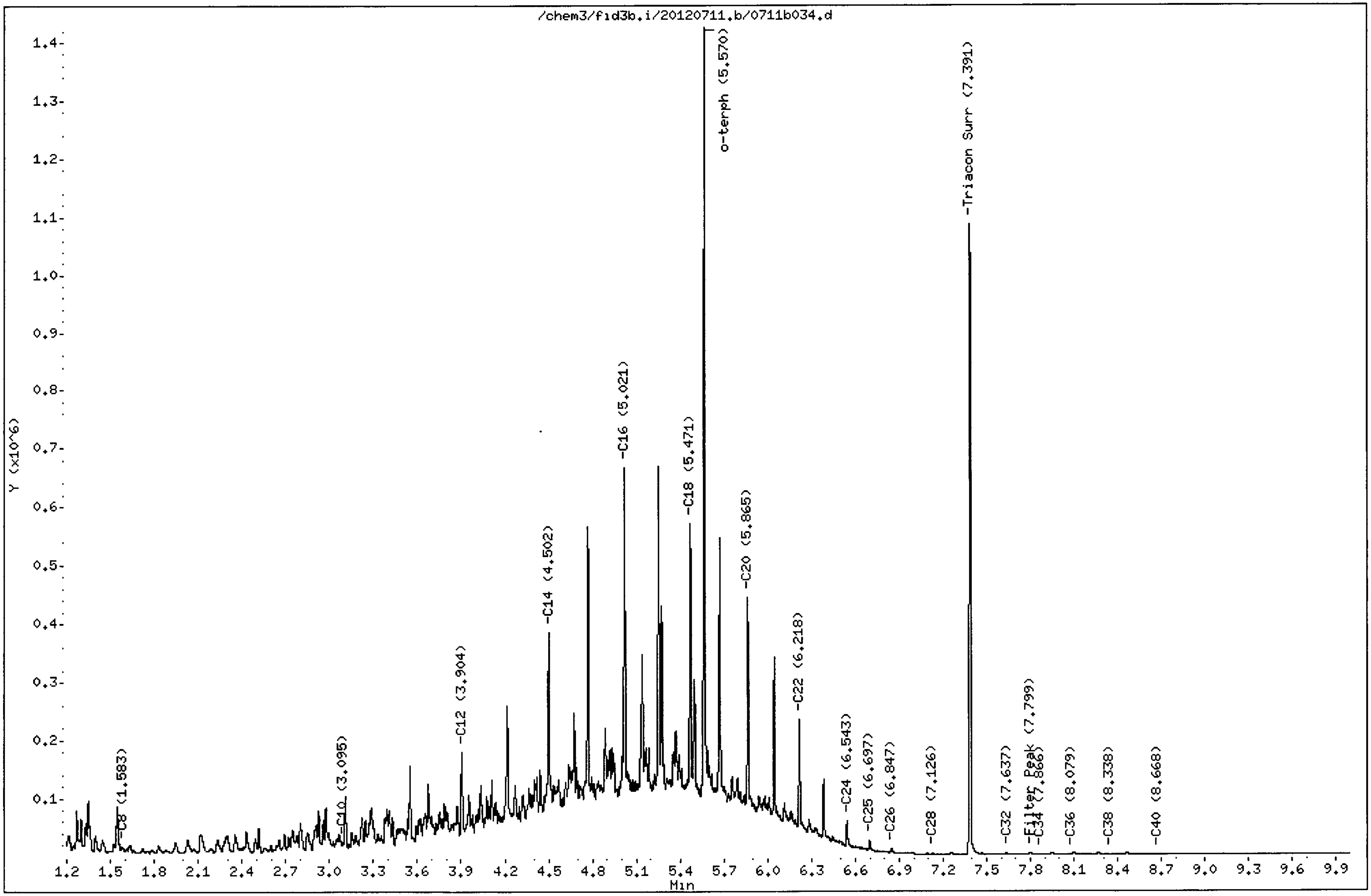
Analyst: AR Date: 7/13/2012

Data File: /chem3/fid3b.i/20120711.b/0711b034.d
Date : 11-JUL-2012 17:21
Client ID:
Sample Info: VB50LCSDW1

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120711.b/0711b035.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50A
Client ID:
Injection: 11-JUL-2012 17:40
Dilution Factor: 1

AR 7/13/2012

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.283	0.000	35912	34289	GAS (Tol-C12)	792086	35.81
C8	1.565	0.000	5390	4346	DIESEL (C12-C24)	88189	6.44 UPL
C10	3.107	0.006	3906	2040	M.OIL (C24-C38)	302058	30.34 UPL
C12	3.909	0.007	1828	611	AK-102 (C10-C25)	232351	14.24
C14	4.506	0.004	821	350	AK-103 (C25-C36)	249944	36.45
C16	5.021	0.002	217	39			
C18	5.466	-0.001	375	305			
C20	5.862	0.000	346	177			
C22	6.222	0.005	363	109			
C24	6.542	0.001	542	234			
C25	6.707	0.012	1163	843			
C26	6.840	-0.002	1029	337			
C28	7.123	0.002	2496	1781	FUEL OIL(C10-C24)	230543	15.82
C32	7.634	0.004	5459	7075			
C34	7.864	0.002	5406	3905			
Filter Peak	7.799	0.000	5738	2385			
C36	8.082	-0.002	4456	1494	BUNKERC (C10-C38)	532602	110.17
o-terph	5.564	-0.003	947639	612079	JET-A (C10-C18)	196204	13.63
Triacon Surr	7.390	0.000	967258	623996			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	612079	32.6	72.5
Triacontane	623996	37.8	84.1

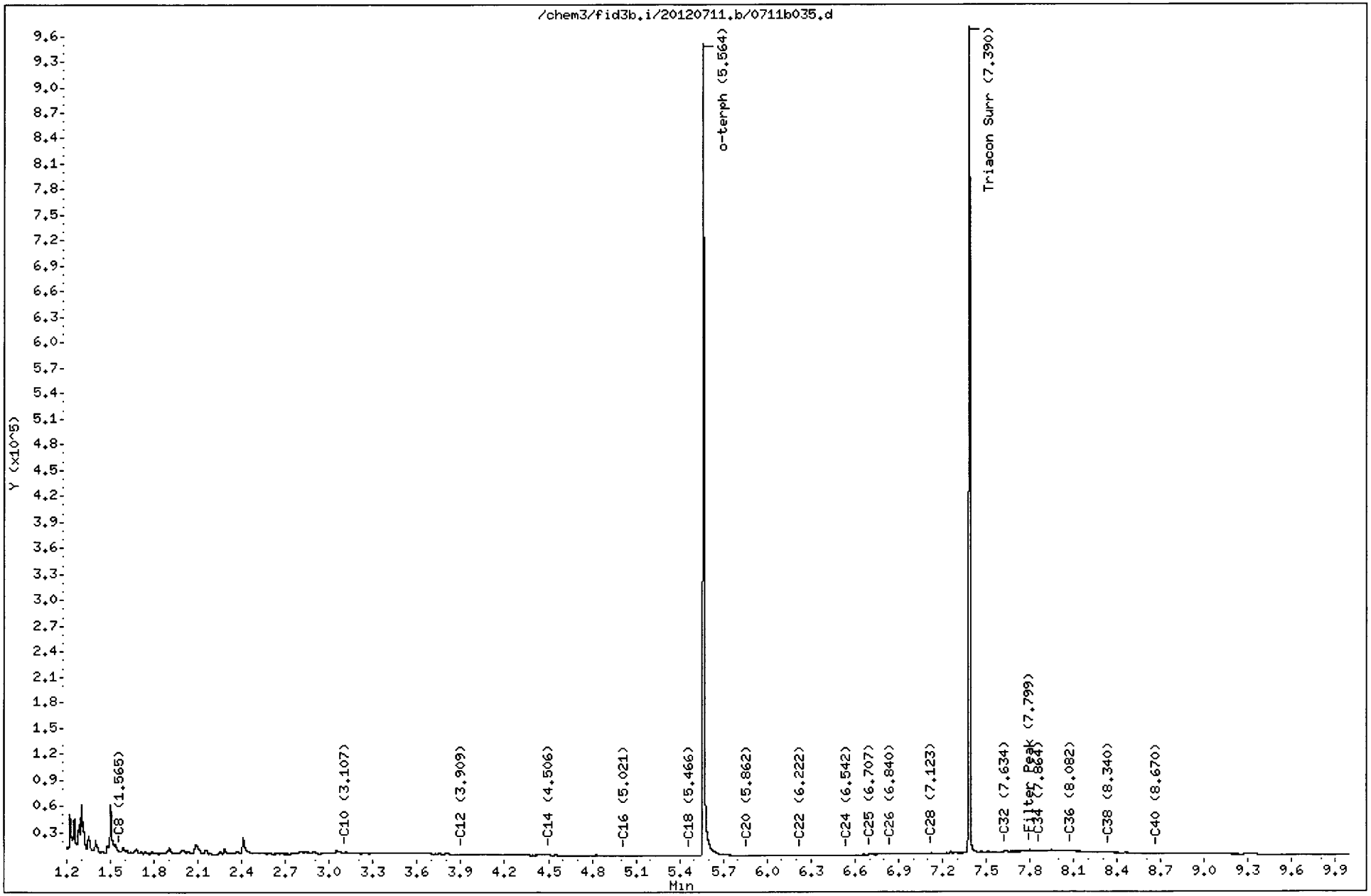
Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b035.d
Date : 11-JUL-2012 17:40
Client ID:
Sample Info: VB50A

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/13/2012

Data file: /chem3/fid3b.i/20120711.b/0711b036.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50B
Client ID:
Injection: 11-JUL-2012 17:59
Dilution Factor: 1

FID:3B RESULTS

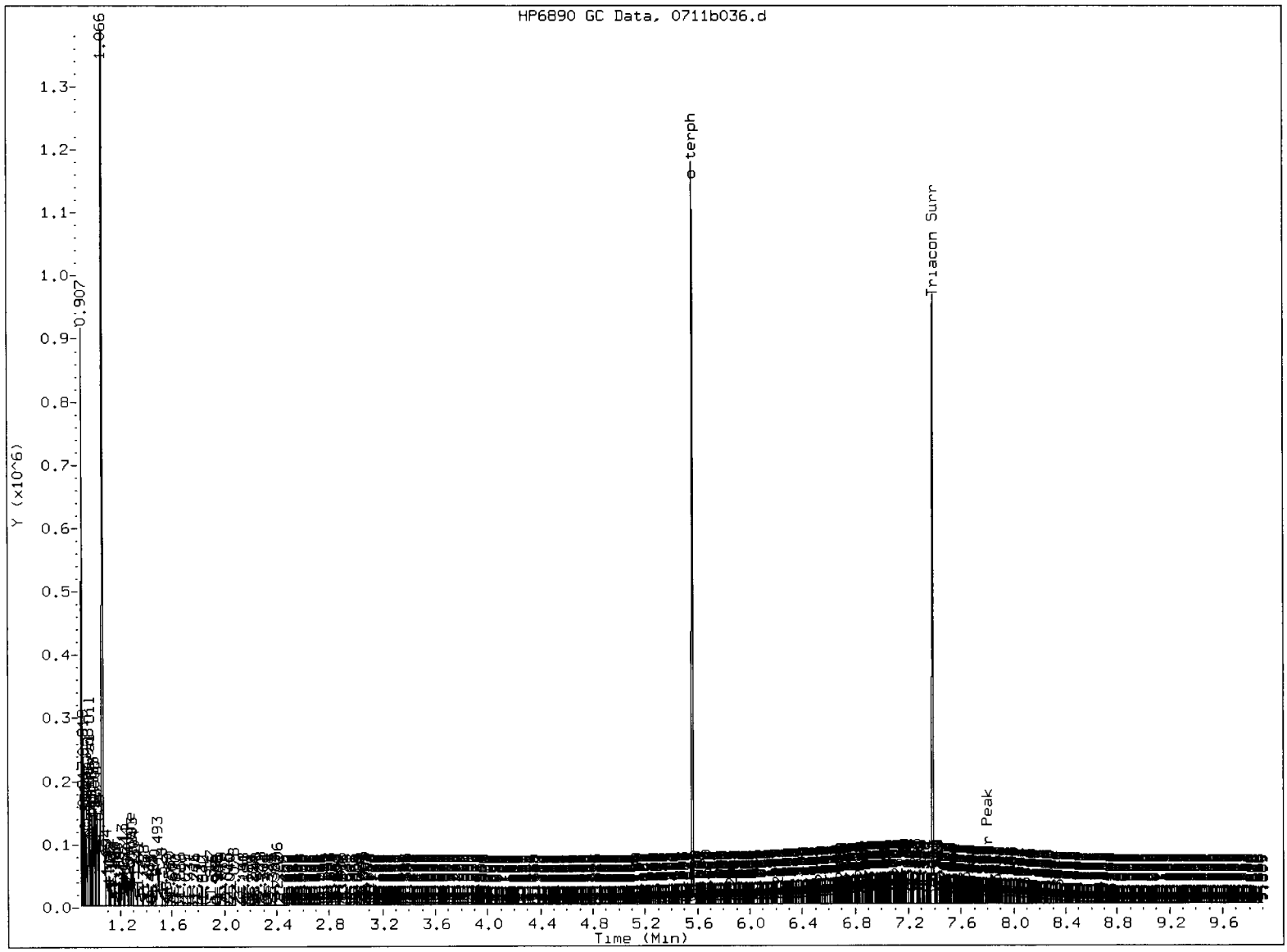
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.275	-0.008	40542	35984	GAS (Tol-C12)	788027	35.62
C8	1.556	-0.009	5472	4875	DIESEL (C12-C24)	663351	48.42 DRO
C10	3.100	-0.001	3570	566	M.OIL (C24-C38)	1625043	163.22 RRO
C12	3.896	-0.006	1943	1805	AK-102 (C10-C25)	850137	52.09 M
C14	4.500	-0.001	866	288	AK-103 (C25-C36)	1487119	216.84 M
C16	5.024	0.006	1560	1228			
C18	5.464	-0.003	6722	6181			
C20	5.861	-0.001	9188	10258			
C22	6.221	0.003	10482	14071			
C24	6.540	-0.001	14227	12929			
C25	6.695	0.000	17680	9513			
C26	6.842	-0.001	20876	10676			
C28	7.121	-0.001	25019	13193	FUEL OIL(C10-C24)	803943	55.16
C32	7.632	0.001	17084	11075			
C34	7.863	0.001	13998	7867			
Filter Peak	7.801	0.002	14938	7661			
C36	8.086	0.002	9363	2766	BUNKERC (C10-C38)	2428986	502.45
o-terph	5.565	-0.002	1157885	644443	JET-A (C10-C18)	288561	20.04
Triacon Surr	7.391	0.001	943065	620475			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	644443	34.3	76.3
Triacontane	620475	37.6	83.6

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 VB50B FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

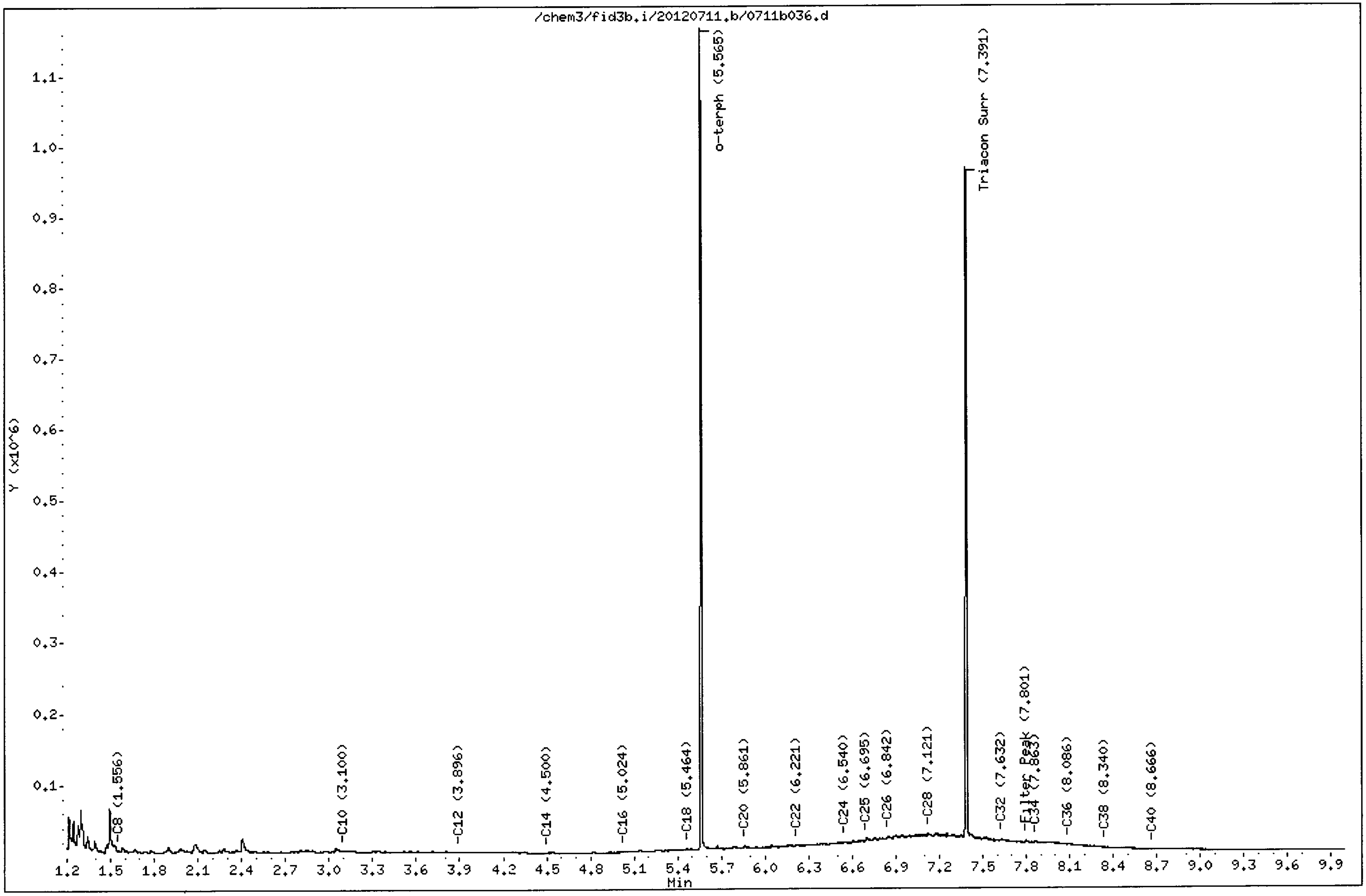
Analyst: AR Date: 7/13/2012

Data File: /chem3/fid3b.i/20120711.b/0711b036.d
Date : 11-JUL-2012 17:59
Client ID:
Sample Info: VB50B

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120711.b/0711b037.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50C
Client ID:
Injection: 11-JUL-2012 18:18
Dilution Factor: 1

AR 7/13/2012

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.282	-0.001	34261	31378	GAS (Tol-C12)	713474	32.25	
C8	1.560	-0.005	4854	3265	DIESEL (C12-C24)	98415	7.18	LRL
C10	3.099	-0.002	3231	701	M.OIL (C24-C38)	513092	51.54	LRC
C12	3.908	0.006	1664	656	AK-102 (C10-C25)	227285	13.93	
C14	4.504	0.003	458	71	AK-103 (C25-C36)	433532	63.22	M
C16	5.023	0.005	112	22				
C18	5.467	0.000	383	295				
C20	5.862	0.000	585	384				
C22	6.217	-0.001	717	208				
C24	6.543	0.001	1267	390				
C25	6.699	0.004	1742	732				
C26	6.841	-0.002	2053	555				
C28	7.123	0.002	4244	3542	FUEL OIL(C10-C24)	222429	15.26	
C32	7.633	0.002	7887	7815				
C34	7.862	0.000	8235	2401				
Filter Peak	7.801	0.002	8545	2538				
C36	8.082	-0.002	7002	1091	BUNKERC (C10-C38)	735521	152.15	
o-terph	5.566	-0.001	1067807	672086	JET-A (C10-C18)	168559	11.71	
Triacon Surr	7.392	0.003	976974	660322				

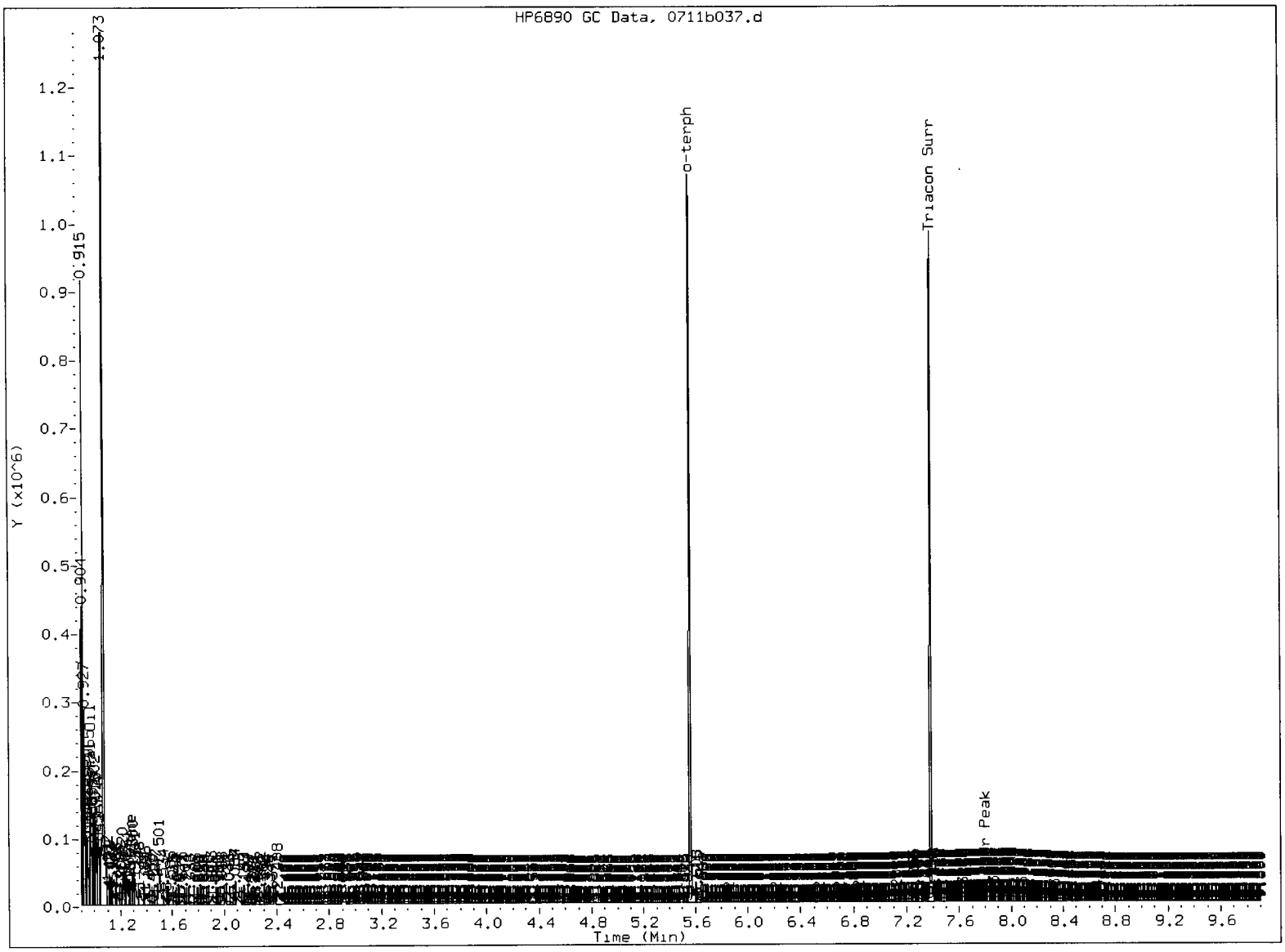
Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	672086	35.8	79.6
Triacontane	660322	40.0	89.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 VB50C

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

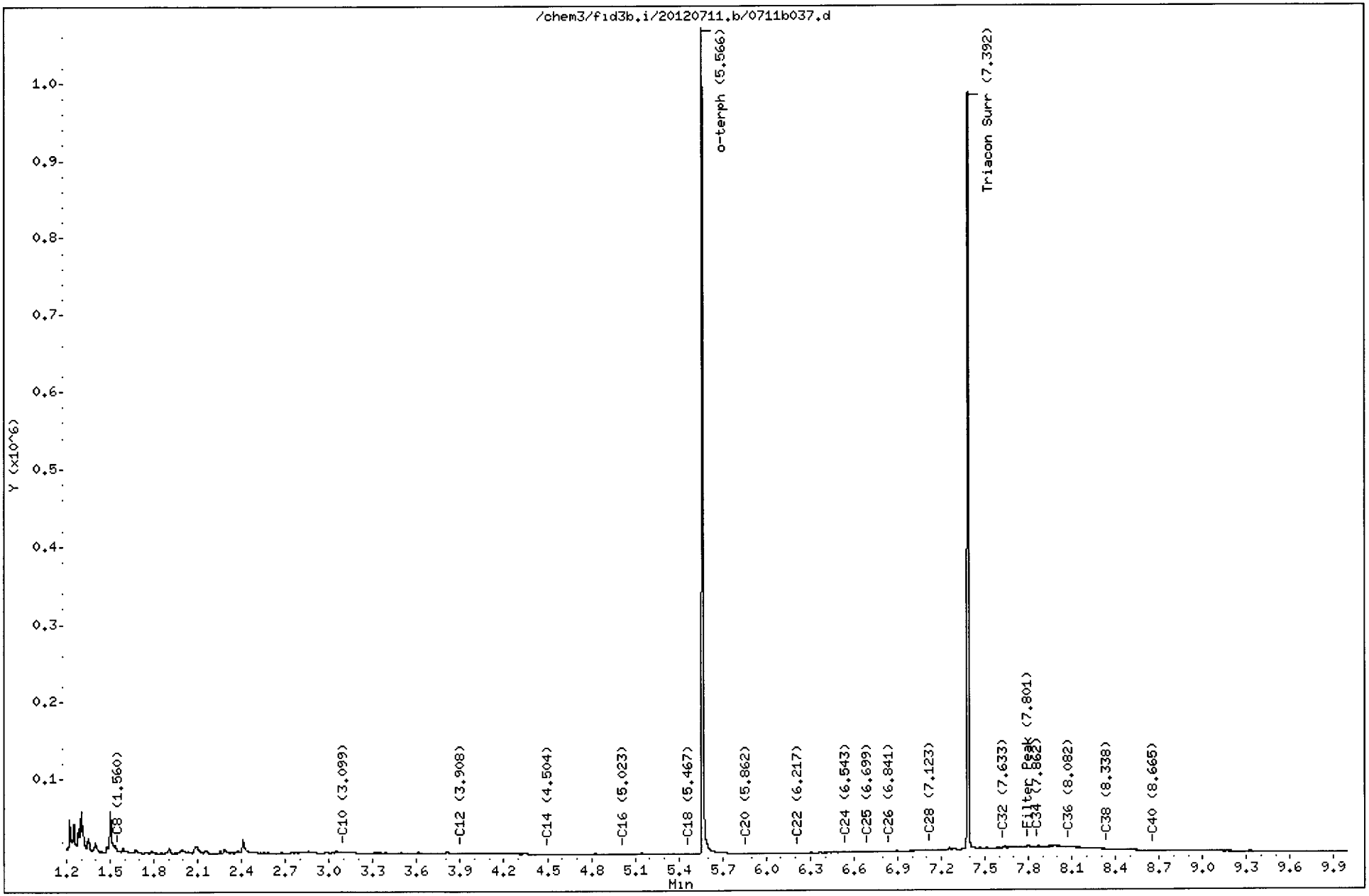
Analyst: AR Date: 7/13/2012

Data File: /chem3/fid3b.i/20120711.b/0711b037.d
Date : 11-JUL-2012 18:18
Client ID:
Sample Info: VB50C

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



VB50 : 00271

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120711.b/0711b038.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50D
Client ID:
Injection: 11-JUL-2012 18:37
Dilution Factor: 1

AR 7/17/2012

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.280	-0.003	39376	35895	GAS (Tol-C12)	846659	38.27
C8	1.562	-0.003	5614	4696	DIESEL (C12-C24)	101218	7.39 LRL
C10	3.098	-0.003	3741	745	M.OIL (C24-C38)	432598	43.45 LRL
C12	3.897	-0.005	2111	1238	AK-102 (C10-C25)	256294	15.70
C14	4.503	0.002	601	227	AK-103 (C25-C36)	360196	52.52
C16	5.016	-0.003	146	71			
C18	5.466	-0.001	496	459			
C20	5.862	0.000	639	438			
C22	6.219	0.001	776	252			
C24	6.542	0.001	1111	533			
C25	6.687	-0.008	1282	269			
C26	6.842	0.000	1682	430			
C28	7.123	0.001	3682	3408	FUEL OIL(C10-C24)	251907	17.28
C32	7.631	0.000	7128	3111			
C34	7.861	-0.001	7327	1952			
Filter Peak	7.798	-0.001	8042	5103			
C36	8.084	0.000	5945	1290	BUNKERC (C10-C38)	684504	141.60
o-terph	5.566	-0.001	1227387	697525	JET-A (C10-C18)	205760	14.29
Triacon Surr	7.389	0.000	1015127	658983			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	697525	37.2	82.6
Triacontane	658983	39.9	88.8

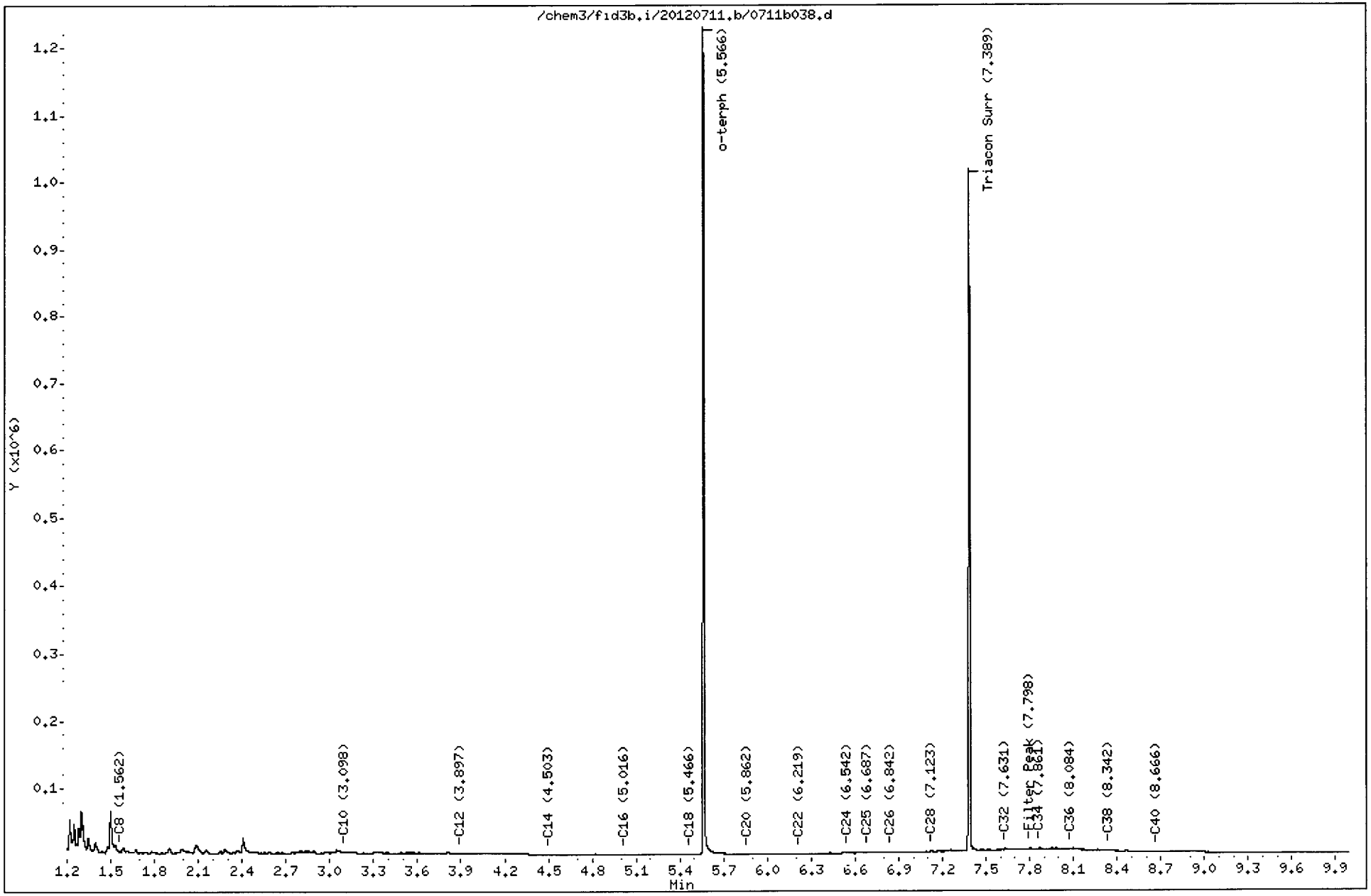
Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b038.d
Date : 11-JUL-2012 18:37
Client ID:
Sample Info: VB50D

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120711.b/0711b039.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50E
Client ID:
Injection: 11-JUL-2012 18:55
Dilution Factor: 1

AR 7/13/2012

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.281	-0.002	38040	31970	GAS (Tol-C12)	844232	38.16
C8	1.563	-0.002	5991	6386	DIESEL (C12-C24)	97610	7.12 URL
C10	3.102	0.001	3734	589	M.OIL (C24-C38)	286276	28.75 URL
C12	3.906	0.004	2271	892	AK-102 (C10-C25)	257546	15.78
C14	4.497	-0.004	863	118	AK-103 (C25-C36)	238760	34.81
C16	5.015	-0.003	222	57			
C18	5.466	-0.001	493	367			
C20	5.862	0.000	808	864			
C22	6.215	-0.003	668	387			
C24	6.544	0.002	752	311			
C25	6.695	0.000	816	160			
C26	6.842	0.000	1208	317			
C28	7.124	0.003	2843	3362	FUEL OIL(C10-C24)	254862	17.49
C32	7.634	0.004	5046	5978			
C34	7.866	0.005	5114	5351			
Filter Peak	7.797	-0.002	5440	3714			
C36	8.088	0.004	4214	2188	BUNKERC (C10-C38)	541138	111.94
o-terph	5.567	0.000	1073353	643153	JET-A (C10-C18)	224546	15.59
Triacon Surr	7.390	0.000	905296	599549			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	643153	34.3	76.2
Triacontane	599549	36.3	80.8

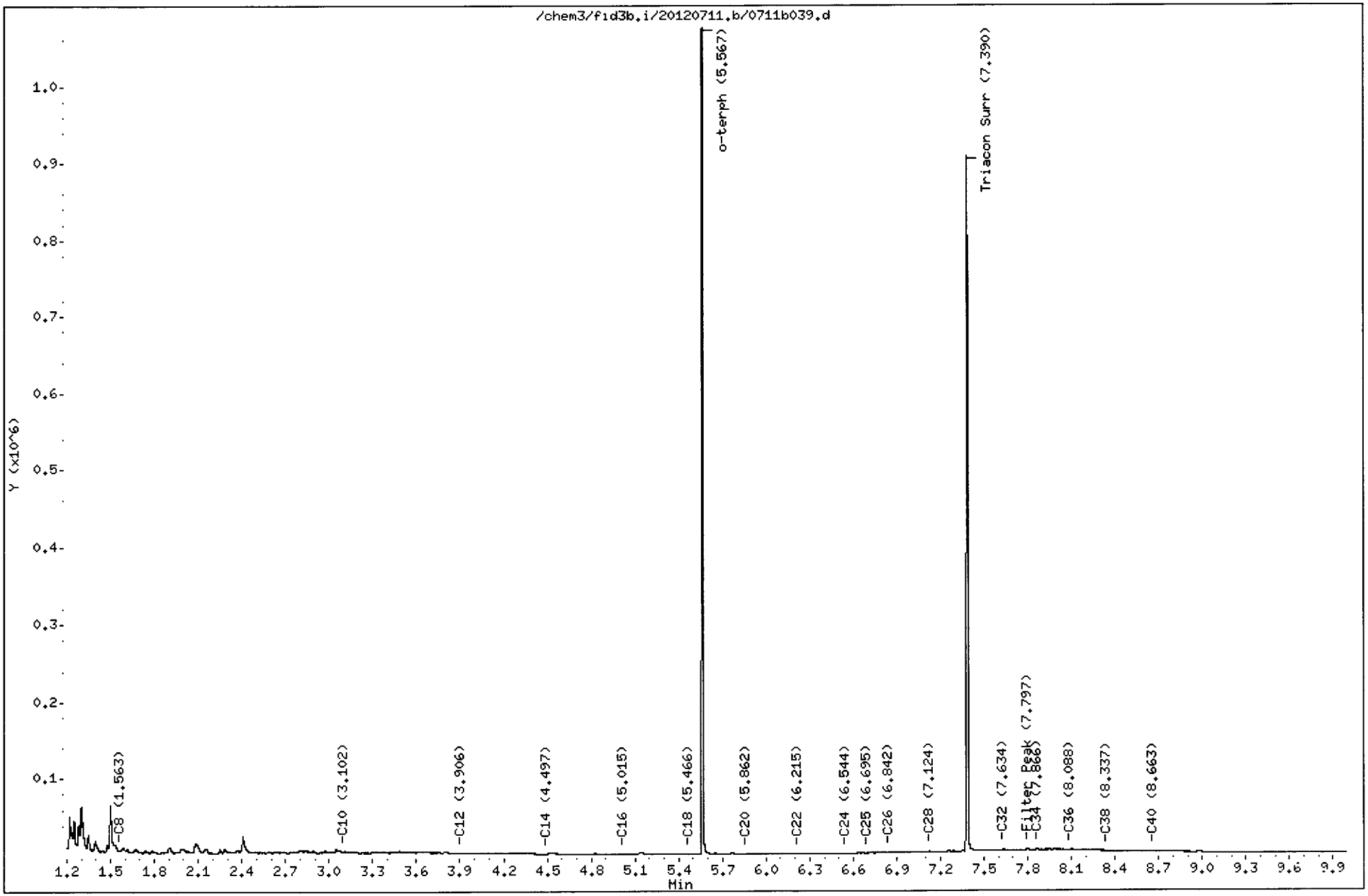
Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b039.d
Date : 11-JUL-2012 18:55
Client ID:
Sample Info: VB50E

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120711.b/0711b040.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50F
Client ID:
Injection: 11-JUL-2012 19:14
Dilution Factor: 1

AR 7/13/2012

FID:3B RESULTS

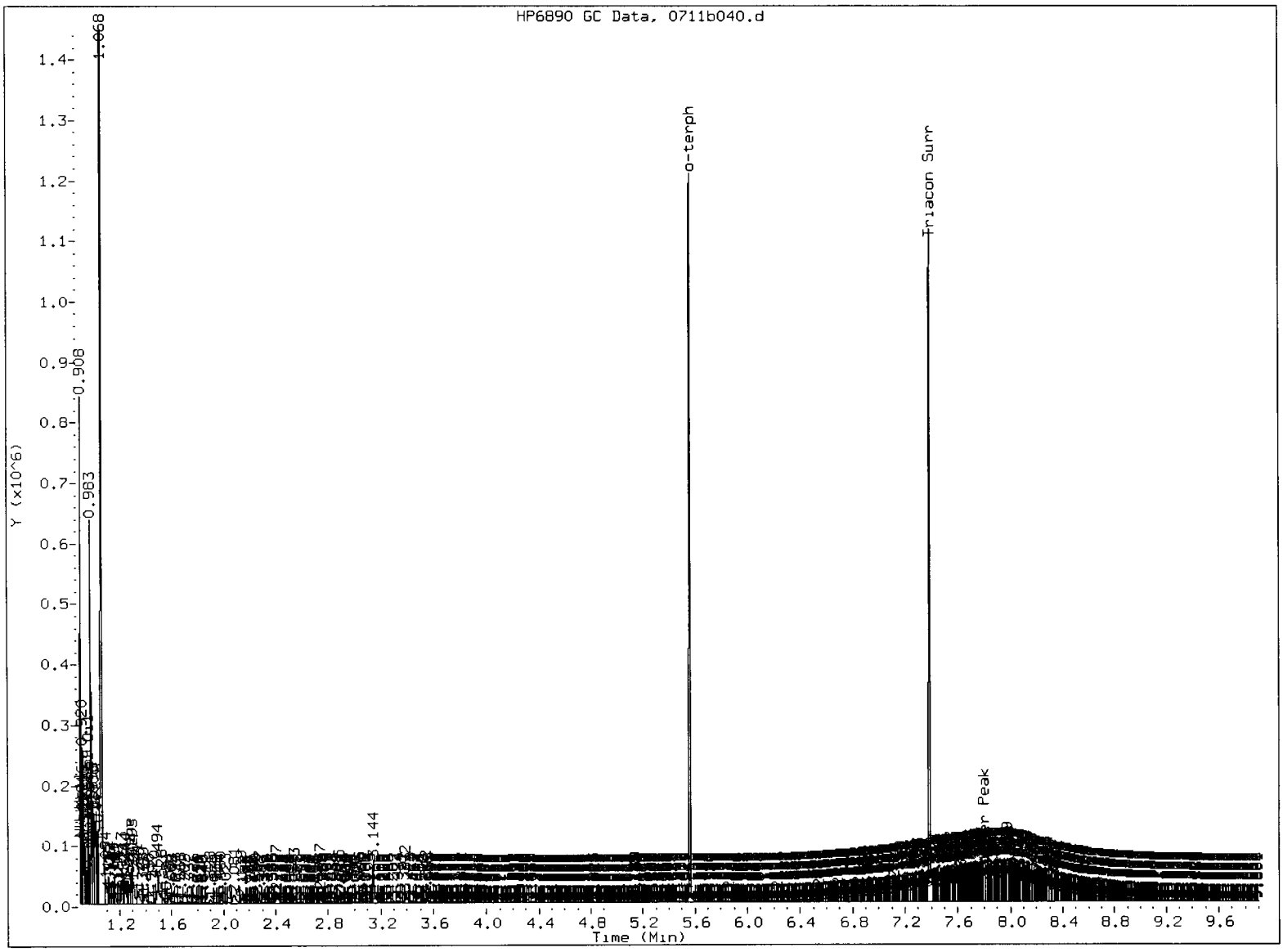
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.276	-0.007	32201	28676	GAS (Tol-C12)	716658	32.40
C8	1.558	-0.007	4501	4352	DIESEL (C12-C24)	249057	18.18 LRL
C10	3.095	-0.006	2248	354	M.OIL (C24-C38)	2654484	266.62 Mcl
C12	3.900	-0.003	1801	1347	AK-102 (C10-C25)	454602	27.85
C14	4.500	-0.002	867	553	AK-103 (C25-C36)	2243760	327.17 M
C16	5.019	0.000	927	252			
C18	5.464	-0.003	2847	2902			
C20	5.861	-0.002	3101	3039			
C22	6.223	0.006	2491	1769			
C24	6.544	0.002	5639	2718			
C25	6.692	-0.003	7258	1135			
C26	6.841	-0.002	9945	2917			
C28	7.122	0.000	19260	7730	FUEL OIL(C10-C24)	433904	29.77
C32	7.632	0.001	36377	17920			
C34	7.865	0.003	50241	43688			
Filter Peak	7.800	0.001	47705	28883			
C36	8.078	-0.006	39112	28155	BUNKERC (C10-C38)	3088388	638.86
o-terph	5.567	0.000	1207270	698558	JET-A (C10-C18)	286140	19.87
Triacon Surr	7.391	0.002	1087033	666107			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	698558	37.2	82.7
Triacontane	666107	40.4	89.7

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 VB50F FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

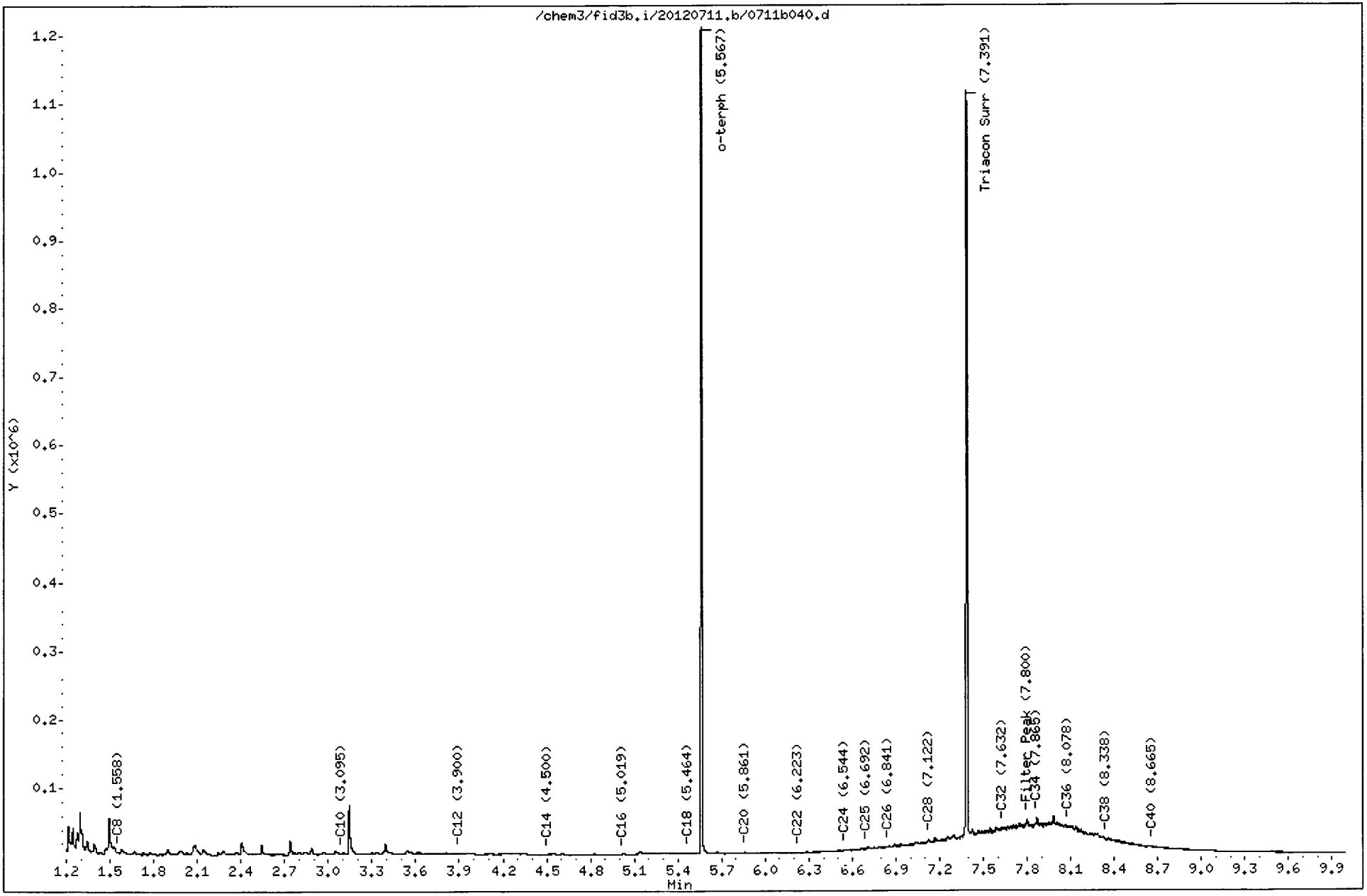
Analyst: AR Date: 7/13/2012

Data File: /chem3/fid3b.i/20120711.b/0711b040.d
Date : 11-JUL-2012 19:14
Client ID:
Sample Info: VB50F

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/13/2012

Data file: /chem3/fid3b.i/20120711.b/0711b041.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50G
Client ID:
Injection: 11-JUL-2012 19:33
Dilution Factor: 1

FID:3B RESULTS

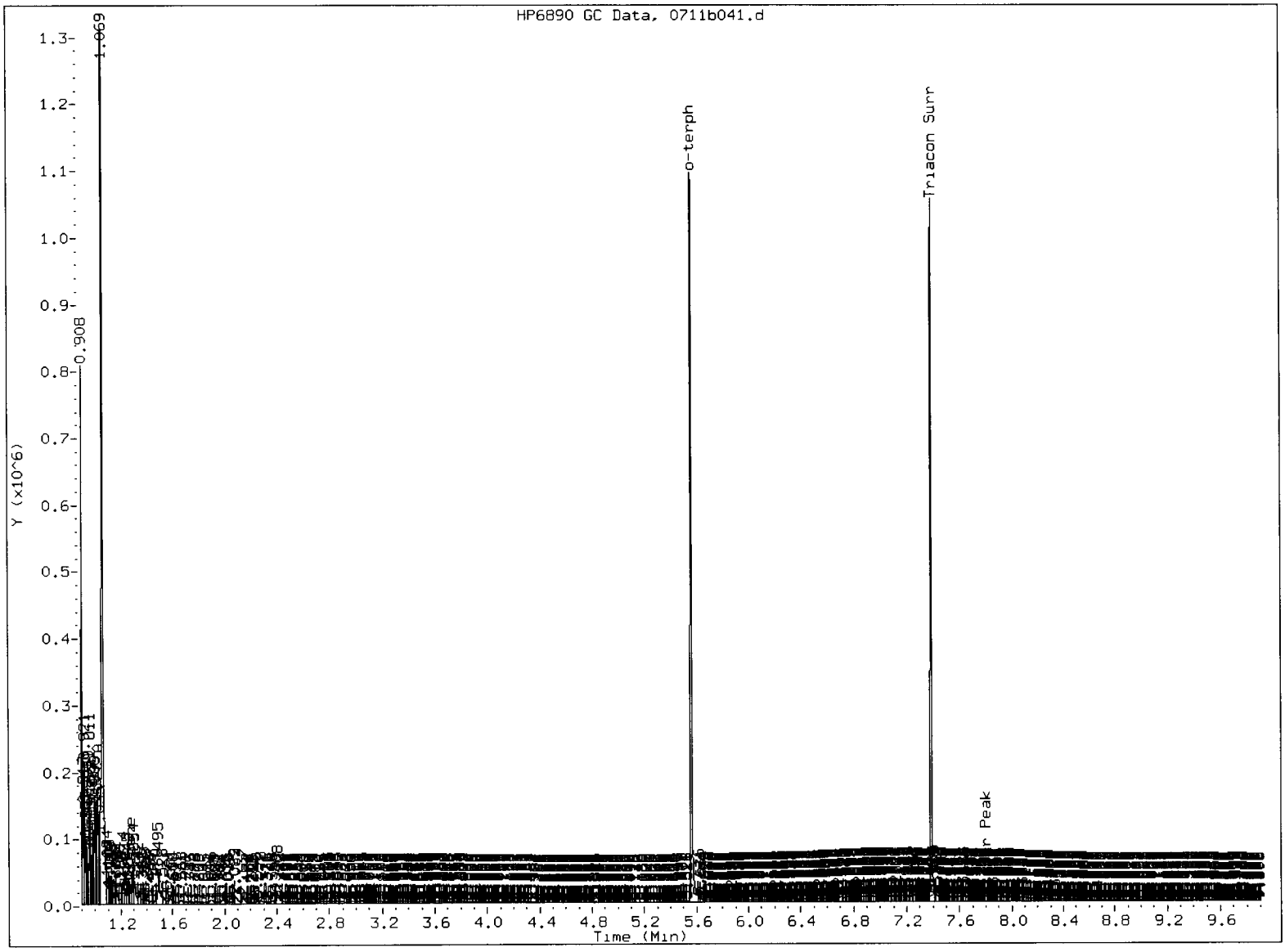
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.276	-0.008	30016	26137	GAS (Tol-C12)	710849	32.13
C8	1.555	-0.010	4873	4341	DIESEL (C12-C24)	250493	18.28 LRL
C10	3.104	0.003	3279	1058	M.OIL (C24-C38)	752481	75.58 LRL
C12	3.909	0.007	1661	935	AK-102 (C10-C25)	397803	24.37
C14	4.506	0.004	549	96	AK-103 (C25-C36)	670176	97.72 M
C16	5.018	0.000	114	65			
C18	5.466	-0.001	1668	1647			
C20	5.868	0.006	3025	2000			
C22	6.214	-0.004	3353	906			
C24	6.542	0.000	5374	3946			
C25	6.692	-0.003	6418	2308			
C26	6.842	0.000	8262	4177			
C28	7.120	-0.002	9585	5509	FUEL OIL(C10-C24)	377976	25.93
C32	7.627	-0.004	7840	2105			
C34	7.860	-0.002	7061	1661			
Filter Peak	7.799	0.000	8552	7292			
C36	8.086	0.002	5751	1348	BUNKERC (C10-C38)	1130457	233.84
o-terph	5.566	-0.001	1093421	689433	JET-A (C10-C18)	183701	12.76
Triacon Surr	7.392	0.002	1044749	660349			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	689433	36.7	81.6
Triacontane	660349	40.0	89.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 VB50G FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

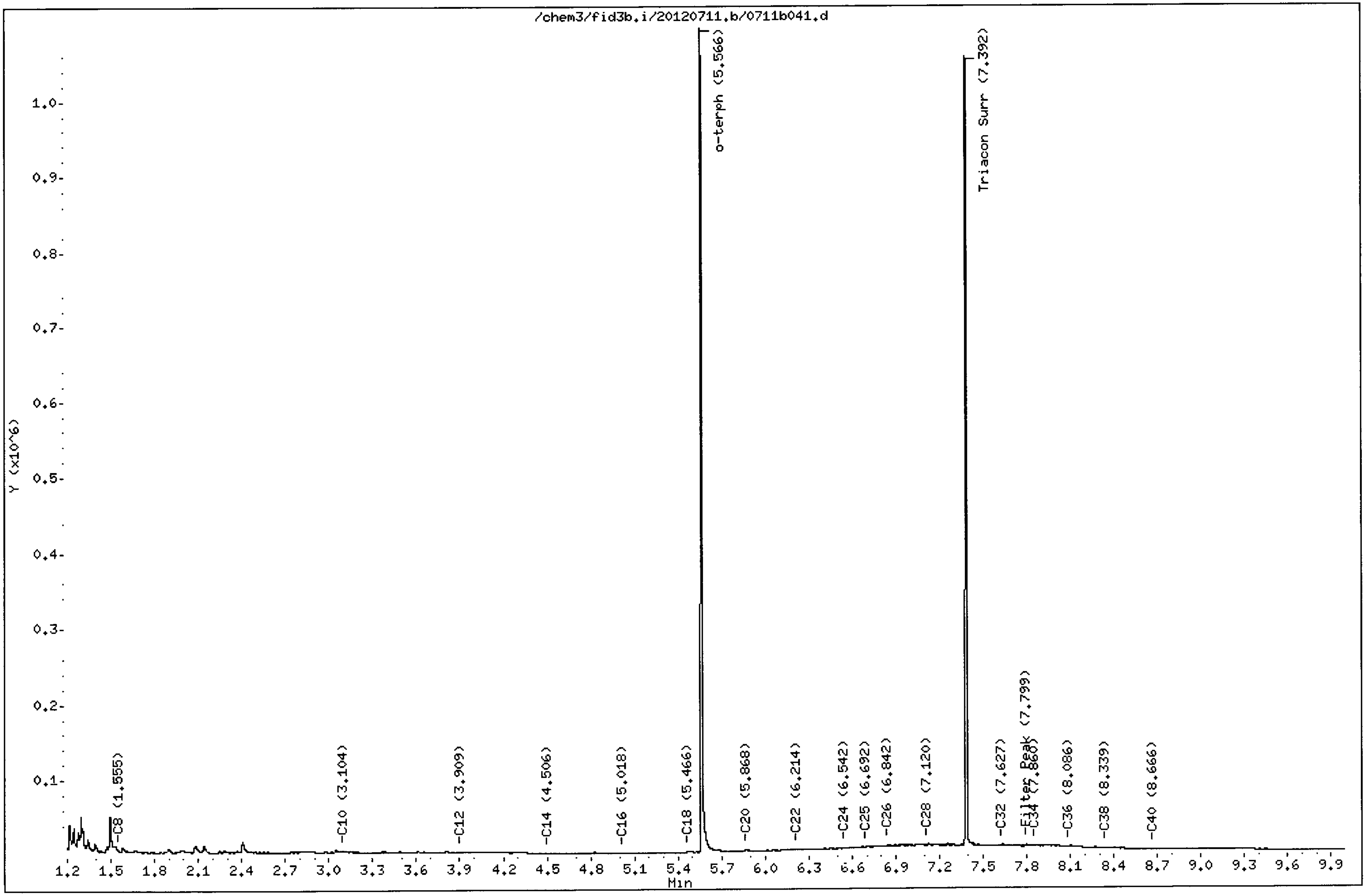
Analyst: AR Date: 7/13/2012

Data File: /chem3/fid3b.i/20120711.b/0711b041.d
Date : 11-JUL-2012 19:33
Client ID:
Sample Info: VB50G

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/12/2012

Data file: /chem3/fid3b.i/20120711.b/0711b042.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/12/2012
Macro: FID:3B062212

ARI ID: DIESEL #4
Client ID:
Injection: 11-JUL-2012 19:52
Dilution Factor: 1

FID:3B RESULTS

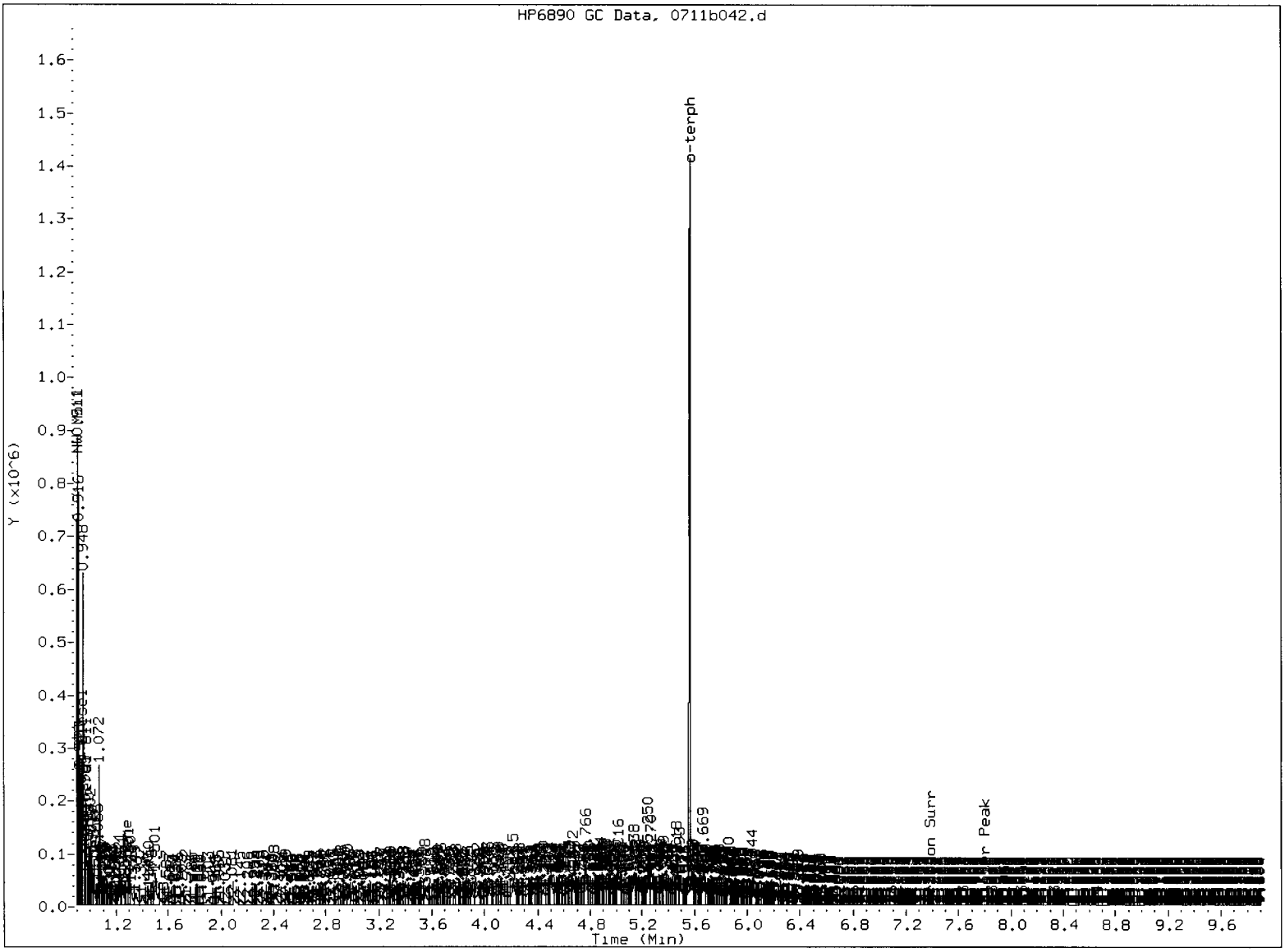
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.283	0.000	34721	34246	GAS (Tol-C12)	1807700	81.72	
C8	1.567	0.002	6968	7211	DIESEL (C12-C24)	3506419	255.94	
C10	3.104	0.003	27891	25466	M.OIL (C24-C38)	58714	5.90	
C12	3.903	0.001	35873	42079	AK-102 (C10-C25)	4299777	263.45	M
C14	4.501	0.000	63856	78514	AK-103 (C25-C36)	42411	6.18	
C16	5.016	-0.002	107690	91978				
C18	5.466	-0.001	104549	85901				
C20	5.862	0.000	73934	59963				
C22	6.219	0.002	30542	33832				
C24	6.538	-0.004	3057	661				
C25	6.696	0.001	1505	411				
C26	6.840	-0.003	779	416				
C28	7.124	0.003	106	58	FUEL OIL(C10-C24)	4293396	294.59	
C32	7.637	0.007	1342	1160				
C34	7.853	-0.009	448	266				
Filter Peak	7.799	0.000	1839	1857				
C36	8.085	0.001	764	301	BUNKERC (C10-C38)	4352109	900.27	
o-terph	5.568	0.001	1383437	816820	JET-A (C10-C18)	3304917	229.52	
Triacon Surr	7.389	-0.001	40	8				

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	816820	43.5	96.7
Triacontane	8	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 DIESEL #4 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

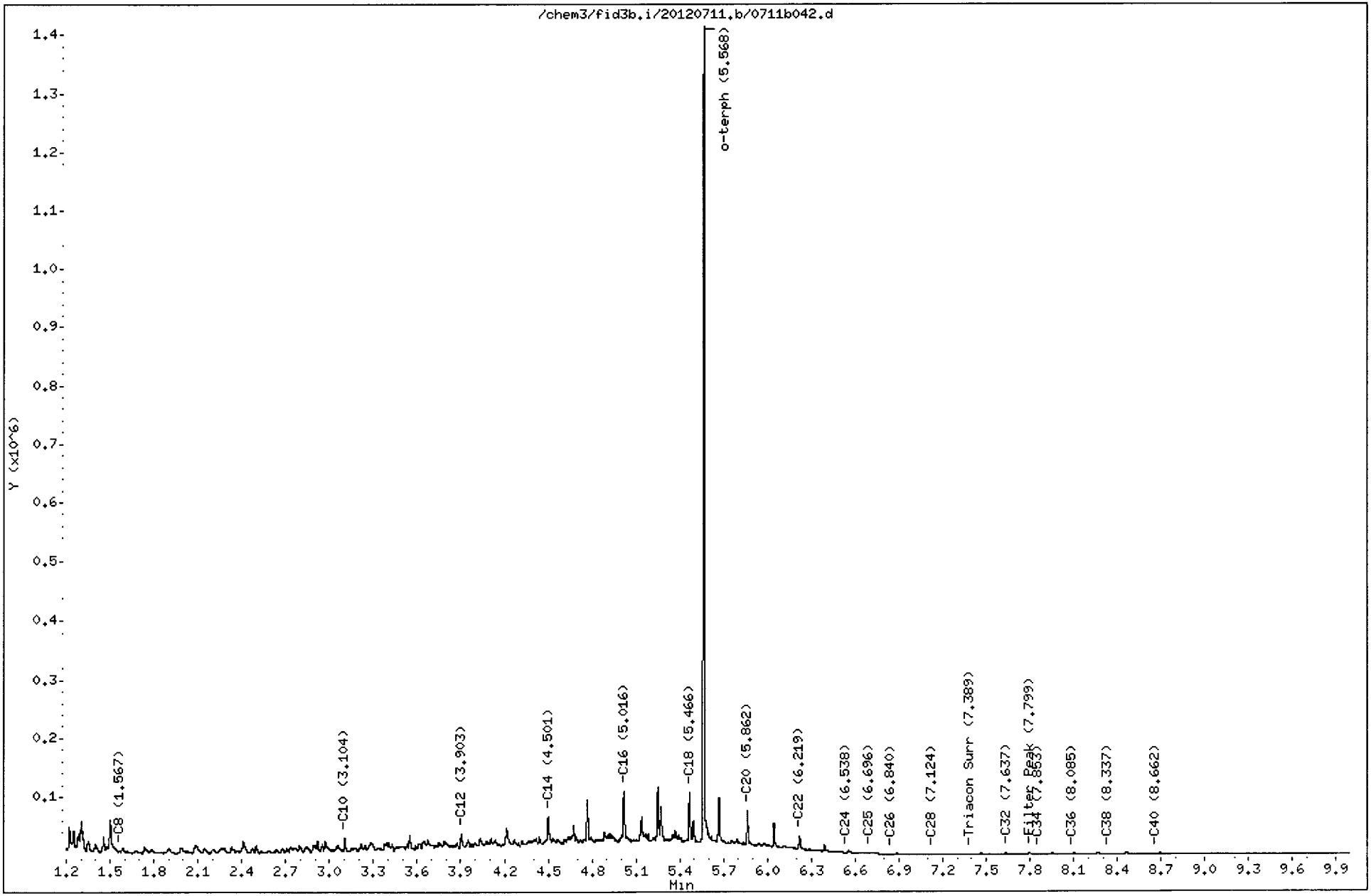
Analyst: AR Date: 7/12/2012

Data File: /chem3/fid3b.i/20120711.b/0711b042.d
Date : 11-JUL-2012 19:52
Client ID:
Sample Info: DIESEL #4

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/12/2012

Data file: /chem3/fid3b.i/20120711.b/0711b043.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/12/2012
Macro: FID:3B062212

ARI ID: MOIL #4
Client ID:
Injection: 11-JUL-2012 20:11
Dilution Factor: 1

FID:3B RESULTS

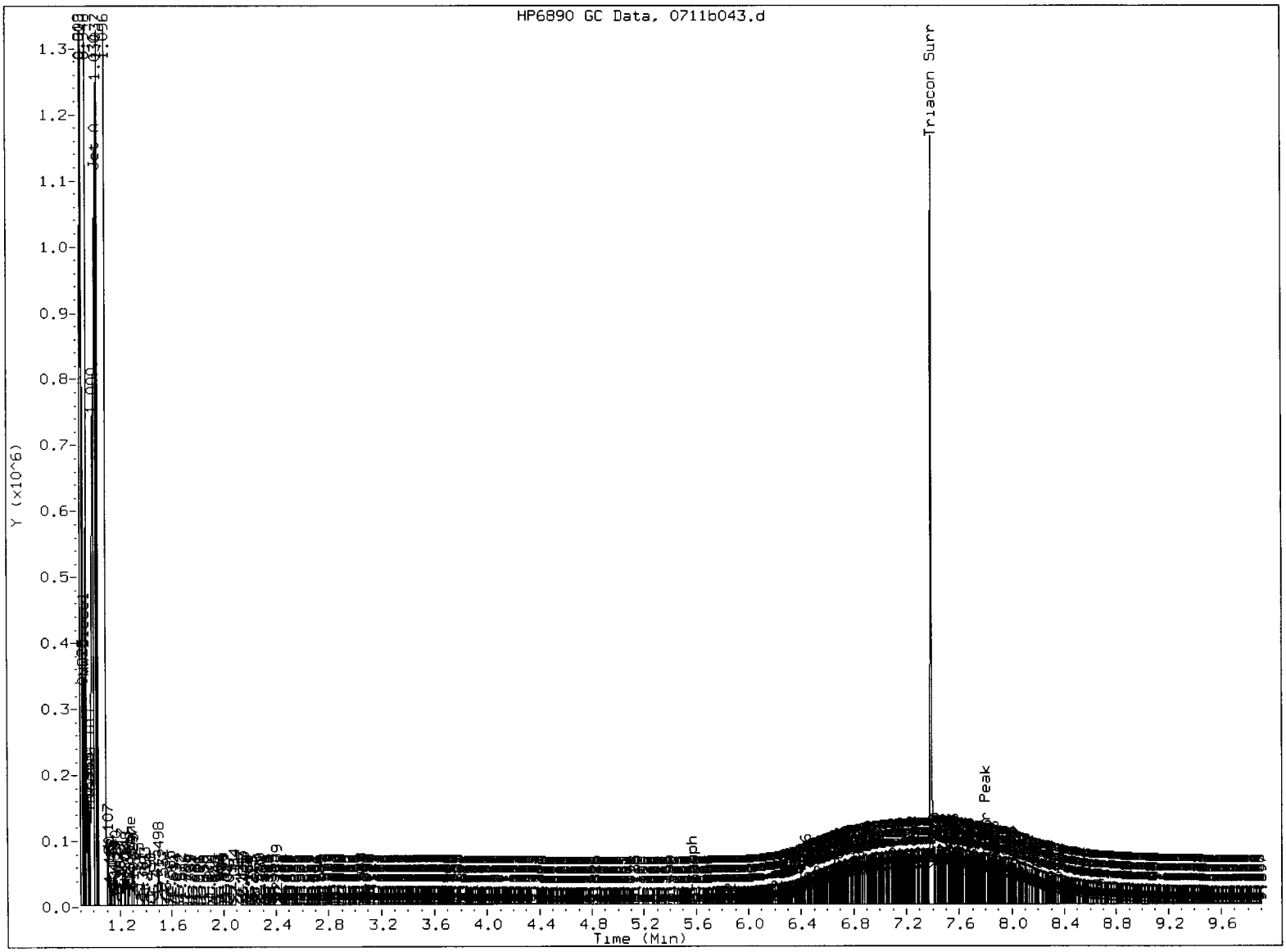
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.279	-0.004	34152	30956	GAS (Tol-C12)	782687	35.38
C8	1.559	-0.006	5510	4447	DIESEL (C12-C24)	552855	40.35
C10	3.099	-0.002	3695	658	M.OIL (C24-C38)	4872300	489.38
C12	3.896	-0.007	1979	1286	AK-102 (C10-C25)	815142	49.94
C14	4.503	0.002	664	197	AK-103 (C25-C36)	4441217	647.60 M
C16	5.014	-0.004	127	77			
C18	5.462	-0.006	154	96			
C20	5.859	-0.003	1215	834			
C22	6.217	0.000	6672	1299			
C24	6.542	0.001	28921	7417			
C25	6.697	0.002	39417	5423			
C26	6.842	-0.001	50069	12415			
C28	7.118	-0.003	55546	18411	FUEL OIL(C10-C24)	695329	47.71
C32	7.631	0.000	58760	11523			
C34	7.861	-0.001	47529	13864			
Filter Peak	7.800	0.001	51552	16089			
C36	8.080	-0.004	34522	19483	BUNKERC (C10-C38)	5567629	1151.71
o-terph	5.574	0.007	1040	1113	JET-A (C10-C18)	196522	13.65
Triacon Surr	7.393	0.004	1106805	754255			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1113	0.1	0.1
Triacontane	754255	45.7	101.6

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 MOIL #4 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Surr pk overlap

Analyst: AR Date: 7/12/2007

Data File: /chem3/fid3b.i/20120711.b/0711b043.d

Page 1

Date : 11-JUL-2012 20:11

Client ID:

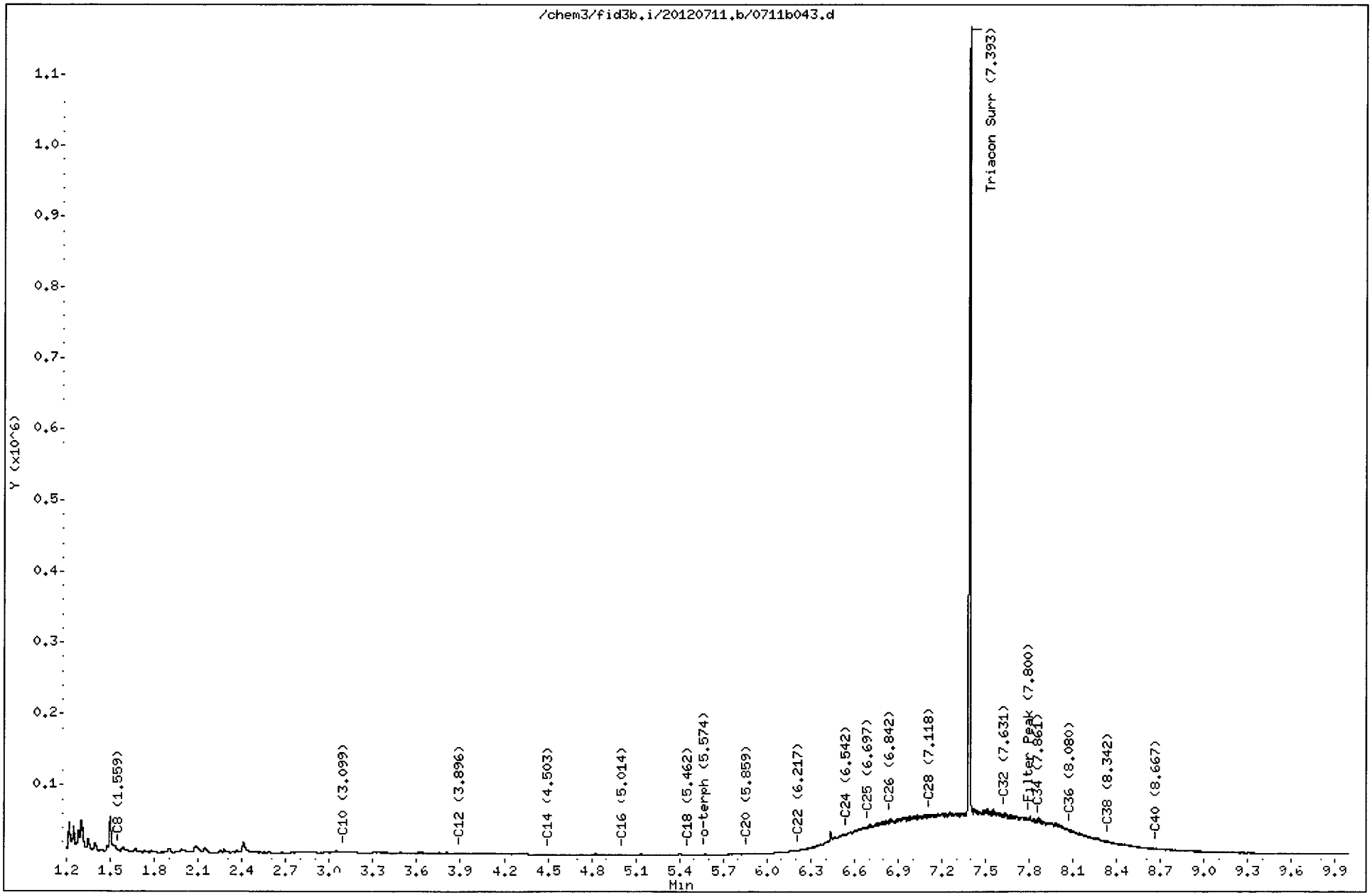
Instrument: fid3b.i

Sample Info: MOIL #4

Operator: MH

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120711.b/0711b044.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50I
Client ID:
Injection: 11-JUL-2012 20:30
Dilution Factor: 1

AR 7/13/2012

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.278	-0.005	33334	28715	GAS (Tol-C12)	1461307	66.06
C8	1.562	-0.003	21595	19939	DIESEL (C12-C24)	360579	26.32 LRL
C10	3.109	0.008	6482	7837	M.OIL (C24-C38)	332134	33.36 LRL
C12	3.902	0.000	8848	11249	AK-102 (C10-C25)	806911	49.44
C14	4.496	-0.005	3848	2199	AK-103 (C25-C36)	284347	41.46
C16	5.018	0.000	1872	1089			
C18	5.466	-0.001	1870	1574			
C20	5.867	0.005	2159	2226			
C22	6.218	0.001	1499	1353			
C24	6.540	-0.002	1621	1431			
C25	6.701	0.006	4858	5069			
C26	6.841	-0.001	1718	335			
C28	7.121	0.000	6493	7545	FUEL OIL(C10-C24)	801614	55.00
C32	7.638	0.008	6442	8935			
C34	7.862	0.001	4666	997			
Filter Peak	7.801	0.002	6037	8655			
C36	8.085	0.001	4056	1671	BUNKERC (C10-C38)	1133749	234.52
o-terph	5.568	0.001	1181407	723306	JET-A (C10-C18)	741737	51.51
Triacon Surr	7.392	0.003	1084632	695835			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	723306	38.5	85.7
Triacontane	695835	42.2	93.7

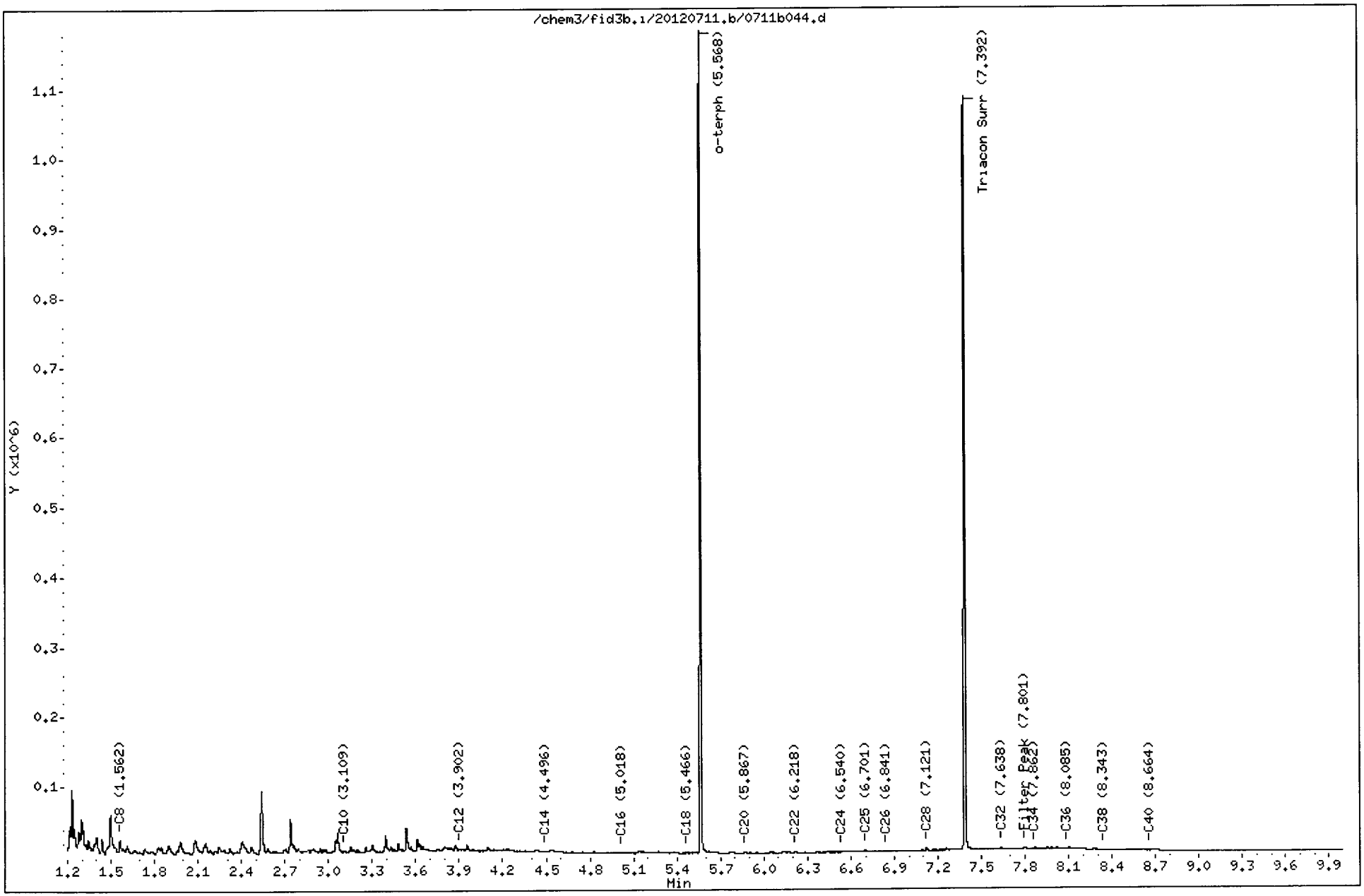
Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b044.d
Date : 11-JUL-2012 20:30
Client ID:
Sample Info: VB50I

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/13/2012

Data file: /chem3/fid3b.i/20120711.b/0711b045.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50J
Client ID:
Injection: 11-JUL-2012 20:49
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.283	0.000	25699	22393	GAS (Tol-C12)	1125271	50.87
C8	1.567	0.002	16507	15292	DIESEL (C12-C24)	627318	45.79 LR
C10	3.109	0.008	4803	6842	M.OIL (C24-C38)	73346	7.37 LRL
C12	3.894	-0.009	10181	8828	AK-102 (C10-C25)	1002222	61.41
C14	4.508	0.007	10054	7340	AK-103 (C25-C36)	57303	8.36
C16	5.017	-0.001	6202	5842			
C18	5.462	-0.005	2488	1841			
C20	5.861	-0.001	1572	1434			
C22	6.219	0.002	270	72			
C24	6.541	0.000	163	65			
C25	6.696	0.001	73	26			
C26	6.845	0.002	44	8			
C28	7.126	0.005	787	656	FUEL OIL(C10-C24)	1001876	68.74
C32	7.636	0.006	1923	1411			
C34	7.860	-0.002	1100	615			
Filter Peak	7.799	0.000	2122	2566			
C36	8.080	-0.004	1341	499	BUNKERC (C10-C38)	1075222	222.42
o-terph	5.566	-0.001	1211827	724116	JET-A (C10-C18)	969957	67.36
Triacon Surr	7.390	0.001	1044977	666817			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	724116	38.6	85.8
Triacontane	666817	40.4	89.8

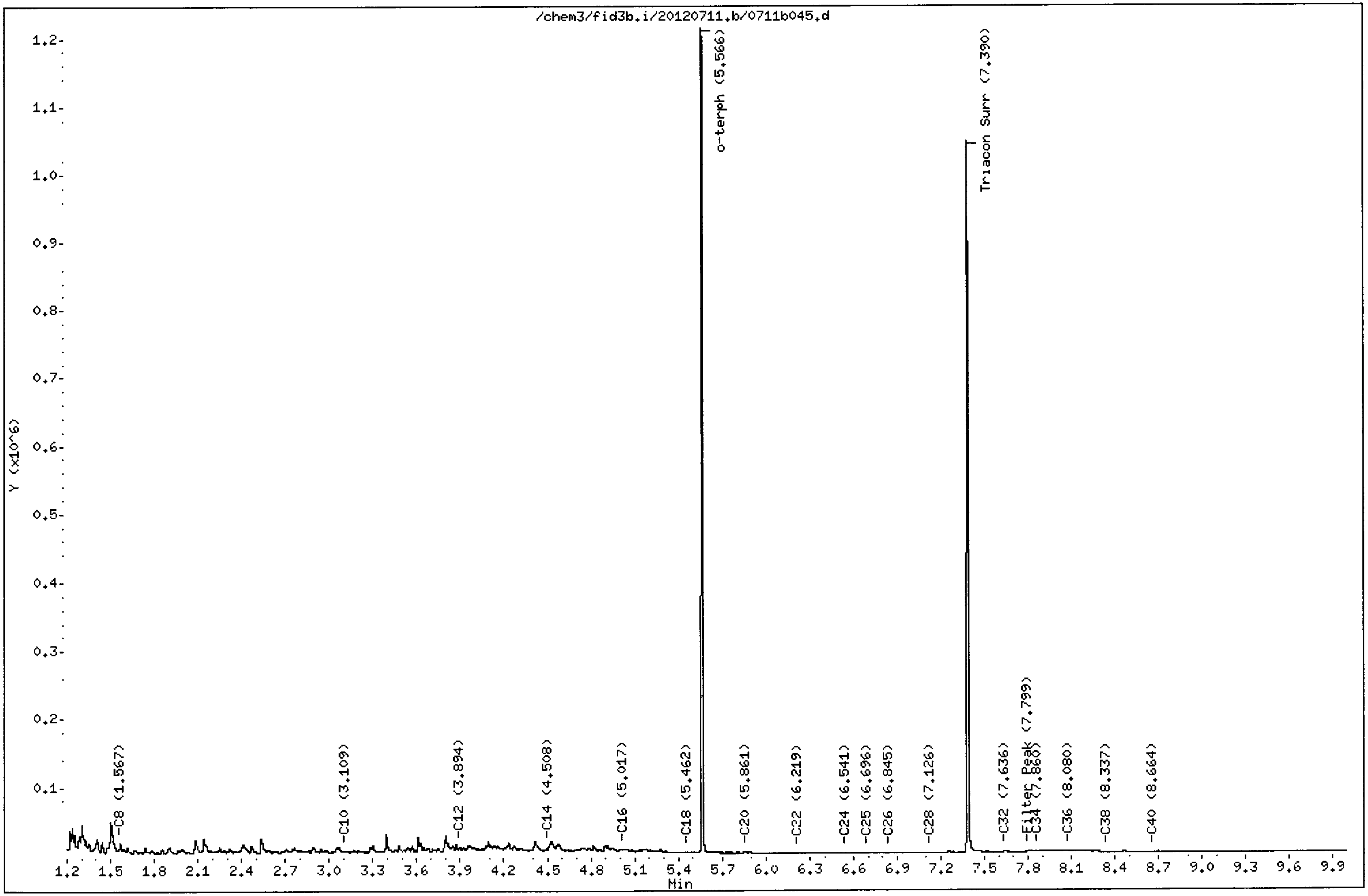
Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b045.d
Date : 11-JUL-2012 20:49
Client ID:
Sample Info: VB50J

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



VB50.00291

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120711.b/0711b046.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50K
Client ID:
Injection: 11-JUL-2012 21:08
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.283	0.000	31052	25885	GAS (Tol-C12)	700260	31.65
C8	1.564	-0.001	4847	3862	DIESEL (C12-C24)	187083	13.66 LRL
C10	3.105	0.004	2872	2177	M.OIL (C24-C38)	432314	43.42 LRL
C12	3.907	0.004	1558	544	AK-102 (C10-C25)	307650	18.85
C14	4.504	0.002	600	81	AK-103 (C25-C36)	379312	55.31
C16	5.021	0.003	728	241			
C18	5.466	-0.001	1399	598			
C20	5.860	-0.003	1564	1263			
C22	6.215	-0.003	1517	298			
C24	6.544	0.002	1584	764			
C25	6.694	-0.001	1644	291			
C26	6.847	0.004	2040	1868			
C28	7.123	0.002	3959	3852	FUEL OIL(C10-C24)	302553	20.76
C32	7.637	0.006	8134	10777			
C34	7.861	-0.001	8705	1853			
Filter Peak	7.798	-0.001	11475	6674			
C36	8.085	0.001	4519	1324	BUNKERC (C10-C38)	734868	152.01
o-terph	5.564	-0.003	1095382	682488	JET-A (C10-C18)	199901	13.88
Triacon Surr	7.392	0.003	1042235	669068			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	682488	36.4	80.8
Triacontane	669068	40.6	90.1

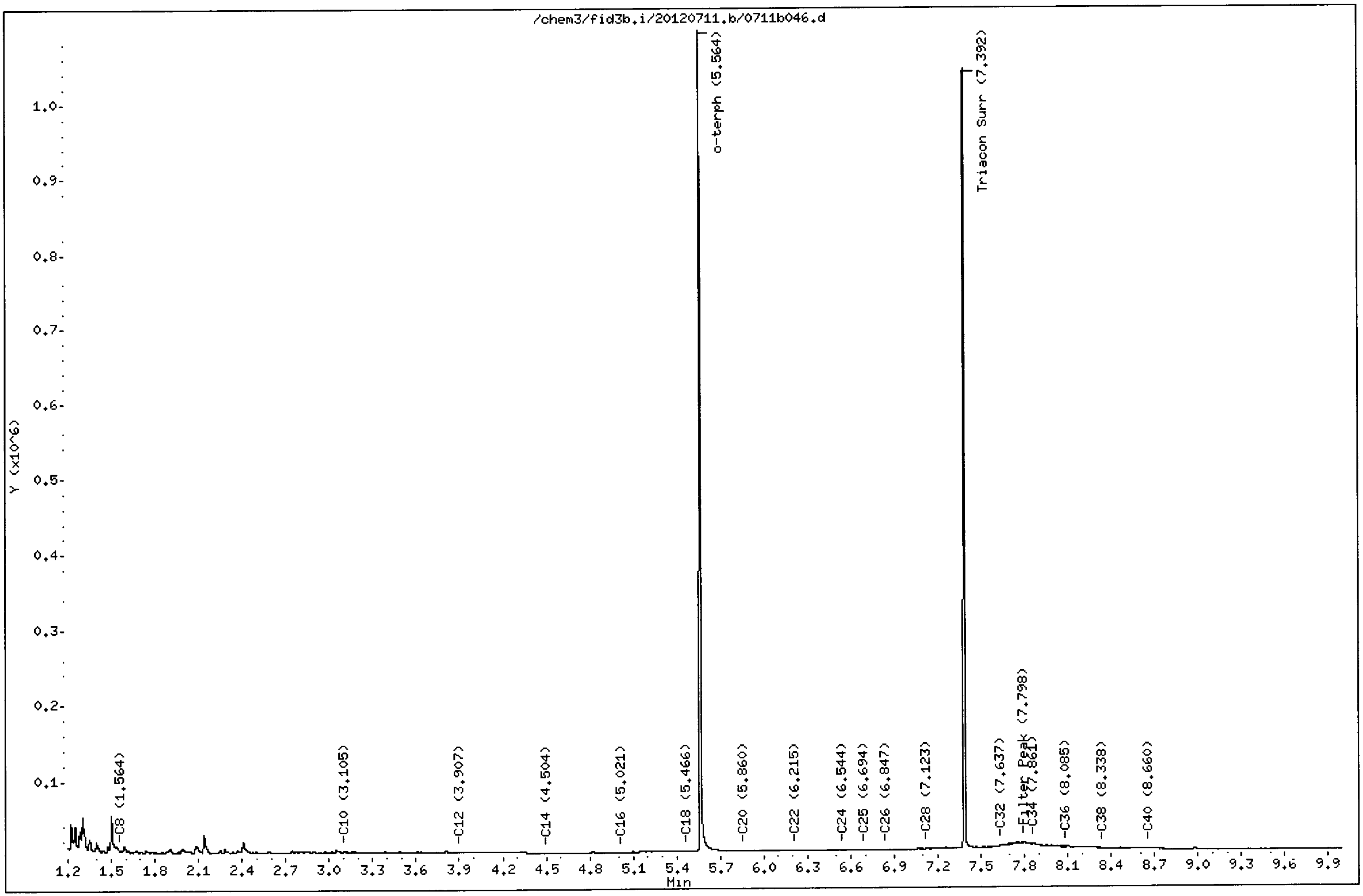
Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b046.d
Date : 11-JUL-2012 21:08
Client ID:
Sample Info: VB50K

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AE 7/13/2012

Data file: /chem3/fid3b.i/20120711.b/0711b047.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50L
Client ID:
Injection: 11-JUL-2012 21:27
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.277	-0.006	57992	42700	GAS (Tol-C12)	2419489	109.37
C8	1.562	-0.002	32760	34180	DIESEL (C12-C24)	1266835	92.47
C10	3.110	0.009	6583	7352	M.OIL (C24-C38)	117462	11.80
C12	3.896	-0.006	28608	30177	AK-102 (C10-C25)	2470225	151.35 M
C14	4.498	-0.003	9282	3656	AK-103 (C25-C36)	99246	14.47
C16	5.015	-0.003	9693	5993			
C18	5.465	-0.003	8195	7948			
C20	5.862	0.000	6004	3463			
C22	6.216	-0.001	2632	514			
C24	6.541	0.000	1192	254			
C25	6.696	0.001	1071	294			
C26	6.843	0.001	930	251			
C28	7.127	0.005	1475	2062	FUEL OIL(C10-C24)	2466477	169.24
C32	7.638	0.008	2702	3631			
C34	7.862	0.000	1326	309			
Filter Peak	7.798	-0.001	2566	3182			
C36	8.087	0.003	1302	422	BUNKERC (C10-C38)	2583939	534.51
o-terph	5.567	0.000	1269355	686767	JET-A (C10-C18)	2218428	154.07
Triacon Surr	7.391	0.001	945225	651579			

Diesel # DRO
LRL

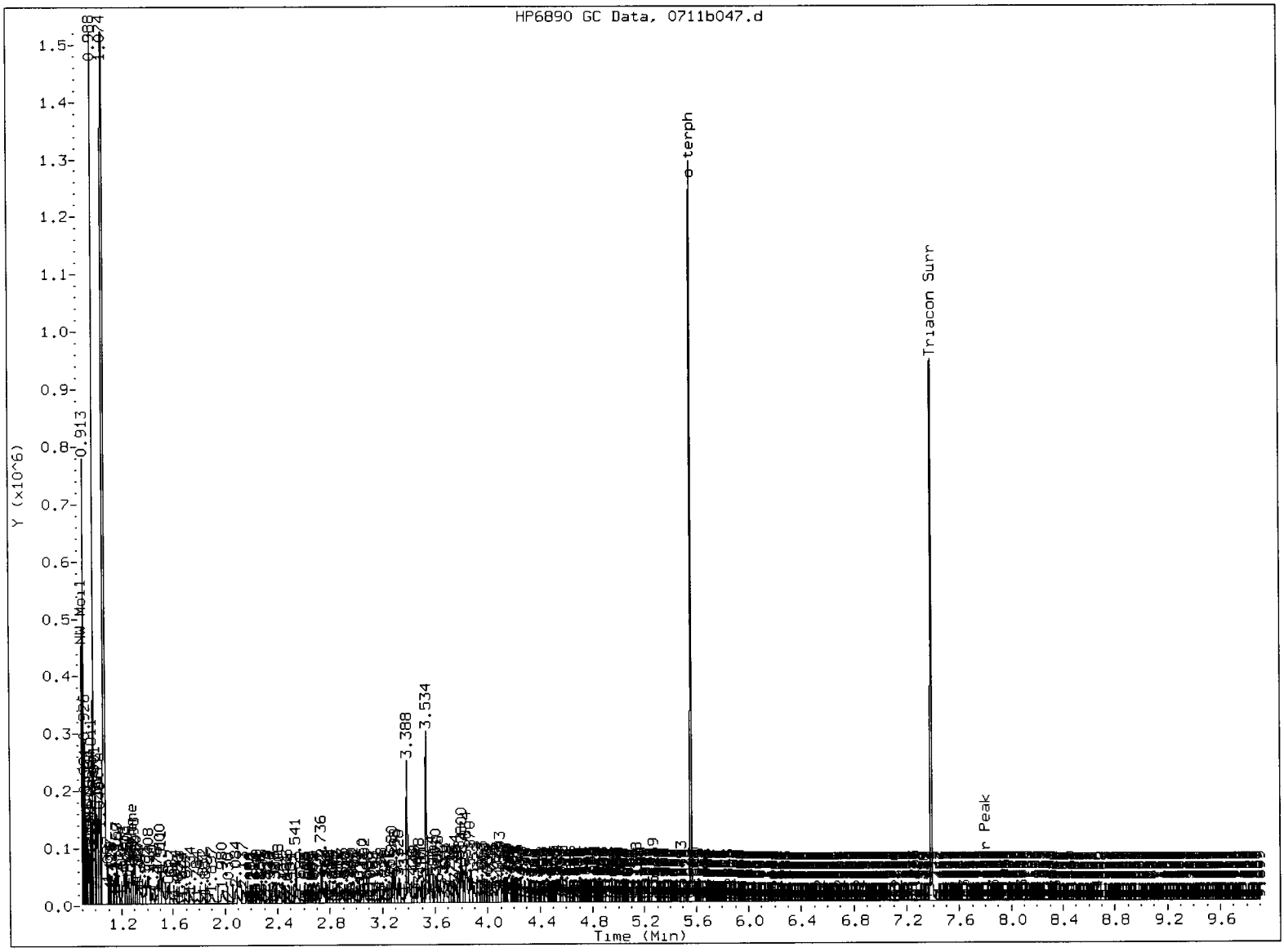
Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	686767	36.6	81.3
Triacontane	651579	39.5	87.8

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 VB50L

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

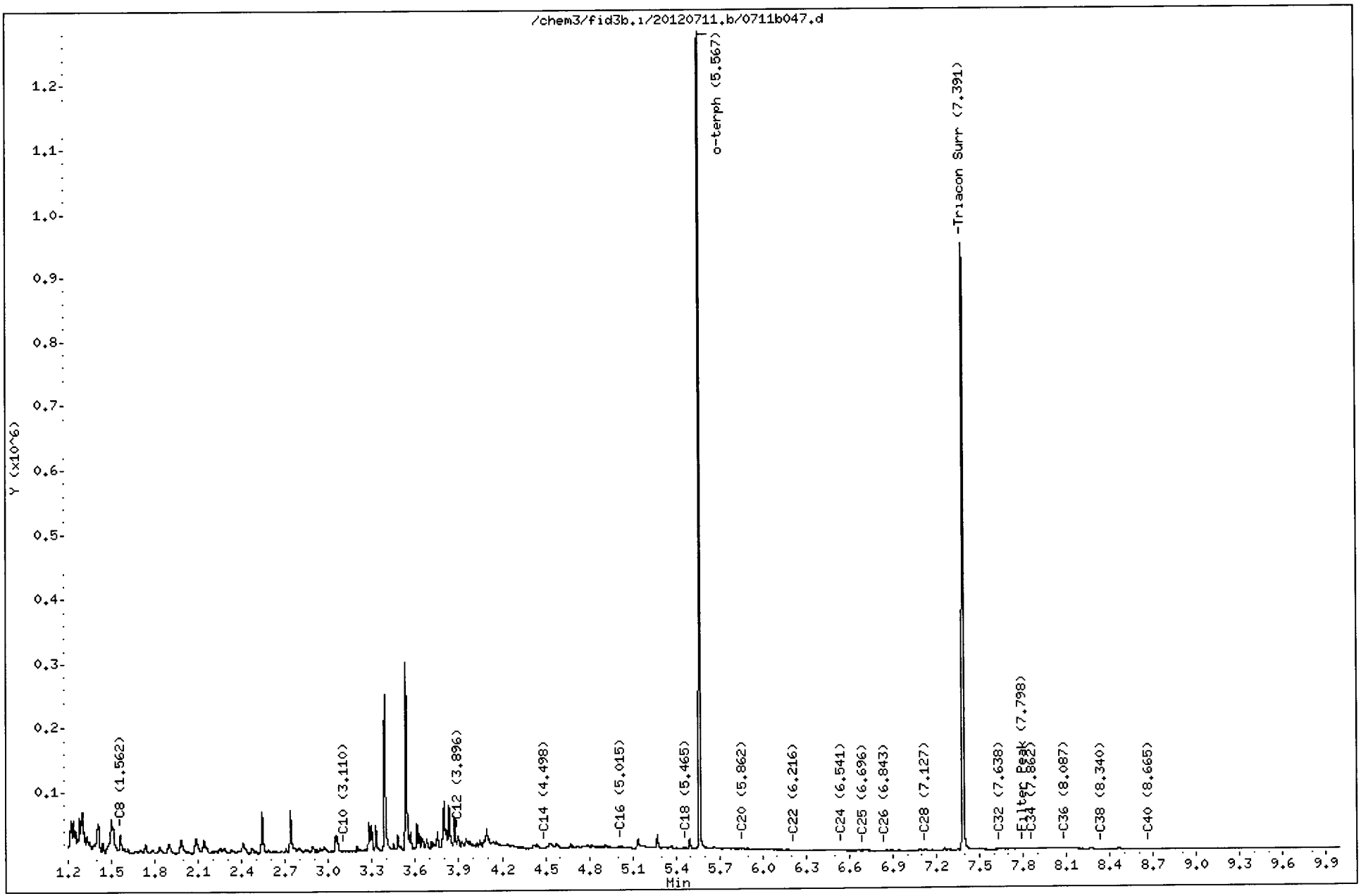
Analyst: AR Date: 7/13/2012

Data File: /chem3/fid3b.i/20120711.b/0711b047.d
Date : 11-JUL-2012 21:27
Client ID:
Sample Info: VB50L

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120711.b/0711b048.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50M
Client ID:
Injection: 11-JUL-2012 21:46
Dilution Factor: 1

AE 7/13/2012

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.280	-0.004	27032	23398	GAS (Tol-C12)	727251	32.87
C8	1.563	-0.002	7577	7067	DIESEL (C12-C24)	381254	27.83 CRL
C10	3.095	-0.006	2552	454	M.OIL (C24-C38)	122651	12.32 CRL
C12	3.907	0.005	2941	1207	AK-102 (C10-C25)	526316	32.25
C14	4.504	0.003	3029	712	AK-103 (C25-C36)	107168	15.63
C16	5.020	0.001	3348	1228			
C18	5.462	-0.005	2941	3070			
C20	5.861	-0.002	2773	1351			
C22	6.220	0.003	1975	1329			
C24	6.539	-0.003	1516	265			
C25	6.698	0.003	1414	328			
C26	6.840	-0.002	1331	895			
C28	7.125	0.003	2162	2584	FUEL OIL(C10-C24)	521542	35.79
C32	7.637	0.006	1903	1282			
C34	7.860	-0.002	944	287			
Filter Peak	7.799	0.000	1769	2251			
C36	8.078	-0.006	911	295	BUNKERC (C10-C38)	644192	133.26
o-terph	5.567	0.000	1197333	706581	JET-A (C10-C18)	404819	28.11
Triacon Surr	7.390	0.001	1023534	668457			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	706581	37.7	83.7
Triacontane	668457	40.5	90.0

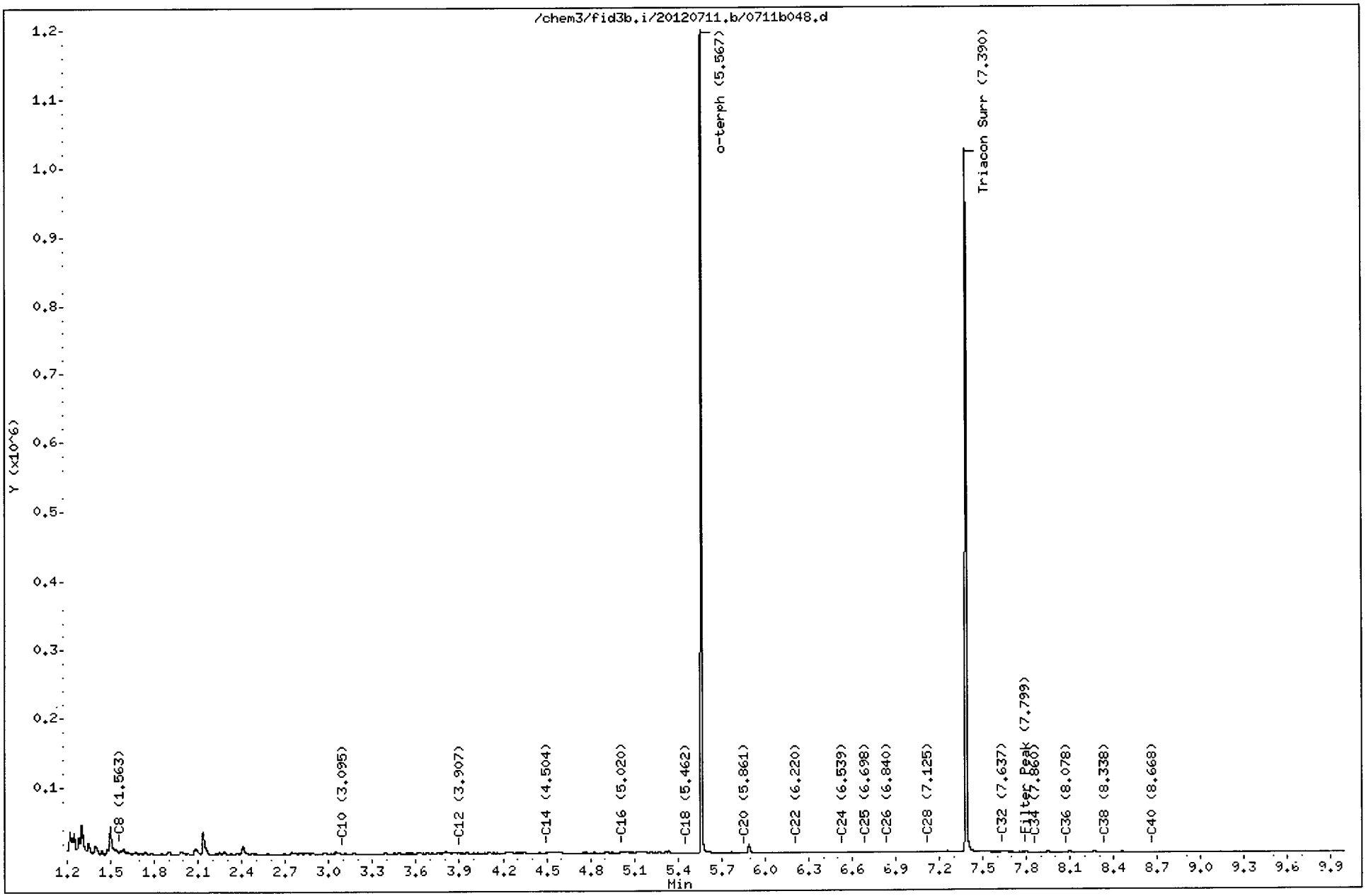
Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b048.d
Date : 11-JUL-2012 21:46
Client ID:
Sample Info: VB50M

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



VB50 : 09298

Acid - cleancol

VB5RAD

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120711.b/0711b049.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50N
Client ID:
Injection: 11-JUL-2012 22:05
Dilution Factor: 1

AR 7/13/2012

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.277	-0.007	23740	20200	GAS (Tol-C12)	672938	30.42
C8	1.558	-0.007	4902	3126	DIESEL (C12-C24)	88908	6.49 LR
C10	3.103	0.002	2614	898	M.OIL (C24-C38)	103039	10.35 LR
C12	3.894	-0.008	1716	1145	AK-102 (C10-C25)	207512	12.71
C14	4.502	0.001	550	184	AK-103 (C25-C36)	86937	12.68
C16	5.016	-0.003	168	79			
C18	5.464	-0.003	67	27			
C20	5.863	0.001	546	401			
C22	6.214	-0.004	347	116			
C24	6.543	0.001	564	198			
C25	6.695	0.000	664	373			
C26	6.843	0.001	745	117			
C28	7.127	0.005	1443	1608	FUEL OIL(C10-C24)	205084	14.07
C32	7.636	0.005	1787	1966			
C34	7.860	-0.002	1094	469			
Filter Peak	7.798	-0.001	1889	2384			
C36	8.088	0.004	1087	406	BUNKERC (C10-C38)	308123	63.74
o-terph	5.565	-0.002	844638	575192	JET-A (C10-C18)	159364	11.07
Triacon Surr	7.389	-0.001	877928	565244			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	575192	30.7	68.1
Triacontane	565244	34.3	76.1

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b049.d

Date : 11-JUL-2012 22:05

Client ID:

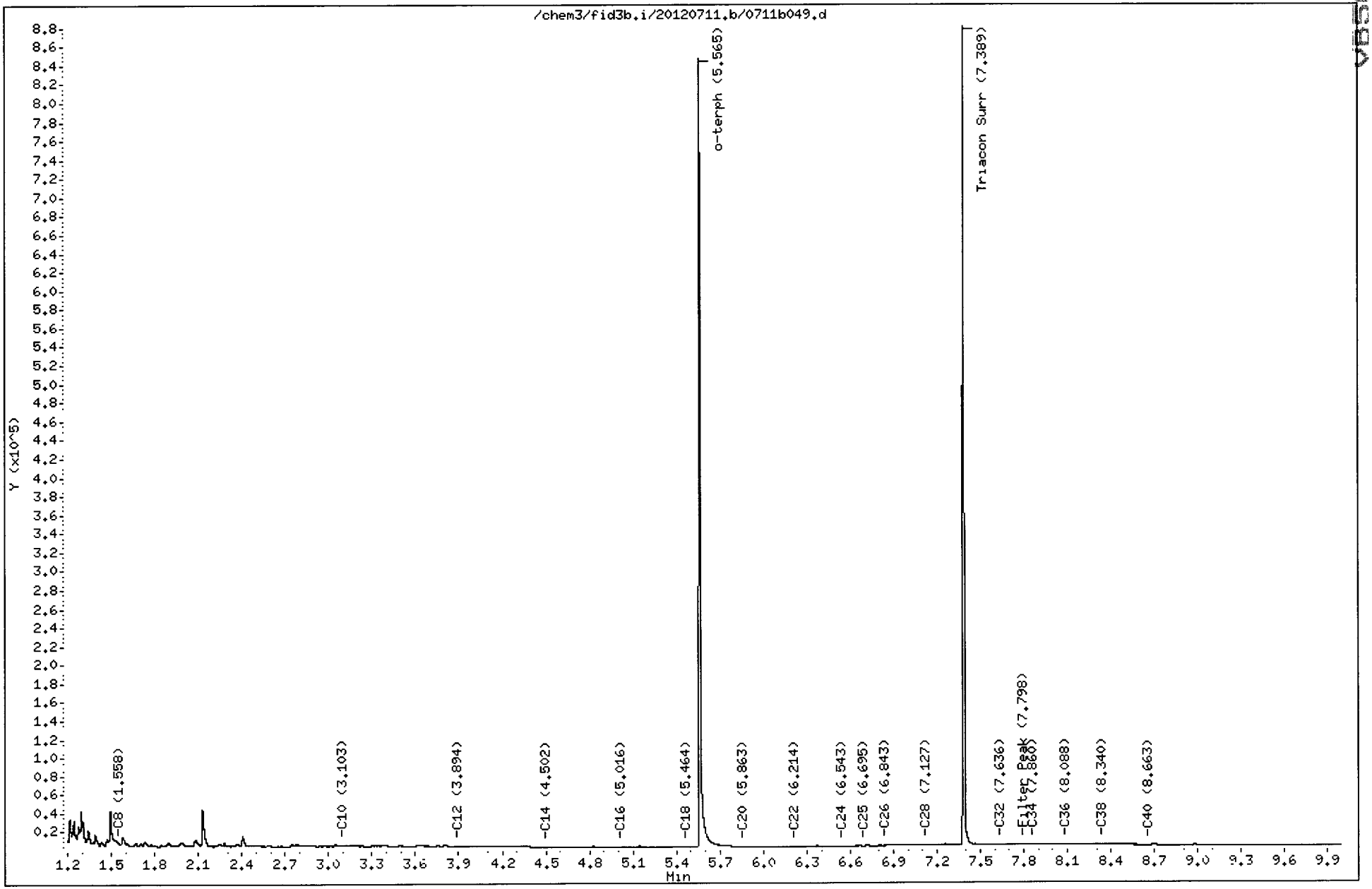
Sample Info: VB50N

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid3b.i/20120711.b/0711b050.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB500
Client ID:
Injection: 11-JUL-2012 22:24
Dilution Factor: 1

AR 7/13/2012

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.287	0.004	14166	2544	GAS (Tol-C12)	530374	23.97
C8	1.557	-0.008	4060	2566	DIESEL (C12-C24)	104132	7.60 LRL
C10	3.101	0.000	1973	391	M.OIL (C24-C38)	50243	5.05 LRL
C12	3.895	-0.007	1502	1318	AK-102 (C10-C25)	199027	12.19
C14	4.507	0.006	512	91	AK-103 (C25-C36)	36935	5.39
C16	5.013	-0.006	175	61			
C18	5.466	-0.001	55	18			
C20	5.860	-0.002	450	538			
C22	6.220	0.002	160	20			
C24	6.542	0.000	75	24			
C25	6.697	0.002	53	22			
C26	6.843	0.001	51	23			
C28	7.127	0.005	633	448	FUEL OIL(C10-C24)	198754	13.64
C32	7.636	0.006	938	1212			
C34	7.859	-0.003	568	256			
Filter Peak	7.797	-0.002	1216	1564			
C36	8.083	-0.001	806	300	BUNKERC (C10-C38)	248997	51.51
o-terph	5.565	-0.002	1055200	684536	JET-A (C10-C18)	133450	9.27
Triacon Surr	7.389	-0.001	999279	668515			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	684536	36.5	81.1
Triacontane	668515	40.5	90.1

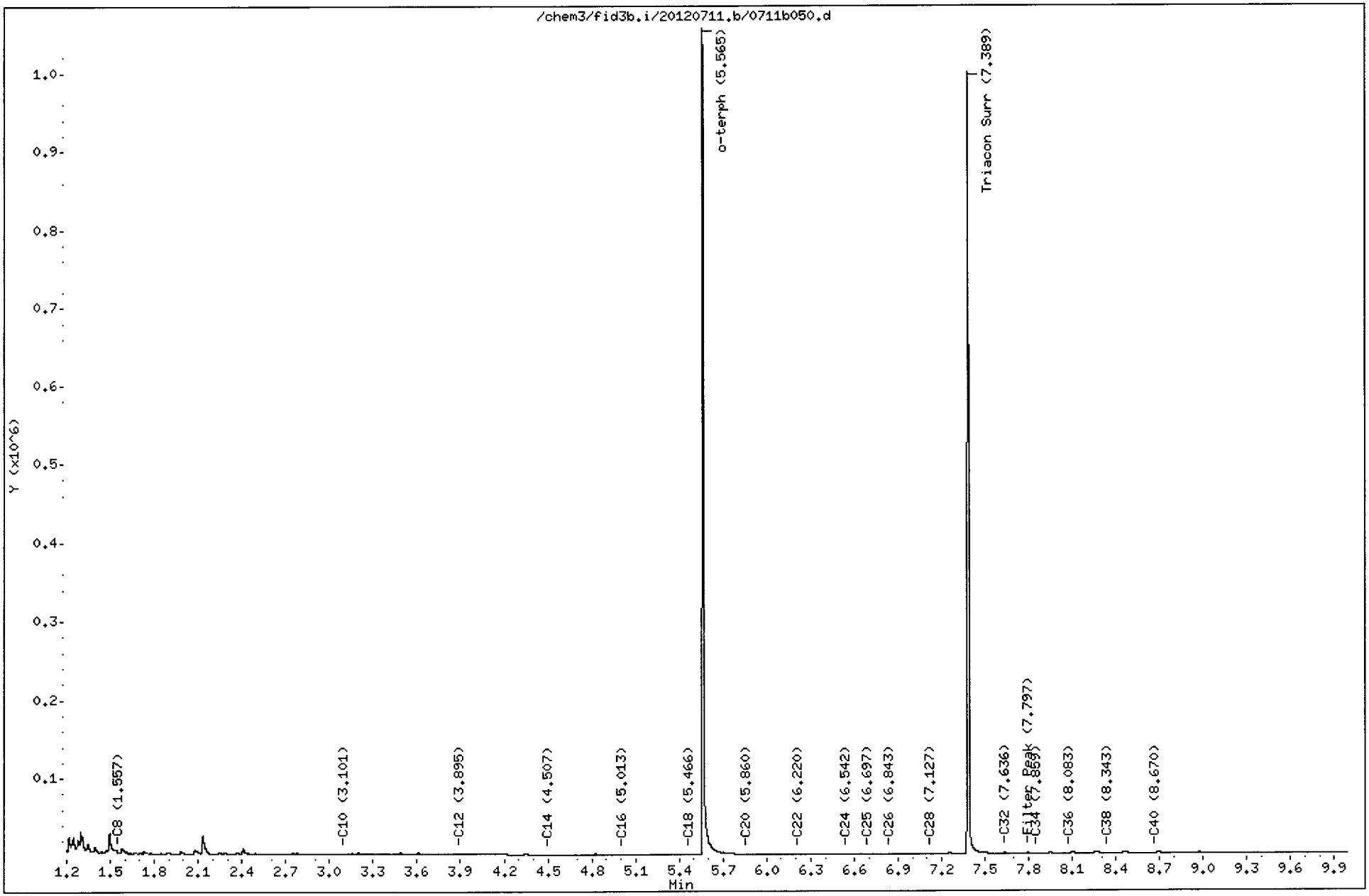
Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b050.d
Date : 11-JUL-2012 22:24
Client ID:
Sample Info: VB500

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/13/2012

Data file: /chem3/fid3b.i/20120711.b/0711b051.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/13/2012
Macro: FID:3B062212

ARI ID: VB50P
Client ID:
Injection: 11-JUL-2012 22:43
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.277	-0.006	23158	21384	GAS (Tol-C12)	591870	26.75
C8	1.582	0.017	10396	15274	DIESEL (C12-C24)	76720	5.60 LRL
C10	3.103	0.002	2427	969	M.OIL (C24-C38)	53213	5.34 LRL
C12	3.909	0.006	1480	468	AK-102 (C10-C25)	182421	11.18
C14	4.499	-0.002	533	126	AK-103 (C25-C36)	40700	5.93
C16	5.015	-0.003	165	94			
C18	5.465	-0.003	126	41			
C20	5.865	0.003	382	184			
C22	6.217	-0.001	133	37			
C24	6.535	-0.006	106	92			
C25	6.698	0.003	28	6			
C26	6.842	0.000	25	5			
C28	7.116	-0.005	133	78	FUEL OIL(C10-C24)	182347	12.51
C32	7.636	0.006	1208	1276			
C34	7.865	0.003	501	304			
Filter Peak	7.799	0.000	1500	1811			
C36	8.081	-0.003	700	249	BUNKERC (C10-C38)	235560	48.73
o-terph	5.565	-0.002	997656	617051	JET-A (C10-C18)	149669	10.39
Triacon Surr	7.388	-0.001	987577	616037			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	617051	32.9	73.1
Triacontane	616037	37.3	83.0

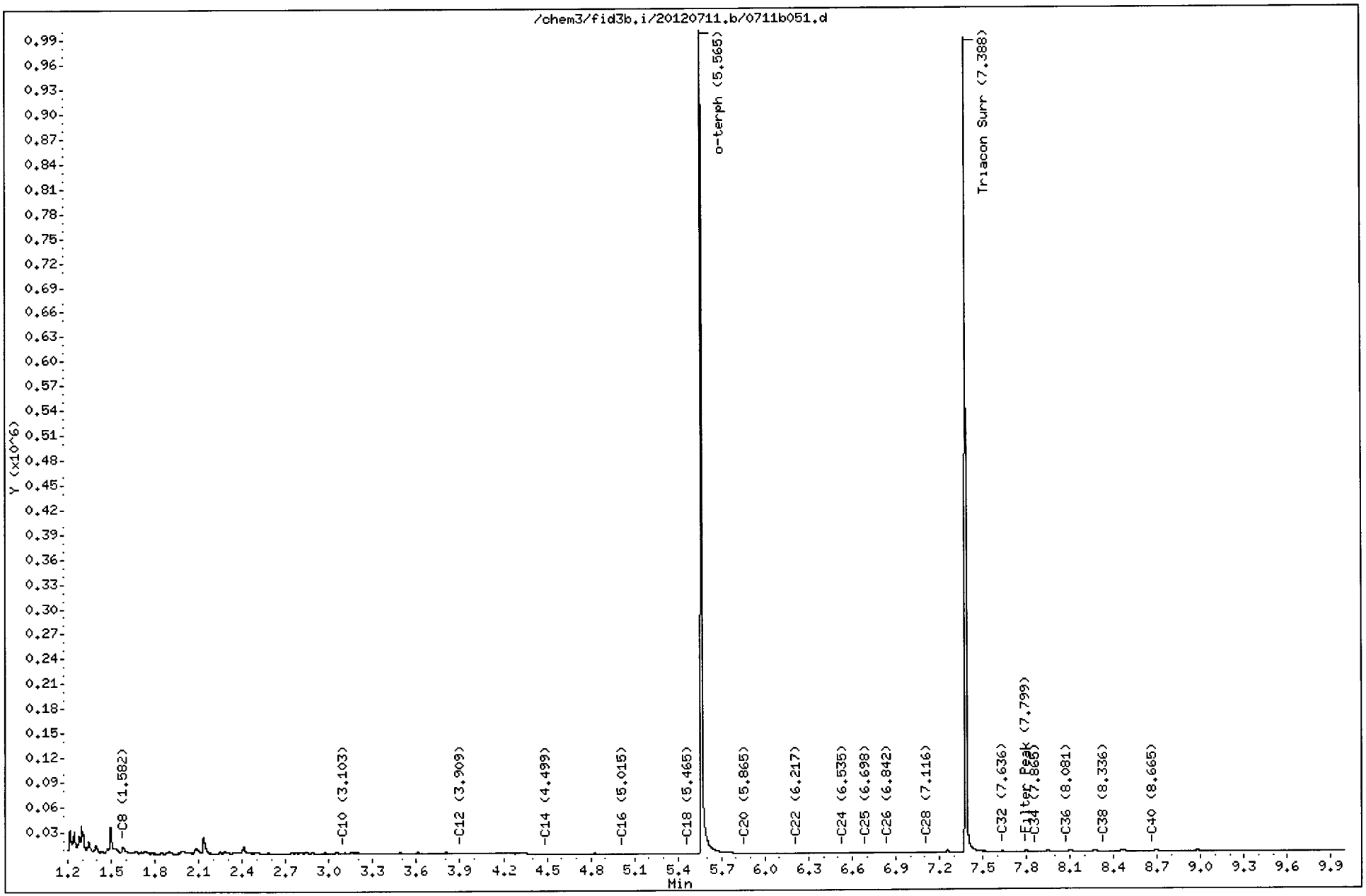
Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

Data File: /chem3/fid3b.i/20120711.b/0711b051.d
Date : 11-JUL-2012 22:43
Client ID:
Sample Info: VB50P

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/12/2012

Data file: /chem3/fid3b.i/20120711.b/0711b052.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/12/2012
Macro: FID:3B062212

ARI ID: DIESEL #5
Client ID:
Injection: 11-JUL-2012 23:02
Dilution Factor: 1

FID:3B RESULTS

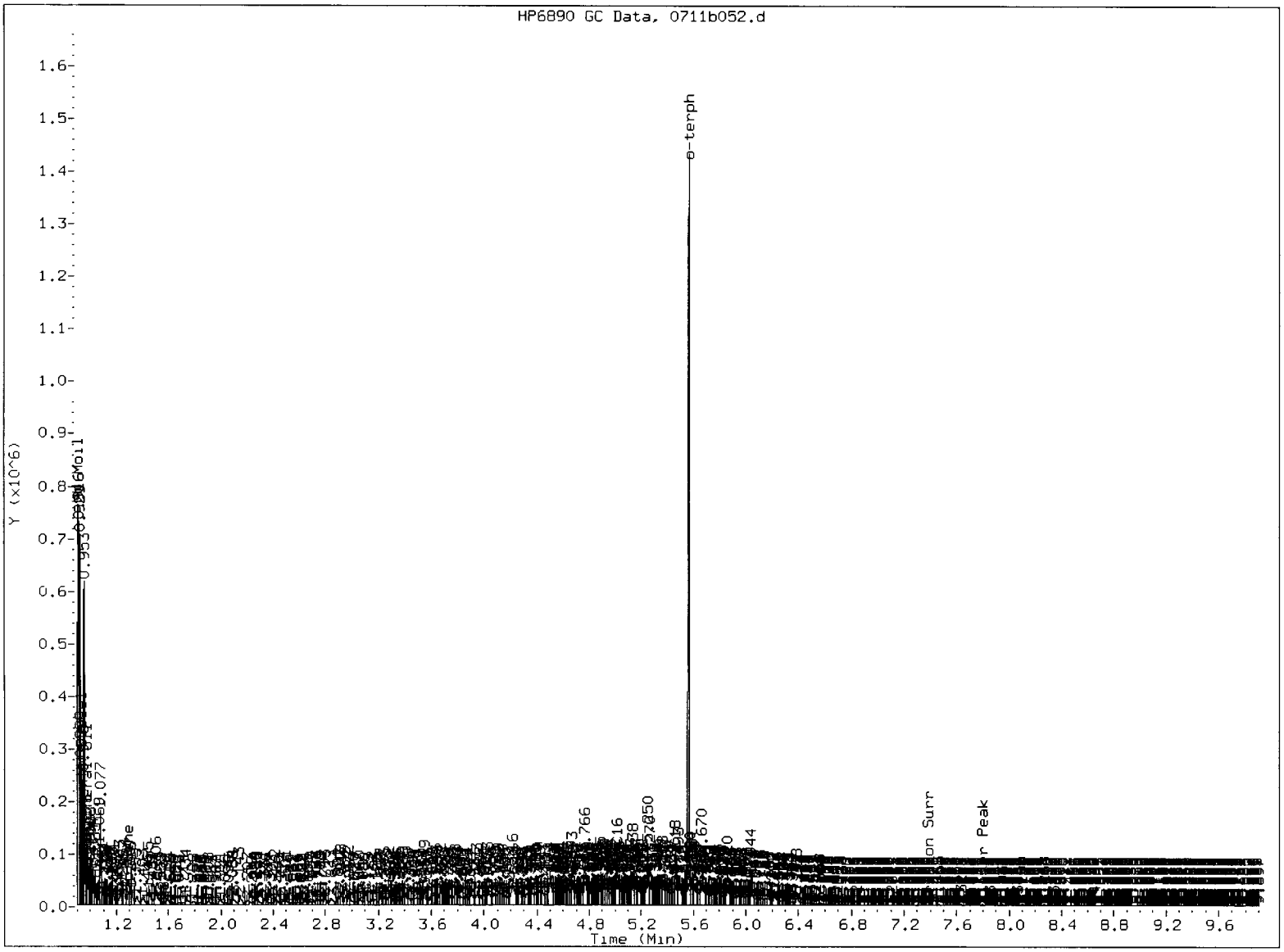
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.289	0.006	24101	24686	GAS (Tol-C12)	1586713	71.73
C8	1.567	0.002	6067	5844	DIESEL (C12-C24)	3640404	265.72
C10	3.105	0.004	27412	23299	M.OIL (C24-C38)	62334	6.26
C12	3.904	0.002	37435	42426	AK-102 (C10-C25)	4363206	267.34 M
C14	4.500	-0.001	65812	87421	AK-103 (C25-C36)	44712	6.52
C16	5.017	-0.002	111406	96268			
C18	5.466	-0.001	107630	88966			
C20	5.862	0.000	76136	69316			
C22	6.218	0.001	31209	38027			
C24	6.534	-0.007	3162	621			
C25	6.697	0.002	1634	1009			
C26	6.842	0.000	850	465			
C28	7.114	-0.007	170	103	FUEL OIL(C10-C24)	4355007	298.82
C32	7.636	0.006	2194	1749			
C34	7.861	-0.001	285	119			
Filter Peak	7.798	-0.001	2746	2326			
C36	8.071	-0.013	494	250	BUNKERC (C10-C38)	4417340	913.76
o-terph	5.568	0.001	1391769	818912	JET-A (C10-C18)	3313793	230.14
Triacon Surr	7.386	-0.003	31	11			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	818912	43.6	97.0
Triacontane	11	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 DIESEL #5 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

Analyst: AR Date: 7/12/2012

Data File: /chem3/fid3b.i/20120711.b/0711b052.d

Page 1

Date : 11-JUL-2012 23:02

Client ID:

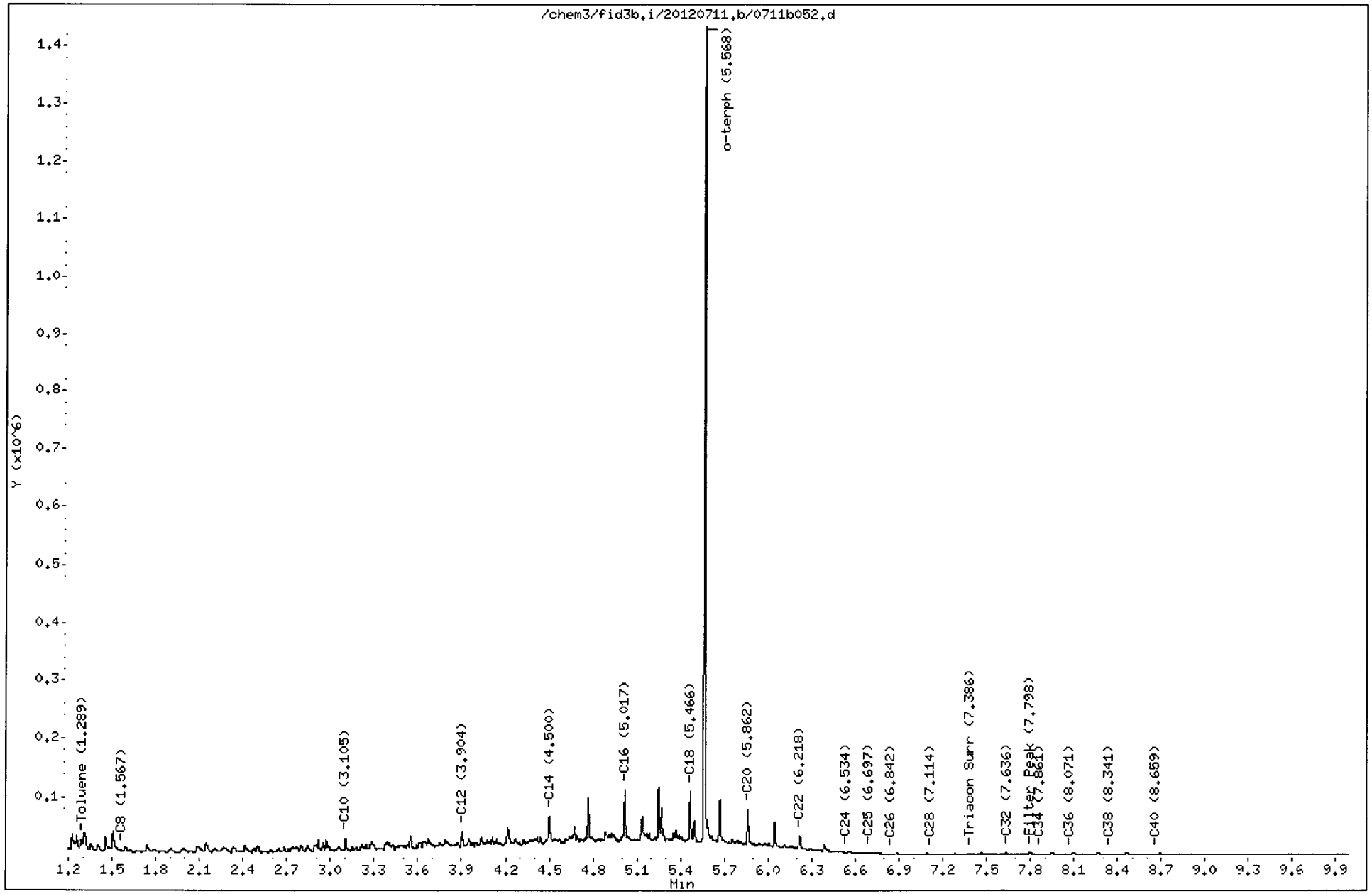
Instrument: fid3b.i

Sample Info: DIESEL #5

Operator: MH

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AF 7/12/2012

Data file: /chem3/fid3b.i/20120711.b/0711b053.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/12/2012
Macro: FID:3B062212

ARI ID: MOIL #5
Client ID:
Injection: 12-JUL-2012 23:21
Dilution Factor: 1

FID:3B RESULTS

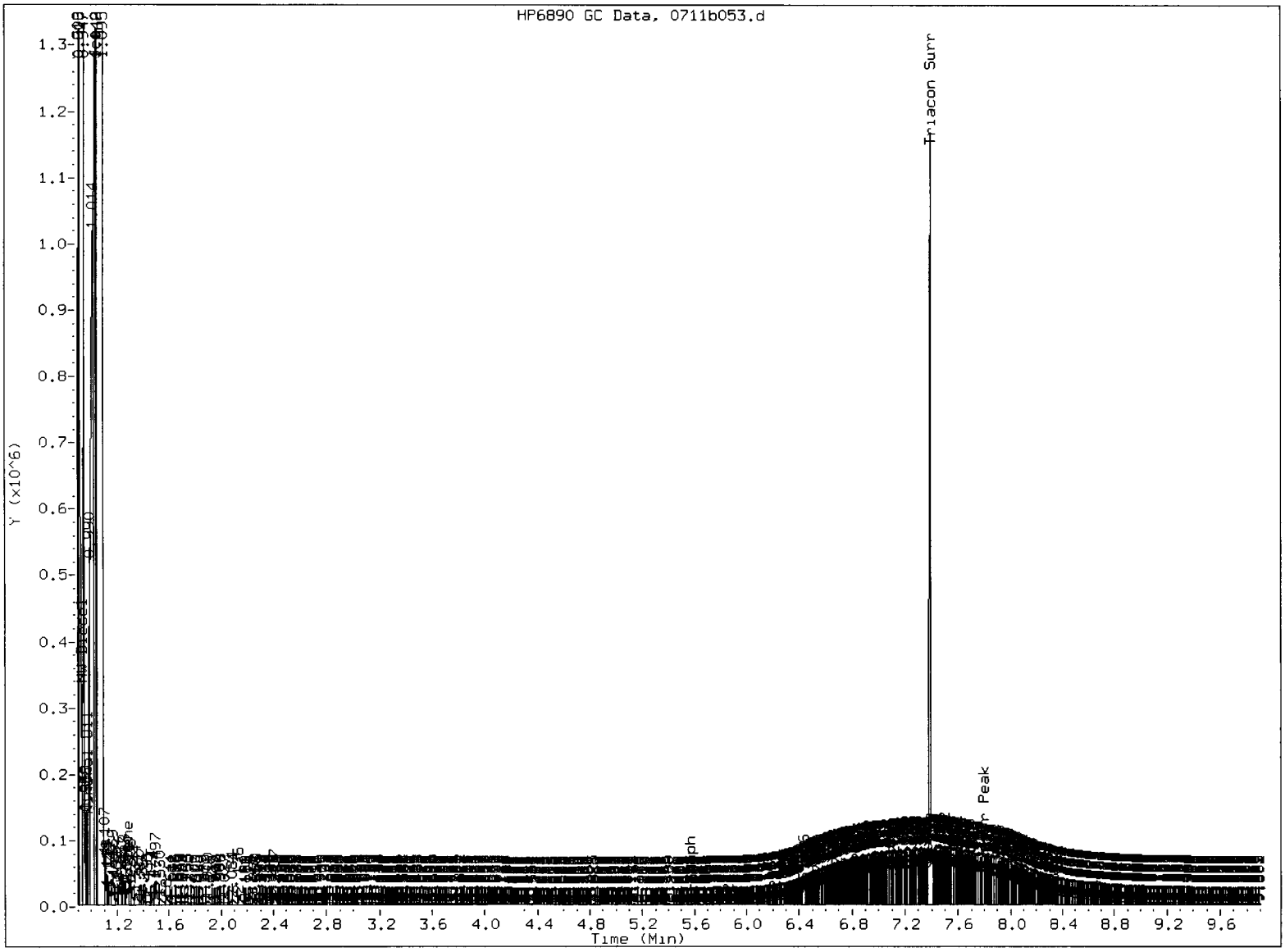
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.278	-0.005	25516	20028	GAS (Tol-C12)	604240	27.31
C8	1.584	0.019	9474	14735	DIESEL (C12-C24)	550290	40.17
C10	3.097	-0.004	2557	749	M.OIL (C24-C38)	4835403	485.68
C12	3.905	0.002	1424	448	AK-102 (C10-C25)	784884	48.09
C14	4.501	-0.001	497	201	AK-103 (C25-C36)	4388960	639.98 M
C16	5.015	-0.004	71	13			
C18	5.466	-0.001	178	23			
C20	5.862	0.000	1260	575			
C22	6.218	0.000	6752	1066			
C24	6.541	-0.001	30487	19585			
C25	6.690	-0.005	41071	22636			
C26	6.844	0.002	48380	12189			
C28	7.118	-0.004	58510	35985	FUEL OIL(C10-C24)	659235	45.23
C32	7.629	-0.001	59379	32156			
C34	7.863	0.001	49781	24359			
Filter Peak	7.801	0.002	50377	30009			
C36	8.090	0.006	32160	8280	BUNKERC (C10-C38)	5494637	1136.61
o-terph	5.572	0.005	1225	642	JET-A (C10-C18)	147809	10.27
Triacon Surr	7.392	0.002	1103706	757893			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	642	0.0	0.1
Triacontane	757893	45.9	102.1

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 MOIL #5 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Surr pk overlap

Analyst: AZ Date: 7/12/2012

Data File: /chem3/fid3b.i/20120711.b/0711b053.d

Date : 12-JUL-2012 23:21

Client ID:

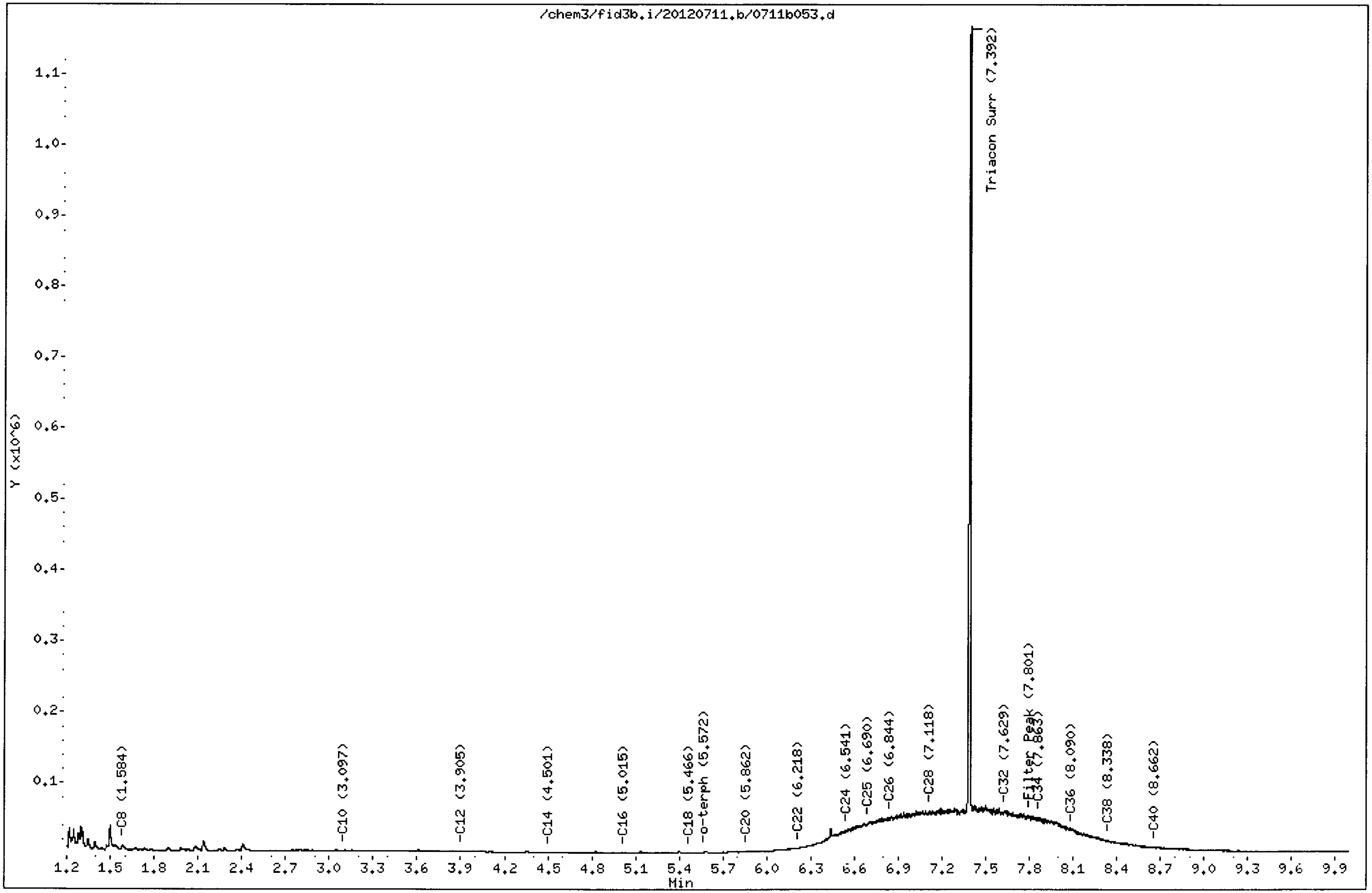
Sample Info: MOIL #5

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/12/2012

Data file: /chem3/fid3b.i/20120711.b/0711b061.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/12/2012
Macro: FID:3B062212

ARI ID: DIESEL #6
Client ID:
Injection: 12-JUL-2012 01:53
Dilution Factor: 1

FID:3B RESULTS

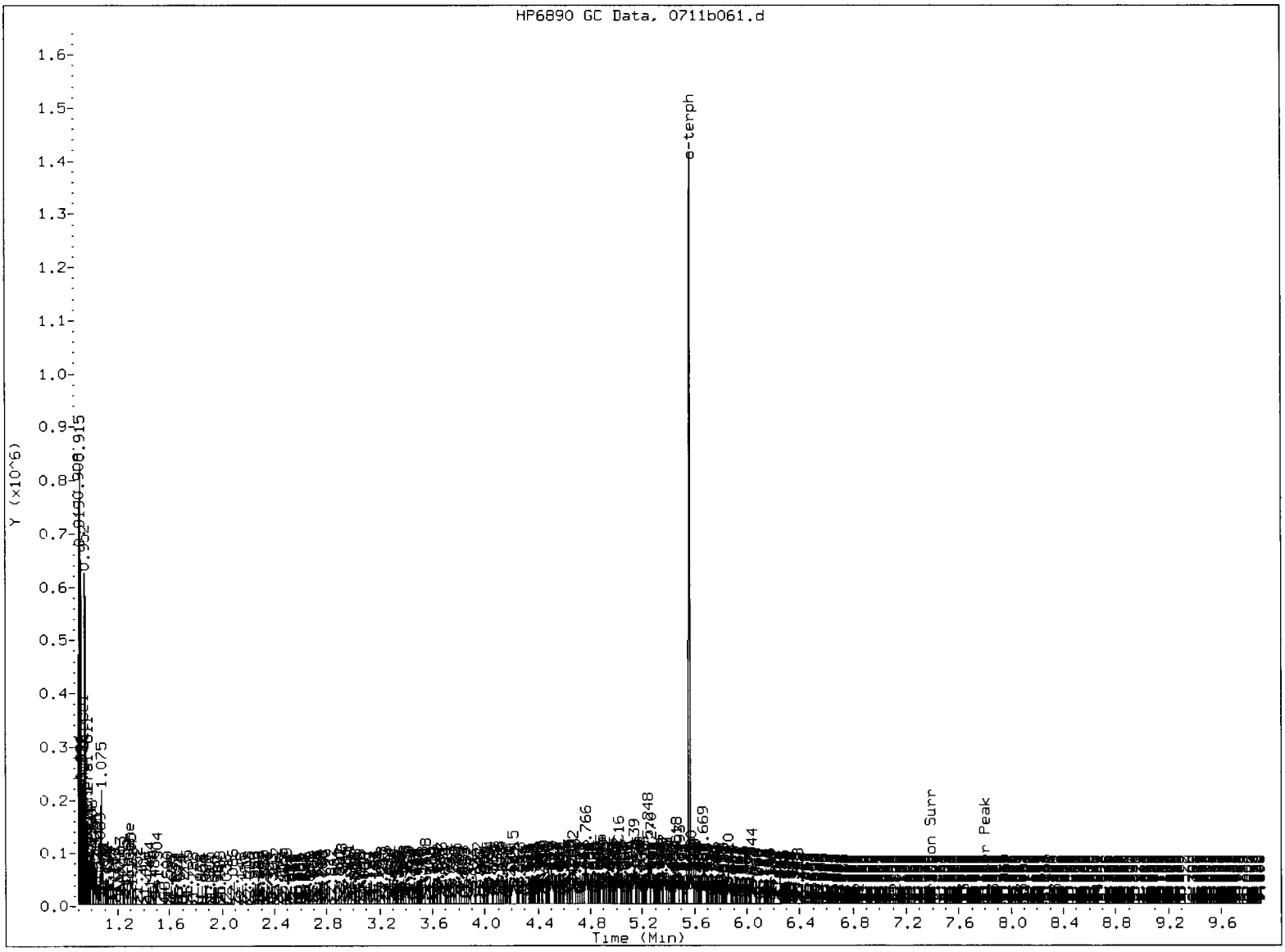
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.287	0.004	27779	27158	GAS (Tol-C12)	1602137	72.42
C8	1.568	0.004	5998	5056	DIESEL (C12-C24)	3727473	272.08
C10	3.104	0.004	27325	24243	M.OIL (C24-C38)	60453	6.07
C12	3.903	0.001	35844	44001	AK-102 (C10-C25)	4477023	274.31 M
C14	4.501	0.000	66493	81955	AK-103 (C25-C36)	44734	6.52
C16	5.016	-0.002	111325	101170			
C18	5.466	-0.001	108751	88967			
C20	5.862	0.000	76911	62748			
C22	6.218	0.001	33433	41925			
C24	6.532	-0.010	3410	1905			
C25	6.693	-0.002	1758	1162			
C26	6.844	0.002	930	721			
C28	7.119	-0.002	173	39	FUEL OIL(C10-C24)	4470460	306.74
C32	7.636	0.005	1916	1502			
C34	7.868	0.006	266	56			
Filter Peak	7.796	-0.003	2297	1961			
C36	8.080	-0.004	475	139	BUNKERC (C10-C38)	4530914	937.25
o-terph	5.567	0.000	1372961	829158	JET-A (C10-C18)	3406048	236.55
Triacon Surr	7.389	-0.001	22	4			

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	829158	44.2	98.2
Triacontane	4	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 DIESEL #6 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

Analyst: AR Date: 7/12/2012

Data File: /chem3/fid3b.i/20120711.b/0711b061.d

Page 1

Date : 12-JUL-2012 01:53

Client ID:

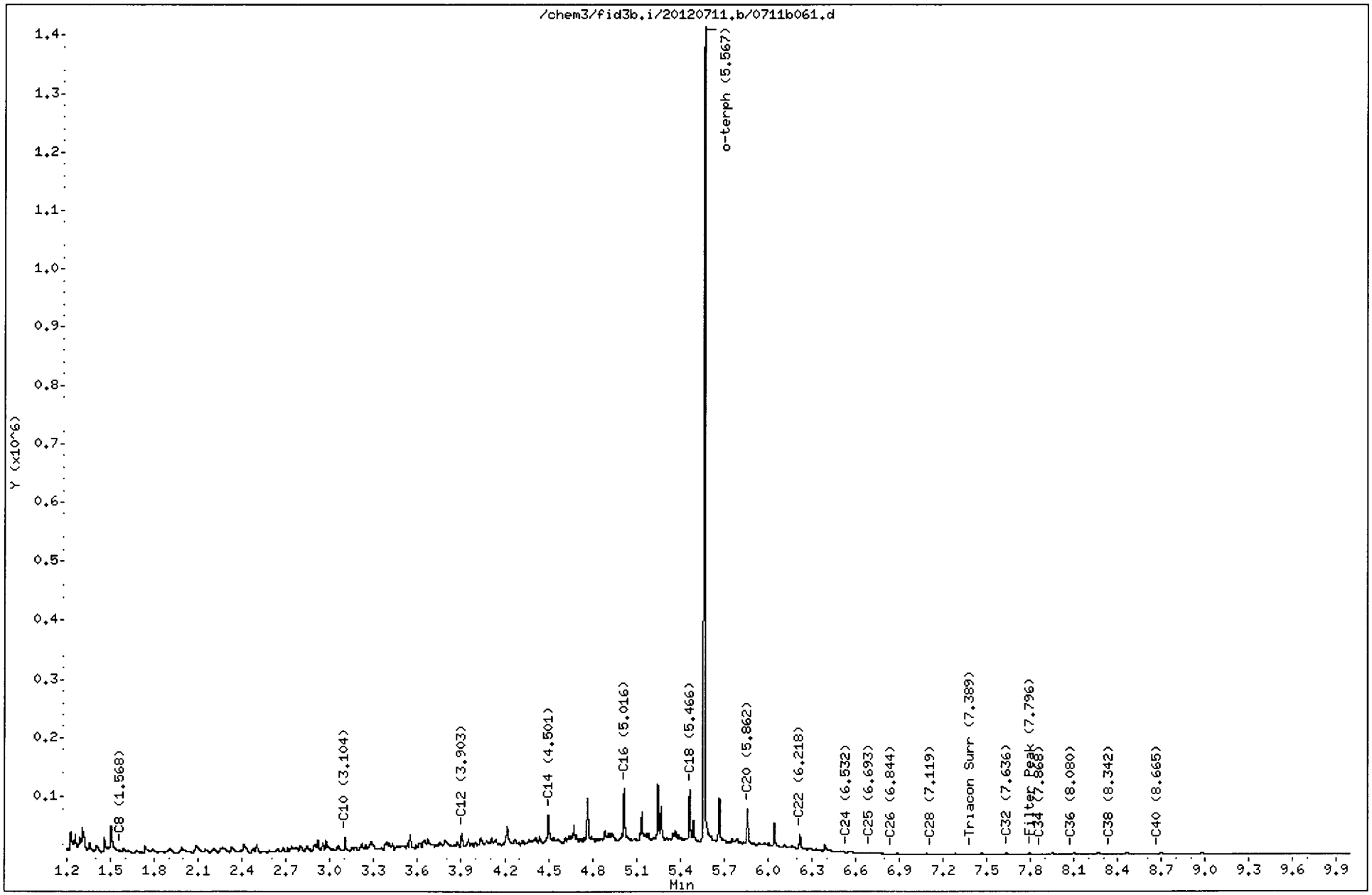
Instrument: fid3b.i

Sample Info: DIESEL #6

Operator: MH

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AF 7/12/2012

Data file: /chem3/fid3b.i/20120711.b/0711b062.d
Method: /chem3/fid3b.i/20120711.b/ftphfid3b.m
Instrument: fid3b.i
Operator: MH
Report Date: 07/12/2012
Macro: FID:3B062212

ARI ID: MOIL #6
Client ID:
Injection: 12-JUL-2012 02:12
Dilution Factor: 1

FID:3B RESULTS

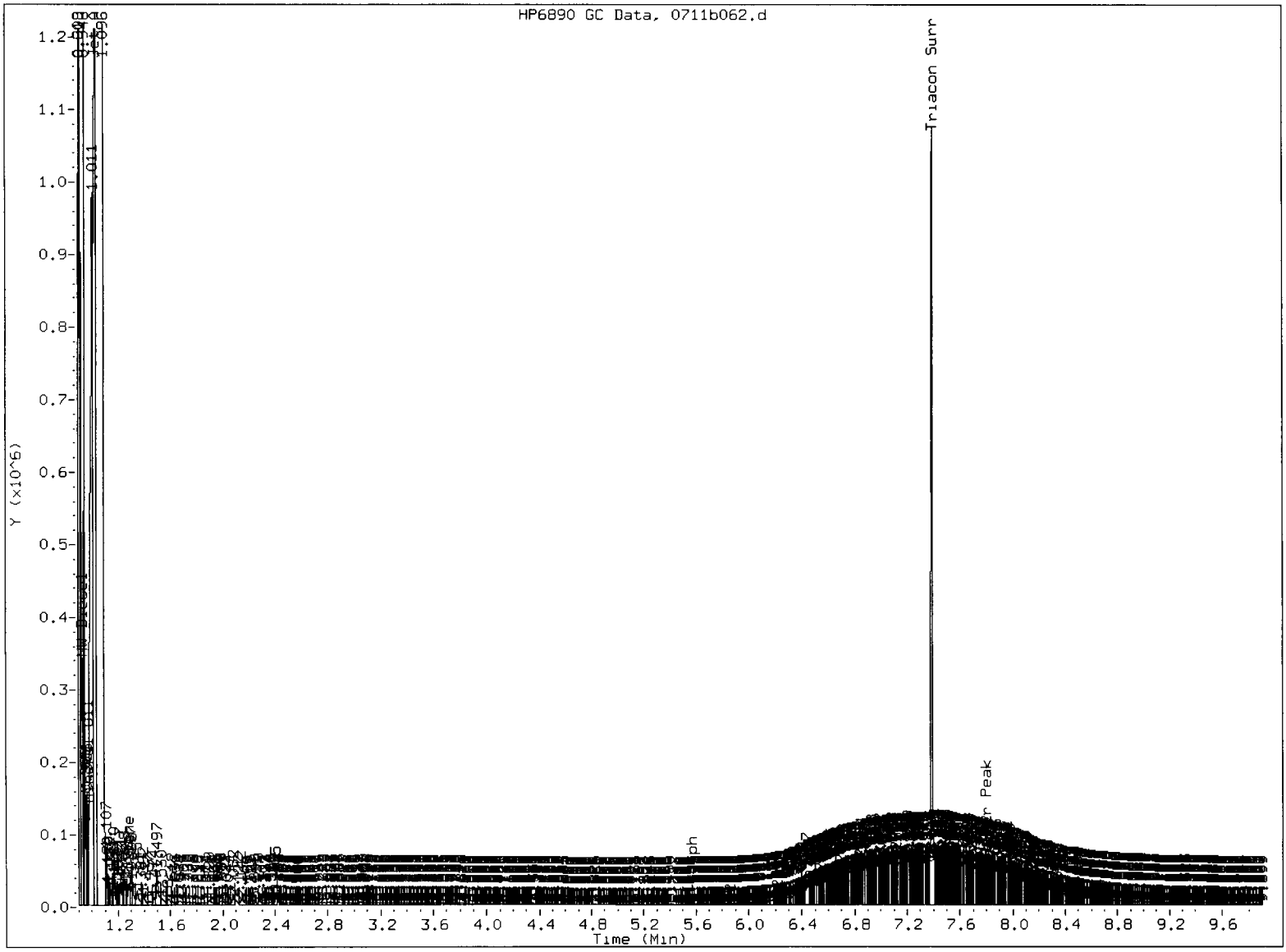
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.279	-0.005	30377	24072	GAS (Tol-C12)	660502	29.86	
C8	1.584	0.019	8567	12786	DIESEL (C12-C24)	557721	40.71	
C10	3.101	0.000	3108	430	M.OIL (C24-C38)	5009384	503.15	
C12	3.897	-0.006	1694	1606	AK-102 (C10-C25)	780767	47.84	
C14	4.504	0.003	568	528	AK-103 (C25-C36)	4564760	665.61	M
C16	5.016	-0.002	101	37				
C18	5.465	-0.003	171	49				
C20	5.863	0.000	1250	487				
C22	6.217	-0.001	6853	2556				
C24	6.543	0.002	30199	14775				
C25	6.697	0.002	41193	14640				
C26	6.845	0.002	49327	18425				
C28	7.122	0.001	58905	27568	FUEL OIL(C10-C24)	676384	46.41	
C32	7.629	-0.002	61725	20327				
C34	7.861	-0.001	50031	27316				
Filter Peak	7.798	-0.001	54788	16158				
C36	8.086	0.002	35218	13623	BUNKERC (C10-C38)	5685769	1176.15	
o-terph	5.572	0.005	1395	610	JET-A (C10-C18)	161273	11.20	
Triacon Surr	7.392	0.002	1009672	773045				

Range Times: NW Diesel(3.952 - 6.592) NW Gas(1.233 - 3.952) NW M.Oil(6.592 - 8.388)
AK102(3.051 - 6.645) AK103(6.645 - 8.134) Jet A(3.051 - 5.517)

Surrogate	Area	Amount	%Rec
o-Terphenyl	610	0.0	0.1
Triacontane	773045	46.9	104.1

Analyte	RF	Curve Date
o-Terph Surr	18765.5	22-JUN-2012
Triacon Surr	16496.0	08-JUN-2012
Gas	22122.0	09-JUN-2012
Diesel	13700.0	22-JUN-2012
Motor Oil	9956.0	08-JUN-2012
AK102	16321.0	22-JUN-2012
AK103	6858.0	08-JUN-2012
JetA	14399.0	16-FEB-2012
Bunker C	4834.2	26-OCT-2011
Fuel Oil	14574.0	16-JUN-2012

FID:3B-2C/RTX-1 MOIL #6 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

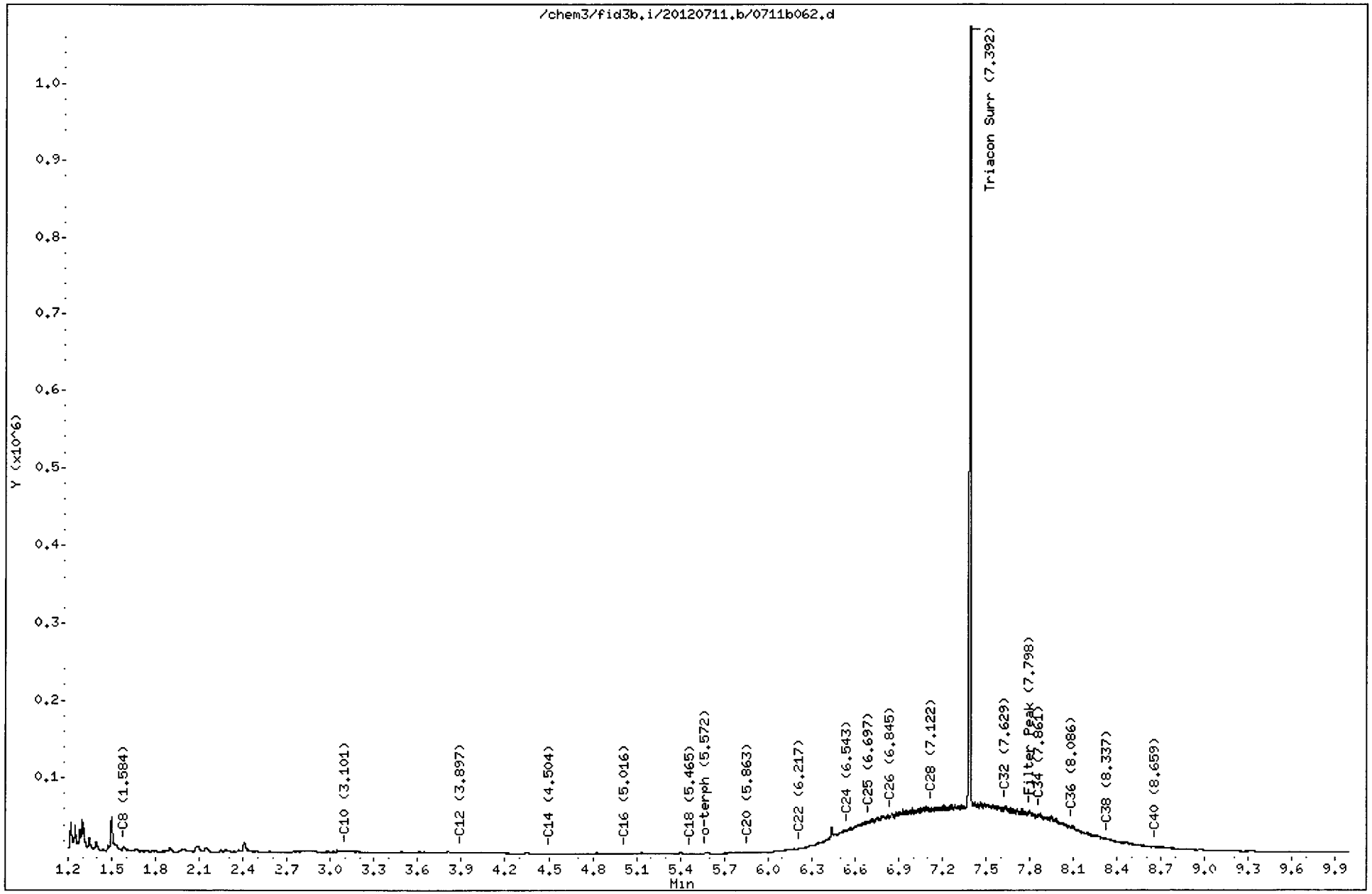
Analyst: AR Date: 7/12/2012

Data File: /chem3/fid3b.i/20120711.b/0711b062.d
Date : 12-JUL-2012 02:12
Client ID:
Sample Info: MOIL #6

Column phase: RTX-1

Instrument: fid3b.i

Operator: MH
Column diameter: 0.25



GC Analyst Notes / Corrective Action Log

ARI Project ID: VB50 Client ID: Anchor

ARI SOP: **403S**(PCB) **405S**(Herb) **407S**(TPH-D) **409S**(HCID) **412S**(PCP) **423S**(Pest)
427S(Dir Inj) **428S**(EPH) **432S**(EDB) **Other**

Parameter(s): no acid/silica cleanup

Instrument: FID-3A FID-3B (FID-4A) FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7

Dates: Curve: Diesel Mol 6/12/2012 & 7/10/2012 Analysis Start: 7/10/2012

Endrin/DDT Breakdown <15%? YES / NO / (NA)		Method Blank In Control?	(YES) / NO
ICal Meets RF & %RSD Criteria?	(YES) / NO	LCS/LCSD Recovery In Control?	(YES) / NO
CCal Meets RF & %RSD Criteria?	(YES) / NO	Surrogate Recovery In Control?	(YES) / NO
Manual Integrations for ICal?	(YES) / NO	Manual Integrations for Samples?	(YES) / NO
Internal Standard Meets Criteria? YES / NO / (NA)		Special Analysis Criteria Met?	(YES) / NO / NA

Lvl 4 VDP

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

- samples Y, Z & AB appear to contain another analyte (in addition to diesel) in the diesel range inflating the diesel quant
- Sample AC the diesel appears weathered

- Sample AD has a contaminant due to column bleed, extract was cleaned before a re-analysis could take place, and no further ~~ext~~ sample was available for re-extraction. For GC, silane peaks were removed from quantitation and mol quant y-flagged. Sample N (acid clean Samp AD) was clean to RL.

Additional Details on Reverse: Yes / (No)

Analyst: _____ **Date:** 7/11/2012

Reviewer: _____ **Date:** 7/13

GC LOG SUMMARY FOR DATABATCH - /chem3/fid4a.i/20120710.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	10-JUL-2012 07:14	0710a001.d	1	RINSE	
2	10-JUL-2012 07:35	0710a002.d	1	RT	
3	10-JUL-2012 07:56	0710a003.d	1	IB	
4	10-JUL-2012 08:18	0710a004.d	1	DIESEL #1	
5	10-JUL-2012 08:39	0710a005.d	1	MOIL #1	
6	10-JUL-2012 09:01	0710a006.d	1	AK103 #1	
7	10-JUL-2012 09:22	0710a007.d	1	DIESEL 50	
8	10-JUL-2012 09:44	0710a008.d	1	DIESEL 100	
9	10-JUL-2012 10:06	0710a009.d	1	DIESEL 250	
10	10-JUL-2012 10:27	0710a010.d	1	DIESEL 500	
11	10-JUL-2012 10:48	0710a011.d	1	DIESEL 250	
12	10-JUL-2012 11:10	0710a012.d	1	DIESEL 1000	
13	10-JUL-2012 11:31	0710a013.d	1	DIESEL 2500	
14	10-JUL-2012 11:53	0710a014.d	1	DIESEL ICV	
15	10-JUL-2012 12:14	0710a015.d	1	DIESEL #2 – Passes	
16	10-JUL-2012 12:36	0710a016.d	1	MOIL #2 – Passes	
17	10-JUL-2012 13:13	0710a017.d	1	VB50MBW1	
18	10-JUL-2012 13:34	0710a018.d	1	VB50MBW1	
19	10-JUL-2012 13:56	0710a019.d	1	VB50LCSW1	
20	10-JUL-2012 14:18	0710a020.d	1	VB50LCSDW1	
21	10-JUL-2012 14:39	0710a021.d	1	VB50R	
22	10-JUL-2012 15:01	0710a022.d	1	VB50S	
23	10-JUL-2012 15:23	0710a023.d	1	VB50T	
24	10-JUL-2012 15:45	0710a024.d	1	VB50U	
25	10-JUL-2012 16:06	0710a025.d	1	VB50V	
26	10-JUL-2012 16:28	0710a026.d	1	VB50W	
27	10-JUL-2012 16:50	0710a027.d	1	VB50X	
28	10-JUL-2012 17:11	0710a028.d	1	DIESEL #3 – Passes	
29	10-JUL-2012 17:32	0710a029.d	1	MOIL #3 – Passes	
30	10-JUL-2012 17:54	0710a030.d	1	VB50Y	
31	10-JUL-2012 18:15	0710a031.d	1	VB50Z	
32	10-JUL-2012 18:36	0710a032.d	1	VB50AA	
33	10-JUL-2012 18:58	0710a033.d	1	VB50AB	
34	10-JUL-2012 19:19	0710a034.d	1	VB50AC	
35	10-JUL-2012 19:40	0710a035.d	1	VB50AD	
36	10-JUL-2012 20:01	0710a036.d	1	VB50AE	
37	10-JUL-2012 20:22	0710a037.d	1	VB50AF	
38	10-JUL-2012 20:44	0710a038.d	1	DIESEL #4 – Passes	
39	10-JUL-2012 21:05	0710a039.d	1	MOIL #4 – Passes	

Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a015.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: DIESEL #2
Client ID:
Injection: 10-JUL-2012 12:14
Dilution Factor: 1

FID:4A RESULTS

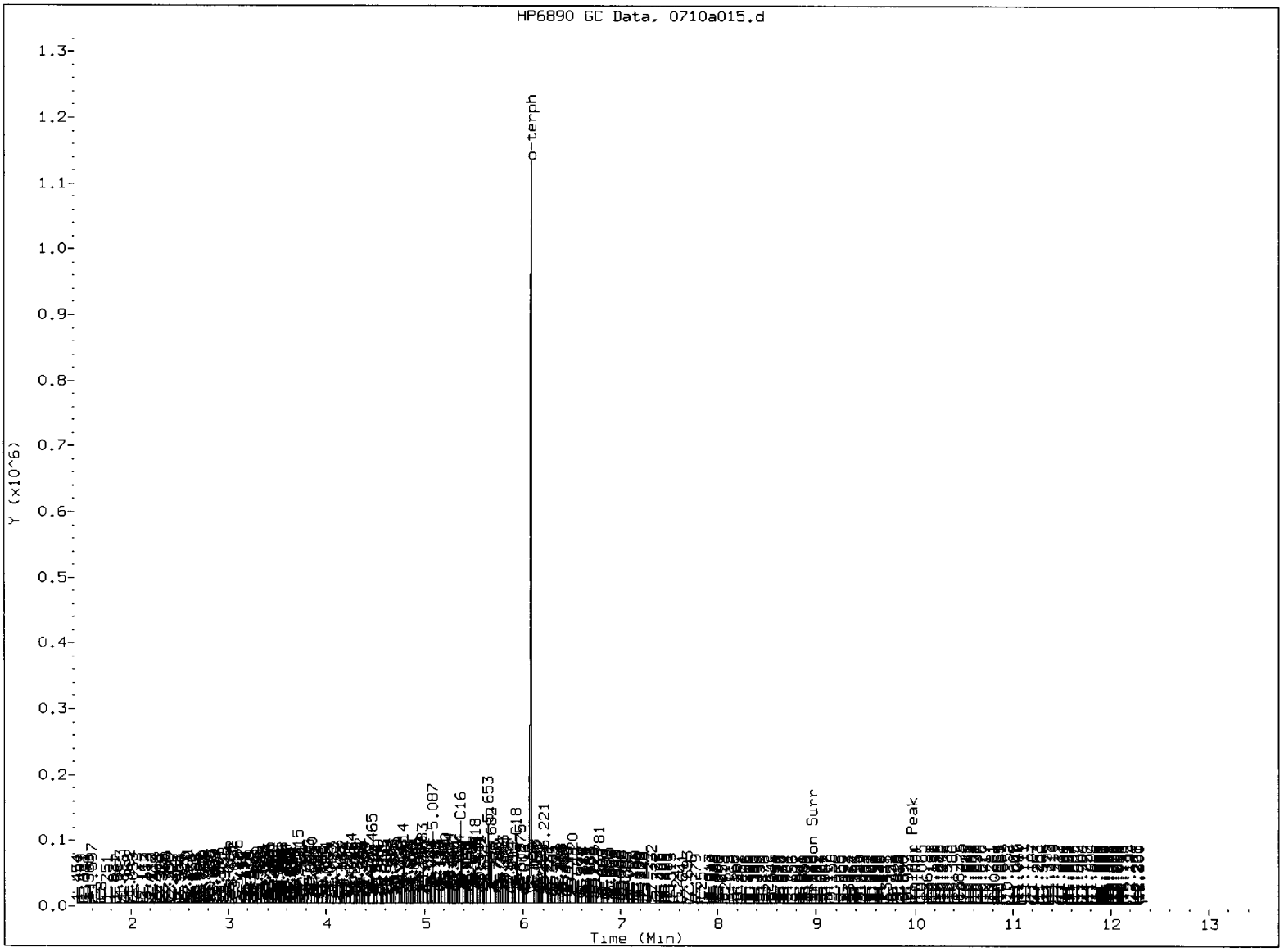
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.401	-0.016	517	1135	GAS (Tol-C12)	845441	56.20	
C8	1.703	0.007	1804	3131	DIESEL (C12-C24)	3430143	234.14	
C10	3.234	0.007	23124	17939	M.OIL (C24-C38)	106158	8.45	
C12	4.114	0.005	49832	37609	AK-102 (C10-C25)	4032106	233.08	M
C14	4.786	0.003	76012	60617	AK-103 (C25-C36)	58109	6.81	
C16	5.372	0.003	124139	90793				
C18	5.936	0.004	100737	89302				
C20	6.504	0.005	62013	72790	JET-A (C10-C18)	3028599	204.06	
C22	7.055	0.004	28989	31558	MIN.OIL (C24-C38)	106158	7.90	
C24	7.581	0.005	6064	12893				
C25	7.835	0.007	2944	8827				
C26	8.079	0.009	1002	2314				
C28	8.515	-0.011	268	302				
C32	9.336	-0.011	155	49				
C34	9.712	-0.017	1742	2984				
Filter Peak	9.974	0.011	1959	2596	BUNKERC (C10-C38)	4114377	459.38	M
C36	10.129	0.030	743	367				
C38	10.445	-0.011	1592	5428				
C40	10.817	0.008	1539	3178				
o-terph	6.084	0.008	1111740	862117				
Triacon Surr	8.965	0.007	331	607				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	862117	42.3	94.0
Triacontane	607	0.0	0.1

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 DIESEL #2 FID:4A SIGNAL



MANUAL INTEGRATION

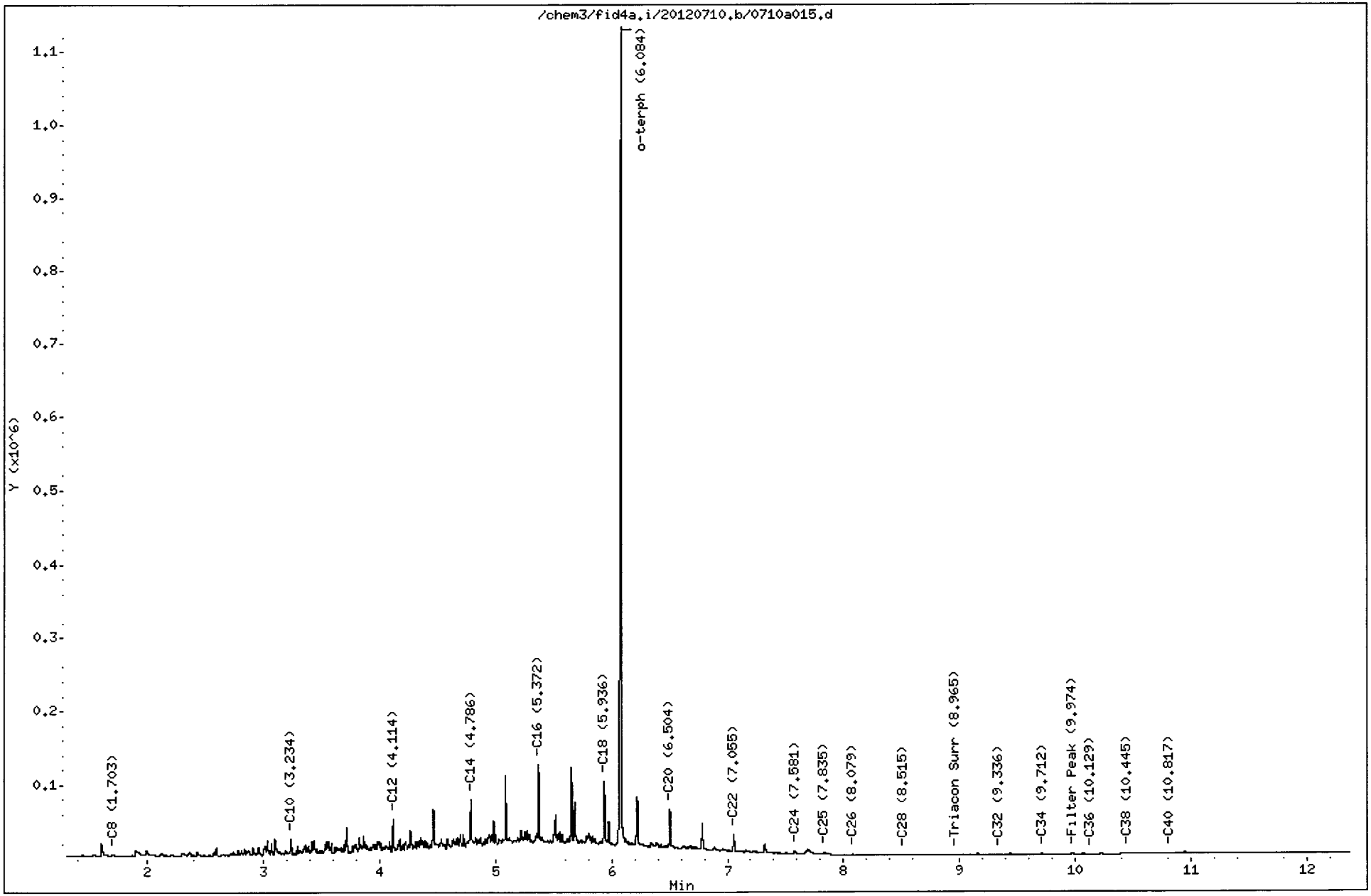
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Surr pk overlap

Analyst: _____ Date: _____

Data File: /chem3/fid4a.i/20120710.b/0710a015.d
Date : 10-JUL-2012 12:14
Client ID:
Sample Info: DIESEL #2

Instrument: fid4a.i
Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a016.d ARI ID: MOIL #2
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 10-JUL-2012 12:36
Operator: MH
Report Date: 07/11/2012 Dilution Factor: 1
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

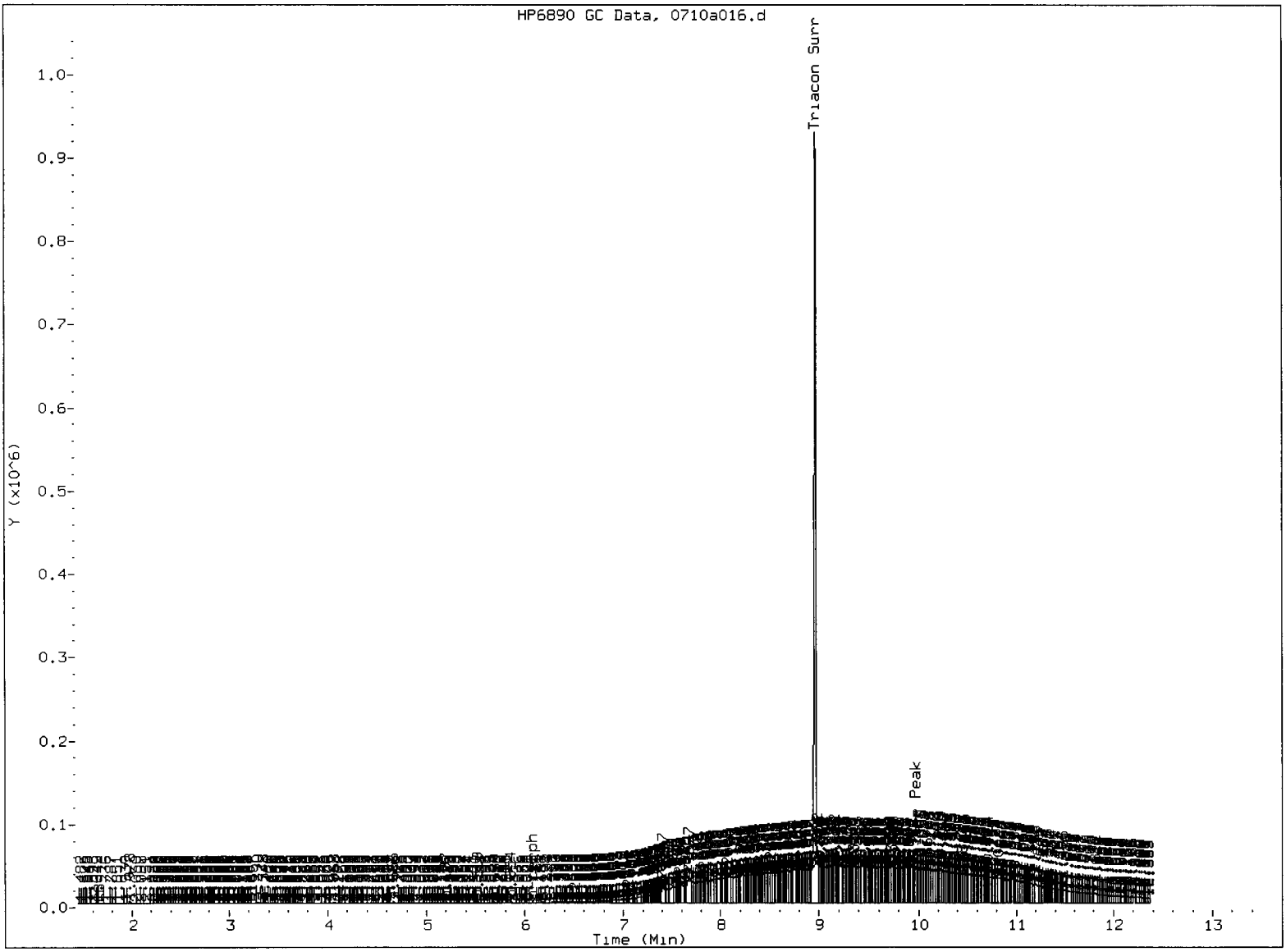
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.356	-0.061	21147	32011	GAS (Tol-C12)	55662	3.70	
C8	1.670	-0.026	399	997	DIESEL (C12-C24)	599914	40.95	
C10	3.235	0.009	717	1793	M.OIL (C24-C38)	6488904	516.26	
C12	4.112	0.003	438	203	AK-102 (C10-C25)	893049	51.62	
C14	4.779	-0.005	358	575	AK-103 (C25-C36)	5413653	634.07	M
C16	5.372	0.003	406	618				
C18	5.936	0.004	622	807				
C20	6.507	0.008	1678	3343	JET-A (C10-C18)	77163	5.20	
C22	7.053	0.002	5304	3624	MIN.OIL (C24-C38)	6488904	482.78	M
C24	7.579	0.003	20402	11490				
C25	7.829	0.001	26958	15925				
C26	8.071	0.001	32243	31352				
C28	8.518	-0.008	38325	47880				
C32	9.350	0.004	47400	62063				
C34	9.732	0.003	46471	36419				
Filter Peak	9.971	0.008	45070	73427	BUNKERC (C10-C38)	7118896	794.83	M
C36	10.092	-0.006	42918	47267				
C38	10.451	-0.006	36257	16486				
C40	10.814	0.005	31055	47555				
o-terph	6.079	0.003	2332	3884				
Triacon Surr	8.967	0.009	879268	851298				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	3884	0.2	0.4
Triacontane	851298	44.6	99.1

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 MOIL #2 FID:4A SIGNAL



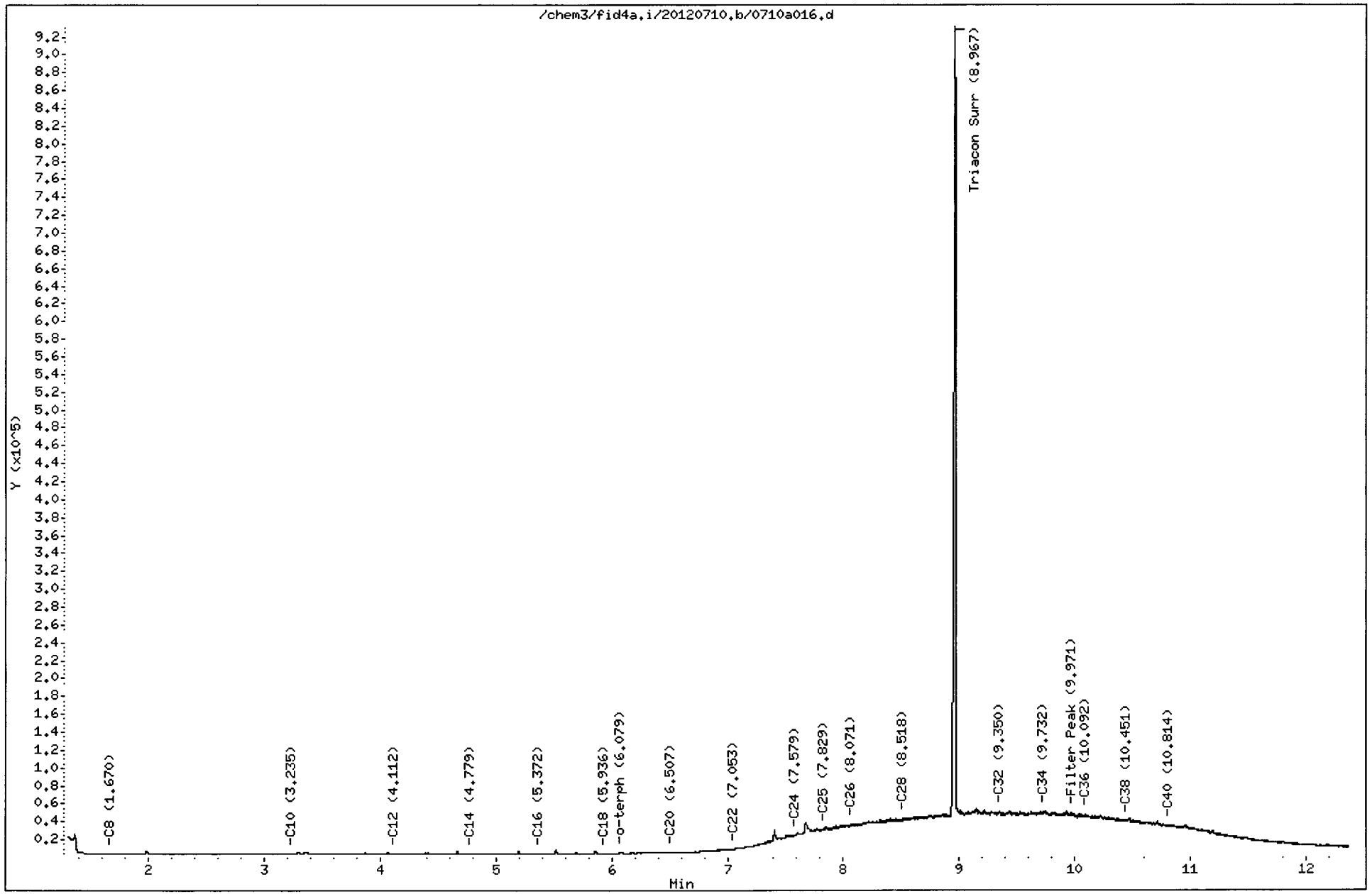
MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

Analyst: _____ Date: _____

Data File: /chem3/fid4a.i/20120710.b/0710a016.d
Date : 10-JUL-2012 12:36
Client ID:
Sample Info: MOIL #2

Instrument: fid4a.i
Operator: MH
Column phase: RTX-1
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/12/2012

Data file: /chem3/fid4a.i/20120710.b/0710a018.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50MBW1
Client ID: VB50MBW1
Injection: 10-JUL-2012 13:34
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.396	-0.022	2108	1860	GAS (Tol-C12)	176068	11.70
C8	1.674	-0.022	1188	2319	DIESEL (C12-C24)	41843	2.86 LRL
C10	3.239	0.012	394	560	M.OIL (C24-C38)	164061	13.05 LRL
C12	4.116	0.007	219	378	AK-102 (C10-C25)	86228	4.98
C14	4.781	-0.003	161	94	AK-103 (C25-C36)	106319	12.45
C16	5.377	0.008	289	650			
C18	5.936	0.003	326	457			
C20	6.513	0.013	251	387	JET-A (C10-C18)	47546	3.20
C22	7.046	-0.005	976	752	MIN.OIL (C24-C38)	164061	12.21
C24	7.586	0.010	107	62			
C25	7.837	0.008	2649	2173			
C26	8.074	0.004	301	477			
C28	8.519	-0.008	542	430			
C32	9.353	0.006	624	244			
C34	9.741	0.012	6965	9226			
Filter Peak	9.966	0.003	866	1335	BUNKERC (C10-C38)	229679	25.64
C36	10.103	0.004	1059	3250			
C38	10.446	-0.011	1545	4091			
C40	10.778	-0.031	4923	7770			
o-terph	6.082	0.006	1017910	784920			
Triacon Surr	8.975	0.017	769211	777254			

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	784920	38.5	85.6
Triacontane	777254	40.7	90.5

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

Data File: /chem3/fid4a.i/20120710.b/0710a018.d

Date : 10-JUL-2012 13:34

Client ID: VB50MBW1

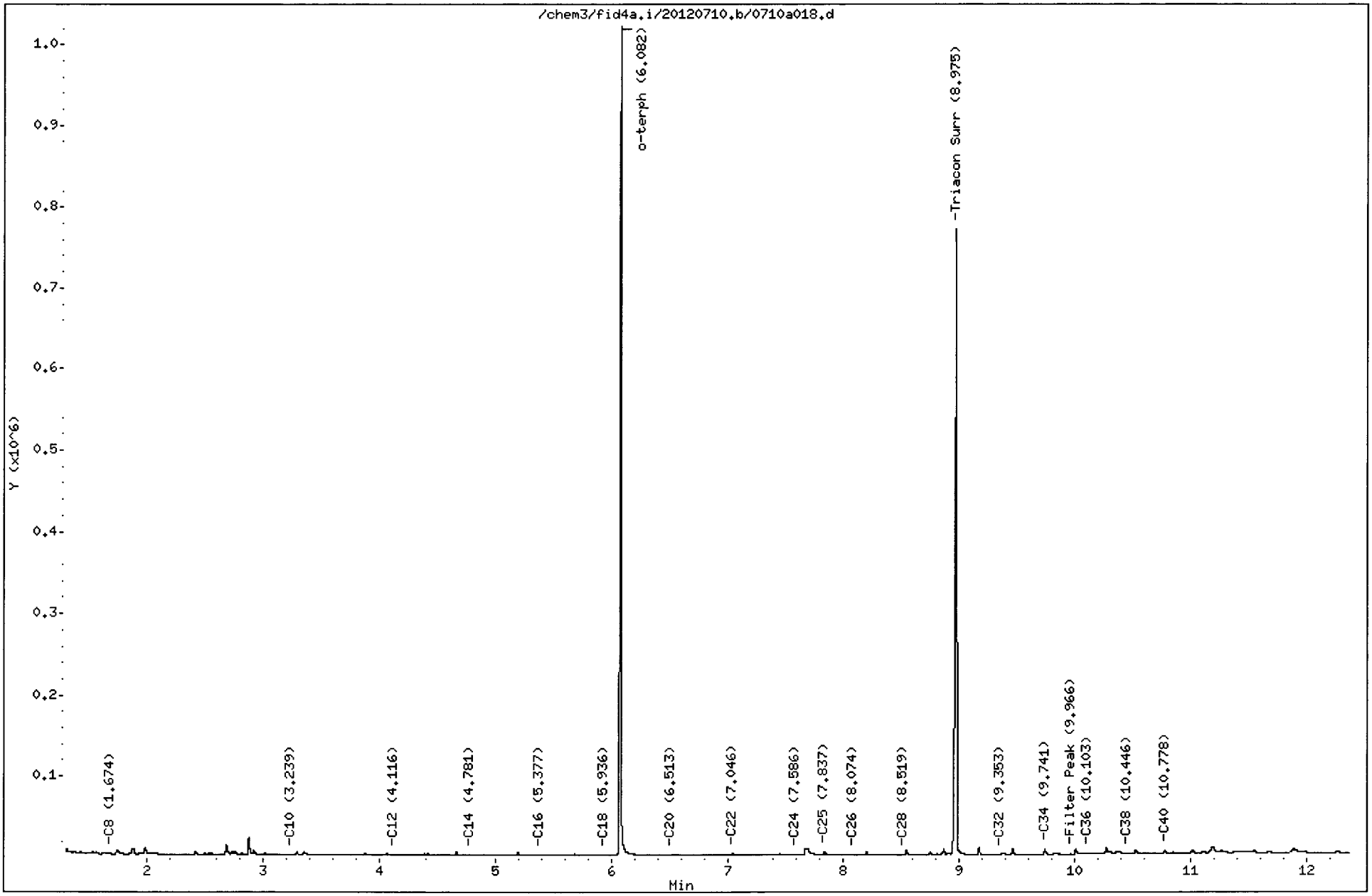
Sample Info: VB50MBW1

Instrument: fid4a.i

Operator: MH

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a019.d ARI ID: VB50LCSW1
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m Client ID: VB50LCSW1
Instrument: fid4a.i Injection: 10-JUL-2012 13:56
Operator: MH
Report Date: 07/11/2012 Dilution Factor: 1
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

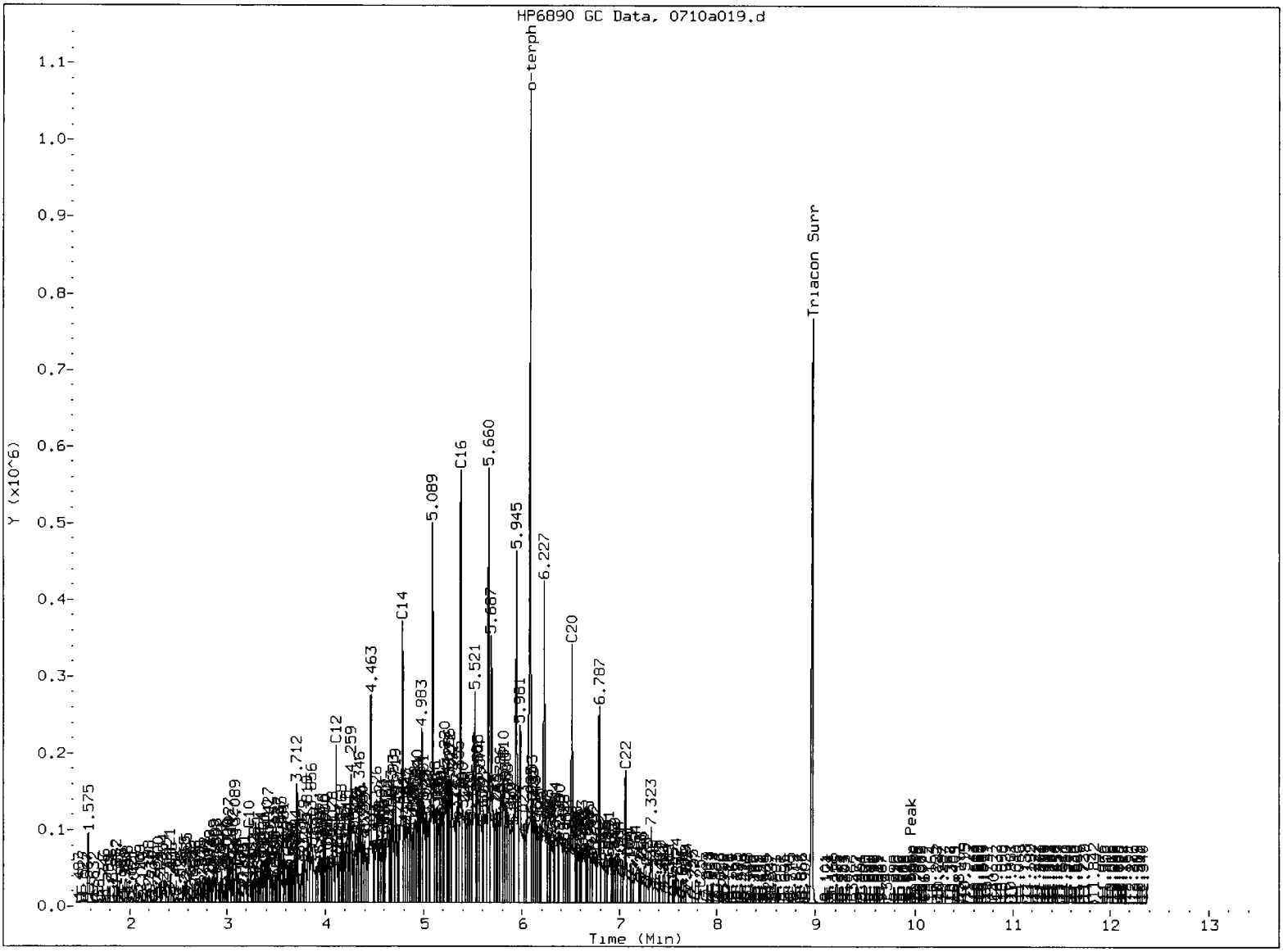
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.426	0.009	8617	7264	GAS (Tol-C12)	3311663	220.13	
C8	1.693	-0.003	4196	6728	DIESEL (C12-C24)	17687538	1207.34	80 %R
C10	3.229	0.002	95108	69008	M.OIL (C24-C38)	256378	20.40	LRL
C12	4.111	0.002	205226	160226	AK-102 (C10-C25)	20102704	1162.07	M
C14	4.787	0.003	366916	387304	AK-103 (C25-C36)	142509	16.69	
C16	5.376	0.007	563662	497246				
C18	5.923	-0.010	102475	83347				
C20	6.510	0.011	336711	381005	JET-A (C10-C18)	14652950	987.26	
C22	7.060	0.009	172154	172209	MIN.OIL (C24-C38)	256378	19.07	
C24	7.580	0.004	46412	50605				
C25	7.832	0.003	18683	35786				
C26	8.074	0.004	7112	10855				
C28	8.531	0.005	1657	1854				
C32	9.370	0.024	970	1754				
C34	9.725	-0.004	2140	2891				
Filter Peak	9.962	-0.001	255	212	BUNKERC (C10-C38)	20266420	2262.77	M
C36	10.103	0.004	433	736				
C38	10.445	-0.012	707	432				
C40	10.811	0.002	1829	6730				
o-terph	6.087	0.011	953573	775661				
Triacon Surr	8.970	0.011	763274	738164				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	775661	38.1	84.6
Triacontane	738164	38.7	85.9

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50LCSW1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

Analyst: AR Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a019.d

Date : 10-JUL-2012 13:56

Client ID:

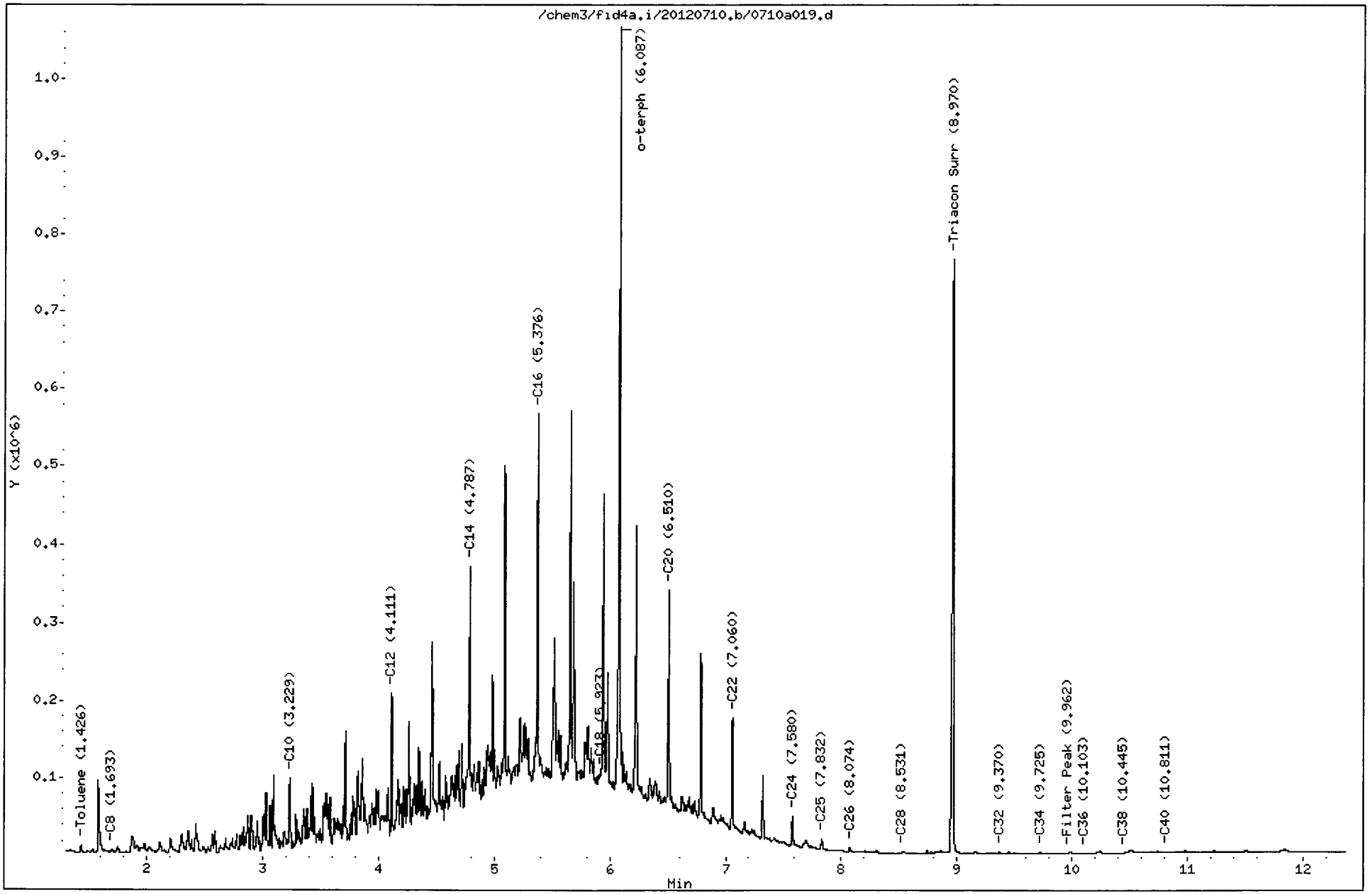
Sample Info: VB50LCSW1

Column phase: RTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a020.d ARI ID: VB50LCSDW1
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m Client ID: VB50LCSDW1
Instrument: fid4a.i Injection: 10-JUL-2012 14:18
Operator: MH
Report Date: 07/11/2012 Dilution Factor: 1
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

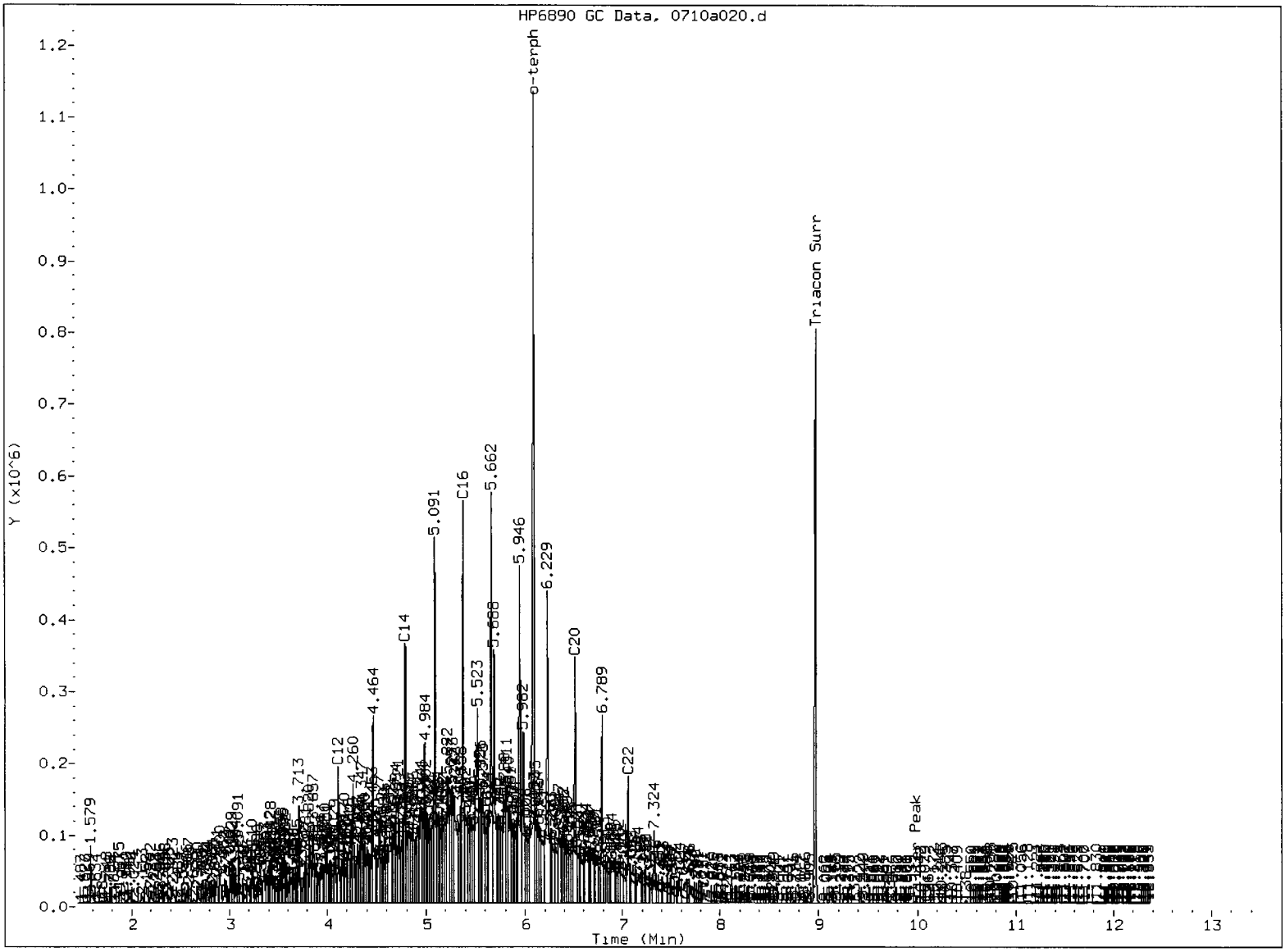
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.428	0.010	6998	6973	GAS (Tol-C12)	2944666	195.74	
C8	1.696	0.000	3243	5461	DIESEL (C12-C24)	17961769	1226.06	81.7%
C10	3.231	0.005	77304	60273	M.OIL (C24-C38)	275083	21.89	
C12	4.112	0.003	191142	146029	AK-102 (C10-C25)	20124510	1163.33	M
C14	4.787	0.004	362532	275204	AK-103 (C25-C36)	184555	21.62	
C16	5.378	0.009	561380	498690				
C18	5.922	-0.011	105145	68686				
C20	6.511	0.012	342705	352639	JET-A (C10-C18)	14410407	970.92	
C22	7.060	0.009	177801	175073	MIN.OIL (C24-C38)	275083	20.47	
C24	7.583	0.007	44969	49730				
C25	7.832	0.004	19005	37872				
C26	8.076	0.006	7447	11139				
C28	8.532	0.006	1744	1978				
C32	9.367	0.020	1363	2285				
C34	9.721	-0.008	4381	4888				
Filter Peak	9.986	0.023	4977	5613	BUNKERC (C10-C38)	20331496	2270.04	M
C36	10.113	0.014	809	2498				
C38	10.493	0.036	5227	8645				
C40	10.810	0.001	1570	3536				
o-terph	6.088	0.012	1019144	795592				
Triacon Surr	8.971	0.013	800503	757686				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	795592	39.1	86.8
Triacontane	757686	39.7	88.2

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50LCSDW1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

Analyst: AR Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a020.d

Date : 10-JUL-2012 14:18

Client ID:

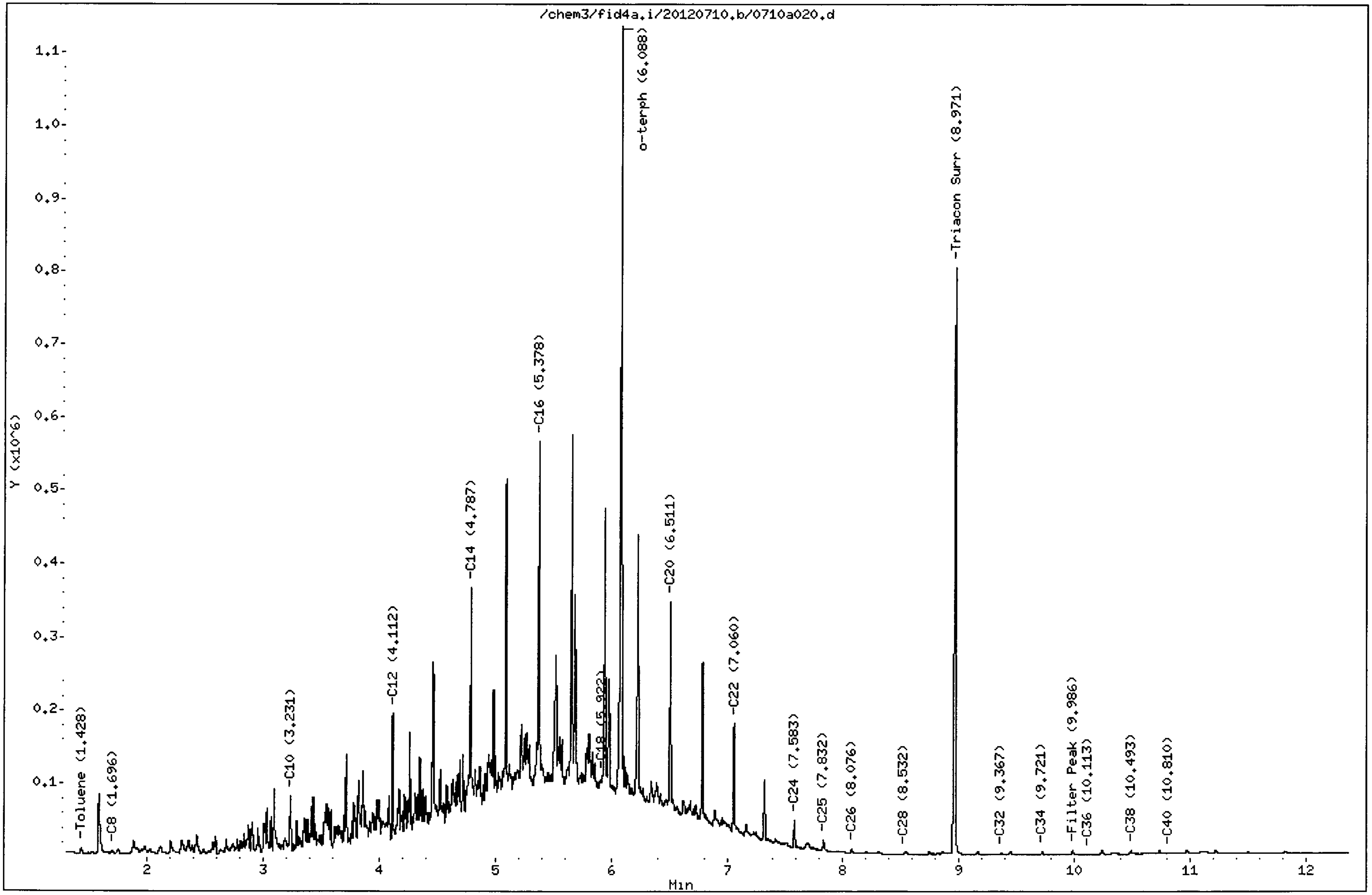
Sample Info: VB50LCSDW1

Column phase: RTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25



VB50 : 00332

Analytical Resources Inc.
407S TPH Quantitation Report

AZ 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a021.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50R
Client ID: CW-PW-01-070412
Injection: 10-JUL-2012 14:39
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.406	-0.012	2215	2088	GAS (Tol-C12)	213397	14.18
C8	1.645	-0.051	37048	37299	DIESEL (C12-C24)	246328	16.81 LRL
C10	3.227	0.000	298	641	M.OIL (C24-C38)	693542	55.18 LRL
C12	4.111	0.003	367	240	AK-102 (C10-C25)	303380	17.54
C14	4.782	-0.001	652	1165	AK-103 (C25-C36)	525479	61.55
C16	5.366	-0.003	1374	2511			
C18	5.938	0.005	1846	3470			
C20	6.498	-0.001	1539	593	JET-A (C10-C18)	129772	8.74
C22	7.048	-0.003	1760	3229	MIN.OIL (C24-C38)	693542	51.60
C24	7.583	0.007	1710	2396			
C25	7.817	-0.012	1937	2089			
C26	8.075	0.005	2055	2291			
C28	8.519	-0.007	2767	2607			
C32	9.339	-0.008	5570	6546			
C34	9.719	-0.010	7506	10790			
Filter Peak	9.957	-0.006	6282	4818	BUNKERC (C10-C38)	962026	107.41
C36	10.104	0.005	6427	3032			
C38	10.456	-0.001	5714	2356			
C40	10.806	-0.002	5951	4029			
o-terph	6.084	0.008	958253	732658			
Triacon Surr	8.972	0.013	790680	737188			

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	732658	36.0	79.9
Triacontane	737188	38.6	85.8

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

Data File: /chem3/fid4a.i/20120710.b/0710a021.d

Date : 10-JUL-2012 14:39

Client ID: CW-PW-01-070412

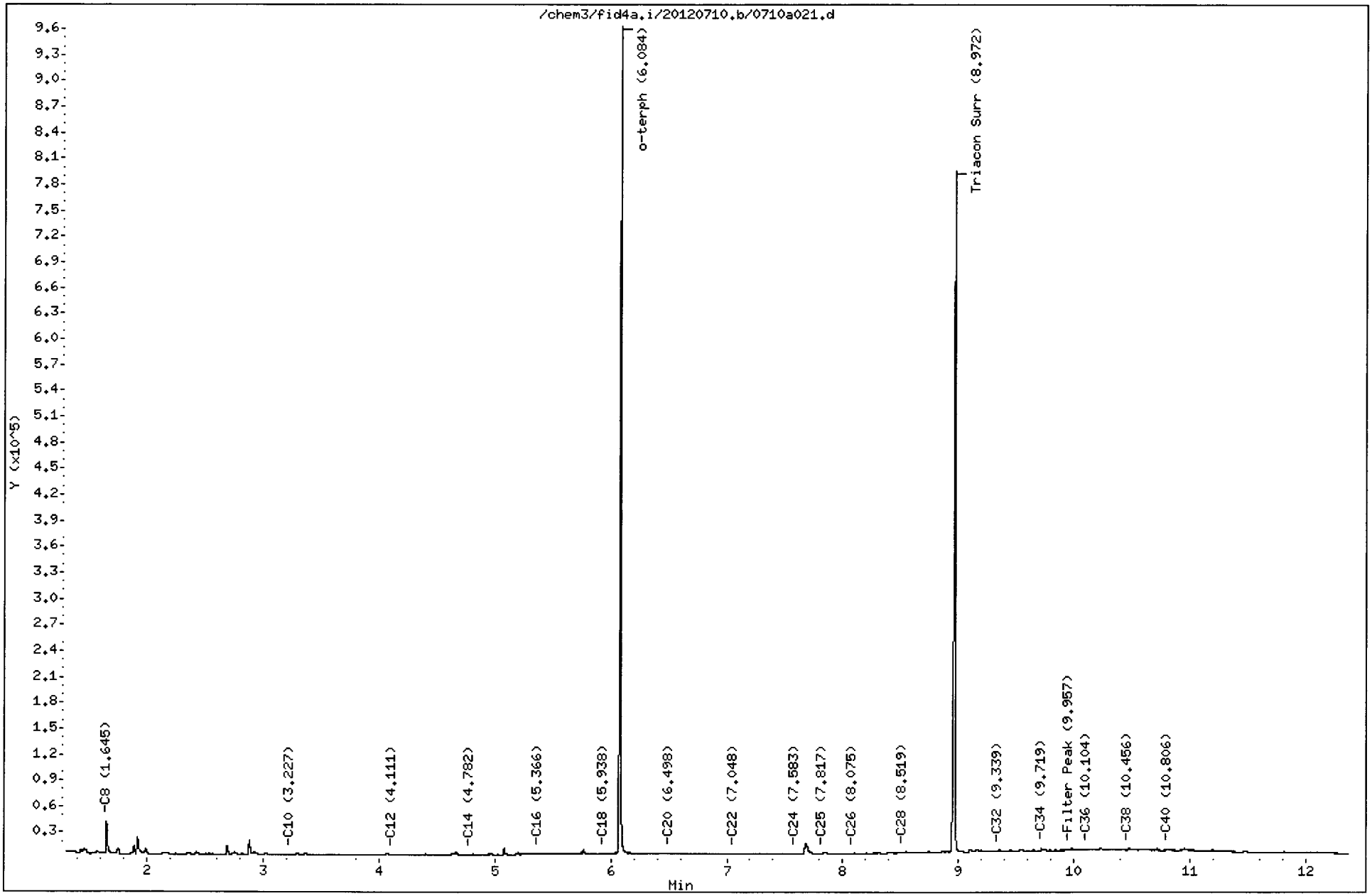
Sample Info: VB50R

Column phase: RTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a022.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50S
Client ID: CW-PW-02-070412
Injection: 10-JUL-2012 15:01
Dilution Factor: 1

FID:4A RESULTS

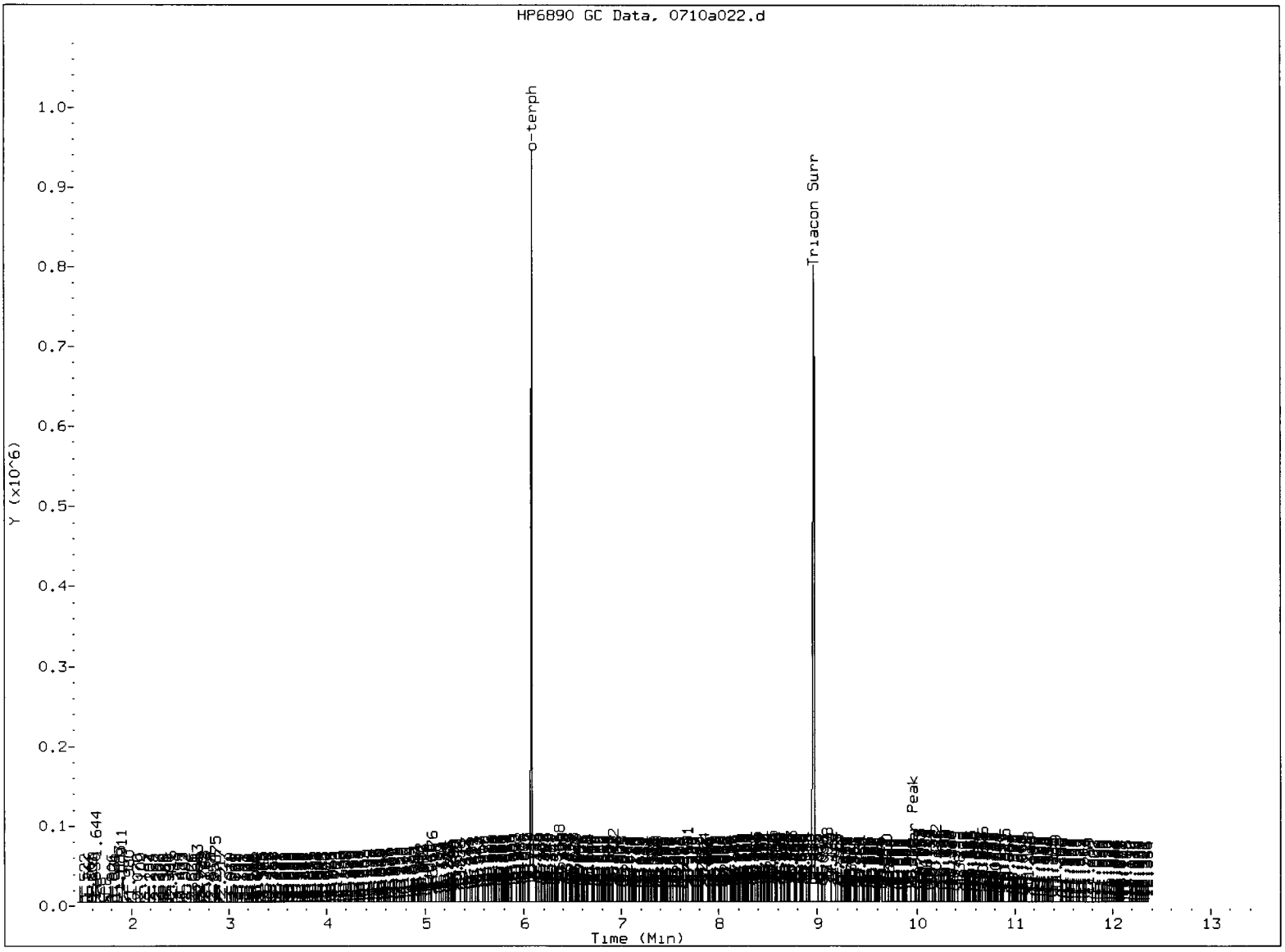
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.427	0.009	3715	4318	GAS (Tol-C12)	302034	20.08	
C8	1.746	0.050	6974	8996	DIESEL (C12-C24)	3477287	237.36	— DRO
C10	3.220	-0.007	478	418	M.OIL (C24-C38)	3577665	284.64	— RRO
C12	4.114	0.005	3838	5495	AK-102 (C10-C25)	3754442	217.03	M
C14	4.787	0.004	7686	7156	AK-103 (C25-C36)	3027102	354.54	M
C16	5.374	0.005	18161	36245				
C18	5.939	0.007	26691	43084				
C20	6.492	-0.008	23679	15867	JET-A (C10-C18)	1463798	98.63	
C22	7.058	0.007	22889	31041	MIN.OIL (C24-C38)	3577665	266.18	M
C24	7.582	0.005	21512	23365				
C25	7.835	0.006	23288	21996				
C26	8.072	0.002	22262	25825				
C28	8.527	0.000	25847	25516				
C32	9.342	-0.004	22848	33110				
C34	9.722	-0.007	21251	32310				
Filter Peak	9.956	-0.007	26349	48682	BUNKERC (C10-C38)	7138565	797.03	M
C36	10.100	0.001	17757	6678				
C38	10.441	-0.015	23562	51209				
C40	10.811	0.002	13838	5960				
o-terph	6.085	0.009	915005	713426				
Triacon Surr	8.966	0.008	773856	717855				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	713426	35.0	77.8
Triacontane	717855	37.6	83.6

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50S FID:4A SIGNAL



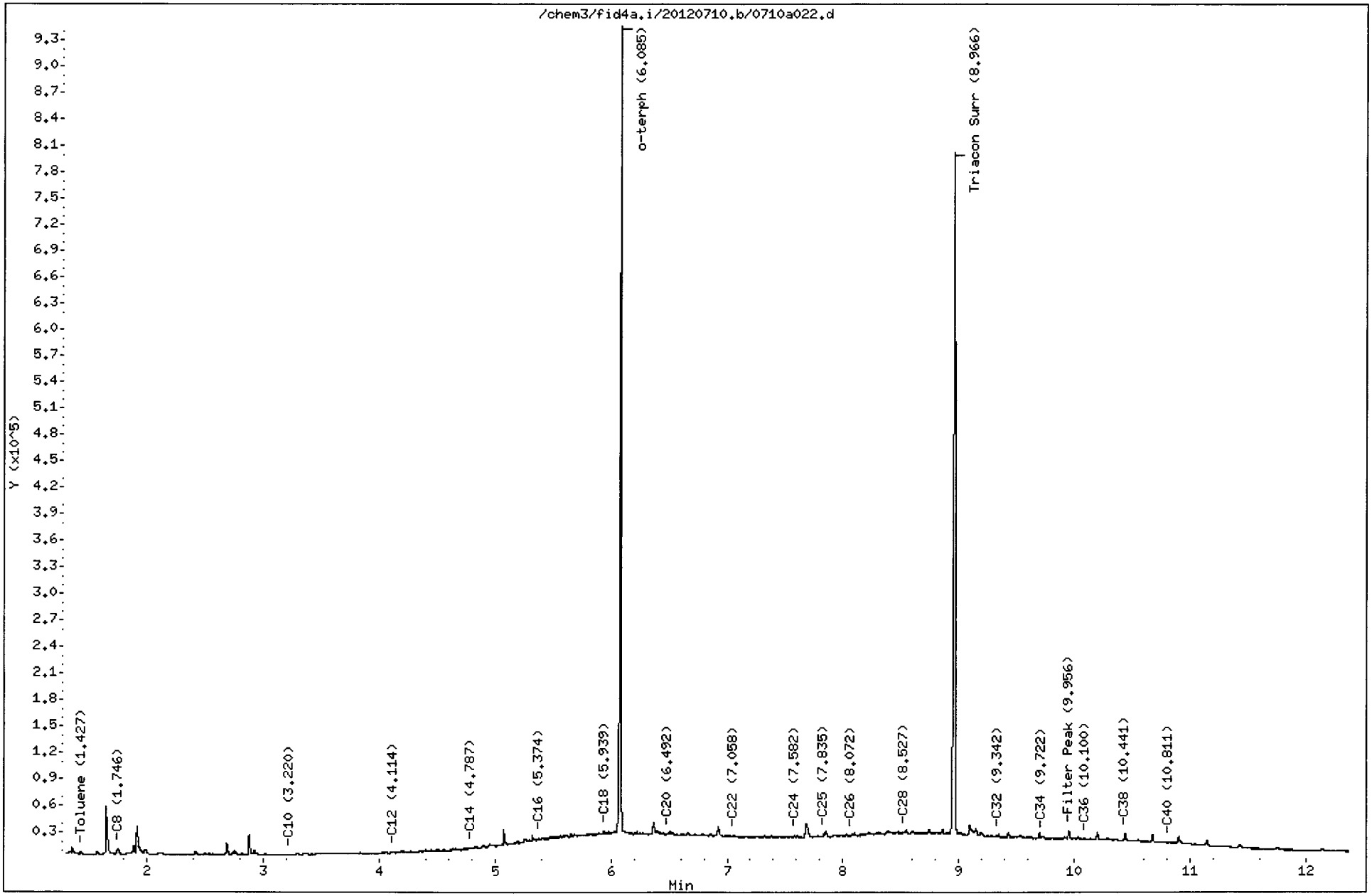
MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other small pk overlap

Analyst: AD Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a022.d
Date : 10-JUL-2012 15:01
Client ID:
Sample Info: VB50S

Instrument: fid4a.i
Operator: MH
Column phase: RTX-1
Column diameter: 0.25



VB50 : 00037

Analytical Resources Inc.
407S TPH Quantitation Report

AP 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a023.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50T
Client ID: CW-PW-03-070512
Injection: 10-JUL-2012 15:23
Dilution Factor: 1

FID:4A RESULTS

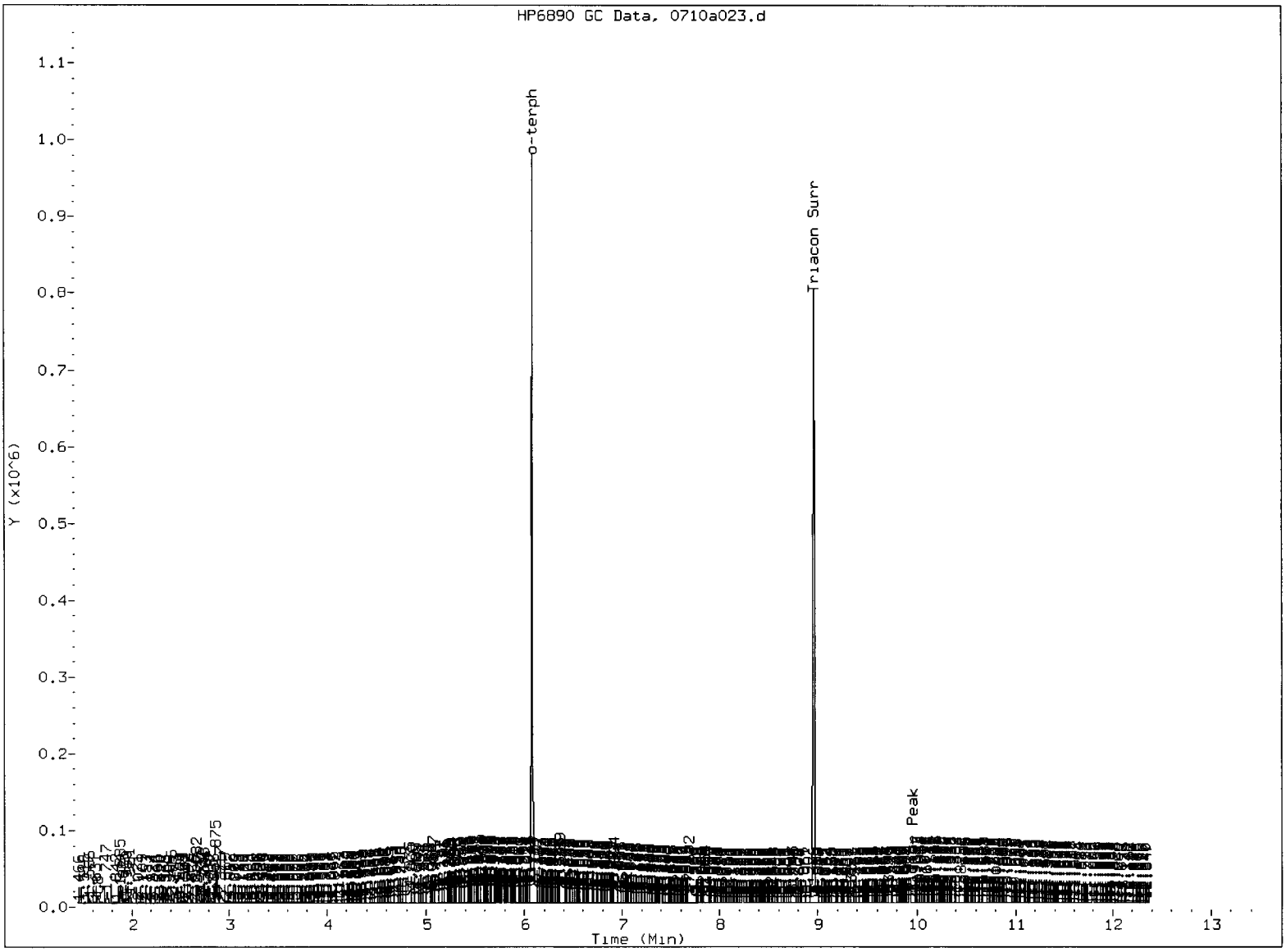
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.427	0.010	3040	3671	GAS (Tol-C12)	363479	24.16	
C8	1.652	-0.044	10337	14297	DIESEL (C12-C24)	3213252	219.33	-Diesel
C10	3.222	-0.004	1080	1244	M.OIL (C24-C38)	1561871	124.26	-Mo1
C12	4.118	0.009	4212	11709	AK-102 (C10-C25)	3430530	198.31	M
C14	4.775	-0.008	11206	21024	AK-103 (C25-C36)	1227116	143.72	M
C16	5.375	0.006	21899	38001				
C18	5.929	-0.004	22801	41086				
C20	6.495	-0.004	19681	21706	JET-A (C10-C18)	1722002	116.02	
C22	7.050	0.000	15397	16360	MIN.OIL (C24-C38)	1561871	116.20	M
C24	7.575	-0.001	11008	14551				
C25	7.828	-0.001	9822	4841				
C26	8.073	0.003	8714	6392				
C28	8.532	0.006	8512	6838				
C32	9.343	-0.004	10616	19477				
C34	9.727	-0.002	11533	19123				
Filter Peak	9.960	-0.003	12162	24025	BUNKERC (C10-C38)	4879690	544.82	M
C36	10.103	0.004	10964	9958				
C38	10.449	-0.007	11227	30848				
C40	10.810	0.002	9057	13662				
o-terph	6.086	0.010	953440	768807				
Triacon Surr	8.965	0.007	790099	753041				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	768807	37.7	83.9
Triacontane	753041	39.5	87.7

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50T FID:4A SIGNAL



MANUAL INTEGRATION

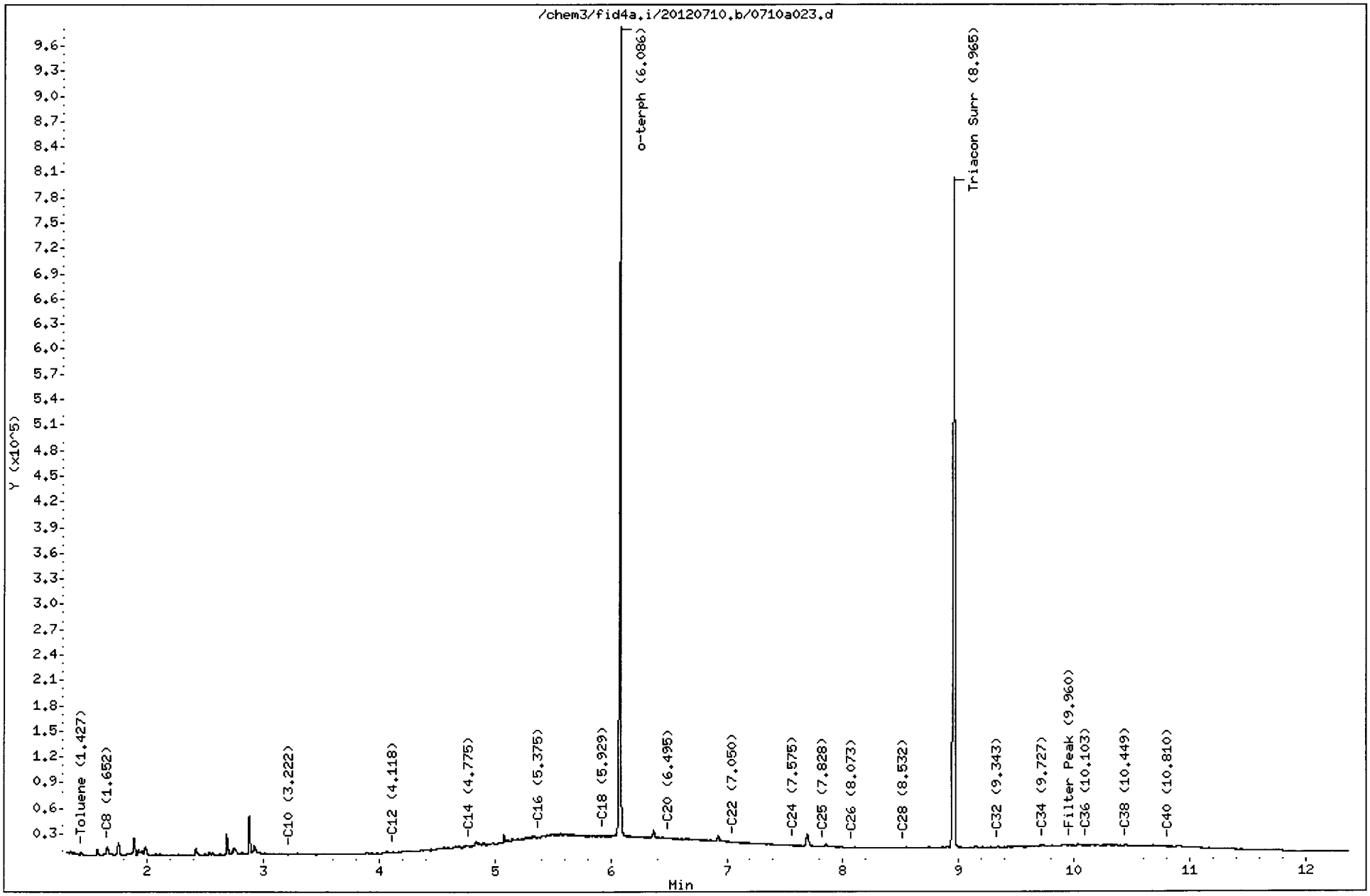
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Surr pk overlap

Analyst: AR Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a023.d
Date : 10-JUL-2012 15:23
Client ID:
Sample Info: VB50T

Instrument: fid4a.i

Operator: MH
Column phase: RTX-1
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AP 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a024.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50U
Client ID: CW-PW-53-070512
Injection: 10-JUL-2012 15:45
Dilution Factor: 1

FID:4A RESULTS

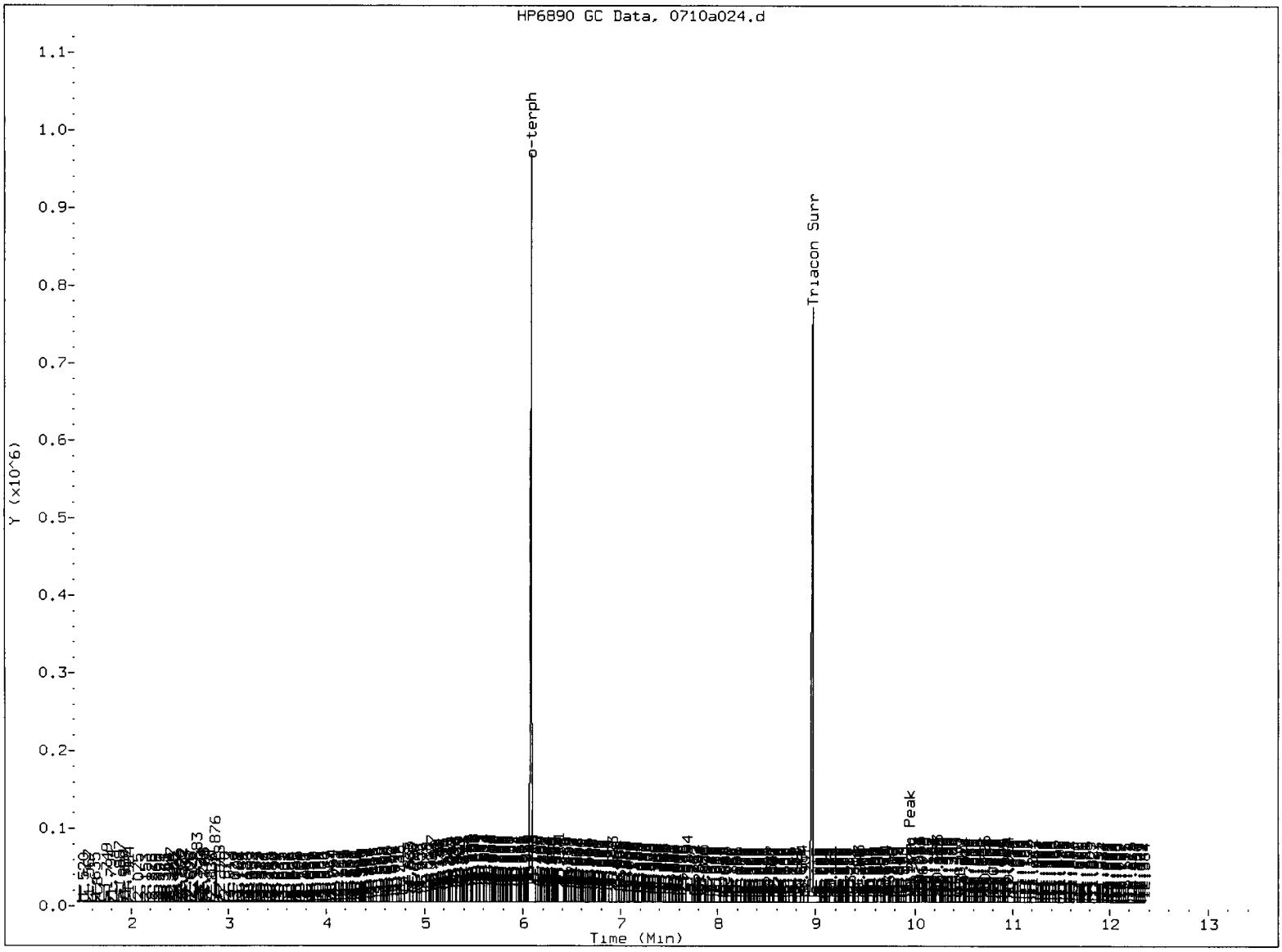
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.429	0.012	3734	5408	GAS (Tol-C12)	407642	27.10	
C8	1.656	-0.040	7247	13281	DIESEL (C12-C24)	3280480	223.92	-Diesel
C10	3.218	-0.009	1417	1904	M.OIL (C24-C38)	1479525	117.71	-Mcil
C12	4.117	0.008	4280	6344	AK-102 (C10-C25)	3516624	203.28	M
C14	4.778	-0.006	11091	20688	AK-103 (C25-C36)	1180909	138.31	M
C16	5.378	0.009	21721	25041				
C18	5.937	0.004	23199	35970				
C20	6.501	0.002	19974	22302	JET-A (C10-C18)	1746137	117.65	
C22	7.051	0.000	16016	16671	MIN.OIL (C24-C38)	1479525	110.08	M
C24	7.574	-0.002	11522	14606				
C25	7.813	-0.016	10307	11412				
C26	8.073	0.003	8813	12695				
C28	8.527	0.001	8307	6989				
C32	9.352	0.005	9604	24277				
C34	9.739	0.010	10022	9966				
Filter Peak	9.954	-0.009	9365	4183	BUNKERC (C10-C38)	4875681	544.38	M
C36	10.085	-0.014	9323	6963				
C38	10.459	0.002	8763	3586				
C40	10.811	0.002	7791	4762				
o-terph	6.087	0.010	941275	743199				
Triacon Surr	8.969	0.011	758258	735038				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	743199	36.5	81.1
Triacontane	735038	38.5	85.6

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50U FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

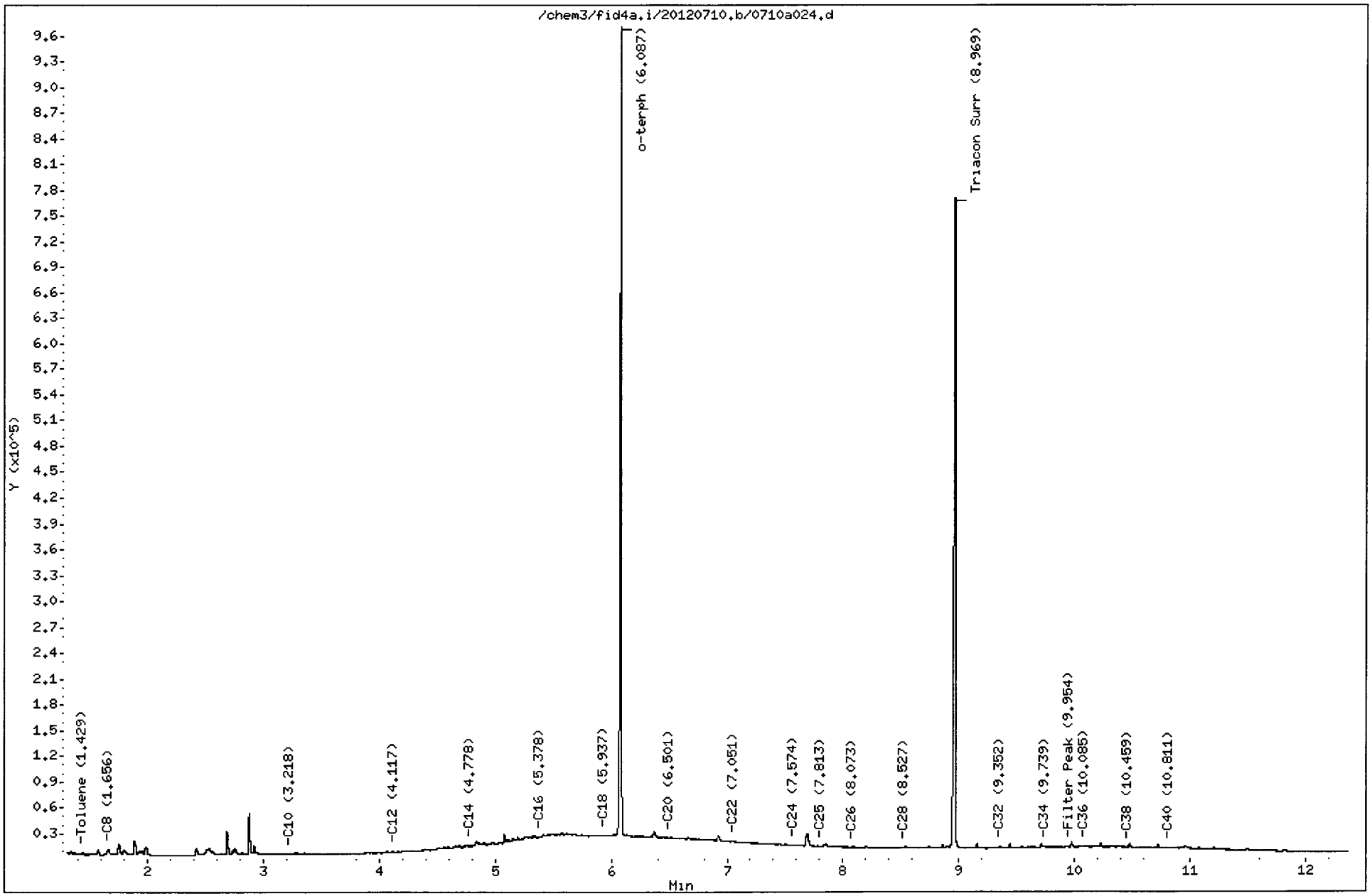
Analyst: AR Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a024.d
Date : 10-JUL-2012 15:45
Client ID: CW-PW-53-070512
Sample Info: VB50U

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a025.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50V
Client ID: CW-PW-04-070512
Injection: 10-JUL-2012 16:06
Dilution Factor: 1

FID:4A RESULTS

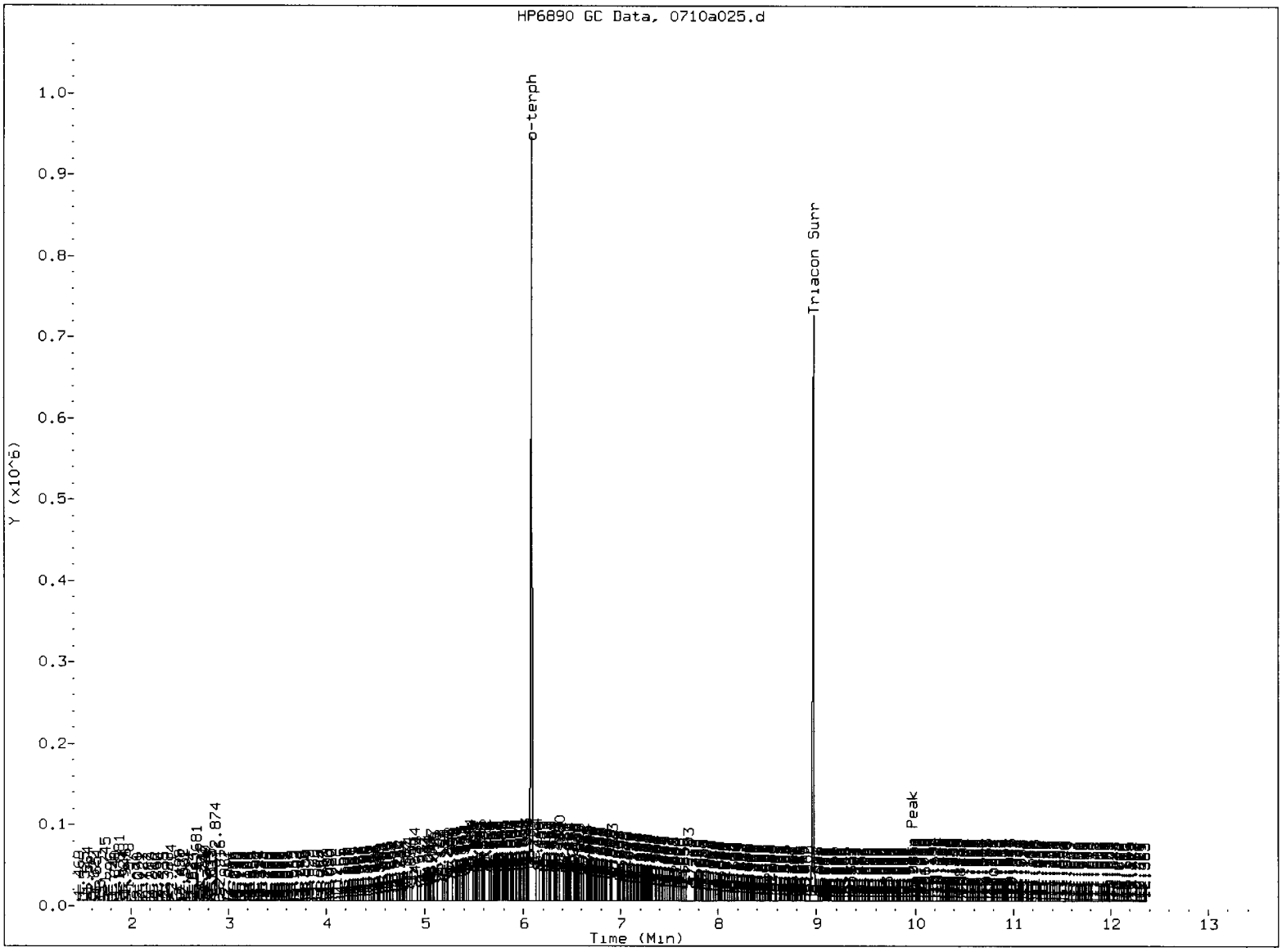
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.427	0.009	4068	5501	GAS (Tol-C12)	540493	35.93	
C8	1.690	-0.006	2080	3911	DIESEL (C12-C24)	5432488	370.82	-Diesel
C10	3.216	-0.010	1575	1855	M.OIL (C24-C38)	1602171	127.47	- RRC
C12	4.114	0.005	6097	18351	AK-102 (C10-C25)	5775076	333.84	M
C14	4.787	0.004	15331	14537	AK-103 (C25-C36)	1288974	150.97	M
C16	5.373	0.004	32118	26682				
C18	5.933	0.000	39812	23605				
C20	6.506	0.007	42144	73887	JET-A (C10-C18)	2690544	181.28	
C22	7.050	-0.001	26687	38997	MIN.OIL (C24-C38)	1602171	119.20	M
C24	7.572	-0.004	19605	29484				
C25	7.828	0.000	16660	5562				
C26	8.075	0.005	13570	18774				
C28	8.523	-0.003	10318	6103				
C32	9.339	-0.007	6943	4782				
C34	9.723	-0.006	7537	7981				
Filter Peak	9.968	0.005	6826	1999	BUNKERC (C10-C38)	7201755	804.08	M
C36	10.099	0.000	7222	6138				
C38	10.455	-0.002	6321	6706				
C40	10.803	-0.006	5901	2541				
o-terph	6.088	0.012	898381	696640				
Triacon Surr	8.971	0.013	713157	660610				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	696640	34.2	76.0
Triacontane	660610	34.6	76.9

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50V FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

Analyst: AR Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a025.d

Date : 10-JUL-2012 16:06

Client ID:

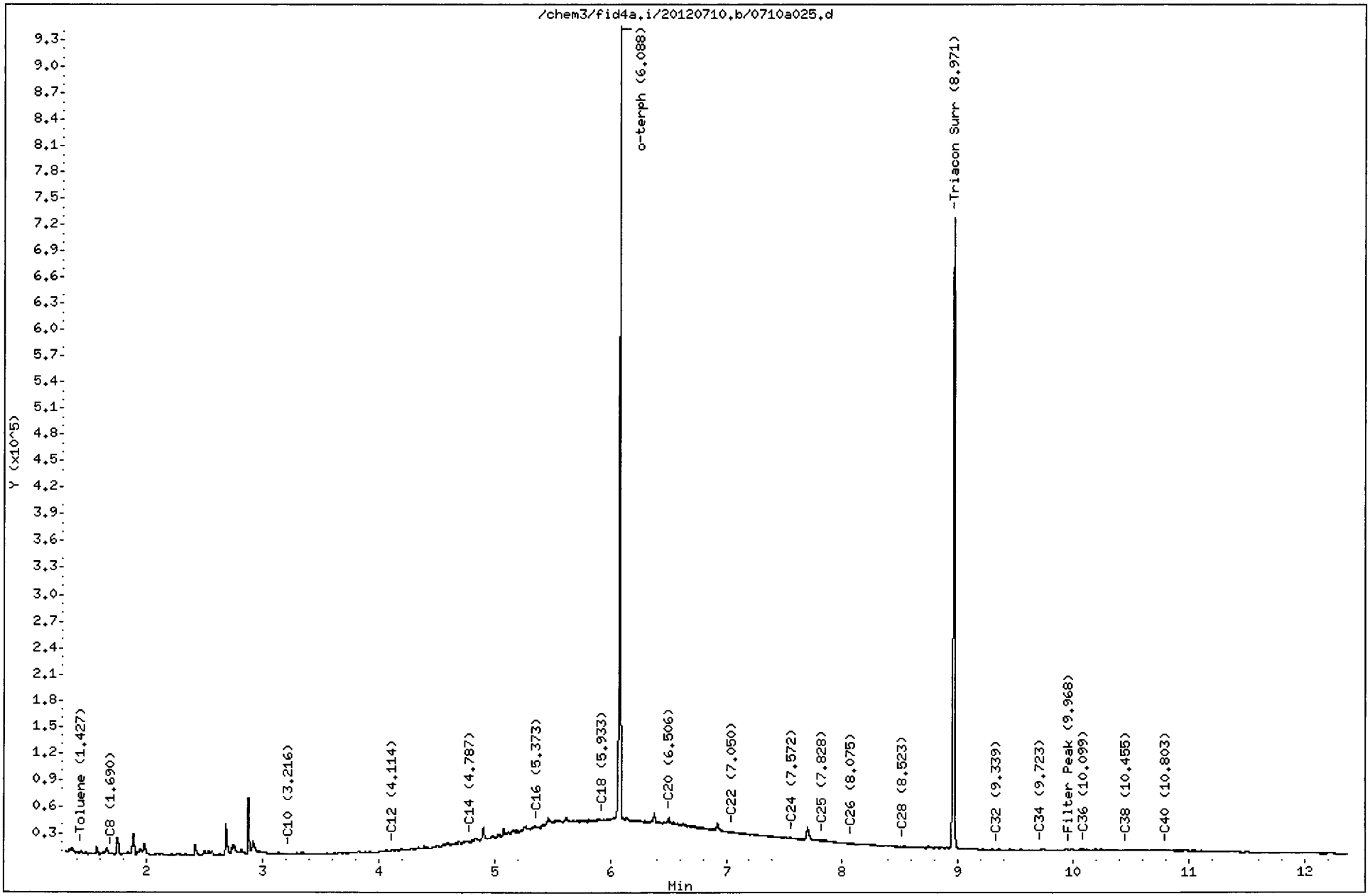
Sample Info: VB50V

Column phase: RTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a026.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50W
Client ID: CW-PW-05-070412
Injection: 10-JUL-2012 16:28
Dilution Factor: 1

FID:4A RESULTS

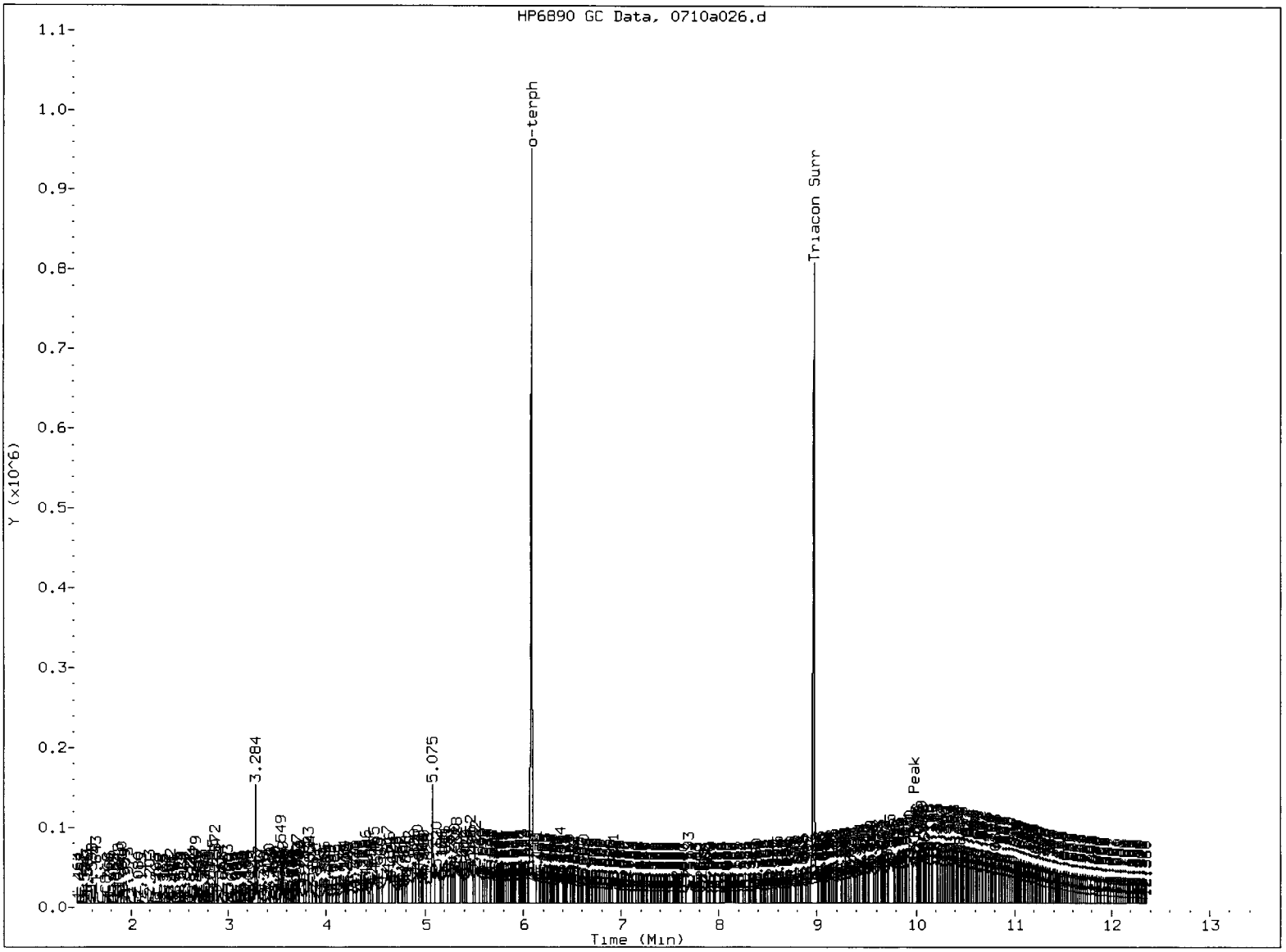
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.420	0.003	13084	11966	GAS (Tol-C12)	994582	66.11
C8	1.741	0.045	10278	13546	DIESEL (C12-C24)	4946563	337.65 – Diesel
C10	3.224	-0.003	2767	1877	M.OIL (C24-C38)	5080631	404.22 – Mo i L
C12	4.113	0.005	13258	21018	AK-102 (C10-C25)	5721023	330.71 M
C14	4.785	0.002	25524	27137	AK-103 (C25-C36)	3957990	463.57 M
C16	5.383	0.014	31631	33718			
C18	5.937	0.004	32000	47876			
C20	6.506	0.007	23900	13075	JET-A (C10-C18)	3599415	242.52
C22	7.053	0.002	17417	25427	MIN.OIL (C24-C38)	5080631	378.00 M
C24	7.575	-0.001	15175	7154			
C25	7.822	-0.006	15324	8076			
C26	8.068	-0.002	15075	6162			
C28	8.538	0.012	18423	8023			
C32	9.337	-0.010	35139	39532			
C34	9.716	-0.013	42934	16812			
Filter Peak	9.978	0.015	52546	100491	BUNKERC (C10-C38)	10645313	1188.56 M
C36	10.094	-0.005	51410	12960			
C38	10.454	-0.002	46729	30108			
C40	10.807	-0.002	39400	42288			
o-terph	6.087	0.011	917312	768377			
Triacon Surr	8.973	0.014	778240	775399			

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	768377	37.7	83.8
Triacontane	775399	40.6	90.3

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50W FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

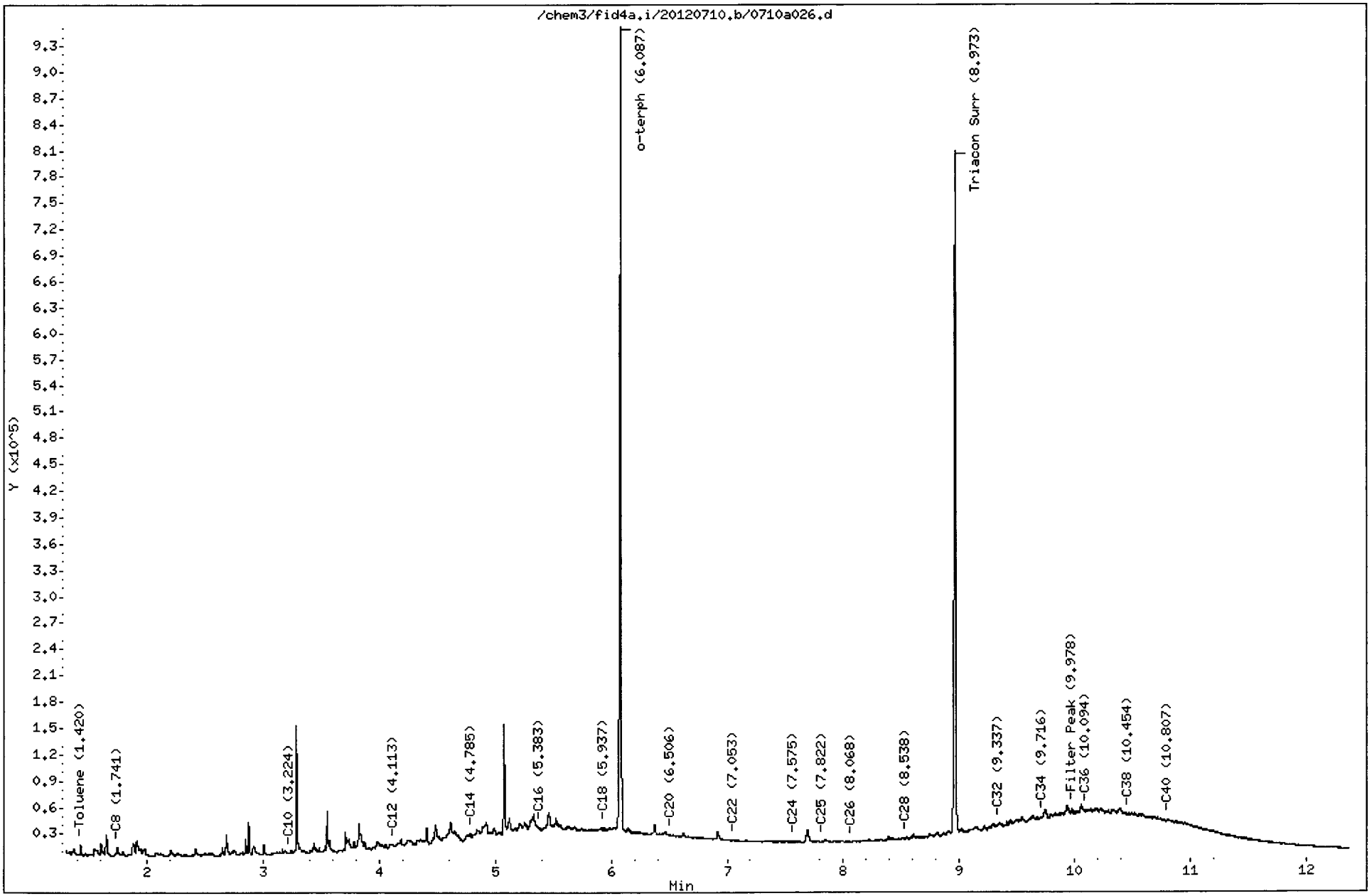
Analyst: AC Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a026.d
Date : 10-JUL-2012 16:28
Client ID:
Sample Info: VB50W

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a027.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50X
Client ID: CW-PW-06-070612
Injection: 10-JUL-2012 16:50
Dilution Factor: 1

FID:4A RESULTS

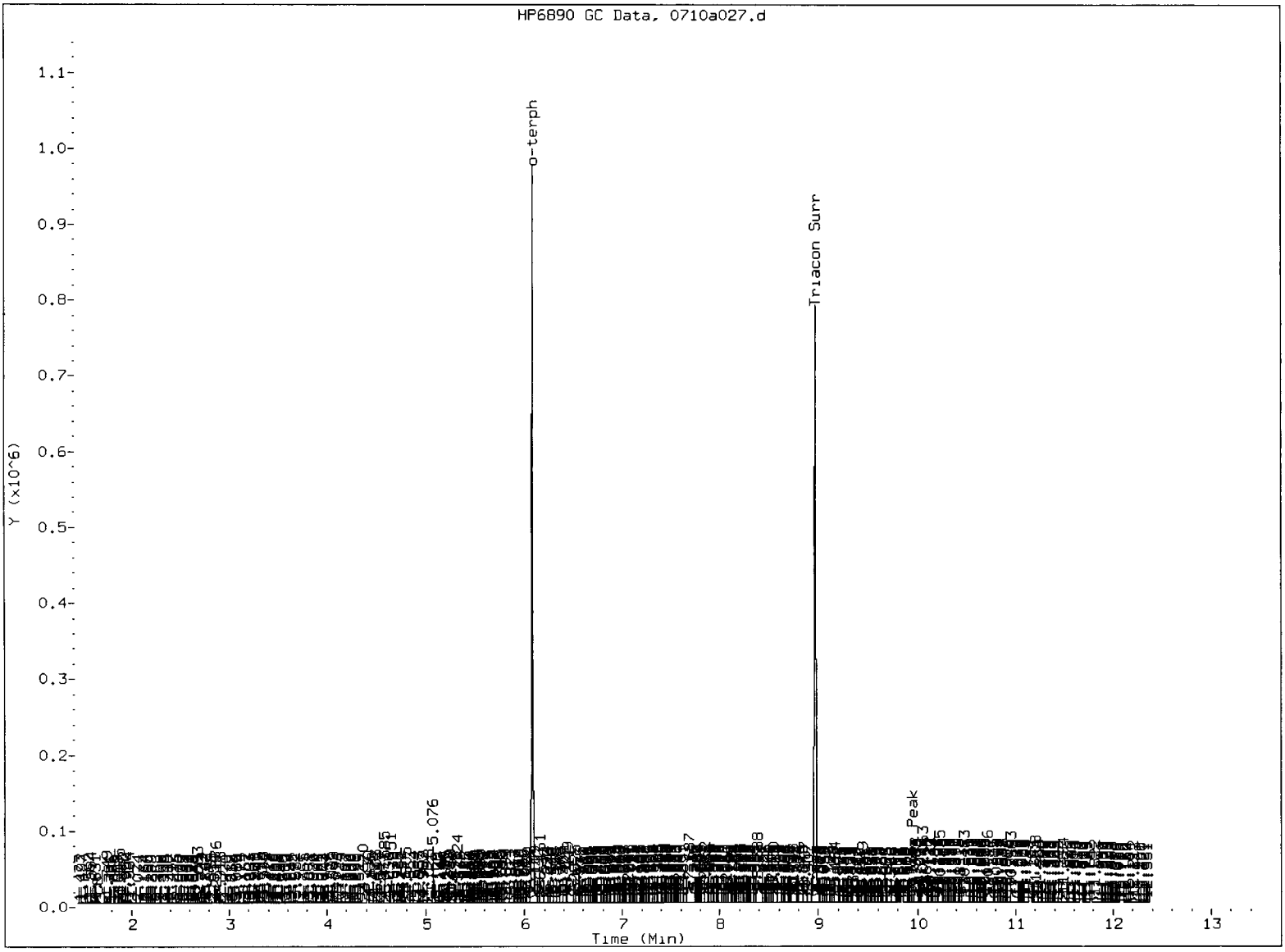
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.426	0.008	4121	4145	GAS (Tol-C12)	233831	15.54	
C8	1.651	-0.045	8391	9797	DIESEL (C12-C24)	1593523	108.77	- DRO
C10	3.222	-0.004	2056	4032	M.OIL (C24-C38)	1911957	152.12	— RRO
C12	4.117	0.009	2140	3107	AK-102 (C10-C25)	1827865	105.66	M
C14	4.769	-0.015	3368	3363	AK-103 (C25-C36)	1574068	184.36	M
C16	5.378	0.009	3992	3667				
C18	5.926	-0.006	7243	1855				
C20	6.507	0.008	12229	14742	JET-A (C10-C18)	632510	42.62	
C22	7.058	0.007	13125	22049	MIN.OIL (C24-C38)	1911957	142.25	M
C24	7.582	0.006	13471	18951				
C25	7.844	0.015	15782	27576				
C26	8.073	0.003	12916	14144				
C28	8.529	0.003	13253	10311				
C32	9.358	0.011	10680	28743				
C34	9.718	-0.011	17637	29765				
Filter Peak	9.946	-0.017	9929	9715	BUNKERC (C10-C38)	3614181	403.53	M
C36	10.092	-0.007	9832	5150				
C38	10.442	-0.014	8736	13053				
C40	10.813	0.004	7996	12723				
o-terph	6.086	0.010	964676	761252				
Triacon Surr	8.973	0.015	777604	756838				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	761252	37.4	83.0
Triacontane	756838	39.7	88.1

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50X FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

Analyst: AR Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a027.d

Date : 10-JUL-2012 16:50

Client ID:

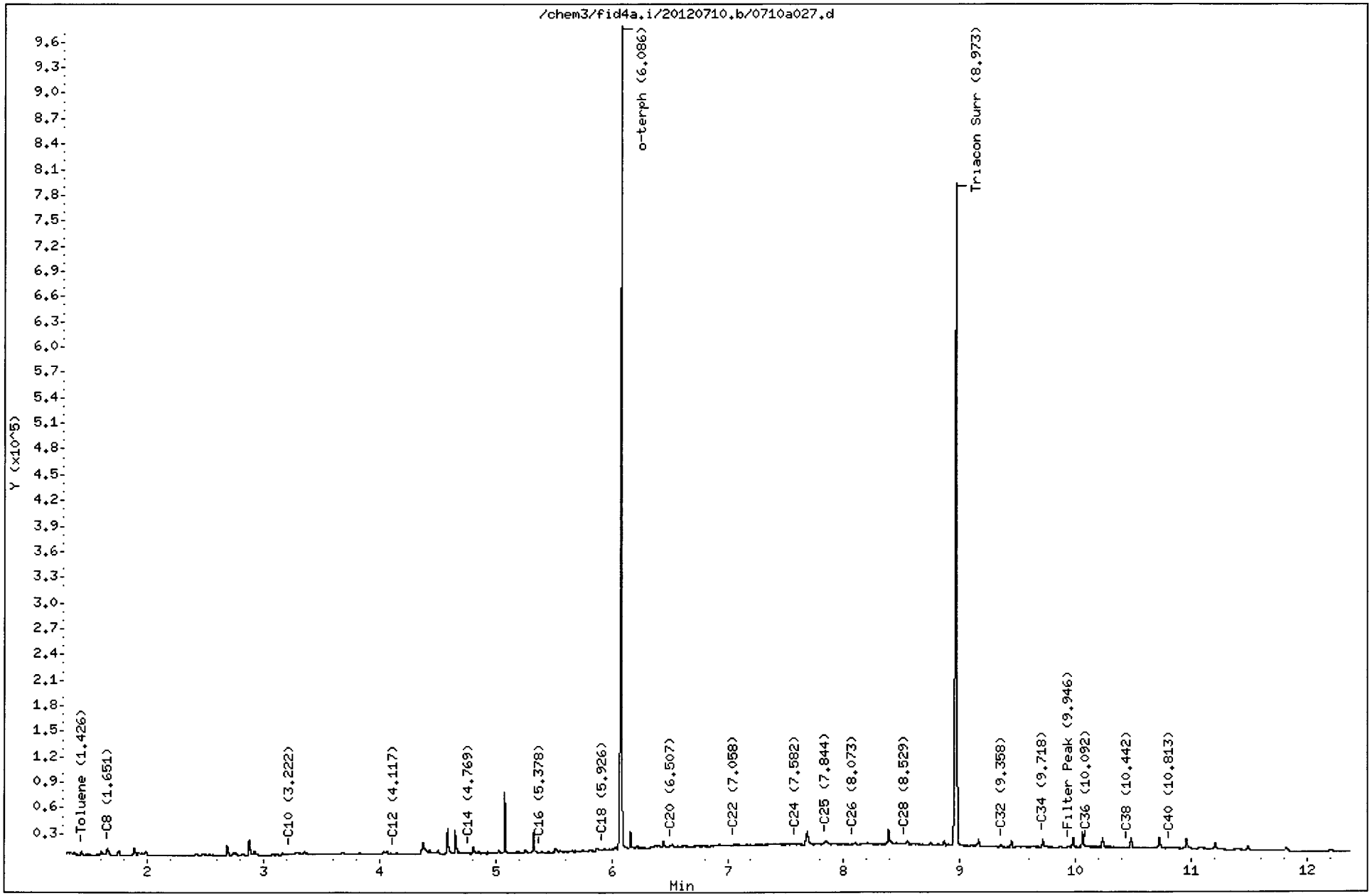
Sample Info: VB50X

Column phase: RTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/12/2012

Data file: /chem3/fid4a.i/20120710.b/0710a028.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: DIESEL #3
Client ID:
Injection: 10-JUL-2012 17:11
Dilution Factor: 1

FID:4A RESULTS

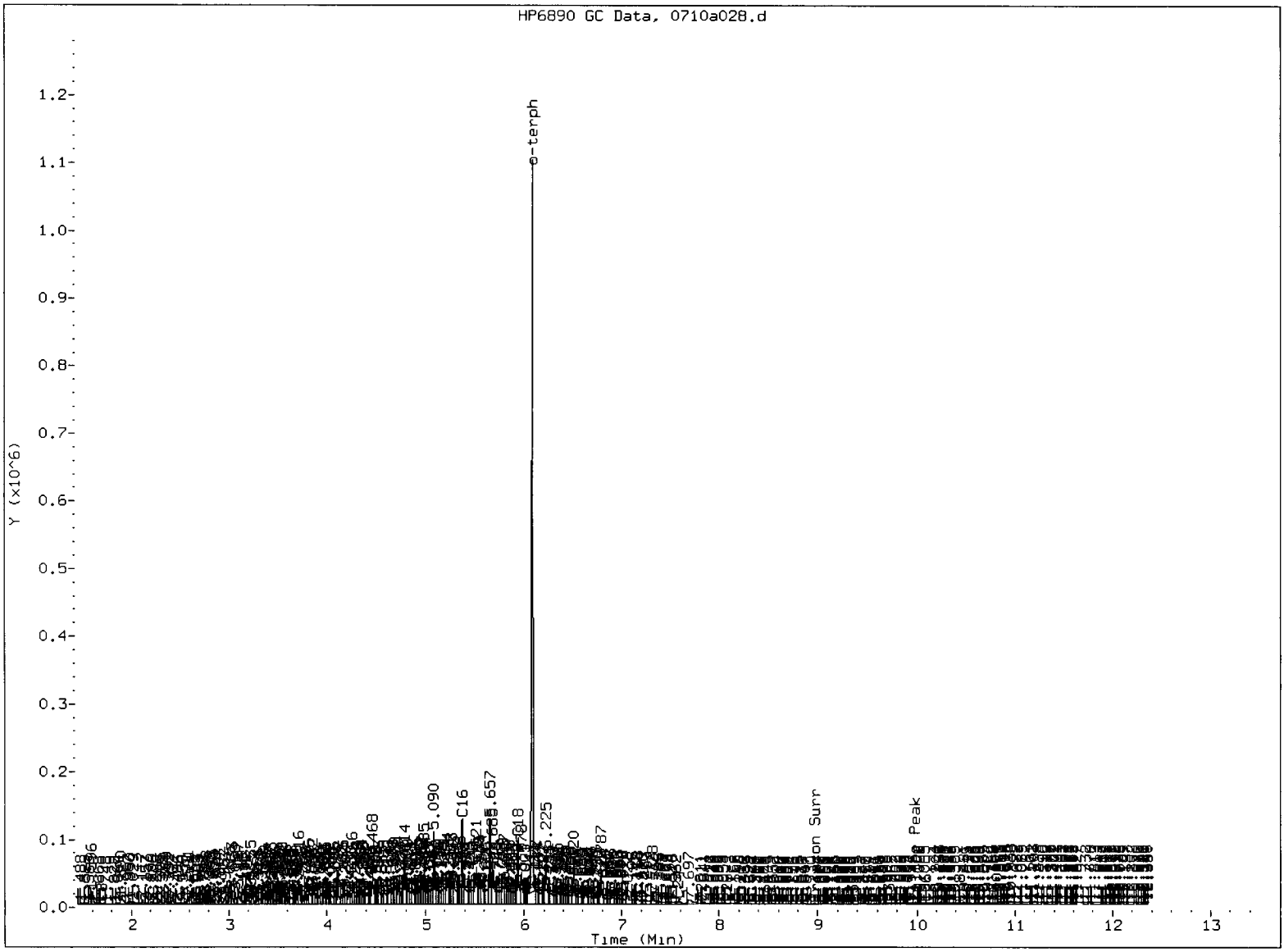
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.431	0.013	1647	1766	GAS (Tol-C12)	830565	55.21	
C8	1.701	0.005	1708	2968	DIESEL (C12-C24)	3456692	235.95	
C10	3.220	-0.006	4563	2929	M.OIL (C24-C38)	118609	9.44	
C12	4.115	0.007	49787	37479	AK-102 (C10-C25)	4047306	233.96	M
C14	4.789	0.006	74546	58054	AK-103 (C25-C36)	69407	8.13	
C16	5.375	0.006	124600	89660				
C18	5.940	0.007	96695	87160				
C20	6.508	0.009	65318	61508	JET-A (C10-C18)	3021191	203.56	
C22	7.059	0.009	29023	40261	MIN.OIL (C24-C38)	118609	8.82	
C24	7.588	0.012	6271	15202				
C25	7.824	-0.005	1460	908				
C26	8.087	0.017	1112	2505				
C28	8.518	-0.008	313	391				
C32	9.353	0.006	362	329				
C34	9.719	-0.010	1782	2831				
Filter Peak	9.980	0.017	2120	2913	BUNKERC (C10-C38)	4141133	462.36	M
C36	10.094	-0.005	1393	4801				
C38	10.435	-0.022	1179	632				
C40	10.820	0.011	2002	2875				
o-terph	6.088	0.012	1080972	861618				
Triacon Surr	8.971	0.013	622	1402				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	861618	42.3	94.0
Triacontane	1402	0.1	0.2

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 DIESEL #3 FID:4A SIGNAL



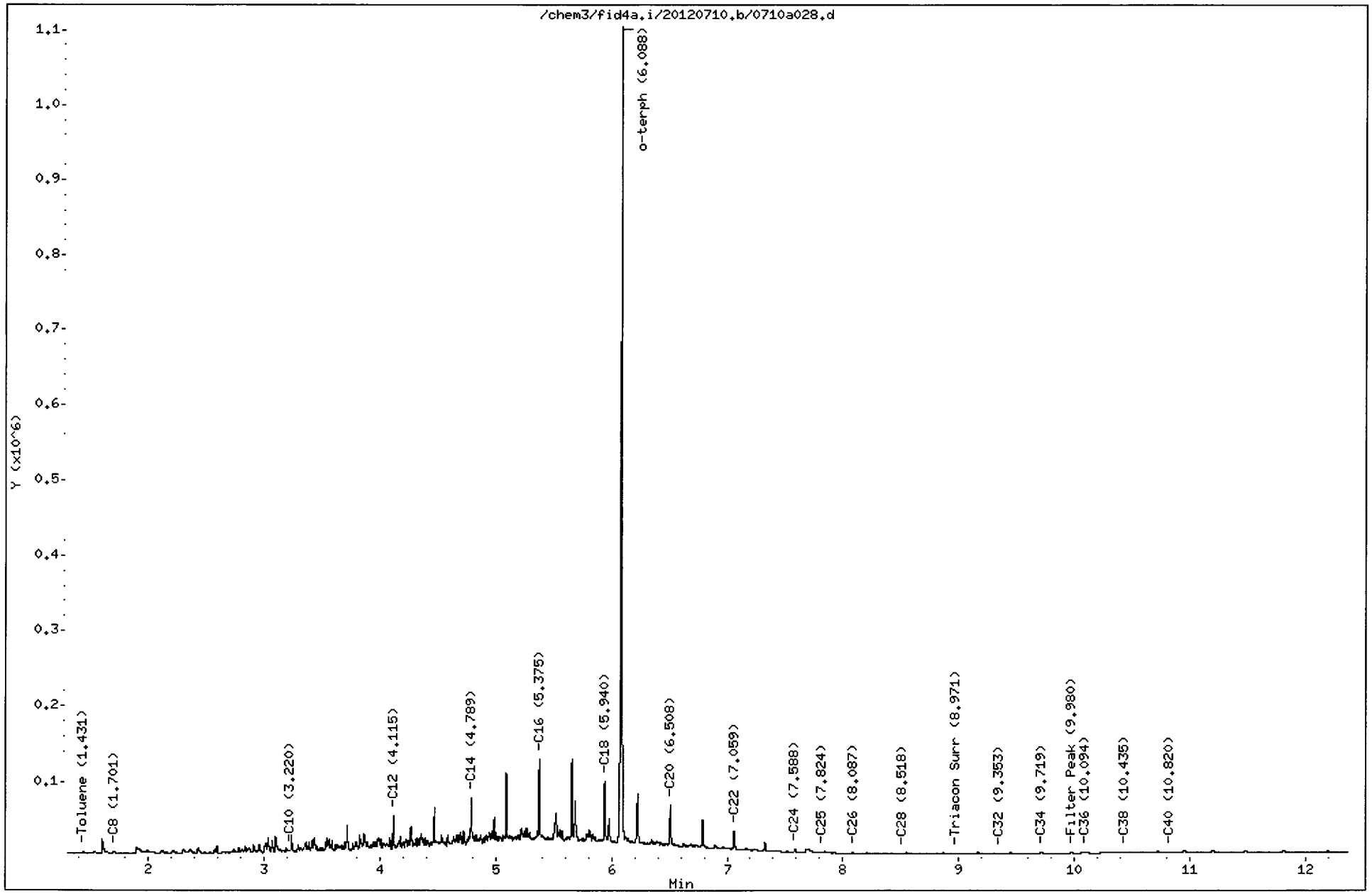
MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

Analyst: AS Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a028.d
Date : 10-JUL-2012 17:11
Client ID:
Sample Info: DIESEL #3

Instrument: fid4a.i
Operator: MH
Column phase: RTX-1
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a029.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: MOIL #3
Client ID:
Injection: 10-JUL-2012 17:32
Dilution Factor: 1

FID:4A RESULTS

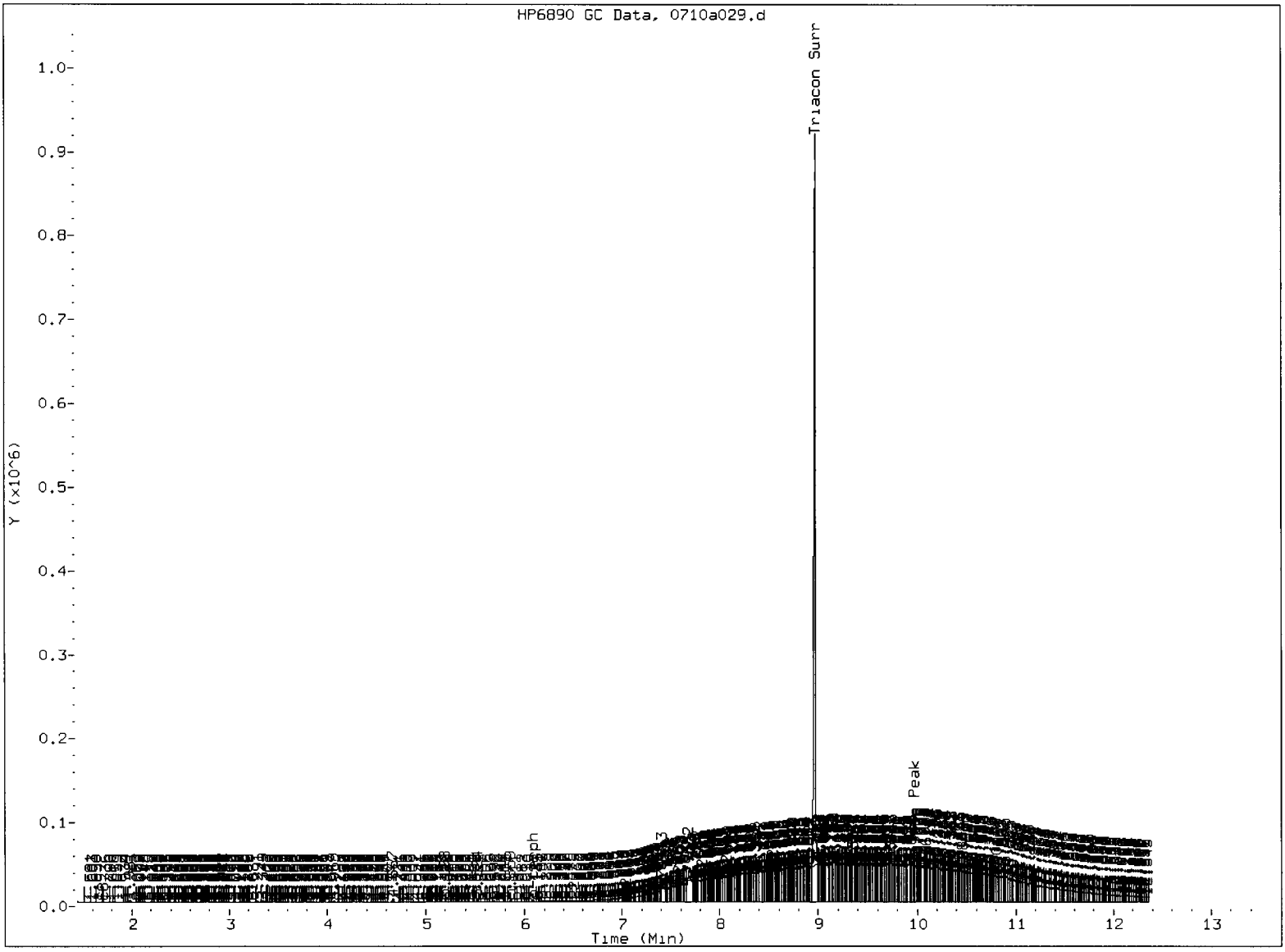
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.357	-0.060	24467	40129	GAS (Tol-C12)	40890	2.72	
C8	1.710	0.014	278	141	DIESEL (C12-C24)	609612	41.61	
C10	3.237	0.010	640	1625	M.OIL (C24-C38)	6503269	517.41	
C12	4.130	0.021	338	697	AK-102 (C10-C25)	852607	49.29	
C14	4.781	-0.002	356	586	AK-103 (C25-C36)	5520943	646.63	M
C16	5.368	-0.001	377	292				
C18	5.948	0.015	642	1483				
C20	6.514	0.015	1599	3380	JET-A (C10-C18)	69482	4.68	
C22	7.045	-0.005	5321	4065	MIN.OIL (C24-C38)	6503269	483.85	M
C24	7.579	0.003	20214	8914				
C25	7.821	-0.008	27299	32663				
C26	8.074	0.004	32752	20713				
C28	8.534	0.008	38656	11402				
C32	9.351	0.004	48475	56654				
C34	9.728	-0.001	47897	59046				
Filter Peak	9.971	0.008	43687	18032	BUNKERC (C10-C38)	7135359	796.67	M
C36	10.096	-0.003	42591	28532				
C38	10.458	0.002	37340	26666				
C40	10.804	-0.005	31523	25987				
o-terph	6.084	0.008	2843	4436				
Triacon Surr	8.971	0.012	872662	874084				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	4436	0.2	0.5
Triacontane	874084	45.8	101.8

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 MOIL #3 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

Analyst: AR Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a029.d

Date : 10-JUL-2012 17:32

Client ID:

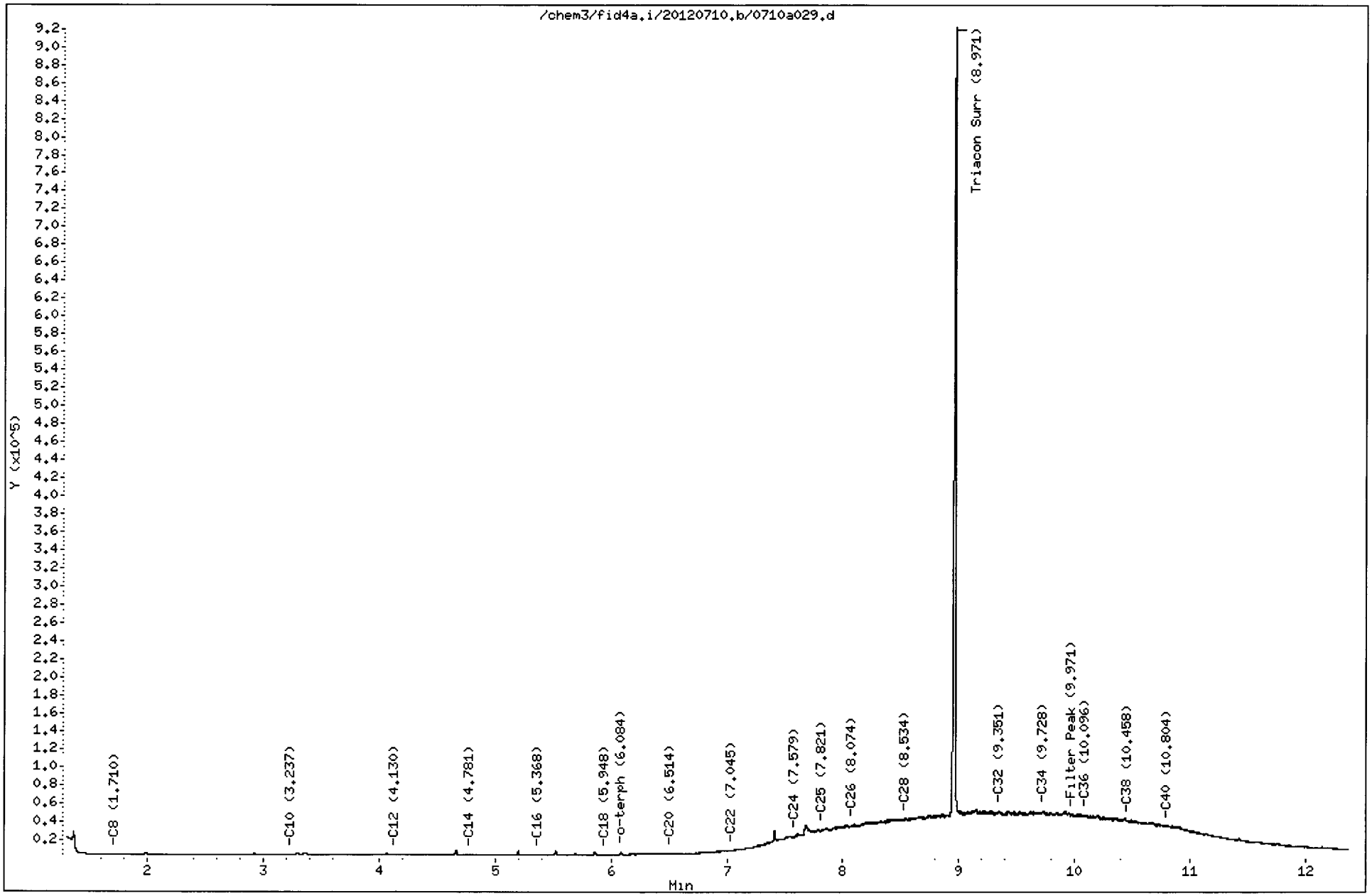
Sample Info: MOIL #3

Column phase: RTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a030.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50Y
Client ID: CWMW-2-070612
Injection: 10-JUL-2012 17:54
Dilution Factor: 1

FID:4A RESULTS

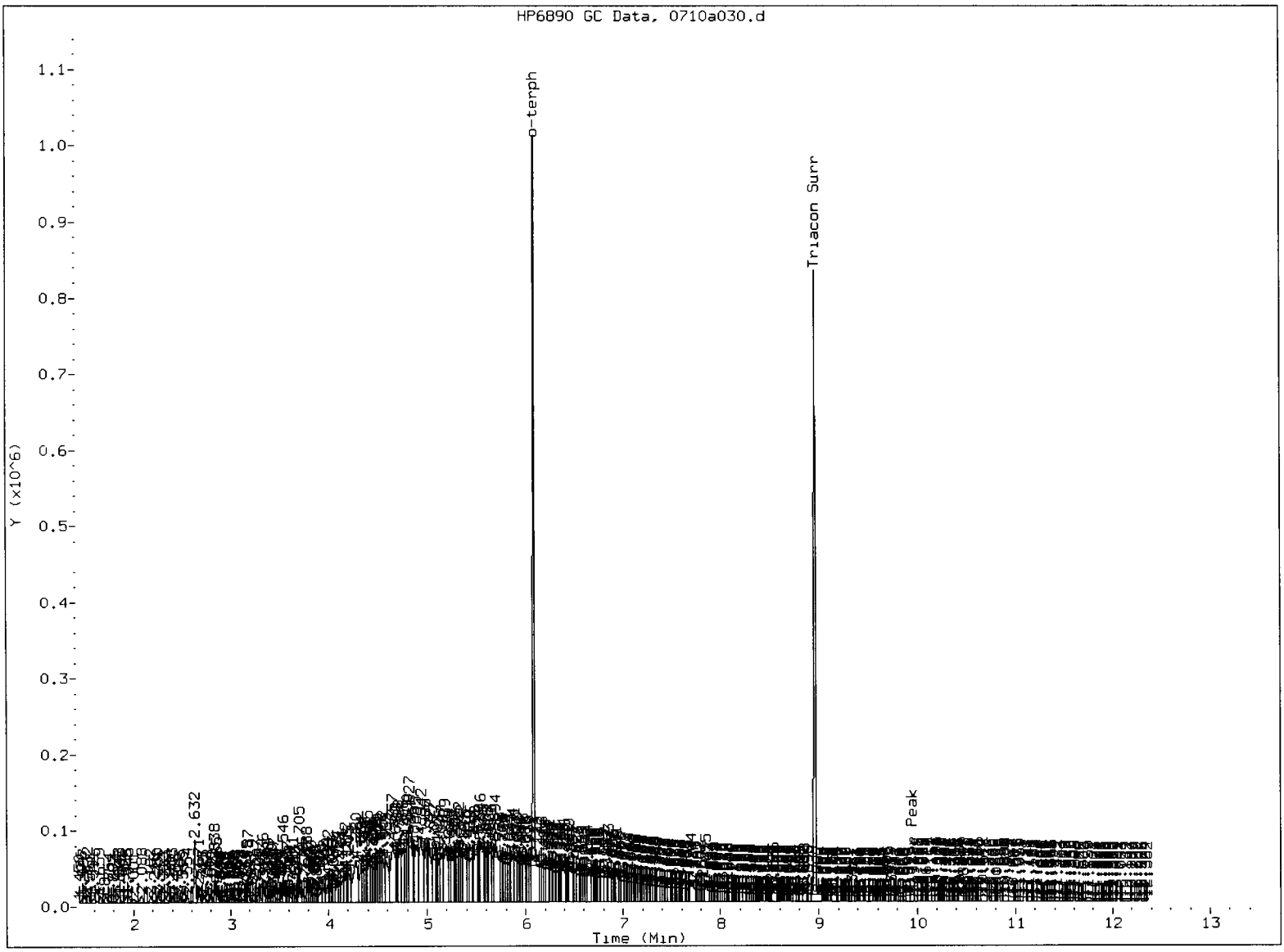
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.418	0.000	3601	4444	GAS (Tol-C12)	1243784	82.68	
C8	1.715	0.019	8093	14710	DIESEL (C12-C24)	9295616	634.51	
C10	3.222	-0.004	4955	5482	M.OIL (C24-C38)	1704820	135.64	
C12	4.113	0.005	28644	37166	AK-102 (C10-C25)	10186384	588.84	M
C14	4.794	0.011	75037	93705	AK-103 (C25-C36)	1388981	162.68	M
C16	5.375	0.006	66633	147946				
C18	5.938	0.005	51584	35339				
C20	6.498	-0.001	40193	54115	JET-A (C10-C18)	6912007	465.71	
C22	7.052	0.001	27411	19827	MIN.OIL (C24-C38)	1704820	126.84	M
C24	7.576	0.000	18951	13348				
C25	7.824	-0.005	17196	22830				
C26	8.074	0.004	13278	6290				
C28	8.517	-0.009	11160	6411				
C32	9.340	-0.006	9760	18024				
C34	9.739	0.010	9557	18612				
Filter Peak	9.949	-0.014	10095	22642	BUNKERC (C10-C38)	11733137	1310.02	M
C36	10.095	-0.004	8142	7224				
C38	10.471	0.014	6883	2729				
C40	10.813	0.004	7312	5023				
o-terph	6.091	0.015	960117	801799				
Triacon Surr	8.965	0.007	821699	774534				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	801799	39.4	87.5
Triacontane	774534	40.6	90.2

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50Y FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

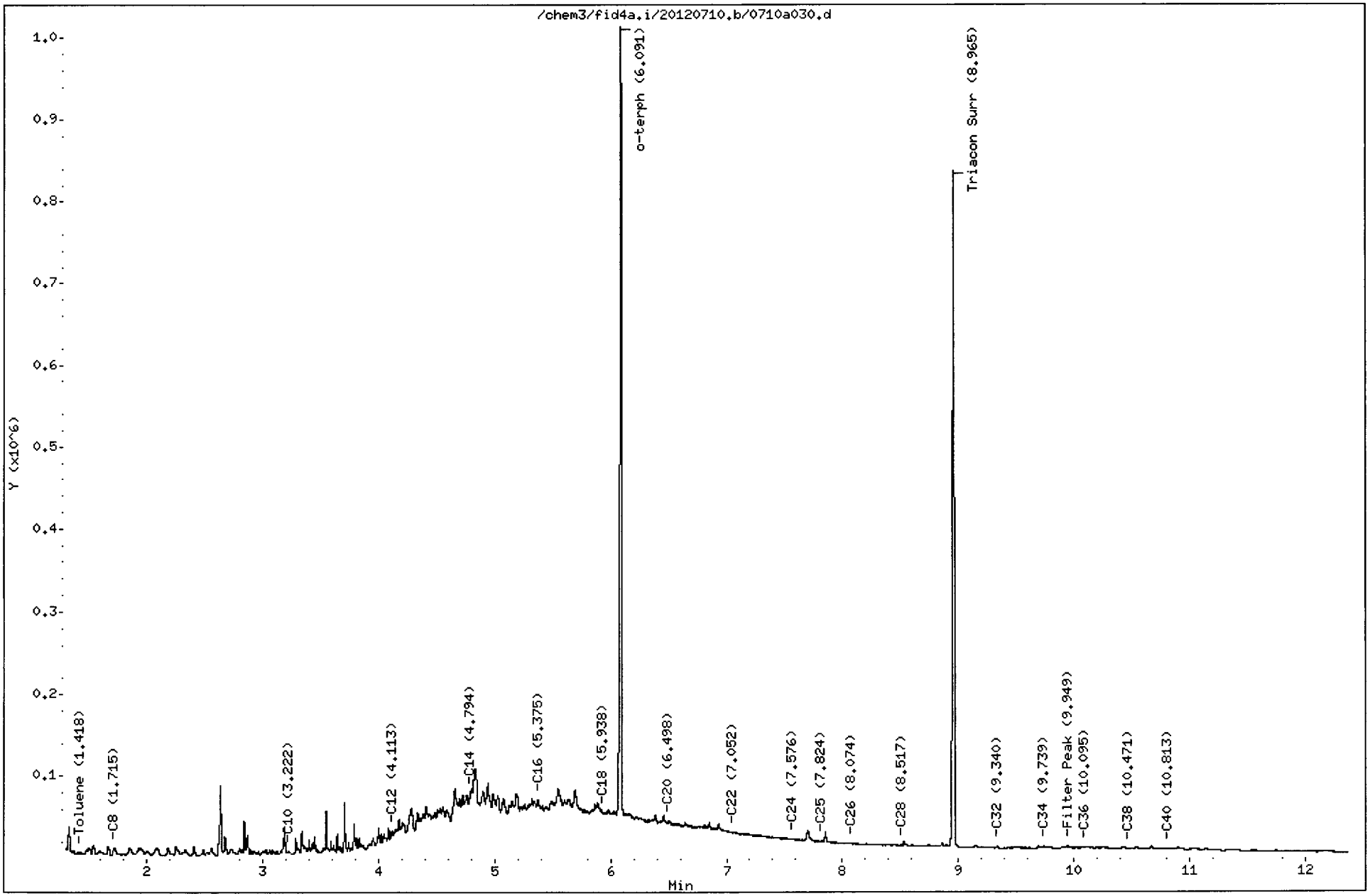
Analyst: AR Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a030.d
Date : 10-JUL-2012 17:54
Client ID:
Sample Info: VB50Y

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a031.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50Z
Client ID: CWMW-18-070612
Injection: 10-JUL-2012 18:15
Dilution Factor: 1

FID:4A RESULTS

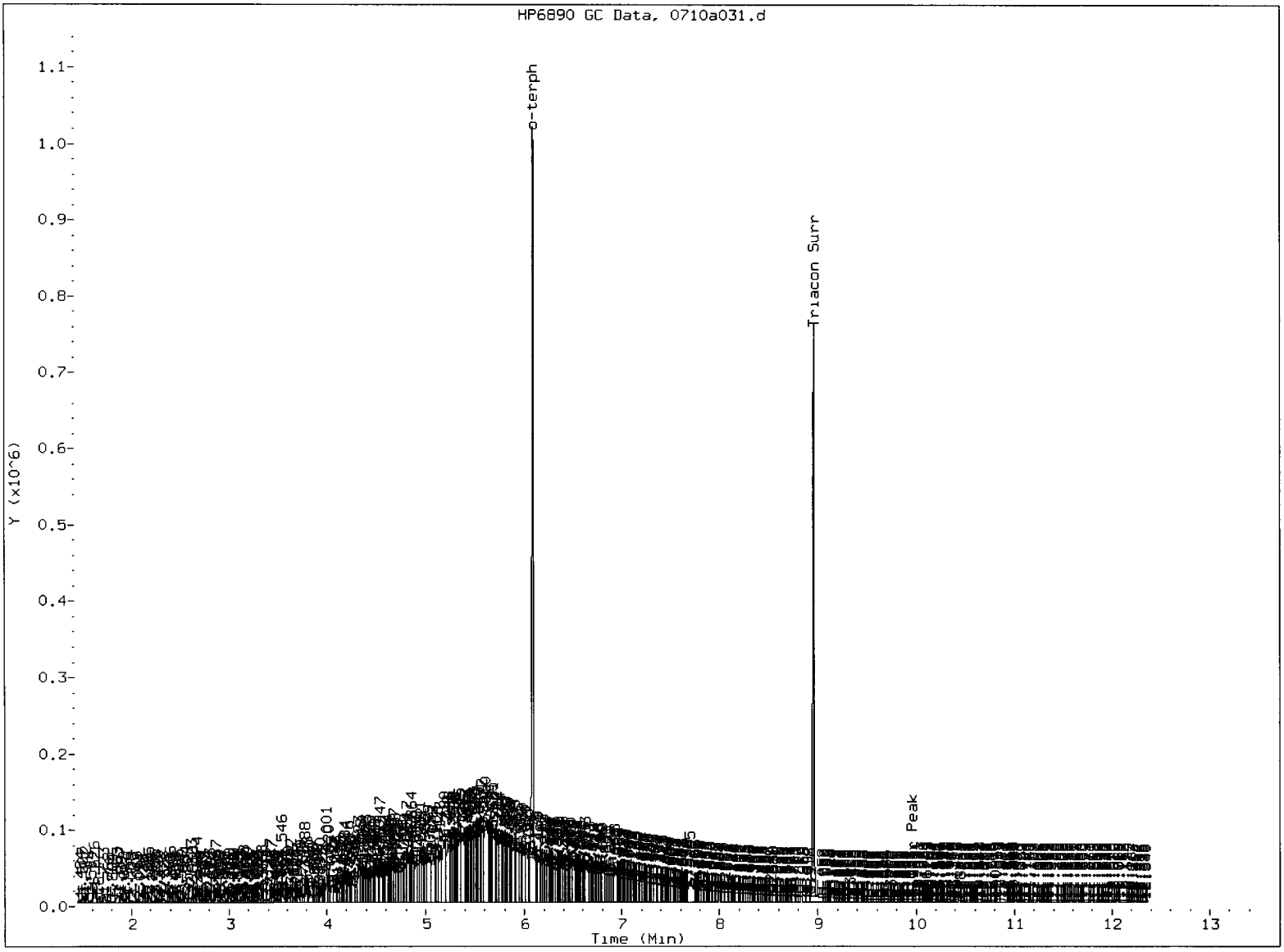
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.427	0.010	8071	9525	GAS (Tol-C12)	996012	66.21	
C8	1.670	-0.026	8760	10636	DIESEL (C12-C24)	9894214	675.37	-Dies tDRO
C10	3.233	0.007	2720	2060	M.OIL (C24-C38)	1382833	110.02	-RRO
C12	4.111	0.002	22373	22918	AK-102 (C10-C25)	10670716	616.84	M
C14	4.778	-0.005	67716	67425	AK-103 (C25-C36)	1126488	131.94	M
C16	5.376	0.007	86748	193069				
C18	5.922	-0.011	74728	138004				
C20	6.493	-0.006	52076	81125	JET-A (C10-C18)	7023650	473.23	
C22	7.056	0.005	32344	16442	MIN.OIL (C24-C38)	1382833	102.88	M
C24	7.573	-0.003	20645	33886				
C25	7.837	0.008	17063	9103				
C26	8.062	-0.008	14443	20706				
C28	8.529	0.003	10718	12461				
C32	9.334	-0.012	6969	15352				
C34	9.743	0.014	4348	3133				
Filter Peak	9.965	0.002	3819	2324	BUNKERC (C10-C38)	11871653	1325.48	M
C36	10.098	0.000	3750	1979				
C38	10.451	-0.006	3467	2328				
C40	10.806	-0.003	3641	4098				
o-terph	6.090	0.014	958949	751112				
Triacon Surr	8.960	0.002	750470	727815				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	751112	36.9	81.9
Triacontane	727815	38.1	84.7

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50Z FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Surr pk overlap

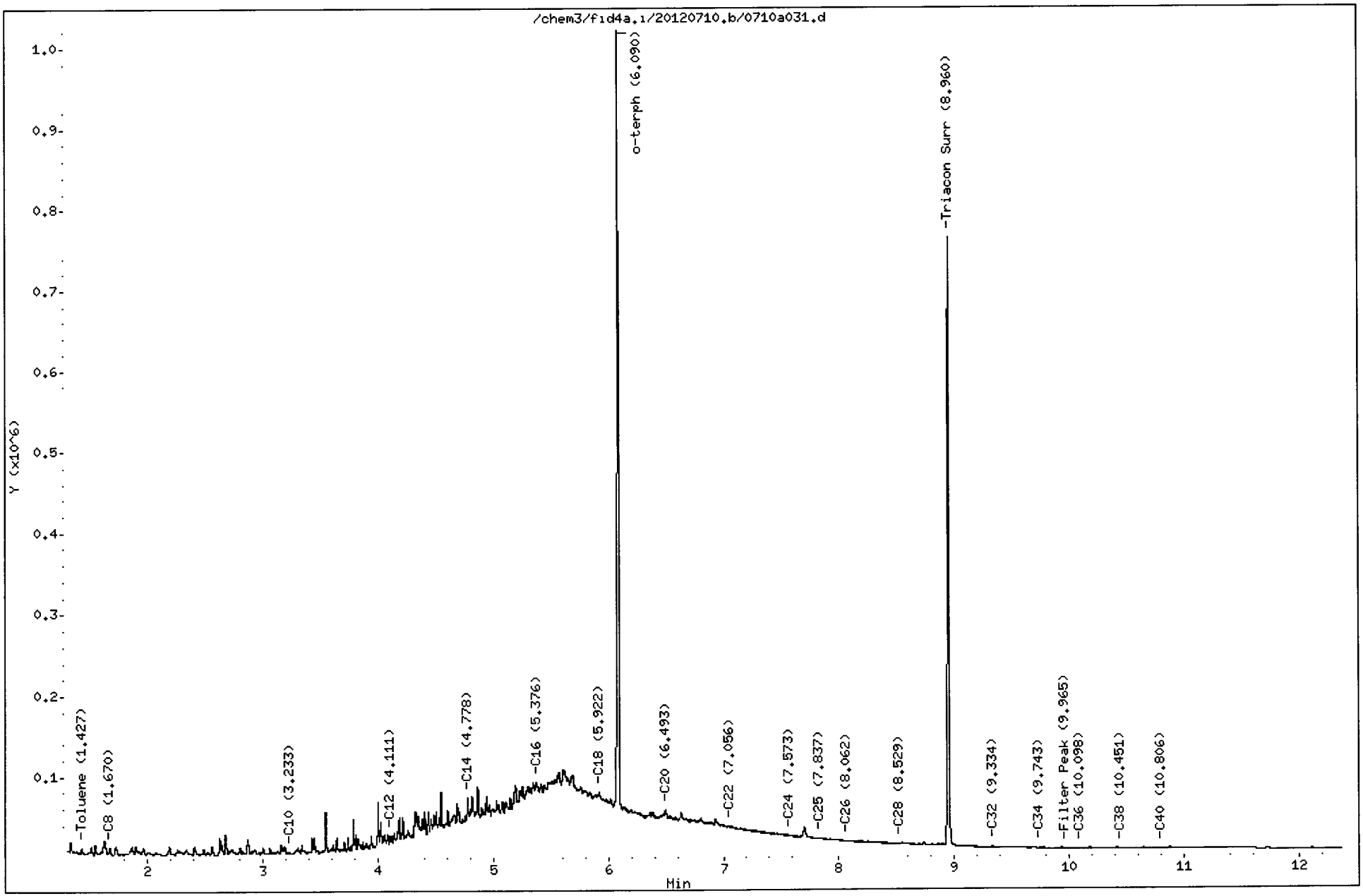
Analyst: AR Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a031.d
Date : 10-JUL-2012 18:15
Client ID:
Sample Info: VB50Z

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a032.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50AA
Client ID: CWMW-65C-070612
Injection: 10-JUL-2012 18:36
Dilution Factor: 1

FID:4A RESULTS

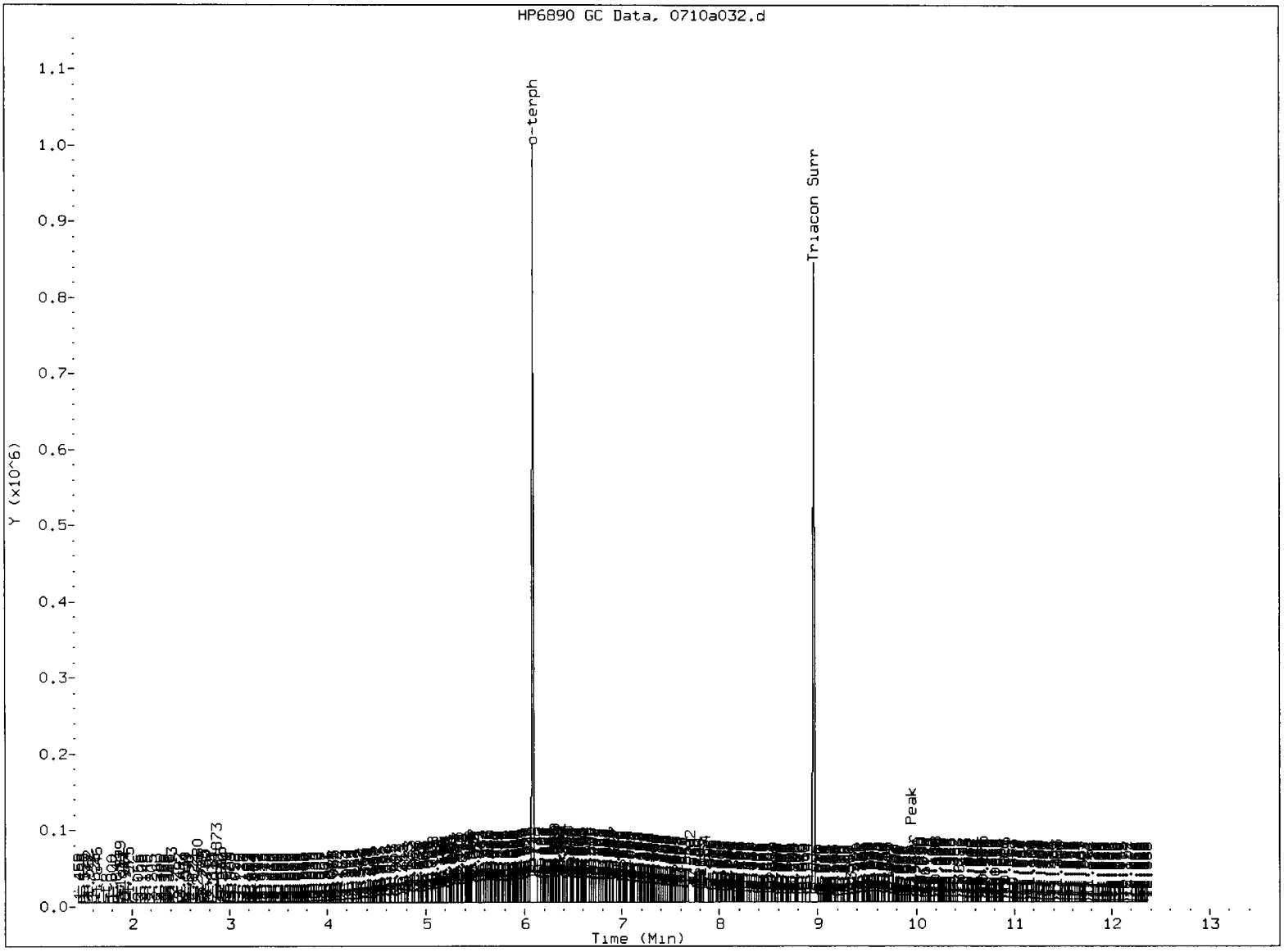
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.422	0.004	3568	5581	GAS (Tol-C12)	355775	23.65	
C8	1.742	0.046	12755	15501	DIESEL (C12-C24)	5029823	343.33	-DRO
C10	3.218	-0.009	1212	1974	M.OIL (C24-C38)	2206809	175.58	- RRO
C12	4.112	0.003	4675	7078	AK-102 (C10-C25)	5330903	308.16	M
C14	4.788	0.005	13136	13043	AK-103 (C25-C36)	1825363	213.79	M
C16	5.365	-0.004	25599	12138				
C18	5.927	-0.006	32375	11412				
C20	6.500	0.001	33691	8024	JET-A (C10-C18)	2172272	146.36	
C22	7.045	-0.006	30140	17905	MIN.OIL (C24-C38)	2206809	164.19	M
C24	7.571	-0.005	23242	11757				
C25	7.813	-0.016	19736	26272				
C26	8.071	0.000	17137	8995				
C28	8.536	0.009	14538	12320				
C32	9.340	-0.007	13443	26881				
C34	9.727	-0.002	14019	20646				
Filter Peak	9.952	-0.011	12582	27154	BUNKERC (C10-C38)	7343325	819.89	M
C36	10.096	-0.003	9025	8865				
C38	10.438	-0.019	11704	29390				
C40	10.804	-0.005	6948	4821				
o-terph	6.088	0.012	960368	777601				
Triacon Surr	8.965	0.006	829577	754781				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	777601	38.2	84.8
Triacontane	754781	39.5	87.9

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50AA FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk ejected

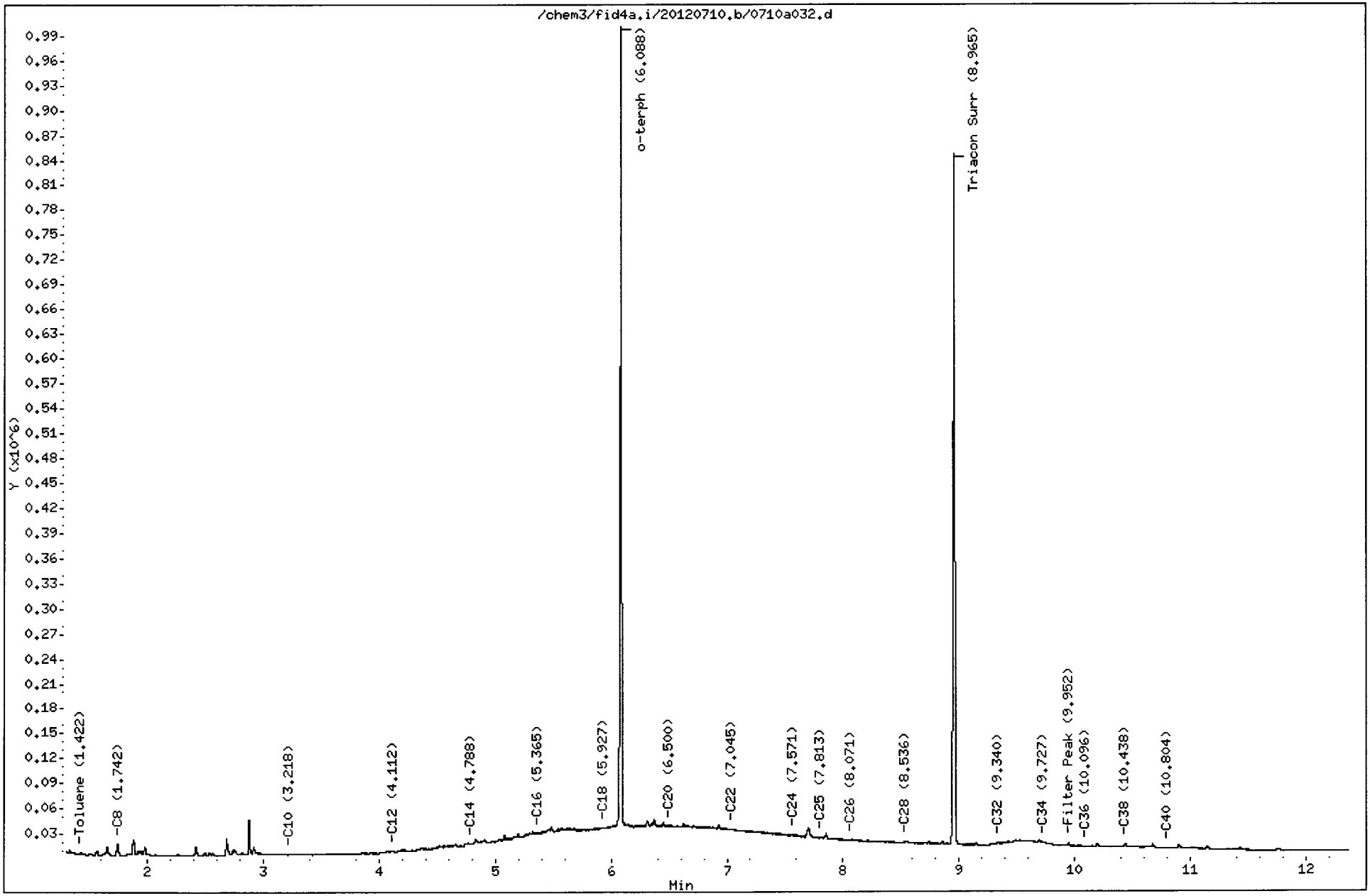
Analyst: AR Date: 7/11/202

Data File: /chem3/fid4a.i/20120710.b/0710a032.d
Date : 10-JUL-2012 18:36
Client ID:
Sample Info: VB50AA

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a033.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50AB
Client ID: MB-1B-070612
Injection: 10-JUL-2012 18:58
Dilution Factor: 1

FID:4A RESULTS

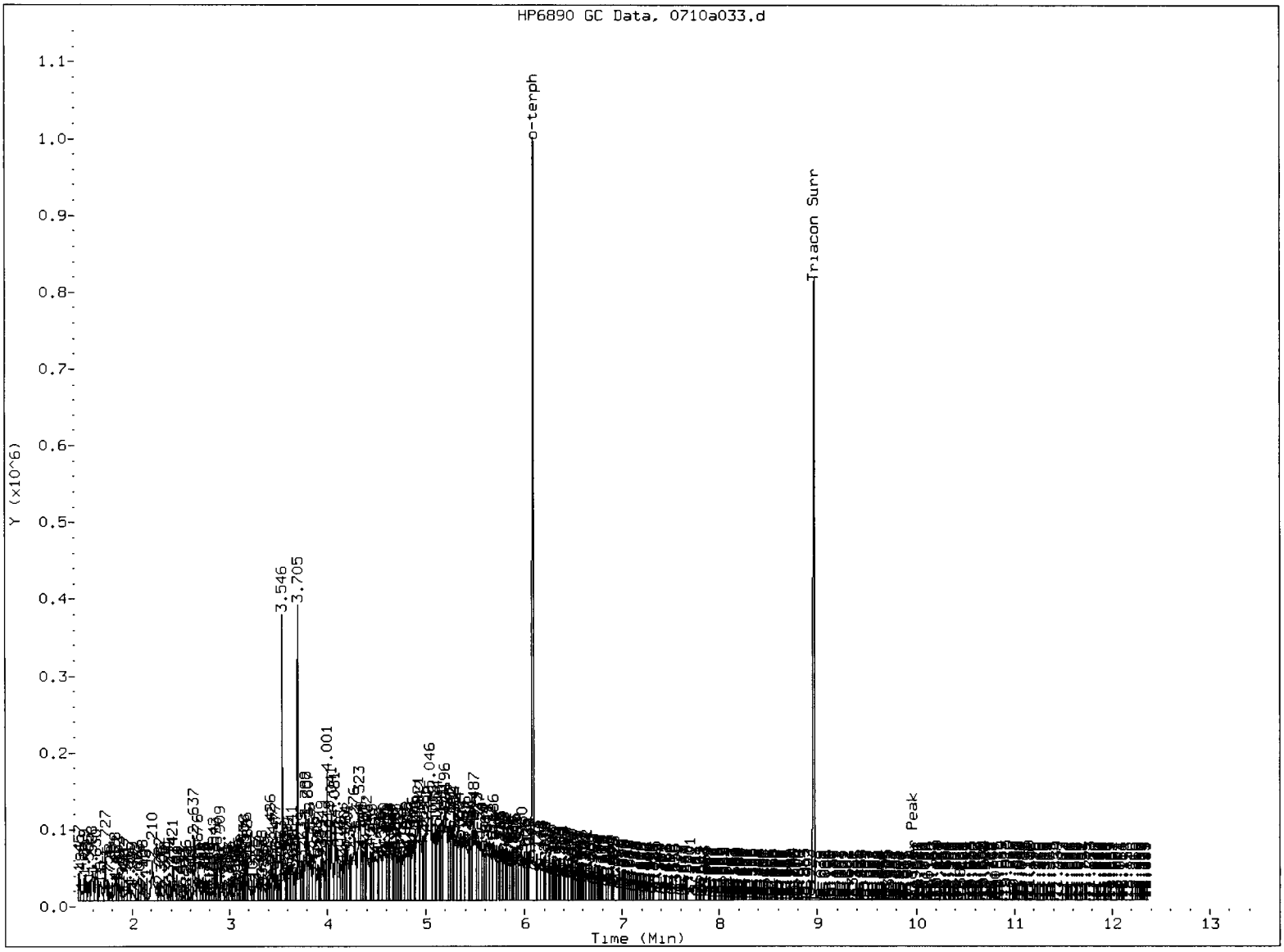
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.437	0.020	28679	26299	GAS (Tol-C12)	3932862	261.43	
C8	1.677	-0.019	25367	40060	DIESEL (C12-C24)	9186278	627.05	– Dies+DRO
C10	3.236	0.009	13825	14781	M.OIL (C24-C38)	545137	43.37	– LR–
C12	4.110	0.001	66906	88555	AK-102 (C10-C25)	11683441	675.38	M
C14	4.778	-0.005	66481	115844	AK-103 (C25-C36)	429922	50.35	M
C16	5.375	0.006	77435	143699				
C18	5.938	0.006	47989	88926				
C20	6.501	0.002	31079	45401	JET-A (C10-C18)	9485550	639.10	
C22	7.048	-0.003	16123	20566	MIN.OIL (C24-C38)	545137	40.56	M
C24	7.594	0.018	9030	10654				
C25	7.820	-0.009	7736	11083				
C26	8.071	0.000	5525	2181				
C28	8.520	-0.006	3859	1051				
C32	9.349	0.002	3173	6897				
C34	9.725	-0.004	1541	1844				
Filter Peak	9.961	-0.002	3245	5398	BUNKERC (C10-C38)	12141122	1355.57	M
C36	10.109	0.010	1205	1239				
C38	10.451	-0.005	3131	4814				
C40	10.808	0.000	1225	763				
o-terph	6.090	0.014	952412	765602				
Triacon Surr	8.968	0.009	807604	751828				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	765602	37.6	83.5
Triacontane	751828	39.4	87.5

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50AB FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Surr pk overlap

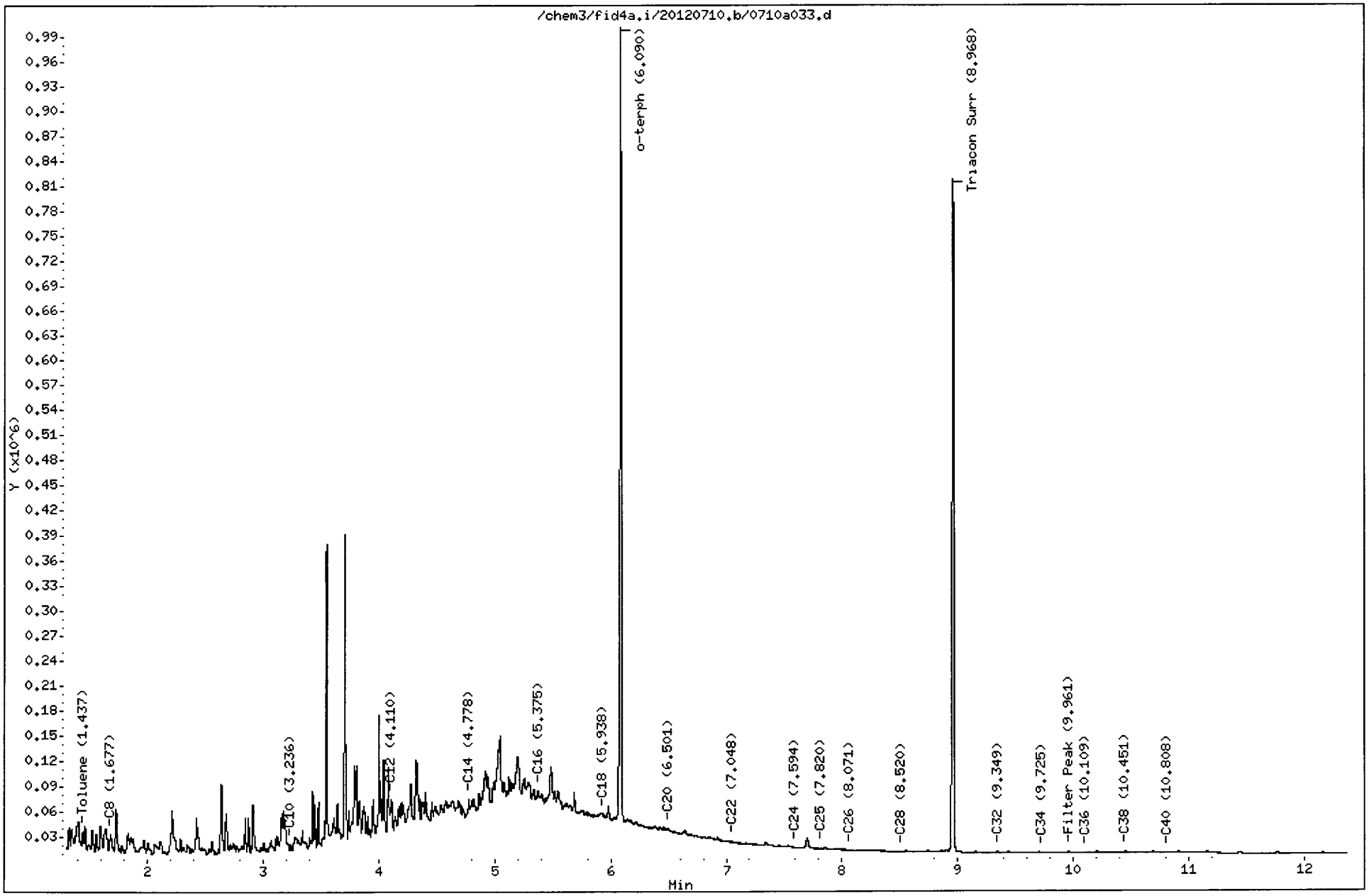
Analyst: AR Date: 7/11/2017

Data File: /chem3/fid4a.i/20120710.b/0710a033.d
Date : 10-JUL-2012 18:58
Client ID:
Sample Info: VB50AB

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



VB50 : 0037A

Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a034.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50AC
Client ID: CW-SP-01-070512
Injection: 10-JUL-2012 19:19
Dilution Factor: 1

FID:4A RESULTS

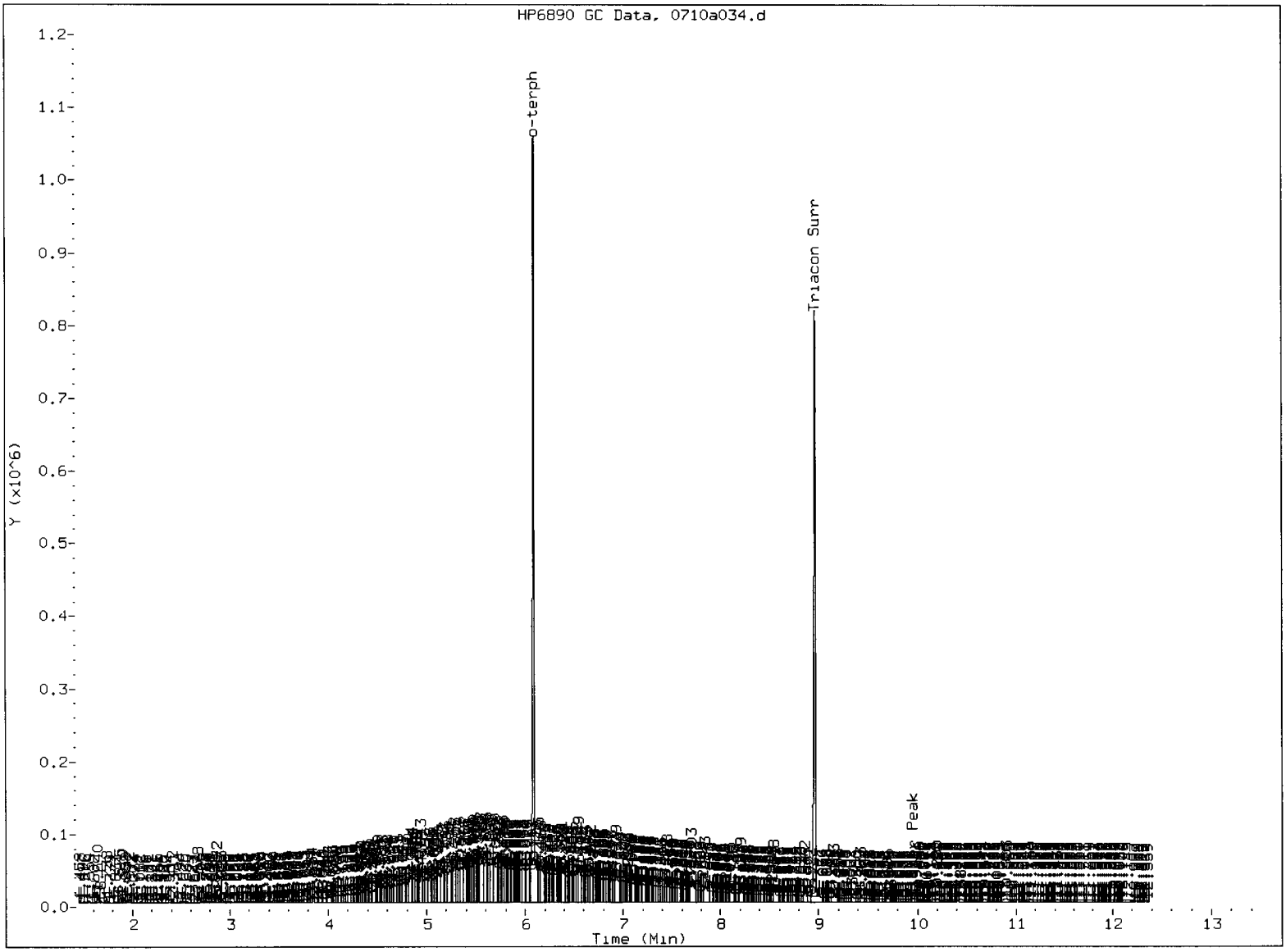
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.417	0.000	3510	3442	GAS (Tol-C12)	503568	33.47	
C8	1.681	-0.015	2802	3985	DIESEL (C12-C24)	7036368	480.30	Weathered diesel
C10	3.231	0.005	1797	1450	M.OIL (C24-C38)	1541911	122.68	RRO
C12	4.108	-0.001	11623	21846	AK-102 (C10-C25)	7535404	435.60	M
C14	4.782	-0.001	28507	32729	AK-103 (C25-C36)	1273046	149.10	M
C16	5.352	-0.017	50027	101759				
C18	5.934	0.001	46695	52928				
C20	6.501	0.002	39248	45532	JET-A (C10-C18)	4192737	282.49	
C22	7.049	-0.002	33537	40107	MIN.OIL (C24-C38)	1541911	114.72	M
C24	7.584	0.008	20907	10732				
C25	7.820	-0.008	17483	7936				
C26	8.066	-0.004	14626	19720				
C28	8.532	0.006	11666	9411				
C32	9.343	-0.003	8041	19339				
C34	9.733	0.004	4956	4015				
Filter Peak	9.953	-0.010	6995	12369	BUNKERC (C10-C38)	8893914	993.02	M
C36	10.094	-0.005	4142	2035				
C38	10.441	-0.015	5565	13822				
C40	10.807	-0.001	3942	2585				
o-terph	6.091	0.015	1007241	792960				
Triacon Surr	8.967	0.008	807184	767329				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	792960	38.9	86.5
Triacontane	767329	40.2	89.3

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50AC FID:4A SIGNAL



MANUAL INTEGRATION

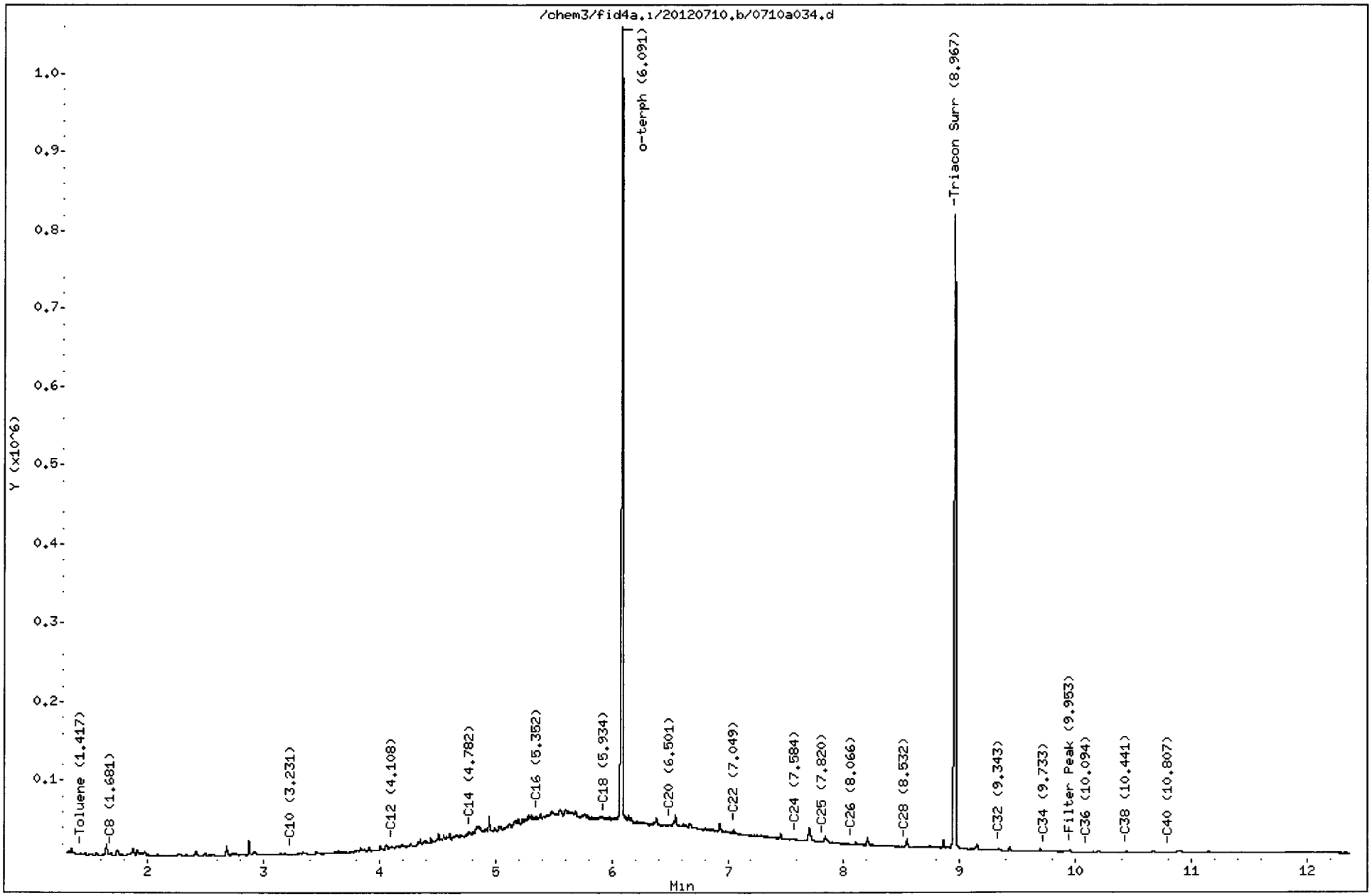
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Surr pk overlap

Analyst: AZ Date: 7/11/20

Data File: /chem3/fid4a.i/20120710.b/0710a034.d
Date : 10-JUL-2012 19:19
Client ID:
Sample Info: VB50AC

Instrument: fid4a.i

Operator: MH
Column phase: RTX-1
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/13/2012

Data file: /chem3/fid4a.i/20120710.b/0710a035.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/13/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50AD
Client ID: CW-SP-02-070412
Injection: 10-JUL-2012 19:40
Dilution Factor: 1

* contaminant removed *

FID:4A RESULTS

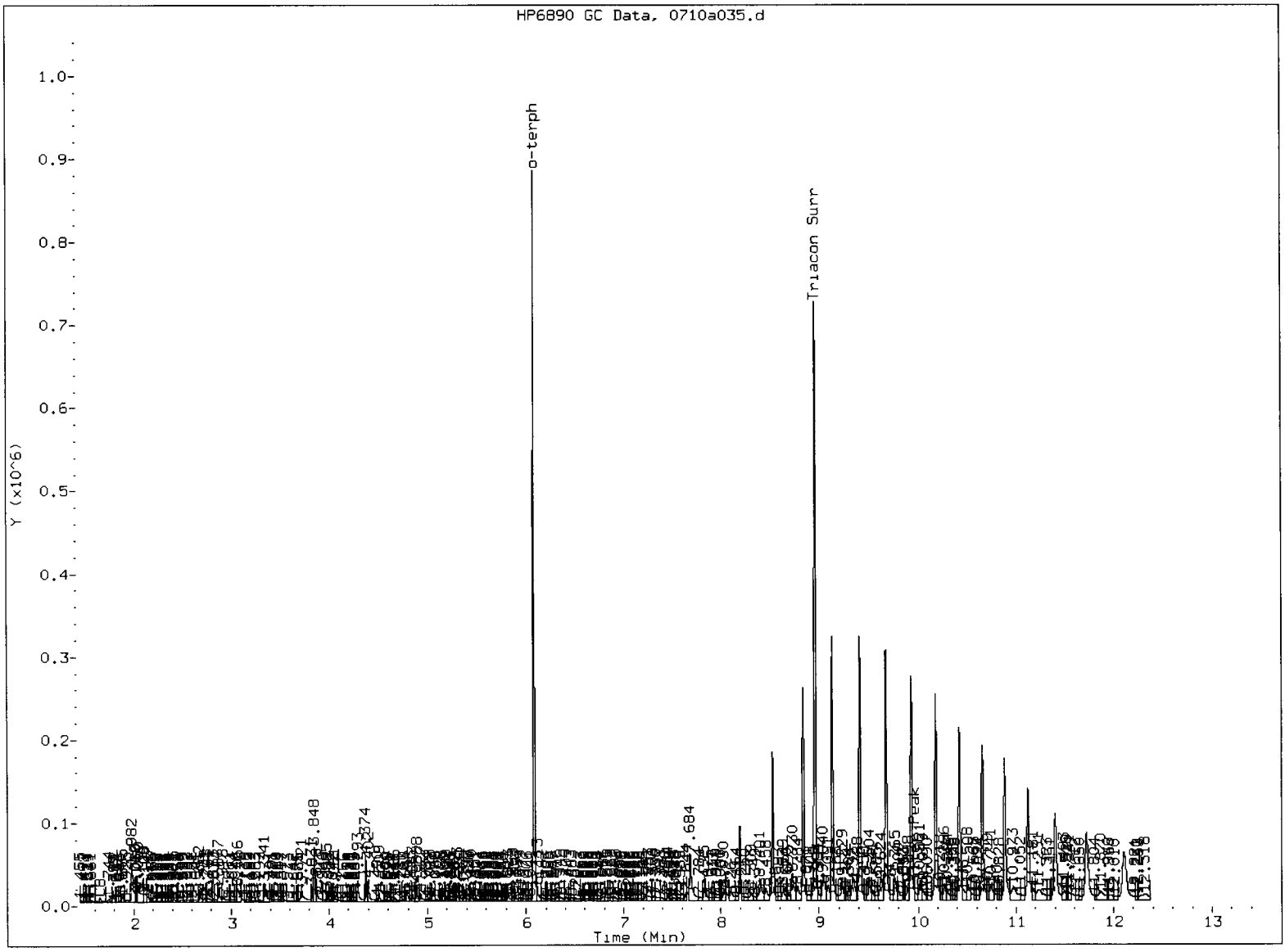
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.422	0.005	4049	5595	GAS (Tol-C12)	566992	37.69	
C8	1.654	-0.042	4948	7267	DIESEL (C12-C24)	580816	39.65	- LR
C10	3.222	-0.005	1402	2561	M.OIL (C24-C38)	1974905	157.13	Y (RRO)
C12	4.133	0.024	969	1445	AK-102 (C10-C25)	906560	52.41	
C14	4.791	0.008	13860	14030	AK-103 (C25-C36)	1752138	205.22	M
C16	5.374	0.005	9025	8392				
C18	5.931	-0.001	3970	4650				
C20	6.504	0.005	3080	8473	JET-A (C10-C18)	530733	35.76	
C22	7.048	-0.002	3266	4918	MIN.OIL (C24-C38)	1974905	146.93	M
C24	7.568	-0.008	3066	4202				
C25	7.836	0.008	30616	32724				
C26	8.104	0.034	12212	28711				
C28	8.558	0.032	6082	7762				
C32	9.339	-0.008	27150	61561				
C34	9.712	-0.017	7862	14673				
Filter Peak	9.965	0.002	10127	17713	BUNKERC (C10-C38)	2775439	309.88	M
C36	10.095	-0.003	6121	14427				
C38	10.458	0.002	13370	27169				
C40	10.811	0.003	6934	9147				
o-terph	6.087	0.011	880685	676056				
Triacon Surr	8.967	0.009	722617	704270				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	676056	33.2	73.7 ✓
Triacontane	704270	36.9	82.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 VB50AD FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other contaminant peaks removed

Analyst: AR Date: 7/13/2012

Data File: /chem3/fid4a.i/20120710.b/0710a035.d

Date : 10-JUL-2012 19:40

Client ID: CW-SP-02-070412

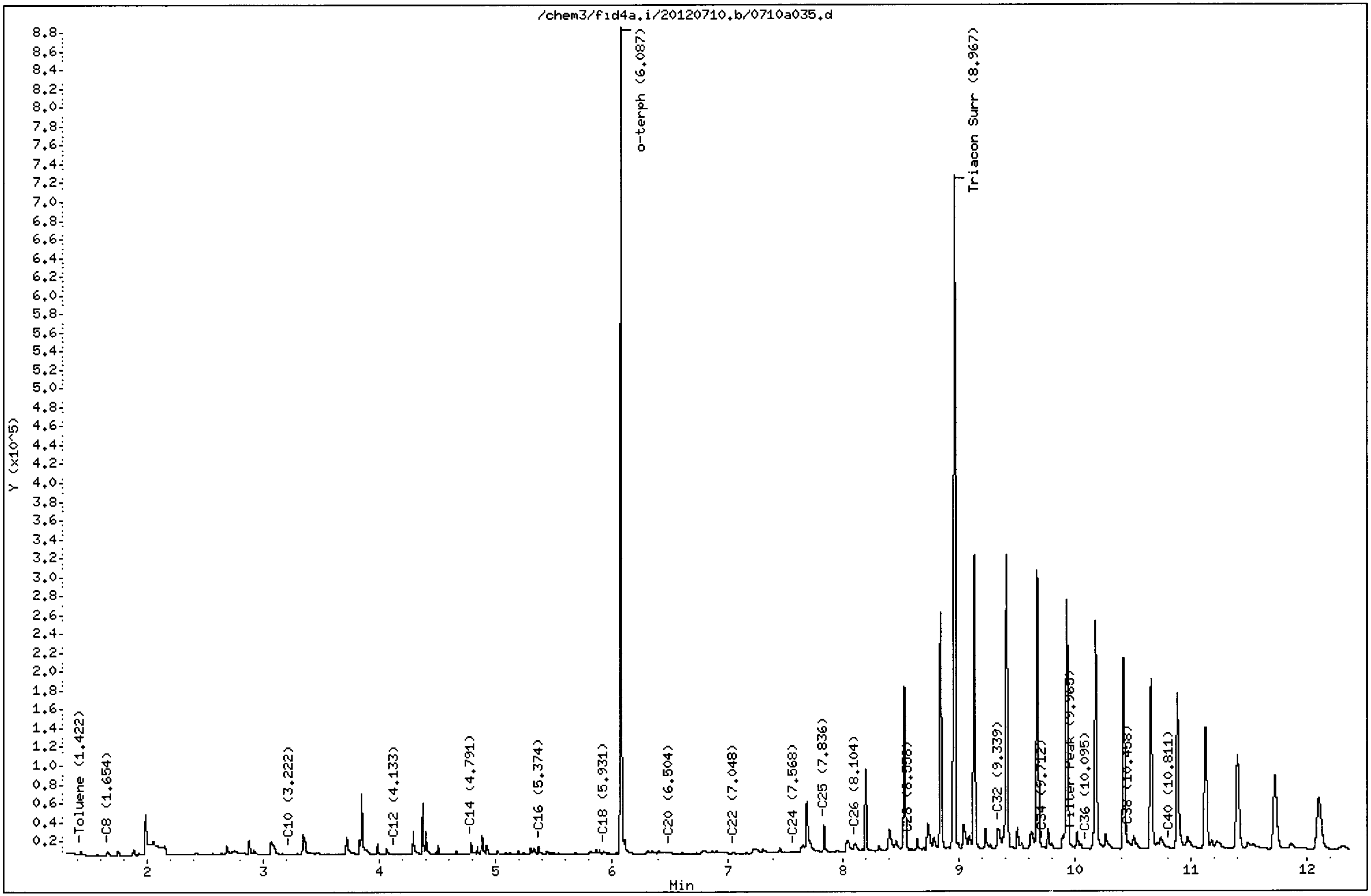
Sample Info: VB50AD

Column phase: RTX-1

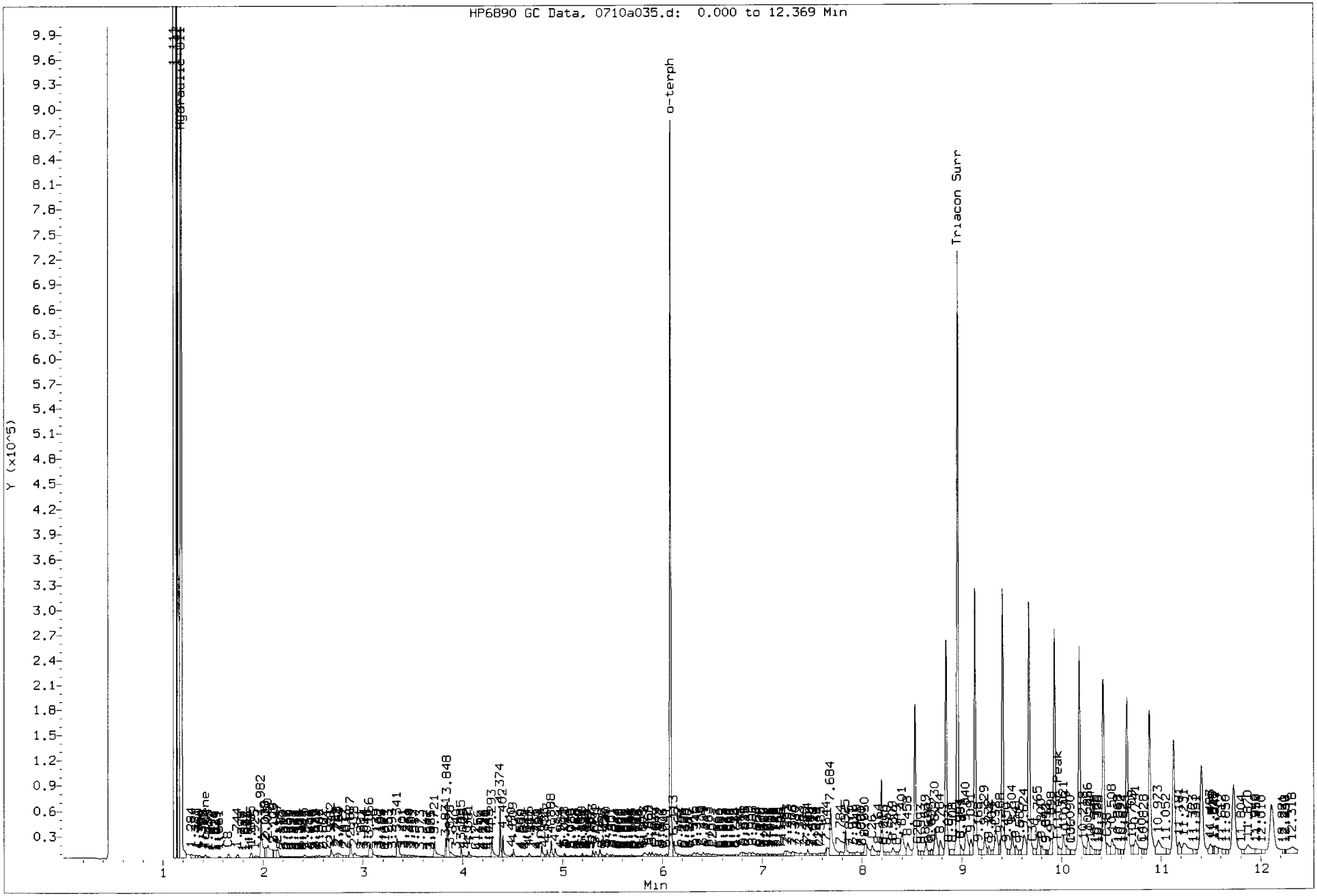
Instrument: fid4a.i

Operator: MH

Column diameter: 0.25



Data File: /chem3/fid4a.i/20120710.b/0710a035.d
Injection Date: 10-JUL-2012 19:40
Instrument: fid4a.i
Client Sample ID: CW-SP-02-070412



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a036.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50AE
Client ID: CW-W-RB-070212
Injection: 10-JUL-2012 20:01
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.410	-0.007	2963	4298	GAS (Tol-C12)	265793	17.67
C8	1.734	0.038	5492	10820	DIESEL (C12-C24)	151952	10.37 - LPL
C10	3.235	0.008	797	1319	M.OIL (C24-C38)	395705	31.48 - LPL
C12	4.134	0.025	544	996	AK-102 (C10-C25)	241676	13.97
C14	4.782	-0.001	665	408	AK-103 (C25-C36)	302365	35.41
C16	5.375	0.006	1150	1492			
C18	5.931	-0.001	1077	1265			
C20	6.504	0.005	733	1493	JET-A (C10-C18)	159259	10.73
C22	7.049	-0.001	966	1404	MIN.OIL (C24-C38)	395705	29.44
C24	7.568	-0.008	585	923			
C25	7.842	0.014	1493	1597			
C26	8.068	-0.002	917	1081			
C28	8.518	-0.008	1812	1871			
C32	9.350	0.003	2786	9170			
C34	9.747	0.018	15761	19525			
Filter Peak	9.971	0.008	3477	8590	BUNKERC (C10-C38)	616507	68.83
C36	10.109	0.010	2302	2384			
C38	10.469	0.013	4218	4984			
C40	10.821	0.012	35374	95575			
o-terph	6.089	0.013	1035409	817364			
Triacon Surr	8.967	0.008	830417	804491			

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	817364	40.1	89.2
Triacontane	804491	42.2	93.7

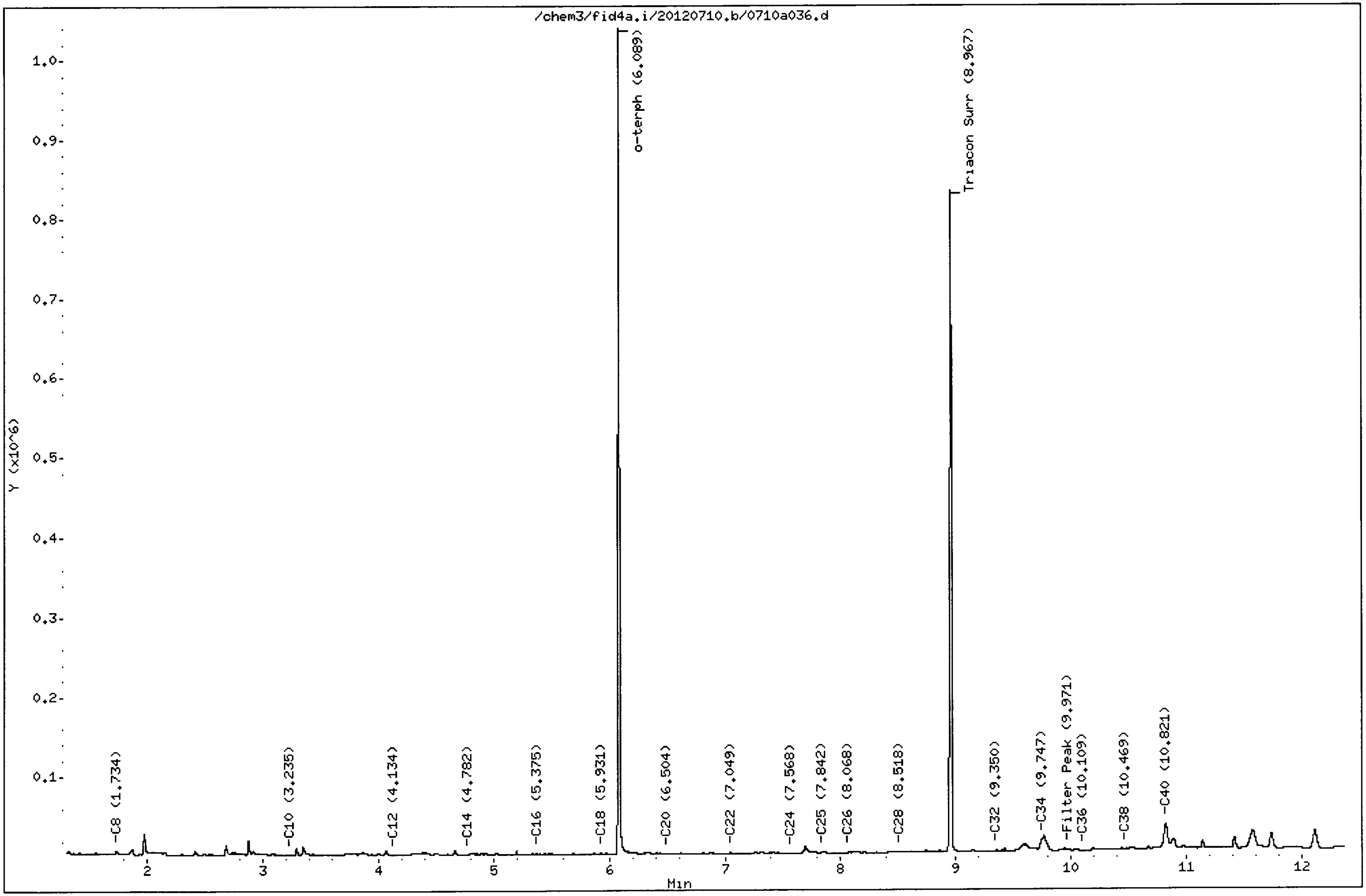
Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

Data File: /chem3/fid4a.i/20120710.b/0710a036.d
Date : 10-JUL-2012 20:01
Client ID: CW-W-RB-070212
Sample Info: VB50AE

Column phase: RTX-1

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/11/2012

Data file: /chem3/fid4a.i/20120710.b/0710a037.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB50AF
Client ID: CW-TP-RB-070212
Injection: 10-JUL-2012 20:22
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.391	-0.026	825	618	GAS (Tol-C12)	185702	12.34
C8	1.696	0.000	2061	2400	DIESEL (C12-C24)	123461	8.43 — LRL
C10	3.236	0.009	501	620	M.OIL (C24-C38)	303733	24.17 — LRL
C12	4.135	0.026	298	373	AK-102 (C10-C25)	184377	10.66
C14	4.780	-0.003	370	240	AK-103 (C25-C36)	236717	27.73
C16	5.375	0.006	730	1014			
C18	5.929	-0.003	831	1798			
C20	6.501	0.002	611	519	JET-A (C10-C18)	108749	7.33
C22	7.046	-0.004	903	1397	MIN.OIL (C24-C38)	303733	22.60
C24	7.565	-0.011	504	628			
C25	7.819	-0.010	804	489			
C26	8.082	0.012	892	2032			
C28	8.533	0.007	1511	1019			
C32	9.353	0.007	3039	8879			
C34	9.751	0.022	10155	19073			
Filter Peak	9.972	0.009	2141	3197	BUNKERC (C10-C38)	469249	52.39
C36	10.091	-0.007	2054	6638			
C38	10.457	0.001	2905	3544			
C40	10.806	-0.003	31621	81090			
o-terph	6.088	0.012	960556	747887			
Triacon Surr	8.964	0.006	769505	738598			

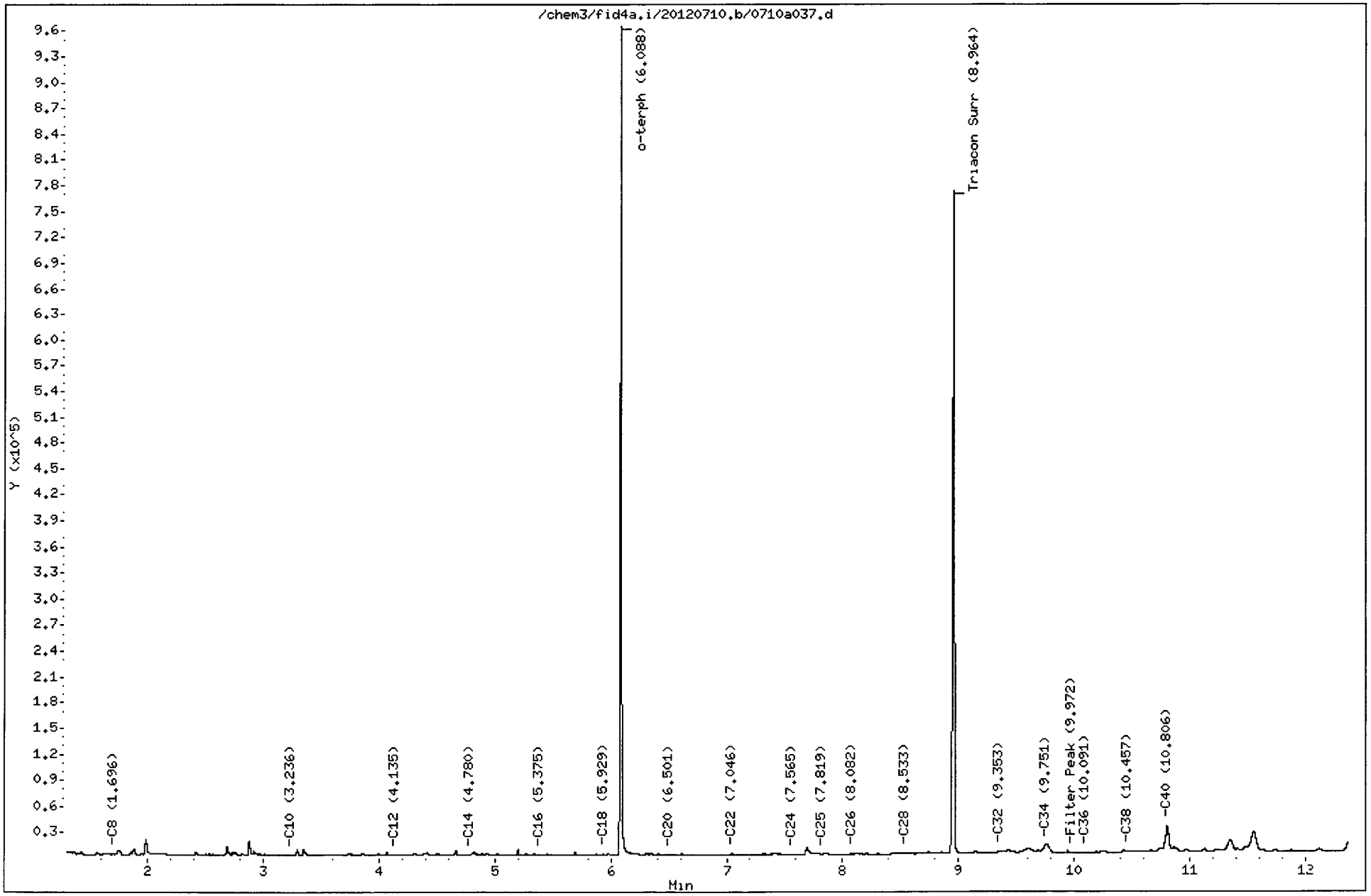
M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	747887	36.7	81.6
Triacontane	738598	38.7	86.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

Data File: /chem3/fid4a.i/20120710.b/0710a037.d
Date : 10-JUL-2012 20:22
Client ID: CW-TP-RB-070212
Sample Info: VB50AF

Instrument: fid4a.i
Operator: MH
Column phase: RTX-1
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120710.b/0710a038.d ARI ID: DIESEL #4 AR 7/11/2012
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 10-JUL-2012 20:44
Operator: MH
Report Date: 07/11/2012 Dilution Factor: 1
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

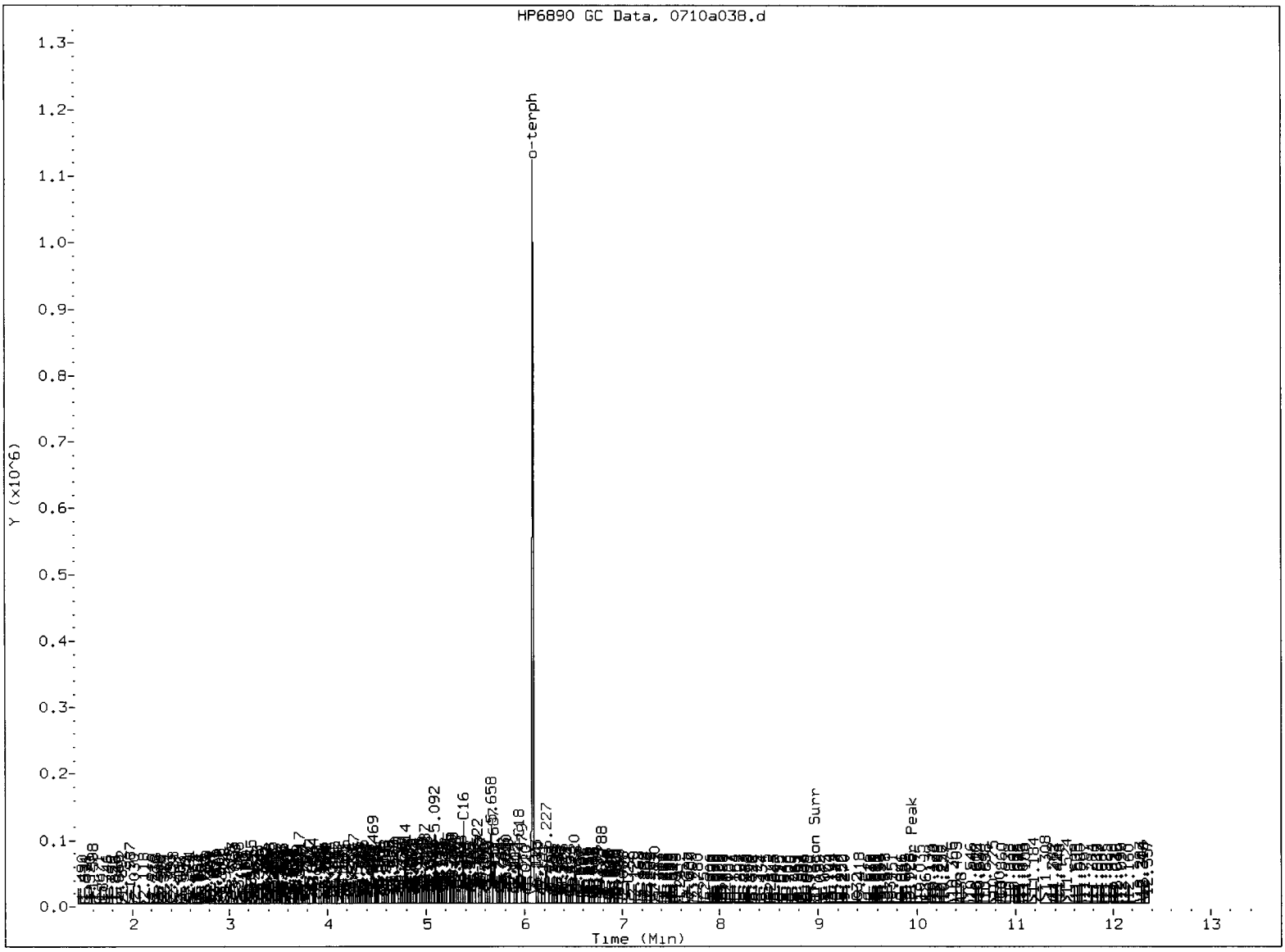
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.434	0.016	1602	1500	GAS (Tol-C12)	850054	56.51	
C8	1.702	0.006	1773	3181	DIESEL (C12-C24)	3441918	234.94	
C10	3.222	-0.005	4454	2939	M.OIL (C24-C38)	173023	13.77	
C12	4.117	0.008	49978	36948	AK-102 (C10-C25)	4036241	233.32	M
C14	4.791	0.008	75323	58714	AK-103 (C25-C36)	103763	12.15	
C16	5.377	0.008	122994	90334				
C18	5.941	0.009	97910	87845				
C20	6.510	0.011	60032	62081	JET-A (C10-C18)	3007295	202.62	
C22	7.062	0.011	28279	44113	MIN.OIL (C24-C38)	173023	12.87	
C24	7.590	0.014	5622	14540				
C25	7.843	0.014	3334	8783				
C26	8.059	-0.012	668	370				
C28	8.515	-0.011	572	659				
C32	9.394	0.048	1890	6803				
C34	9.737	0.008	2227	4235				
Filter Peak	9.952	-0.011	1130	1913	BUNKERC (C10-C38)	4188793	467.68	M
C36	10.095	-0.004	1258	4629				
C38	10.453	-0.003	2578	3212				
C40	10.835	0.027	4673	8165				
o-terph	6.090	0.014	1101021	866166				
Triacon Surr	8.960	0.002	764	1762				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	866166	42.5	94.5
Triacontane	1762	0.1	0.2

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 DIESEL #4 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

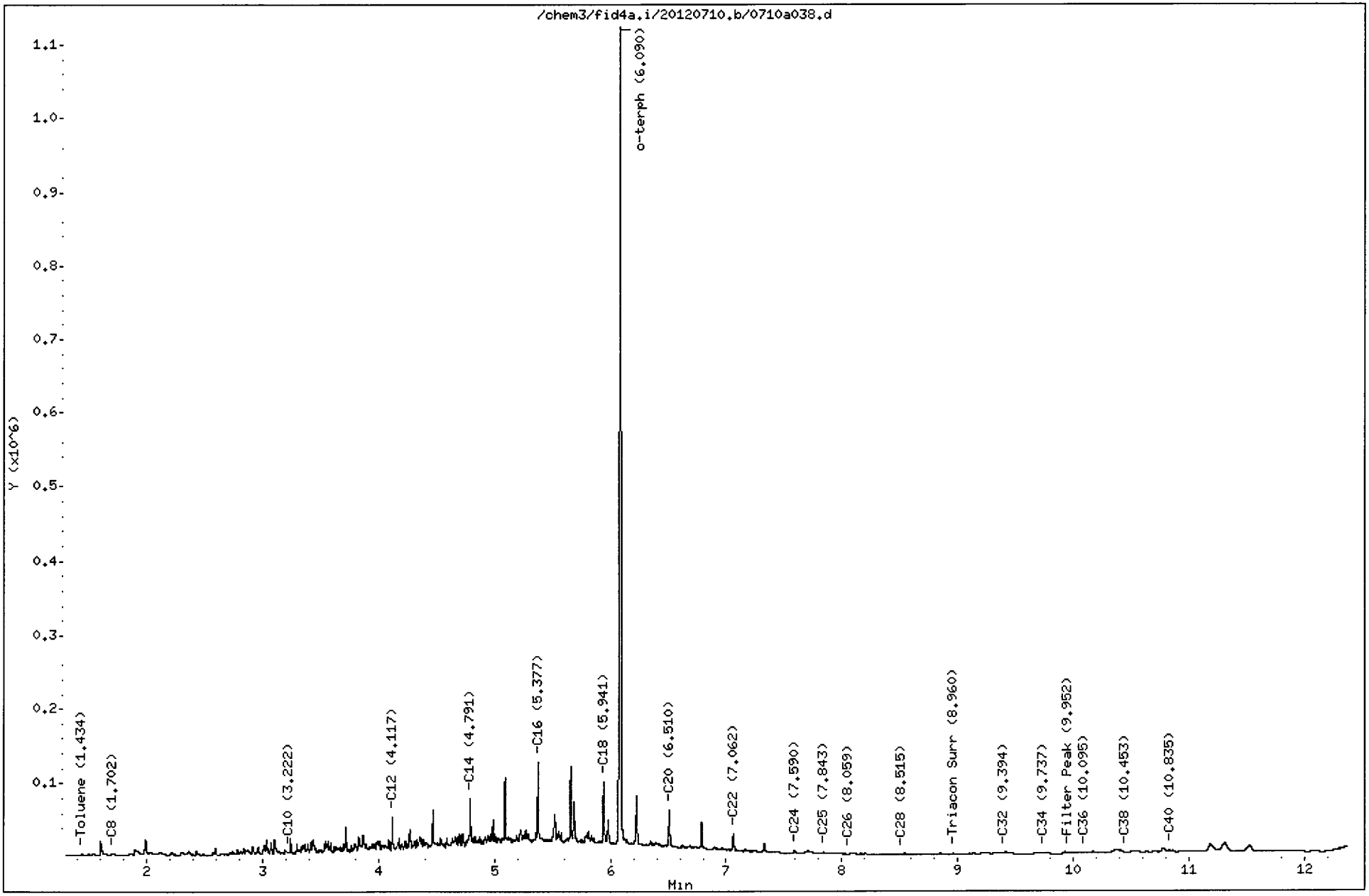
Analyst: AR Date: 7/11/202

Data File: /chem3/fid4a.i/20120710.b/0710a038.d
Date : 10-JUL-2012 20:44
Client ID:
Sample Info: DIESEL #4

Column phase: RTX-1

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120710.b/0710a039.d
Method: /chem3/fid4a.i/20120710.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/11/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: MOIL #4
Client ID:
Injection: 10-JUL-2012 21:05
Dilution Factor: 1

AR-7/11/2012

FID:4A RESULTS

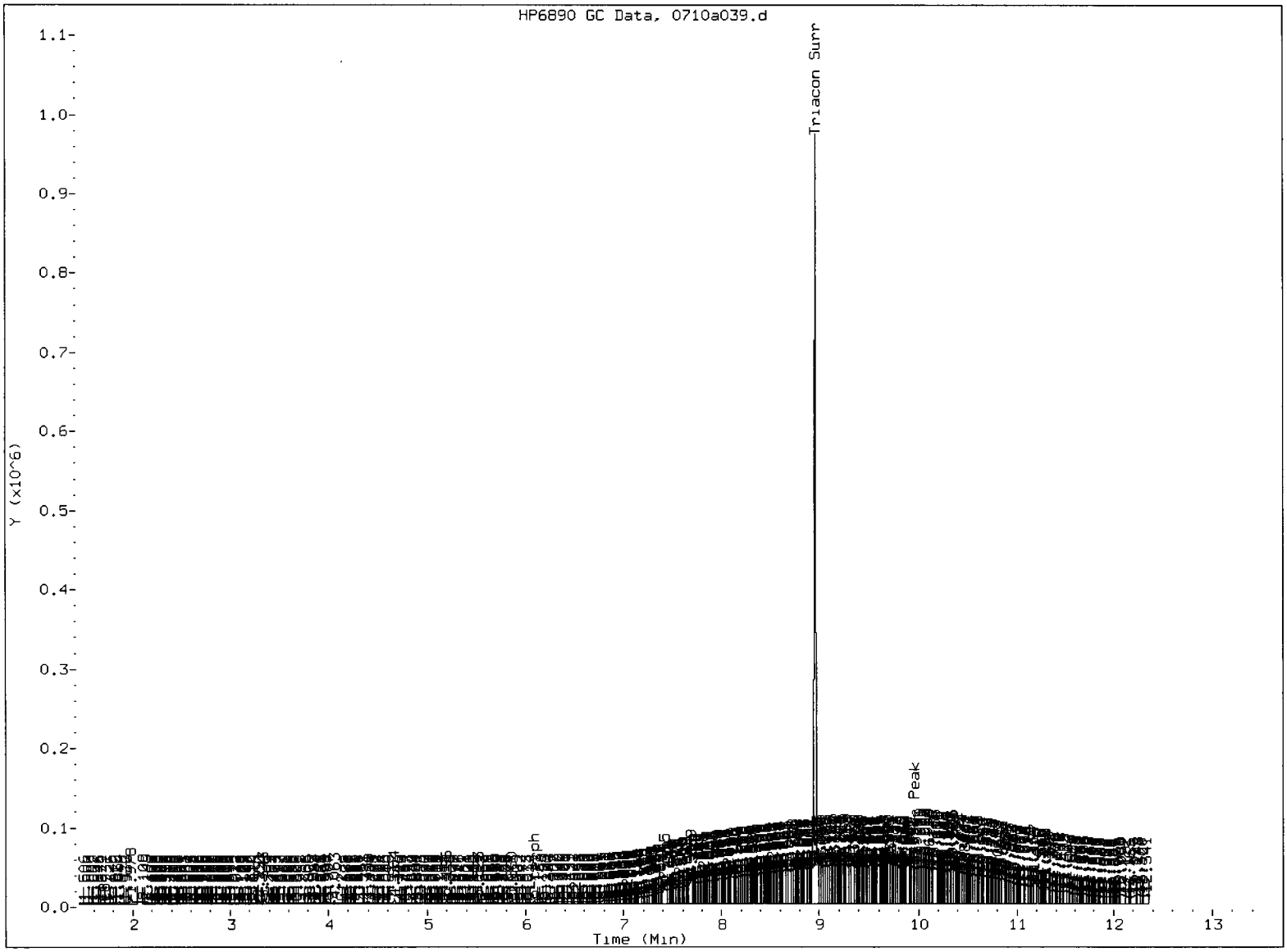
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.415	-0.002	1460	5144	GAS (Tol-C12)	112061	7.45	
C8	1.709	0.013	596	257	DIESEL (C12-C24)	690475	47.13	
C10	3.238	0.011	866	2115	M.OIL (C24-C38)	6812018	541.97	
C12	4.146	0.037	547	683	AK-102 (C10-C25)	924166	53.42	
C14	4.780	-0.004	545	263	AK-103 (C25-C36)	5842414	684.28	M
C16	5.378	0.009	820	1326				
C18	5.928	-0.005	842	720				
C20	6.508	0.009	1773	4179	JET-A (C10-C18)	128960	8.69	
C22	7.045	-0.006	5630	6999	MIN.OIL (C24-C38)	6812018	506.82	M
C24	7.572	-0.004	20426	15246				
C25	7.827	-0.001	27876	9943				
C26	8.074	0.004	32363	25454				
C28	8.530	0.004	40864	24748				
C32	9.357	0.011	49165	50627				
C34	9.719	-0.010	51494	66717				
Filter Peak	9.963	0.000	46237	51996	BUNKERC (C10-C38)	7552032	843.19	M
C36	10.109	0.010	45416	29346				
C38	10.468	0.011	39130	44658				
C40	10.808	0.000	32256	18997				
o-terph	6.085	0.009	3367	5495				
Triacon Surr	8.963	0.005	923353	891666				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	5495	0.3	0.6
Triacontane	891666	46.7	103.8

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

FID:4A-2C/RTX-1 MOIL #4 FID:4A SIGNAL



MANUAL INTEGRATION

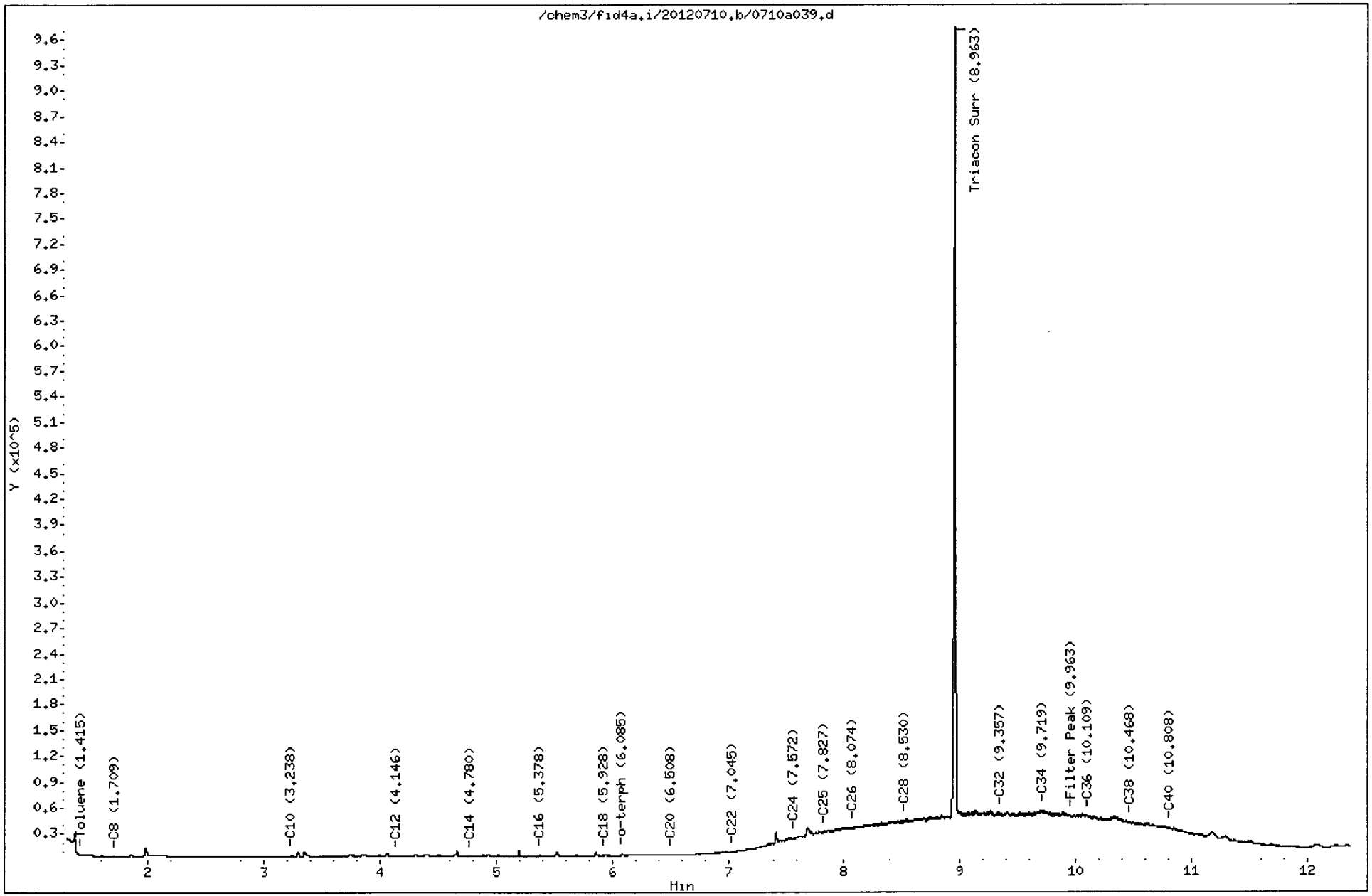
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other surr pk overlap

Analyst: AR Date: 7/11/2012

Data File: /chem3/fid4a.i/20120710.b/0710a039.d
Date : 10-JUL-2012 21:05
Client ID:
Sample Info: MOIL #4

Instrument: fid4a.i

Operator: MH
Column phase: RTX-1
Column diameter: 0.25



TPHG/BETX Raw Data
Initial Calibration Notes and Raw Data

ARI Job ID: VB50

Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Initial Calibration Notes

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.3) **710S**(RSK-175)

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6

Curve Date(s): BTEX 07/13/12 gas 07/14/12 Internal Standard ID N/A Expiration N/A

BFB Tune Meets Criteria?	YES / NO	ICV Exceeding ±20%?	YES / NO
ICal Meets %RSD & r^2 Criteria?	YES / NO	ICV Exceeding ±30%?	YES / NO
Q flag applied?	YES / NO	Linear Fits Used?	YES / NO
Manual Integrations for ICal?	YES / NO	Quadratic Fits Used?	YES / NO
Spectral Library Updated?	YES / NO / NA	Calibration Points Dropped?	YES / NO
Minimum Response Factors Met	YES / NO / NA	Purge Volume (mL)	15mL

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
BB/TFT	VW746-3	11/11/12	BTEX	VW730-3	08/08/12
gasoline	VW750-2	11/29/12	gasoline	VW736-2	09/12/12
BTEX	VW750-1	11/29/12			
RT mix	VW755-2	12/27/12			

Detail problems, corrective actions and/or other pertinent information below:

gas cal ran on 07/13 w/ BTEX curve failed re-ran gas cal on 07/14 and it passed reporting BTEX curve from 07/13 and gas curve from 07/14 07/16/12

Analyst: _____ **Date:** 07/16/12

Reviewer: _____ **Date:** 7/16

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Batch File: /chem3/pid1.i/vpcc0713-2.b
Inst ID: pid1.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07
FILENAME:	0713a005	0713a006	0713a007	0713a008	0713a009	0713a010	0713a011
INJ.DATE:	13-JUL-2012	13-JUL-2012	13-JUL-2012	13-JUL-2012	13-JUL-2012	13-JUL-2012	13-JUL-2012
INJ.TIME:	12:29	12:58	13:27	13:56	14:26	14:55	15:24

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	1 MTBE	+++++	4.583	4.577	4.579	4.579	4.579	4.580	4.577	4.527-4.627	4.579	0.002
	2 Benzene	7.050	7.050	7.050	7.051	7.051	7.053	7.055	7.050	7.000-7.100	7.052	0.002
$	3 TFT(Surr)	7.885	7.885	7.885	7.886	7.886	7.887	7.888	7.885	7.835-7.935	7.886	0.001
	4 Toluene	9.917	9.913	9.913	9.913	9.914	9.916	9.919	9.917	9.867-9.967	9.915	0.002
	15 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	13.068	13.018-13.118	+++++	+++++
	5 Ethylbenzene	12.803	12.806	12.806	12.806	12.808	12.810	12.815	12.803	12.753-12.853	12.808	0.004
	6 M/P-Xylene	12.967	12.967	12.967	12.967	12.970	12.974	12.984	12.967	12.917-13.017	12.971	0.006
	7 O-Xylene	13.913	13.919	13.919	13.919	13.920	13.922	13.929	13.913	13.883-13.943	13.920	0.005
$	19 BFB(Surr)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.006	15.976-16.036	+++++	+++++
$	8 BB(Surr)	15.413	15.413	15.413	15.413	15.413	15.413	15.414	15.413	15.363-15.463	15.413	0.000
	13 1,3,5 Trimethyl Benzen	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.433	16.403-16.463	+++++	+++++
	14 1,2,4 Trimethyl Benzen	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.905	16.875-16.935	+++++	+++++
	16 1,3 Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.863	16.833-16.893	+++++	+++++
	17 1,4 Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.979	16.949-17.009	+++++	+++++
	18 1,2 Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.371	17.341-17.401	+++++	+++++

Reviewer 1 _____ Date: 07/16/12
Reviewer 2 _____ Date: _____

Report Date : 16-Jul-2012 09:54

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/vpcc0714-1.b/FID15ml.m
Batch File: /chem3/pid1.i/vpcc0714-1.b
Inst ID: pid1.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	0714a003	0714a004	0714a005	0714a006	0714a007	0714a008
INJ.DATE:	14-JUL-2012	14-JUL-2012	14-JUL-2012	14-JUL-2012	14-JUL-2012	14-JUL-2012
INJ.TIME:	09:01	09:30	10:00	10:29	10:58	11:28

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 NWTPHG	+++++	+++++	+++++	+++++	+++++	+++++	0.492	0.422-0.562	+++++	+++++
20 WAGAS	+++++	+++++	+++++	+++++	+++++	+++++	0.937	0.867-1.007	+++++	+++++
19 AK101	+++++	+++++	+++++	+++++	+++++	+++++	1.251	1.181-1.321	+++++	+++++
21 8015GAS	+++++	+++++	+++++	+++++	+++++	+++++	1.539	1.469-1.609	+++++	+++++
1 2-Methylpentane	4.307	4.305	4.308	4.307	4.311	4.315	4.307	4.237-4.377	4.309	0.004
2 nC6	4.804	4.805	4.807	4.806	4.808	4.809	4.804	4.734-4.874	4.807	0.002
3 nC7	6.848	6.848	6.850	6.848	6.850	6.850	6.845	6.775-6.915	6.849	0.001
$ 4 TFT(Surr)	7.879	7.879	7.881	7.878	7.877	7.875	7.878	7.808-7.948	7.878	0.002
5 nC8	9.512	9.510	9.512	9.510	9.511	9.515	9.508	9.438-9.578	9.512	0.002
6 Toluene	9.906	9.905	9.907	9.907	9.911	9.917	9.905	9.835-9.975	9.909	0.004
7 nC9	12.432	12.432	12.432	12.432	12.434	12.439	12.431	12.361-12.501	12.433	0.003
$ 22 BFB(Surr)	+++++	+++++	+++++	+++++	+++++	+++++	16.027	15.957-16.097	+++++	+++++
8 nC10-Decane	15.225	15.225	15.225	15.225	15.227	15.230	15.224	15.154-15.294	15.226	0.002
$ 9 BB(Surr)	15.406	15.406	15.407	15.406	15.407	15.408	15.405	15.335-15.475	15.407	0.001
10 1,2,4-Trimethylbenzene	16.125	16.124	16.125	16.124	16.127	16.131	16.124	16.054-16.194	16.126	0.003
11 nc11	16.776	16.776	16.776	16.775	16.775	16.777	16.775	16.705-16.845	16.776	0.001
12 nC12-Dodecane	17.811	17.811	17.809	17.808	17.807	17.807	17.809	17.739-17.879	17.809	0.002

Reviewer 1 ____ Date: 07/16/12
Reviewer 2 ____ Date: ____

VB50 : 00391

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/pid1.i/vpcc0714-1.b

	Time	Filename	LabID	ClientID	Vial#	pH	DF
1	0803	0714a001.d	RINSE				1
2	0832	0714a002.d	RT+BCAL				1
3	0901	0714a003.d	0.03 PPM GAS				1
4	0930	0714a004.d	0.1 PPM GAS				1
5	1000	0714a005.d	0.25 PPM GAS				1
6	1029	0714a006.d	1 PPM GAS				1
7	1058	0714a007.d	2.5 PPM GAS				1
8	1128	0714a008.d	5.0 PPM GAS				1
9	1157	0714a009.d	GAS ICV				1

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/pid1.i/vpcc0713-1.b

	Time	Filename	LabID	ClientID	Vial#	pH	DF
1	0929	0713a001.d	RINSE				1
2	0959	0713a002.d	RT+ BCAL				1
3	1028	0713a003.d	LOWBTEXCHK				1
4	1057	0713a004.d	LOWGCALCH				1
5	1229	0713a005.d	0.08 PPM BTEX				1
6	1258	0713a006.d	0.25 PPM BTEX				1
7	1327	0713a007.d	1 PPM BTEX				1
8	1356	0713a008.d	5 PPM BTEX				1
9	1426	0713a009.d	25 PPM BTEX				1
10	1455	0713a010.d	50 PPM BTEX				1
11	1524	0713a011.d	100 PPM BTEX				1
12	1553	0713a012.d	BTEX ICV				1
13	1623	0713a013.d	0.03 PPM GAS				1
14	1652	0713a014.d	0.1 PPM GAS				1
15	1721	0713a015.d	0.25 PPM GAS				1
16	1750	0713a016.d	1 PPM GAS				1
17	1820	0713a017.d	2.5 PPM GAS				1
18	1849	0713a018.d	5.0 PPM GAS				1
19	1918	0713a019.d	GAS ICV				1

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/pid1.i/vpcc0714-1.b

	Time	Filename	LabID	ClientID	Vial#	pH	DF
1	0803	0714a001.d	RINSE				1
2	0832	0714a002.d	RT+BCAL				1
3	0901	0714a003.d	0.03 PPM GAS				1
4	0930	0714a004.d	0.1 PPM GAS				1
5	1000	0714a005.d	0.25 PPM GAS				1
6	1029	0714a006.d	1 PPM GAS				1
7	1058	0714a007.d	2.5 PPM GAS				1
8	1128	0714a008.d	5.0 PPM GAS				1
9	1157	0714a009.d	GAS ICV				1

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUL-2012 12:29
End Cal Date : 13-JUL-2012 15:24
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Cal Date : 14-Jul-2012 06:43 monicah
Curve Type : Average

Calibration File Names:
Level 1: /chem3/pid1.i/vpcc0713-2.b/0713a005.d
Level 2: /chem3/pid1.i/vpcc0713-2.b/0713a006.d
Level 3: /chem3/pid1.i/vpcc0713-2.b/0713a007.d
Level 4: /chem3/pid1.i/vpcc0713-2.b/0713a008.d
Level 5: /chem3/pid1.i/vpcc0713-2.b/0713a009.d
Level 6: /chem3/pid1.i/vpcc0713-2.b/0713a010.d
Level 7: /chem3/pid1.i/vpcc0713-2.b/0713a011.d

Compound	0.08000 Level 1	0.25000 Level 2	1.000 Level 3	5.000 Level 4	25.000 Level 5	50.000 Level 6	RRF	% RSD	
	100.000 Level 7								
1 MTBE	+++++	116	127	128	121	123			
	131						124	4.419	
2 Benzene	962	852	835	809	746	733			
	778						817	9.533	
4 Toluene	1012	812	754	740	687	684			
	720						773	14.805	
15 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
5 Ethylbenzene	725	704	677	671	625	616			
	647						666	6.009	
6 M/P-Xylene	800	748	742	736	690	671			
	689						725	6.187	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUL-2012 12:29
End Cal Date : 13-JUL-2012 15:24
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Cal Date : 14-Jul-2012 06:43 monicah
Curve Type : Average

Compound	0.08000 Level 1	0.25000 Level 2	1.000 Level 3	5.000 Level 4	25.000 Level 5	50.000 Level 6	RRF	% RSD	
	100.000 Level 7								
7 O-Xylene	625	580	564	560	524	519			
	546						560	6.465	
13 1,3,5 Trimethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
14 1,2,4 Trimethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
16 1,3 Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
17 1,4 Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
18 1,2 Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
$ 3 TFT(Surr)	51.63636	51.25000	49.82090	47.49000	47.55639	47.16292			
	46.88000						48.82808	4.156	
$ 19 BFB(Surr)	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
$ 8 BB(Surr)	82.90909	86.34091	87.22388	85.18000	84.26316	85.07303			
	84.54000						85.07572	1.653	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUL-2012 12:29
End Cal Date : 13-JUL-2012 15:24
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc0714-1.b/FID15ml.m
Cal Date : 15-Jul-2012 10:38 jrains
Curve Type : Average

Compound	0.000e+00 Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	RRF	% RSD	
14 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
$ 4 TFT(Surr)	42.68182	42.40909	40.68657	38.32000	37.78947	36.91011	36.33000	39.30387	6.635	
$ 22 BFB(Surr)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
$ 9 BB(Surr)	20.31818	21.29545	20.97015	19.91000	19.71429	19.55618	19.24000	20.14346	3.759	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUL-2012 12:29
End Cal Date : 13-JUL-2012 15:24
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc0713-1.b/FID15ml.m
Cal Date : 13-Jul-2012 16:11 monicah
Curve Type : Average

Average %RSD Results.
Calculated Average %RSD = 5.19706
Maximun Average %RSD = 20.00000
* Passed Average %RSD Test.

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUL-2012 12:29
End Cal Date : 13-JUL-2012 15:24
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc0713-1.b/FID15ml.m
Cal Date : 13-Jul-2012 16:11 monicah
Curve Type : Average

Calibration File Names:
Level 1: /chem3/pid1.i/vpcc0713-1.b/0713a005.d
Level 2: /chem3/pid1.i/vpcc0713-1.b/0713a006.d
Level 3: /chem3/pid1.i/vpcc0713-1.b/0713a007.d
Level 4: /chem3/pid1.i/vpcc0713-1.b/0713a008.d
Level 5: /chem3/pid1.i/vpcc0713-1.b/0713a009.d
Level 6: /chem3/pid1.i/vpcc0713-1.b/0713a010.d
Level 7: /chem3/pid1.i/vpcc0713-1.b/0713a011.d

Compound	0.000e+00 Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	RRF	% RSD	
18 NWTPHG	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
20 WAGAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
19 AK101	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
21 8015GAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
1 2-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
2 nC6	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUL-2012 12:29
End Cal Date : 13-JUL-2012 15:24
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc0713-1.b/FID15ml.m
Cal Date : 13-Jul-2012 16:11 monicah
Curve Type : Average

Compound	0.000e+00 Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	0.000e+00 Level 7	RRF	% RSD	
3 nC7	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
5 nC8	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
6 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
7 nC9	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
8 nC10-Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
10 1,2,4-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
11 nc11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
12 nC12-Dodecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
13 nC13	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0713-1.b/0713a002.d
Data file 2: /chem3/pid1.i/vpcc0713-2.b/0713a002.d
Method: /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 18-Feb-2012
BETX Ical Date: 13-JUL-2012

ARI ID: RT+ BCAL
Client ID:
Injection Date: 13-JUL-2012 09:59
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.876	0.000	4029	50312	102.5	TFT(Surr)
15.405	0.000	2073	17182	102.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1092660	292423	0.268
8015B 2MP-TMB	(4.21 to 16.22)	2196192	344816	0.157
AK101 nC6-nC10	(4.70 to 15.12)	1767773	250696	0.142
NWTPHG Tol-Nap	(9.80 to 18.92)	1162054	312694	0.269

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

JK 07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.884	-0.004	5066	0.0	TFT(Surr)
15.412	-0.002	8758	0.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.049	-0.005	4319	0.000	Benzene
9.911	-0.008	3974	0.000	Toluene
12.804	-0.011	3603	0.000	Ethylbenzene
12.966	-0.018	7854	0.000	M/P-Xylene
13.917	-0.012	2983	0.000	O-Xylene
4.578	-0.002	715	0.000	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.1/vpcc0713-1.b/0713a002.d

Date : 13-JUL-2012 09:59

Client ID:

Sample Info: RT+ BCAL

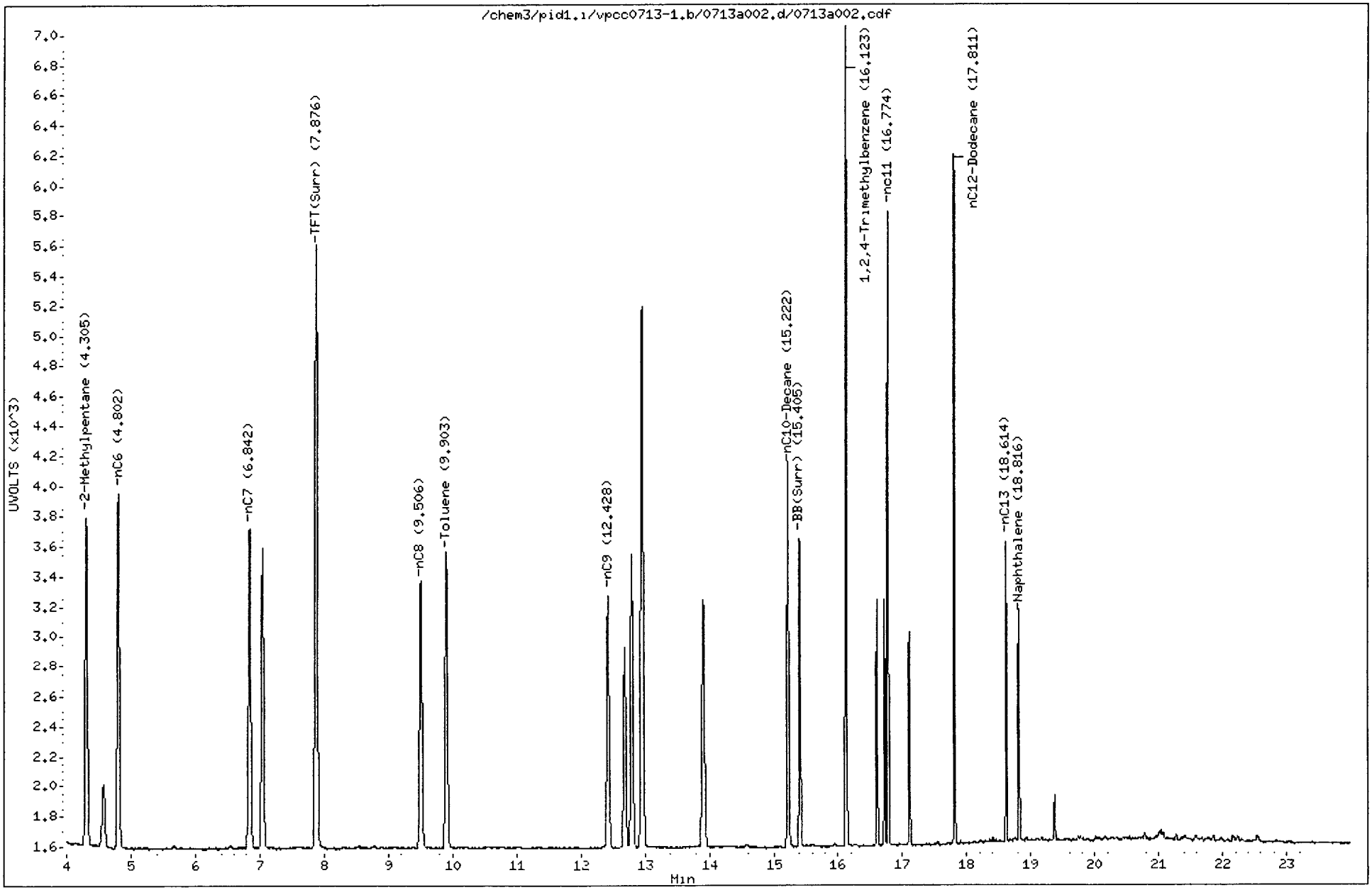
Column phase: RTX 502-2 FID

Instrument: pid1.1

Operator: JR

Column diameter: 0.18

VR50.00462



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0713-1.b/0713a005.d
Data file 2: /chem3/pid1.i/vpcc0713-2.b/0713a005.d
Method: /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 18-Feb-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 0.08 PPM BTEX
Client ID:
Injection Date: 13-JUL-2012 12:29
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.001	939	11506	22.0	TFT(Surr)
15.406	0.002	447	3837	22.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1092660	5511	0.005
8015B 2MP-TMB	(4.21 to 16.22)	2196192	3474	0.002
AK101 nC6-nC10	(4.70 to 15.12)	1767773	2836	0.002
NWTPHG Tol-Nap	(9.80 to 18.92)	1162054	6629	0.006

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

JR 07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	-0.003	1136	22.0	TFT(Surr)
15.413	-0.001	1824	22.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.050	-0.005	77	0.080N	Benzene
9.917	-0.003	81	0.080N	Toluene
12.803	-0.012	58	0.080N	Ethylbenzene
12.967	-0.017	128	0.160N	M/P-Xylene
13.913	-0.015	50	0.080N	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0713-1.b/0713a005.d

Date : 13-JUL-2012 12:29

Client ID:

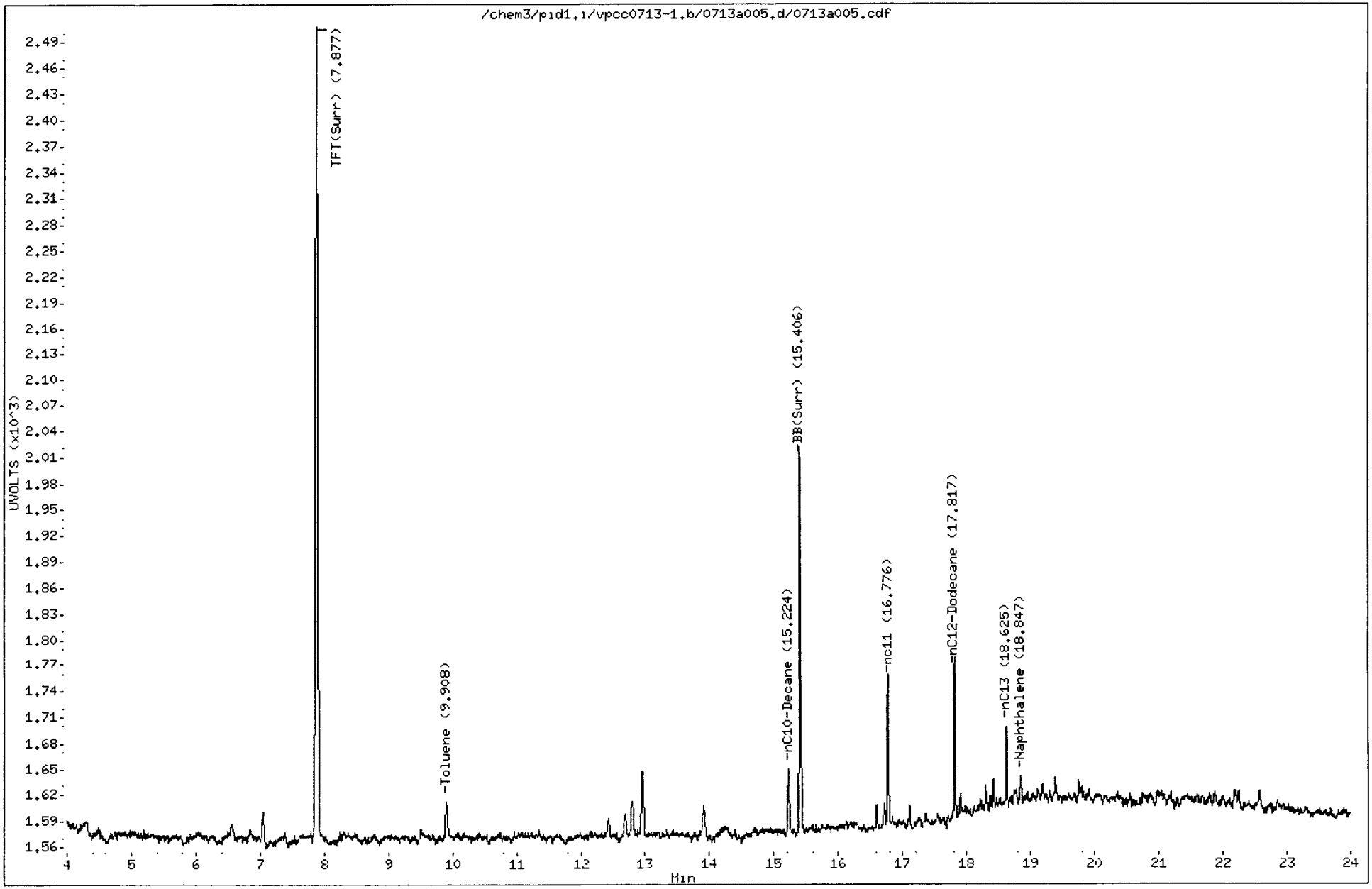
Sample Info: 0.08 PPM BTEX

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0713-1.b/0713a006.d
Data file 2: /chem3/pid1.i/vpcc0713-2.b/0713a006.d
Method: /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 18-Feb-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 0.25 PPM BTEX
Client ID:
Injection Date: 13-JUL-2012 12:58
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.001	1866	23107	43.9	TFT(Surr)
15.406	0.001	937	7892	45.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1092660	9224	0.008
8015B 2MP-TMB	(4.21 to 16.22)	2196192	8619	0.004
AK101 nC6-nC10	(4.70 to 15.12)	1767773	8619	0.005
NWTPHG Tol-Nap	(9.80 to 18.92)	1162054	9491	0.008

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

JK 07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	-0.003	2255	43.8	TFT(Surr)
15.413	-0.001	3799	44.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.050	-0.004	213	0.235	Benzene
9.913	-0.006	203	0.223	Toluene
12.806	-0.009	176	0.246	Ethylbenzene
12.967	-0.017	374	0.483	M/P-Xylene
13.919	-0.010	145	0.241	O-Xylene
4.583	0.004	29	0.250N	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.1/vpcc0713-1.b/0713a006.d

Date : 13-JUL-2012 12:58

Client ID:

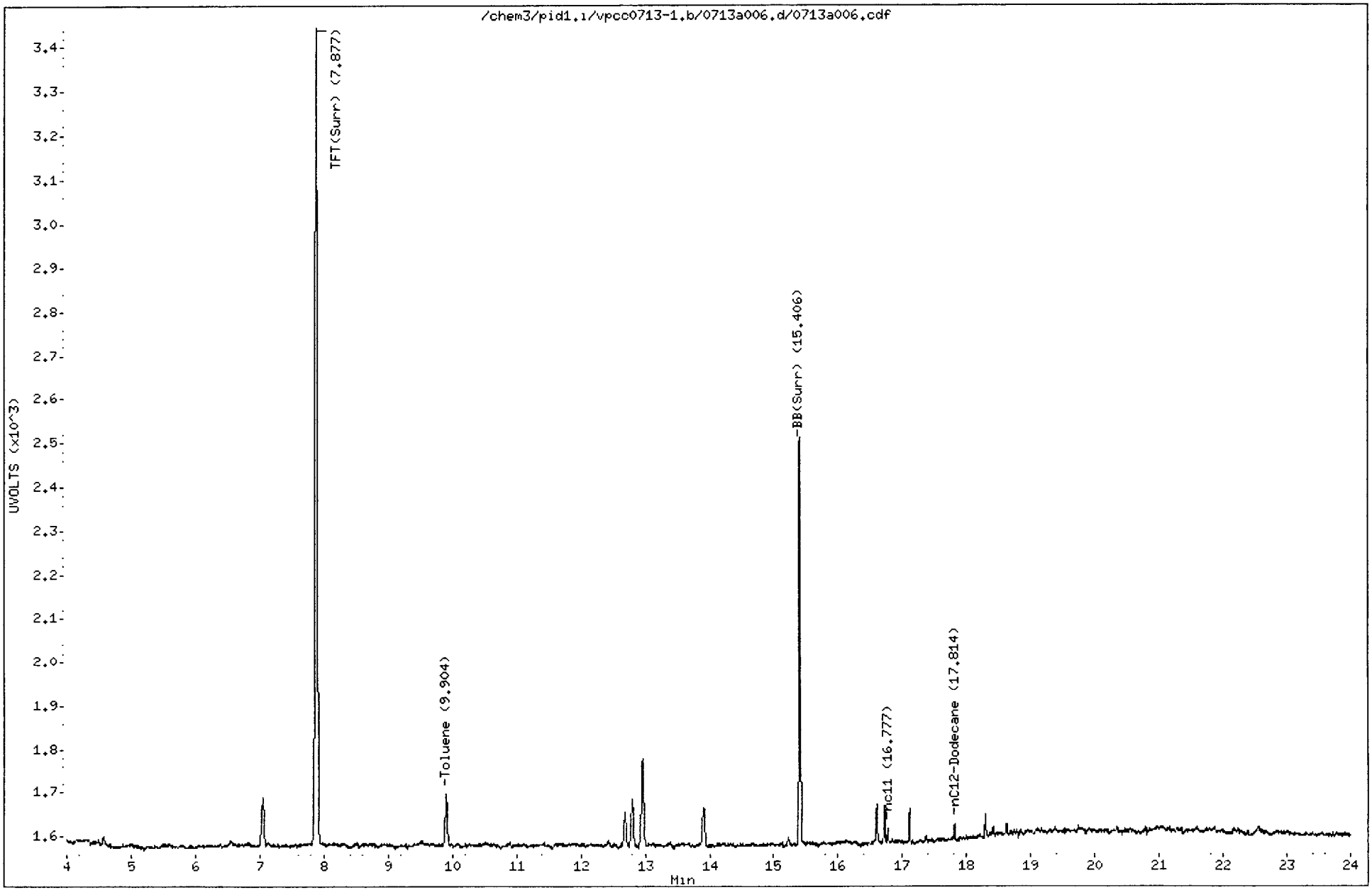
Sample Info: 0.25 PPM BTEX

Column phase: RTX 502-2 FID

Instrument: pid1.1

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0713-1.b/0713a007.d
Data file 2: /chem3/pid1.i/vpcc0713-2.b/0713a007.d
Method: /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 18-Feb-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 1 PPM BTEX
Client ID:
Injection Date: 13-JUL-2012 13:27
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.002	2726	33566	65.0	TFT(Surr)
15.406	0.001	1405	11643	67.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1092660	33378	0.031
8015B 2MP-TMB	(4.21 to 16.22)	2196192	33206	0.015
AK101 nC6-nC10	(4.70 to 15.12)	1767773	32133	0.018
NWTPHG Tol-Nap	(9.80 to 18.92)	1162054	33625	0.029

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	-0.003	3338	65.6	TFT(Surr)
15.413	-0.001	5844	68.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.050	-0.004	835	0.945	Benzene
9.913	-0.006	754	0.877	Toluene
12.806	-0.009	677	0.964	Ethylbenzene
12.967	-0.017	1485	1.945	M/P-Xylene
13.919	-0.009	564	0.956	O-Xylene
4.577	-0.003	127	1.045N	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0713-1.b/0713a007.d

Date : 13-JUL-2012 13:27

Client ID:

Sample Info: 1 PPM BTEX

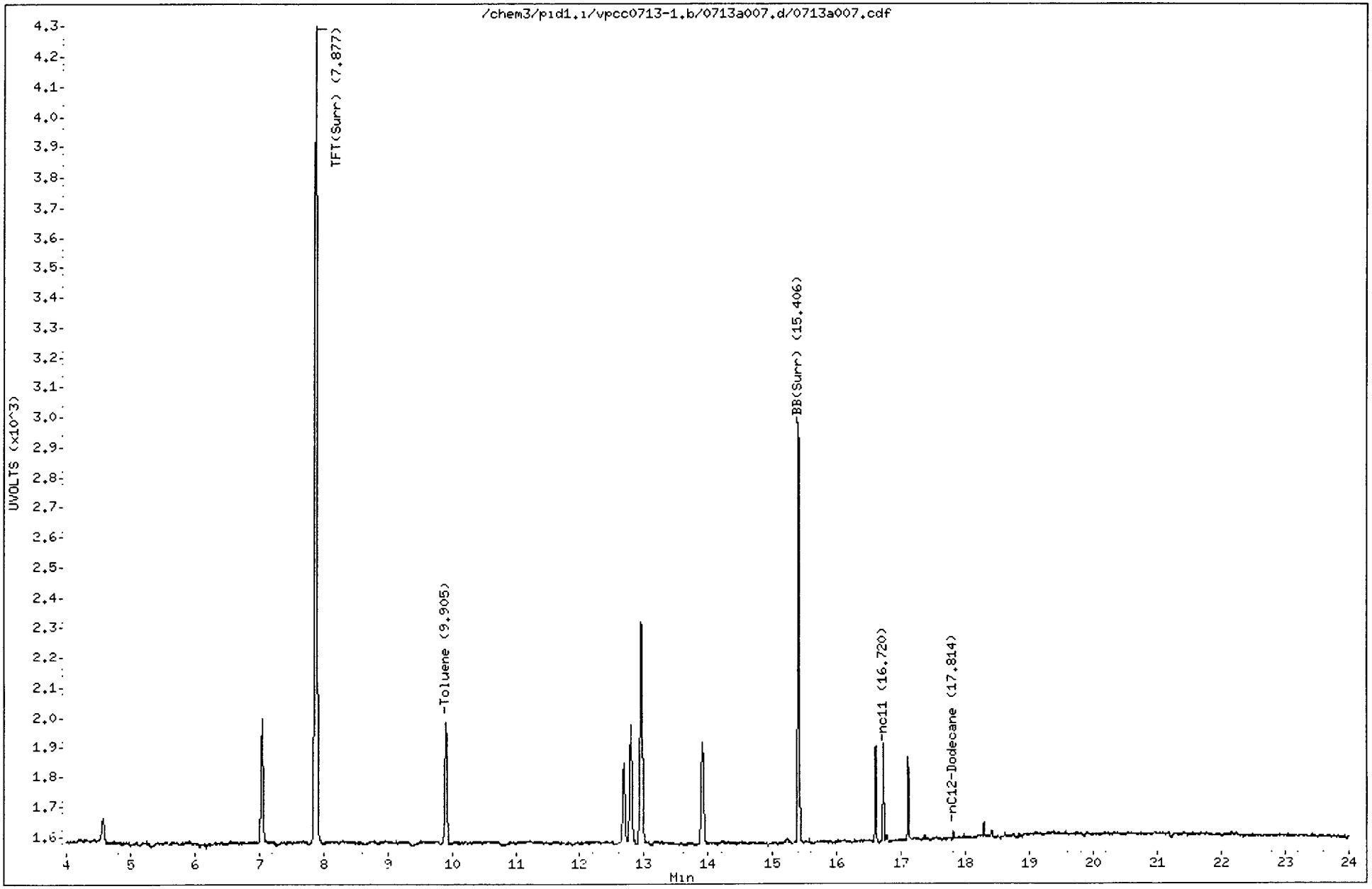
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB50:08103



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0713-1.b/0713a008.d
Data file 2: /chem3/pid1.i/vpcc0713-2.b/0713a008.d
Method: /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 18-Feb-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 5 PPM BTEX
Client ID:
Injection Date: 13-JUL-2012 13:56
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	0.002	3832	47704	93.4	TFT(Surr)
15.405	0.001	1991	16686	96.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1092660	150456	0.138
8015B 2MP-TMB	(4.21 to 16.22)	2196192	150994	0.069
AK101 nC6-nC10	(4.70 to 15.12)	1767773	145339	0.082
NWTPHG Tol-Nap	(9.80 to 18.92)	1162054	150813	0.130

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	-0.002	4749	94.9	TFT(Surr)
15.413	-0.001	8518	99.7	BB(Surr)

7/07/16/12

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	-0.004	4047	4.680	Benzene
9.913	-0.006	3699	4.459	Toluene
12.806	-0.009	3353	4.830	Ethylbenzene
12.967	-0.017	7357	9.724	M/P-Xylene
13.919	-0.010	2802	4.812	O-Xylene
4.579	-0.001	642	5.186	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0713-1.b/0713a008.d

Date : 13-JUL-2012 13:56

Client ID:

Sample Info: 5 PPM BTEX

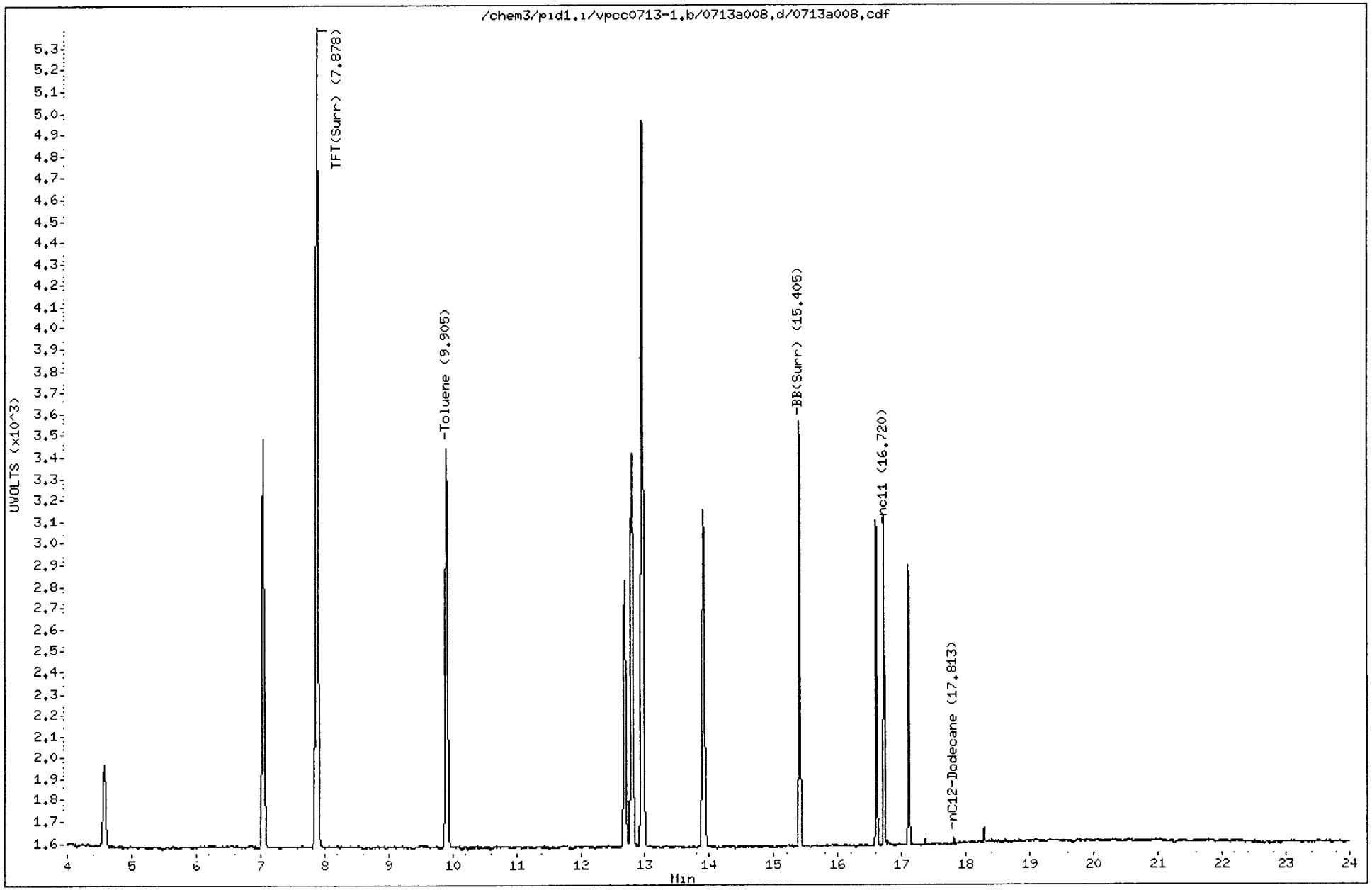
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB50:00418



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0713-1.b/0713a009.d
Data file 2: /chem3/pid1.i/vpcc0713-2.b/0713a009.d
Method: /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 18-Feb-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 25 PPM BTEX
Client ID:
Injection Date: 13-JUL-2012 14:26
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	0.003	5026	62211	124.5	TFT(Surr)
15.406	0.001	2622	21759	128.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1092660	656657	0.601
8015B 2MP-TMB	(4.21 to 16.22)	2196192	660666	0.301
AK101 nC6-nC10	(4.70 to 15.12)	1767773	634956	0.359
NWTPHG Tol-Nap	(9.80 to 18.92)	1162054	656848	0.565

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	-0.002	6325	127.6	TFT(Surr)
15.413	-0.001	11207	131.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	-0.003	18643	22.170	Benzene
9.914	-0.005	17187	21.453	Toluene
12.808	-0.008	15624	22.966	Ethylbenzene
12.970	-0.014	34498	46.416	M/P-Xylene
13.920	-0.008	13096	22.949	O-Xylene
4.579	-0.001	3029	24.598	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0713-1.b/0713a009.d

Date : 13-JUL-2012 14:26

Client ID:

Sample Info: 25 PPM BTEX

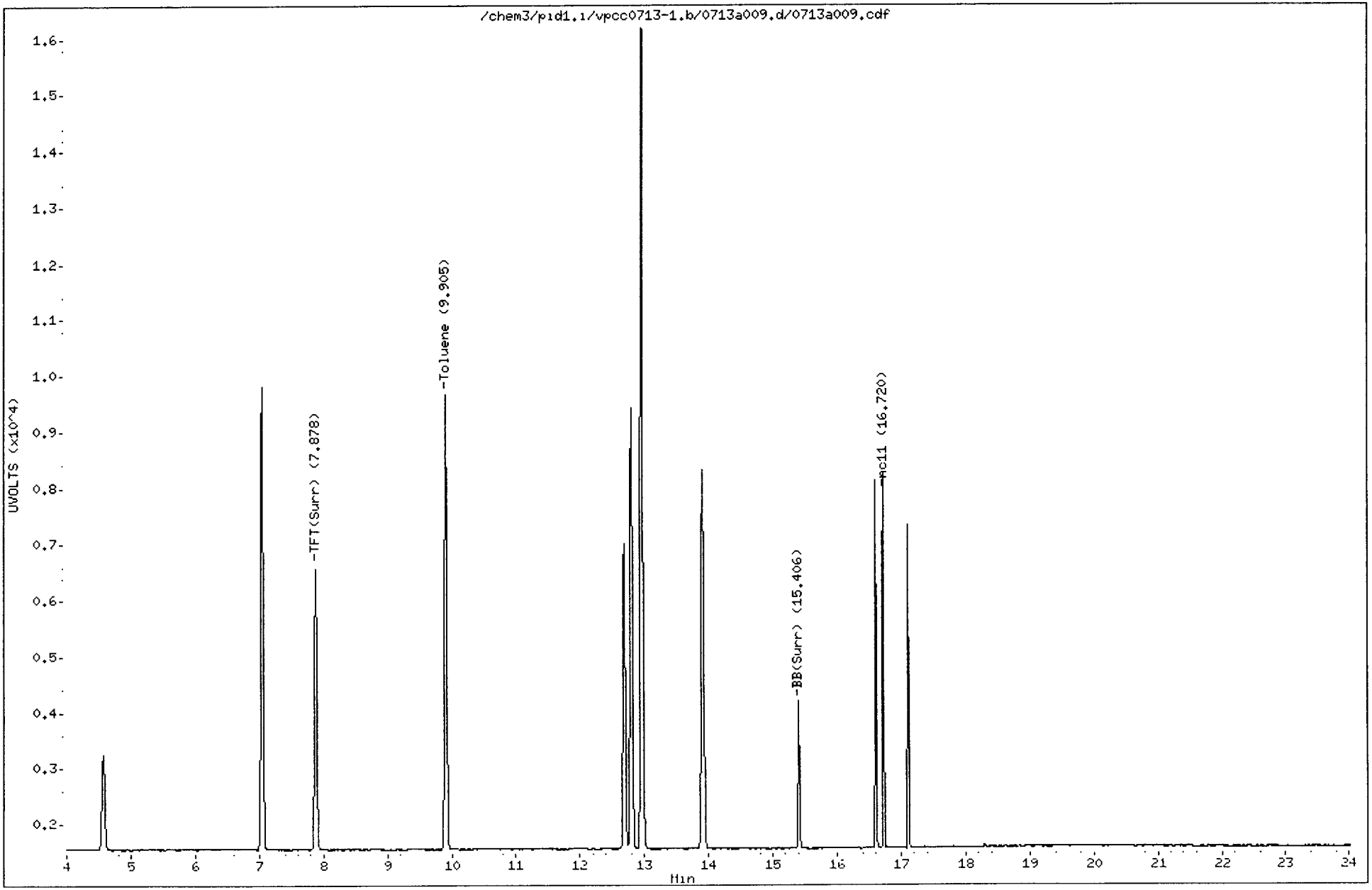
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB50 : 6/11/12



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0713-1.b/0713a010.d
Data file 2: /chem3/pid1.i/vpcc0713-2.b/0713a010.d
Method: /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 18-Feb-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 50 PPM BTEX
Client ID:
Injection Date: 13-JUL-2012 14:55
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.879	0.003	6570	81430	165.1	TFT(Surr)
15.406	0.001	3481	28795	171.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1092660	1264854	1.158
8015B 2MP-TMB	(4.21 to 16.22)	2196192	1272429	0.579
AK101 nC6-nC10	(4.70 to 15.12)	1767773	1221903	0.691
NWTPHG Tol-Nap	(9.80 to 18.92)	1162054	1265342	1.089

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

JK 07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	-0.001	8395	170.8	TFT(Surr)
15.413	-0.001	15143	177.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.053	-0.002	36670	44.556	Benzene
9.916	-0.004	34177	43.730	Toluene
12.810	-0.006	30792	45.988	Ethylbenzene
12.974	-0.009	67070	91.733	M/P-Xylene
13.922	-0.006	25934	46.147	O-Xylene
4.579	-0.001	6128	49.811	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0713-1.b/0713a010.d

Date : 13-JUL-2012 14:55

Client ID:

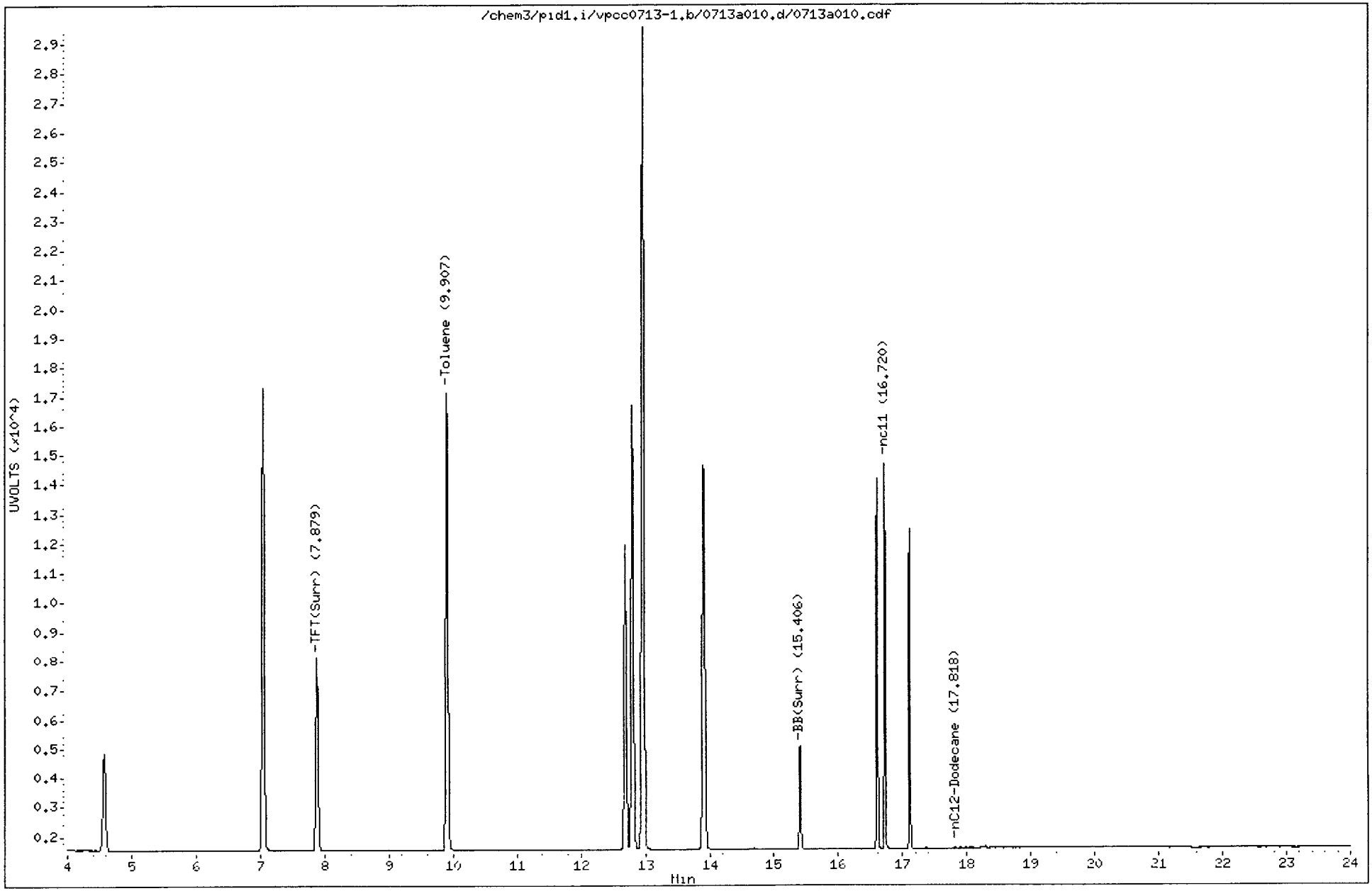
Sample Info: 50 PPM BTEX

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0713-1.b/0713a011.d
Data file 2: /chem3/pid1.i/vpcc0713-2.b/0713a011.d
Method: /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 18-Feb-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 100 PPM BTEX
Client ID:
Injection Date: 13-JUL-2012 15:24
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.004	7266	90307	184.9	TFT(Surr)
15.407	0.002	3848	32284	191.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1092660	2610504	2.389
8015B 2MP-TMB	(4.21 to 16.22)	2196192	2625773	1.196
AK101 nC6-nC10	(4.70 to 15.12)	1767773	2520621	1.426
NWTPHG Tol-Nap	(9.80 to 18.92)	1162054	2610777	2.247

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.000	9376	192.0	TFT(Surr)
15.414	0.000	16908	198.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.055	0.000	77810	95.287	Benzene
9.919	0.000	71950	93.116	Toluene
12.815	0.000	64721	97.124	Ethylbenzene
12.984	0.000	137724	189.946	M/P-Xylene
13.929	0.000	54585	97.529	O-Xylene
4.580	0.000	13102	105.358	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.1/vpcc0713-1.b/0713a011.d

Date : 13-JUL-2012 15:24

Client ID:

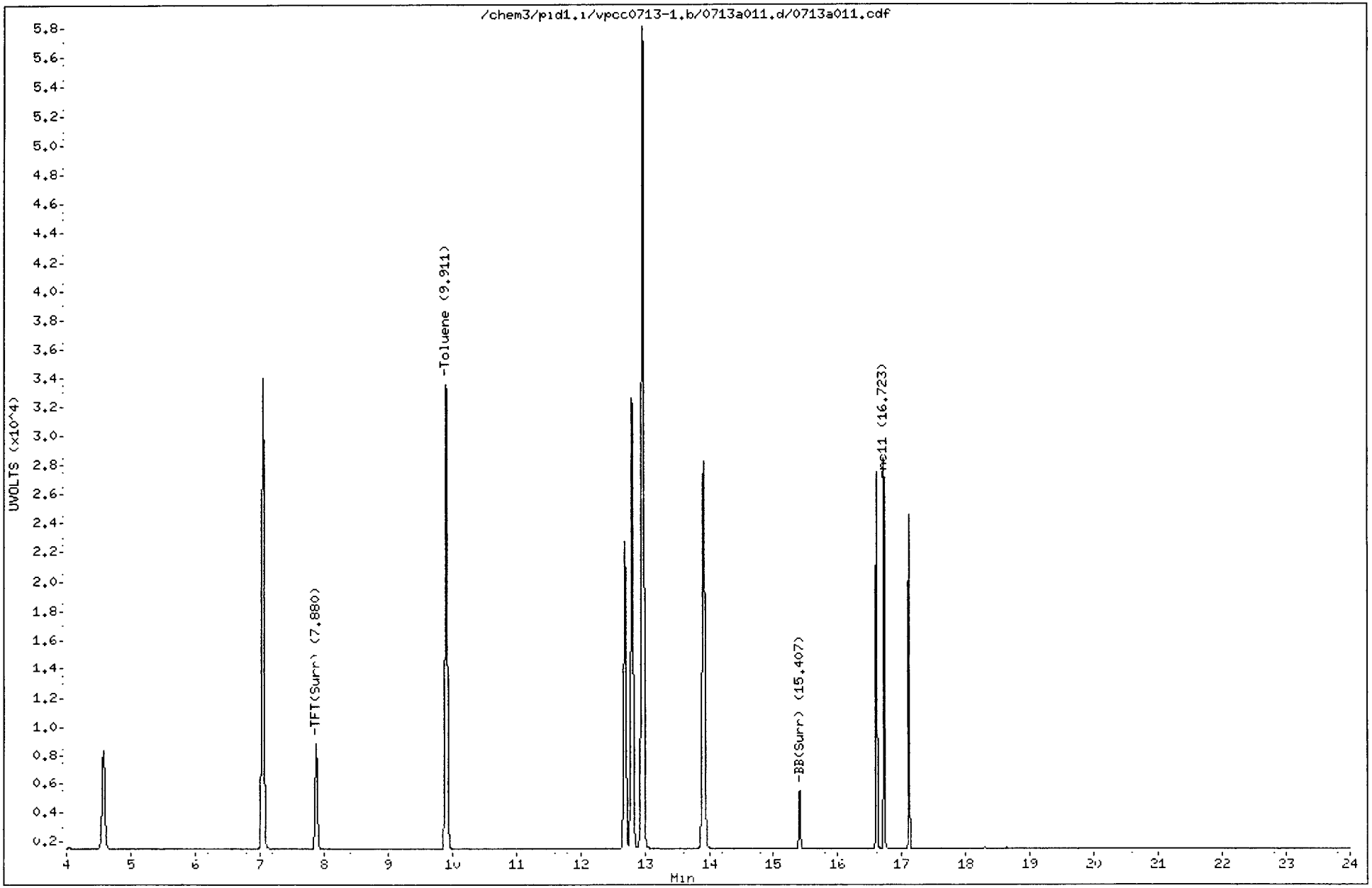
Sample Info: 100 PPM BTEX

Column phase: RTX 502-2 FID

Instrument: pid1.1

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0713-1.b/0713a012.d
Data file 2: /chem3/pid1.i/vpcc0713-2.b/0713a012.d
Method: /chem3/pid1.i/vpcc0713-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 18-Feb-2012
BETX Ical Date: 13-JUL-2012

ARI ID: BTEX ICV
Client ID:
Injection Date: 13-JUL-2012 15:53
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.879	0.003	7482	92604	190.4	TFT(Surr)
15.406	0.002	3990	33202	198.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1092660	305465	0.280
8015B 2MP-TMB	(4.21 to 16.22)	2196192	303815	0.138
AK101 nC6-nC10	(4.70 to 15.12)	1767773	291863	0.165
NWTPHG Tol-Nap	(9.80 to 18.92)	1162054	305731	0.263

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	-0.001	9612	196.9	TFT(Surr)
15.414	-0.001	17404	204.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.052	-0.003	8227	10.075	Benzene
9.914	-0.006	7655	9.907	Toluene
12.807	-0.009	6940	10.415	Ethylbenzene
12.968	-0.016	15165	20.915	M/P-Xylene
13.919	-0.009	5916	10.570	O-Xylene
4.579	0.000	1367	10.993	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0713-1.b/0713a012.d

Date : 13-JUL-2012 15:53

Client ID:

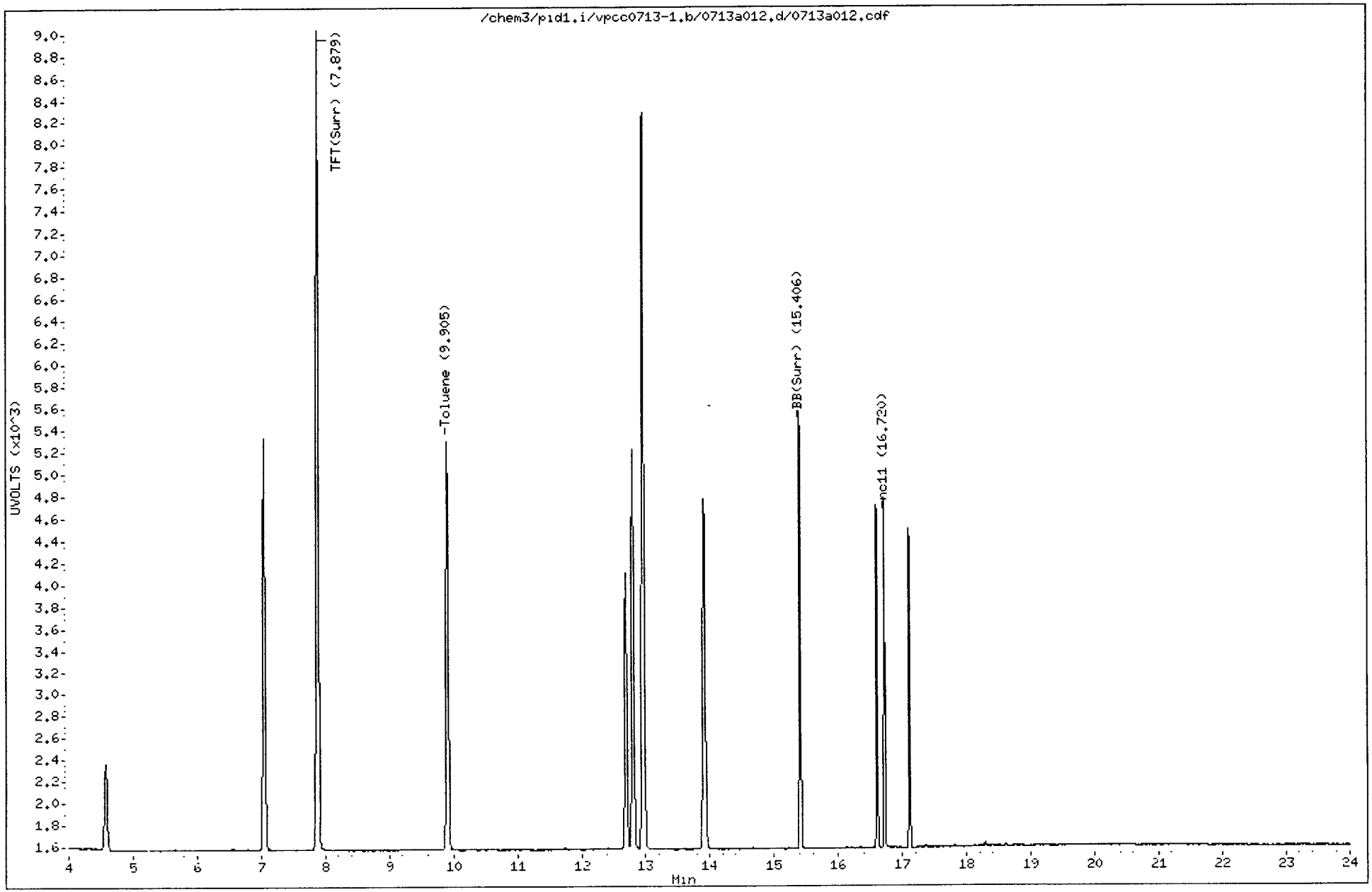
Sample Info: BTEX ICV

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0714-1.b/0714a002.d
Data file 2: /chem3/pid1.i/vpcc0714-2.b/0714a002.d
Method: /chem3/pid1.i/vpcc0714-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: RT+BCAL
Client ID:
Injection Date: 14-JUL-2012 08:32
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	0.000	3852	47942	98.0	TFT(Surr)
15.405	0.000	1971	16357	97.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1084751	556369	0.513
8015B 2MP-TMB	(4.21 to 16.22)	2234698	665428	0.298
AK101 nC6-nC10	(4.70 to 15.12)	1783632	475945	0.267
NWTPHG Tol-Nap	(9.80 to 18.91)	1149637	589208	0.513

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.000	4825	98.8	TFT(Surr)
15.414	0.000	8331	97.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.052	0.000	7907	9.683	Benzene
9.914	0.000	7250	9.383	Toluene
12.808	0.000	6643	9.969	Ethylbenzene
12.969	0.000	14501	19.999	M/P-Xylene
13.920	0.000	5561	9.936	O-Xylene
4.579	0.000	1396	11.226	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.1/vpcc0714-1.b/0714a002.d

Date : 14-JUL-2012 08:32

Client ID:

Sample Info: RT+BCAL

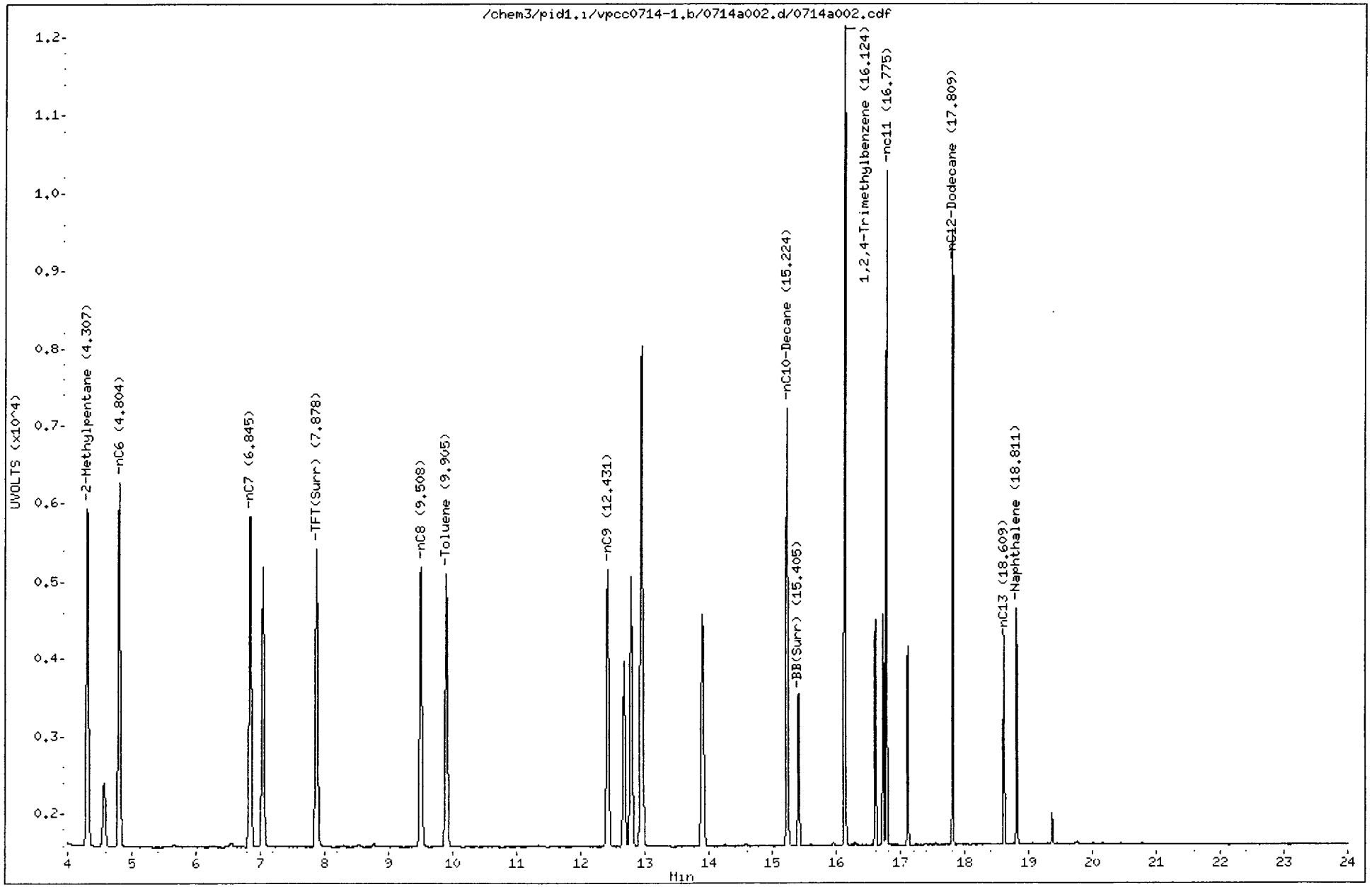
Column phase: RTX 502-2 FID

Instrument: pid1.1

Operator: MH

Column diameter: 0.18

VB50 : 0611 20



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0714-1.b/0714a003.d
Data file 2: /chem3/pid1.i/vpcc0714-2.b/0714a003.d
Method: /chem3/pid1.i/vpcc0714-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 0.03 PPM GAS
Client ID:
Injection Date: 14-JUL-2012 09:01
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.879	0.001	3940	49670	100.2	TFT(Surr)
15.406	0.001	2049	17630	101.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1084751	42084	0.039
8015B 2MP-TMB	(4.21 to 16.22)	2234698	74592	0.033
AK101 nC6-nC10	(4.70 to 15.12)	1783632	56485	0.032
NWTPHG Tol-Nap	(9.80 to 18.91)	1149637	47875	0.042

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.000	4844	99.2	TFT(Surr)
15.414	0.000	8564	100.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
9.914	0.000	726	0.940	Toluene
12.807	0.000	179	0.269	Ethylbenzene
12.971	0.002	747	1.030	M/P-Xylene
13.920	0.000	253	0.452	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0714-1.b/0714a003.d

Date : 14-JUL-2012 09:01

Client ID:

Sample Info: 0.03 PPM GAS

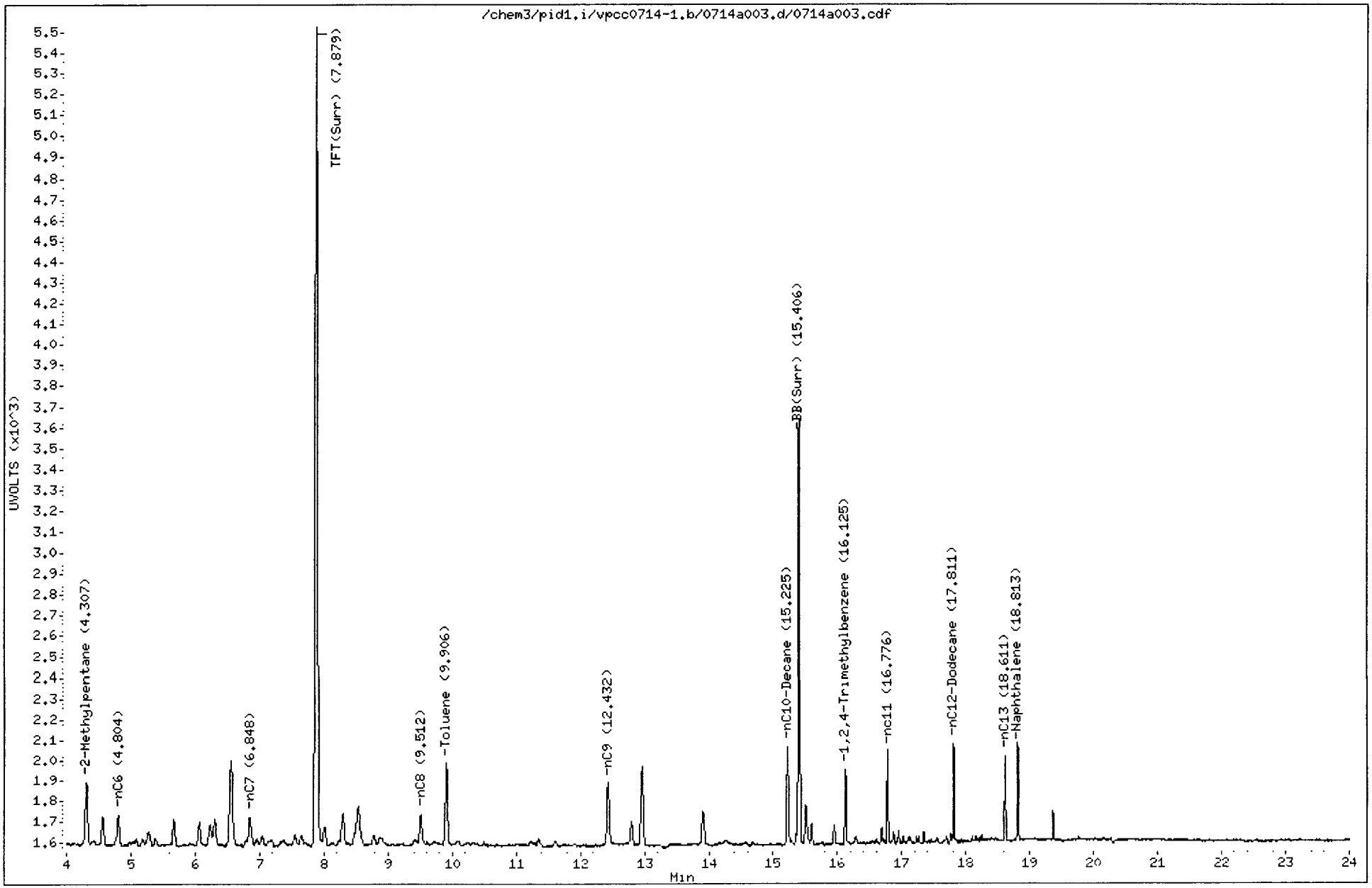
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: MH

Column diameter: 0.18

VB50 : 604422



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0714-1.b/0714a004.d
Data file 2: /chem3/pid1.i/vpcc0714-2.b/0714a004.d
Method: /chem3/pid1.i/vpcc0714-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 0.1 PPM GAS
Client ID:
Injection Date: 14-JUL-2012 09:30
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.879	0.000	4057	52258	103.2	TFT(Surr)
15.406	0.000	2124	17989	105.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1084751	108742	0.100
8015B 2MP-TMB	(4.21 to 16.22)	2234698	236218	0.106
AK101 nC6-nC10	(4.70 to 15.12)	1783632	189898	0.106
NWTPHG Tol-Nap	(9.80 to 18.91)	1149637	111888	0.097

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

MA 11/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.000	5033	103.1	TFT(Surr)
15.413	0.000	8905	104.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	-0.001	256	0.313	Benzene
9.914	0.000	2578	3.336	Toluene
12.807	-0.001	663	0.995	Ethylbenzene
12.970	0.002	2679	3.695	M/P-Xylene
13.920	0.000	925	1.653	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0714-1.b/0714a004.d

Date : 14-JUL-2012 09:30

Client ID:

Sample Info: 0.1 PPM GAS

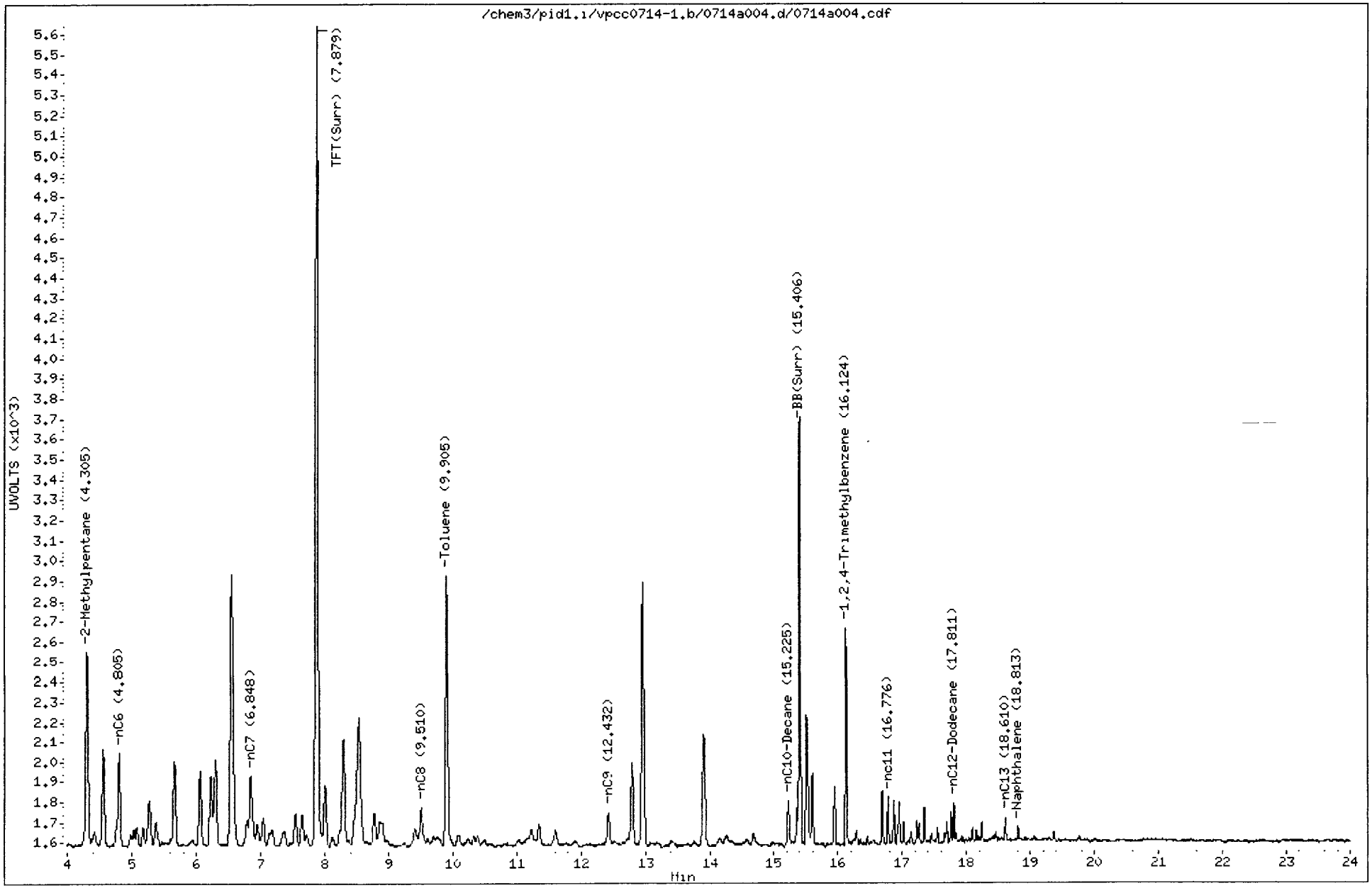
Instrument: pid1.i

Operator: MH

Column phase: RTX 502-2 FID

Column diameter: 0.18

VB50:0714



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0714-1.b/0714a005.d
Data file 2: /chem3/pid1.i/vpcc0714-2.b/0714a005.d
Method: /chem3/pid1.i/vpcc0714-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 0.25 PPM GAS
Client ID:
Injection Date: 14-JUL-2012 10:00
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	0.002	4182	56303	106.4	TFT(Surr)
15.407	0.002	2186	18675	108.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1084751	248984	0.230
8015B 2MP-TMB	(4.21 to 16.22)	2234698	554393	0.248
AK101 nC6-nC10	(4.70 to 15.12)	1783632	449295	0.252
NWTPHG Tol-Nap	(9.80 to 18.91)	1149637	257813	0.224

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	5152	105.5	TFT(Surr)
15.415	0.001	9169	107.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.053	0.001	655	0.802	Benzene
9.916	0.001	6544	8.469	Toluene
12.808	0.000	1658	2.488	Ethylbenzene
12.972	0.003	6744	9.301	M/P-Xylene
13.921	0.001	2346	4.192	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0714-1.b/0714a005.d

Date : 14-JUL-2012 10:00

Client ID:

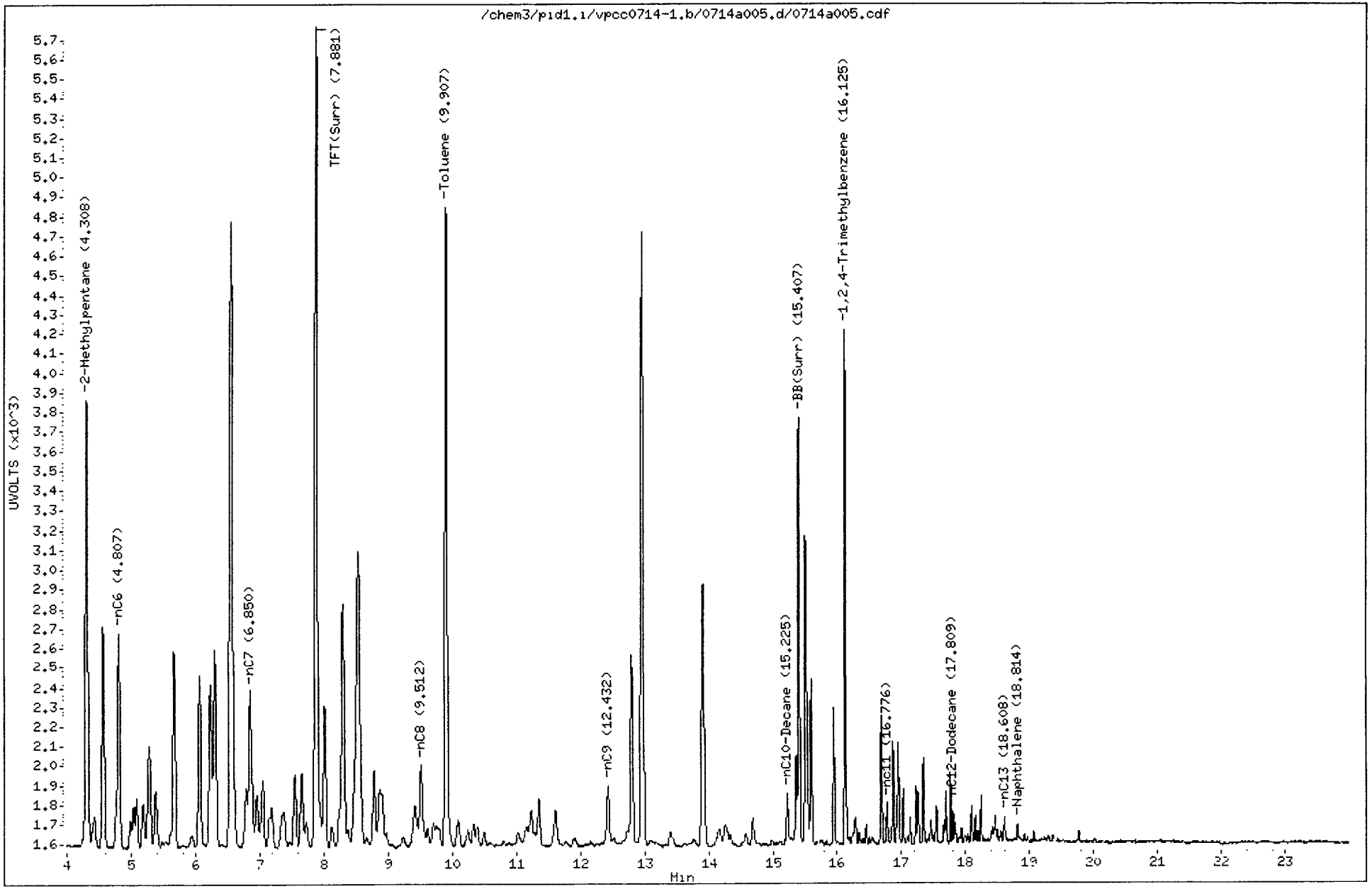
Sample Info: 0.25 PPM GAS

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: MH

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0714-1.b/0714a006.d
Data file 2: /chem3/pid1.i/vpcc0714-2.b/0714a006.d
Method: /chem3/pid1.i/vpcc0714-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 1 PPM GAS
Client ID:
Injection Date: 14-JUL-2012 10:29
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	0.000	4292	60465	109.2	TFT(Surr)
15.406	0.001	2146	18731	106.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1084751	923401	0.851
8015B 2MP-TMB	(4.21 to 16.22)	2234698	1989000	0.890
AK101 nC6-nC10	(4.70 to 15.12)	1783632	1607190	0.901
NWTPHG Tol-Nap	(9.80 to 18.91)	1149637	964287	0.839

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.001	5143	105.3	TFT(Surr)
15.415	0.001	8988	105.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.053	0.001	2503	3.065	Benzene
9.917	0.002	25054	32.424	Toluene
12.809	0.001	6427	9.645	Ethylbenzene
12.973	0.005	25857	35.661	M/P-Xylene
13.922	0.002	8998	16.077	O-Xylene
4.569	-0.010	537	4.318	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0714-1.b/0714a006.d

Date : 14-JUL-2012 10:29

Client ID:

Sample Info: 1 PPM GAS

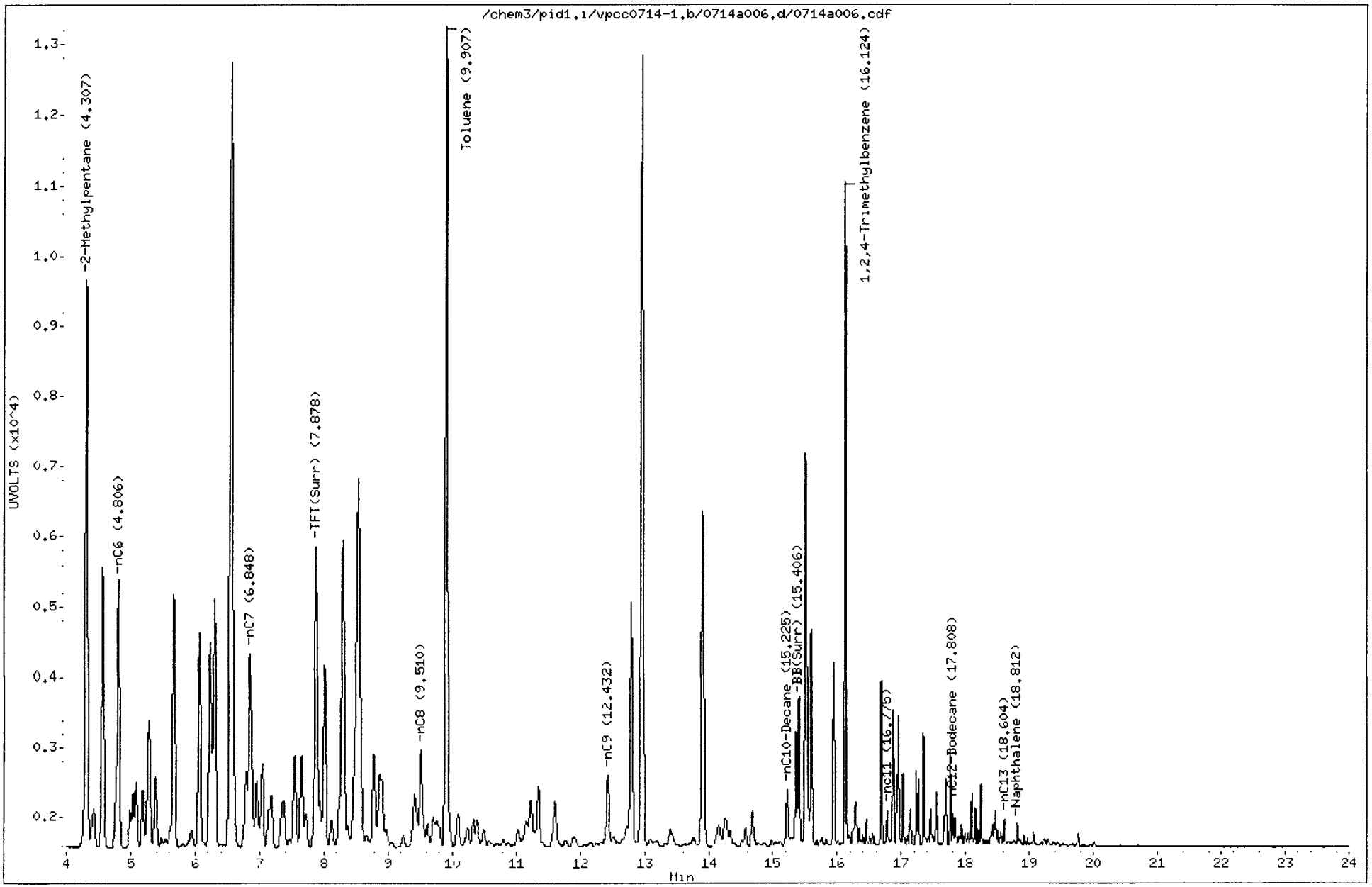
Instrument: pid1.i

Operator: MH

Column phase: RTX 502-2 FID

Column diameter: 0.18

VB50 : 06128



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0714-1.b/0714a007.d
Data file 2: /chem3/pid1.i/vpcc0714-2.b/0714a007.d
Method: /chem3/pid1.i/vpcc0714-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 2.5 PPM GAS
Client ID:
Injection Date: 14-JUL-2012 10:58
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	-0.001	4879	76521	124.1	TFT(Surr)
15.407	0.001	2233	19700	110.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1084751	2637920	2.432
8015B 2MP-TMB	(4.21 to 16.22)	2234698	5509254	2.465
AK101 nC6-nC10	(4.70 to 15.12)	1783632	4446759	2.493
NWTPHG Tol-Nap	(9.80 to 18.91)	1149637	2752072	2.394

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

10/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.000	5494	112.5	TFT(Surr)
15.414	0.001	9022	106.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.054	0.002	7060	8.646	Benzene
9.920	0.005	70212	90.867	Toluene
12.810	0.002	18230	27.357	Ethylbenzene
12.978	0.010	72343	99.774	M/P-Xylene
13.924	0.004	25137	44.913	O-Xylene
4.572	-0.007	1472	11.837	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0714-1.b/0714a007.d

Date : 14-JUL-2012 10:58

Client ID:

Sample Info: 2.5 PPM GAS

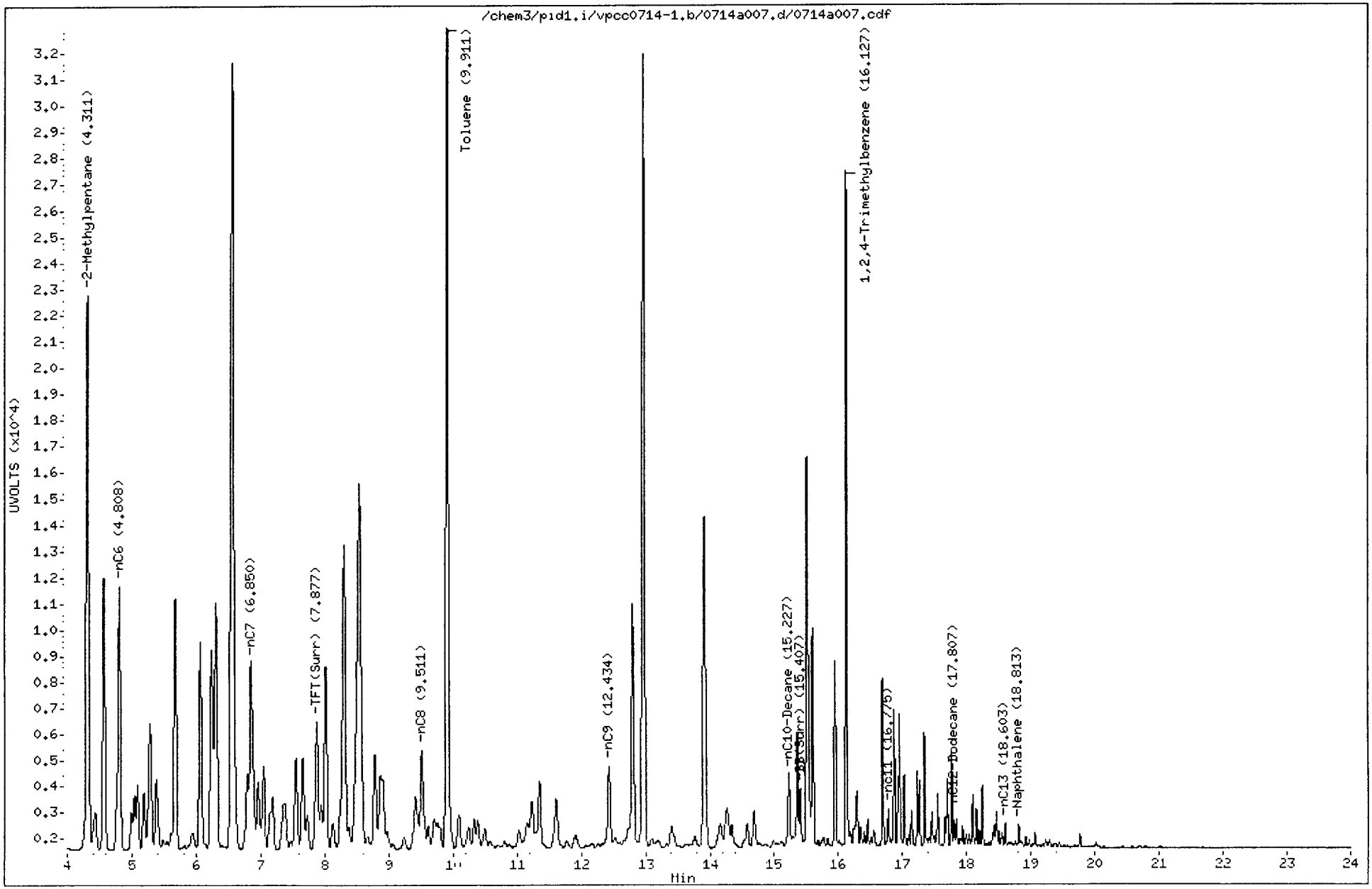
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: MH

Column diameter: 0.18

VB50 : 00130



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0714-1.b/0714a008.d
Data file 2: /chem3/pid1.i/vpcc0714-2.b/0714a008.d
Method: /chem3/pid1.i/vpcc0714-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: 5.0 PPM GAS
Client ID:
Injection Date: 14-JUL-2012 11:28
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.875	-0.003	6360	104890	161.8	TFT(Surr)
15.408	0.003	2606	23290	129.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1084751	5218912	4.811
8015B 2MP-TMB	(4.21 to 16.22)	2234698	10746736	4.809
AK101 nC6-nC10	(4.70 to 15.12)	1783632	8684544	4.869
NWTPHG Tol-Nap	(9.80 to 18.91)	1149637	5433668	4.726

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/14/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	-0.001	6582	134.8	TFT(Surr)
15.415	0.001	10176	119.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.056	0.004	13749	16.837	Benzene
9.925	0.011	134291	173.797	Toluene
12.814	0.006	35049	52.597	Ethylbenzene
12.987	0.018	136911	188.825	M/P-Xylene
13.929	0.010	49459	88.370	O-Xylene
4.576	-0.002	2764	22.226	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0714-1.b/0714a008.d

Date : 14-JUL-2012 11:28

Client ID:

Sample Info: 5.0 PPM GAS

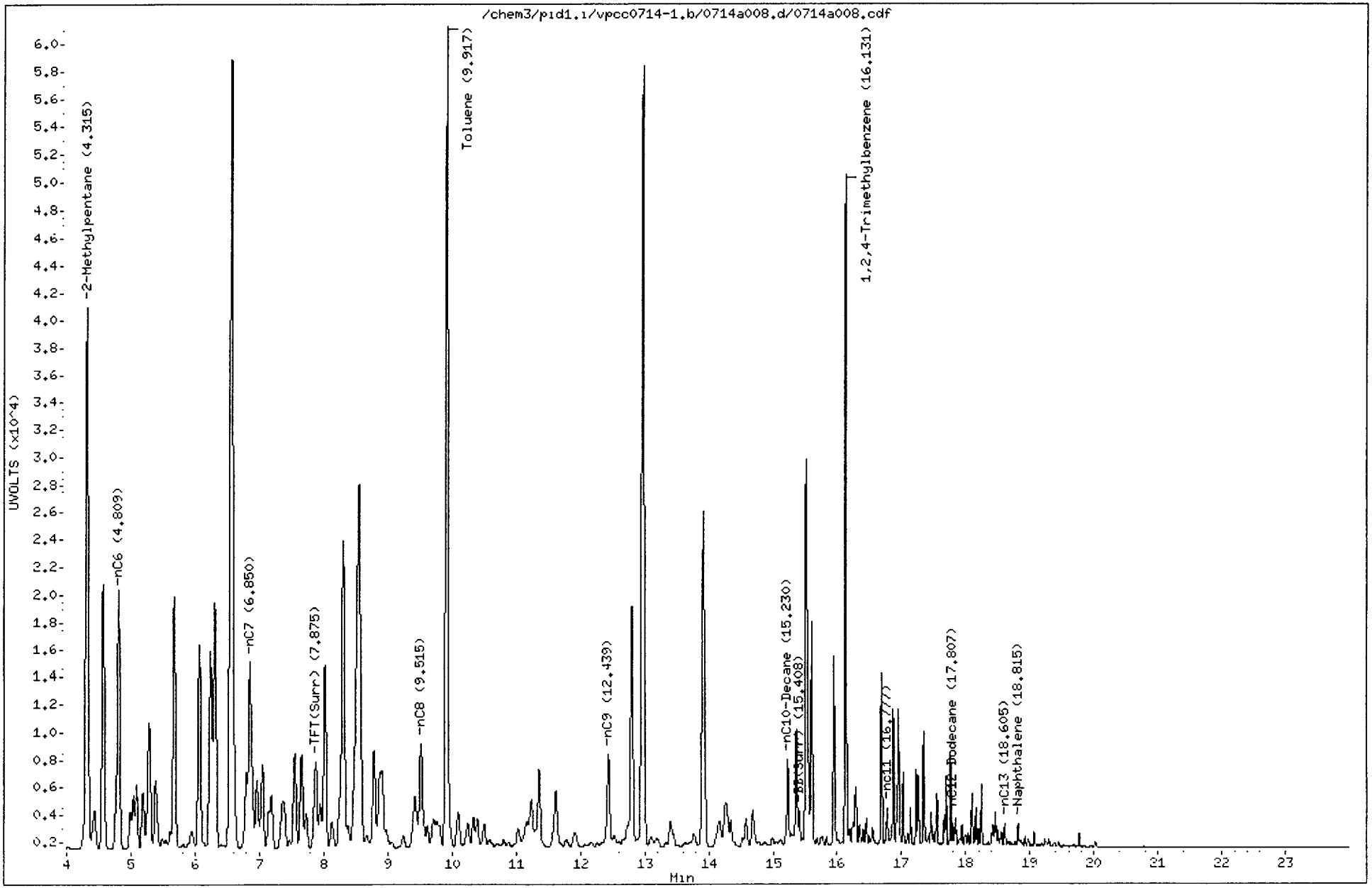
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: MH

Column diameter: 0.18

V850 00142



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0714-1.b/0714a009.d
Data file 2: /chem3/pid1.i/vpcc0714-2.b/0714a009.d
Method: /chem3/pid1.i/vpcc0714-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: GAS ICV
Client ID:
Injection Date: 14-JUL-2012 11:57
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.002	3998	53274	101.7	TFT(Surr)
15.407	0.002	2126	18688	105.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	1084751	1107949	1.021
8015B 2MP-TMB	(4.21 to 16.22)	2234698	2219627	0.993
AK101 nC6-nC10	(4.70 to 15.12)	1783632	1651193	0.926
NWTPHG Tol-Nap	(9.80 to 18.91)	1149637	1155762	1.005

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	4896	100.3	TFT(Surr)
15.414	0.001	8931	105.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.054	0.002	5402	6.615	Benzene
9.918	0.004	44564	57.674	Toluene
12.809	0.001	8003	12.010	Ethylbenzene
12.974	0.005	32058	44.214	M/P-Xylene
13.921	0.002	9017	16.111	O-Xylene
4.581	0.002	12193	98.049	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0714-1.b/0714a009.d

Page 1

Date : 14-JUL-2012 11:57

Client ID:

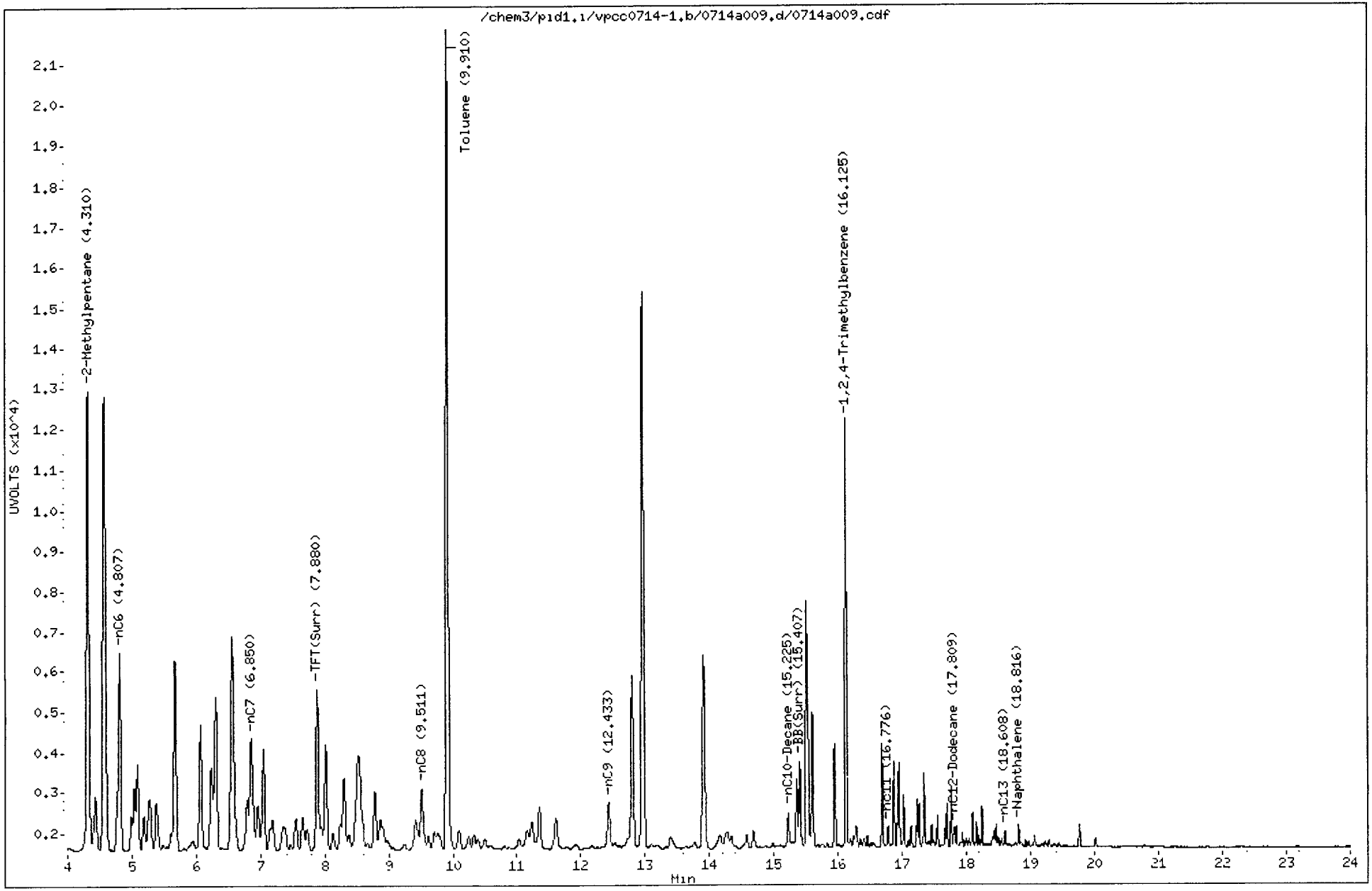
Instrument: pid1.i

Sample Info: GAS ICV

Operator: MH

Column phase: RTX 502-2 FID

Column diameter: 0.18



TPHG/BETX Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: VB50

Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Analyst Notes / Corrective Action Log

ARI Project ID: VB50 Client ID: central waterfront

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.2) **710S**(RSK-175)

Parameter(s): gas btex

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6 FINN-5

Purge Volume (mL) 15mL Curve Date: 07/13 & 07/14 Analysis Start Date: 07/15/12

pH ≤ 2.0	YES / NO / NA	Method Blank In Control?	YES / NO
BFB Tune Meets Criteria?	YES / NO / NA	LCS / LCSD Recovery In Control?	YES / NO
Internal Standard Meets Criteria?	YES / NO / NA	Surrogate Recovery In Control?	YES / NO
ICal acceptable?	YES / NO	CCal acceptable?	YES / NO
Q flag applied?	YES / NO / NA	Q flag applied?	YES / NO / NA
Manual Integrations for ICal?	YES / NO	Manual Integrations for Samples?	Yes / NO
Special Analysis Criteria Met?	YES / NO / NA		

Bubbles/Headspace: None SM (≤ 2mm •) PB (2-4mm) LG (> 4mm •) Head Space

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary): Sample E, F, H & Q have large bubbles 7/17/12

Additional Details on Reverse: Yes / No

Analyst: _____ **Date:** 07/17/12

Reviewer: _____ **Date:** 7/17

Analytical Resources Inc.: Organics Instrument Log

PID-1 Serial No.: 2750A-17141

Date: 07/15/12 Analysis: TPHG Analyst: JL

Column 1 Serial No.: 821726 Column Type: RTX-502.2 07/16/12

Column 2 Serial No.: — Column Type: —

GC Method: BTEX ICal Date: 07/13 & 07/14 Injection Volume: 15 mL

IS	Ical/Ccal	ICV
VW746-3	VW726-1 VW737-3 VW745-3	VW745-3

Document All Maintenance Tasks In StarLIMS

	Time	Filename	LabID	ClientID	Vial#	pH	DF
1	0940	0715a001.d	RINSE				1
2	1009	0715a002.d	RT+BCAL				1
3	1038	0715a003.d	GCAL#1				1
4	1108	0715a004.d	LCS0715				1
5	1137	0715a005.d	LCSD0715				1
6	1206	0715a006.d	LCS0715				1
7	1235	0715a007.d	LCSD0715				1
8	1304	0715a008.d	MB0715				1
9	1432	0715a009.d	VB50Emisinj				1
10	1502	0715a010.d	VB50Fmisinj				1
11	1551	0715a011.d	RINSE				1
12	1620	0715a012.d	BCAL#2				1
13	1650	0715a013.d	GCAL#2				1
14	1719	0715a014.d	VB50E		/	/	1
15	1748	0715a015.d	VB50F		/	/	1
16	1817	0715a016.d	VB50H		/	/	1
17	1847	0715a017.d	VB50N		/	/	1
18	1916	0715a018.d	VB50Q		/	/	1
19	1945	0715a019.d	BCAL#3				1
20	2014	0715a020.d	GCAL#3				1
21	2044	0715a021.d	VB50A		/	/	1
22	2113	0715a022.d	VB50B		/	/	1
24	2211	0715a024.d	VB50D		/	/	1
25	2240	0715a025.d	VB50G		/	/	1
26	2310	0715a026.d	VB50I		2	/	1
27	2339	0715a027.d	VB50J		/	/	1
28	0008	0715a028.d	VB50K		/	/	1
29	0037	0715a029.d	VB50L		/	/	1
30	0107	0715a030.d	VB50M		/	/	1
31	0136	0715a031.d	BCAL#4				1
32	0205	0715a032.d	GCAL#4				1
33	0234	0715a033.d	VB50O		/	/	1
34	0304	0715a034.d	VB50P		/	/	1
35	0333	0715a035.d	BCAL#5				1
36	0402	0715a036.d	GCAL#5				1

JL 07/16/12.

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a002.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a002.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: RT+BCAL
Client ID:
Injection Date: 15-JUL-2012 10:09
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	3860	47999	98.2	TFT(Surr)
15.407	0.000	1999	16556	99.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	277541	0.256
8015B 2MP-TMB	(4.21 to 16.22)	2234698	332170	0.149
AK101 nC6-nC10	(4.71 to 15.12)	1783632	235673	0.132
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	299670	0.261

07/16/12

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.001	4799	98.3	TFT(Surr)
15.414	0.001	8400	98.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.054	0.001	3720	4.556	Benzene
9.915	0.001	3368	4.359	Toluene
12.808	0.000	3072	4.610	Ethylbenzene
12.969	0.000	6679	9.212	M/P-Xylene
13.920	0.000	2539	4.537	O-Xylene
4.580	0.002	655	5.267	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a002.d

Date : 15-JUL-2012 10:09

Client ID:

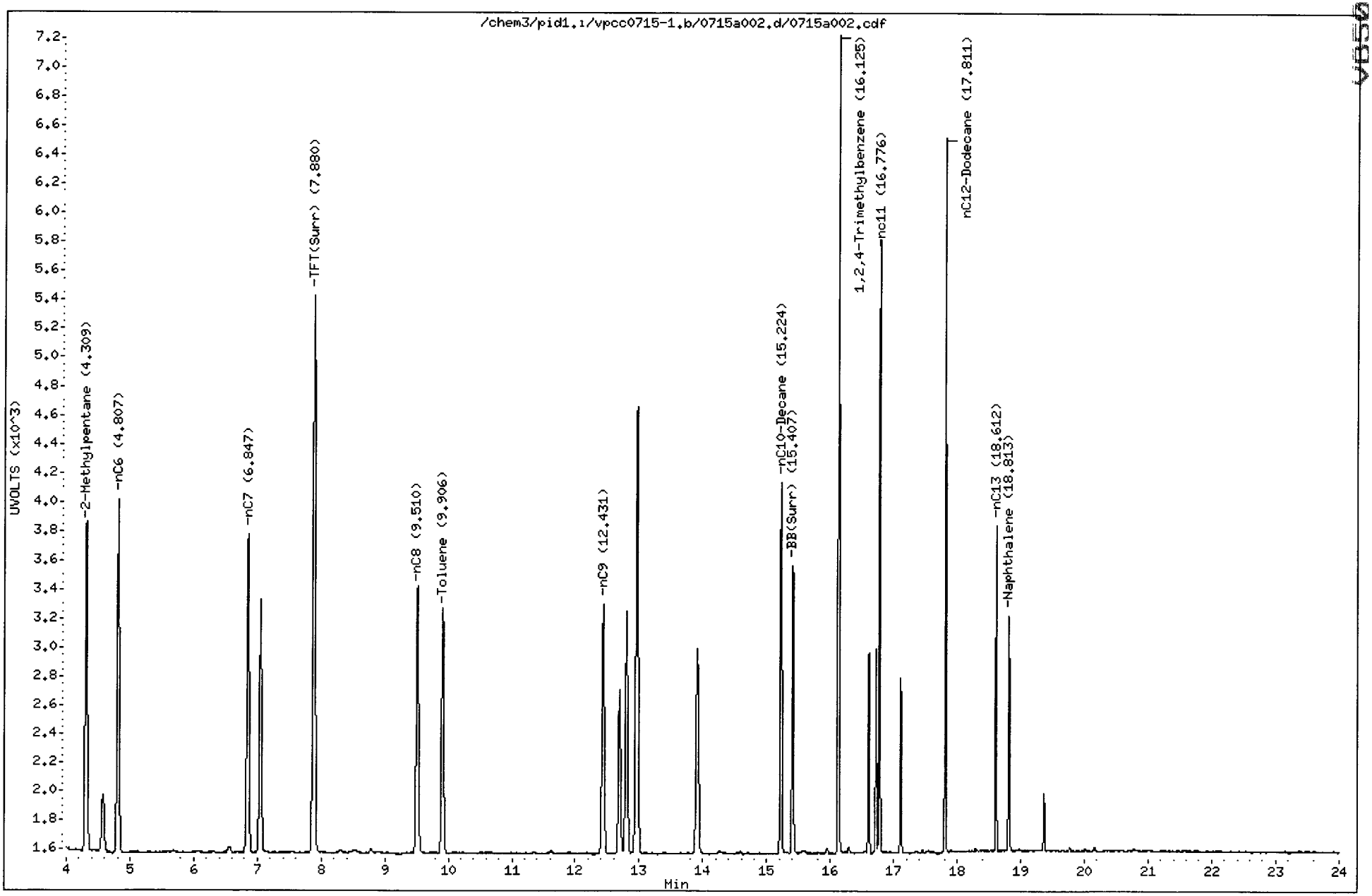
Sample Info: RT+BCAL

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a003.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a003.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: GCAL#1
Client ID:
Injection Date: 15-JUL-2012 10:38
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.879	-0.002	4447	63346	113.1	TFT(Surr)
15.407	0.000	2160	19170	107.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	1109904	1.023
8015B 2MP-TMB	(4.21 to 16.22)	2234698	2411357	1.079
AK101 nC6-nC10	(4.71 to 15.12)	1783632	1953430	1.095
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	1160496	1.009

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.001	5287	108.3	TFT(Surr)
15.414	0.001	8906	104.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.053	0.001	2977	3.646	Benzene
9.917	0.002	29544	38.235	Toluene
12.808	0.000	7524	11.291	Ethylbenzene
12.974	0.005	30403	41.931	M/P-Xylene
13.922	0.002	10524	18.804	O-Xylene
4.569	-0.010	668	5.372	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a003.d

Date : 15-JUL-2012 10:38

Client ID:

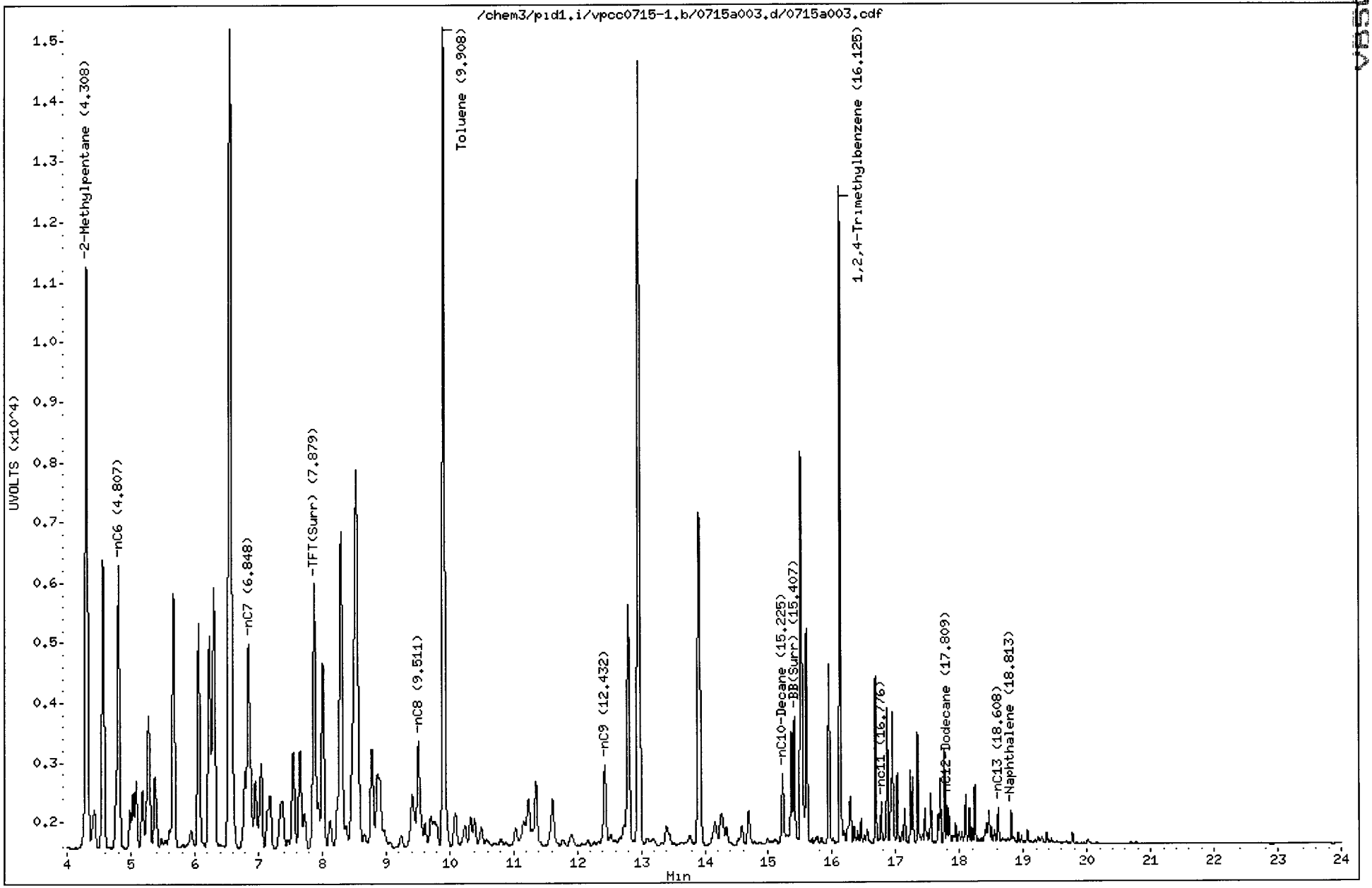
Sample Info: GCAL#1

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a006.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a006.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: LCS0715
Client ID:
Injection Date: 15-JUL-2012 12:06
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	-0.002	4268	61458	108.6	TFT(Surr)
15.406	0.000	2110	19052	104.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	1108746	1.022
8015B 2MP-TMB	(4.21 to 16.22)	2234698	2369782	1.060
AK101 nC6-nC10	(4.71 to 15.12)	1783632	1915765	1.074
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	1157242	1.007

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.000	5113	104.7	TFT(Surr)
15.414	0.000	8808	103.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.052	0.000	3054	3.740	Benzene
9.916	0.002	30100	38.955	Toluene
12.808	0.000	7705	11.563	Ethylbenzene
12.973	0.005	30791	42.466	M/P-Xylene
13.921	0.002	10718	19.150	O-Xylene
4.568	-0.011	657	5.283	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a006.d

Date : 15-JUL-2012 12:06

Client ID:

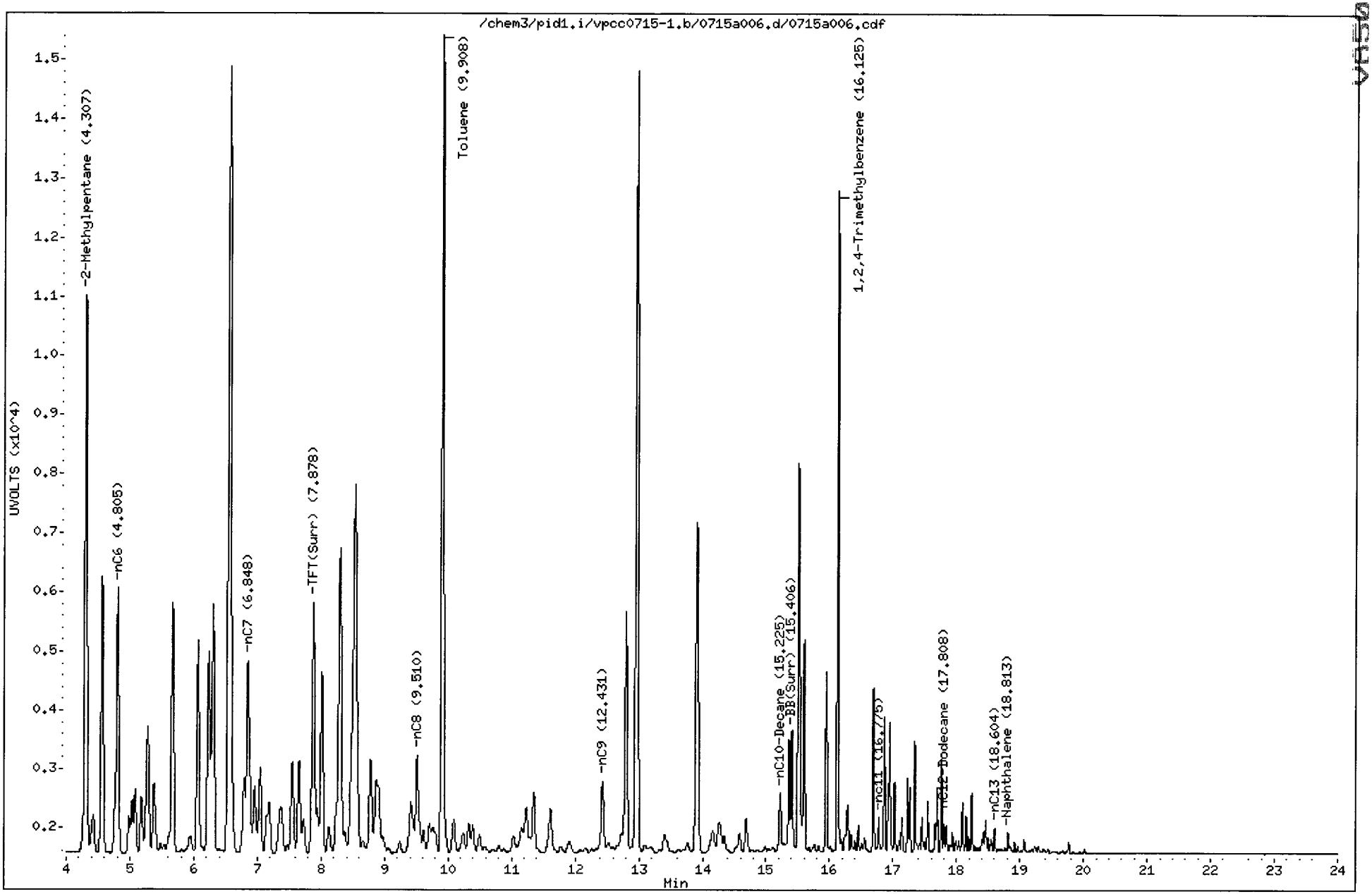
Sample Info: LCS0715

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a007.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a007.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: LCSD0715
Client ID:
Injection Date: 15-JUL-2012 12:35
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	-0.002	4345	62065	110.5	TFT(Surr)
15.406	0.000	2184	19273	108.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	1051028	0.969
8015B 2MP-TMB	(4.21 to 16.22)	2234698	2256145	1.010
AK101 nC6-nC10	(4.71 to 15.12)	1783632	1825207	1.023
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	1094072	0.952

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.000	5225	107.0	TFT(Surr)
15.414	0.000	9160	107.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.052	0.000	2911	3.565	Benzene
9.916	0.002	28983	37.509	Toluene
12.808	0.000	7434	11.156	Ethylbenzene
12.973	0.004	29908	41.249	M/P-Xylene
13.921	0.001	10363	18.516	O-Xylene
4.569	-0.010	626	5.034	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a007.d

Page 1

Date : 15-JUL-2012 12:35

Client ID:

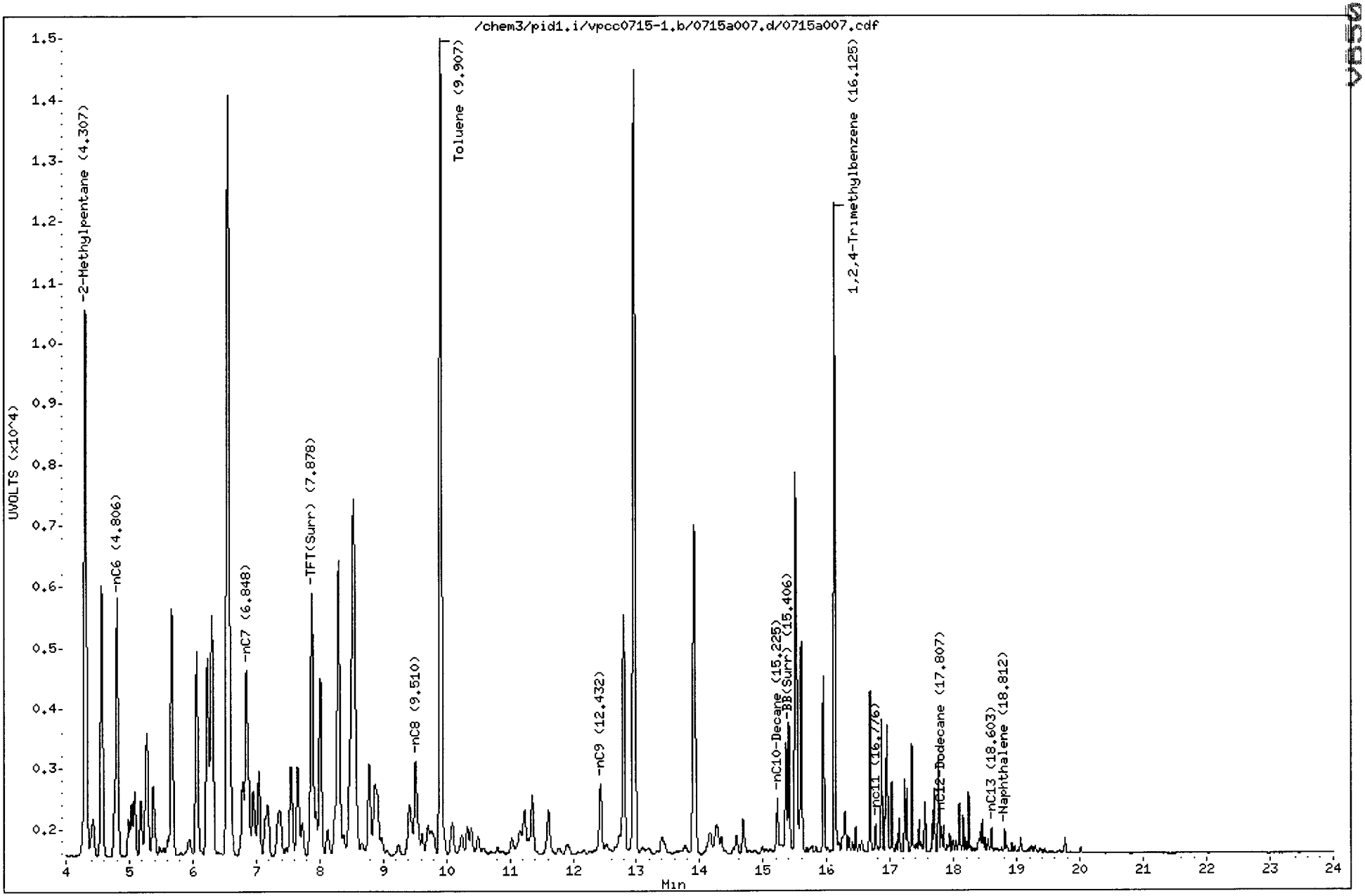
Instrument: pid1.i

Sample Info: LCSD0715

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a008.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a008.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: MB0715
Client ID:
Injection Date: 15-JUL-2012 13:04
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.879	-0.001	3770	47021	95.9	TFT(Surr)
15.406	-0.001	2012	16582	99.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	8310	0.008
8015B 2MP-TMB	(4.21 to 16.22)	2234698	18167	0.008
AK101 nC6-nC10	(4.71 to 15.12)	1783632	15060	0.008
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	9055	0.008

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.001	4666	95.6	TFT(Surr)
15.414	0.001	8408	98.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a008.d

Date : 15-JUL-2012 13:04

Client ID:

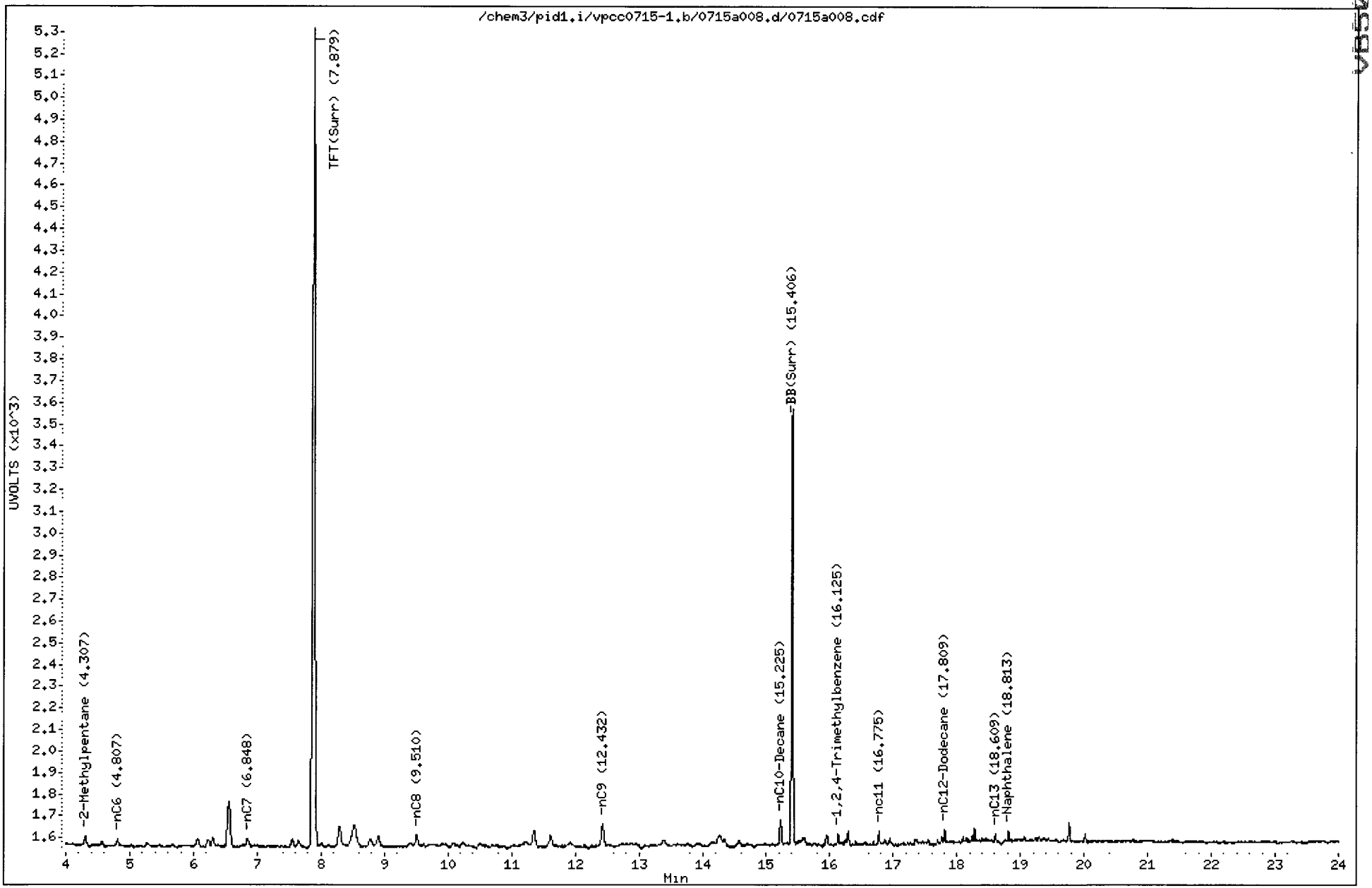
Sample Info: MB0715

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a012.d ARI ID: BCAL#2
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a012.d Client ID:
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m Injection Date: 15-JUL-2012 16:20
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 14-Jul-2012 Dilution Factor: 1.000
BETX Ical Date: 13-JUL-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	3923	48357	99.8	TFT(Surr)
15.407	0.000	2058	17194	102.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	145747	0.134
8015B 2MP-TMB	(4.21 to 16.22)	2234698	146073	0.065
AK101 nC6-nC10	(4.71 to 15.12)	1783632	140785	0.079
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	145747	0.127

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.001	4878	99.9	TFT(Surr)
15.414	0.001	8728	102.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.053	0.001	3929	4.811	Benzene
9.915	0.001	3574	4.625	Toluene
12.807	0.000	3240	4.862	Ethylbenzene
12.969	0.000	7141	9.849	M/P-Xylene
13.920	0.000	2730	4.878	O-Xylene
4.579	0.000	666	5.356	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a012.d

Page 1

Date : 15-JUL-2012 16:20

Client ID:

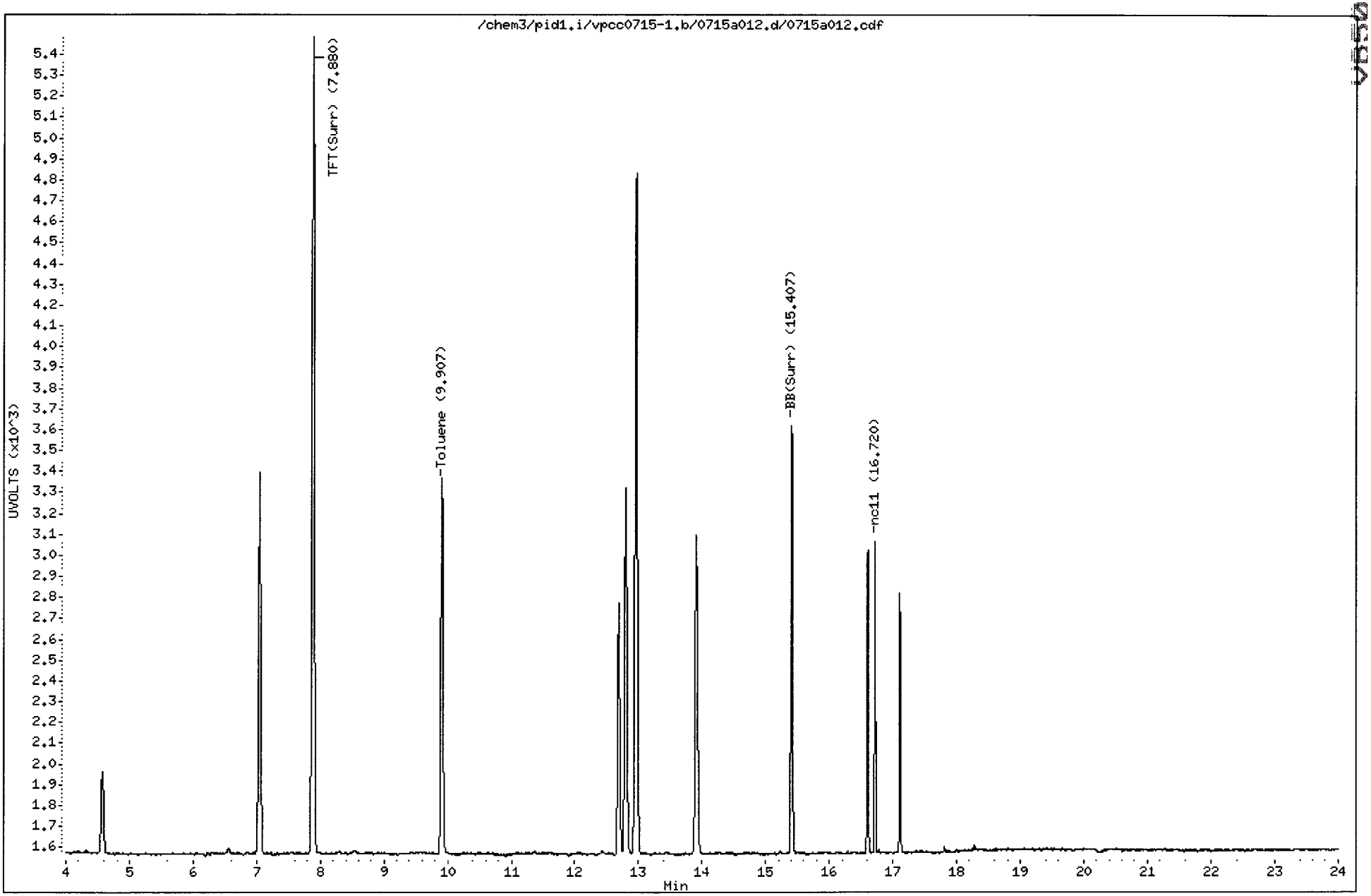
Instrument: pid1.i

Sample Info: BCAL#2

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a013.d ARI ID: GCAL#2
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a013.d Client ID:
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m Injection Date: 15-JUL-2012 16:50
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 14-Jul-2012 Dilution Factor: 1.000
BETX Ical Date: 13-JUL-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	-0.003	4171	59648	106.1	TFT(Surr)
15.406	-0.001	2044	18281	101.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	1058735	0.976
8015B 2MP-TMB	(4.21 to 16.22)	2234698	2292839	1.026
AK101 nC6-nC10	(4.71 to 15.12)	1783632	1856762	1.041
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	1104129	0.960

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	-0.001	5010	102.6	TFT(Surr)
15.413	0.000	8435	99.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.052	-0.001	2956	3.620	Benzene
9.915	0.001	29213	37.807	Toluene
12.807	-0.001	7468	11.207	Ethylbenzene
12.972	0.004	30038	41.428	M/P-Xylene
13.920	0.000	10398	18.578	O-Xylene
4.568	-0.011	670	5.388	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a013.d

Date : 15-JUL-2012 16:50

Client ID:

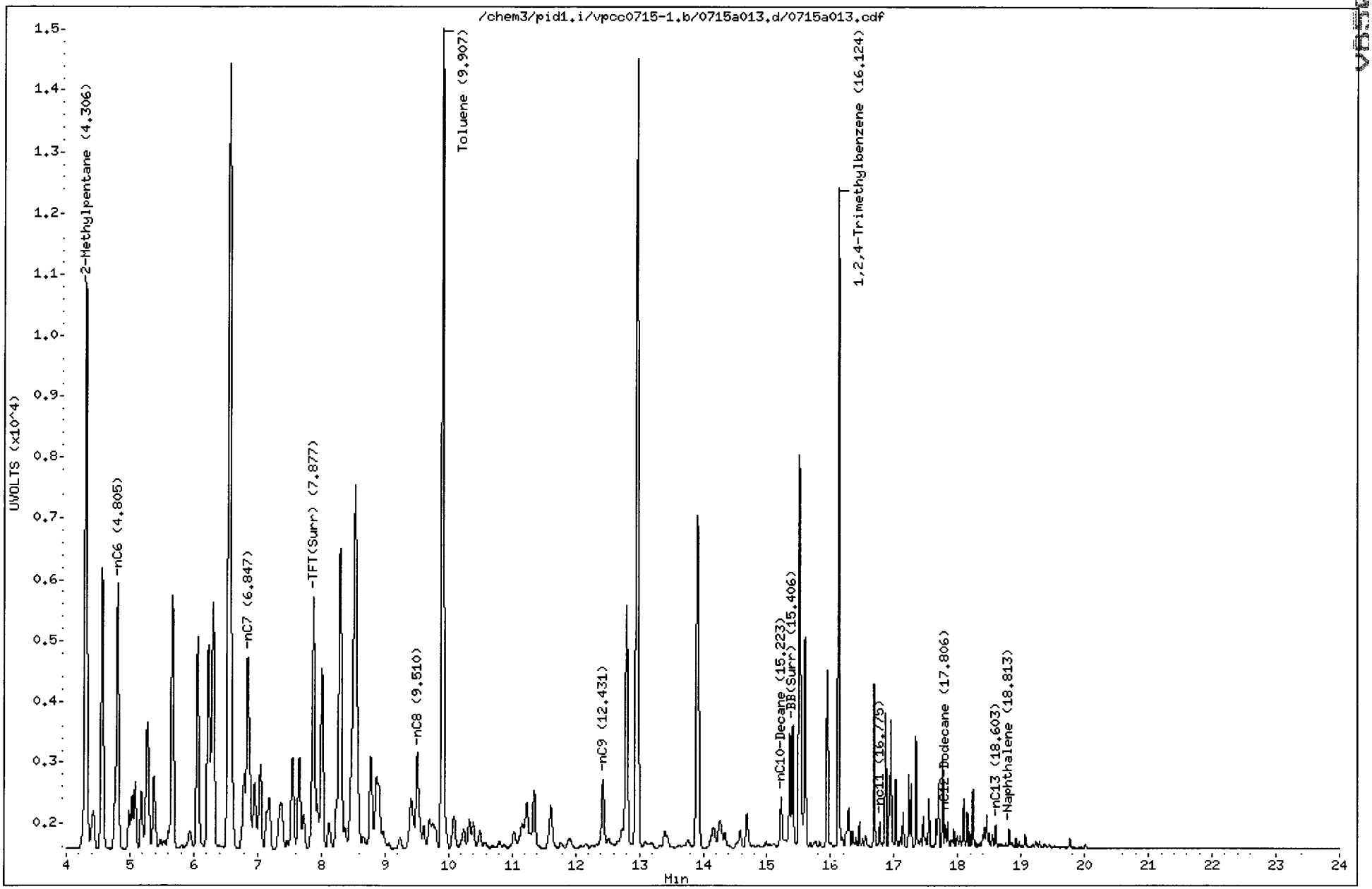
Sample Info: GCAL#2

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a014.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a014.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50E
Client ID:
Injection Date: 15-JUL-2012 17:19
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	3976	52213	101.2	TFT(Surr)
15.407	0.000	2058	17562	102.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	62048	0.057
8015B 2MP-TMB	(4.21 to 16.22)	2234698	210784	0.094
AK101 nC6-nC10	(4.71 to 15.12)	1783632	163809	0.092
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	70051	0.061

gas/gro

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.000	4953	101.4	TFT(Surr)
15.414	0.001	8674	102.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
9.914	0.000	192	0.248	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a014.d

Date : 15-JUL-2012 17:19

Client ID:

Sample Info: VB50E

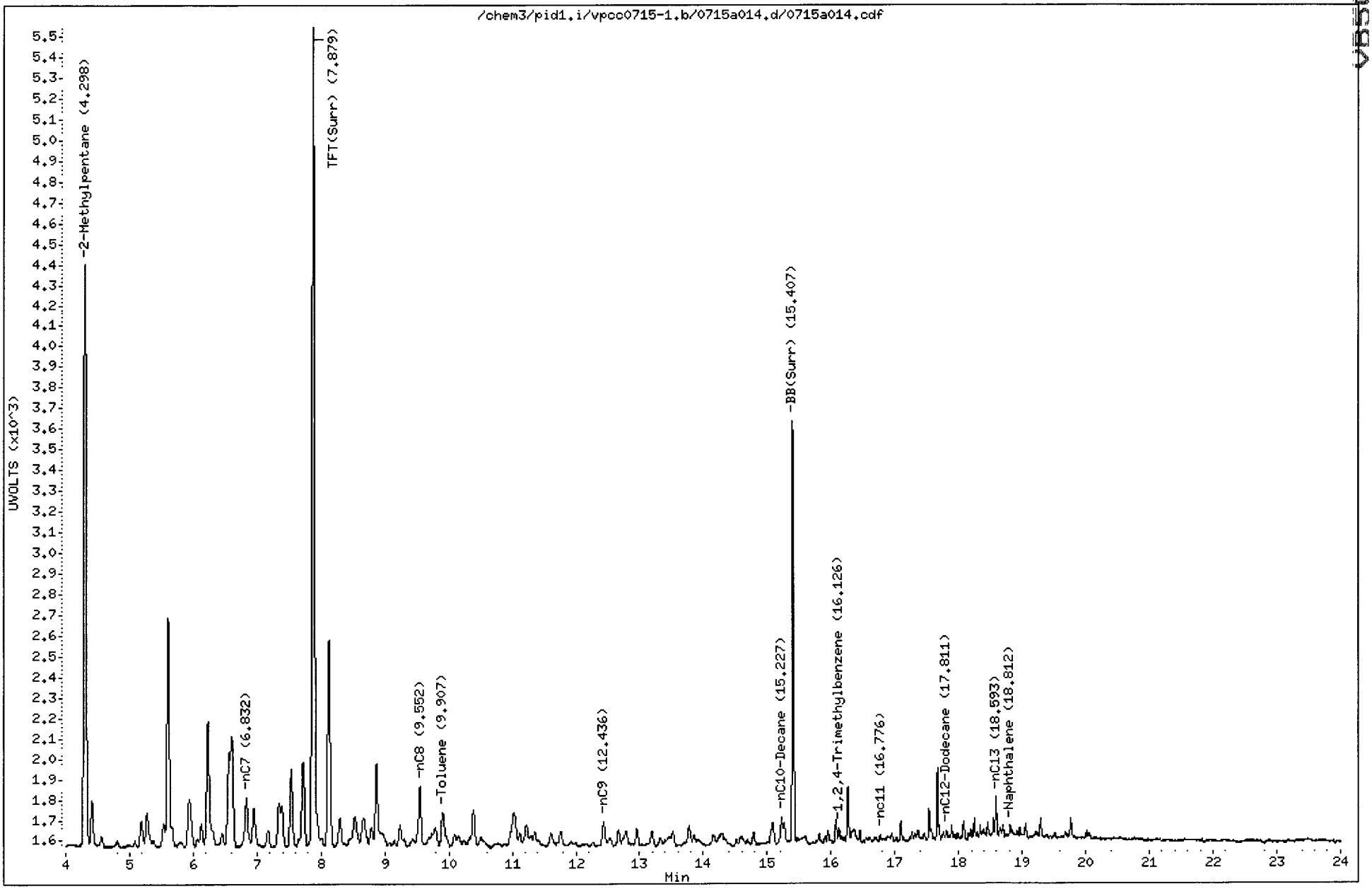
Column phase: RTX 502-2 FID

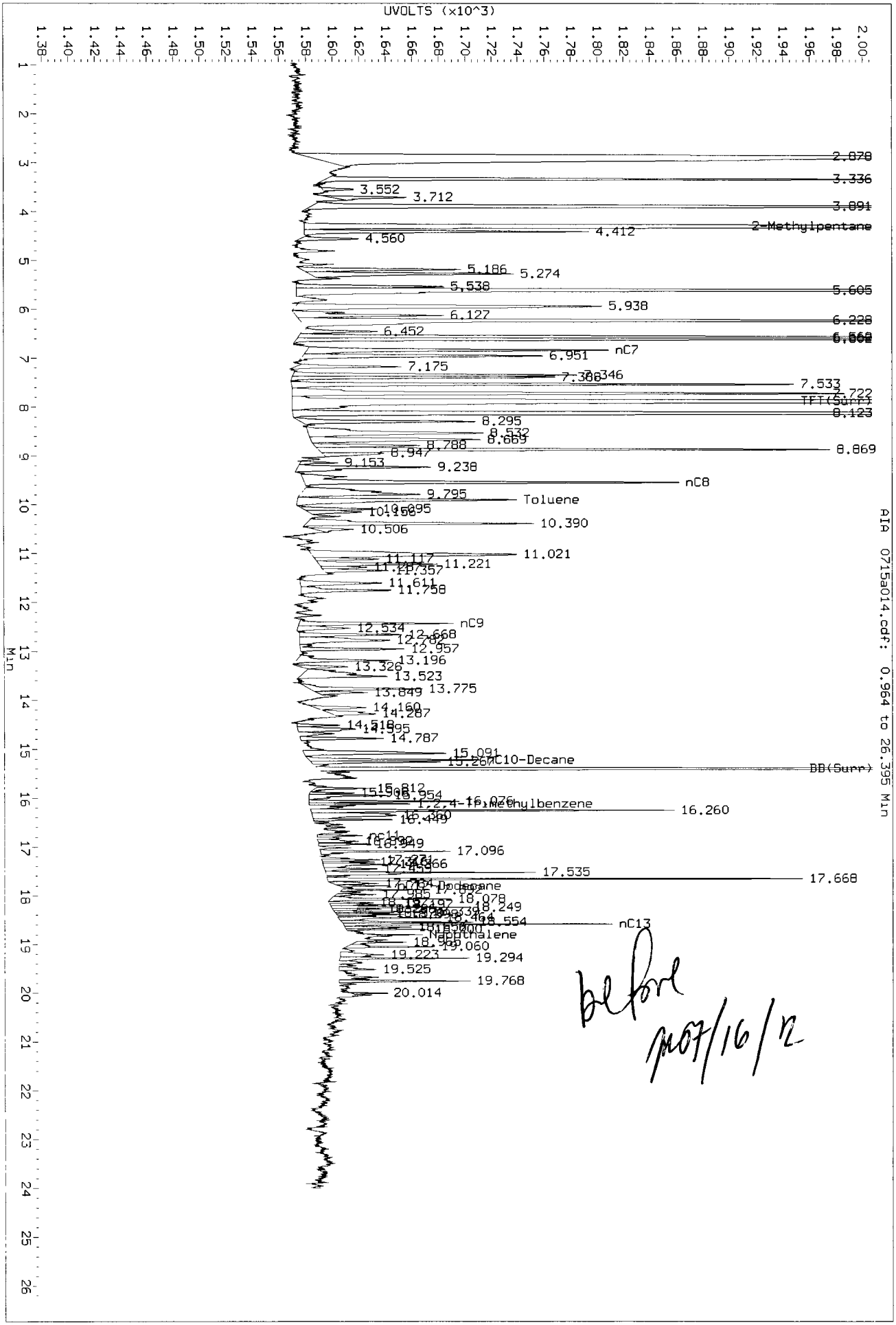
Instrument: pid1.i

Operator: JR

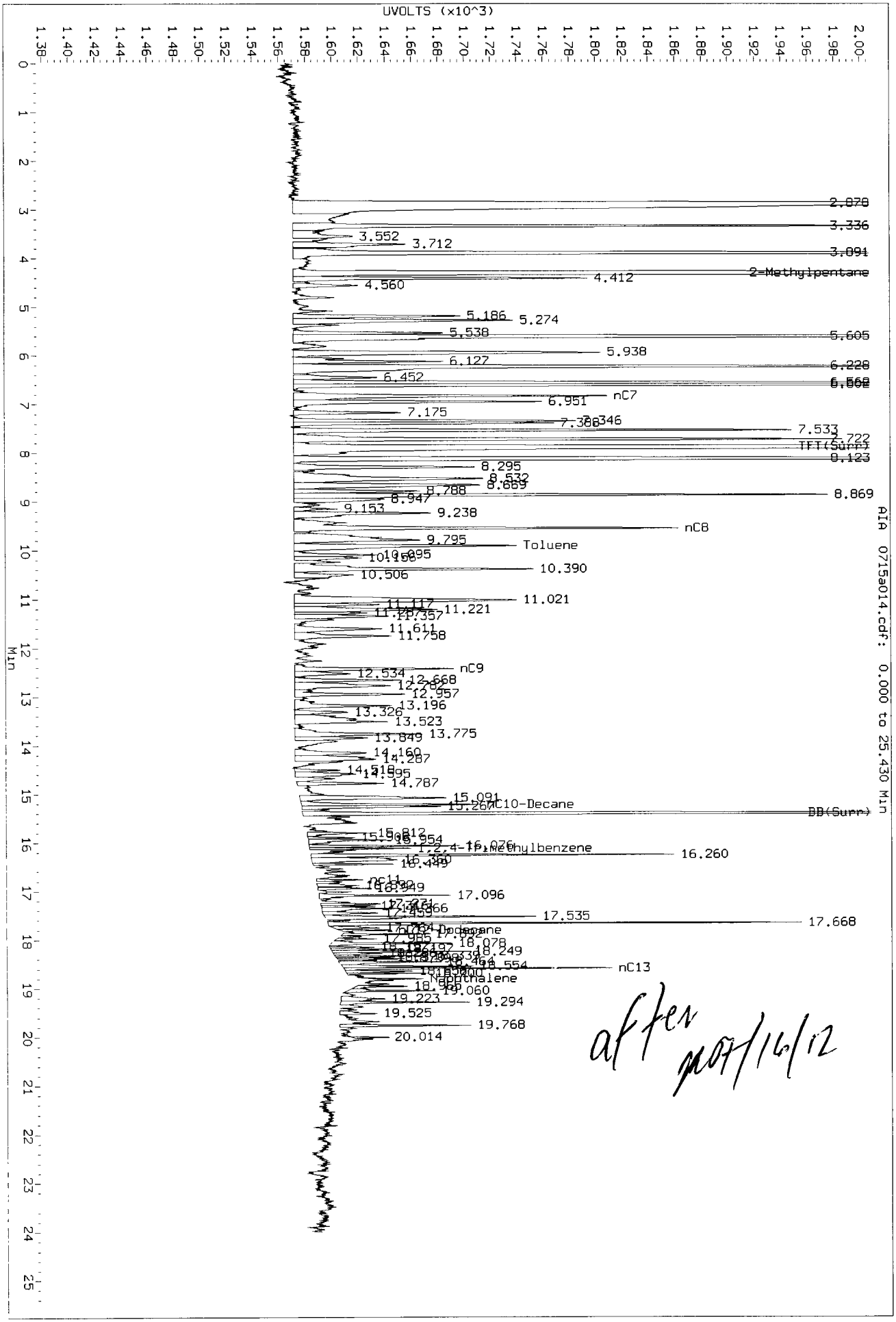
Column diameter: 0.18

VB50E 07150





before 07/16/12



Data File: /chem3/pid1.i/vpcc0715-1.b/0715a014.d/0715a014.cdf
Injection Date: 15-JUL-2012 17:19
Instrument: pid1.i
Client Sample ID:

after 07/16/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a015.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a015.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50F
Client ID:
Injection Date: 15-JUL-2012 17:48
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	4054	51416	103.1	TFT(Surr)
15.407	0.000	2149	18062	106.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	176017	0.162
8015B 2MP-TMB	(4.21 to 16.22)	2234698	407100	0.182
AK101 nC6-nC10	(4.71 to 15.12)	1783632	374775	0.210
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	202271	0.176

GAS

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

JR 07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.000	5086	104.2	TFT(Surr)
15.414	0.000	9129	107.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.054	0.001	53701	65.763	Benzene
9.915	0.000	1440	1.864	Toluene
12.808	0.000	216	0.324	Ethylbenzene
12.968	-0.001	1088	1.501	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a015.d

Page 1

Date : 15-JUL-2012 17:48

Client ID:

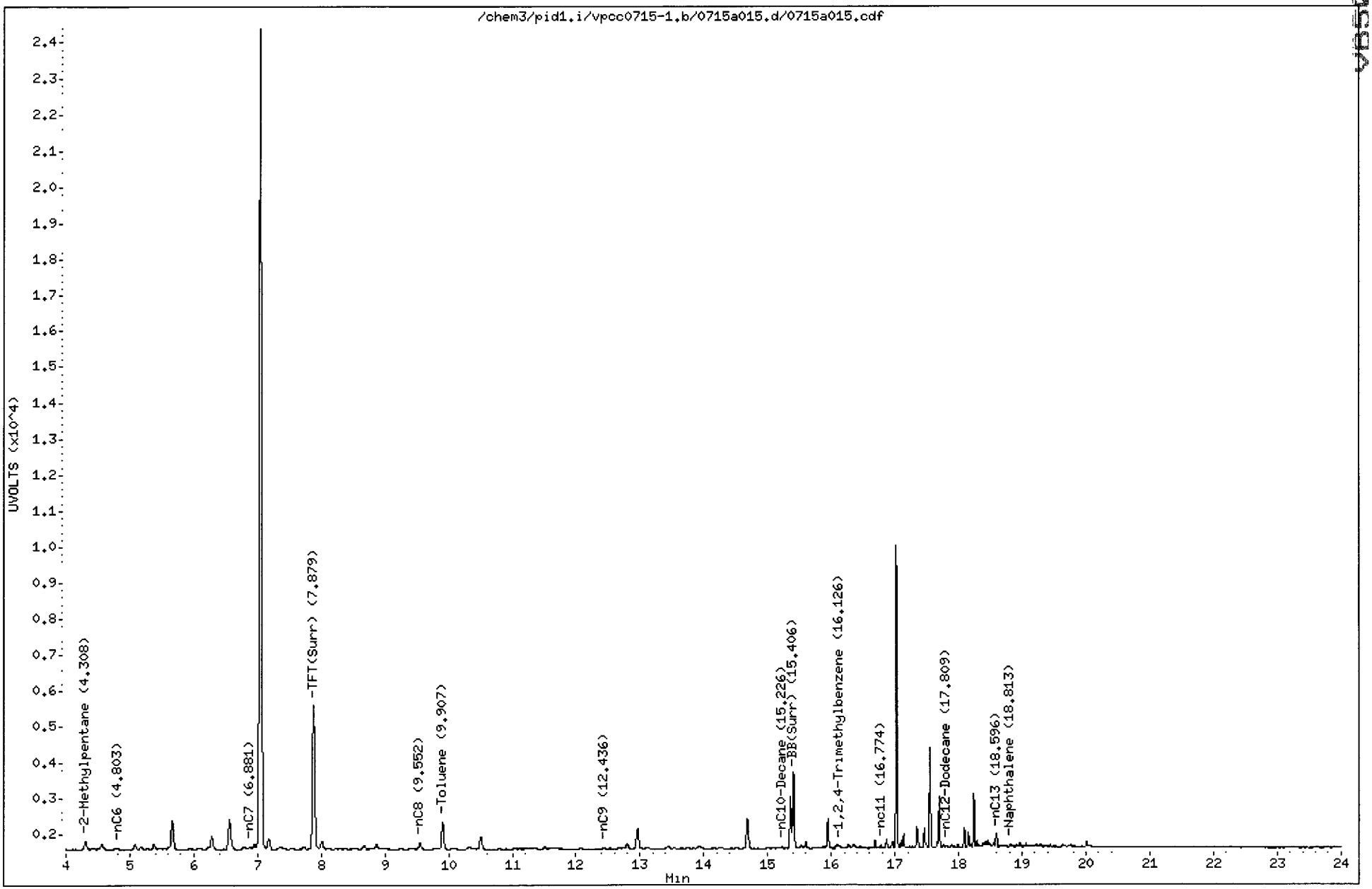
Instrument: pid1.i

Sample Info: VB50F

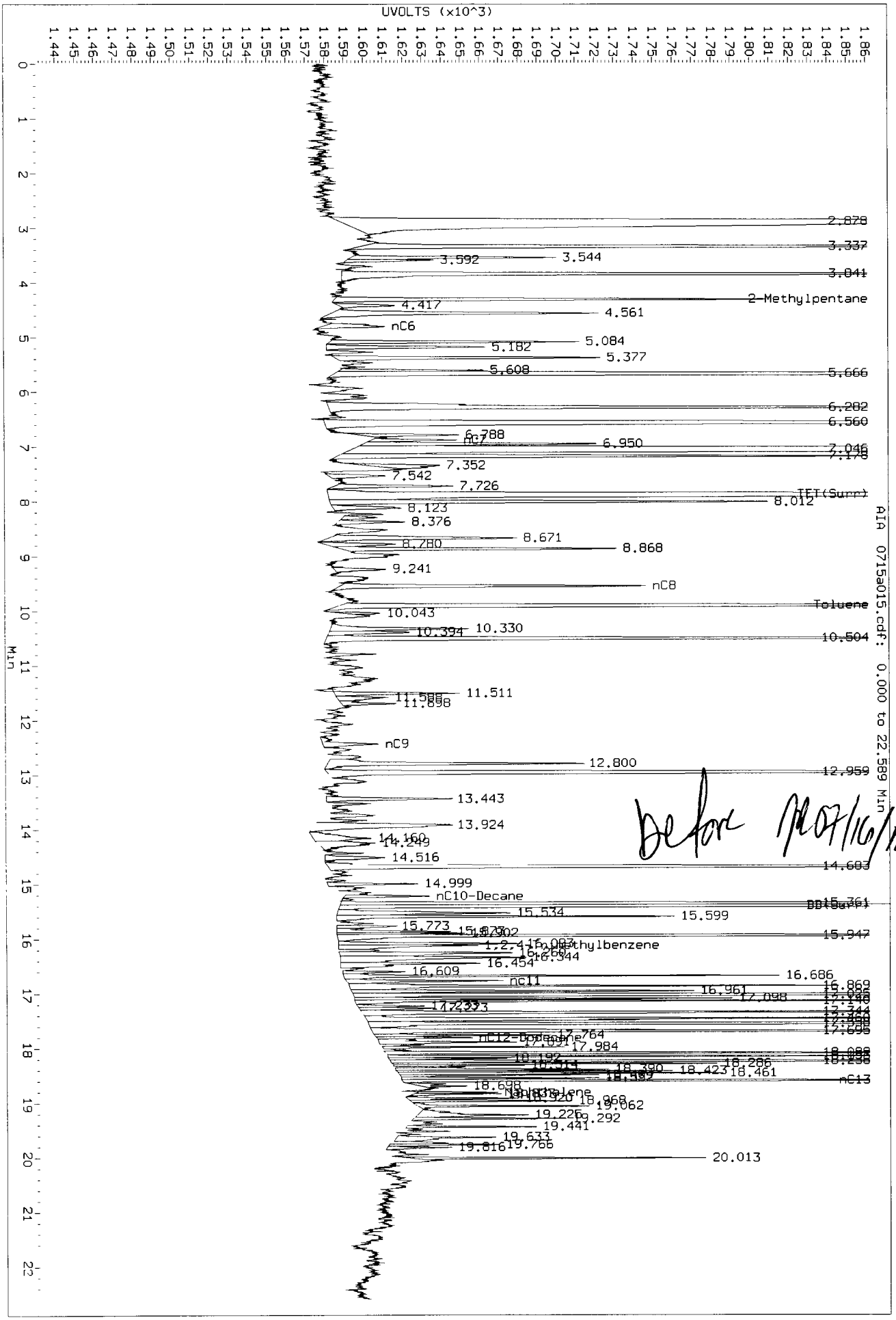
Operator: JR

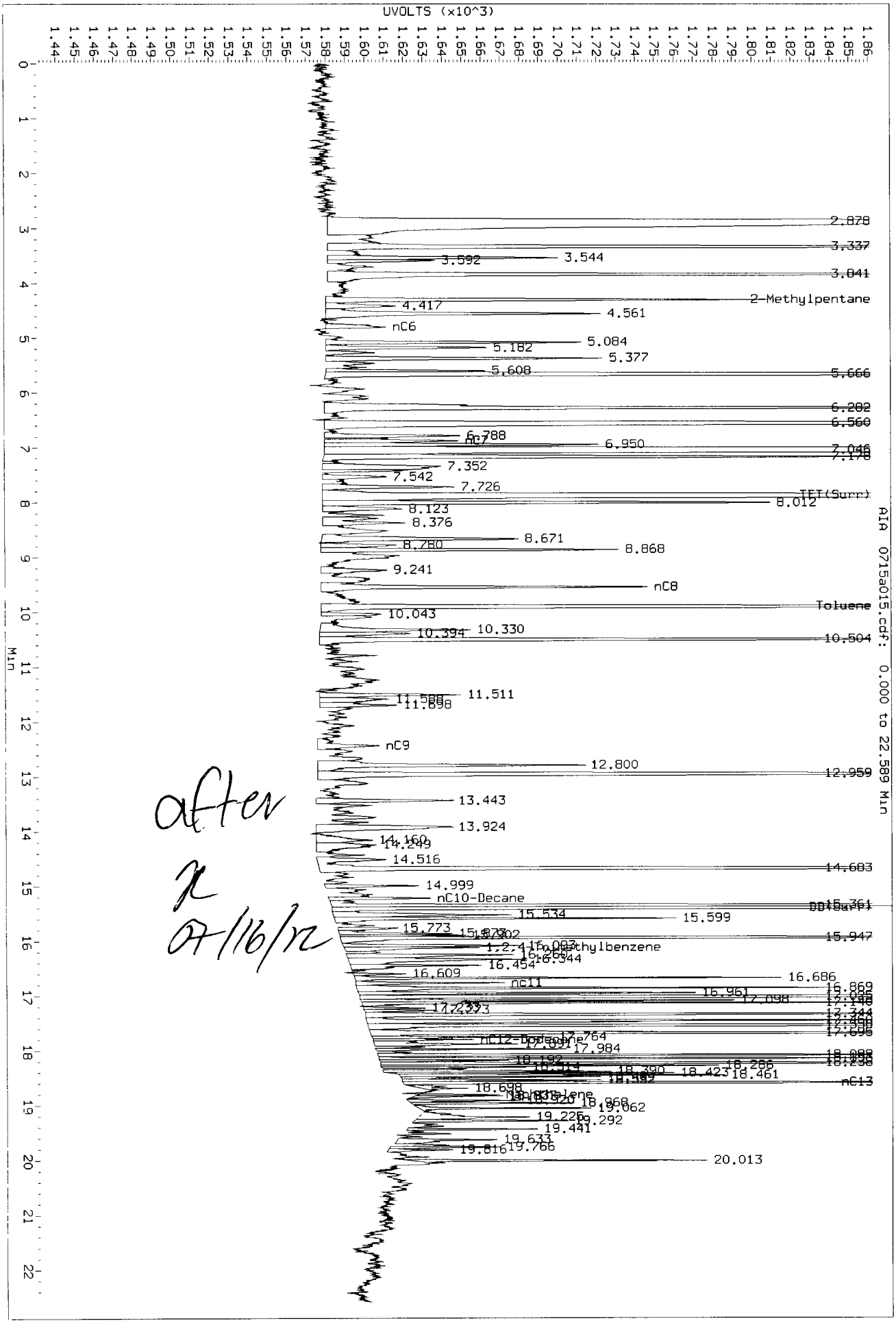
Column phase: RTX 502-2 FID

Column diameter: 0.18



VB50 : 00157


Data File: /chem3/pid1.1/vpcc0715-1.b/0715a015.d/0715a015.cdf
Injection Date: 15-JUL-2012 17:48
Instrument: pid1.1
Client Sample ID:
UVOLTS (x10^3)
AIA 0715a015.cdf: 0.000 to 22.589 Min
Min
2.878
3.337
3.592
3.544
3.841
2-Methylpentane
4.417
4.561
nC6
5.182
5.084
5.377
5.608
5.666
6.282
6.560
6.788
nC7
6.950
7.046
7.352
7.542
7.726
TFT(Surr)
8.012
8.123
8.376
8.671
8.780
8.868
9.241
nC8
Toluene
10.043
10.394
10.330
10.504
11.511
nC9
12.800
12.959
13.443
13.924
14.160
14.516
14.603
14.999
nC10-Decane
15.534
15.599
15.773
15.947
16.454
16.609
16.686
nC11
16.961
17.098
17.984
nC12-Decane
18.192
18.286
18.423
18.461
nC13
18.698
19.062
19.226
19.292
19.441
19.633
19.816
19.766
20.013
Before 7/16/12


Data File: /chem3/pid1.i/vpcc0715-1.b/0715a015.d/0715a015.cdf
Injection Date: 15-JUL-2012 17:48
Instrument: pid1.i
Client Sample ID:
UVOLTS (x10^3)
Min
AIA 0715a015.cdf: 0.000 to 22.589 Min
2.878
3.337
3.592
3.544
3.841
2-Methylpentane
4.417
4.561
nC6
5.182
5.084
5.377
5.608
5.666
6.282
6.560
6.788
6.950
7.046
7.178
7.352
7.542
7.726
TFT(Surr)
8.012
8.123
8.376
8.671
8.780
8.868
9.241
nC8
Toluene
10.043
10.394
10.330
10.504
11.511
11.698
nC9
12.800
12.959
13.443
13.924
14.160
14.249
14.516
14.683
14.999
nC10-Decane
15.534
15.599
15.773
15.947
16.454
16.609
16.686
nC11
16.961
17.098
17.233
nC12-Dodecane
17.764
17.984
18.390
18.423
18.461
nC13
18.698
19.062
19.225
19.292
19.441
19.633
19.816
19.766
20.013
after
R
04/16/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a016.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a016.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50H
Client ID:
Injection Date: 15-JUL-2012 18:17
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.879	-0.001	3984	49069	101.4	TFT(Surr)
15.406	0.000	2074	17234	103.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	756	0.001
8015B 2MP-TMB	(4.21 to 16.22)	2234698	1	0.000
AK101 nC6-nC10	(4.71 to 15.12)	1783632	0	0.000
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	1025	0.001

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

JK 07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.001	4923	100.8	TFT(Surr)
15.415	0.001	8737	102.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a016.d

Date : 15-JUL-2012 18:17

Client ID:

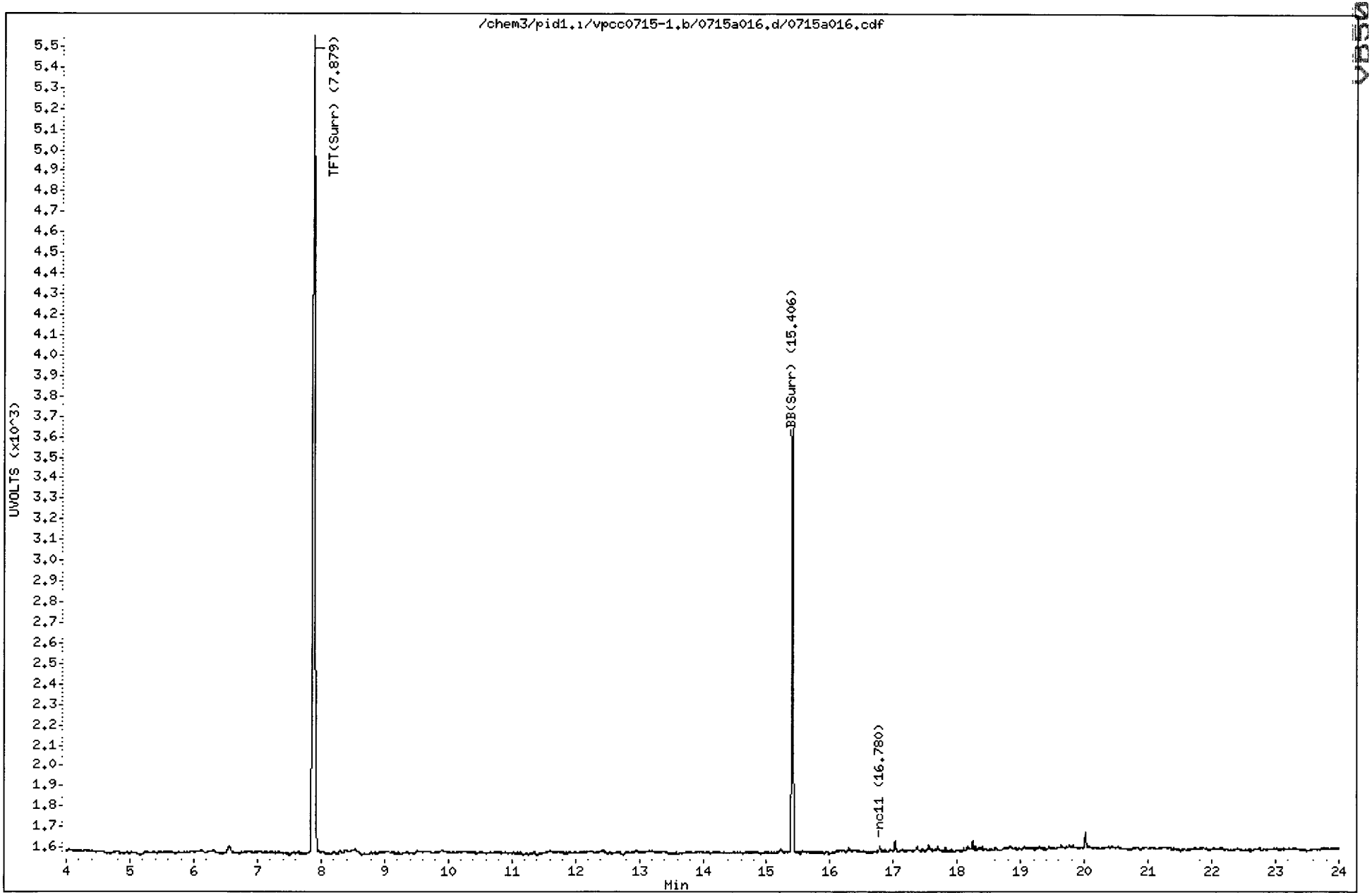
Sample Info: VB50H

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a017.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a017.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50N
Client ID:
Injection Date: 15-JUL-2012 18:47
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.882	0.002	3907	48547	99.4	TFT(Surr)
15.407	0.001	2042	17088	101.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	716	0.001
8015B 2MP-TMB	(4.21 to 16.22)	2234698	0	0.000
AK101 nC6-nC10	(4.71 to 15.12)	1783632	0	0.000
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	985	0.001

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.890	0.003	4805	98.4	TFT(Surr)
15.415	0.001	8527	100.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a017.d

Page 1

Date : 15-JUL-2012 18:47

Client ID:

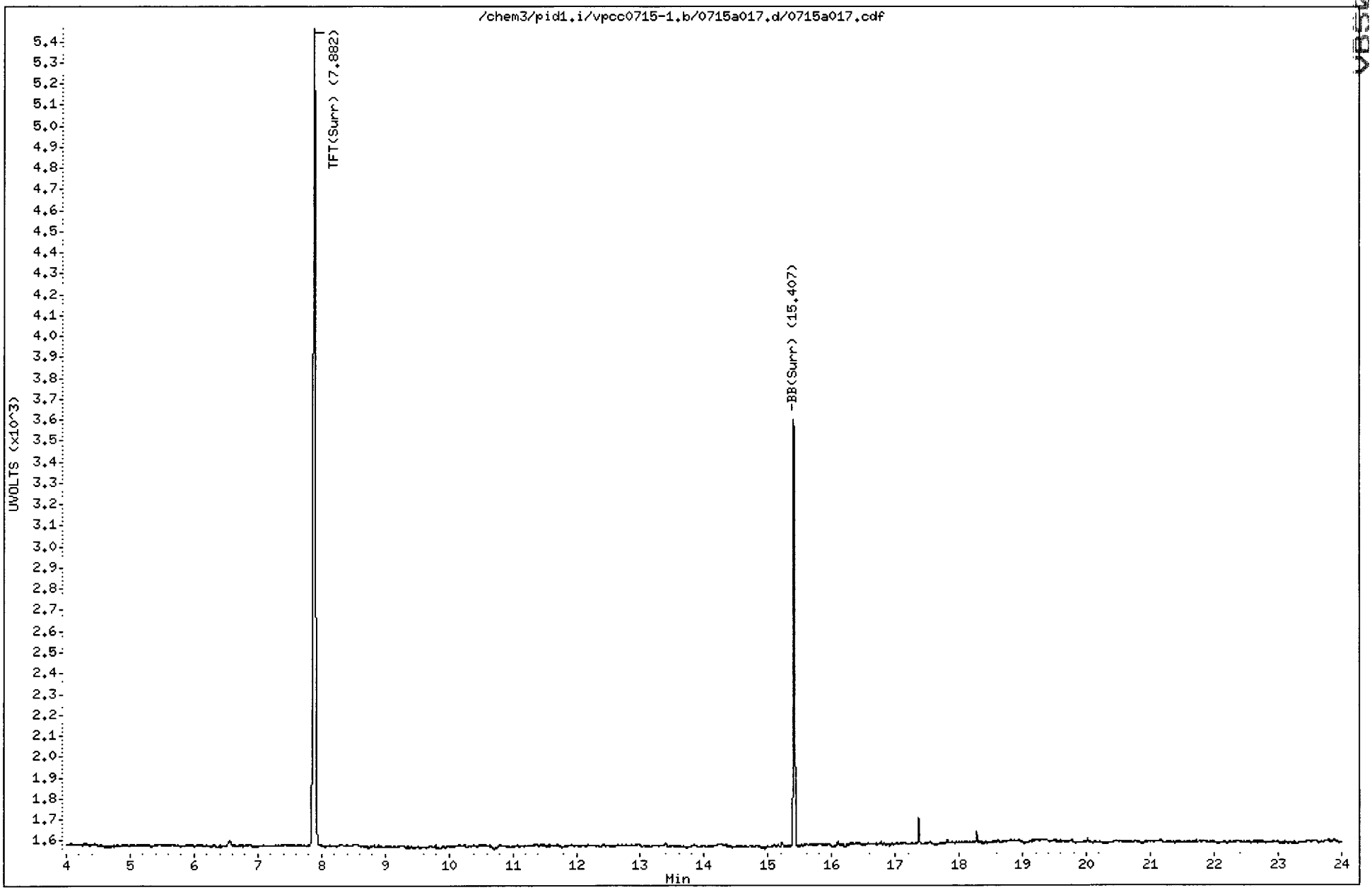
Instrument: pid1.i

Sample Info: VB50N

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a018.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a018.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50Q
Client ID:
Injection Date: 15-JUL-2012 19:16
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	3922	48514	99.8	TFT(Surr)
15.407	0.000	2050	17126	101.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	1	0.000
8015B 2MP-TMB	(4.21 to 16.22)	2234698	1	0.000
AK101 nC6-nC10	(4.71 to 15.12)	1783632	0	0.000
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	1	0.000

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.001	4820	98.7	TFT(Surr)
15.414	0.001	8566	100.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a018.d

Date : 15-JUL-2012 19:16

Client ID:

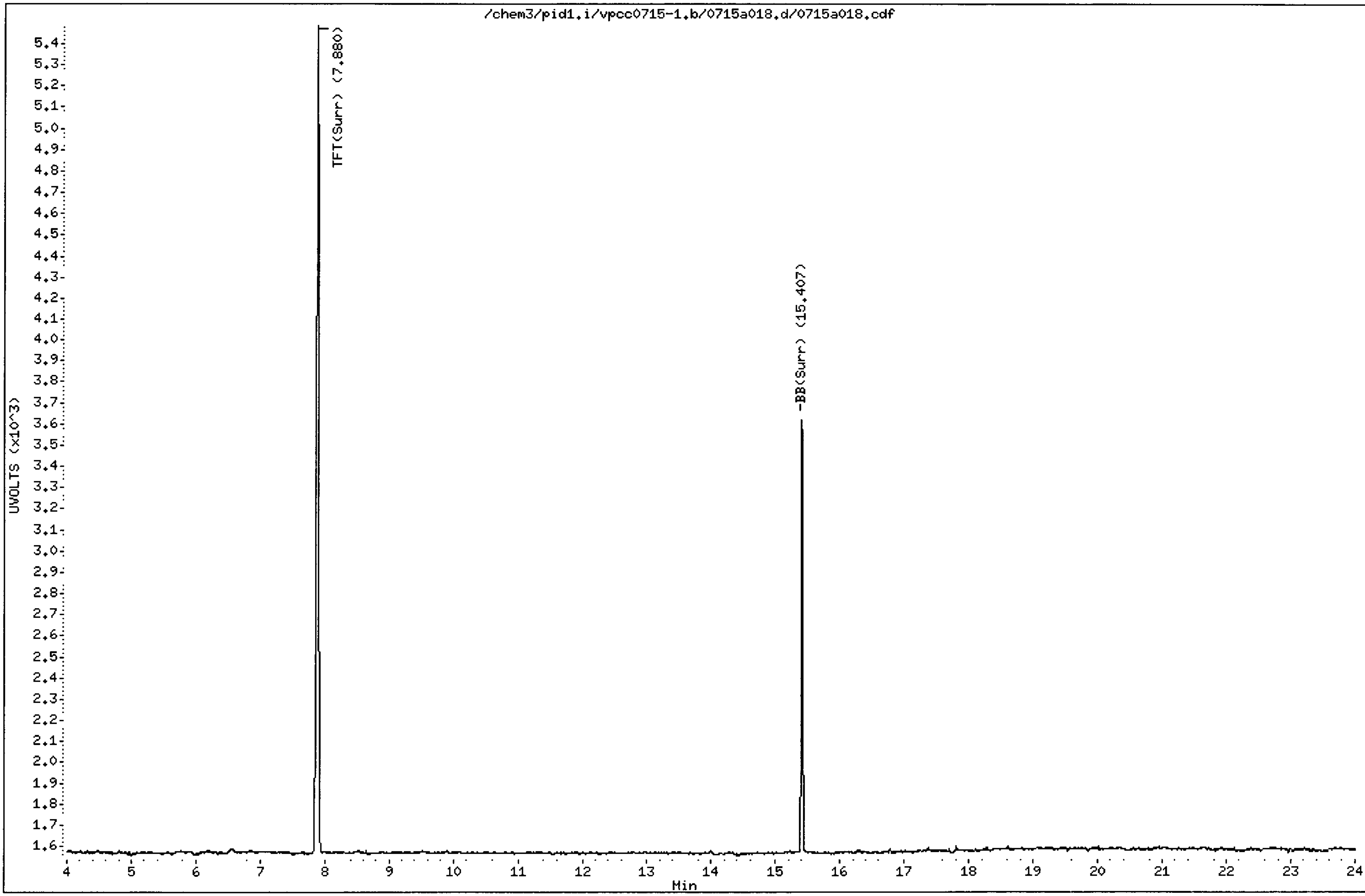
Sample Info: VB50Q

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a019.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a019.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: BCAL#3
Client ID:
Injection Date: 15-JUL-2012 19:45
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	3785	46823	96.3	TFT(Surr)
15.407	0.001	1999	16758	99.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	155431	0.143
8015B 2MP-TMB	(4.21 to 16.22)	2234698	156091	0.070
AK101 nC6-nC10	(4.71 to 15.12)	1783632	149917	0.084
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	155814	0.136

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.002	4629	94.8	TFT(Surr)
15.415	0.001	8416	98.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.053	0.001	4117	5.042	Benzene
9.915	0.001	3757	4.862	Toluene
12.808	0.001	3394	5.093	Ethylbenzene
12.970	0.001	7415	10.227	M/P-Xylene
13.921	0.001	2872	5.131	O-Xylene
4.580	0.001	726	5.838	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a019.d

Date : 15-JUL-2012 19:45

Client ID:

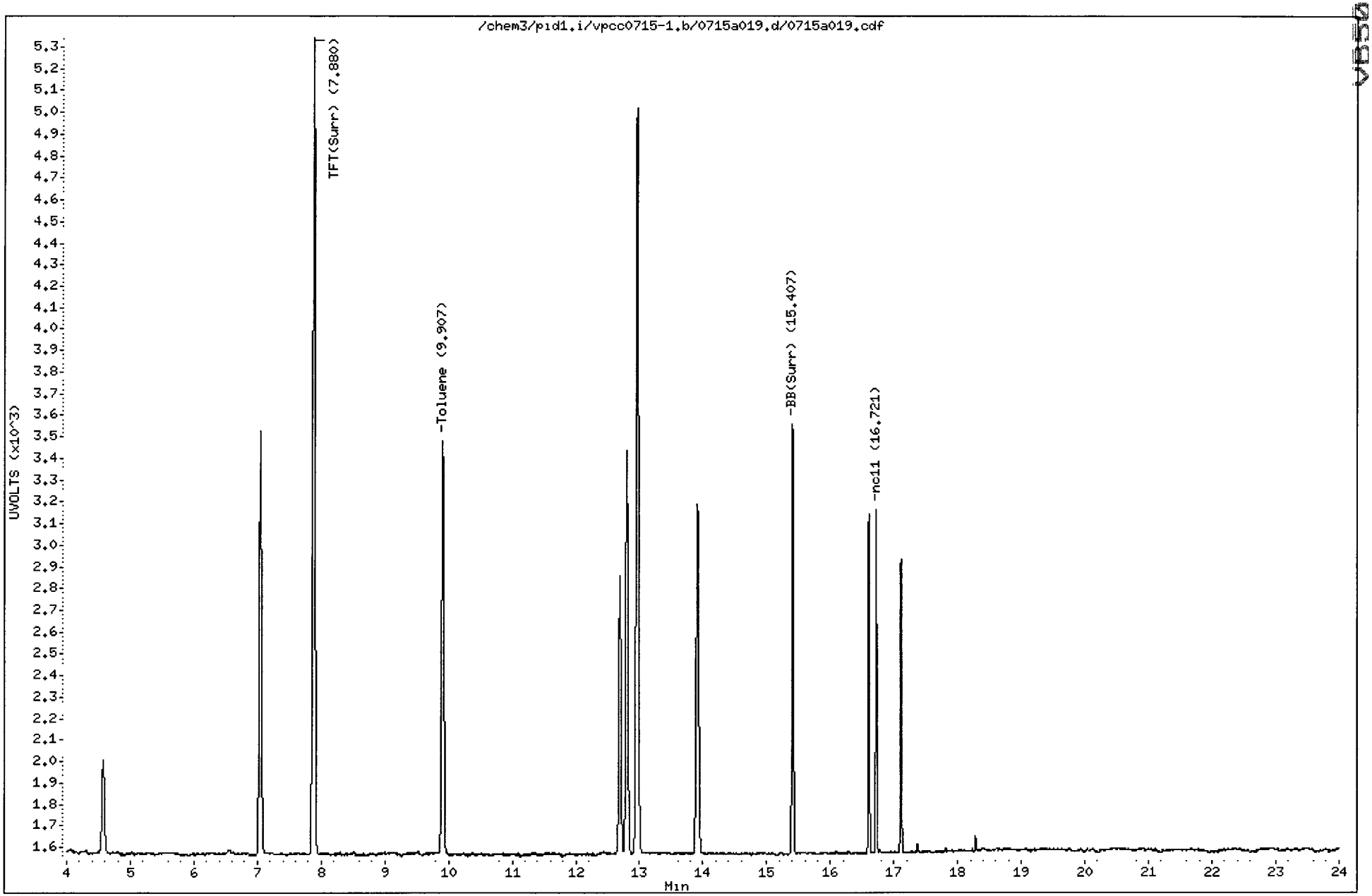
Sample Info: BCAL#3

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a020.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a020.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: GCAL#3
Client ID:
Injection Date: 15-JUL-2012 20:14
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.879	-0.001	4047	57958	103.0	TFT(Surr)
15.407	0.000	2047	18027	101.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	1005938	0.927
8015B 2MP-TMB	(4.21 to 16.22)	2234698	2132888	0.954
AK101 nC6-nC10	(4.71 to 15.12)	1783632	1723500	0.966
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	1050022	0.913

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.001	4762	97.5	TFT(Surr)
15.414	0.000	8450	99.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.054	0.001	2777	3.401	Benzene
9.917	0.002	27715	35.868	Toluene
12.808	0.000	7138	10.712	Ethylbenzene
12.973	0.005	28626	39.480	M/P-Xylene
13.921	0.002	9849	17.598	O-Xylene
4.570	-0.008	556	4.471	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a020.d

Date : 15-JUL-2012 20:14

Client ID:

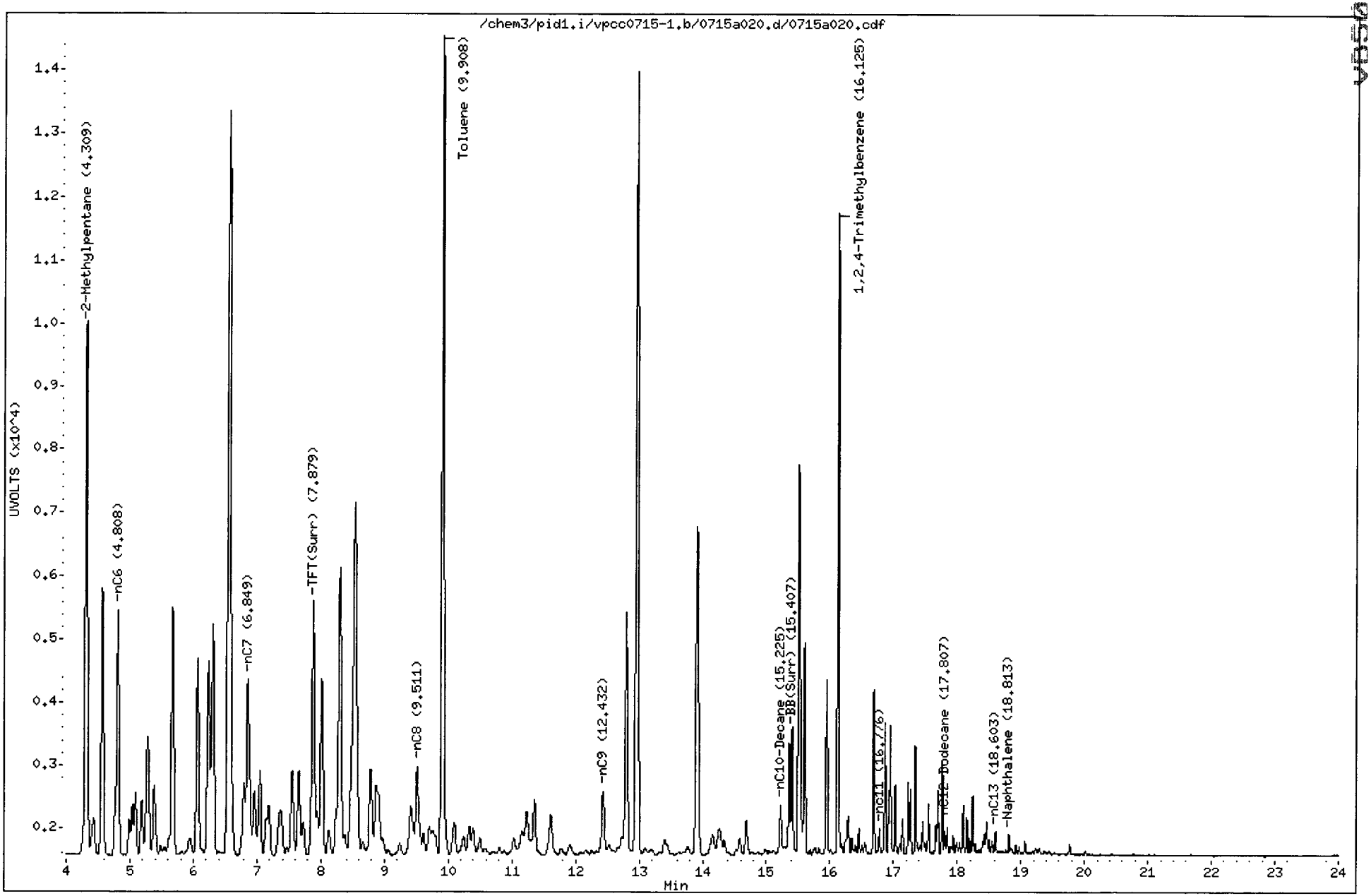
Sample Info: GCAL#3

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a021.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a021.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50A
Client ID:
Injection Date: 15-JUL-2012 20:44
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	0.001	3973	49173	101.1	TFT(Surr)
15.407	0.000	2190	18348	108.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	6271	0.006
8015B 2MP-TMB	(4.21 to 16.22)	2234698	10005	0.004
AK101 nC6-nC10	(4.71 to 15.12)	1783632	8587	0.005
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	6882	0.006

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

JK 07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.003	4862	99.6	TFT(Surr)
15.414	0.001	9184	108.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a021.d

Date : 15-JUL-2012 20:44

Client ID:

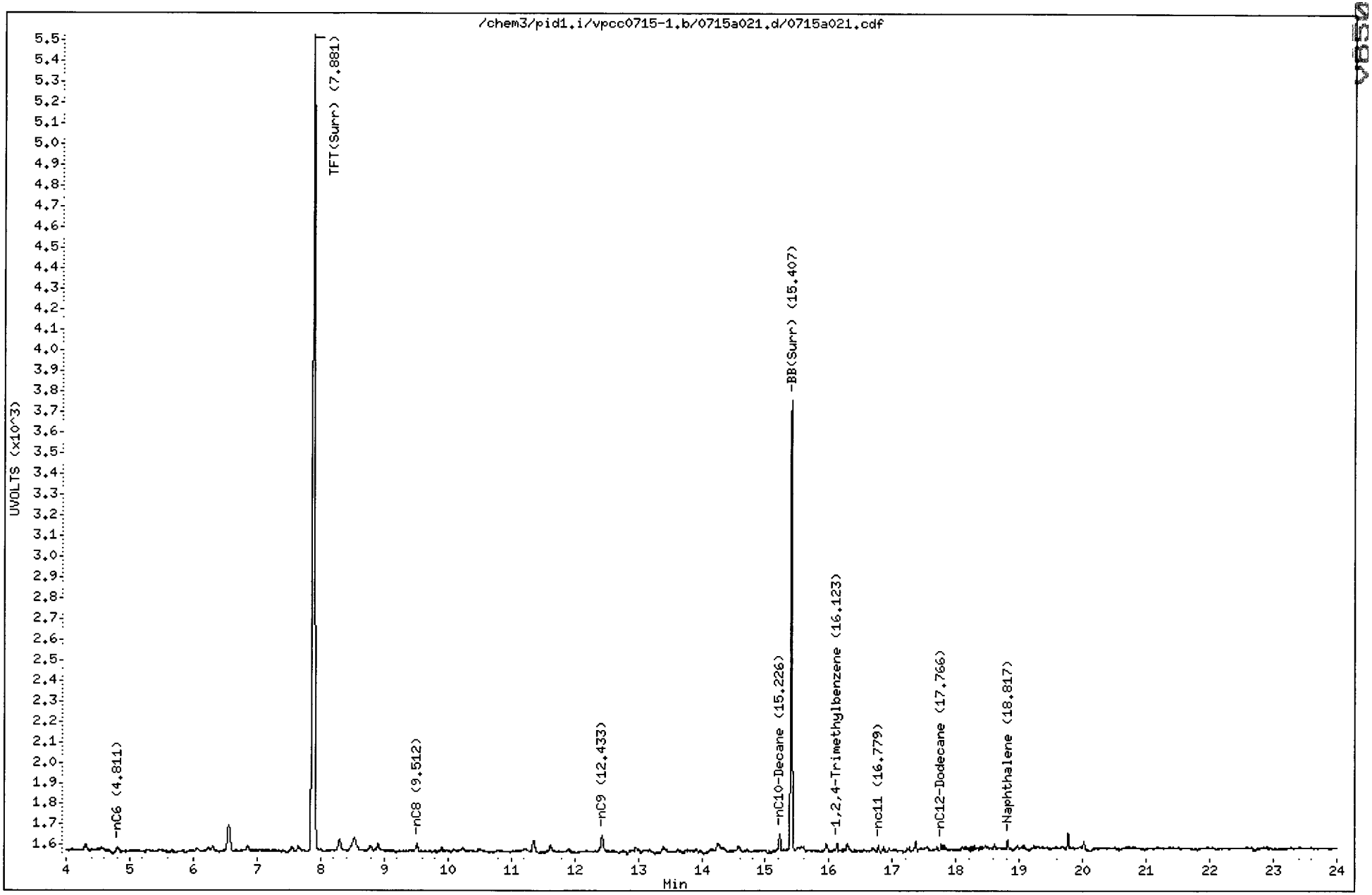
Sample Info: VB50A

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a022.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a022.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50B
Client ID:
Injection Date: 15-JUL-2012 21:13
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	0.000	3915	48630	99.6	TFT(Surr)
15.407	0.000	2189	18205	108.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	270	0.000
8015B 2MP-TMB	(4.21 to 16.22)	2234698	493	0.000
AK101 nC6-nC10	(4.71 to 15.12)	1783632	492	0.000
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	270	0.000

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	4797	98.2	TFT(Surr)
15.414	0.001	9148	107.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a022.d

Page 1

Date : 15-JUL-2012 21:13

Client ID:

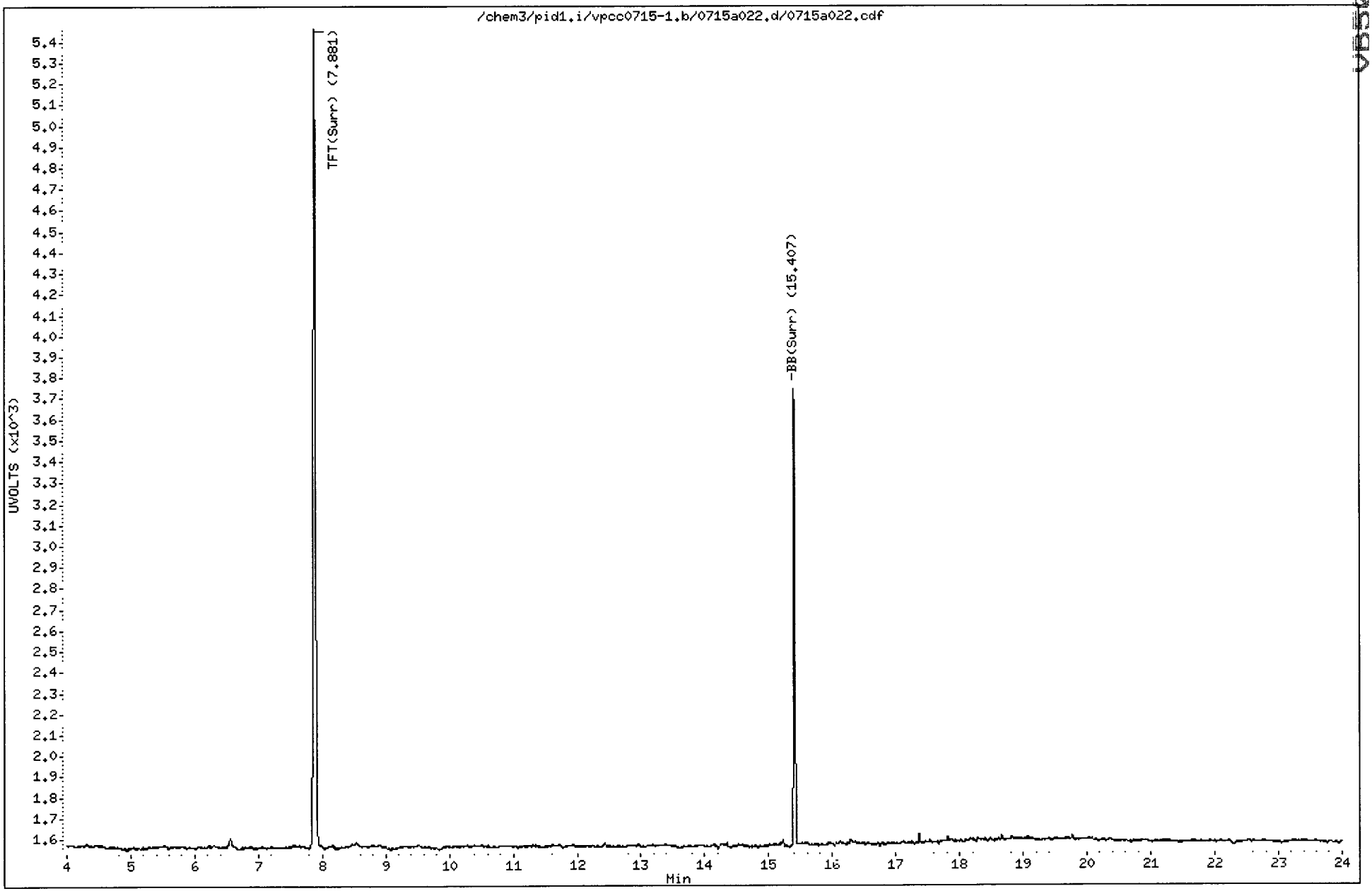
Instrument: pid1.i

Sample Info: VB50B

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



VB50B

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a023.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a023.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50C
Client ID:
Injection Date: 15-JUL-2012 21:42
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	0.001	3997	49180	101.7	TFT(Surr)
15.407	0.000	2142	18162	106.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	509	0.000
8015B 2MP-TMB	(4.21 to 16.22)	2234698	1009	0.000
AK101 nC6-nC10	(4.71 to 15.12)	1783632	831	0.000
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	509	0.000

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	4907	100.5	TFT(Surr)
15.414	0.001	9036	106.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a023.d

Page 1

Date : 15-JUL-2012 21:42

Client ID:

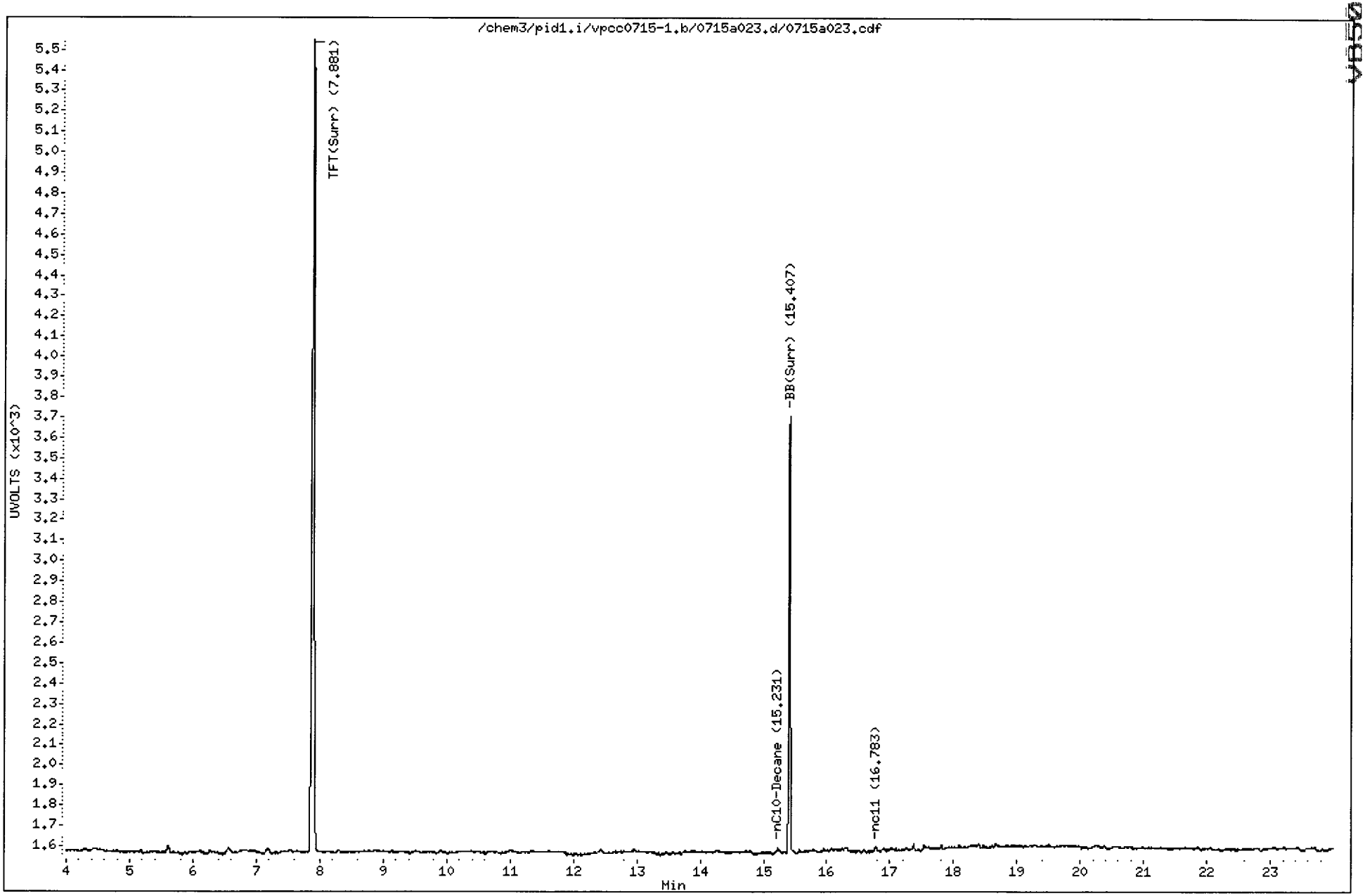
Instrument: pid1.i

Sample Info: VB50C

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



VB50C : 0715a023

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a024.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a024.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50D
Client ID:
Injection Date: 15-JUL-2012 22:11
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	0.001	3792	47118	96.5	TFT(Surr)
15.407	0.000	2104	17843	104.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	180	0.000
8015B 2MP-TMB	(4.21 to 16.22)	2234698	1	0.000
AK101 nC6-nC10	(4.71 to 15.12)	1783632	0	0.000
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	180	0.000

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	4662	95.5	TFT(Surr)
15.414	0.001	8791	103.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a024.d

Date : 15-JUL-2012 22:11

Client ID:

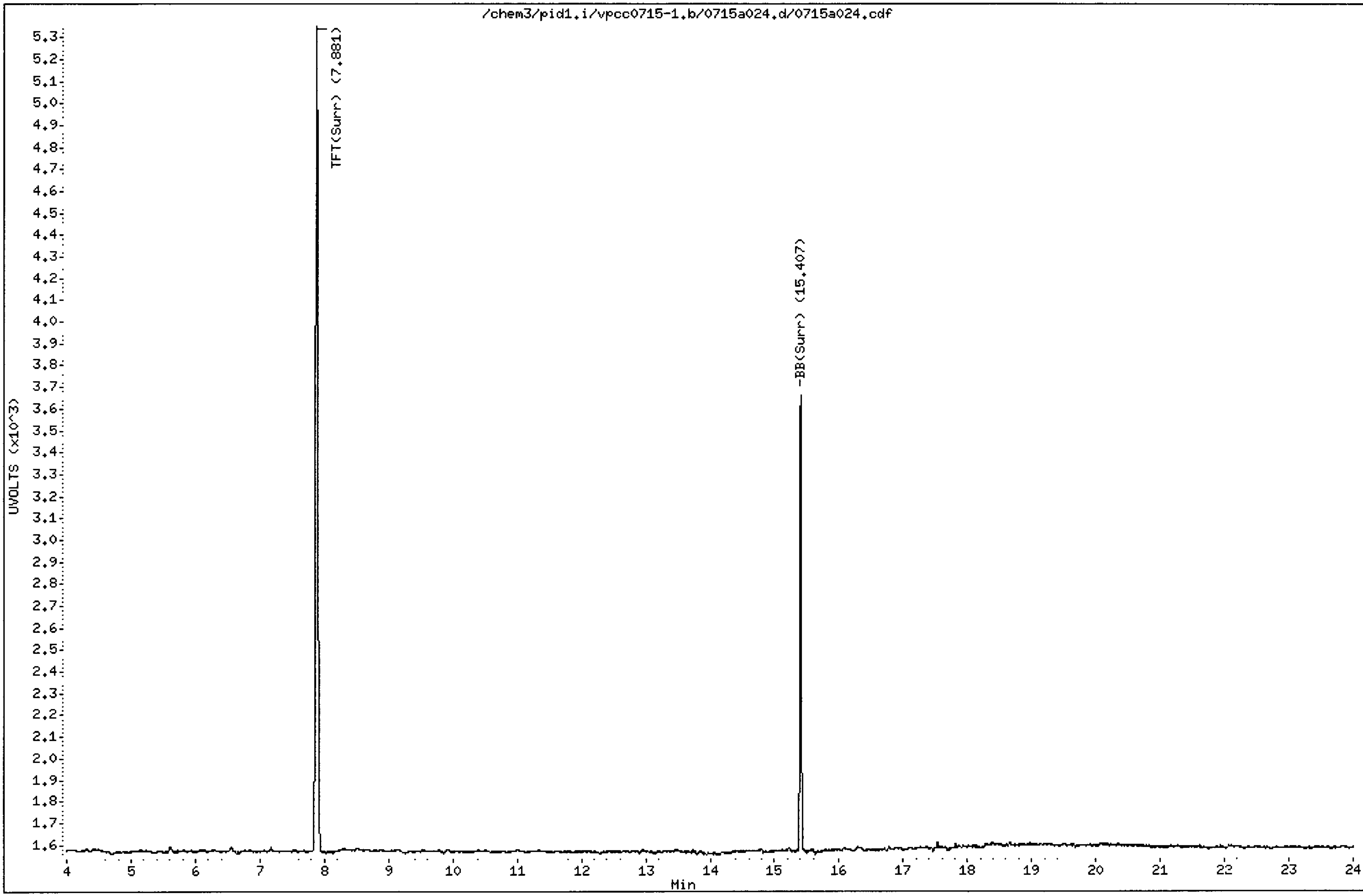
Sample Info: VB50D

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a025.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a025.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50G
Client ID:
Injection Date: 15-JUL-2012 22:40
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	4090	51023	104.1	TFT(Surr)
15.406	0.000	2283	18981	113.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	25434	0.023
8015B 2MP-TMB	(4.21 to 16.22)	2234698	15115	0.007
AK101 nC6-nC10	(4.71 to 15.12)	1783632	7562	0.004
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	26162	0.023

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	5001	102.4	TFT(Surr)
15.415	0.001	9616	113.0	BB(Surr)

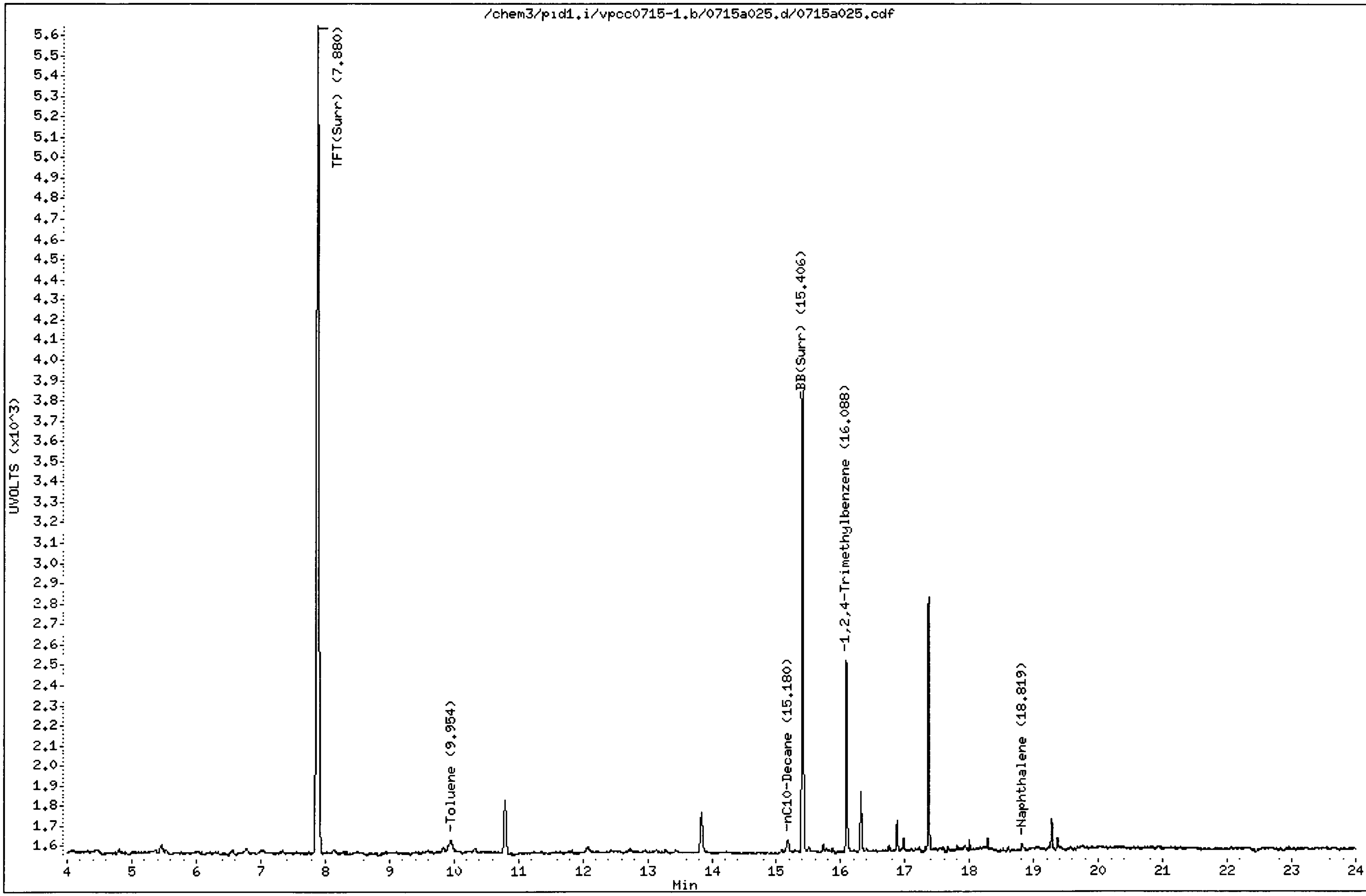
SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
9.946	0.031	176	0.228	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a025.d
Date : 15-JUL-2012 22:40
Client ID:
Sample Info: VB50G
Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: JR
Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a026.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a026.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50I
Client ID:
Injection Date: 15-JUL-2012 23:10
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	3761	48164	95.7	TFT(Surr)
15.407	0.000	2076	18647	103.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	451166	0.416
8015B 2MP-TMB	(4.21 to 16.22)	2234698	641490	0.287
AK101 nC6-nC10	(4.71 to 15.12)	1783632	546740	0.307
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	527373	0.459

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.001	4613	94.5	TFT(Surr)
15.414	0.000	8636	101.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.784	-0.024	494	0.741	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a026.d

Date : 15-JUL-2012 23:10

Client ID:

Sample Info: VB50I

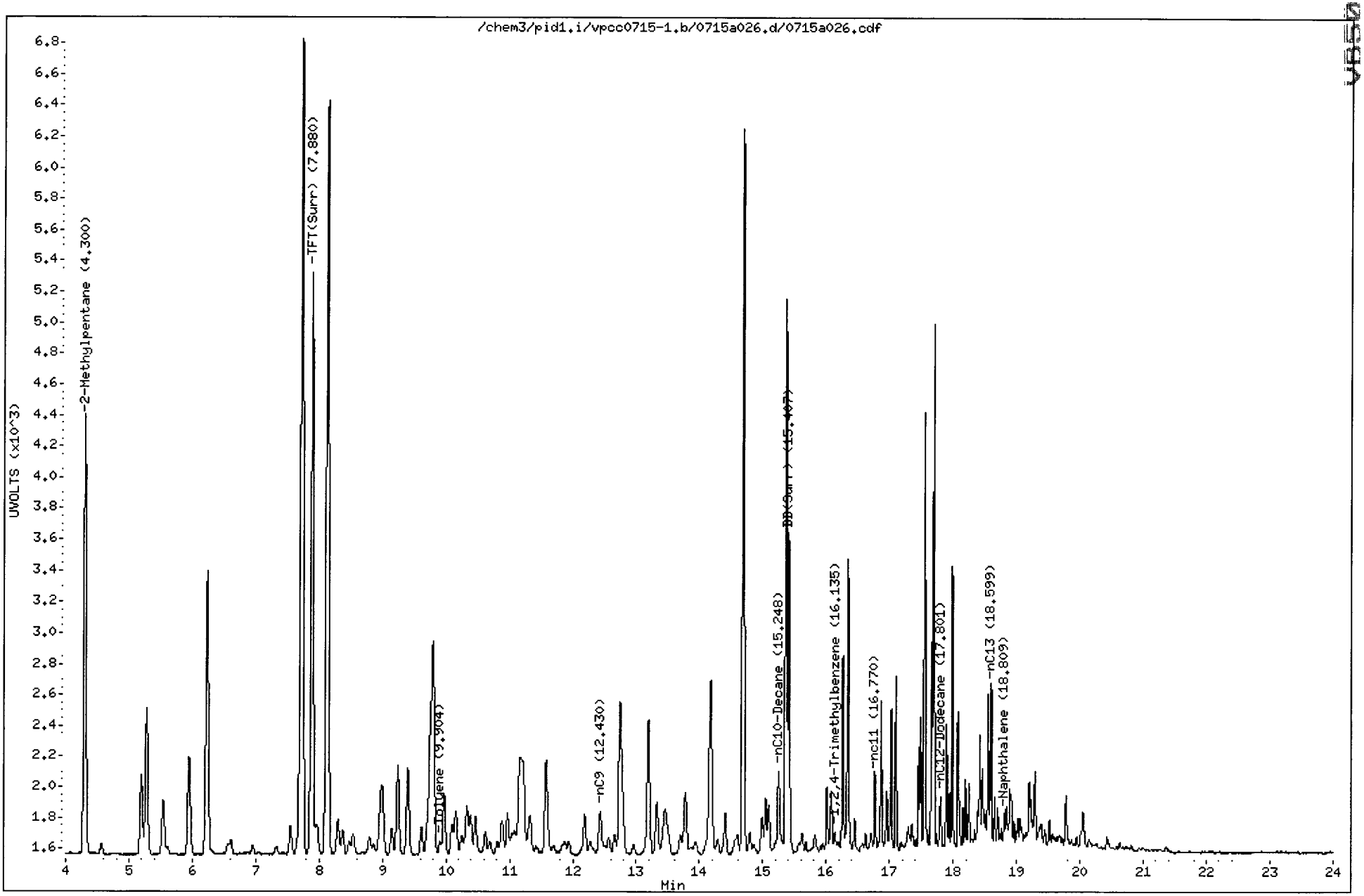
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB50I 0715a026.d



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a027.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a027.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50J
Client ID:
Injection Date: 15-JUL-2012 23:39
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	3913	54805	99.6	TFT(Surr)
15.407	0.000	2127	20777	105.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	277504	0.256
8015B 2MP-TMB	(4.21 to 16.22)	2234698	387313	0.173
AK101 nC6-nC10	(4.71 to 15.12)	1783632	335100	0.188
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	408148	0.355

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07 07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.001	4849	99.3	TFT(Surr)
15.414	0.001	8744	102.8	BB(Surr)

07/16/12

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.783	-0.025	369	0.554	Ethylbenzene
12.968	0.000	148	0.204	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a027.d

Page 1

Date : 15-JUL-2012 23:39

Client ID:

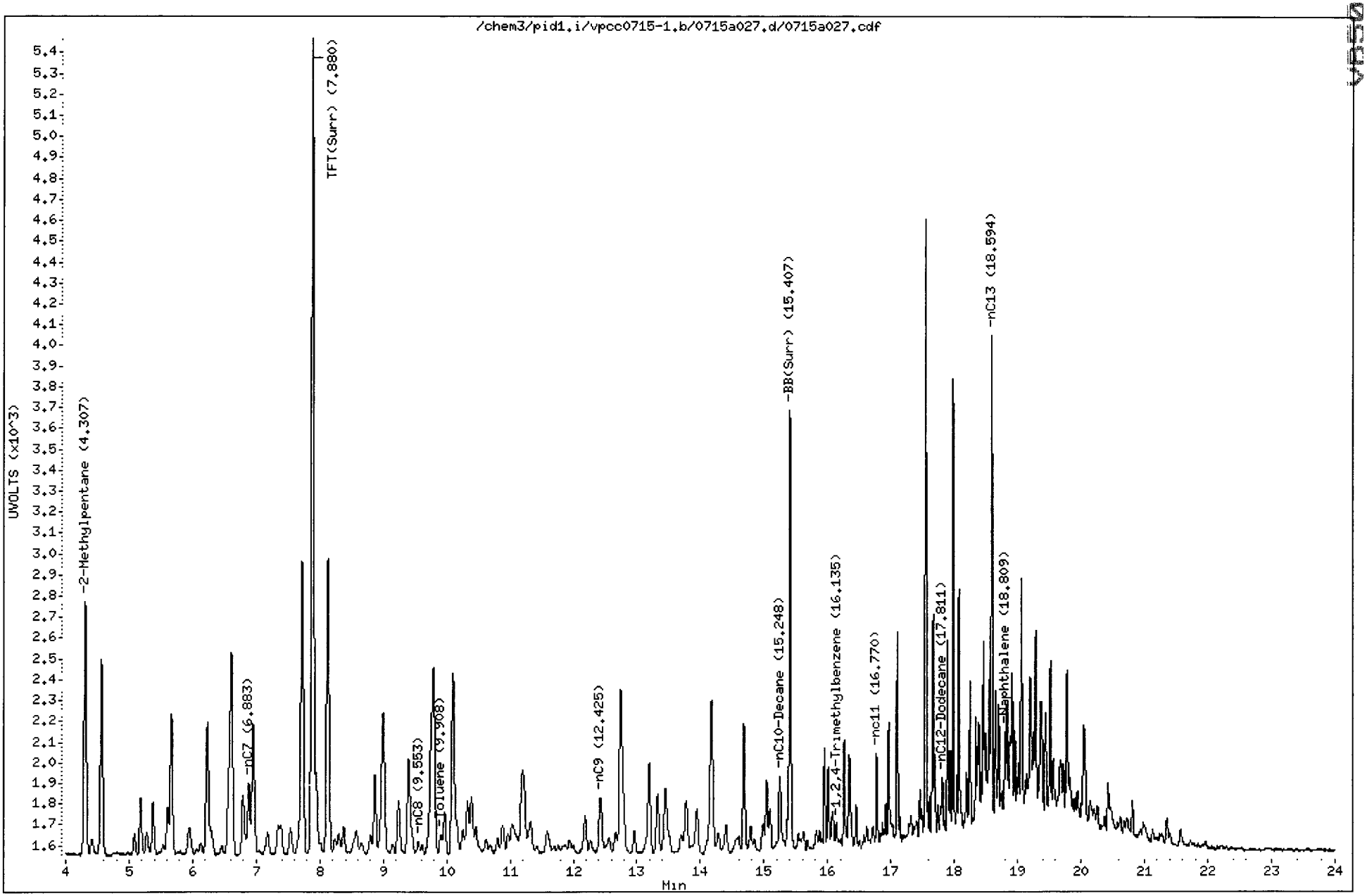
Instrument: pid1.i

Sample Info: VB50J

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



VB50 : 060483

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a028.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a028.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50K
Client ID:
Injection Date: 16-JUL-2012 00:08
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	3887	48124	98.9	TFT(Surr)
15.407	0.000	2107	17386	104.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	2675	0.002
8015B 2MP-TMB	(4.21 to 16.22)	2234698	6044	0.003
AK101 nC6-nC10	(4.71 to 15.12)	1783632	5467	0.003
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	7825	0.007

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.002	4806	98.4	TFT(Surr)
15.414	0.001	8786	103.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a028.d

Date : 16-JUL-2012 00:08

Client ID:

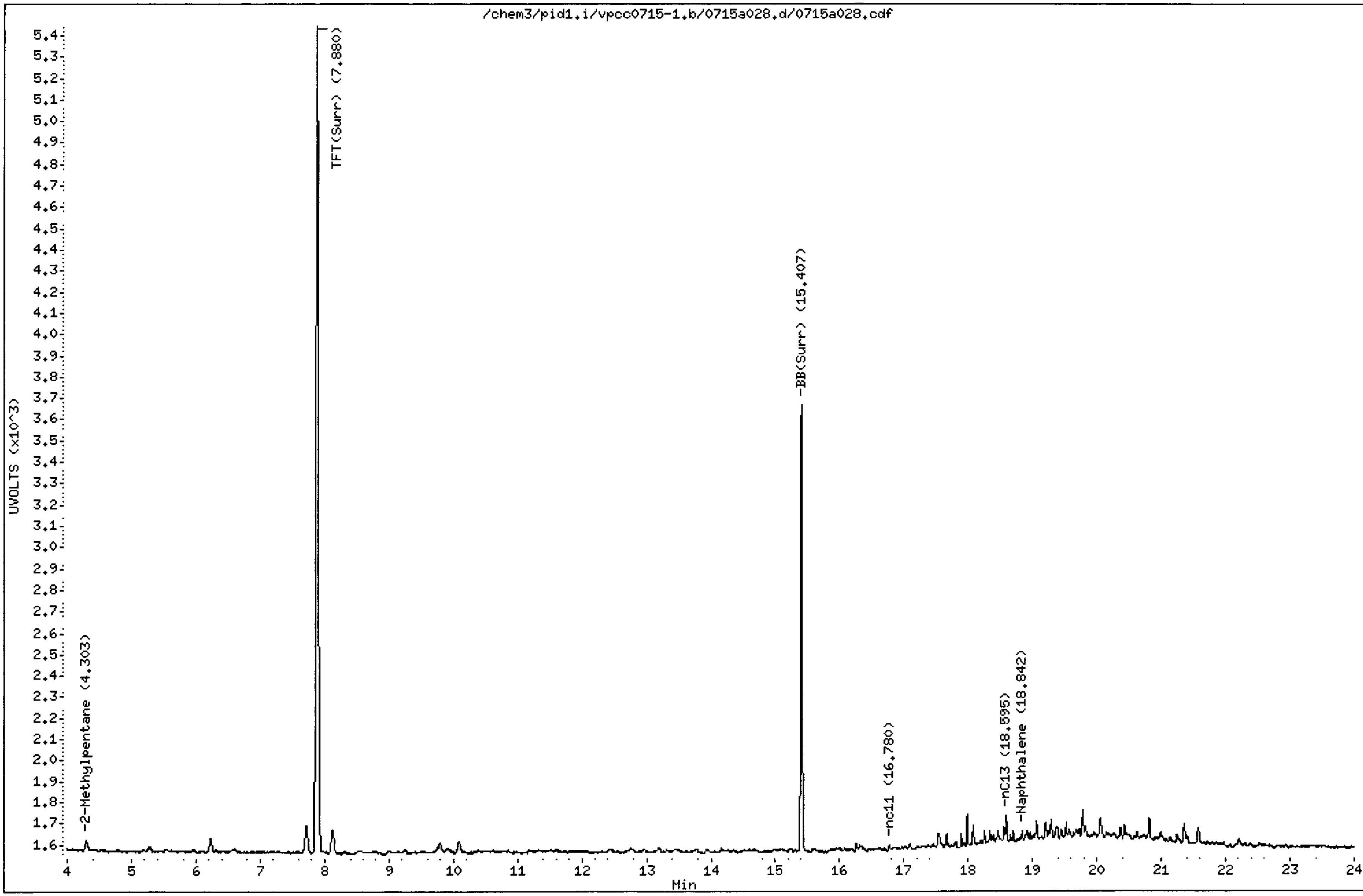
Sample Info: VB50K

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



VB50 : 00485

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a029.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a029.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50L
Client ID:
Injection Date: 16-JUL-2012 00:37
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	4321	56529	109.9	TFT(Surr)
15.407	0.000	2284	20893	113.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	1193604	1.100
8015B 2MP-TMB	(4.21 to 16.22)	2234698	3316623	1.484
AK101 nC6-nC10	(4.71 to 15.12)	1783632	3005694	1.685
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	1473977	1.282

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.002	5350	109.6	TFT(Surr)
15.414	0.000	9576	112.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.059	0.007	161812	198.156	Benzene E
9.914	0.000	2359	3.053	Toluene
12.806	-0.002	1938	2.908	Ethylbenzene
12.963	-0.005	2003	2.762	M/P-Xylene
13.946	0.026	200	0.357	O-Xylene
4.572	-0.007	464	3.731	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a029.d

Page 1

Date : 16-JUL-2012 00:37

Client ID:

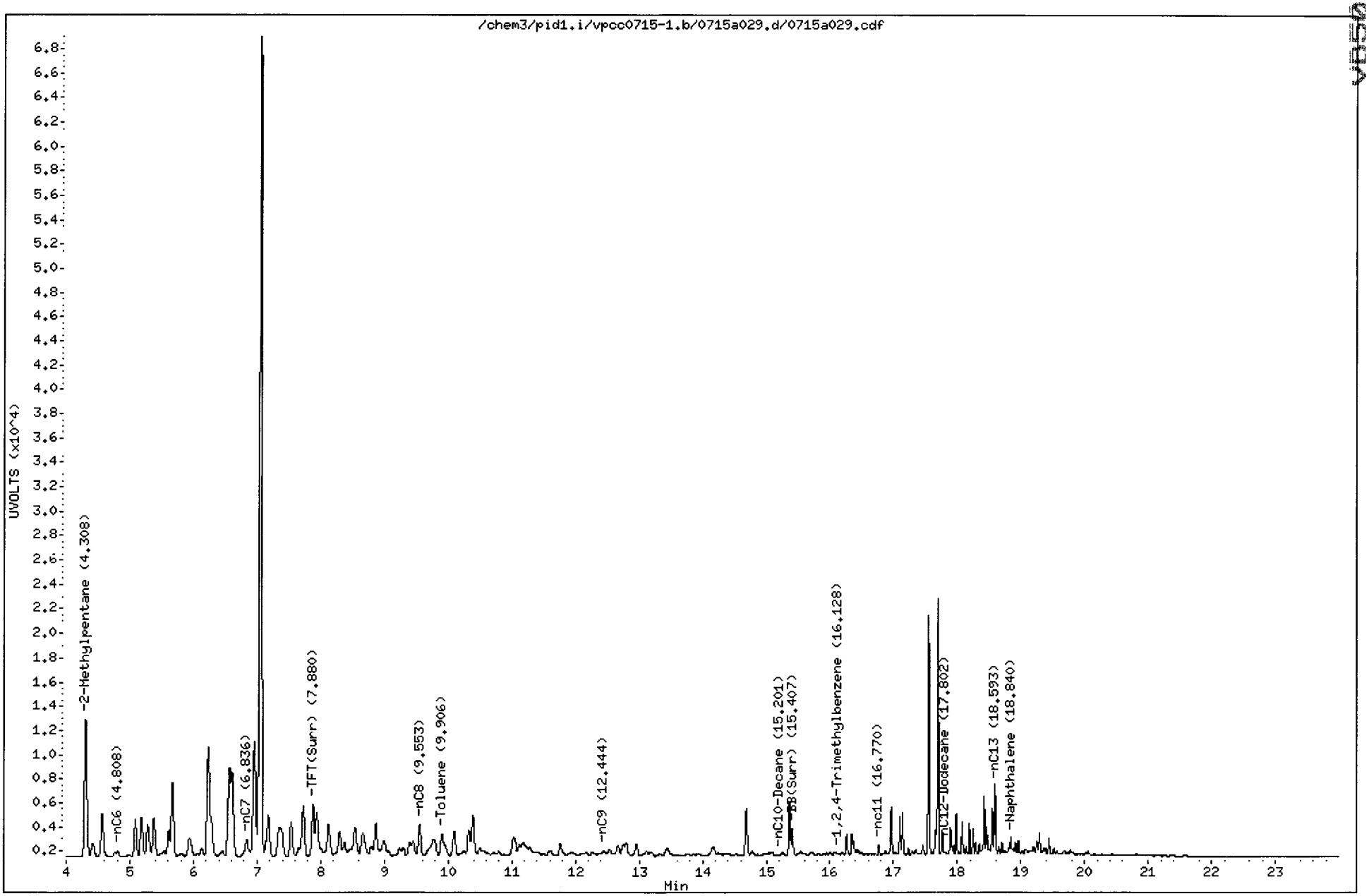
Instrument: pid1.i

Sample Info: VB50L

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



VB50 : 00437

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a030.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a030.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50M
Client ID:
Injection Date: 16-JUL-2012 01:07
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	0.001	3682	46958	93.7	TFT(Surr)
15.407	0.000	1963	16795	97.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	55920	0.052
8015B 2MP-TMB	(4.21 to 16.22)	2234698	122163	0.055
AK101 nC6-nC10	(4.71 to 15.12)	1783632	98171	0.055
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	78743	0.068

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	4520	92.6	TFT(Surr)
15.414	0.001	8200	96.4	BB(Surr)

07/16/12

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a030.d

Date : 16-JUL-2012 01:07

Client ID:

Sample Info: VB50M

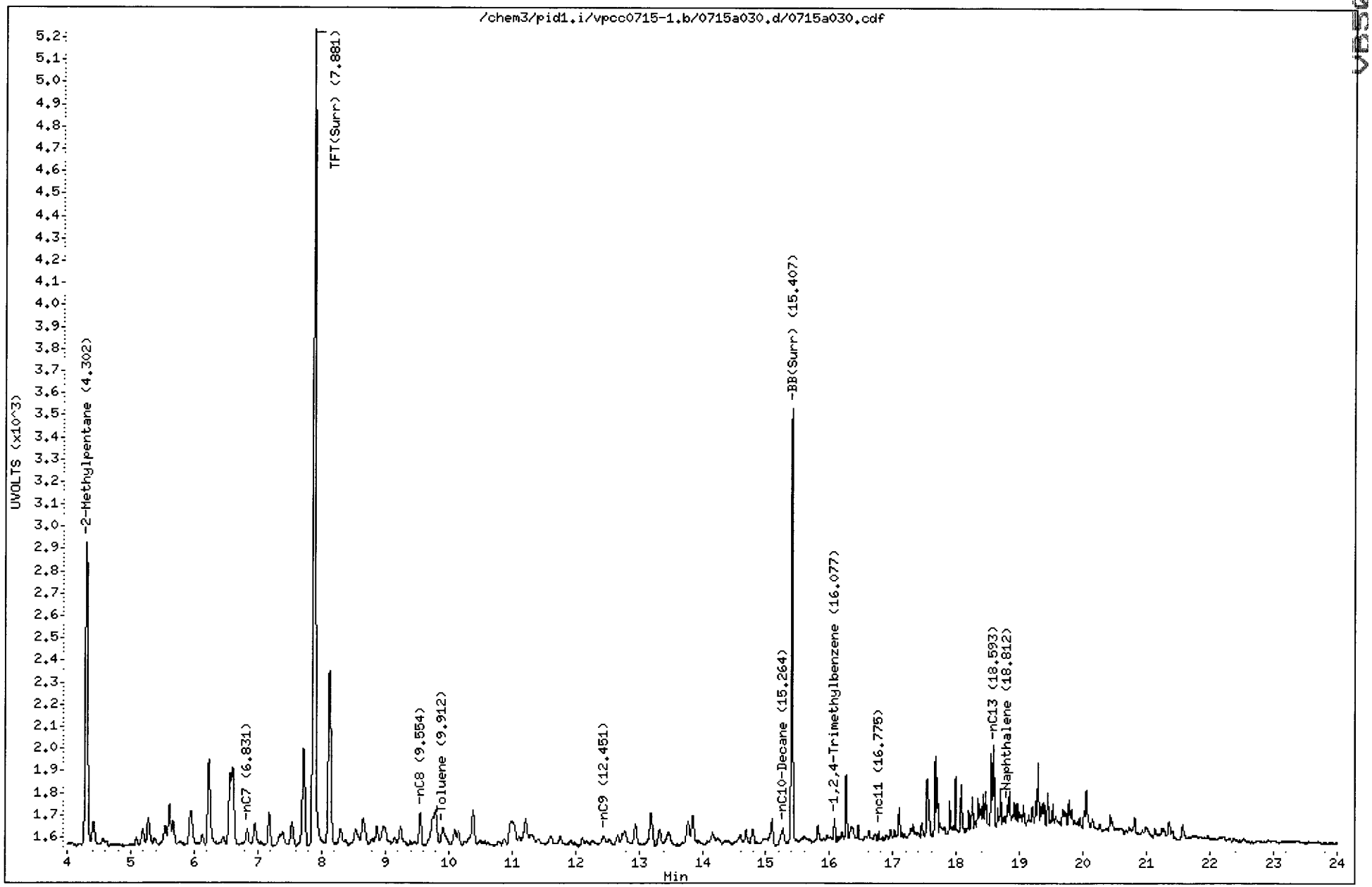
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB50 : 00489



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a031.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a031.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: BCAL#4
Client ID:
Injection Date: 16-JUL-2012 01:36
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	3777	46853	96.1	TFT(Surr)
15.406	-0.001	2073	17495	102.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	154494	0.142
8015B 2MP-TMB	(4.21 to 16.22)	2234698	155133	0.069
AK101 nC6-nC10	(4.71 to 15.12)	1783632	148772	0.083
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	154683	0.135

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	4624	94.7	TFT(Surr)
15.415	0.001	8709	102.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.054	0.002	4119	5.044	Benzene
9.916	0.002	3770	4.879	Toluene
12.808	0.000	3380	5.072	Ethylbenzene
12.969	0.001	7349	10.136	M/P-Xylene
13.921	0.001	2850	5.092	O-Xylene
4.581	0.002	782	6.288	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a031.d

Date : 16-JUL-2012 01:36

Client ID:

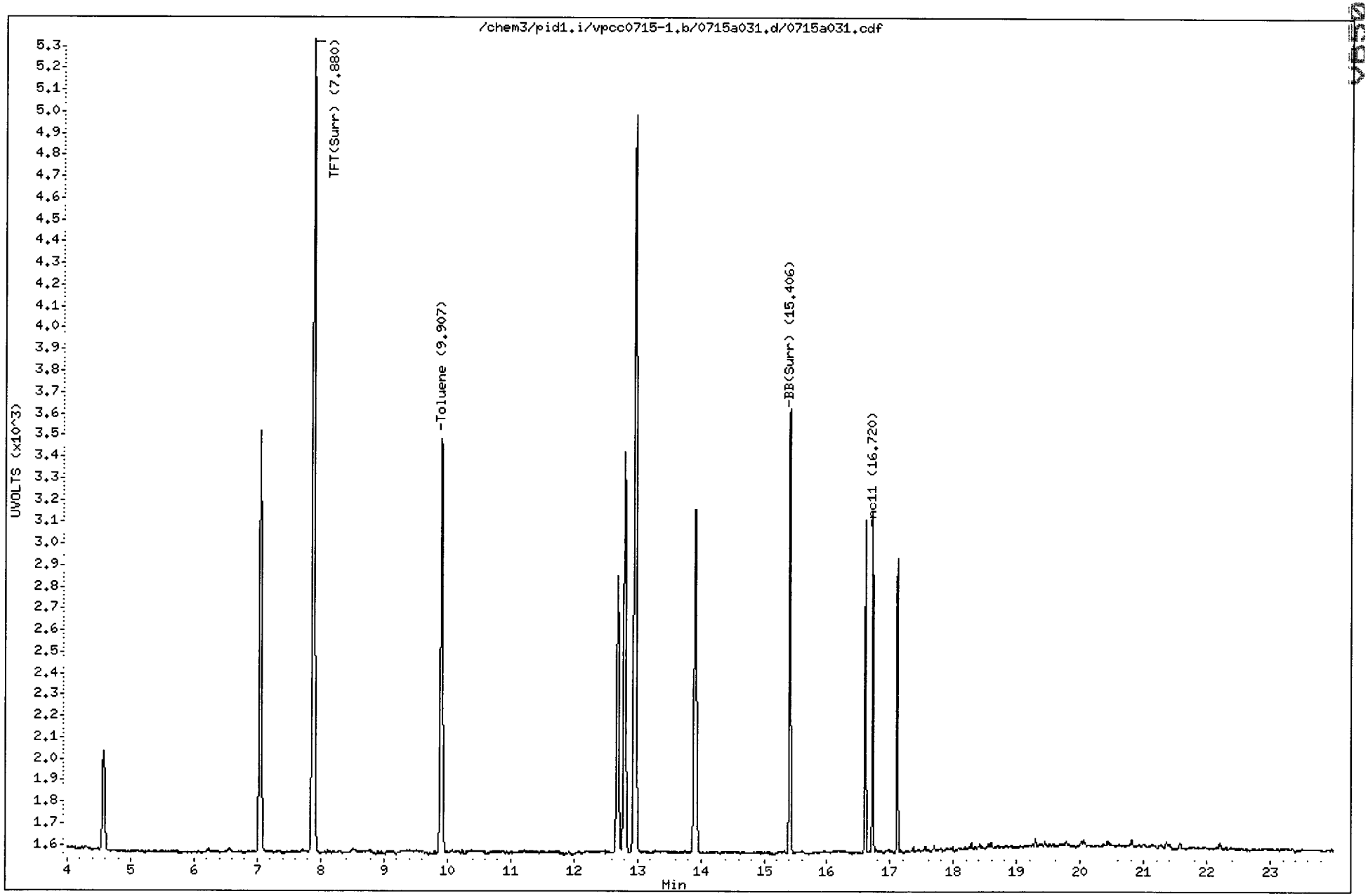
Sample Info: BCAL#4

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a032.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a032.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: GCAL#4
Client ID:
Injection Date: 16-JUL-2012 02:05
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	0.000	3901	55658	99.3	TFT(Surr)
15.407	0.000	2041	17732	101.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	980730	0.904
8015B 2MP-TMB	(4.21 to 16.22)	2234698	2032777	0.910
AK101 nC6-nC10	(4.71 to 15.12)	1783632	1632009	0.915
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	1023307	0.890

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	4563	93.5	TFT(Surr)
15.415	0.001	8523	100.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.055	0.003	2885	3.533	Benzene
9.918	0.003	28848	37.335	Toluene
12.809	0.001	7344	11.021	Ethylbenzene
12.974	0.006	29259	40.353	M/P-Xylene
13.923	0.003	10397	18.577	O-Xylene
4.572	-0.007	523	4.206	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a032.d

Page 1

Date : 16-JUL-2012 02:05

Client ID:

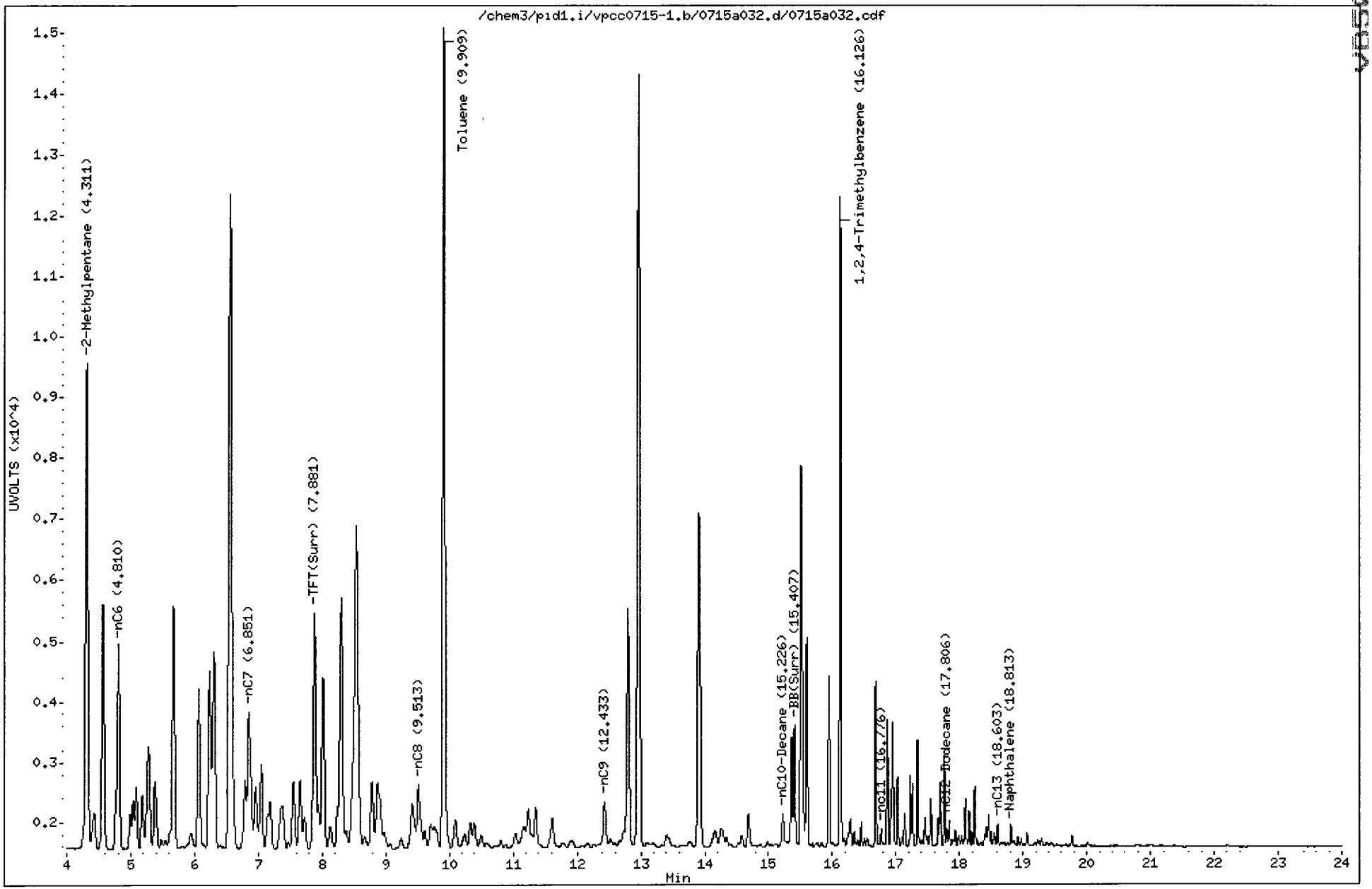
Instrument: pid1.i

Sample Info: GCAL#4

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a033.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a033.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50O
Client ID:
Injection Date: 16-JUL-2012 02:34
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	3824	47368	97.3	TFT(Surr)
15.407	0.000	2046	16907	101.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	3217	0.003
8015B 2MP-TMB	(4.21 to 16.22)	2234698	5779	0.003
AK101 nC6-nC10	(4.71 to 15.12)	1783632	4908	0.003
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	3951	0.003

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.001	4667	95.6	TFT(Surr)
15.414	0.001	8516	100.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a033.d

Date : 16-JUL-2012 02:34

Client ID:

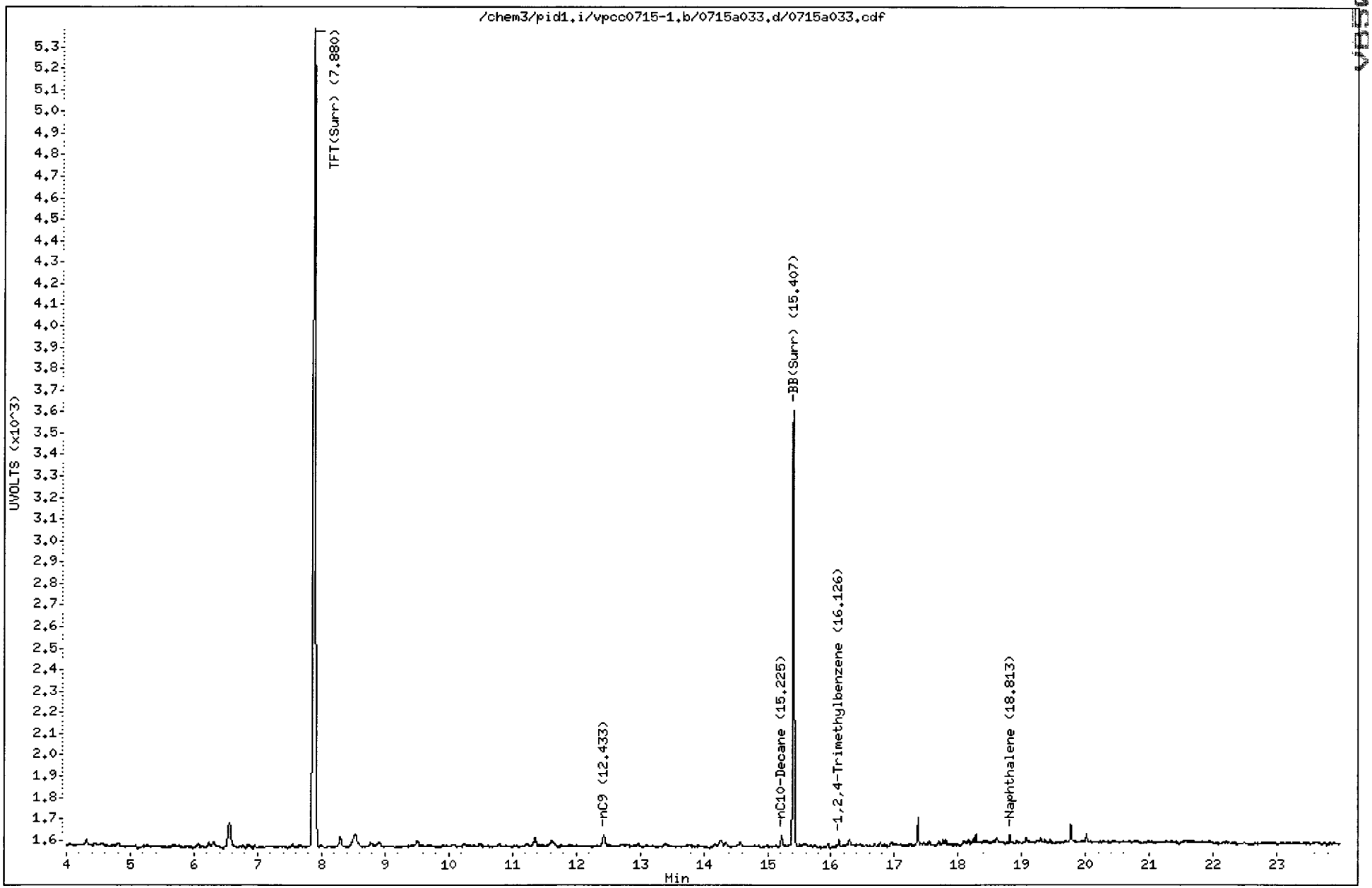
Sample Info: VB500

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a034.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a034.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: VB50P
Client ID:
Injection Date: 16-JUL-2012 03:04
Matrix: WATER
Dilution Factor: 1.000

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FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	0.001	3617	44947	92.0	TFT(Surr)
15.407	0.000	1916	15988	95.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	1027	0.001
8015B 2MP-TMB	(4.21 to 16.22)	2234698	770	0.000
AK101 nC6-nC10	(4.71 to 15.12)	1783632	770	0.000
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	1027	0.001

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

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07/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	4423	90.6	TFT(Surr)
15.414	0.001	7947	93.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a034.d

Page 1

Date : 16-JUL-2012 03:04

Client ID:

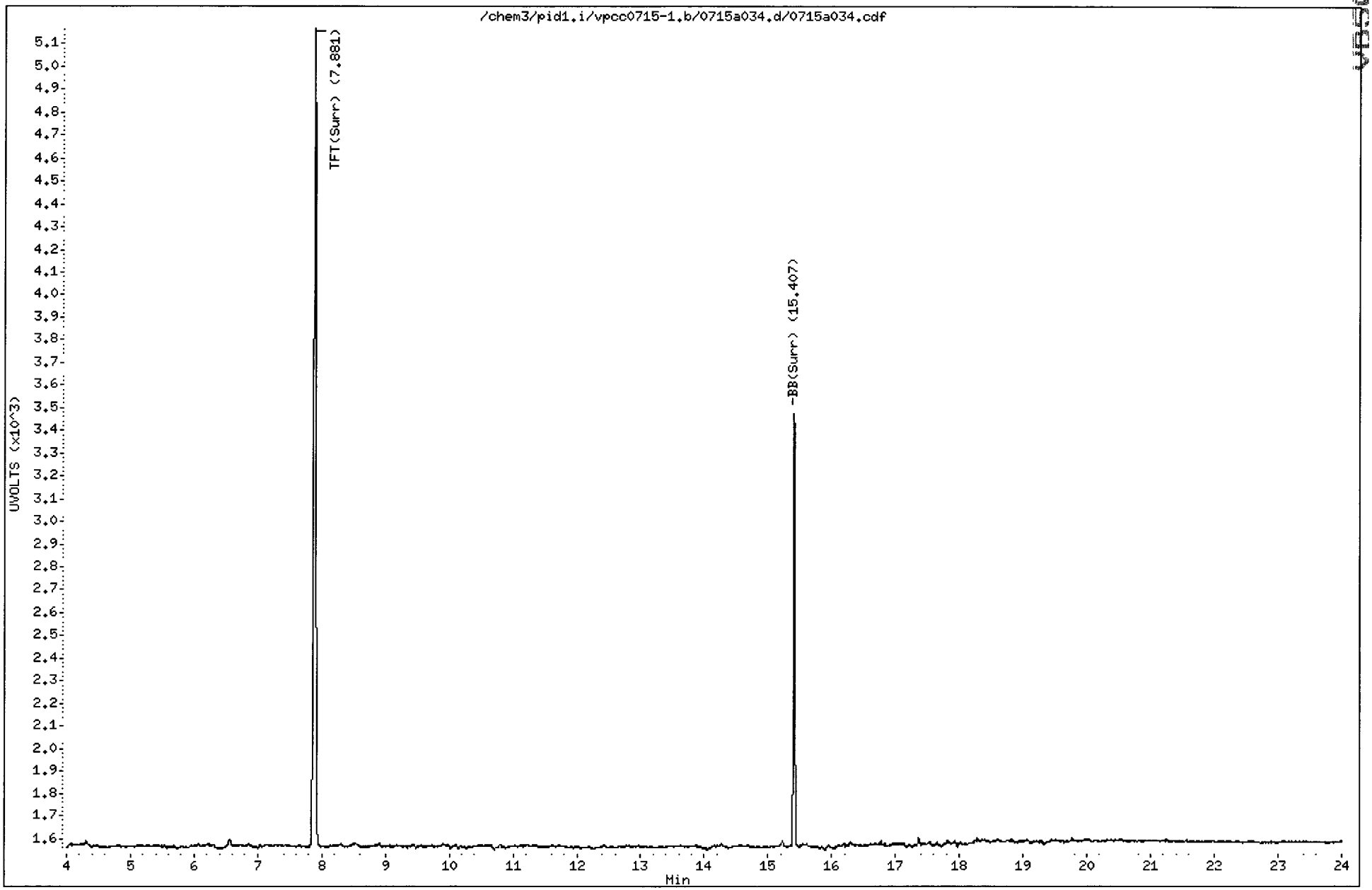
Instrument: pid1.i

Sample Info: VB50P

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a035.d ARI ID: BCAL#5
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a035.d Client ID:
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m Injection Date: 16-JUL-2012 03:33
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 14-Jul-2012 Dilution Factor: 1.000
BETX Ical Date: 13-JUL-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.000	3620	44804	92.1	TFT(Surr)
15.406	0.000	2048	16819	101.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	155530	0.143
8015B 2MP-TMB	(4.21 to 16.22)	2234698	156729	0.070
AK101 nC6-nC10	(4.71 to 15.12)	1783632	150260	0.084
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	155949	0.136

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	4401	90.1	TFT(Surr)
15.415	0.001	8508	100.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.054	0.002	4170	5.107	Benzene
9.916	0.001	3784	4.897	Toluene
12.808	0.001	3409	5.116	Ethylbenzene
12.969	0.001	7415	10.227	M/P-Xylene
13.921	0.001	2897	5.176	O-Xylene
4.581	0.002	779	6.264	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a035.d

Date : 16-JUL-2012 03:33

Client ID:

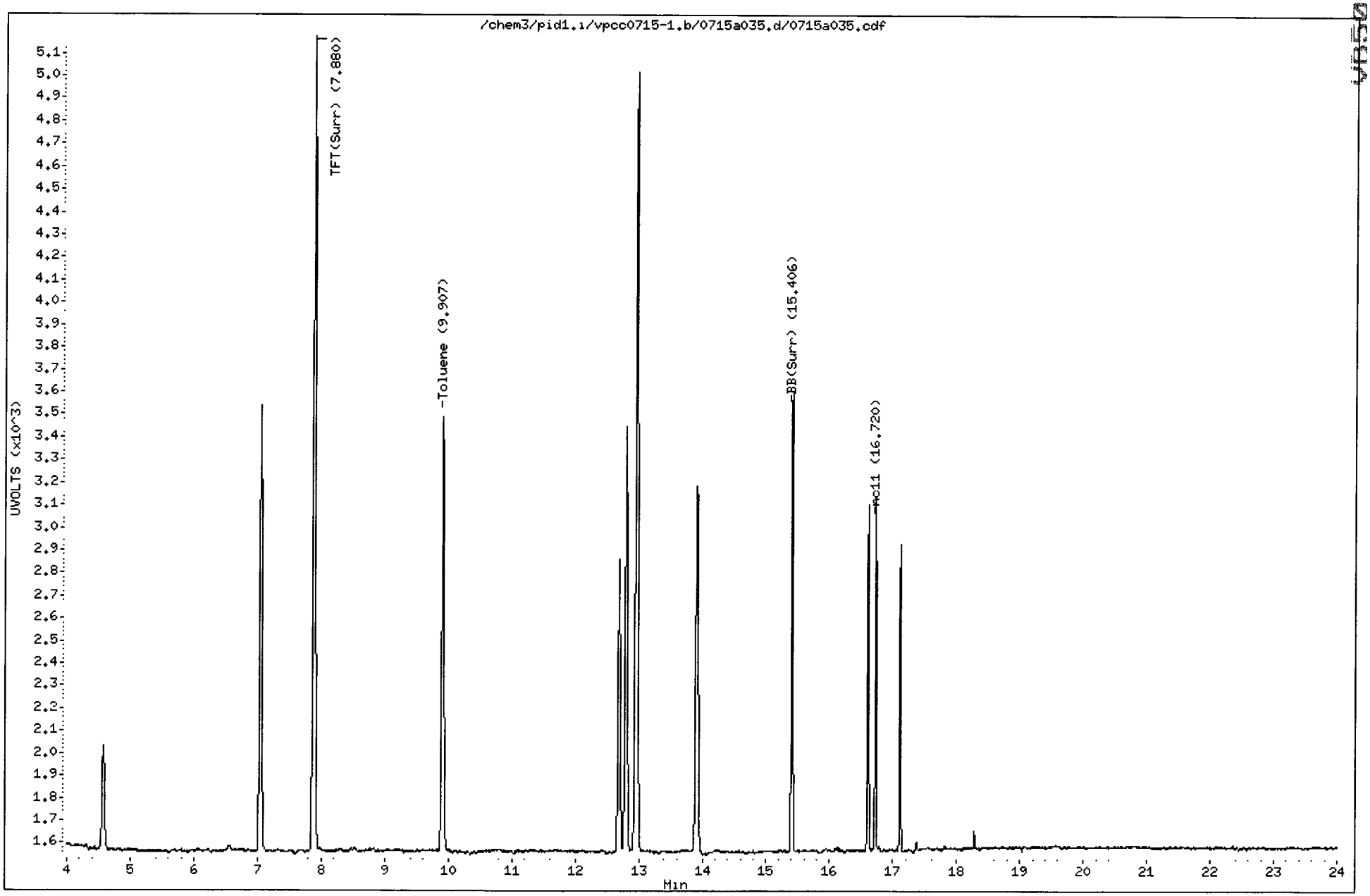
Sample Info: BCAL#5

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0715-1.b/0715a036.d
Data file 2: /chem3/pid1.i/vpcc0715-2.b/0715a036.d
Method: /chem3/pid1.i/vpcc0715-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: GCAL#5
Client ID:
Injection Date: 16-JUL-2012 04:02
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	0.001	3981	57095	101.3	TFT(Surr)
15.408	0.001	2092	18392	103.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.91)	1084751	994720	0.917
8015B 2MP-TMB	(4.21 to 16.22)	2234698	2021625	0.905
AK101 nC6-nC10	(4.71 to 15.12)	1783632	1620224	0.908
NWTPHG Tol-Nap	(9.81 to 18.91)	1149637	1039894	0.905

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.002	4694	96.1	TFT(Surr)
15.415	0.002	8696	102.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.055	0.003	2868	3.512	Benzene
9.918	0.004	28362	36.706	Toluene
12.809	0.001	7294	10.946	Ethylbenzene
12.974	0.006	29012	40.013	M/P-Xylene
13.923	0.003	10125	18.091	O-Xylene
4.571	-0.008	527	4.238	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0715-1.b/0715a036.d

Page 1

Date : 16-JUL-2012 04:02

Client ID:

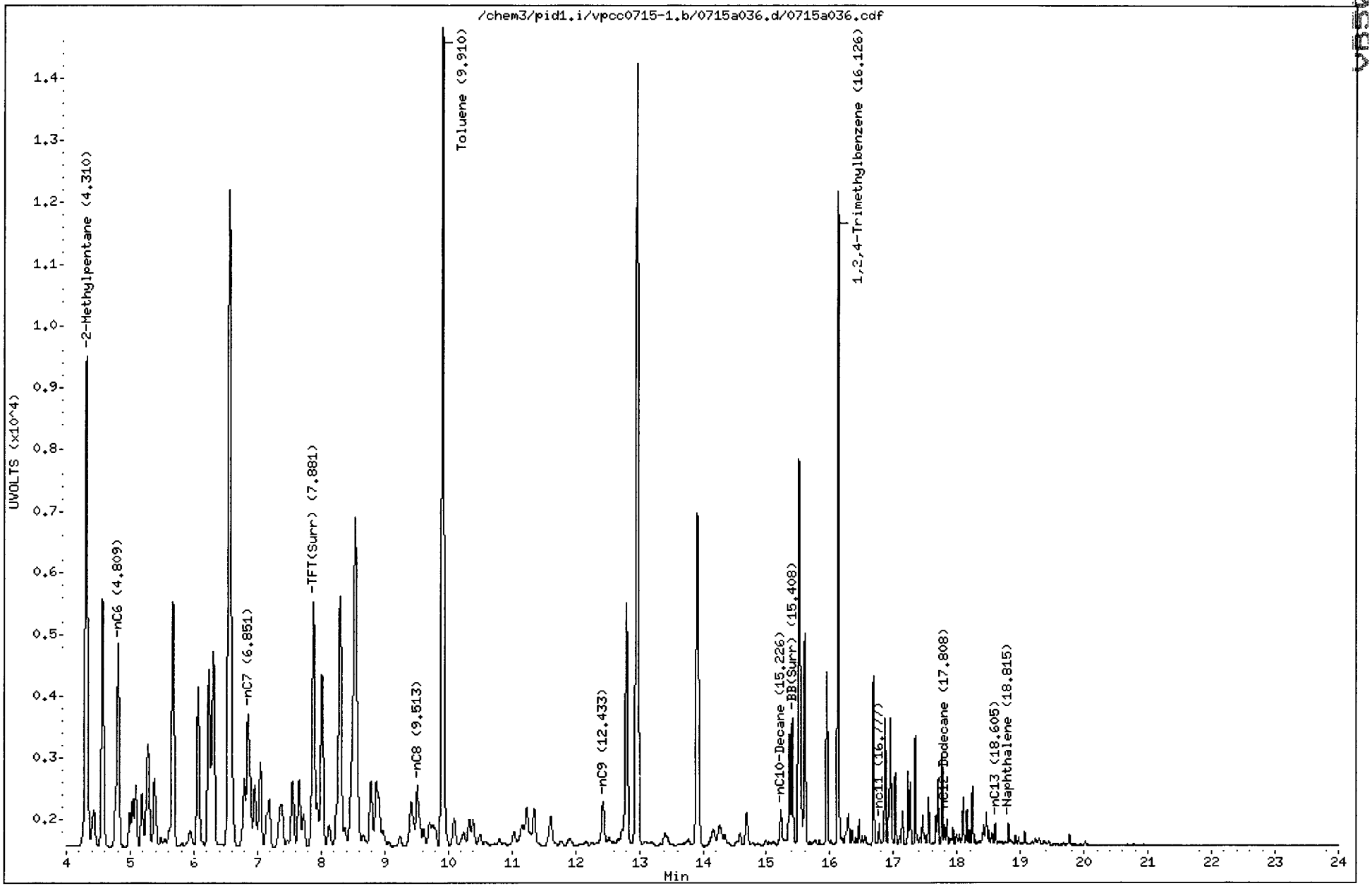
Instrument: pid1.i

Sample Info: GCAL#5

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0716-1.b/0716a007.d
Data file 2: /chem3/pid1.i/vpcc0716-2.b/0716a007.d
Method: /chem3/pid1.i/vpcc0716-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: rt+bcal
Client ID:
Injection Date: 16-JUL-2012 11:53
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.883	0.000	3826	47566	97.3	TFT(Surr)
15.409	0.000	1998	16528	99.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.92)	1084751	281247	0.259
8015B 2MP-TMB	(4.21 to 16.23)	2234698	333993	0.149
AK101 nC6-nC10	(4.71 to 15.13)	1783632	241405	0.135
NWTPHG Tol-Nap	(9.81 to 18.94)	1149637	302991	0.264

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.891	0.000	4862	99.6	TFT(Surr)
15.417	0.000	8475	99.6	BB(Surr)

7/16/12 17
7/17/12

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.057	0.000	4017	4.919	Benzene
9.918	0.000	3692	4.778	Toluene
12.811	0.000	3334	5.003	Ethylbenzene
12.972	0.000	7316	10.090	M/P-Xylene
13.924	0.000	2778	4.964	O-Xylene
4.583	0.000	774	6.224	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0716-1.b/0716a007.d

Date : 16-JUL-2012 11:53

Client ID:

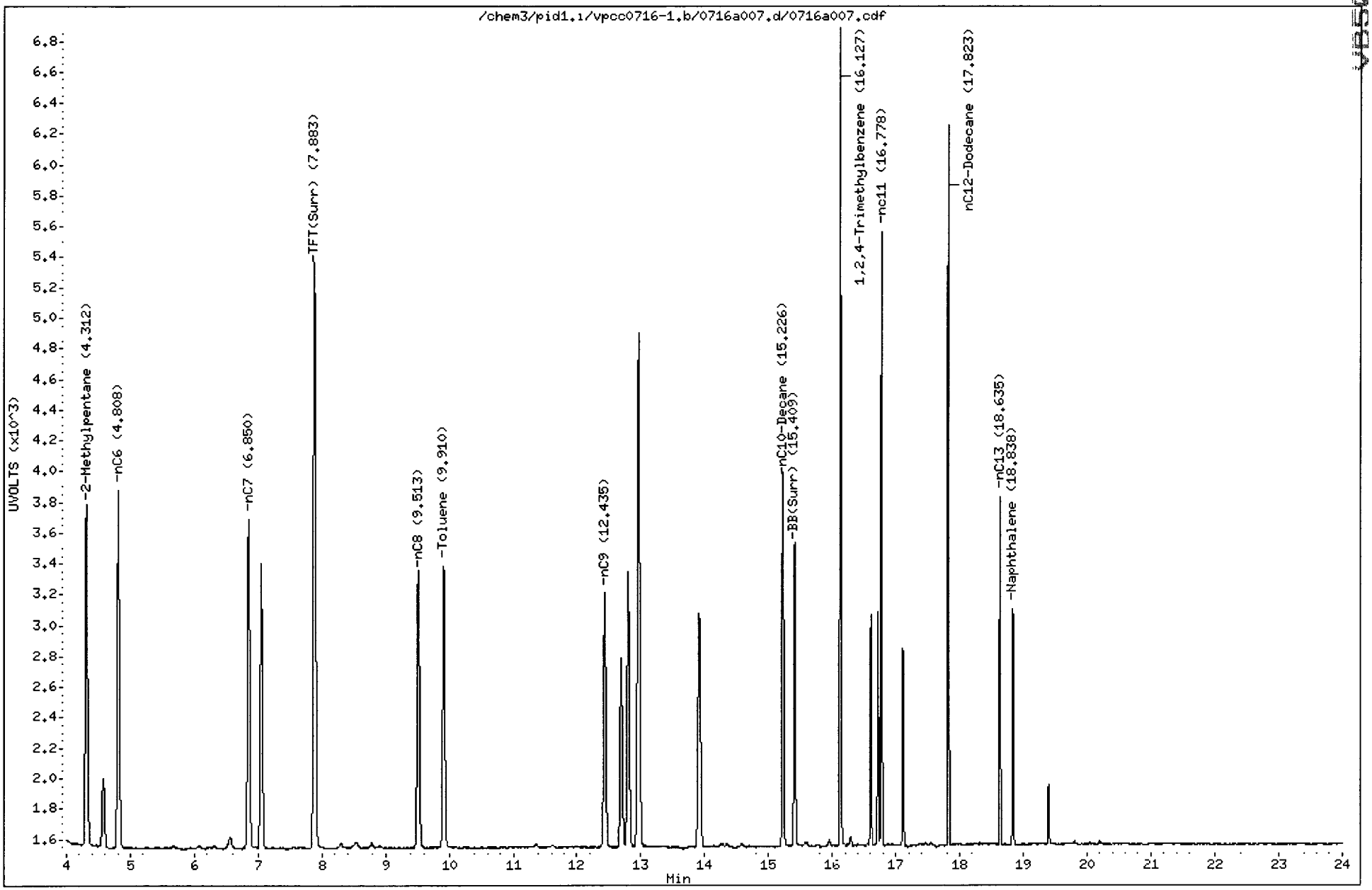
Sample Info: rt+bcal

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0716-1.b/0716a008.d ARI ID: gcal
Data file 2: /chem3/pid1.i/vpcc0716-2.b/0716a008.d Client ID:
Method: /chem3/pid1.i/vpcc0716-2.b/PIDB15ml.m Injection Date: 16-JUL-2012 12:22
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 14-Jul-2012 Dilution Factor: 1.000
BETX Ical Date: 13-JUL-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	-0.002	4288	61535	109.1	TFT(Surr)
15.408	-0.001	2108	18610	104.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.92)	1084751	1039145	0.958
8015B 2MP-TMB	(4.21 to 16.23)	2234698	2302686	1.030
AK101 nC6-nC10	(4.71 to 15.13)	1783632	1871142	1.049
NWTPHG Tol-Nap	(9.81 to 18.94)	1149637	1086543	0.945

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	-0.002	5134	105.1	TFT(Surr)
15.416	-0.001	8817	103.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.056	-0.001	2853	3.494	Benzene
9.919	0.000	28310	36.638	Toluene
12.810	-0.001	7288	10.937	Ethylbenzene
12.975	0.003	29248	40.338	M/P-Xylene
13.923	-0.001	10045	17.948	O-Xylene
4.571	-0.011	666	5.356	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0716-1.b/0716a008.d

Page 1

Date : 16-JUL-2012 12:22

Client ID:

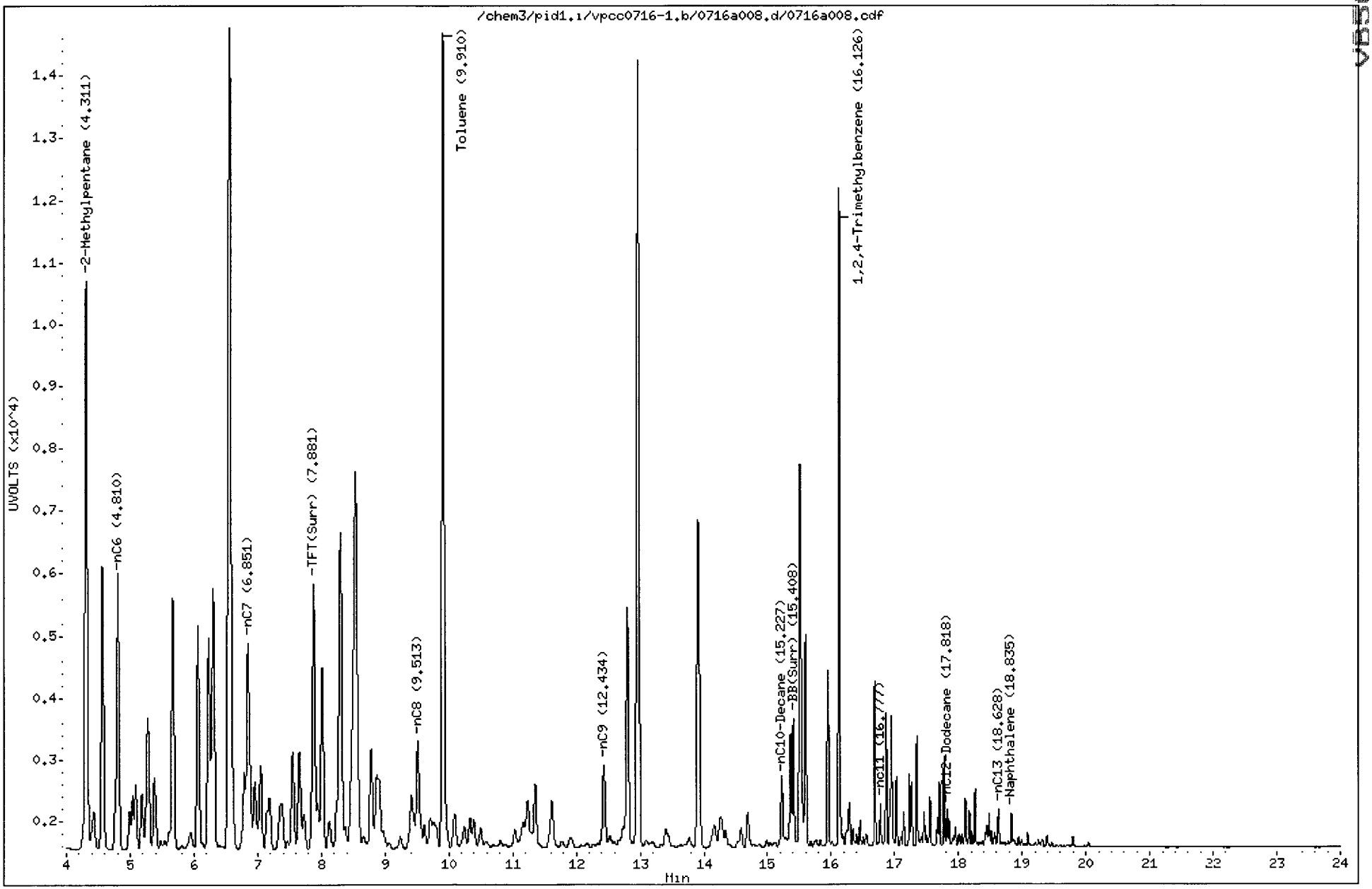
Instrument: pid1.i

Sample Info: gcal

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0716-1.b/0716a009.d
Data file 2: /chem3/pid1.i/vpcc0716-2.b/0716a009.d
Method: /chem3/pid1.i/vpcc0716-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: lcs0716
Client ID:
Injection Date: 16-JUL-2012 12:51
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.879	-0.003	4074	58208	103.7	TFT(Surr)
15.408	-0.001	2011	17625	99.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.92)	1084751	1021022	0.941
8015B 2MP-TMB	(4.21 to 16.23)	2234698	2239367	1.002
AK101 nC6-nC10	(4.71 to 15.13)	1783632	1818796	1.020
NWTPHG Tol-Nap	(9.81 to 18.94)	1149637	1064519	0.926

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	-0.002	4835	99.0	TFT(Surr)
15.416	-0.001	8343	98.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.055	-0.001	2758	3.377	Benzene
9.918	0.000	27745	35.907	Toluene
12.810	-0.001	7160	10.745	Ethylbenzene
12.975	0.003	28929	39.898	M/P-Xylene
13.924	0.000	9925	17.733	O-Xylene
4.571	-0.012	621	4.994	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

07/17/12
07/17/12

Data File: /chem3/pid1.i/vpcc0716-1.b/0716a009.d

Date : 16-JUL-2012 12:51

Client ID:

Sample Info: lcs0716

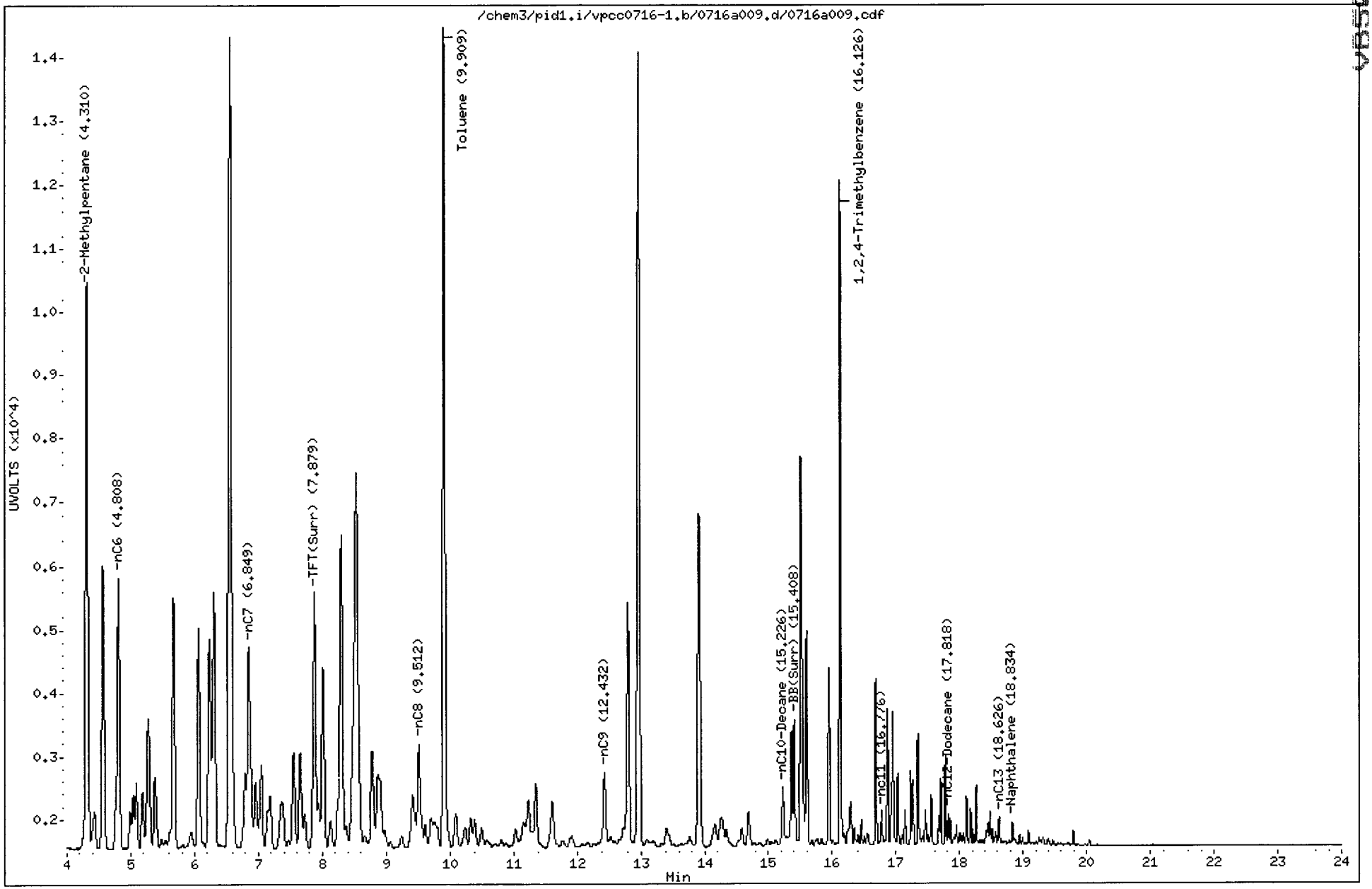
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

/chem3/pid1.i/vpcc0716-1.b/0716a009.d/0716a009.cdf



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0716-1.b/0716a010.d
Data file 2: /chem3/pid1.i/vpcc0716-2.b/0716a010.d
Method: /chem3/pid1.i/vpcc0716-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: lcsd0716
Client ID:
Injection Date: 16-JUL-2012 13:21
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	-0.002	4262	60934	108.4	TFT(Surr)
15.409	0.000	2106	18515	104.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.92)	1084751	1015858	0.936
8015B 2MP-TMB	(4.21 to 16.23)	2234698	2205473	0.987
AK101 nC6-nC10	(4.71 to 15.13)	1783632	1789989	1.004
NWTPHG Tol-Nap	(9.81 to 18.94)	1149637	1058601	0.921

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/17/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.890	-0.001	5067	103.8	TFT(Surr)
15.416	-0.001	8843	103.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.056	-0.001	2757	3.376	Benzene
9.919	0.000	27509	35.602	Toluene
12.810	-0.001	7067	10.605	Ethylbenzene
12.975	0.003	28526	39.342	M/P-Xylene
13.924	0.000	9935	17.751	O-Xylene
4.572	-0.010	593	4.769	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0716-1.b/0716a010.d

Date : 16-JUL-2012 13:21

Client ID:

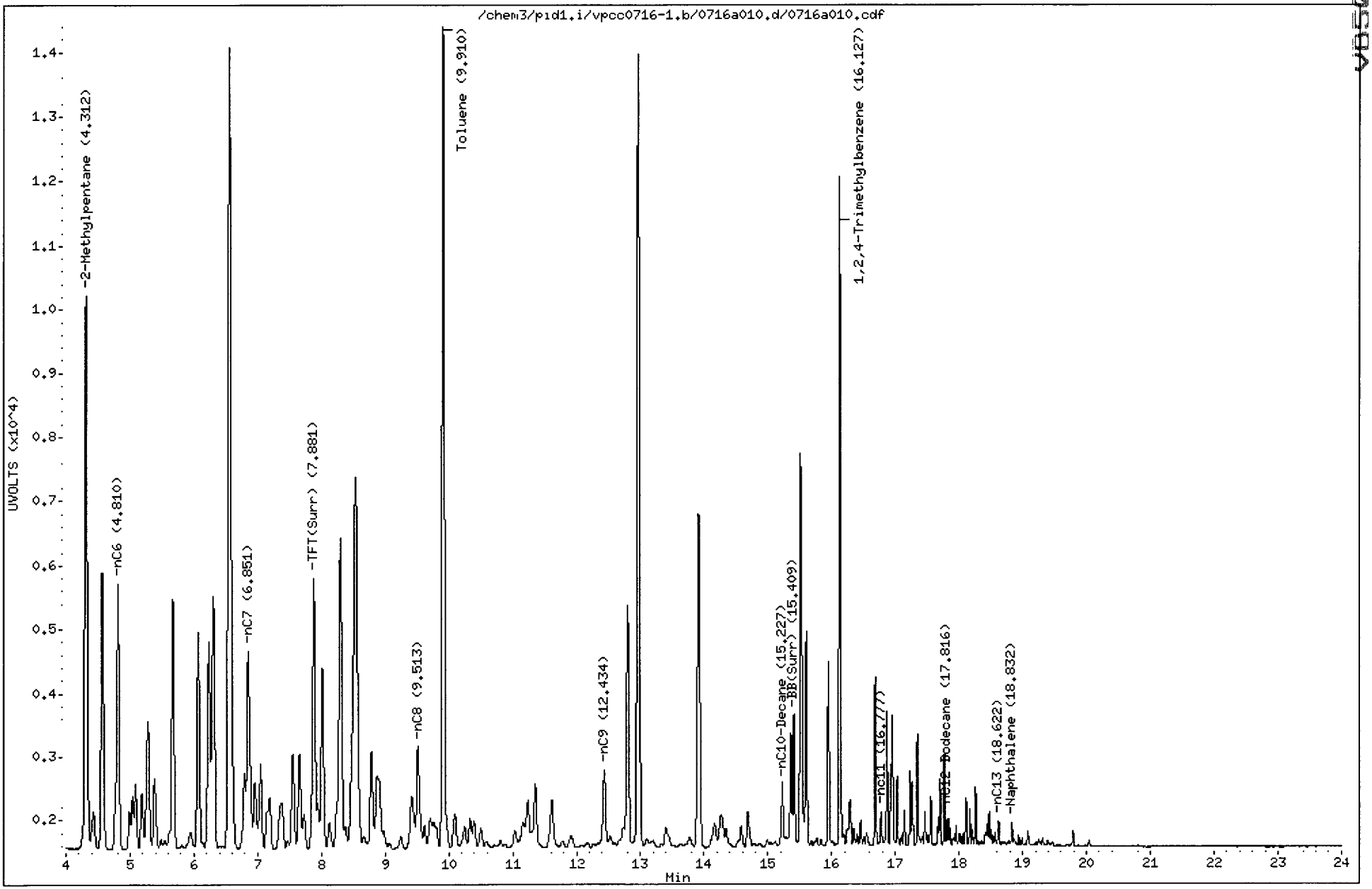
Sample Info: lcsd0716

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0716-1.b/0716a011.d
Data file 2: /chem3/pid1.i/vpcc0716-2.b/0716a011.d
Method: /chem3/pid1.i/vpcc0716-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: mb0716
Client ID:
Injection Date: 16-JUL-2012 13:50
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.882	-0.001	3964	49016	100.9	TFT(Surr)
15.409	0.000	2090	17340	103.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.92)	1084751	7401	0.007
8015B 2MP-TMB	(4.21 to 16.23)	2234698	14184	0.006
AK101 nC6-nC10	(4.71 to 15.13)	1783632	11996	0.007
NWTPHG Tol-Nap	(9.81 to 18.94)	1149637	7969	0.007

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/17/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.890	-0.001	4894	100.2	TFT(Surr)
15.416	-0.001	8820	103.7	BB(Surr)

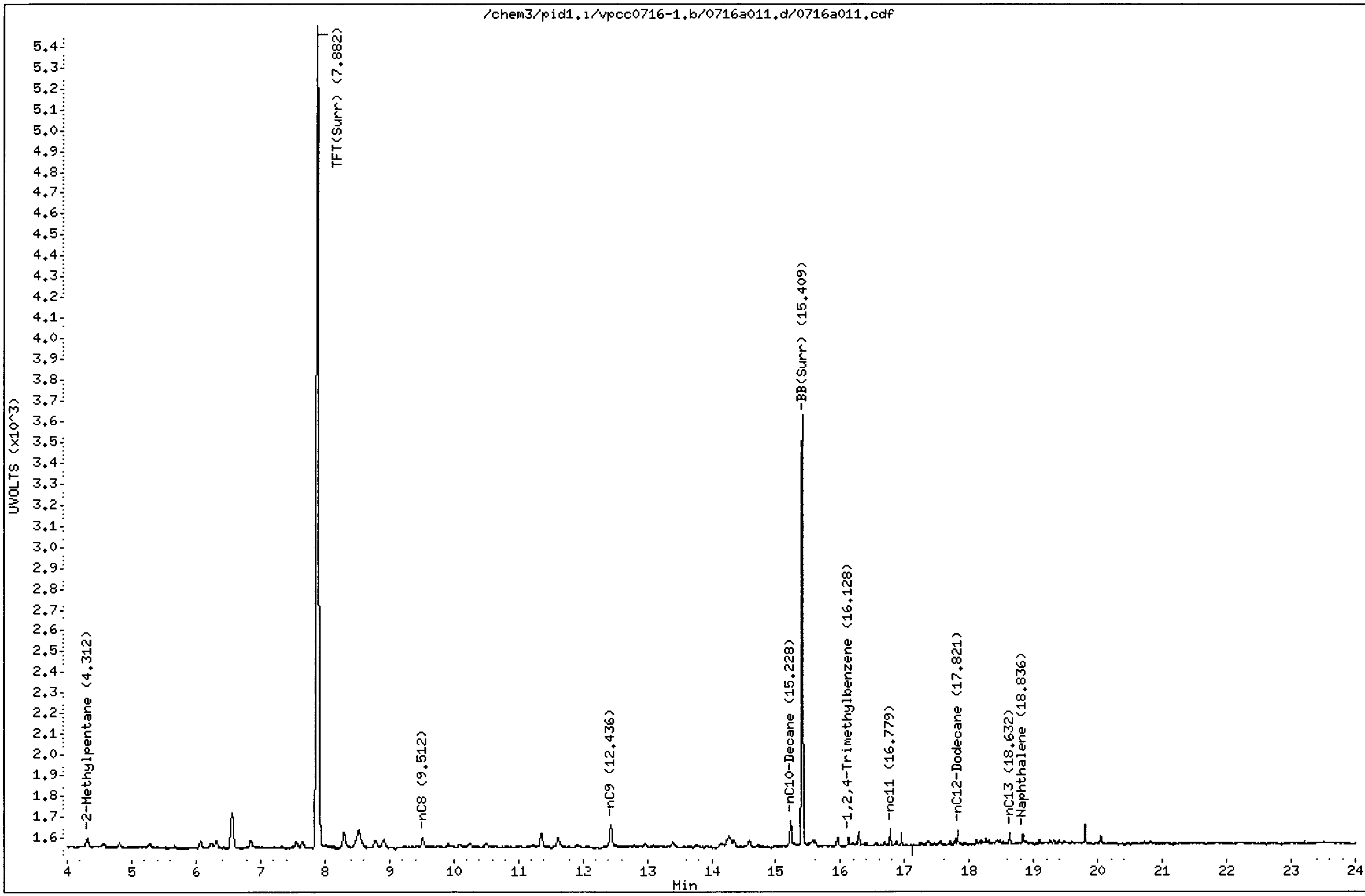
SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0716-1.b/0716a011.d
Date : 16-JUL-2012 13:50
Client ID:
Sample Info: mb0716
Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: JR
Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0716-1.b/0716a012.d
Data file 2: /chem3/pid1.i/vpcc0716-2.b/0716a012.d
Method: /chem3/pid1.i/vpcc0716-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: vb501
Client ID:
Injection Date: 16-JUL-2012 14:19
Matrix: WATER
Dilution Factor: 5.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.883	0.000	3696	47970	94.0	TFT(Surr)
15.408	-0.001	1953	16786	97.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.92)	1084751	206451	0.190
8015B 2MP-TMB	(4.21 to 16.23)	2234698	650955	0.291
AK101 nC6-nC10	(4.71 to 15.13)	1783632	592919	0.332
NWTPHG Tol-Nap	(9.81 to 18.94)	1149637	257222	0.224

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.891	0.000	4533	92.8	TFT(Surr)
15.416	-0.001	8163	95.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.057	0.000	32267	39.514	Benzene
9.916	-0.002	459	0.594	Toluene
12.808	-0.003	352	0.528	Ethylbenzene
12.966	-0.006	349	0.481	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0716-1.b/0716a012.d

Date : 16-JUL-2012 14:19

Client ID:

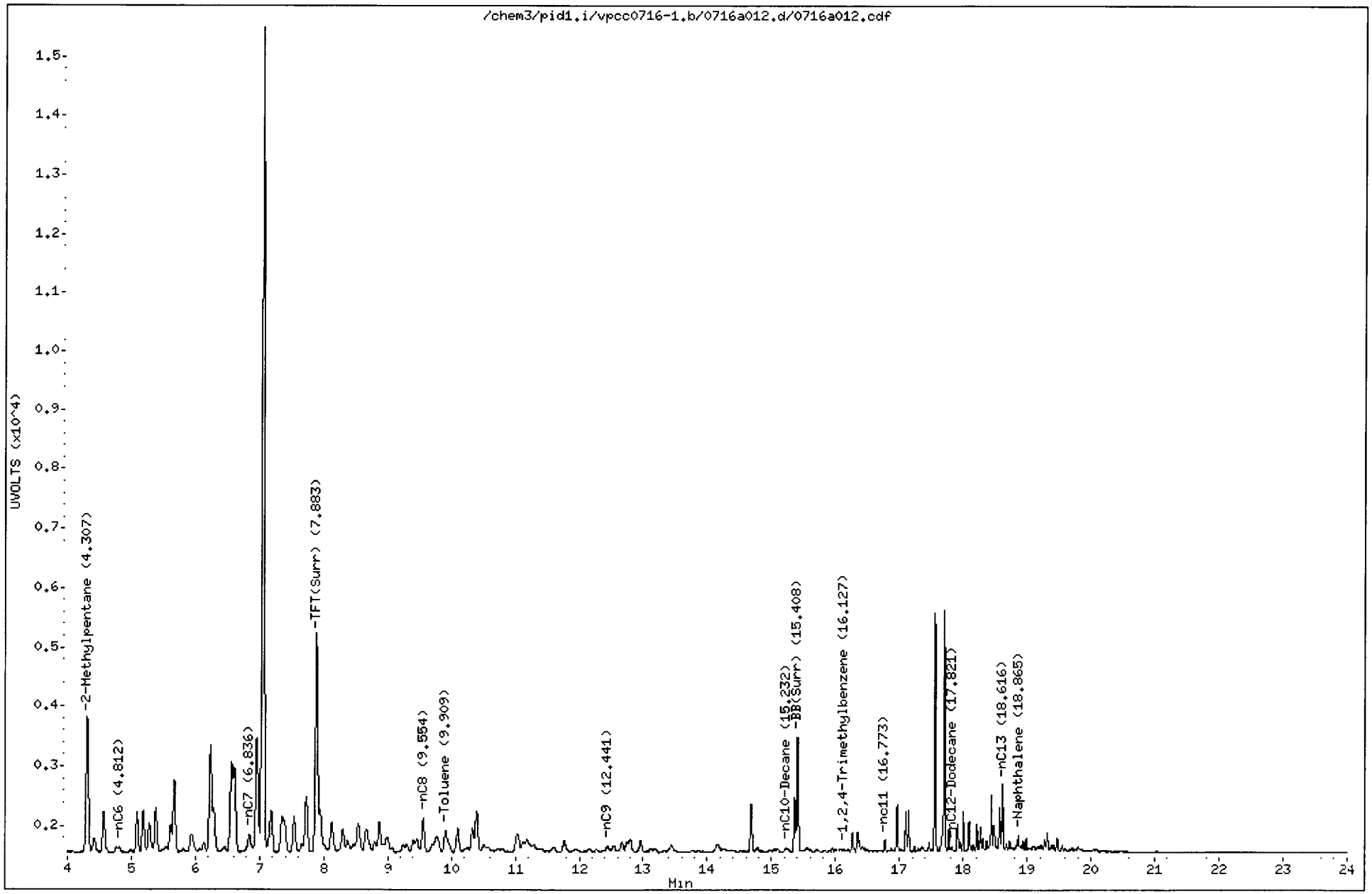
Sample Info: vb501,5

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0716-1.b/0716a013.d
Data file 2: /chem3/pid1.i/vpcc0716-2.b/0716a013.d
Method: /chem3/pid1.i/vpcc0716-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: bcal#2
Client ID:
Injection Date: 16-JUL-2012 14:49
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.883	0.000	3741	46678	95.2	TFT(Surr)
15.409	0.000	2010	16641	99.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.92)	1084751	151367	0.140
8015B 2MP-TMB	(4.21 to 16.23)	2234698	150896	0.068
AK101 nC6-nC10	(4.71 to 15.13)	1783632	144273	0.081
NWTPHG Tol-Nap	(9.81 to 18.94)	1149637	153010	0.133

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.891	0.000	4589	94.0	TFT(Surr)
15.416	0.000	8430	99.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.056	0.000	3893	4.767	Benzene
9.918	-0.001	3647	4.720	Toluene
12.811	-0.001	3286	4.931	Ethylbenzene
12.972	-0.001	7147	9.857	M/P-Xylene
13.924	-0.001	2738	4.892	O-Xylene
4.583	0.000	712	5.725	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0716-1.b/0716a013.d

Date : 16-JUL-2012 14:49

Client ID:

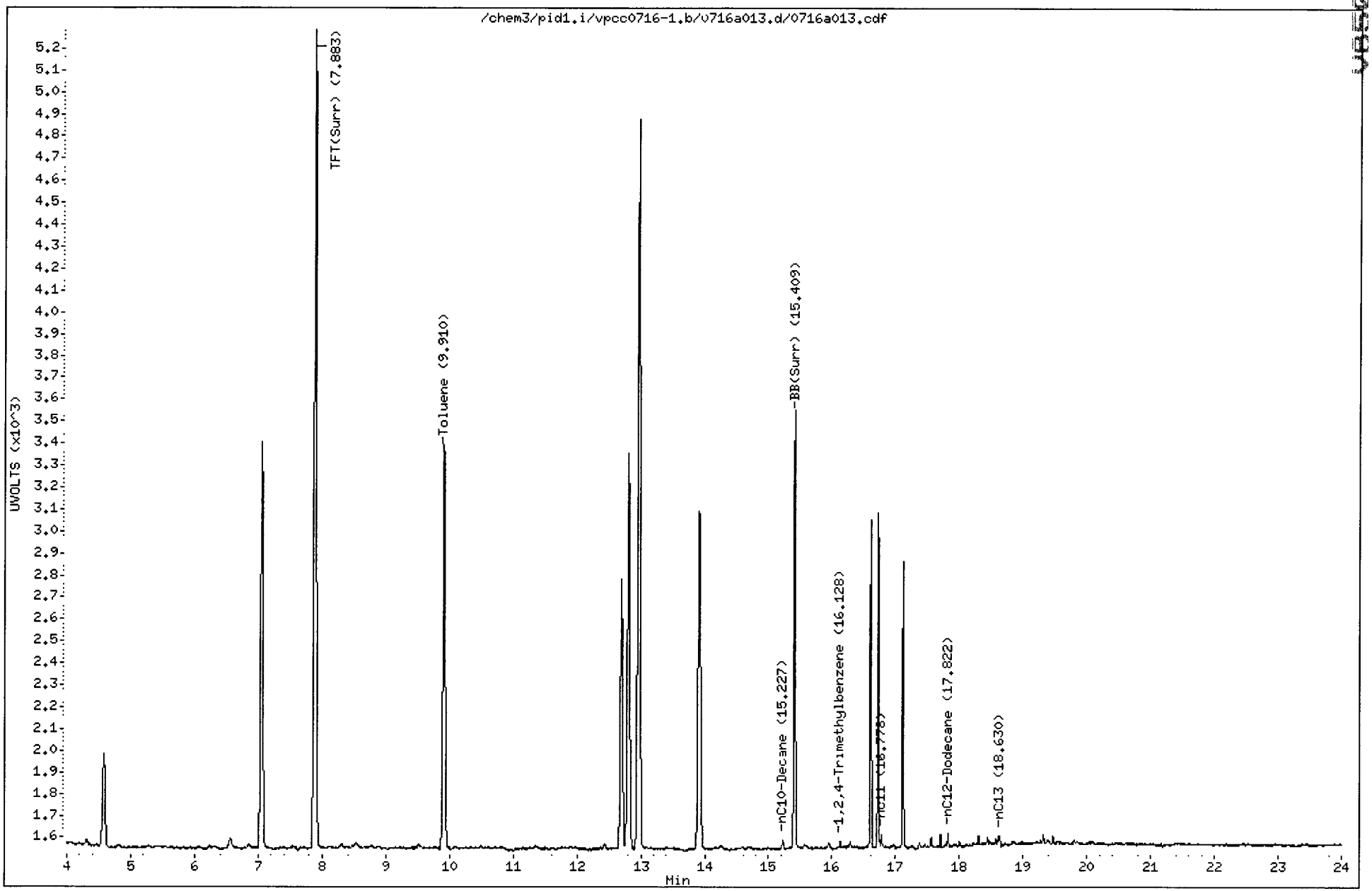
Sample Info: bcal#2

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc0716-1.b/0716a014.d
Data file 2: /chem3/pid1.i/vpcc0716-2.b/0716a014.d
Method: /chem3/pid1.i/vpcc0716-2.b/PIDB15ml.m
Instrument: pid1.i
Gas Ical Date: 14-Jul-2012
BETX Ical Date: 13-JUL-2012

ARI ID: gcal#2
Client ID:
Injection Date: 16-JUL-2012 15:18
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.882	-0.001	3983	57683	101.3	TFT(Surr)
15.409	0.000	2002	17891	99.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.81 to 17.92)	1084751	1065915	0.983
8015B 2MP-TMB	(4.21 to 16.23)	2234698	2283670	1.022
AK101 nC6-nC10	(4.71 to 15.13)	1783632	1846963	1.036
NWTPHG Tol-Nap	(9.81 to 18.94)	1149637	1110876	0.966

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.891	0.000	4682	95.9	TFT(Surr)
15.417	0.000	8358	98.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.057	0.000	2982	3.652	Benzene
9.920	0.001	29528	38.215	Toluene
12.811	0.000	7538	11.312	Ethylbenzene
12.977	0.004	30356	41.866	M/P-Xylene
13.925	0.001	10502	18.764	O-Xylene
4.573	-0.009	612	4.921	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc0716-1.b/0716a014.d

Date : 16-JUL-2012 15:18

Client ID:

Sample Info: gcal#2

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

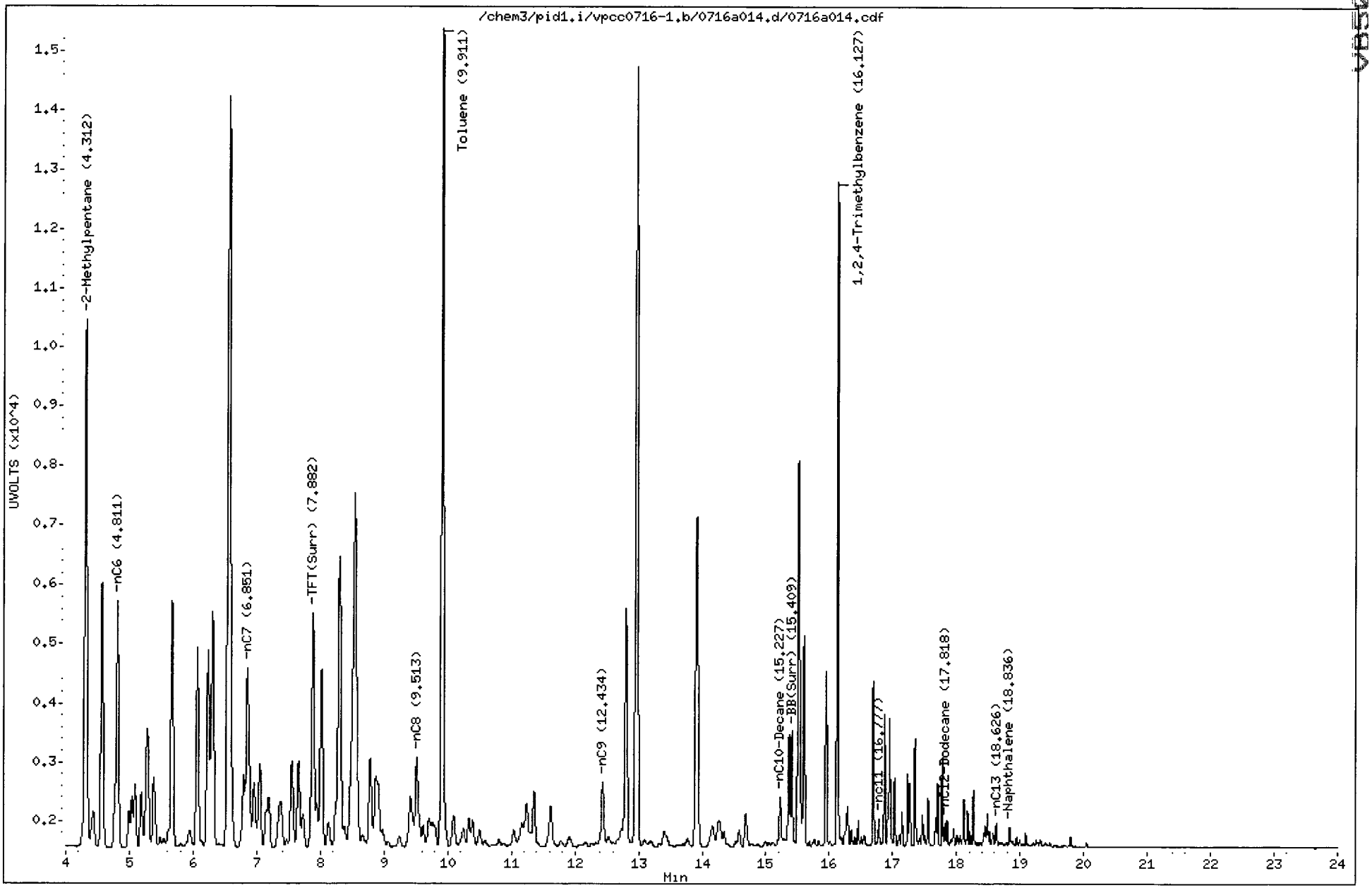


Table of Contents: ARI Job VB51, VB54

Client: Anchor QEA, LLC

Project: 080007-01.02 Central Waterfront RI

Signature

July-25-2012
Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 25, 2012

Cindy Fields
Anchor QEA
720 Olive Way, Suite 1900
Seattle, WA 98101

RE: Client Project: Central Waterfront RI , 080007-01.02
ARI Job Nos.: VB51 & VB54

Dear Cindy:

Please find enclosed the Chain of Custody records (COCs), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile VB51_VB54

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: VB51, VB54

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested:	Page: 1 of 5	
ARI Client Company: Anchor QEA, LLC	Phone: (206)9033394	Date: 7/2/12	Ice Present?
Client Contact: Cindy Fields, Julia Labadie		No. of Coolers:	Cooler Temps:
Client Project Name: labdata@anchorqea.com Central Waterfront RI			
Client Project #: 080007-01.02	Samplers: JL		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No Containers	NWTPH-Gx	NWTPH-Dx	BTEX	NWTPH-Dx (TS)	HOLD				Notes/Comments
					Analysis Requested								
CW-TP-06-5.5-6.5	7/2/12	935	SO	6	X		X	X					Perform all NWTPH-Dx with & without silica gel cleanup.
CW-TP-06-5.5-6.5	7/2/12	940	SO	1		X							With and w/o silica gel cleanup
CW-TP-07-6.5-7.5	7/2/12	1035	SO	6					X				
CW-TP-07-6.5-7.5	7/2/12	1040	SO	1					X				" "
CW-TP-07-9-10	7/2/12	1050	SO	6	X		X	X					
CW-TP-07-9-10	7/2/12	1055	SO	1		X							" "
CW-TP-09-6.3-7.3	7/2/12	1235	SO	6	X		X	X					
CW-TP-09-6.3-7.3	7/2/12	1240	SO	1		X							" "
CW-TP-09-10-11	7/2/12	1255	SO	6	X		X	X					
CW-TP-09-10-11	7/2/12	1300	SO	1		X							" "

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Matt Wilson	Printed Name: Jennifer Miller	Printed Name:	Printed Name:
	Company: Anchor QEA	Company: ARI	Company:	Company:
	Date & Time: 7/07/12 1030	Date & Time: 7/7/12 1030	Date & Time:	Date & Time:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client Anchor Project Name Central Waterfront Site RI

COC No(s) _____ (NA) Delivered by Fed-Ex UPS Courier Hand Delivered Other _____

Assigned ARI Job No: VB51 Tracking No _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc)	(YES)	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6 0 °C for chemistry)	2.0 2.9 0.3 1.9	
If cooler temperature is out of compliance fill out form 00070F	Temp Gun ID#:	90411619

Cooler Accepted by: JM Date 7/8/12 7/7/12 Time 1030

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?	YES	(NO)
What kind of packing material was used?	(Bubble Wrap) (Wet Ice) (Gel Packs) (Baggies) (Foam Block) Paper Other:	
Was sufficient ice used (if appropriate)?	NA (YES)	NO
Were all bottles sealed in individual plastic bags?	YES	(NO)
Did all bottles arrive in good condition (unbroken)?	(YES)	NO
Were all bottle labels complete and legible?	(YES)	NO
Did the number of containers listed on COC match with the number of containers received?	(YES)	NO
Did all bottle labels and tags agree with custody papers?	(YES)	NO
Were all bottles used correct for the requested analyses?	(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	(NA) YES	NO
Were all VOC vials free of air bubbles?	(NA) YES	NO
Was sufficient amount of sample sent in each bottle?	(YES)	NO
Date VOC Trip Blank was made at ARI.	(NA)	

Was Sample Split by ARI: (NA) YES Date/Time _____ Equipment _____ Split by: _____

Samples Logged by TB Date: 7-9-12 Time: 851

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By. Date

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
		

Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested:
ARI Client Company: Anchor QEA	Phone: (206) 903 3394
Client Contact: Cindy Fields: labdata@anchorqea.com	
Client Project Name: Central Waterfront RI	
Client Project #: 080007-01.02	Samplers: JL, MW

Page: 2 of 5

Date: 7/2/12 | Ice Present?

No. of Coolers: | Cooler Temps:

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: NWTPH-Gx	NWTPH-Dx	BTEX	NWTPH-Gx (TS)					Notes/Comments
CW-TP-08-7-8	7/2/12	1400	SO	6	X		X	X					~~With + w/o silica gel cleanup~~
CW-TP-08-7-8	7/2/12	1405	SO	1		X							with + w/o silica gel cleanup
CW-TP-04-8-9	7/2/12	1505	SO	6	X		X	X					
CW-TP-04-8-9	7/2/12	1510	SO	1		X							" "
CW-TP-54-8-9	7/2/12	1505	SO	6	X		X	X					
CW-TP-54-8-9	7/2/12	1510	SO	1		X							" "
CW-TP-RB-070212	7/2/12	1620	W	5	X	X	X						
CW-W-RB-070212	7/2/12	1640	W	5	X	X	X						
CW-TB	—	—	W	1	X		X						trip blank

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Matt Wilson	Printed Name: Jennifer Millsap	Printed Name.	Printed Name.
	Company: Anchor QEA	Company: ARI	Company	Company
	Date & Time: 7/02/12 1030	Date & Time: 7/7/12 1030	Date & Time	Date & Time

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard (15-day)	Page: 3 of 5	
ARI Client Company: Anchor QEA, LLC	Phone: (206) 903 3394	Date: 7/6/2012	Ice Present?
Client Contact: Cindy Fields: labdata@anchorqea.com		No. of Coolers:	Cooler Temps:
Client Project Name: Central Waterfront Site RI			
Client Project #:	Samplers: JL		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: NWTPH-Dx	NWTPH-Gx	BTEX	NWTPH-Gx (TS)					Notes/Comments
CW-TP-05-7-8	7/6/12	810	SO	6		X	X	X					Perform NWTPH-Dx with and without silica gel cleanup
CW-TP-05-7-8	7/6/12	815	SO	1	X								with and without silica gel cleanup
CW-TP-03-7-8	7/6/12	905	SO	6		X	X	X					
CW-TP-03-7-8	7/6/12	910	SO	1	X								" "
CW-TP-02=8.2-9.2	7/6/12	1005	SO	6		X	X	X					
CW-TP-02=8.2-9.2	7/6/12	1010	SO	1	X								" "
CW-TP-01-8-9	7/6/12	1050	SO	6		X	X	X					
CW-TP-01-8-9	7/6/12	1055	SO	1	X								" "
CW-TB	—	—	W	1	X		X						trip blank

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Matt Wilson	Printed Name: Jennifer Mitsop	Printed Name:	Printed Name:
	Company: Anchor QEA	Company: ARI	Company:	Company:
	Date & Time: 7/07/12 1030	Date & Time: 7/9/12 1030	Date & Time:	Date & Time

VBS1:6666

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

- Year Chemists and Consultants

Cooler Receipt Form

ARI Client Anchor

COC No(s) _____ (NA)

Assigned ARI Job No VB51

Project Name: Central Waterfront Site

Delivered by Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc)	(YES)	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)	2.0 2.9 0.3 1.9	
If cooler temperature is out of compliance fill out form 00070F		

Cooler Accepted by JM Date 7/8/12 7/7/12 Time 1030 Temp Gun ID# 90411619

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?	YES	(NO)
What kind of packing material was used? (Bubble Wrap) (Wet Ice) (Gel Packs) (Baggies) (Foam Block) Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES) NO
Were all bottles sealed in individual plastic bags?		(YES) NO
Did all bottles arrive in good condition (unbroken)?		YES (NO)
Were all bottle labels complete and legible?		(YES) NO
Did the number of containers listed on COC match with the number of containers received?		(YES) NO
Did all bottle labels and tags agree with custody papers?		YES (NO)
Were all bottles used correct for the requested analyses?		(YES) NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)		(YES) NO
Were all VOC vials free of air bubbles?	(NA)	YES NO
Was sufficient amount of sample sent in each bottle?	NA	YES (NO)
Date VOC Trip Blank was made at ARI		(YES) NO
Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____	NA	6-2ER Split by: _____

Samples Logged by TS Date 7-9-12 Time 1025

** Notify Project Manager of discrepancies or concerns **

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

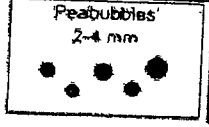
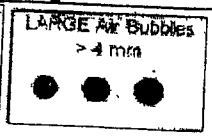
Additional Notes, Discrepancies, & Resolutions:

Missing Matt vial for CW-TP_011-8-A

CW-TB 1 "pb"

Rinse blanks logged on VB50 with waters.

By: TS Date: 7-9-12

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles >4 mm
		

Small → "sm"	
Peabubbles → "pb"	
Large → "lg"	
Headspace → "hs"	

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: VB51, VB54

ANALYTICAL
RESOURCES
INCORPORATED

Case Narrative

Client: Anchor QEA
Project: Central Waterfront RI, 080007-01.02
ARI Job Nos.: VB51 & VB54

Sample receipt

Ten soil samples were received on July 7, 2012 under ARI job VB51. The cooler temperatures measured by IR thermometer following ARI SOP were 0.3, 1.9, 2.0, and 2.9°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

Fourteen soil samples and two trip blanks were received on July 7, 2012 under ARI job VB54. Rinse blanks listed on the COC have been reported under a separate cover. The cooler temperatures measured by IR thermometer following ARI SOP were 0.3, 1.9, 2.0, and 2.9°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

BETX by SW8260C

The samples were analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements. Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

The matrix spike and matrix spike duplicate percent recoveries were within control limits.

BETX by SW8260-SIM

On 7/20/12 sample **CW-TP-01-8-9** was analyzed for SIM BETX, as requested by Anchor QEA. The sample was analyzed outside the method recommended holding times.

Initial and continuing calibrations were within method requirements. Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

NWTPH-Dx

The samples were initially extracted and analyzed within the method recommended holding times. After initial sample analysis, the extracts were acid/silica cleaned and re-analyzed. Both sets of results have been reported.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

The matrix spike and matrix spike duplicate percent recoveries were within advisory control limits.

NWTPH-Gx

The samples were analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

The matrix spike and matrix spike duplicate percent recoveries were within advisory control limits.

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: VB51
Client: Anchor QEA, LLC
Project Event: 080007-01.02
Project Name: Central Waterfront RI

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	CW-TP-06-5.5-6.5	VB51A	12-12906	Soil	07/02/12 09:35	07/07/12 10:30
2.	CW-TP-06-5.5-6.5	VB51B	12-12907	Soil	07/02/12 09:40	07/07/12 10:30
3.	CW-TP-06-5.5-6.5	VB51C	12-12908	Soil	07/02/12 09:40	07/07/12 10:30
4.	CW-TP-07-6.5-7.5	VB51D	12-12909	Soil	07/02/12 10:35	07/07/12 10:30
5.	CW-TP-07-6.5-7.5	VB51E	12-12910	Soil	07/02/12 10:40	07/07/12 10:30
6.	CW-TP-07-9-10	VB51F	12-12911	Soil	07/02/12 10:50	07/07/12 10:30
7.	CW-TP-07-9-10	VB51G	12-12912	Soil	07/02/12 10:55	07/07/12 10:30
8.	CW-TP-07-9-10	VB51H	12-12913	Soil	07/02/12 10:55	07/07/12 10:30
9.	CW-TP-09-6.3-7.3	VB51I	12-12914	Soil	07/02/12 12:35	07/07/12 10:30
10.	CW-TP-09-6.3-7.3	VB51J	12-12915	Soil	07/02/12 12:40	07/07/12 10:30
11.	CW-TP-09-6.3-7.3	VB51K	12-12916	Soil	07/02/12 12:40	07/07/12 10:30
12.	CW-TP-09-10-11	VB51L	12-12917	Soil	07/02/12 12:55	07/07/12 10:30
13.	CW-TP-09-10-11	VB51M	12-12918	Soil	07/02/12 13:00	07/07/12 10:30
14.	CW-TP-09-10-11	VB51N	12-12919	Soil	07/02/12 13:00	07/07/12 10:30

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: VB54
Client: Anchor QEA, LLC
Project Event: 080007-01.02
Project Name: Central Waterfront RI

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	CW-TB	VB54W	12-12920	Water	07/02/12	07/07/12 10:30
2.	CW-TP-05-7-8	VB54A	12-12940	Soil	07/06/12 08:10	07/07/12 10:30
3.	CW-TP-05-7-8	VB54B	12-12941	Soil	07/06/12 08:15	07/07/12 10:30
4.	CW-TP-05-7-8	VB54C	12-12942	Soil	07/06/12 08:15	07/07/12 10:30
5.	CW-TP-03-7-8	VB54D	12-12943	Soil	07/06/12 09:05	07/07/12 10:30
6.	CW-TP-03-7-8	VB54E	12-12944	Soil	07/06/12 09:10	07/07/12 10:30
7.	CW-TP-03-7-8	VB54F	12-12945	Soil	07/06/12 09:10	07/07/12 10:30
8.	CW-TP-02-8.2-9.2	VB54G	12-12946	Soil	07/06/12 10:05	07/07/12 10:30
9.	CW-TP-02-8.2-9.2	VB54H	12-12947	Soil	07/06/12 10:10	07/07/12 10:30
10.	CW-TP-02-8.2-9.2	VB54I	12-12948	Soil	07/06/12 10:10	07/07/12 10:30
11.	CW-TP-01-8-9	VB54J	12-12949	Soil	07/06/12 10:50	07/07/12 10:30
12.	CW-TP-01-8-9	VB54K	12-12950	Soil	07/06/12 10:55	07/07/12 10:30
13.	CW-TP-01-8-9	VB54L	12-12951	Soil	07/06/12 10:55	07/07/12 10:30
14.	CW-TB	VB54M	12-12952	Water	07/06/12	07/07/12 10:30
15.	CW-TP-08-7-8	VB54N	12-12953	Soil	07/02/12 14:00	07/07/12 10:30
16.	CW-TP-08-7-8	VB54O	12-12954	Soil	07/02/12 14:05	07/07/12 10:30
17.	CW-TP-08-7-8	VB54P	12-12955	Soil	07/02/12 14:05	07/07/12 10:30
18.	CW-TP-04-8-9	VB54Q	12-12956	Soil	07/02/12 15:05	07/07/12 10:30
19.	CW-TP-04-8-9	VB54R	12-12957	Soil	07/02/12 15:10	07/07/12 10:30
20.	CW-TP-04-8-9	VB54S	12-12958	Soil	07/02/12 15:10	07/07/12 10:30
21.	CW-TP-54-8-9	VB54T	12-12959	Soil	07/02/12 15:05	07/07/12 10:30
22.	CW-TP-54-8-9	VB54U	12-12960	Soil	07/02/12 15:10	07/07/12 10:30
23.	CW-TP-54-8-9	VB54V	12-12961	Soil	07/02/12 15:10	07/07/12 10:30

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q — Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

Spike Recovery Control Limits for Analysis of Solid Samples
Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C
5 mL Purge Volume [7]

Effective:5/18/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	Low Level [1]	Low Level ME Limits [3]	Medium Level [2]	Medium Level ME Limits [3]
LCS Spike Recovery [8]				
Dichlorodifluoromethane	67 - 142	37 - 164	25 - 128	**10** - 145
Chloromethane	65 - 129	54 - 135	55 - 121	44 - 132
Vinyl Chloride	74 - 134	51 - 149	66 - 123	57 - 133
Bromomethane	40 - 172	44 - 149	40 - 154	21 - 173
Chloroethane	53 - 154	53 - 142	72 - 128	63 - 137
Trichlorofluoromethane	57 - 161	59 - 143	69 - 135	58 - 146
Acrolein	60 - 130	40 - 151	39 - 135	23 - 151
1,1,2-Trichloro-1,2,2-trifluoroethane	72 - 142	65 - 139	65 - 139	53 - 151
Acetone	48 - 132	48 - 143	55 - 130	43 - 143
1,1-Dichloroethene	73 - 138	67 - 135	73 - 133	63 - 143
Bromoethane	74 - 132	68 - 134	74 - 133	64 - 143
Methyl Iodide	34 - 181	53 - 151	47 - 155	29 - 173
Methylene Chloride	61 - 128	61 - 132	**80 - 120**	75 - 122
Acrylonitrile	59 - 124	57 - 135	62 - 129	51 - 140
Methyl tert-Butyl Ether	68 - 124	62 - 128	69 - 128	59 - 138
Carbon Disulfide	72 - 146	61 - 139	64 - 135	52 - 147
trans-1,2-Dichloroethene	73 - 131	74 - 126	78 - 125	70 - 133
Vinyl Acetate	54 - 138	47 - 149	66 - 132	55 - 143
1,1-Dichloroethane	65 - 139	75 - 124	77 - 124	69 132
2-Butanone	64 - 120	62 - 127	65 - 126	55 - 136
2,2-Dichloropropane	77 - 137	66 - 131	75 - 127	66 - 136
cis-1,2-Dichloroethene	75 - 124	76 - 123	**80** - 125	74 - 132
Chloroform	75 - 126	74 - 123	**80** - 124	73 - 131
Bromodichloromethane	80 - 122	70 - 128	78 - 130	69 - 139
1,1,1-Trichloroethane	78 - 133	70 - 128	76 - 130	67 - 139
1,1-Dichloropropene	80 - 123	77 - 123	77 - 131	68 - 140
Carbon Tetrachloride	76 - 136	70 - 130	74 - 129	65 - 138
1,2-Dichloroethane	77 - **120**	69 - 123	73 - 123	65 - 131
Benzene	80 - **120**	80 - 126	**80 - 120**	75 - 130
Trichloroethene	80 - 120	77 - 123	**80** - 125	75 - 132
1,2-Dichloropropane	74 - **120**	76 - 120	**80** - 122	74 - 129
Bromochloromethane	69 - 133	73 - 127	**80** - 127	73 - 135
Dibromomethane	80 - **120**	74 - 121	**80** - 121	76 - 128
2-Chloroethylvinylether	20 - 157	**10** - 222	61 - 128	50 - 139

Spike Recovery Control Limits for Analysis of Solid Samples
Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C
5 mL Purge Volume [7]

Effective:5/18/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	Low Level [1]	Low Level ME Limits [3]	Medium Level [2]	Medium Level ME Limits [3]
4-Methyl-2-Pentanone	70 - 124	59 - 125	80 - 123	73 - 130
cis-1,3-Dichloropropene	80 - 124	67 - 125	80 - 122	73 - 129
Toluene	78 - **120**	79 - **120**	**80** - 122	**80** - 127
trans-1,3-Dichloropropene	80 - 126	57 - 125	**80** - 123	79 - 129
2-Hexanone	62 - 128	54 - 141	58 - 129	46 - 141
1,1,2-Trichloroethane	77 - **120**	75 - 122	**80** - 120	77 - 126
1,3-Dichloropropane	77 - **120**	74 - 122	**80** - 120	76 - 126
Tetrachloroethene	76 - 131	79 - 127	**80** - 130	73 - 138
Dibromochloromethane	77 - 123	55 - 128	77 - 120	70 - 127
Ethylene Dibromide	79 - **120**	68 - 124	**80** - **120**	**80** - 120
Chlorobenzene	80 - **120**	82 - 120	**80** - 121	80 - 127
Ethylbenzene	**80** - **120**	80 - 134	**80** - 126	**80** - 132
1,1,2,2-Tetrachloroethane	71 - **120**	66 - 128	79 - **120**	73 - 123
m,p-Xylene	**80** - 123	**80** - 131	**80** - 130	**80** - 137
o-Xylene	**80** - **120**	71 - 126	**80** - 124	**80** - 130
Styrene	**80** - 122	78 - 130	**80** - 132	77 - 140
Isopropylbenzene	**77** - 127	84 - 133	**80** - 130	**80** - 137
Bromoform	63 - **120**	50 - 128	68 - 129	58 - 139
1,1,1,2-Tetrachloroethane	80 - **120**	60 - 130	**80** - 126	76 - 133
1,2,3-Trichloropropane	75 - **120**	64 - 129	77 - **120**	71 - 121
trans-1,4-Dichloro-2-butene	62 - 127	55 - 136	66 - 127	56 - 137
n-Propylbenzene	**76** - 126	**80** - 139	**80** - 132	77 - 140
Bromobenzene	75 - **120**	78 - 122	**80** - 121	80 - 127
1,3,5-Trimethylbenzene	77 - 126	**80** - 131	78 - 137	68 - 147
2-Chlorotoluene	76 - 120	77 - 132	**80** - 123	**80** - 129
4-Chlorotoluene	75 - 121	77 - 134	**80** - 130	74 - 138
tert-Butylbenzene	77 - 125	**80** - 128	**80** - 133	78 - 141
1,2,4-Trimethylbenzene	77 - 125	**80** - 132	**80** - 131	79 - 139
sec-Butylbenzene	77 - 127	80 - 142	**80** - 136	76 - 146
4-Isopropyltoluene	78 - 131	**80** - 138	**80** - 141	71 - 151
1,3-Dichlorobenzene	76 - 120	**80** - 126	**80** 126	77 - 133
1,4-Dichlorobenzene	75 - **120**	79 - 126	**80** 121	77 - 127
n-Butylbenzene	75 - 134	**80** - 146	**80** - 138	77 - 147
1,2-Dichlorobenzene	77 - **120**	78 - 122	**80** - **120**	**80** - 121
1,2-Dibromo-3-chloropropane	61 - 128	49 - 130	67 - 121	58 - 130
1,2,4-Trichlorobenzene	75 - 130	69 - 139	**80** - 133	72 - 142

Spike Recovery Control Limits for Analysis of Solid Samples Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C 5 mL Purge Volume [7]

Effective:5/18/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	Low Level [1]	Low Level ME Limits [3]	Medium Level [2]	Medium Level ME Limits [3]
Hexachloro-1,3-butadiene	72 - 135	67 - 138	62 - 148	48 - 162
Naphthalene	71 - 122	58 - 126	74 - 133	64 - 143
1,2,3-Trichlorobenzene	76 - 122	65 - 131	80 - 126	72 - 134
MB/LCS Surrogate Recovery				
Dibromofluoromethane	**80 - 120**	(4)	**80 - 120**	(4)
d4-1,2-Dichloroethane	**80** - 122	(4)	76 - **120**	(4)
d8-Toluene	**80 - 120**	(4)	**80 - 120**	(4)
4-Bromofluorobenzene	**80 - 120**	(4)	**80 - 120**	(4)
d4-1,2-Dichlorobenzene	**80 - 120**	(4)	**80 - 120**	(4)
Sample Surrogate Recovery				
Dibromofluoromethane	77 - **120**	(4)	30 - 160[6]	(4)
d4-1,2-Dichloroethane	**80** - 149	(4)	69 - **120**	(4)
d8-Toluene	**80 - 120**	(4)	**80 - 120**	(4)
4-Bromofluorobenzene	77 - **120**	(4)	76 - 128	(4)
d4-1,2-Dichlorobenzene	**80 - 120**	(4)	**80 - 120**	(4)

(1) Control Limits calculated using all data generated 1/1/12 through 5/31/12.
(2) Control Limits calculated using all data generated 3/1/07 through 11/15/07.
(3) **ME** = A **marginal exceedance** defined in the NELAC Standard[5] as beyond the LCS-CL but still within the ME limits. ME limits are between 3 and 4 standard deviations around the mean. A maximum of four marginal exceedances are acceptable. Five or more marginal exceedances require corrective action.
(4) Marginal Exceedances not allowed for surrogate standards
(5) **2003 NELAC Standard (EPA/600/R-04/003), July 2003**, Chapter 5, pages 251-252.
(6) 30 – 160 are default, advisory control limits used when there is insufficient data to calculate historic control limits. **DO NOT** use these limits as the sole reason to reject the data from a batch of analyses
(7) Highlighted control limits (**bold font**) are adjusted from the calculated values as follows:
a) ARI does not use control limits < 10
b) Control limits for analyzes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.
(8) Laboratory Control Sample (LCS) spike recovery control limits also used as advisory control limits for sample matrix spike (MS) analyzes. MS recovery values are advisory and not used to assess the acceptability of an analytical batch.

Volatile Organics Selected Ion Monitoring
DL, LOD, LOQ and Control Limit Summary [1]
EPA Method 8260C - SIM

Analyte	Aqueous Samples				Solid Samples				RPD[4]
	DL[2] ng/L	LOD ng/L	LOQ ng/L	LCS[5,6] Recovery	DL[3] µg/kg	LOD µg/kg	LOQ µg/kg	LCS[5,6] Recovery	
Acrylonitrile	15.8 [7]	**25**	**50**	75 – 125					≤ 40
Vinyl Chloride	5.01	**10**	**20**	76 – **120**					≤ 40
1,1-Dichloroethene	4.59	**10**	**20**	**80 – 120**					≤ 40
cis-1,2-Dichloroethene	3.62	**10**	**20**	**80 – 120**					≤ 40
trans-1,2-Dichloroethene	5.06	**10**	**20**	**80 – 120**					≤ 40
Trichloroethene	6.49	**10**	**20**	**80 – 120**					≤ 40
Tetrachloroethene	6.82	**10**	**20**	**80** – 122					≤ 40
1,1,2,2-Tetrachloroethane	4.73	**10**	**20**	**80** – 128					≤ 40
1,2-Dichloroethane	4.42	**10**	**20**	**80** – 128					≤ 40
Benzene	5.03	**10**	**20**	**80 – 120**	0.082	**0.5**	**1.0**	75– 125	≤ 40
Toluene					0.137	**0.5**	**1.0**	75– 125	≤ 40
Ethyl Benzene					0.104	**0.5**	**1.0**	75– 125	≤ 40
m, p - Xylene					0.293	**1.0**	**2.0**	75– 125	≤ 40
o - Xylene					0.083	**0.5**	**1.0**	75– 125	≤ 40
Surrogate % Recovery	**MB / LCS**	**Sample**			**MB / LCS[6]**	**Sample[6]**			
d_4-1,2-Dichloroethane	78 – 126	**80** – 129			75 – 125	75– 125			≤ 40
d_8-Toluene	**80 – 120**	**80 – 120**			75 – 125	75– 125			≤ 40

(1) Detection Limit (DL), Limit of Detection (LOD) and Limit of Quantitation (LOQ) are defined in ARI SOP 1018S
(2) LOD effective 2/16/12
(3) MDL study RI48 (6/25/10)
(4) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} x100$$

(5) Highlighted control limits (**bold font**) are adjusted from the calculated values to reflect that:
a. ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit or
b. Control limits for analyzes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.
(6) 75 – 125 are default values used when there is insufficient data to calculate historic control limits.
(7) MDL Study 5/20/2010

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Quality Control Criteria
Total Petroleum Hydrocarbons
(Diesel & Motor Oil)

Analysis Code	Analyte[5]	DL[1]	LOD[1]	LOQ[2] ppm	Spike % Recovery Control Limits[3]			RPD[4]
					LCS	MB/LCS Surrogate	Sample Surrogate	
HCIWVX	NWTPH-HCID – Water Samples	--	--	0.50 [7]	--	--	50-150	≤ 40
HCISVX	NWTPH-HCID – Solid Samples	--	--	50 [7]	--	--	50-150	
Aqueous Samples – No Extract Clean-up – Separatory Funnel Extraction – 500 to 1.0 mL								
DIESWI	DRO – NWTPH-Dext (C_{12}-C_{24})	0.022	0.05	0.1	64-112	50-150	50-150	≤ 40
AK2WSI	DRO – AK102 (C_{10}-C_{25})	0.022	0.05	0.1	75-125 [6]	60-120	50-150	
OILWSI	RRO – NWTPH-Dext (C_{24}-C_{38})	0.044	0.1	0.2	64-112	50-150	50-150	
AK3WSI	RRO – AK103 (C_{25}-C_{36})	0.030 [9]	0.1	0.2	60-120 [6]	60-120	50-150	
Aqueous Samples – With Acid and/or Silica Gel Clean-up – Separatory Funnel Extraction – 500 to 1.0 mL								
DIESWI	DRO – NWTPH-Dext (C_{12}-C_{24})	0.039	0.05	0.1	61-104	50-150	50-150	≤ 40
AK2WSI	DRO – AK102 (C_{10}-C_{25})	0.042	0.05	0.1	75-125 [6]	60-120	50-150	
OILWSI	RRO – NWTPH-Dext (C_{24}-C_{38})	0.010	0.1	0.2	61-104	50-150	50-150	
AK3WSI	RRO – AK103 (C_{25}-C_{36})	0.030 [8]	0.1	0.2	60-120 [6]	60-120	50-150	
Solid Matrix Samples – No Extract Clean-up – Microwave Extraction – 10 g to 1 mL								
DIESMI	DRO – NWTPH-Dext (C_{12}-C_{24})	1.35	2.5	5	62-119	50-150	50-150	≤ 40
DIESMI	DRO – NWTPH-Dext Jet A	2.22 [11]	2.5	5	60 – 130 [8]	50-150	50-150	
AK2SMI	DRO – AK102 (C_{10}-C_{25})	2.43	2.5	5	75-125 [6]	60-120	50-150	
OILSMI	RRO – NWTPH-Dext (C_{24}-C_{38})	2.48	5	10	62-119	50-150	50-150	
AK3SMI	RRO – AK103 (C_{25}-C_{36})	0.665 [9]	5	10	60-120 [6]	60-120	50-150	
Solid Matrix Samples – With Acid and/or Silica Gel Clean-up – Microwave Extraction – 10 g to 1 mL								
DIESMI	DRO – NWTPH-Dext (C_{12}-C_{24})	1.28	2.5	5	60-108	50-150	50-150	≤ 40
AK2SMI	DRO – AK102 (C_{10}-C_{25})	2.06	2.5	5	75-125 [6]	60-120	50-150	
OILSMI	RRO – NWTPH-Dext (C_{24}-C_{38})	1.57	5	10	60-108	50-150	50-150	
AK3SMI	RRO – AK103 (C_{25}-C_{36})	0.665 [10]	5	10	60-120 [6]	60-120	50-150	

(1) DL (Detection Limit) and LOD (Limit of Detection) as defined in ARI SOP 1018S.
(2) Limit of Quantitation as defined in ARI SOP 1018S. The spike concentration used to determine the DL and the concentration of the lowest standard used to calibrate the GC-FID instrument.
(3) All surrogate recovery limits are specified in the published methods (AK102, AK103 & NWTPH-Dext). The surrogate standard is *o*-Terphenyl.
(4) Acceptance criteria for the relative percent difference (RPD) between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then $RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} x100$
(5) DRO = Diesel Range Organics and RRO = Residual Range Organics as defined in the methods referenced in footnote 3.
(6) Method specified LCS acceptance limits.
(7) Method specified reporting limits
(8) Default LCS control limits pending calculation of historic limits
(9) MDL study QD55 completed 2/12/10
(10) MDL study QD35 completed 1/29/10
(11) LOD Study UI44 completed 2/28/12

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Quality Control Criteria
Gasoline and BTEX

Method	Analyte	DL[1]	LOD[1]	LOQ[1]	Spike % Recovery Control Limits			RPD[3]
					LCS	MB/LCS Surrogate	Sample Surrogate	
Aqueous Samples 5 mL purge volume (DL, LOD & LOQ values in µg/L (ppb) for BTEX and mg/L (ppm) for gasoline								
NWTPH-G	Toluene – Naphthalene	0.057	0.125	0.25	75 – 124	--	--	≤ 40
8015B	2-methylpentane – 1,2,4-Trimethylbenzene	0.031	0.125	0.25	75 – 124	--	--	
WA-TPH-G	Toluene – nC_{12})	0.087	0.125	0.25	75 – 124	--	--	
AK-101	nC_6 – nC_{12}	0.032	0.050	0.10	75 – 124	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	**80 - 120**	**80** - 120	
	Bromobenzene	--	--	--	--	**80 - 120**	**80** - 120	
8021B	Benzene	0.094	0.5	1.0	73 – **120**	--	--	≤ 40
8021B	Toluene	0.113	0.5	1.0	73 – **120**	--	--	
8021B	Ethylbenzene	0.117	0.5	1.0	69 – **120**	--	--	
8021B	m/p-Xylene	0.265	1.0	2.0	72 – **120**	--	--	
8021B	o-Xylene	0.136	0.5	1.0	73 – **120**	--	--	
8021B	MTBE	0.412	0.5	1.0	30 – 182	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	79 – **120**	**80 - 120**	
	Bromobenzene	--	--	--	--	79 – **120**	**80 - 120**	
Solid Samples - (DL, LOD & LOQ values in µg/kg (ppb) for BTEX and mg/kg (ppm) for gasoline								
NWTPH-G	Toluene – Naphthalene	1.66	2.5	5	74 – 124	--	--	≤ 40
8015B	2-methylpentane – 1,2,4-Trimethylbenzene	1.57	2.5	5	74 – 124	--	--	
WA-TPH-G	Toluene – nC_{12})	1.54	2.5	5	74 – 124	--	--	
AK-101	nC_6 – nC_{12}	1.84	2.5	5	74 – 124	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	**80 - 120**	66-123	
	Bromobenzene	--	--	--	--	**80 - 120**	62-130	
8021B	Benzene	4.59	12.5	25	72 – **120**	--	--	≤ 40
8021B	Toluene	7.13	12.5	25	72 – **120**	--	--	
8021B	Ethylbenzene	4.98	12.5	25	71 – **120**	--	--	
8021B	m/p-Xylene	11.9	25.0	50	72 – **120**	--	--	
8021B	o-Xylene	6.23	12.5	25	72 – **120**	--	--	
8021B	MTBE	3.82	12.5	25	40 – 163	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	80 – **120**	68 – 124	
	Bromobenzene	--	--	--	--	77 – **120**	62 – 134	

(1) Detection Limit (DL), Limit of Detection (LOD) and Limit of Quantitation (LOQ) as defined in ARI SOP 1018S.
(2) Highlighted control limits (bold font) are adjusted from the calculated values as follows:
a) Highlighted control limits (**bold font**) adjusted to demonstrate that ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.
b) Control limits for analytes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.
(3) Acceptance criteria for the relative percent difference (RPD) between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} x100$$

Volatile Analysis
Report and Summary QC Forms

ARI Job ID: VB51, VB54

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-06-5.5-6.5**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB51A
LIMS ID: 12-12906
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/11/12 15:44

Sample Amount: 5.59 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 17.9%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.9	< 0.9	U
108-88-3	Toluene	0.9	< 0.9	U
100-41-4	Ethylbenzene	0.9	< 0.9	U
179601-23-1	m,p-Xylene	0.9	< 0.9	U
95-47-6	o-Xylene	0.9	< 0.9	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	100%
Bromofluorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-07-9-10**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB51F
LIMS ID: 12-12911
Matrix: Soil
Data Release Authorized: MW
Reported: 07/13/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/11/12 16:06

Sample Amount: 6.90 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 20.4%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.7	< 0.7	U
108-88-3	Toluene	0.7	< 0.7	U
100-41-4	Ethylbenzene	0.7	< 0.7	U
179601-23-1	m,p-Xylene	0.7	< 0.7	U
95-47-6	o-Xylene	0.7	< 0.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	93.1%
d8-Toluene	100%
Bromofluorobenzene	112%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-09-6.3-7.3**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB51I
LIMS ID: 12-12914
Matrix: Soil
Data Release Authorized: YMW
Reported: 07/13/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI 080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/11/12 16:29

Sample Amount: 9.09 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 10.0%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.6	< 0.6	U
108-88-3	Toluene	0.6	< 0.6	U
100-41-4	Ethylbenzene	0.6	< 0.6	U
179601-23-1	m,p-Xylene	0.6	< 0.6	U
95-47-6	o-Xylene	0.6	< 0.6	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	95.0%
d8-Toluene	102%
Bromofluorobenzene	112%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-09-10-11**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB51L
LIMS ID: 12-12917
Matrix: Soil
Data Release Authorized: MW
Reported: 07/13/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/11/12 16:52

Sample Amount: 7.75 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 7.9%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.6	< 0.6	U
108-88-3	Toluene	0.6	< 0.6	U
100-41-4	Ethylbenzene	0.6	< 0.6	U
179601-23-1	m,p-Xylene	0.6	< 0.6	U
95-47-6	o-Xylene	0.6	< 0.6	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	100%
Bromofluorobenzene	110%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-071112A	Method Blank	Low	95.4%	99.9%	101%	NA	0
LCS-071112A	Lab Control	Low	94.6%	99.3%	101%	NA	0
LCSD-071112A	Lab Control Dup	Low	95.5%	99.2%	101%	NA	0
VB51A	CW-TP-06-5.5-6.5	Low	104%	100%	102%	NA	0
VB51F	CW-TP-07-9-10	Low	93.1%	100%	112%	NA	0
VB51I	CW-TP-09-6.3-7.3	Low	95.0%	102%	112%	NA	0
VB51L	CW-TP-09-10-11	Low	100%	100%	110%	NA	0

	LCS/MB LIMITS		QC LIMITS	
SW8260C	Low	Med	Low	Med
(DCE) = d4-1,2-Dichloroethane	79-121	76-120	75-152	69-120
(TOL) = d8-Toluene	80-120	80-120	82-115	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	64-120	76-128
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 12-12906 to 12-12917

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-071112A**
Page 1 of 1 **LAB CONTROL SAMPLE**

Lab Sample ID: LCS-071112A
LIMS ID: 12-12906
Matrix: Soil
Data Release Authorized: MW
Reported: 07/13/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT5/PAB
LCSD: NT5/PAB
Date Analyzed LCS: 07/11/12 09:09
LCSD: 07/11/12 09:32

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	47.4	50.0	94.8%	45.8	50.0	91.6%	3.4%
Toluene	46.4	50.0	92.8%	44.7	50.0	89.4%	3.7%
Ethylbenzene	47.5	50.0	95.0%	46.1	50.0	92.2%	3.0%
m,p-Xylene	101	100	101%	98.5	100	98.5%	2.5%
o-Xylene	47.4	50.0	94.8%	46.8	50.0	93.6%	1.3%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	94.6%	95.5%
d8-Toluene	99.3%	99.2%
Bromofluorobenzene	101%	101%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0711

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC

ARI Job No: VB51

Project: CENTRAL WATERFRONT RI

Lab File ID: MB0711

Lab Sample ID: MB0711

Date Analyzed: 07/11/12

Time Analyzed: 0955

Instrument ID: NT5

Heated Purge: (Y/N) Y

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0711	LCS0711	LCS0711	0909
02	LCS0711	LCS0711	LCS0711A	0932
03	CW-TP-06-5.5	VB51A	VB51A	1544
04	CW-TP-07-9-1	VB51F	VB51F	1606
05	CW-TP-09-6.3	VB51I	VB51I	1629
06	CW-TP-09-10-	VB51L	VB51L	1652
07				
08				
09				
10				
11				
12				
13				
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30				

COMMENTS:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-071112A**
 METHOD BLANK

Lab Sample ID: MB-071112A
LIMS ID: 12-12906
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI 080007-01.02
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/11/12 09:55

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	95.4%
d8-Toluene	99.9%
Bromofluorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-05-7-8**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB54A
LIMS ID: 12-12940
Matrix: Soil
Data Release Authorized: MW
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02
Date Sampled: 07/06/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 17:21

Sample Amount: 16.5 mg-dry-wt
Purge Volume: 5.0 mL
Moisture: 15.7%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	300	< 300	U
108-88-3	Toluene	300	< 300	U
100-41-4	Ethylbenzene	300	< 300	U
179601-23-1	m,p-Xylene	300	< 300	U
95-47-6	o-Xylene	300	< 300	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	87.9%
d8-Toluene	100%
Bromofluorobenzene	108%
d4-1,2-Dichlorobenzene	103%

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-03-7-8**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB54D
LIMS ID: 12-12943
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI 080007-01.02
Date Sampled: 07/06/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 17:44

Sample Amount: 12.1 mg-dry-wt
Purge Volume: 5.0 mL
Moisture: 14.5%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	410	< 410	U
108-88-3	Toluene	410	< 410	U
100-41-4	Ethylbenzene	410	< 410	U
179601-23-1	m,p-Xylene	410	< 410	U
95-47-6	o-Xylene	410	< 410	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	89.5%
d8-Toluene	99.3%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	102%

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-02-8.2-9.2**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB54G
LIMS ID: 12-12946
Matrix: Soil
Data Release Authorized: MW
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02
Date Sampled: 07/06/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 14:58

Sample Amount: 14.9 mg-dry-wt
Purge Volume: 5.0 mL
Moisture: 15.6%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	340	< 340	U
108-88-3	Toluene	340	< 340	U
100-41-4	Ethylbenzene	340	< 340	U
179601-23-1	m,p-Xylene	340	< 340	U
95-47-6	o-Xylene	340	< 340	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	93.9%
d8-Toluene	100%
Bromofluorobenzene	108%
d4-1,2-Dichlorobenzene	102%

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-01-8-9**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB54J
LIMS ID: 12-12949
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI 080007-01.02
Date Sampled: 07/06/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 18:06

Sample Amount: 5.90 mg-dry-wt
Purge Volume: 5.0 mL
Moisture: 14.4%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	850	< 850	U
108-88-3	Toluene	850	< 850	U
100-41-4	Ethylbenzene	850	< 850	U
179601-23-1	m,p-Xylene	850	< 850	U
95-47-6	o-Xylene	850	< 850	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	88.4%
d8-Toluene	99.1%
Bromofluorobenzene	104%
d4-1,2-Dichlorobenzene	101%

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TB**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB54M
LIMS ID: 12-12952
Matrix: Water
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02
Date Sampled: 07/06/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 15:44

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	LOQ	Result	Q
71-43-2	Benzene	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	92.2%
d8-Toluene	99.4%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-08-7-8**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB54N
LIMS ID: 12-12953
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 16:06

Sample Amount: 7.72 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 17.6%

CAS Number	Analyte	RL	Result	Q
71-43-2	**Benzene**	**0.6**	**1.1**	
108-88-3	**Toluene**	**0.6**	**1.7**	
100-41-4	Ethylbenzene	0.6	< 0.6	U
179601-23-1	**m,p-Xylene**	**0.6**	**1.4**	
95-47-6	o-Xylene	0.6	< 0.6	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.4%
d8-Toluene	98.4%
Bromofluorobenzene	95.6%
d4-1,2-Dichlorobenzene	106%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-04-8-9**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB54Q
LIMS ID: 12-12956
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI 080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 18:29

Sample Amount: 3.71 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 25.9%

CAS Number	Analyte	RL	Result	Q
71-43-2	**Benzene**	**1.3**	**11**	
108-88-3	Toluene	1.3	< 1.3	U
100-41-4	Ethylbenzene	1.3	< 1.3	U
179601-23-1	m,p-Xylene	1.3	< 1.3	U
95-47-6	o-Xylene	1.3	< 1.3	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	86.4%
d8-Toluene	99.2%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-54-8-9**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB54T
LIMS ID: 12-12959
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 16:52

Sample Amount: 4.43 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 26.6%

CAS Number	Analyte	RL	Result	Q
71-43-2	**Benzene**	**1.1**	**1.9**	
108-88-3	Toluene	1.1	< 1.1	U
100-41-4	Ethylbenzene	1.1	< 1.1	U
179601-23-1	m,p-Xylene	1.1	< 1.1	U
95-47-6	o-Xylene	1.1	< 1.1	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	95.3%
d8-Toluene	98.4%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
VB54A	CW-TP-05-7-8	Med	87.9%	100%	108%	103%	0
VB54D	CW-TP-03-7-8	Med	89.5%	99.3%	103%	102%	0
MB-071212A	Method Blank	Med	92.6%	99.1%	102%	102%	0
LCS-071212A	Lab Control	Med	90.6%	98.3%	101%	102%	0
LCSD-071212A	Lab Control Dup	Med	90.2%	99.3%	102%	101%	0
VB54G	CW-TP-02-8.2-9.2	Med	93.9%	100%	108%	102%	0
VB54GMS	CW-TP-02-8.2-9.2	Med	86.7%	99.1%	106%	101%	0
VB54GMSD	CW-TP-02-8.2-9.2	Med	86.7%	99.7%	106%	100%	0
VB54J	CW-TP-01-8-9	Med	88.4%	99.1%	104%	101%	0
MB-071212A	Method Blank	Low	92.6%	99.1%	102%	102%	0
LCS-071212A	Lab Control	Low	90.6%	98.3%	101%	102%	0
LCSD-071212A	Lab Control Dup	Low	90.2%	99.3%	102%	101%	0
VB54N	CW-TP-08-7-8	Low	97.4%	98.4%	95.6%	106%	0
VB54Q	CW-TP-04-8-9	Low	86.4%	99.2%	103%	100%	0
VB54T	CW-TP-54-8-9	Low	95.3%	98.4%	102%	104%	0

	LCS/MB LIMITS		QC LIMITS	
SW8260C	Low	Med	Low	Med
(DCE) = d4-1,2-Dichloroethane	79-121	76-120	75-152	69-120
(TOL) = d8-Toluene	80-120	80-120	82-115	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	64-120	76-128
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 12-12940 to 12-12959

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
VB54M	CW-TB	5	92.2%	99.4%	102%	103%	0

	LCS/MB LIMITS	QC LIMITS
SW8260C		
(DCE) = d4-1,2-Dichloroethane	80-122	80-125
(TOL) = d8-Toluene	80-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120

Prep Method: SW5030B
Log Number Range: 12-12952 to 12-12952

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-02-8.2-9.2**
Page 1 of 1 **MATRIX SPIKE**

Lab Sample ID: VB54G
LIMS ID: 12-12946
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02
Date Sampled: 07/06/12
Date Received: 07/07/12

Instrument/Analyst MS: NT5/PAB
MSD: NT5/PAB
Date Analyzed MS: 07/12/12 18:52
MSD: 07/12/12 19:15

Sample Amount MS: 14.9 mg-dry-wt
MSD: 14.9 mg-dry-wt
Purge Volume MS: 5.0 mL
MSD: 5.0 mL
Moisture: 15.6%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Benzene	< 336 U	15100	16800	89.9%	14600	16800	86.9%	3.4%
Toluene	< 336 U	14600	16800	86.9%	14100	16800	83.9%	3.5%
Ethylbenzene	< 336 U	14900	16800	88.7%	14100	16800	83.9%	5.5%
m,p-Xylene	< 336 U	31400	33600	93.5%	29800	33600	88.7%	5.2%
o-Xylene	< 336 U	15600	16800	92.9%	14800	16800	88.1%	5.3%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-02-8.2-9.2**
Page 1 of 1 **MATRIX SPIKE**

Lab Sample ID: VB54G
LIMS ID: 12-12946
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI 080007-01.02
Date Sampled: 07/06/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 18:52

Sample Amount: 14.9 mg-dry-wt
Purge Volume: 5.0 mL
Moisture: 15.6%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	340	---	
108-88-3	Toluene	340	---	
100-41-4	Ethylbenzene	340	---	
179601-23-1	m,p-Xylene	340	---	
95-47-6	o-Xylene	340	---	

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	86.7%
d8-Toluene	99.1%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	101%

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: CW-TP-02-8.2-9.2**
Page 1 of 1 **MATRIX SPIKE DUP**

Lab Sample ID: VB54G
LIMS ID: 12-12946
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI 080007-01.02
Date Sampled: 07/06/12
Date Received: 07/07/12

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 19:15

Sample Amount: 14.9 mg-dry-wt
Purge Volume: 5.0 mL
Moisture: 15.6%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	340	---	
108-88-3	Toluene	340	---	
100-41-4	Ethylbenzene	340	---	
179601-23-1	m,p-Xylene	340	---	
95-47-6	o-Xylene	340	---	

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	86.7%
d8-Toluene	99.7%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	100%

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-071212A**
Page 1 of 1 **LAB CONTROL SAMPLE**

Lab Sample ID: LCS-071212A
LIMS ID: 12-12946
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT5/PAB
LCSD: NT5/PAB
Date Analyzed LCS: 07/12/12 12:37
LCSD: 07/12/12 13:00

Sample Amount LCS: 100 mg-dry-wt
LCSD: 100 mg-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	2370	2500	94.8%	2440	2500	97.6%	2.9%
Toluene	2320	2500	92.8%	2400	2500	96.0%	3.4%
Ethylbenzene	2430	2500	97.2%	2490	2500	99.6%	2.4%
m,p-Xylene	5160	5000	103%	5320	5000	106%	3.1%
o-Xylene	2450	2500	98.0%	2540	2500	102%	3.6%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	90.6%	90.2%
d8-Toluene	98.3%	99.3%
Bromofluorobenzene	101%	102%
d4-1,2-Dichlorobenzene	102%	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-071212A**
Page 1 of 1 **LAB CONTROL SAMPLE**

Lab Sample ID: LCS-071212A
LIMS ID: 12-12953
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT5/PAB
LCSD: NT5/PAB
Date Analyzed LCS: 07/12/12 12:37
LCSD: 07/12/12 13:00

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	47.5	50.0	95.0%	48.9	50.0	97.8%	2.9%
Toluene	46.3	50.0	92.6%	48.0	50.0	96.0%	3.6%
Ethylbenzene	48.6	50.0	97.2%	49.8	50.0	99.6%	2.4%
m,p-Xylene	103	100	103%	106	100	106%	2.9%
o-Xylene	49.0	50.0	98.0%	50.8	50.0	102%	3.6%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	90.6%	90.2%
d8-Toluene	98.3%	99.3%
Bromofluorobenzene	101%	102%
d4-1,2-Dichlorobenzene	102%	101%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0712

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC

ARI Job No: VB54

Project: CENTRAL WATERFRONT RI

Lab File ID: MB0712

Lab Sample ID: MB0712

Date Analyzed: 07/12/12

Time Analyzed: 1323

Instrument ID: NT5

Heated Purge: (Y/N) Y

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0712	LCS0712	LCS0712	1237
02	LCS0712	LCS0712	LCS0712A	1300
03	CW-TP-02-8.2	VB54G	VB54G	1458
04	CW-TB	VB54M	VB54M	1544
05	CW-TP-08-7-8	VB54N	VB54N	1606
06	CW-TP-54-8-9	VB54T	VB54T	1652
07	CW-TP-05-7-8	VB54A	VB54A2	1721
08	CW-TP-03-7-8	VB54D	VB54D2	1744
09	CW-TP-01-8-9	VB54J	VB54J2	1806
10	CW-TP-04-8-9	VB54Q	VB54Q2	1829
11	CW-TP-02-8.2	VB54GMS	VB54GMS	1852
12	CW-TP-02-8.2	VB54GMSD	VB54GMSD	1915
13				
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COMMENTS:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-071212A**
Page 1 of 1 **METHOD BLANK**

Lab Sample ID: MB-071212A
LIMS ID: 12-12946
Matrix: Soil
Data Release Authorized: MW
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI 080007-01.02
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 13:23

Sample Amount: 100 mg-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	50	< 50	U
108-88-3	Toluene	50	< 50	U
100-41-4	Ethylbenzene	50	< 50	U
179601-23-1	m,p-Xylene	50	< 50	U
95-47-6	o-Xylene	50	< 50	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	92.6%
d8-Toluene	99.1%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-071212A**
Page 1 of 1 **METHOD BLANK**

Lab Sample ID: MB-071212A
LIMS ID: 12-12953
Matrix: Soil
Data Release Authorized:
Reported: 07/13/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI 080007-01.02
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT5/PAB
Date Analyzed: 07/12/12 13:23

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	92.6%
d8-Toluene	99.1%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	102%

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: ANCHOR QEA, LLC

Lab Code: ARI Case No.: CENTRAL WATERFRONT RI SDG No.: VB51

Lab File ID: BFB0629A BFB Injection Date: 06/29/12

Instrument ID: NT5 BFB Injection Time: 1056

GC Column: RTXVMS ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	22.9
75	30.0 - 66.0% of mass 95	50.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.1 (0.2)1
174	50.0 - 101.0% of mass 95	75.8
175	4.0 - 9.0% of mass 174	5.8 (7.6)1
176	95.0 - 101.0% of mass 174	73.9 (97.5)1
177	5.0 - 9.0% of mass 176	5.0 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD1	IC0629	0010629	06/29/12	1134
02	VSTD2	IC0629	0020629	06/29/12	1157
03	VSTD5	IC0629	0050629	06/29/12	1220
04	VSTD10	IC0629	0100629	06/29/12	1242
05	VSTD50	IC0629	0500629	06/29/12	1305
06	VSTD100	IC0629	1000629	06/29/12	1328
07	VSTD150	IC0629	1500629	06/29/12	1351
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5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: ANCHOR QEA, LLC

Lab Code: ARI Case No.: CENTRAL WATERFRONT RI SDG No.: VB51

Lab File ID: BFB0711 BFB Injection Date: 07/11/12

Instrument ID: NT5 BFB Injection Time: 0800

GC Column: RTXVMS ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	22.7
75	30.0 - 66.0% of mass 95	51.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.1
173	Less than 2.0% of mass 174	0.2 (0.3)1
174	50.0 - 101.0% of mass 95	79.2
175	4.0 - 9.0% of mass 174	5.7 (7.1)1
176	95.0 - 101.0% of mass 174	76.9 (97.1)1
177	5.0 - 9.0% of mass 176	5.0 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	CC0711	0500711	07/11/12	0822
02	LCS0711	LCS0711	LCS0711	07/11/12	0909
03	LCS0711	LCS0711	LCS0711A	07/11/12	0932
04	MB0711	MB0711	MB0711	07/11/12	0955
05	CW-TP-06-5.5-6.5	VB51A	VB51A	07/11/12	1544
06	CW-TP-07-9-10	VB51F	VB51F	07/11/12	1606
07	CW-TP-09-6.3-7.3	VB51I	VB51I	07/11/12	1629
08	CW-TP-09-10-11	VB51L	VB51L	07/11/12	1652
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5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: ANCHOR QEA, LLC

Lab Code: ARI Case No.: CENTRAL WATERFRONT RI SDG No.: VB54

Lab File ID: BFB0712 BFB Injection Date: 07/12/12

Instrument ID: NT5 BFB Injection Time: 1138

GC Column: RTXVMS ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	21.7
75	30.0 - 66.0% of mass 95	50.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 101.0% of mass 95	80.9
175	4.0 - 9.0% of mass 174	6.0 (7.4)1
176	95.0 - 101.0% of mass 174	77.0 (95.2)1
177	5.0 - 9.0% of mass 176	4.9 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	CC0712	0500712	07/12/12	1201
02	LCS0712	LCS0712	LCS0712	07/12/12	1237
03	LCS0712	LCS0712	LCS0712A	07/12/12	1300
04	MB0712	MB0712	MB0712	07/12/12	1323
05	CW-TP-02-8.2-9.2	VB54G	VB54G	07/12/12	1458
06	CW-TB	VB54M	VB54M	07/12/12	1544
07	CW-TP-08-7-8	VB54N	VB54N	07/12/12	1606
08	CW-TP-54-8-9	VB54T	VB54T	07/12/12	1652
09	CW-TP-05-7-8	VB54A	VB54A2	07/12/12	1721
10	CW-TP-03-7-8	VB54D	VB54D2	07/12/12	1744
11	CW-TP-01-8-9	VB54J	VB54J2	07/12/12	1806
12	CW-TP-04-8-9	VB54Q	VB54Q2	07/12/12	1829
13	CW-TP-02-8.2-9.2	VB54GMS	VB54GMS	07/12/12	1852
14	CW-TP-02-8.2-9.2	VB54GMSD	VB54GMSD	07/12/12	1915
15					
16					
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22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB51 Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 Calibration Date: 06/29/12

LAB FILE ID: RF1: 0010629 RF2: 0020629 RF5: 0050629
RF10: 0100629 RF50: 0500629

COMPOUND	RF1	RF2	RF5	RF10	RF50
Chloromethane	0.839	0.951	0.835	0.945	0.969
Vinyl Chloride	0.883	0.903	0.794	0.930	0.977
Bromomethane	0.540	0.536	0.461	0.484	0.471
Chloroethane	0.586	0.647	0.514	0.553	0.587
Trichlorofluoromethane	1.038	0.850	0.719	0.775	0.759
Acrolein	0.108	0.118	0.116	0.130	0.117
112Trichloro122Trifluoroetha	0.612	0.636	0.575	0.642	0.618
Acetone	0.307	0.273	0.231	0.245	0.224
1,1-Dichloroethene	0.579	0.617	0.570	0.645	0.620
Bromoethane	0.441	0.480	0.434	0.486	0.471
Iodomethane	0.569	0.579	0.516	0.640	0.832
Methylene Chloride	0.977	0.871	0.721	0.780	0.744
Acrylonitrile	0.243	0.259	0.249	0.281	0.277
Carbon Disulfide	2.194	2.236	2.023	2.272	2.226
Trans-1,2-Dichloroethene	0.729	0.711	0.670	0.733	0.723
Vinyl Acetate	1.229	1.287	1.223	1.412	1.376
1,1-Dichloroethane	1.372	1.488	1.319	1.531	1.478
2-Butanone	0.071	0.071	0.071	0.081	0.080
2,2-Dichloropropane	1.095	1.168	1.048	1.173	1.134
Cis-1,2-Dichloroethene	0.729	0.773	0.692	0.807	0.774
Chloroform	1.200	1.273	1.172	1.348	1.302
Bromochloromethane	0.327	0.350	0.315	0.363	0.352
1,1,1-Trichloroethane	1.073	1.149	1.030	1.175	1.166
1,1-Dichloropropene	0.406	0.417	0.382	0.432	0.431
Carbon Tetrachloride	0.368	0.398	0.351	0.394	0.406
1,2-Dichloroethane	0.444	0.458	0.440	0.500	0.481
Benzene	1.157	1.199	1.106	1.259	1.270
Trichloroethene	0.313	0.302	0.277	0.323	0.316
1,2-Dichloropropane	0.302	0.326	0.302	0.342	0.337
Bromodichloromethane	0.376	0.400	0.376	0.427	0.430
Dibromomethane	0.147	0.178	0.158	0.185	0.180
2-Chloroethyl Vinyl Ether	0.148	0.164	0.158	0.206	0.212
4-Methyl-2-Pentanone	0.098	0.115	0.116	0.134	0.137
Cis 1,3-dichloropropene	0.437	0.465	0.436	0.502	0.531
Toluene	0.807	0.819	0.729	0.818	0.823
Trans 1,3-Dichloropropene	0.391	0.439	0.403	0.475	0.498
2-Hexanone	0.160	0.168	0.171	0.204	0.203

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB51 Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 Calibration Date: 06/29/12

LAB FILE ID: RF1: 0010629 RF2: 0020629 RF5: 0050629
RF10: 0100629 RF50: 0500629

COMPOUND	RF1	RF2	RF5	RF10	RF50
1,1,2-Trichloroethane	0.237	0.246	0.228	0.264	0.261
1,3-Dichloropropane	0.348	0.359	0.353	0.409	0.406
Tetrachloroethene	0.256	0.276	0.250	0.287	0.279
Chlorodibromomethane	0.225	0.225	0.217	0.247	0.256
1,2-Dibromoethane	0.226	0.223	0.220	0.254	0.254
Chlorobenzene	0.667	0.705	0.659	0.770	0.757
Ethyl Benzene	1.232	1.246	1.130	1.316	1.340
1,1,1,2-Tetrachloroethane	0.230	0.237	0.217	0.255	0.267
m,p-xylene	0.426	0.437	0.422	0.494	0.504
o-Xylene	0.392	0.419	0.396	0.466	0.483
Styrene	0.703	0.716	0.664	0.798	0.823
Bromoform	0.258	0.271	0.263	0.287	0.308
1,1,2,2-Tetrachloroethane	0.447	0.441	0.433	0.505	0.487
1,2,3-Trichloropropane	0.127	0.144	0.142	0.162	0.159
Trans-1,4-Dichloro 2-Butene	0.155	0.181	0.174	0.202	0.201
N-Propyl Benzene	2.524	2.510	2.317	2.643	2.678
Bromobenzene	0.563	0.503	0.491	0.555	0.550
Isopropyl Benzene	1.890	1.981	1.920	2.183	2.230
2-Chloro Toluene	1.562	1.507	1.397	1.626	1.636
4-Chloro Toluene	1.630	1.575	1.466	1.673	1.710
T-Butyl Benzene	1.461	1.473	1.393	1.588	1.661
1,3,5-Trimethyl Benzene	1.664	1.657	1.618	1.845	1.870
1,2,4-Trimethylbenzene	1.661	1.639	1.580	1.843	1.893
S-Butyl Benzene	2.098	2.188	2.102	2.371	2.440
4-Isopropyl Toluene	1.716	1.718	1.677	1.933	2.025
1,3-Dichlorobenzene	1.013	0.996	0.930	1.048	1.057
1,4-Dichlorobenzene	1.154	1.045	0.983	1.080	1.073
N-Butyl Benzene	1.789	1.615	1.588	1.782	1.851
1,2-Dichlorobenzene	1.030	0.982	0.907	1.030	1.022
1,2-Dibromo 3-Chloropropane	0.084	0.084	0.096	0.094	0.100
1,2,4-Trichlorobenzene	0.746	0.653	0.572	0.664	0.689
Hexachloro 1,3-Butadiene	0.428	0.426	0.381	0.424	0.426
Naphthalene	1.412	1.327	1.262	1.411	1.499
1,2,3-Trichlorobenzene	0.646	0.618	0.577	0.631	0.653
Dichlorodifluoromethane	0.658	0.634	0.565	0.648	0.726
Methyl tert butyl ether	1.850	2.024	1.974	2.274	2.216

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB51 Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 Calibration Date: 06/29/12

LAB FILE ID: RF1: 0010629 RF2: 0020629 RF5: 0050629
RF10: 0100629 RF50: 0500629

COMPOUND	RF1	RF2	RF5	RF10	RF50
d4-1,2-Dichloroethane	0.923	0.953	0.958	0.953	0.950
d8-Toluene	1.353	1.368	1.366	1.364	1.369
4-Bromofluorobenzene	0.547	0.556	0.555	0.558	0.562
d4-1,2-Dichlorobenzene	0.935	0.940	0.937	0.920	0.932
Dibromofluoromethane	0.786	0.795	0.796	0.792	0.792

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB51 Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 Calibration Date: 06/29/12

LAB FILE ID: RF100: 1000629 RF150: 1500629

COMPOUND	TYPE	RF	CURVE OR R^2	AVE	%RSD
Chloromethane	0.954	0.858	AVRG	0.907	6.6
Vinyl Chloride	0.972	0.846	AVRG	0.901	7.3
Bromomethane	0.463	0.412	AVRG	0.481	9.3
Chloroethane	0.558	0.477	AVRG	0.560	9.8
Trichlorofluoromethane	0.741	0.632	AVRG	0.788	16.2
Acrolein	0.119	0.111	AVRG	0.117	6.0
112Trichloro122Trifluoroetha	0.629	0.500	AVRG	0.602	8.3
Acetone	0.226	0.201	AVRG	0.244	14.6
1,1-Dichloroethene	0.633		AVRG	0.611	4.9
Bromoethane	0.484	0.425	AVRG	0.460	5.6
Iodomethane	0.854	0.744	AVRG	0.676	19.9
Methylene Chloride	0.755	0.663	AVRG	0.787	13.3
Acrylonitrile	0.278	0.255	AVRG	0.263	5.9
Carbon Disulfide	2.270		AVRG	2.203	4.2
Trans-1,2-Dichloroethene	0.739	0.654	AVRG	0.708	4.7
Vinyl Acetate	1.432	1.288	AVRG	1.321	6.5
1,1-Dichloroethane	1.492	1.322	AVRG	1.429	6.2
2-Butanone	0.082	0.075	AVRG	0.076	6.5
2,2-Dichloropropane	1.150	1.014	AVRG	1.112	5.5
Cis-1,2-Dichloroethene	0.788	0.703	AVRG	0.752	5.9
Chloroform	1.330	1.175	AVRG	1.257	5.9
Bromochloromethane	0.356	0.318	AVRG	0.340	5.8
1,1,1-Trichloroethane	1.184	1.050	AVRG	1.118	5.8
1,1-Dichloropropene	0.438	0.392	AVRG	0.414	5.2
Carbon Tetrachloride	0.415	0.367	AVRG	0.386	6.1
1,2-Dichloroethane	0.487	0.438	AVRG	0.464	5.4
Benzene	1.283	1.147	AVRG	1.203	5.7
Trichloroethene	0.322	0.290	AVRG	0.306	5.7
1,2-Dichloropropane	0.348	0.313	AVRG	0.324	5.8
Bromodichloromethane	0.439	0.394	AVRG	0.406	6.4
Dibromomethane	0.184	0.166	AVRG	0.171	8.6
2-Chloroethyl Vinyl Ether	0.218	0.200	AVRG	0.187	15.4
4-Methyl-2-Pentanone	0.143	0.135	AVRG	0.125	13.0
Cis 1,3-dichloropropene	0.545	0.491	AVRG	0.487	8.8
Toluene	0.842	0.766	AVRG	0.801	4.9
Trans 1,3-Dichloropropene	0.521	0.472	AVRG	0.457	10.6
2-Hexanone	0.201	0.181	AVRG	0.184	10.0

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB51 Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 Calibration Date: 06/29/12

LAB FILE ID: RF100: 1000629 RF150: 1500629

COMPOUND	TYPE	RF	CURVE OR R^2	AVE	%RSD
1,1,2-Trichloroethane		0.267	0.243	AVRG	0.249	6.0
1,3-Dichloropropane		0.403	0.365	AVRG	0.378	7.2
Tetrachloroethene		0.276	0.241	AVRG	0.266	6.4
Chlorodibromomethane		0.260	0.232	AVRG	0.237	7.1
1,2-Dibromoethane		0.259	0.234	AVRG	0.238	7.0
Chlorobenzene		0.753	0.671	AVRG	0.712	6.7
Ethyl Benzene		1.369	1.199	AVRG	1.262	6.7
1,1,1,2-Tetrachloroethane		0.289	0.246	AVRG	0.249	9.7
m,p-xylene		0.510	0.308	AVRG	0.443	15.9
o-Xylene		0.491	0.448	AVRG	0.442	9.2
Styrene		0.896	0.646	AVRG	0.750	12.2
Bromoform		0.311	0.251	AVRG	0.278	8.6
1,1,2,2-Tetrachloroethane		0.470	0.401	AVRG	0.455	7.7
1,2,3-Trichloropropane		0.153	0.131	AVRG	0.145	9.2
Trans-1,4-Dichloro 2-Butene		0.193	0.147	AVRG	0.179	12.1
N-Propyl Benzene		2.509	2.046	AVRG	2.461	8.8
Bromobenzene		0.521	0.437	AVRG	0.517	8.6
Isopropyl Benzene		2.111	1.745	AVRG	2.008	8.7
2-Chloro Toluene		1.563	1.312	AVRG	1.515	7.9
4-Chloro Toluene		1.653	1.336	AVRG	1.578	8.4
T-Butyl Benzene		1.577	1.322	AVRG	1.496	7.9
1,3,5-Trimethyl Benzene		1.807	1.515	AVRG	1.711	7.7
1,2,4-Trimethylbenzene		1.825	1.510	AVRG	1.708	8.6
S-Butyl Benzene		2.317	1.855	AVRG	2.196	9.1
4-Isopropyl Toluene		1.929	1.593	AVRG	1.799	9.0
1,3-Dichlorobenzene		1.039	0.822	AVRG	0.987	8.5
1,4-Dichlorobenzene		1.042	0.853	AVRG	1.033	9.1
N-Butyl Benzene		1.759	1.452	AVRG	1.691	8.4
1,2-Dichlorobenzene		0.969	0.829	AVRG	0.967	7.8
1,2-Dibromo 3-Chloropropane		0.094	0.076	AVRG	0.090	9.9
1,2,4-Trichlorobenzene		0.657	0.516	AVRG	0.642	11.8
Hexachloro 1,3-Butadiene		0.402	0.323	AVRG	0.401	9.7
Naphthalene		1.415	1.129	AVRG	1.351	9.1
1,2,3-Trichlorobenzene		0.611	0.480	AVRG	0.602	9.9
Dichlorodifluoromethane		0.713	0.616	AVRG	0.652	8.5
Methyl tert butyl ether		2.271	2.039	AVRG	2.092	7.8

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB51 Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 Calibration Date: 06/29/12

LAB FILE ID: RF100: 1000629 RF150: 1500629

COMPOUND	TYPE	RF	CURVE OR R^2	AVE	%RSD
d4-1,2-Dichloroethane	0.936	0.942	AVRG	0.945	1.3
d8-Toluene	1.363	1.371	AVRG	1.365	0.4
4-Bromofluorobenzene	0.565	0.562	AVRG	0.558	1.1
d4-1,2-Dichlorobenzene	0.911	0.850	AVRG	0.918	3.4
Dibromofluoromethane	0.793	0.786	AVRG	0.791	0.5

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC | Client: ANCHOR QEA, LLC

ARI Job No: VB51 | Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 | Cont. Calib. Date: 07/11/12

Init. Calib. Date: 06/29/12 | Cont. Calib. Time: 0822

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
Chloromethane	0.907	0.8508	0.100	AVRG	-6.2	
Vinyl Chloride	0.901	0.8971	0.010	AVRG	-0.4	
Bromomethane	0.481	0.4676	0.010	AVRG	-2.8	
Chloroethane	0.560	0.5456	0.010	AVRG	-2.6	
Trichlorofluoromethane	0.788	0.7451	0.010	AVRG	-5.4	
Acrolein	0.117	0.1206	0.010	AVRG	3.1	
112Trichloro122Trifluoroetha	0.602	0.6277	0.010	AVRG	4.3	
Acetone	0.244	0.2024	0.010	AVRG	-17.0	
1,1-Dichloroethene	0.611	0.6019	0.010	AVRG	-1.5	
Bromoethane	0.460	0.4472	0.010	AVRG	-2.8	
Iodomethane	0.676	0.8412	0.010	AVRG	24.4	<-
Methylene Chloride	0.787	0.7069	0.010	AVRG	-10.2	
Acrylonitrile	0.263	0.2402	0.010	AVRG	-8.7	
Carbon Disulfide	2.204	2.1090	0.010	AVRG	-4.3	
Trans-1,2-Dichloroethene	0.708	0.7049	0.010	AVRG	-0.4	
Vinyl Acetate	1.321	1.2178	0.010	AVRG	-7.8	
1,1-Dichloroethane	1.429	1.4006	0.100	AVRG	-2.0	
2-Butanone	0.076	0.0723	0.010	AVRG	-4.9	
2,2-Dichloropropane	1.112	1.1783	0.010	AVRG	6.0	
Cis-1,2-Dichloroethene	0.752	0.7503	0.010	AVRG	-0.2	
Chloroform	1.257	1.2782	0.010	AVRG	1.7	
Bromochloromethane	0.340	0.3315	0.010	AVRG	-2.5	
1,1,1-Trichloroethane	1.118	1.1864	0.010	AVRG	6.1	
1,1-Dichloropropene	0.414	0.4595	0.010	AVRG	11.0	
Carbon Tetrachloride	0.386	0.4393	0.010	AVRG	13.8	
1,2-Dichloroethane	0.464	0.4736	0.010	AVRG	2.1	
Benzene	1.203	1.2927	0.010	AVRG	7.4	
Trichloroethene	0.306	0.3425	0.010	AVRG	11.9	
1,2-Dichloropropane	0.324	0.3399	0.010	AVRG	4.9	
Bromodichloromethane	0.406	0.4321	0.010	AVRG	6.4	
Dibromomethane	0.171	0.1784	0.010	AVRG	4.3	
2-Chloroethyl Vinyl Ether	0.186	0.1983	0.010	AVRG	6.6	
4-Methyl-2-Pentanone	0.125	0.1280	0.010	AVRG	2.4	
Cis 1,3-dichloropropene	0.487	0.5284	0.010	AVRG	8.5	
Toluene	0.800	0.8440	0.010	AVRG	5.5	
Trans 1,3-Dichloropropene	0.457	0.4980	0.010	AVRG	9.0	
2-Hexanone	0.184	0.1834	0.010	AVRG	-0.3	

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB51 Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 Cont. Calib. Date: 07/11/12

Init. Calib. Date: 06/29/12 Cont. Calib. Time: 0822

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
1,1,2-Trichloroethane	0.249	0.2570	0.010	AVRG	3.2
1,3-Dichloropropane	0.378	0.3864	0.010	AVRG	2.2
Tetrachloroethene	0.266	0.2914	0.010	AVRG	9.5
Chlorodibromomethane	0.237	0.2484	0.010	AVRG	4.8
1,2-Dibromoethane	0.238	0.2490	0.010	AVRG	4.6
Chlorobenzene	0.712	0.7444	0.300	AVRG	4.6
Ethyl Benzene	1.262	1.3560	0.010	AVRG	7.4
1,1,1,2-Tetrachloroethane	0.249	0.2643	0.010	AVRG	6.1
m,p-xylene	0.443	0.5055	0.010	AVRG	14.1
o-Xylene	0.442	0.4786	0.010	AVRG	8.3
Styrene	0.749	0.8150	0.010	AVRG	8.8
Bromoform	0.278	0.2834	0.100	AVRG	1.9
1,1,2,2-Tetrachloroethane	0.455	0.4293	0.300	AVRG	-5.6
1,2,3-Trichloropropane	0.145	0.1423	0.010	AVRG	-1.9
Trans-1,4-Dichloro 2-Butene	0.179	0.1859	0.010	AVRG	3.8
N-Propyl Benzene	2.461	2.6740	0.010	AVRG	8.6
Bromobenzene	0.517	0.5268	0.010	AVRG	1.9
Isopropyl Benzene	2.008	2.2228	0.010	AVRG	10.7
2-Chloro Toluene	1.515	1.5998	0.010	AVRG	5.6
4-Chloro Toluene	1.578	1.6823	0.010	AVRG	6.6
T-Butyl Benzene	1.496	1.6337	0.010	AVRG	9.2
1,3,5-Trimethyl Benzene	1.711	1.8487	0.010	AVRG	8.0
1,2,4-Trimethylbenzene	1.707	1.8606	0.010	AVRG	9.0
S-Butyl Benzene	2.196	2.4351	0.010	AVRG	10.9
4-Isopropyl Toluene	1.799	2.0198	0.010	AVRG	12.3
1,3-Dichlorobenzene	0.986	1.0306	0.010	AVRG	4.5
1,4-Dichlorobenzene	1.033	1.0444	0.010	AVRG	1.1
N-Butyl Benzene	1.691	1.9373	0.010	AVRG	14.6
1,2-Dichlorobenzene	0.967	0.9744	0.010	AVRG	0.8
1,2-Dibromo 3-Chloropropane	0.090	0.0904	0.010	AVRG	0.4
1,2,4-Trichlorobenzene	0.642	0.7124	0.010	AVRG	11.0
Hexachloro 1,3-Butadiene	0.401	0.4347	0.010	AVRG	8.4
Naphthalene	1.351	1.4679	0.010	AVRG	8.6
1,2,3-Trichlorobenzene	0.602	0.6525	0.010	AVRG	8.4
Dichlorodifluoromethane	0.651	0.5988	0.010	AVRG	-8.0
Methyl tert butyl ether	2.092	2.0950	0.010	AVRG	0.1

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB51 Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 Cont. Calib. Date: 07/11/12

Init. Calib. Date: 06/29/12 Cont. Calib. Time: 0822

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.945	0.9023	0.010	AVRG	-4.5
d8-Toluene	1.365	1.3711	0.010	AVRG	0.4
4-Bromofluorobenzene	0.558	0.5713	0.010	AVRG	2.4
d4-1,2-Dichlorobenzene	0.918	0.9311	0.010	AVRG	1.4
Dibromofluoromethane	0.791	0.7485	0.010	AVRG	-5.4

<- Exceeds QC limit of 20% D
* RF less than minimum RF

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC | Client: ANCHOR QEA, LLC

ARI Job No: VB54 | Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 | Cont. Calib. Date: 07/12/12

Init. Calib. Date: 06/29/12 | Cont. Calib. Time: 1201

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
Chloromethane	0.907	0.8120	0.100	AVRG	-10.5	
Vinyl Chloride	0.901	0.8517	0.010	AVRG	-5.5	
Bromomethane	0.481	0.4536	0.010	AVRG	-5.7	
Chloroethane	0.560	0.4774	0.010	AVRG	-14.8	
Trichlorofluoromethane	0.788	0.6502	0.010	AVRG	-17.5	
Acrolein	0.117	0.1092	0.010	AVRG	-6.7	
112Trichloro122Trifluoroetha	0.602	0.5782	0.010	AVRG	-4.0	
Acetone	0.244	0.1755	0.010	AVRG	-28.1	<-
1,1-Dichloroethene	0.611	0.5546	0.010	AVRG	-9.2	
Bromoethane	0.460	0.4230	0.010	AVRG	-8.0	
Iodomethane	0.676	0.7486	0.010	AVRG	10.7	
Methylene Chloride	0.787	0.6699	0.010	AVRG	-14.9	
Acrylonitrile	0.263	0.2164	0.010	AVRG	-17.7	
Carbon Disulfide	2.204	1.9448	0.010	AVRG	-11.8	
Trans-1,2-Dichloroethene	0.708	0.6619	0.010	AVRG	-6.5	
Vinyl Acetate	1.321	1.1045	0.010	AVRG	-16.4	
1,1-Dichloroethane	1.429	1.3156	0.100	AVRG	-7.9	
2-Butanone	0.076	0.0658	0.010	AVRG	-13.4	
2,2-Dichloropropane	1.112	1.0706	0.010	AVRG	-3.7	
Cis-1,2-Dichloroethene	0.752	0.7007	0.010	AVRG	-6.8	
Chloroform	1.257	1.2039	0.010	AVRG	-4.2	
Bromochloromethane	0.340	0.3051	0.010	AVRG	-10.3	
1,1,1-Trichloroethane	1.118	1.1111	0.010	AVRG	-0.6	
1,1-Dichloropropene	0.414	0.4466	0.010	AVRG	7.9	
Carbon Tetrachloride	0.386	0.4327	0.010	AVRG	12.1	
1,2-Dichloroethane	0.464	0.4580	0.010	AVRG	-1.3	
Benzene	1.203	1.2585	0.010	AVRG	4.6	
Trichloroethene	0.306	0.3323	0.010	AVRG	8.6	
1,2-Dichloropropane	0.324	0.3347	0.010	AVRG	3.3	
Bromodichloromethane	0.406	0.4278	0.010	AVRG	5.4	
Dibromomethane	0.171	0.1730	0.010	AVRG	1.2	
2-Chloroethyl Vinyl Ether	0.186	0.1904	0.010	AVRG	2.4	
4-Methyl-2-Pentanone	0.125	0.1193	0.010	AVRG	-4.6	
Cis 1,3-dichloropropene	0.487	0.5197	0.010	AVRG	6.7	
Toluene	0.800	0.8202	0.010	AVRG	2.5	
Trans 1,3-Dichloropropene	0.457	0.4834	0.010	AVRG	5.8	
2-Hexanone	0.184	0.1724	0.010	AVRG	-6.3	

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB54 Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 Cont. Calib. Date: 07/12/12

Init. Calib. Date: 06/29/12 Cont. Calib. Time: 1201

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
1,1,2-Trichloroethane	0.249	0.2465	0.010	AVRG	-1.0
1,3-Dichloropropane	0.378	0.3861	0.010	AVRG	2.1
Tetrachloroethene	0.266	0.2942	0.010	AVRG	10.6
Chlorodibromomethane	0.237	0.2485	0.010	AVRG	4.8
1,2-Dibromoethane	0.238	0.2380	0.010	AVRG	0.0
Chlorobenzene	0.712	0.7428	0.300	AVRG	4.3
Ethyl Benzene	1.262	1.3514	0.010	AVRG	7.1
1,1,1,2-Tetrachloroethane	0.249	0.2643	0.010	AVRG	6.1
m,p-xylene	0.443	0.5037	0.010	AVRG	13.7
o-Xylene	0.442	0.4793	0.010	AVRG	8.4
Styrene	0.749	0.8115	0.010	AVRG	8.3
Bromoform	0.278	0.2846	0.100	AVRG	2.4
1,1,2,2-Tetrachloroethane	0.455	0.4205	0.300	AVRG	-7.6
1,2,3-Trichloropropane	0.145	0.1389	0.010	AVRG	-4.2
Trans-1,4-Dichloro 2-Butene	0.179	0.1747	0.010	AVRG	-2.4
N-Propyl Benzene	2.461	2.6788	0.010	AVRG	8.8
Bromobenzene	0.517	0.5289	0.010	AVRG	2.3
Isopropyl Benzene	2.008	2.2186	0.010	AVRG	10.5
2-Chloro Toluene	1.515	1.6173	0.010	AVRG	6.8
4-Chloro Toluene	1.578	1.6882	0.010	AVRG	7.0
T-Butyl Benzene	1.496	1.6336	0.010	AVRG	9.2
1,3,5-Trimethyl Benzene	1.711	1.8681	0.010	AVRG	9.2
1,2,4-Trimethylbenzene	1.707	1.8686	0.010	AVRG	9.5
S-Butyl Benzene	2.196	2.4171	0.010	AVRG	10.1
4-Isopropyl Toluene	1.799	2.0301	0.010	AVRG	12.8
1,3-Dichlorobenzene	0.986	1.0373	0.010	AVRG	5.2
1,4-Dichlorobenzene	1.033	1.0588	0.010	AVRG	2.5
N-Butyl Benzene	1.691	1.9355	0.010	AVRG	14.4
1,2-Dichlorobenzene	0.967	0.9715	0.010	AVRG	0.5
1,2-Dibromo 3-Chloropropane	0.090	0.0861	0.010	AVRG	-4.3
1,2,4-Trichlorobenzene	0.642	0.7369	0.010	AVRG	14.8
Hexachloro 1,3-Butadiene	0.401	0.4544	0.010	AVRG	13.3
Naphthalene	1.351	1.4523	0.010	AVRG	7.5
1,2,3-Trichlorobenzene	0.602	0.6638	0.010	AVRG	10.3
Dichlorodifluoromethane	0.651	0.5525	0.010	AVRG	-15.1
Methyl tert butyl ether	2.092	1.9365	0.010	AVRG	-7.4

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC | Client: ANCHOR QEA, LLC

ARI Job No: VB54 | Project: CENTRAL WATERFRONT RI

Instrument ID: NT5 | Cont. Calib. Date: 07/12/12

Init. Calib. Date: 06/29/12 | Cont. Calib. Time: 1201

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.945	0.8444	0.010	AVRG	-10.6
d8-Toluene	1.365	1.3506	0.010	AVRG	-1.0
4-Bromofluorobenzene	0.558	0.5714	0.010	AVRG	2.4
d4-1,2-Dichlorobenzene	0.918	0.9255	0.010	AVRG	0.8
Dibromofluoromethane	0.791	0.7091	0.010	AVRG	-10.4

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC | Client: ANCHOR QEA, LLC

ARI Job No: VB51 | Project: CENTRAL WATERFRONT RI

Ical Midpoint ID: 0100629 | Ical Date: 06/29/12

Instrument ID: NT5 | Project Run Date: 07/11/12

		IS1(PFB)		IS2(DFB)		IS3(CLB)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	293236	4.69	694035	5.14	808184	7.62
	UPPER LIMIT	586472	5.19	1388070	5.64	1616368	8.12
	LOWER LIMIT	146618	4.19	347018	4.64	404092	7.12
	Sample ID						
01	LCS0711	326836	4.69	735118	5.14	884851	7.62
02	LCS0711	353341	4.69	790781	5.14	950724	7.62
03	MB0711	353026	4.69	789004	5.14	936440	7.62
04	CW-TP-06-5.5	301936	4.69	688350	5.14	830244	7.62
05	CW-TP-07-9-1	321784	4.68	711684	5.14	853720	7.62
06	CW-TP-09-6.3	356277	4.68	792068	5.14	957371	7.62
07	CW-TP-09-10-	336687	4.68	741826	5.14	907529	7.62
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC | Client: ANCHOR QEA, LLC

ARI Job No: VB51 | Project: CENTRAL WATERFRONT RI

Ical Midpoint ID: 0100629 | Ical Date: 06/29/12

Instrument ID: NT5 | Project Run Date: 07/11/12

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	454284	9.70				
	UPPER LIMIT	908568	10.20				
	LOWER LIMIT	227142	9.20				
	Sample ID						
01	LCS0711	502866	9.70				
02	LCS0711	545607	9.70				
03	MB0711	523077	9.69				
04	CW-TP-06-5.5	466045	9.69				
05	CW-TP-07-9-1	495401	9.69				
06	CW-TP-09-6.3	557771	9.69				
07	CW-TP-09-10-	535771	9.69				
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (DCB) = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC | Client: ANCHOR QEA, LLC

ARI Job No: VB54 | Project: CENTRAL WATERFRONT RI

Ical Midpoint ID: 0100629 | Ical Date: 06/29/12

Instrument ID: NT5 | Project Run Date: 07/12/12

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	293236	4.69	694035	5.14	808184	7.62
	UPPER LIMIT	586472	5.19	1388070	5.64	1616368	8.12
	LOWER LIMIT	146618	4.19	347018	4.64	404092	7.12
	Sample ID						
01	LCS0712	377833	4.69	826188	5.14	976831	7.62
02	LCS0712	362946	4.68	791808	5.14	940304	7.62
03	MB0712	361662	4.69	786283	5.14	934814	7.62
04	CW-TP-02-8.2	341478	4.68	760339	5.14	922328	7.62
05	CW-TB	348336	4.69	764914	5.14	904194	7.62
06	CW-TP-08-7-8	368321	4.69	805022	5.14	912001	7.62
07	CW-TP-54-8-9	380275	4.69	821158	5.14	948771	7.62
08	CW-TP-05-7-8	353324	4.69	762817	5.14	902584	7.62
09	CW-TP-03-7-8	368303	4.69	796940	5.14	933542	7.62
10	CW-TP-01-8-9	387611	4.69	855814	5.14	1023686	7.62
11	CW-TP-04-8-9	367769	4.68	803106	5.14	951194	7.62
12	CW-TP-02-8.2	369707	4.68	798637	5.14	946356	7.62
13	CW-TP-02-8.2	393258	4.68	855581	5.14	1023286	7.62
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC | Client: ANCHOR QEA, LLC

ARI Job No: VB54 | Project: CENTRAL WATERFRONT RI

Ical Midpoint ID: 0100629 | Ical Date: 06/29/12

Instrument ID: NT5 | Project Run Date: 07/12/12

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	454284	9.70				
	UPPER LIMIT	908568	10.20				
	LOWER LIMIT	227142	9.20				
	Sample ID						
01	LCS0712	548462	9.70				
02	LCS0712	545289	9.70				
03	MB0712	530388	9.69				
04	CW-TP-02-8.2	533815	9.69				
05	CW-TB	509429	9.69				
06	CW-TP-08-7-8	418075	9.69				
07	CW-TP-54-8-9	514845	9.69				
08	CW-TP-05-7-8	509274	9.70				
09	CW-TP-03-7-8	523731	9.69				
10	CW-TP-01-8-9	581217	9.69				
11	CW-TP-04-8-9	550555	9.69				
12	CW-TP-02-8.2	552267	9.70				
13	CW-TP-02-8.2	605084	9.70				
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (DCB) = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

SIM Volatile Analysis
Report and Summary QC Forms

ARI Job ID: VB51, VB54

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: CW-TP-01-8-9**
Page 1 of 1 **SAMPLE**

Lab Sample ID: VB54J
LIMS ID: 12-12949
Matrix: Soil
Data Release Authorized:
Reported: 07/23/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI 080007-01.02
Date Sampled: 07/06/12
Date Received: 07/07/12

Instrument/Analyst: NT7/PKC
Date Analyzed: 07/20/12 16:43

Sample Amount: 23.3 mg-dry-wt
Purge Volume: 10.0 mL
Moisture: 14.4%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	8.6	< 8.6	U
108-88-3	**Toluene**	**8.6**	**30**	
100-41-4	**Ethylbenzene**	**8.6**	**10**	
179601-23-1	**m,p-Xylene**	**17**	**30**	
95-47-6	**o-Xylene**	**8.6**	**32**	

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	88.2%
d8-Toluene	86.0%
Bromofluorobenzene	115%

SW8260-SIM SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02

Client ID	DCE	TOL	BFB	TOT OUT
MB-072012	89.0%	103%	93.3%	0
LCS-072012	83.0%	100%	112%	0
LCSD-072012	82.9%	101%	111%	0
CW-TP-01-8-9	88.2%	86.0%	115%	0

	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(75-125)	(75-125)
(TOL) = d8-Toluene	(75-125)	(75-125)
(BFB) = Bromofluorobenzene	(30-160)	(30-160)

Prep Method: SW5030
Log Number Range: 12-12949 to 12-12949

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: LCS-072012**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-072012
LIMS ID: 12-12949
Matrix: Soil
Data Release Authorized:
Reported: 07/23/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT7/PKC
LCSD: NT7/PKC
Date Analyzed LCS: 07/20/12 15:23
LCSD: 07/20/12 15:50

Sample Amount LCS: 200 mg-dry-wt
LCSD: 200 mg-dry-wt
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	50.6	50.0	101%	50.2	50.0	100%	0.8%
Toluene	48.4	50.0	96.8%	49.2	50.0	98.4%	1.6%
Ethylbenzene	54.8	50.0	110%	55.6	50.0	111%	1.4%
m,p-Xylene	106	100	106%	102	100	102%	3.8%
o-Xylene	48.6	50.0	97.2%	49.2	50.0	98.4%	1.2%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0720

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC

ARI Job No: VB54

Project: CENTRAL WATERFRONT RI

Lab File ID: MB0720

Lab Sample ID: MB0720

Date Analyzed: 07/20/12

Time Analyzed: 1617

Instrument ID: NT7

Heated Purge: (Y/N) N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0720	LCS0720	LCS0720	1523
02	LCS0720	LCS0720	LCS0720A	1550
03	CW-TP-01-8-9	VB54J	VB54J	1643
04				
05				
06				
07				
08				
09				
10				
11				
12				
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26				
27				
28				
29				
30				

COMMENTS:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: MB-072012**
Page 1 of 1 **METHOD BLANK**

Lab Sample ID: MB-072012
LIMS ID: 12-12949
Matrix: Soil
Data Release Authorized:
Reported: 07/23/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI 080007-01.02
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT7/PKC
Date Analyzed: 07/20/12 16:17

Sample Amount: 200 mg-dry-wt
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	89.0%
d8-Toluene	103%
Bromofluorobenzene	93.3%

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: ANCHOR QEA, LLC

Lab Code: VC52 Case No.: CENTRAL WATERFRONT RI SDG No.: VB54

Lab File ID: BFB0620 BFB Injection Date: 06/20/12

Instrument ID: NT7 BFB Injection Time: 1016

GC Column: RTXVMS ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.3
75	30.0 - 66.0% of mass 95	51.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	8.6
173	Less than 2.0% of mass 174	0.4 (0.6)1
174	50.0 - 101.0% of mass 95	62.3
175	4.0 - 9.0% of mass 174	4.5 (7.2)1
176	95.0 - 101.0% of mass 174	61.2 (98.3)1
177	5.0 - 9.0% of mass 176	4.0 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	IC5000	IC5000	50000620	06/20/12	1059
02	IC2000	IC2000	20000620	06/20/12	1126
03	IC1000	IC1000	10000620	06/20/12	1153
04	IC0500	IC0500	05000620	06/20/12	1219
05	IC0100	IC0100	01000620	06/20/12	1246
06	IC0050	IC0050	00500620	06/20/12	1313
07	IC0020	IC0020	00200620	06/20/12	1340
08	ICV1000	ICV1000	ICV0620	06/20/12	1407
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: ANCHOR QEA, LLC

Lab Code: VC52 Case No.: CENTRAL WATERFRONT RI SDG No.: VB54

Lab File ID: BFB0720D BFB Injection Date: 07/20/12

Instrument ID: NT7 BFB Injection Time: 1409

GC Column: RTXVMS ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.6
75	30.0 - 66.0% of mass 95	50.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 101.0% of mass 95	67.4
175	4.0 - 9.0% of mass 174	5.5 (8.1)1
176	95.0 - 101.0% of mass 174	64.5 (95.8)1
177	5.0 - 9.0% of mass 176	4.3 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CC0720	CC0720	CC0720TST	07/20/12	1444
02	LCS0720	LCS0720	LCS0720	07/20/12	1523
03	LCS0720	LCS0720	LCS0720A	07/20/12	1550
04	MB0720	MB0720	MB0720	07/20/12	1617
05	CW-TP-01-8-9	VB54J	VB54J	07/20/12	1643
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB54 Project: CENTRAL WATERFRONT RI

Instrument ID: NT7 Calibration Date: 06/20/12

LAB FILE ID: RF20: 00200620 RF50: 00500620 RF100: 01000620
RF500: 05000620 RF1000: 10000620

COMPOUND	RF20	RF50	RF100	RF500	RF1000
Benzene	2.056	1.788	1.805	1.747	1.814
Toluene	2.222	1.805	1.844	2.041	2.085
Ethyl Benzene	1.817	1.771	1.984	2.265	2.374
m,p xylene	0.644	0.730	0.797	0.918	0.984
o-xylene	1.495	2.024	1.982	1.958	1.957
d4-1,2-Dichloroethane	0.710	0.749	0.758	0.695	0.674
d8-Toluene	1.207	1.215	1.194	1.195	1.178
4-Bromofluorobenzene	0.290	0.286	0.301	0.352	0.341

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB54 Project: CENTRAL WATERFRONT RI

Instrument ID: NT7 Calibration Date: 06/20/12

LAB FILE ID: RF2000: 20000620 RF5000: 50000620

COMPOUND	TYPE	RF	CURVE OR R^2	AVE	%RSD
Benzene	1.618		AVRG	1.805	7.9
Toluene	1.879		AVRG	1.979	8.2
Ethyl Benzene	2.113		AVRG	2.054	11.8
m,p xylene	0.902		AVRG	0.829	15.4
o-xylene	1.788		AVRG	1.867	10.7
d4-1,2-Dichloroethane	0.688	0.673	AVRG	0.707	4.9
d8-Toluene	1.174	1.144	AVRG	1.187	2.0
4-Bromofluorobenzene	0.344	0.355	AVRG	0.324	9.4

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC

ARI Job No: VB54 Project: CENTRAL WATERFRONT RI

Instrument ID: NT7 Cont. Calib. Date: 07/20/12

Init. Calib. Date: 06/20/12 Cont. Calib. Time: 1444

COMPOUND	CalAmt or ARF	CC Amt 1000	MIN RRF	CURVE TYPE	%D or Drift
Benzene	1.805	1.8761	0.010	AVRG	3.9
Toluene	1.979	1.9914	0.010	AVRG	0.6
Ethyl Benzene	2.054	2.3614	0.010	AVRG	15.0
m,p xylene	0.829	0.9125	0.010	AVRG	10.1
o-xylene	1.867	1.8969	0.010	AVRG	1.6
d4-1,2-Dichloroethane	0.707	0.6011	0.010	AVRG	-15.0
d8-Toluene	1.187	1.1655	0.010	AVRG	-1.8
4-Bromofluorobenzene	0.324	0.3836	0.010	AVRG	18.4

<- Exceeds QC limit of 20% D
* RF less than minimum RF

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC | Client: ANCHOR QEA, LLC

ARI Job No: VB54 | Project: CENTRAL WATERFRONT RI

Ical Midpoint ID: 05000620 | Ical Date: 06/20/12

Instrument ID: NT7 | Project Run Date: 06/20/12

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3 AREA #	RT #
	ICAL MIDPT	159352	5.32	314548	5.76	284476	8.22
	UPPER LIMIT	318704	5.82	629096	6.26	568952	8.72
	LOWER LIMIT	79676	4.82	157274	5.26	142238	7.72
	Sample ID						
01	ICV1000	154755	5.32	306996	5.76	280830	8.22
02							
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 = d5 -Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC | Client: ANCHOR QEA, LLC

ARI Job No: VB54 | Project: CENTRAL WATERFRONT RI

Ical Midpoint ID: 05000620 | Ical Date: 06/20/12

Instrument ID: NT7 | Project Run Date: 07/20/12

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3 AREA #	RT #
	ICAL MIDPT	159352	5.32	314548	5.76	284476	8.22
	UPPER LIMIT	318704	5.82	629096	6.26	568952	8.72
	LOWER LIMIT	79676	4.82	157274	5.26	142238	7.72
	Sample ID						
01	LCS0720	135920	5.32	240206	5.75	229098	8.21
02	LCS0720	134695	5.32	236608	5.75	225359	8.21
03	MB0720	124931	5.32	216638	5.76	219120	8.22
04	CW-TP-01-8-9	126410	5.32	235012	5.75	260324	8.22
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 = d5 -Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

TPHD Analysis
Report and Summary QC Forms

ARI Job ID: VB51, VB54

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID-Silica and Acid Cleaned
Extraction Method:
Page 1 of 1

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02

Matrix: Soil
Data Release Authorized: MW
Reported: 07/19/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
MB-071112	Method Blank	07/11/12	07/17/12	2.00	Diesel Range	5.0	< 5.0 U
12-12908	HC ID: ---		FID4A	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		86.3%
VB51C	CW-TP-06-5.5-6.5	07/11/12	07/17/12	2.00	Diesel Range	6.1	< 6.1 U
12-12908	HC ID: ---		FID4A	1.0	Motor Oil Range	12	< 12 U
					o-Terphenyl		85.0%
VB51H	CW-TP-07-9-10	07/11/12	07/18/12	2.00	**Diesel Range**	**60**	**840**
12-12913	HC ID: **DIESEL/MOTOR OIL**		FID4A	10	**Motor Oil Range**	**120**	**140**
					o-Terphenyl		56.0%
VB51K	CW-TP-09-6.3-7.3	07/11/12	07/18/12	2.00	**Diesel Range**	**1100**	**27000**
12-12916	HC ID: **DIESEL/RRO**		FID4A	200	**Motor Oil Range**	**2200**	**3200**
					o-Terphenyl		D
VB51N	CW-TP-09-10-11	07/11/12	07/18/12	2.00	**Diesel Range**	**590**	**14000**
12-12919	HC ID: **DIESEL/RRO**		FID4A	100	**Motor Oil Range**	**1200**	**1700**
					o-Terphenyl		D

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02

Client ID	OTER	TOT OUT
MB-071112	86.3%	0
LCS-071112	95.7%	0
CW-TP-06-5.5-6.5	85.0%	0
CW-TP-06-5.5-6.5 MS	87.8%	0
CW-TP-06-5.5-6.5 MSD	83.6%	0
CW-TP-07-9-10	56.0%	0
CW-TP-09-6.3-7.3	D	0
CW-TP-09-10-11	D	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 12-12908 to 12-12919

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID-Silica and Acid Cleaned
Extraction Method:
Page 1 of 1

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02

Matrix: Soil
Data Release Authorized:
Reported: 07/19/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
MB-071112	Method Blank	07/11/12	07/17/12	2.00	Diesel Range	5.0	< 5.0 U
12-12942	HC ID: ---		FID4A	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		86.3%
VB54C	CW-TP-05-7-8	07/11/12	07/17/12	2.00	**Diesel Range**	**32**	**3900 E**
12-12942	HC ID: **DIESEL/RRO**		FID4A	5.0	**Motor Oil Range**	**63**	**490**
					o-Terphenyl		70.6%
VB54C DL	CW-TP-05-7-8	07/11/12	07/18/12	2.00	**Diesel Range**	**320**	**4200**
12-12942	HC ID: **DIESEL**		FID4A	50	Motor Oil Range	630	< 630 U
					o-Terphenyl		D
VB54F	CW-TP-03-7-8	07/11/12	07/17/12	2.00	**Diesel Range**	**30**	**3900 E**
12-12945	HC ID: **DIESEL/RRO**		FID4A	5.0	**Motor Oil Range**	**59**	**450**
					o-Terphenyl		65.7%
VB54F DL	CW-TP-03-7-8	07/11/12	07/18/12	2.00	**Diesel Range**	**300**	**4100**
12-12945	HC ID: **DIESEL**		FID4A	50	Motor Oil Range	590	< 590 U
					o-Terphenyl		D
VB54I	CW-TP-02-8.2-9.2	07/11/12	07/18/12	2.00	**Diesel Range**	**280**	**5700**
12-12948	HC ID: **DIESEL/RRO**		FID4A	50	**Motor Oil Range**	**570**	**570**
					o-Terphenyl		D
VB54L	CW-TP-01-8-9	07/11/12	07/18/12	2.00	**Diesel Range**	**280**	**11000**
12-12951	HC ID: **DIESEL/RRO**		FID4A	50	**Motor Oil Range**	**560**	**940**
					o-Terphenyl		D
VB54P	CW-TP-08-7-8	07/11/12	07/17/12	2.00	**Diesel Range**	**5.6**	**140**
12-12955	HC ID: **DIESEL/MOTOR OIL**		FID4A	1.0	**Motor Oil Range**	**11**	**85**
					o-Terphenyl		72.1%
VB54S	CW-TP-04-8-9	07/11/12	07/18/12	2.00	**Diesel Range**	**32**	**530**
12-12958	HC ID: **DIESEL/RRO**		FID4A	5.0	**Motor Oil Range**	**65**	**70**
					o-Terphenyl		55.9%
VB54V	CW-TP-54-8-9	07/11/12	07/18/12	2.00	**Diesel Range**	**32**	**580**
12-12961	HC ID: **DIESEL/RRO**		FID4A	5.0	**Motor Oil Range**	**63**	**82**
					o-Terphenyl		61.8%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02

Client ID	OTER	TOT OUT
MB-071112	86.3%	0
LCS-071112	95.7%	0
CW-TP-05-7-8	70.6%	0
CW-TP-05-7-8 DL	D	0
CW-TP-03-7-8	65.7%	0
CW-TP-03-7-8 DL	D	0
CW-TP-02-8.2-9.2	D	0
CW-TP-01-8-9	D	0
CW-TP-08-7-8	72.1%	0
CW-TP-04-8-9	55.9%	0
CW-TP-54-8-9	61.8%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 12-12942 to 12-12961

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned **Sample ID: CW-TP-06-5.5-6.5**
Page 1 of 1 **MS/MSD**

Lab Sample ID: VB51C
LIMS ID: 12-12908
Matrix: Soil
Data Release Authorized:
Reported: 07/19/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

Date Extracted MS/MSD: 07/11/12

Date Analyzed MS: 07/17/12 15:27
MSD: 07/17/12 15:49
Instrument/Analyst MS: FID/MH
MSD: FID/MH

Sample Amount MS: 16.6 g-dry-wt
MSD: 16.5 g-dry-wt
Final Extract Volume MS: 2.0 mL
MSD: 2.0 mL
Dilution Factor MS: 1.0
MSD: 1.0
Percent Moisture: 18.2%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	< 6.1	138	181	76.2%	132	182	72.5%	4.4%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	87.8%	83.6%

Results reported in mg/kg
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned **Sample ID: LCS-071112**
Page 1 of 1 **LAB CONTROL**

Lab Sample ID: LCS-071112 QC Report No: VB51-Anchor QEA, LLC
LIMS ID: 12-12908 Project: Central Waterfront RI
Matrix: Soil 080007-01.02
Data Release Authorized: Date Sampled: 07/02/12
Reported: 07/19/12 Date Received: 07/07/12

Date Extracted: 07/11/12 Sample Amount: 20.0 g
Date Analyzed: 07/17/12 14:44 Final Extract Volume: 2.0 mL
Instrument/Analyst: FID/MH Dilution Factor: 1.0

Range	Lab Control	Spike Added	Recovery
Diesel	123	150	82.0%

TPHD Surrogate Recovery

o-Terphenyl	95.7%

Results reported in mg/kg

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: VB51
Matrix: Soil Project: Central Waterfront RI
Date Received: 07/07/12 080007-01.02

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
12-12908-071112MB1	Method Blank	20.0 g	2.00 mL	-	07/11/12
12-12908-071112LCS1	Lab Control	20.0 g	2.00 mL	-	07/11/12
12-12908-VB51C	CW-TP-06-5.5-6.5	16.5 g	2.00 mL	D	07/11/12
12-12908-VB51CMS	CW-TP-06-5.5-6.5	16.6 g	2.00 mL	D	07/11/12
12-12908-VB51CMSD	CW-TP-06-5.5-6.5	16.5 g	2.00 mL	D	07/11/12
12-12913-VB51H	CW-TP-07-9-10	16.6 g	2.00 mL	D	07/11/12
12-12916-VB51K	CW-TP-09-6.3-7.3	17.9 g	2.00 mL	D	07/11/12
12-12919-VB51N	CW-TP-09-10-11	17.0 g	2.00 mL	D	07/11/12

Basis: D=Dry Weight W=As Received

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: VB54
Matrix: Soil — Project: Central Waterfront Site RI
Date Received: 07/07/12 — 080007-01.02

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
12-12942-071112MB1	Method Blank	20.0 g	2.00 mL	-	07/11/12
12-12942-071112LCS1	Lab Control	20.0 g	2.00 mL	-	07/11/12
12-12942-VB54C	CW-TP-05-7-8	15.8 g	2.00 mL	D	07/11/12
12-12945-VB54F	CW-TP-03-7-8	17.0 g	2.00 mL	D	07/11/12
12-12948-VB54I	CW-TP-02-8.2-9.2	17.6 g	2.00 mL	D	07/11/12
12-12951-VB54L	CW-TP-01-8-9	17.9 g	2.00 mL	D	07/11/12
12-12955-VB54P	CW-TP-08-7-8	17.9 g	2.00 mL	D	07/11/12
12-12958-VB54S	CW-TP-04-8-9	15.4 g	2.00 mL	D	07/11/12
12-12961-VB54V	CW-TP-54-8-9	15.8 g	2.00 mL	D	07/11/12

Basis: D=Dry Weight W=As Received

TPH METHOD BLANK SUMMARY

BLANK NO.

VB51MBS2

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB51-VB54 Project No.: CENTRAL WATERFRONT

Date Extracted: 07/11/12 Matrix: SOLID

Date Analyzed : 07/17/12 Instrument ID : FID4A

Time Analyzed : 1423

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	VB51LCSS2	VB51LCSS2	07/17/12
02	CW-TP-06-5.5	VB51C	07/17/12
03	CW-TP-06-5.5	VB51CMS	07/17/12
04	CW-TP-06-5.5	VB51CMSD	07/17/12
05	CW-TP-05-7-8	VB54C	07/17/12
06	CW-TP-03-7-8	VB54F	07/17/12
07	CW-TP-08-7-8	VB54P	07/17/12
08	CW-TP-07-9-1	VB51H	07/18/12
09	CW-TP-09-6.3	VB51K	07/18/12
10	CW-TP-09-10-	VB51N	07/18/12
11	CW-TP-05-7-8	VB54C	07/18/12
12	CW-TP-03-7-8	VB54F	07/18/12
13	CW-TP-02-8.2	VB54I	07/18/12
14	CW-TP-01-8-9	VB54L	07/18/12
15	CW-TP-04-8-9	VB54S	07/18/12
16	CW-TP-54-8-9	VB54V	07/18/12
17			

FORM IV TPH

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3546
Page 1 of 1

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02

Matrix: Soil

Date Received: 07/07/12

Data Release Authorized: VD
Reported: 07/20/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
MB-071112	Method Blank	07/11/12	07/17/12	2.00	Diesel Range	5.0	< 5.0 U
12-12907	HC ID: ---		FID4A	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		87.8%
VB51B	CW-TP-06-5.5-6.5	07/11/12	07/17/12	2.00	Diesel Range	6.1	< 6.1 U
12-12907	HC ID: ---		FID4A	1.0	Motor Oil Range	12	< 12 U
					o-Terphenyl		79.9%
VB51G	CW-TP-07-9-10	07/11/12	07/18/12	2.00	**Diesel Range**	**60**	**1,200**
12-12912	HC ID: **DIESEL/MOTOR OIL**		FID4A	10	**Motor Oil Range**	**120**	**240**
					o-Terphenyl		69.3%
VB51J	CW-TP-09-6.3-7.3	07/11/12	07/18/12	2.00	**Diesel Range**	**1,400**	**34,000**
12-12915	HC ID: **DIESEL/MOTOR OIL**		FID4A	250	**Motor Oil Range**	**2,800**	**5,200**
					o-Terphenyl		D
VB51M	CW-TP-09-10-11	07/11/12	07/18/12	2.00	**Diesel Range**	**590**	**18,000**
12-12918	HC ID: **DIESEL/MOTOR OIL**		FID4A	100	**Motor Oil Range**	**1,200**	**2,900**
					o-Terphenyl		D

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02

Client ID	OTER	TOT OUT
071112MBS	87.8%	0
071112LCS	93.2%	0
CW-TP-06-5.5-6.5	79.9%	0
CW-TP-06-5.5-6.5 MS	84.9%	0
CW-TP-06-5.5-6.5 MSD	80.4%	0
CW-TP-07-9-10	69.3%	0
CW-TP-09-6.3-7.3	D	0
CW-TP-09-10-11	D	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 12-12907 to 12-12918

FORM-II TPHD

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3546
Page 1 of 1

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02

Matrix: Soil

Date Received: 07/07/12

Data Release Authorized: VD
Reported: 07/20/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
MB-071112	Method Blank	07/11/12	07/17/12	2.00	Diesel Range	5.0	< 5.0 U
12-12941	HC ID: ---		FID4A	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		87.8%
VB54B	CW-TP-05-7-8	07/11/12	07/18/12	2.00	**Diesel Range**	**320**	**5,000**
12-12941	HC ID: **DIESEL/MOTOR OIL**		FID4A	50	**Motor Oil Range**	**630**	**800**
					o-Terphenyl		D
VB54E	CW-TP-03-7-8	07/11/12	07/18/12	2.00	**Diesel Range**	**300**	**5,300**
12-12944	HC ID: **DIESEL/MOTOR OIL**		FID4A	50	**Motor Oil Range**	**590**	**840**
					o-Terphenyl		D
VB54H	CW-TP-02-8.2-9.2	07/11/12	07/18/12	2.00	**Diesel Range**	**280**	**6,600**
12-12947	HC ID: **DIESEL/MOTOR OIL**		FID4A	50	**Motor Oil Range**	**570**	**880**
					o-Terphenyl		D
VB54K	CW-TP-01-8-9	07/11/12	07/18/12	2.00	**Diesel Range**	**560**	**12,000**
12-12950	HC ID: **DIESEL/MOTOR OIL**		FID4A	100	**Motor Oil Range**	**1,100**	**1,400**
					o-Terphenyl		D
VB54O	CW-TP-08-7-8	07/11/12	07/18/12	2.00	**Diesel Range**	**29**	**230**
12-12954	HC ID: **DIESEL/MOTOR OIL**		FID4A	5.0	**Motor Oil Range**	**58**	**210**
					o-Terphenyl		76.8%
VB54R	CW-TP-04-8-9	07/11/12	07/18/12	2.00	**Diesel Range**	**32**	**670**
12-12957	HC ID: **DIESEL/MOTOR OIL**		FID4A	5.0	**Motor Oil Range**	**65**	**120**
					o-Terphenyl		60.4%
VB54U	CW-TP-54-8-9	07/11/12	07/18/12	2.00	**Diesel Range**	**32**	**760**
12-12960	HC ID: **DIESEL/MOTOR OIL**		FID4A	5.0	**Motor Oil Range**	**63**	**140**
					o-Terphenyl		69.2%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI
080007-01.02

Client ID	OTER	TOT OUT
071112MBS	87.8%	0
071112LCS	93.2%	0
CW-TP-05-7-8	D	0
CW-TP-03-7-8	D	0
CW-TP-02-8.2-9.2	D	0
CW-TP-01-8-9	D	0
CW-TP-08-7-8	76.8%	0
CW-TP-04-8-9	60.4%	0
CW-TP-54-8-9	69.2%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 12-12941 to 12-12960

FORM-II TPHD

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: CW-TP-06-5.5-6.5
MS/MSD

Lab Sample ID: VB51B
LIMS ID: 12-12907
Matrix: Soil
Data Release Authorized: VT
Reported: 07/20/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

Date Extracted MS/MSD: 07/11/12

Date Analyzed MS: 07/17/12 21:32
MSD: 07/17/12 21:53
Instrument/Analyst MS: FID4A/AAR
MSD: FID4A/AAR

Sample Amount MS: 16.6 g-dry-wt
MSD: 16.5 g-dry-wt
Final Extract Volume MS: 2.0 mL
MSD: 2.0 mL
Dilution Factor MS: 1.00
MSD: 1.00
Percent Moisture: 18.2%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	< 6.1 U	144	181	79.6%	139	182	76.4%	3.5%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	84.9%	80.4%

Results reported in mg/kg
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-071112
LAB CONTROL

Lab Sample ID: LCS-071112
LIMS ID: 12-12907
Matrix: Soil
Data Release Authorized: VT
Reported: 07/20/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI 080007-01.02
Date Sampled: NA
Date Received: NA

Date Extracted: 07/11/12
Date Analyzed: 07/17/12 20:49
Instrument/Analyst: FID4A/AAR

Sample Amount: 20.0 g-dry-wt
Final Extract Volume: 2.0 mL
Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	129	150	86.0%

TPHD Surrogate Recovery

o-Terphenyl	93.2%

Results reported in mg/kg

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: VB51
Matrix: Soil Project: Central Waterfront RI
Date Received: 07/07/12 080007-01.02

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
12-12907-071112MB1	Method Blank	20.0 g	2.00 mL	-	07/11/12
12-12907-071112LCS1	Lab Control	20.0 g	2.00 mL	-	07/11/12
12-12907-VB51B	CW-TP-06-5.5-6.5	16.5 g	2.00 mL	D	07/11/12
12-12907-VB51BMS	CW-TP-06-5.5-6.5	16.6 g	2.00 mL	D	07/11/12
12-12907-VB51BMSD	CW-TP-06-5.5-6.5	16.5 g	2.00 mL	D	07/11/12
12-12908-071112MB1	Method Blank	20.0 g	2.00 mL	-	07/11/12
12-12908-071112LCS1	Lab Control	20.0 g	2.00 mL	-	07/11/12
12-12908-VB51C	CW-TP-06-5.5-6.5	16.5 g	2.00 mL	D	07/11/12
12-12908-VB51CMS	CW-TP-06-5.5-6.5	16.6 g	2.00 mL	D	07/11/12
12-12908-VB51CMSD	CW-TP-06-5.5-6.5	16.5 g	2.00 mL	D	07/11/12
12-12912-VB51G	CW-TP-07-9-10	16.6 g	2.00 mL	D	07/11/12
12-12913-VB51H	CW-TP-07-9-10	16.6 g	2.00 mL	D	07/11/12
12-12915-VB51J	CW-TP-09-6.3-7.3	17.9 g	2.00 mL	D	07/11/12
12-12916-VB51K	CW-TP-09-6.3-7.3	17.9 g	2.00 mL	D	07/11/12
12-12918-VB51M	CW-TP-09-10-11	17.0 g	2.00 mL	D	07/11/12

Basis: D=Dry Weight W=As Received

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: VB54
Matrix: Soil
Project: Central Waterfront Site RI
Date Received: 07/07/12
080007-01.02

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
12-12941-071112MB1	Method Blank	20.0 g	2.00 mL	-	07/11/12
12-12941-071112LCS1	Lab Control	20.0 g	2.00 mL	-	07/11/12
12-12941-VB54B	CW-TP-05-7-8	15.8 g	2.00 mL	D	07/11/12
12-12942-071112MB1	Method Blank	20.0 g	2.00 mL	-	07/11/12
12-12942-071112LCS1	Lab Control	20.0 g	2.00 mL	-	07/11/12
12-12942-VB54C	CW-TP-05-7-8	15.8 g	2.00 mL	D	07/11/12
12-12944-VB54E	CW-TP-03-7-8	17.0 g	2.00 mL	D	07/11/12
12-12945-VB54F	CW-TP-03-7-8	17.0 g	2.00 mL	D	07/11/12
12-12947-VB54H	CW-TP-02-8.2-9.2	17.6 g	2.00 mL	D	07/11/12
12-12948-VB54I	CW-TP-02-8.2-9.2	17.6 g	2.00 mL	D	07/11/12
12-12950-VB54K	CW-TP-01-8-9	17.9 g	2.00 mL	D	07/11/12
12-12951-VB54L	CW-TP-01-8-9	17.9 g	2.00 mL	D	07/11/12
12-12954-VB54O	CW-TP-08-7-8	17.4 g	2.00 mL	D	07/11/12
12-12955-VB54P	CW-TP-08-7-8	17.9 g	2.00 mL	D	07/11/12
12-12957-VB54R	CW-TP-04-8-9	15.4 g	2.00 mL	D	07/11/12
12-12958-VB54S	CW-TP-04-8-9	15.4 g	2.00 mL	D	07/11/12
12-12960-VB54U	CW-TP-54-8-9	15.8 g	2.00 mL	D	07/11/12

Basis: D=Dry Weight W=As Received

TPH METHOD BLANK SUMMARY

BLANK NO.

VB51MBS1

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC.

SDG No.: VB51

Project No.: CENTRAL WATERFRONT RI

Date Extracted: 07/11/12

Matrix: SOLID

Date Analyzed : 07/17/12

Instrument ID : FID4A

Time Analyzed : 2027

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	VB51LCSS1	VB51LCSS1	07/17/12
02	CW-TP-06-5.5	VB51B	07/17/12
03	CW-TP-06-5.5	VB51BMS	07/17/12
04	CW-TP-06-5.5	VB51BMSD	07/17/12
05	CW-TP-08-7-8	VB54O	07/18/12
06	CW-TP-07-9-1	VB51G	07/18/12
07	CW-TP-09-6.3	VB51J	07/18/12
08	CW-TP-09-10-	VB51M	07/18/12
09	CW-TP-05-7-8	VB54B	07/18/12
10	CW-TP-03-7-8	VB54E	07/18/12
11	CW-TP-02-8.2	VB54H	07/18/12
12	CW-TP-01-8-9	VB54K	07/18/12
13	CW-TP-04-8-9	VB54R	07/18/12
14	CW-TP-54-8-9	VB54U	07/18/12
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FORM IV TPH

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR QEA

Instrument: FID4A.I Project: CENTRAL WATERFRONT

Calibration Date: 10-JUL-2012 SDG No.: VB51-VB54

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	15764	15034	14470	13671	14439	14524	14650	4.8
AK Diesel	18717	17811	17107	16132	16972	17054	17299	5.1
OR Diesel	19617	18217	17496	16231	17061	17134	17626	6.6
Cal Diesel	18371	17508	16984	16049	16896	16994	17134	4.5
o-Terph	21761	20224	20295	19224	20353	*****	20371	4.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (4.114-7.579)
AK Diesel C10-C25 (3.227-7.829)
OR Diesel C10-C28 (3.227-8.527)
Cal Diesel C10-C24 (3.227-7.579)

Calibration Files	Analysis Time
0710a007.d	10-JUL-2012 09:22
0710a008.d	10-JUL-2012 09:44
0710a011.d	10-JUL-2012 10:48
0710a010.d	10-JUL-2012 10:27
0710a012.d	10-JUL-2012 11:10
0710a013.d	10-JUL-2012 11:31

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client:ANCHOR QEA

Instrument: FID4A.I Project:CENTRAL WATERFRONT

Calibration Date: 12-JUN-2012 SDG No.: VB51-VB54

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	11845	13246	13189	12254	12177	12701	12569	4.6
Triac Surr	21428	18681	19369	18317	17635	*****	19086	7.6

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
0612a020.d	12-JUN-2012 17:01
0612a021.d	12-JUN-2012 17:22
0612a022.d	12-JUN-2012 17:44
0612a023.d	12-JUN-2012 18:06
0612a024.d	12-JUN-2012 18:27
0612a025.d	12-JUN-2012 18:49

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 10-JUL-2012
Project: CENTRAL WATERFRONT

CCal Date: 17-JUL-2012
SDG No.: VB51-VB54

Analysis Time: 13:18
Lab ID: DIESEL #2

Instrument: FID4A.I
Lab File Name: 0717a018.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3435959	234.5	250	-6.2
AK102 (C10-C25)	4030682	233.0	250	-6.8
Terphenyl	889166	43.6	45	-3.0

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 12-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 17-JUL-2012
SDG No.: VB51-VB54

Analysis Time: 13:39
Lab ID: MOIL #2

Instrument: FID4A.I
Lab File Name: 0717a019.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D
WAMoil(C24-C38)	6231565	495.8	500	-0.8
AK103 (C25-C36)	5269872	617.2	500	23.4
OR. MOIL (C28-C40)	5164916	683.8	500	36.8
CRUDE(Tol-C40)	7675083	1016.2	500	103.2
n-Triacontane	849488	44.5	45	-1.1

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36
OR M.Oil C28-C40

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 10-JUL-2012
Project: CENTRAL WATERFRONT

CCal Date: 17-JUL-2012
SDG No.: VB51-VB54

Analysis Time: 17:57
Lab ID: DIESEL #3

Instrument: FID4A.I
Lab File Name: 0717a031.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3433924	234.4	250	-6.2
AK102 (C10-C25)	4028857	232.9	250	-6.8
Terphenyl	886993	43.5	45	-3.2

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA, LLC

ICal Date: 12-JUN-2012

Project: CENTRAL WATERFRONT

CCal Date: 17-JUL-2012

SDG No.: VB51-VB54

Analysis Time: 18:19

Lab ID: MOIL #3

Instrument: FID4A.I

Lab File Name: 0717a032.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	6410750	510.0	500	2.0	
AK103 (C25-C36)	5427421	635.7	500	27.1	<-
OR. MOIL (C28-C40)	5390397	713.7	500	42.7	
CRUDE(Tol-C40)	7875798	1042.8	500	108.6	
n-Triacontane	863517	45.2	45	0.5	

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

Quant Ranges :

WA M.Oil	C24-C38
AK M.Oil	C25-C36
OR M.Oil	C28-C40

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 10-JUL-2012
Project: CENTRAL WATERFRONT

CCal Date: 17-JUL-2012
SDG No.: VB51-VB54

Analysis Time: 22:15
Lab ID: DIESEL #4

Instrument: FID4A.I
Lab File Name: 0717a043.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3533101	241.2	250	-3.5
AK102 (C10-C25)	4143216	239.5	250	-4.2
Terphenyl	895927	44.0	45	-2.3

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 12-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 17-JUL-2012
SDG No.: VB51-VB54

Analysis Time: 22:36
Lab ID: MOIL #4

Instrument: FID4A.I
Lab File Name: 0717a044.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D
WAMoil(C24-C38)	6232571	495.9	500	-0.8
AK103 (C25-C36)	5263287	616.5	500	23.3
OR. MOIL (C28-C40)	5222195	691.4	500	38.3
CRUDE(Tol-C40)	7674012	1016.1	500	103.2
n-Triacontane	863005	45.2	45	0.5

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36
OR M.Oil C28-C40

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC.

ICal Date: 10-JUL-2012
Project: CENTRAL WATERFRONT

CCal Date: 18-JUL-2012
SDG No.: VB51

Analysis Time: 02:32
Lab ID: DIESEL #5

Instrument: FID4A.I
Lab File Name: 0717a055.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3519689	240.3	250	-3.9
AK102 (C10-C25)	4118484	238.1	250	-4.8
Terphenyl	922543	45.3	45	0.6

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC.

ICal Date: 12-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 18-JUL-2012
SDG No.: VB51

Analysis Time: 02:53
Lab ID: MOIL #5

Instrument: FID4A.I
Lab File Name: 0717a056.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	6930602	551.4	500	10.3	
AK103 (C25-C36)	5736732	671.9	500	34.4	<-
OR. MOIL (C28-C40)	6061947	802.6	500	60.5	
CRUDE(Tol-C40)	8893581	1177.5	500	135.5	
n-Triacontane	875657	45.9	45	2.0	

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36
OR M.Oil C28-C40

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 10-JUL-2012
Project: CENTRAL WATERFRONT

CCal Date: 18-JUL-2012
SDG No.: VB51-VB54

Analysis Time: 12:57
Lab ID: DIESEL #9

Instrument: FID4A.I
Lab File Name: 0717a084.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3614250	246.7	250	-1.3
AK102 (C10-C25)	4236385	244.9	250	-2.0
Terphenyl	949842	46.6	45	3.6

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA, LLC

ICal Date: 12-JUN-2012

Project: CENTRAL WATERFRONT

CCal Date: 18-JUL-2012

SDG No.: VB51-VB54

Analysis Time: 13:19

Lab ID: MOIL #9

Instrument: FID4A.I

Lab File Name: 0717a085.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	6249290	497.2	500	-0.6	
AK103 (C25-C36)	5347902	626.4	500	25.3	<-
OR. MOIL (C28-C40)	5074280	671.8	500	34.4	
CRUDE(Tol-C40)	7655705	1013.6	500	102.7	
n-Triacontane	868625	45.5	45	1.1	

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36
OR M.Oil C28-C40

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 10-JUL-2012
Project: CENTRAL WATERFRONT

CCal Date: 18-JUL-2012
SDG No.: VB51-VB54

Analysis Time: 17:14
Lab ID: DIESEL #10

Instrument: FID4A.I
Lab File Name: 0717a096.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3826808	261.2	250	4.5
AK102 (C10-C25)	4472701	258.6	250	3.4
Terphenyl	937577	46.0	45	2.3

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 12-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 18-JUL-2012
SDG No.: VB51-VB54

Analysis Time: 17:36
Lab ID: MOIL #10

Instrument: FID4A.I
Lab File Name: 0717a097.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	6266058	498.5	500	-0.3	
AK103 (C25-C36)	5341584	625.6	500	25.1	<-
OR. MOIL (C28-C40)	5036683	666.9	500	33.4	
CRUDE(Tol-C40)	7665209	1014.9	500	103.0	
n-Triacontane	888396	46.5	45	3.4	

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36
OR M.Oil C28-C40

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 10-JUL-2012
Project: CENTRAL WATERFRONT

CCal Date: 18-JUL-2012
SDG No.: VB51-VB54

Analysis Time: 21:31
Lab ID: DIESEL #11

Instrument: FID4A.I
Lab File Name: 0717a108.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3770012	257.3	250	2.9
AK102 (C10-C25)	4415626	255.3	250	2.1
Terphenyl	947310	46.5	45	3.3

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC

ICal Date: 12-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 18-JUL-2012
SDG No.: VB51-VB54

Analysis Time: 21:53
Lab ID: MOIL #11

Instrument: FID4A.I
Lab File Name: 0717a109.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D
WAMoil(C24-C38)	6135546	488.1	500	-2.4
AK103 (C25-C36)	5310789	622.0	500	24.4
OR. MOIL (C28-C40)	4962213	657.0	500	31.4
CRUDE(Tol-C40)	7548068	999.4	500	99.9
n-Triacontane	892160	46.7	45	3.9

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36
OR M.Oil C28-C40

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC.

ICal Date: 10-JUL-2012
Project: CENTRAL WATERFRONT

CCal Date: 19-JUL-2012
SDG No.: VB51

Analysis Time: 01:49
Lab ID: DIESEL #12

Instrument: FID4A.I
Lab File Name: 0717a120.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	3829025	261.4	250	4.5
AK102 (C10-C25)	4477701	258.8	250	3.5
Terphenyl	970600	47.6	45	5.9

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: ANCHOR QEA, LLC.

ICal Date: 12-JUN-2012
Project: CENTRAL WATERFRONT

CCal Date: 19-JUL-2012
SDG No.: VB51

Analysis Time: 02:11
Lab ID: MOIL #12

Instrument: FID4A.I
Lab File Name: 0717a121.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	6416272	510.5	500	2.1	
AK103 (C25-C36)	5456198	639.0	500	27.8	<-
OR. MOIL (C28-C40)	5206027	689.3	500	37.9	
CRUDE(Tol-C40)	7804922	1033.4	500	106.7	
n-Triacontane	899071	47.1	45	4.7	

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36
OR M.Oil C28-C40

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB51-VB54 Project:CENTRAL WATERFRONT

Instrument ID: FID4A GC Column: RTX-1

Run Date: 06/12/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 6.10 TRIAC: 8.98

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RT	06/12/12	1346	6.10	8.98
02		IB	06/12/12	1408	6.10	8.98
03		DIESEL 50	06/12/12	1429	6.10	8.97
04		DIESEL 100	06/12/12	1451	6.10	8.97
05		DIESEL 250	06/12/12	1512	6.11	8.99
06		DIESEL 500	06/12/12	1534	6.11	8.99
07		DIESEL 1000	06/12/12	1555	6.13	8.98
08		DIESEL 2500	06/12/12	1617	6.16*	8.97
09		DIESEL ICV	06/12/12	1639	6.10	8.99
10		MOIL 100	06/12/12	1701	6.10	8.96
11		MOIL 250	06/12/12	1722	6.10	8.97
12		MOIL 500	06/12/12	1744	6.10	8.98
13		MOIL 1000	06/12/12	1806	6.10	8.99
14		MOIL 2500	06/12/12	1827	6.10	9.01
15		MOIL 5000	06/12/12	1849	6.10	9.05*
16		MOIL ICV	06/12/12	1910	6.10	8.97

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB51-VB54 Project:CENTRAL WATERFRONT

Instrument ID: FID4A GC Column: RTX-1

Run Date: 07/12/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 6.09 TRIAC: 8.97

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RINSE	07/10/12	0714	6.07	8.97
02		RT	07/10/12	0735	6.08	8.96
03		IB	07/10/12	0756	6.08	8.96
04		DIESEL #1	07/10/12	0818	6.08	8.94
05		MOIL #1	07/10/12	0839	6.08	8.96
06		AK103 #1	07/10/12	0901	6.08	8.96
07		DIESEL 50	07/10/12	0922	6.08	8.96
08		DIESEL 100	07/10/12	0944	6.08	8.95
09		ZZZZZ	07/10/12	1006	6.08	8.94
10		DIESEL 500	07/10/12	1027	6.09	8.95
11		DIESEL 250	07/10/12	1048	6.08	8.95
12		DIESEL 1000	07/10/12	1110	6.11	8.95
13		DIESEL 2500	07/10/12	1131	6.13	8.94
14		DIESEL ICV	07/10/12	1153	6.08	8.95

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB51-VB54 Project: CENTRAL WATERFRONT

Instrument ID: FID4A GC Column: RTX-1

Run Date: 07/17/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 6.09 TRIAC: 8.96

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01	ZZZZZ	ZZZZZ	07/17/12	0636	6.10	8.99
02	RT	RT	07/17/12	0657	6.09	8.96
03	IB	IB	07/17/12	0718	6.09	8.97
04	ZZZZZ	ZZZZZ	07/17/12	0740	6.09	8.98
05	ZZZZZ	ZZZZZ	07/17/12	0801	6.09	8.97
06	ZZZZZ	ZZZZZ	07/17/12	0823	6.09	8.97
07	ZZZZZ	ZZZZZ	07/17/12	0920	6.10	8.99
08	ZZZZZ	ZZZZZ	07/17/12	0941	6.09	8.97
09	ZZZZZ	ZZZZZ	07/17/12	1003	6.09	8.98
10	ZZZZZ	ZZZZZ	07/17/12	1024		
11	ZZZZZ	ZZZZZ	07/17/12	1046	6.09	8.97
12	ZZZZZ	ZZZZZ	07/17/12	1108	6.09	8.97
13	ZZZZZ	ZZZZZ	07/17/12	1129	6.10	8.98
14	ZZZZZ	ZZZZZ	07/17/12	1151	6.10	8.97
15	ZZZZZ	ZZZZZ	07/17/12	1213	6.09	8.96
16	ZZZZZ	ZZZZZ	07/17/12	1234	6.09	8.97
17	ZZZZZ	ZZZZZ	07/17/12	1256	6.09	8.97
18	CENTRAL WATE	DIESEL #2	07/17/12	1318	6.09	8.96
19	CENTRAL WATE	MOIL #2	07/17/12	1339	6.09	8.98
20	ZZZZZ	ZZZZZ	07/17/12	1401	6.09	8.98
21	VB51MBS2	VB51MBS2	07/17/12	1423	6.09	8.98
22	VB51LCSS2	VB51LCSS2	07/17/12	1444	6.10	8.97
23	CW-TP-06-5.5	VB51C	07/17/12	1506	6.09	8.97
24	CW-TP-06-5.5	VB51CMS	07/17/12	1527	6.09	8.97
25	CW-TP-06-5.5	VB51CMSD	07/17/12	1549	6.09	8.97
26	ZZZZZ	ZZZZZ	07/17/12	1610	6.10	8.98
27	ZZZZZ	ZZZZZ	07/17/12	1632	6.08	8.98
28	ZZZZZ	ZZZZZ	07/17/12	1653	6.10	8.97
29	CW-TP-05-7-8	VB54C	07/17/12	1715	6.10	8.96
30	CW-TP-03-7-8	VB54F	07/17/12	1736	6.11	8.96
31	CENTRAL WATE	DIESEL #3	07/17/12	1757	6.09	8.95
32	CENTRAL WATE	MOIL #3	07/17/12	1819	6.09	8.97

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB51-VB54 Project: CENTRAL WATERFRONT

Instrument ID: FID4A GC Column: RTX-1

Run Date: 07/17/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 6.09 TRIAC: 8.96

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01	ZZZZZ	ZZZZZ	07/17/12	1840	6.09	8.95
02	ZZZZZ	ZZZZZ	07/17/12	1902	6.10	8.96
03	CW-TP-08-7-8	VB54P	07/17/12	1923	6.09	8.97
04	CW-TP-04-8-9	VB54S	07/17/12	1945	6.10	8.96
05	ZZZZZ	ZZZZZ	07/17/12	2006	6.11	8.96
06	ZZZZZ	ZZZZZ	07/17/12	2027	6.09	8.96
07	ZZZZZ	ZZZZZ	07/17/12	2049	6.09	8.96
08	ZZZZZ	ZZZZZ	07/17/12	2110	6.09	8.96
09	ZZZZZ	ZZZZZ	07/17/12	2132	6.09	8.97
10	ZZZZZ	ZZZZZ	07/17/12	2153	6.09	8.97
11	CENTRAL WATE	DIESEL #4	07/17/12	2215	6.09	8.96
12	CENTRAL WATE	MOIL #4	07/17/12	2236	6.10	8.97
13	RT	RT	07/18/12	0943	6.09	8.97
14	IB	IB	07/18/12	1004	6.09	8.97
15	DIESEL	DIESEL #8	07/18/12	1026	6.09	8.95
16	MOIL	MOIL #8	07/18/12	1047	6.10	8.97
17	ZZZZZ	ZZZZZ	07/18/12	1109	6.09	8.97
18	ZZZZZ	ZZZZZ	07/18/12	1130	6.10	8.98
19	ZZZZZ	ZZZZZ	07/18/12	1152	6.10	8.98
20	ZZZZZ	ZZZZZ	07/18/12	1214	6.09	8.96
21	ZZZZZ	ZZZZZ	07/18/12	1235		
22	CENTRAL WATE	DIESEL #9	07/18/12	1257	6.10	8.99
23	CENTRAL WATE	MOIL #9	07/18/12	1319	6.10	8.97
24	ZZZZZ	ZZZZZ	07/18/12	1340	6.09	8.96
25	ZZZZZ	ZZZZZ	07/18/12	1402	6.09	8.97
26	ZZZZZ	ZZZZZ	07/18/12	1423	6.09	8.97
27	ZZZZZ	ZZZZZ	07/18/12	1445	6.09	8.97
28	ZZZZZ	ZZZZZ	07/18/12	1506	6.09	8.97
29	CW-TP-07-9-1	VB51H	07/18/12	1528	6.09	8.96
30	CW-TP-09-6.3	VB51K	07/18/12	1549		
31	CW-TP-09-10-	VB51N	07/18/12	1610		
32	CW-TP-05-7-8	VB54C	07/18/12	1632		

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB51-VB54 Project: CENTRAL WATERFRONT

Instrument ID: FID4A GC Column: RTX-1

Run Date: 07/17/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 6.09 TRIAC: 8.96

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01	CW-TP-03-7-8	VB54F	07/18/12	1653		
02	CENTRAL WATE	DIESEL #10	07/18/12	1714	6.10	8.97
03	CENTRAL WATE	MOIL #10	07/18/12	1736	6.10	8.97
04	CW-TP-02-8.2	VB54I	07/18/12	1757		
05	CW-TP-01-8-9	VB54L	07/18/12	1818		
06	CW-TP-04-8-9	VB54S	07/18/12	1839	6.09	8.95
07	CW-TP-54-8-9	VB54V	07/18/12	1901	6.09	8.95
08	ZZZZZ	ZZZZZ	07/18/12	1922	6.09	8.95
09	ZZZZZ	ZZZZZ	07/18/12	1944	6.10	8.99
10	ZZZZZ	ZZZZZ	07/18/12	2005	6.09	8.98
11	ZZZZZ	ZZZZZ	07/18/12	2027	6.09	8.95
12	ZZZZZ	ZZZZZ	07/18/12	2048	6.09	8.95
13	ZZZZZ	ZZZZZ	07/18/12	2110	6.09	8.99
14	CENTRAL WATE	DIESEL #11	07/18/12	2131	6.09	8.97
15	CENTRAL WATE	MOIL #11	07/18/12	2153	6.10	8.97

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA, LLC.

SDG No.: VB51 Project: CENTRAL WATERFRONT RI

Instrument ID: FID4A GC Column: RTX-1

Run Date: 07/17/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 6.09 TRIAC: 8.96

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT	TERPH #	TRIAC RT	TRIAC #
01	DIESEL	DIESEL #3	07/17/12	1757	6.09		8.95	
02	MOIL	MOIL #3	07/17/12	1819	6.09		8.97	
03	VB51MBS1	VB51MBS1	07/17/12	2027	6.09		8.96	
04	VB51LCSS1	VB51LCSS1	07/17/12	2049	6.09		8.96	
05	CW-TP-06-5.5	VB51B	07/17/12	2110	6.09		8.96	
06	CW-TP-06-5.5	VB51BMS	07/17/12	2132	6.09		8.97	
07	CW-TP-06-5.5	VB51BMSD	07/17/12	2153	6.09		8.97	
08	DIESEL	DIESEL #4	07/17/12	2215	6.09		8.96	
09	MOIL	MOIL #4	07/17/12	2236	6.10		8.97	
10	CW-TP-08-7-8	VB54O	07/18/12	0127	6.09		8.95	
11	DIESEL	DIESEL #5	07/18/12	0232	6.09		8.96	
12	MOIL	MOIL #5	07/18/12	0253	6.09		8.97	
13	DIESEL	DIESEL #10	07/18/12	1714	6.10		8.97	
14	MOIL	MOIL #10	07/18/12	1736	6.10		8.97	
15	CW-TP-07-9-1	VB51G	07/18/12	1922	6.09		8.95	
16	CW-TP-09-6.3	VB51J	07/18/12	1944				
17	CW-TP-09-10-	VB51M	07/18/12	2005				
18	CW-TP-05-7-8	VB54B	07/18/12	2027	6.09		8.95	
19	CW-TP-03-7-8	VB54E	07/18/12	2048	6.09		8.95	
20	CW-TP-02-8.2	VB54H	07/18/12	2110	6.09		8.95	
21	DIESEL	DIESEL #11	07/18/12	2131	6.09		8.97	
22	MOIL	MOIL #11	07/18/12	2153	6.10		8.97	
23	CW-TP-01-8-9	VB54K	07/18/12	2236				
24	CW-TP-04-8-9	VB54R	07/18/12	2257	6.09		8.95	
25	CW-TP-54-8-9	VB54U	07/18/12	2319	6.09		8.95	
26	DIESEL	DIESEL #12	07/19/12	0149	6.09		8.96	
27	MOIL	MOIL #12	07/19/12	0211	6.10		8.97	

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

TPHG Analysis
Report and Summary QC Forms

ARI Job ID: VB51, VB54

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Soil

Data Release Authorized: MW
Reported: 07/16/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
Event: 080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

ARI ID	Client ID	Analysis Date	Basis	Range	Result
MB-071112	Method Blank	07/11/12	Dry	Gasoline	< 5.0 U
12-12906		PID1		HC ID	---
				Trifluorotoluene	92.8%
				Bromobenzene	93.3%
VB51A	CW-TP-06-5.5-6.5	07/11/12	Dry	Gasoline	< 6.1 U
12-12906		PID1		HC ID	---
				Trifluorotoluene	94.1%
				Bromobenzene	94.3%
MB-071212	Method Blank	07/12/12	Dry	Gasoline	< 5.0 U
12-12911		PID1		HC ID	---
				Trifluorotoluene	96.9%
				Bromobenzene	98.1%
VB51F	CW-TP-07-9-10	07/12/12	Dry	**Gasoline**	**380**
12-12911		PID1		HC ID	GRO
				Trifluorotoluene	91.6%
				Bromobenzene	126%
VB51I	CW-TP-09-6.3-7.3	07/12/12	Dry	**Gasoline**	**1800**
12-12914		PID1		HC ID	GRO
				Trifluorotoluene	89.9%
				Bromobenzene	125%
VB51L	CW-TP-09-10-11	07/12/12	Dry	**Gasoline**	**330**
12-12917		PID1		HC ID	GRO
				Trifluorotoluene	88.9%
				Bromobenzene	107%

Gasoline values reported in mg/kg (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ANALYTICAL RESOURCES INCORPORATED

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: VB51
Matrix: Soil

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
Event: 080007-01.02

Client ID	BFB	TFT	BBZ	TOT OUT
MB-071112	NA	92.8%	93.3%	0
LCS-071112	NA	98.1%	95.6%	0
LCSD-071112	NA	97.0%	94.8%	0
CW-TP-06-5.5-6.5	NA	94.1%	94.3%	0
CW-TP-06-5.5-6.5 MS	NA	99.6%	97.8%	0
CW-TP-06-5.5-6.5 MSD	NA	99.0%	99.2%	0
MB-071212	NA	96.9%	98.1%	0
LCS-071212	NA	102%	98.4%	0
LCSD-071212	NA	98.2%	95.8%	0
CW-TP-07-9-10	NA	91.6%	126%	0
CW-TP-09-6.3-7.3	NA	89.9%	125%	0
CW-TP-09-10-11	NA	88.9%	107%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(66-123)
(BBZ) = Bromobenzene	(80-120)	(62-130)

Log Number Range: 12-12906 to 12-12917

FORM II TPHG

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Soil

Data Release Authorized:
Reported: 07/16/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: 080007-01.02
Date Sampled: 07/06/12
Date Received: 07/07/12

ARI ID	Client ID	Analysis Date	Basis	Range	Result
MB-071212	Method Blank	07/12/12	Dry	Gasoline	< 5.0 U
12-12940		PID1		HC ID	---
				Trifluorotoluene	96.9%
				Bromobenzene	98.1%
VB54A	CW-TP-05-7-8	07/12/12	Dry	**Gasoline**	**980**
12-12940		PID1		HC ID	GRO
				Trifluorotoluene	88.8%
				Bromobenzene	103%
VB54D	CW-TP-03-7-8	07/12/12	Dry	**Gasoline**	**750**
12-12943		PID1		HC ID	GRO
				Trifluorotoluene	93.5%
				Bromobenzene	110%
VB54G	CW-TP-02-8.2-9.2	07/12/12	Dry	**Gasoline**	**800**
12-12946		PID1		HC ID	GRO
				Trifluorotoluene	90.2%
				Bromobenzene	107%
VB54J	CW-TP-01-8-9	07/12/12	Dry	**Gasoline**	**1400**
12-12949		PID1		HC ID	GRO
				Trifluorotoluene	91.6%
				Bromobenzene	115%
VB54N	CW-TP-08-7-8	07/12/12	Dry	**Gasoline**	**23**
12-12953		PID1		HC ID	GRO
				Trifluorotoluene	90.3%
				Bromobenzene	92.5%
VB54Q	CW-TP-04-8-9	07/12/12	Dry	**Gasoline**	**26**
12-12956		PID1		HC ID	GRO
				Trifluorotoluene	93.6%
				Bromobenzene	95.3%
VB54T	CW-TP-54-8-9	07/12/12	Dry	**Gasoline**	**900**
12-12959		PID1		HC ID	GRO
				Trifluorotoluene	86.6%
				Bromobenzene	97.5%

Gasoline values reported in mg/kg (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Water

Data Release Authorized:
Reported: 07/16/12

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI
Event: 080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-071112	Method Blank	07/11/12	1.0	Gasoline	< 0.25 U
12-12920		PID1		HC ID	---
				Trifluorotoluene	92.8%
				Bromobenzene	93.3%
VB54W	CW-TB	07/11/12	1.0	Gasoline	< 0.25 U
12-12920		PID1		HC ID	---
				Trifluorotoluene	97.1%
				Bromobenzene	94.5%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

ANALYTICAL RESOURCES INCORPORATED

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: VB54
Matrix: Soil

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront Site RI
Event: 080007-01.02

Client ID	BFB	TFT	BBZ	TOT OUT
MB-071212	NA	96.9%	98.1%	0
LCS-071212	NA	102%	98.4%	0
LCSD-071212	NA	98.2%	95.8%	0
CW-TP-05-7-8	NA	88.8%	103%	0
CW-TP-03-7-8	NA	93.5%	110%	0
CW-TP-02-8.2-9.2	NA	90.2%	107%	0
CW-TP-01-8-9	NA	91.6%	115%	0
CW-TP-08-7-8	NA	90.3%	92.5%	0
CW-TP-04-8-9	NA	93.6%	95.3%	0
CW-TP-54-8-9	NA	86.6%	97.5%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(66-123)
(BBZ) = Bromobenzene	(80-120)	(62-130)

Log Number Range: 12-12940 to 12-12959

ANALYTICAL RESOURCES INCORPORATED

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: VB54
Matrix: Water

QC Report No: VB54-Anchor QEA, LLC
Project: Central Waterfront RI
Event: 080007-01.02

Client ID	TFT	BBZ	TOT OUT
MB-071112	92.8%	93.3%	0
LCS-071112	98.1%	95.6%	0
LCSD-071112	97.0%	94.8%	0
CW-TB	97.1%	94.5%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 12-12920 to 12-12920

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: CW-TP-06-5.5-6.5
MATRIX SPIKE

Lab Sample ID: VB51A
LIMS ID: 12-12906
Matrix: Soil
Data Release Authorized:
Reported: 07/16/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
Event: 080007-01.02
Date Sampled: 07/02/12
Date Received: 07/07/12

Date Analyzed MS: 07/11/12 18:01
MSD: 07/11/12 18:31
Instrument/Analyst MS: PID1/JLW
MSD: PID1/JLW

Purge Volume: 5.0 mL

Sample Amount MS: 82.3 mg-dry-wt
MSD: 82.3 mg-dry-wt

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Gasoline Range Hydrocarbons	< 6.07 U	53.3	49.9	107%	54.7	49.9	110%	2.6%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	MS	MSD
Trifluorotoluene	99.6%	99.0%
Bromobenzene	97.8%	99.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: LCS-071112
LAB CONTROL SAMPLE

Lab Sample ID: LCS-071112
LIMS ID: 12-12906
Matrix: Soil
Data Release Authorized: MW
Reported: 07/16/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
Event: 080007-01.02
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 07/11/12 10:29
LCSD: 07/11/12 10:58
Instrument/Analyst LCS: PID1/JLW
LCSD: PID1/JLW

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt
LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	46.8	50.0	93.6%	47.4	50.0	94.8%	1.3%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	98.1%	97.0%
Bromobenzene	95.6%	94.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: LCS-071212
LAB CONTROL SAMPLE

Lab Sample ID: LCS-071212
LIMS ID: 12-12911
Matrix: Soil
Data Release Authorized: MJ
Reported: 07/16/12

QC Report No: VB51-Anchor QEA, LLC
Project: Central Waterfront RI
Event: 080007-01.02
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 07/12/12 09:14
LCSD: 07/12/12 09:44
Instrument/Analyst LCS: PID1/JLW
LCSD: PID1/JLW

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt
LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	48.4	50.0	96.8%	44.8	50.0	89.6%	7.7%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	102%	98.2%
Bromobenzene	98.4%	95.8%

4

BETX/GAS METHOD BLANK SUMMARY

BLANK NO.

0711MB1

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB51,VB54 Project No.: CENTRAL WATERFRONT RI

Date Analyzed : 07/11/12 Matrix: WATER

Time Analyzed : 1127 Instrument ID : PID1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	0711LCS1	0711LCS1	07/11/12
02	0711LCSD1	0711LCSD1	07/11/12
03	CW-TB	VB54W	07/11/12
04	CW-TP-06-5.5	VB51A	07/11/12
05	CW-TP-06-5.5	VB51AMS	07/11/12
06	CW-TP-06-5.5	VB51AMSD	07/11/12
07			
08			
09			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

BETX/GAS METHOD BLANK SUMMARY

BLANK NO.

0711MB1

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB51,VB54 Project No.: CENTRAL WATERFRONT RI

Date Analyzed : 07/11/12 Matrix: WATER

Time Analyzed : 1127 Instrument ID : PID1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	0711LCS1	0711LCS1	07/11/12
02	0711LCSD1	0711LCSD1	07/11/12
03	CW-TB	VB54W	07/11/12
04	CW-TP-06-5.5	VB51A	07/11/12
05	CW-TP-06-5.5	VB51AMS	07/11/12
06	CW-TP-06-5.5	VB51AMSD	07/11/12
07			
08			
09			
10			
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27			
28			
29			
30			

BETX/GAS METHOD BLANK SUMMARY

BLANK NO. 0712MB1

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB51,VB54 Project No.: CENTRAL WATERFRONT RI

Date Analyzed : 07/12/12 Matrix: WATER

Time Analyzed : 1013 Instrument ID : PID1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	0712LCS1	0712LCS1	07/12/12
02	0712LCSD1	0712LCSD1	07/12/12
03	CW-TP-07-9-1	VB51F	07/12/12
04	CW-TP-09-6.3	VB51I	07/12/12
05	CW-TP-09-10-	VB51L	07/12/12
06	CW-TP-05-7-8	VB54A	07/12/12
07	CW-TP-03-7-8	VB54D	07/12/12
08	CW-TP-02-8.2	VB54G	07/12/12
09	CW-TP-01-8-9	VB54J	07/12/12
10	CW-TP-08-7-8	VB54N	07/12/12
11	CW-TP-04-8-9	VB54Q	07/12/12
12	CW-TP-54-8-9	VB54T	07/12/12
13			
14			
15			
16			
17			
18			
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20			
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26			
27			
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29			
30			

6a
GAS INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Anchor QEA

Instrument/Det: PID1.I/RTX 502-2 FID Project: Central Waterfront RI

Calibration Date: 15-MAY-2012 SDG No.: VB51,VB54

Gas Range	RF1 0.1	RF2 0.25	RF3 1.0	RF4 2.5	RF5 5.0	RF6 10	Ave RF	%RSD
WA Gas	397850	330558	346678	320641	323467	327952	341191	8.6
AK Gas	578815	518252	551660	511858	514576	554726	538315	5.1
NW Gas	423295	349064	365464	337312	339367	342672	359529	9.1
Cal Gas	755385	658594	687617	636075	639358	676292	675554	6.5
8015Gas	751115	659688	694925	640845	641633	681663	678311	6.1
Surrogates Rel. Rec.	RF1 22	RF2 44	RF3 67	RF4 100	RF5 133	RF6 178	Ave RF	%RSD
TFT(Surr)	34.04545	31.15909	29.35821	26.87000	29.69173	29.31461		
	29.24000						29.95416	7.345
BB(Surr)	22.13636	20.20455	19.31343	16.91000	19.51128	18.47191		
	18.94000						19.35536	8.281

<- Indicates %RSD outside limits
Surrogate areas are not included in RF calculation.

Quant Ranges : WA Gas Toluene - nC12
AK Gas nC6 - nC10
NW Gas Toluene - Naphthalene
Cal Gas nC6 - nC12
8015 Gas 2-Methylpentane - 1,2,4-Trimethylbenzene

Calibration Files	Analysis Time
0515a024.d	15-MAY-2012 21:34
0515a023.d	15-MAY-2012 21:05
0515a022.d	15-MAY-2012 20:36
0515a021.d	15-MAY-2012 20:06
0515a020.d	15-MAY-2012 19:37
0515a019.d	15-MAY-2012 19:07

SURR Calibration Files	Analysis Time
0515a017.d	15-MAY-2012 18:09
0515a016.d	15-MAY-2012 17:40
0515a015.d	15-MAY-2012 17:11
0515a014.d	15-MAY-2012 16:42
0515a013.d	15-MAY-2012 16:13
0515a012.d	15-MAY-2012 15:44
0515a011.d	15-MAY-2012 15:15

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: Anchor QEA

ICal Date: 15-MAY-2012
Project: Central Waterfront

CCal Date: 11-JUL-2012
SDG No.: VB51

Lab File Name: 0711a003.d
Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	775884	2.27	2.50	-9.0
AKGas (C6-C10)	1267287	2.35	2.50	-5.8
NWGas (Tol-Nap)	817000	2.27	2.50	-9.1
8015C (2MP-TMB)	1560668	2.30	2.50	-8.0

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: Anchor QEA

ICal Date: 15-MAY-2012
Project: Central Waterfront

CCal Date: 11-JUL-2012
SDG No.: VB51

Lab File Name: 0711a003.d
Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	45539	106.9	100.0	6.9
Bromoflrbenz	17494	101.3	100.0	1.3

FORM VII-Surr

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: Anchor QEA

ICal Date: 15-MAY-2012
Project: Central Waterfront

CCal Date: 11-JUL-2012
SDG No.: VB51

Lab File Name: 0711a014.d
Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	732247	2.15	2.50	-14.2
AKGas (C6-C10)	1171708	2.18	2.50	-12.9
NWGas (Tol-Nap)	764876	2.13	2.50	-14.9
8015C (2MP-TMB)	1449393	2.14	2.50	-14.5

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: Anchor QEA

ICal Date: 15-MAY-2012
Project: Central Waterfront

CCal Date: 11-JUL-2012
SDG No.: VB51

Lab File Name: 0711a014.d
Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	42751	101.0	100.0	1.0
Bromoflrbenz	16658	98.9	100.0	-1.1

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Anchor QEA

ICal Date: 15-MAY-2012 Project: Central Waterfront

CCal Date: 11-JUL-2012 SDG No.: VB51

Lab File Name: 0711a003.d Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	775884	2.27	2.50	-9.0
AKGas (C6-C10)	1267287	2.35	2.50	-5.8
NWGas (Tol-Nap)	817000	2.27	2.50	-9.1
8015C (2MP-TMB)	1560668	2.30	2.50	-8.0

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Anchor QEA

ICal Date: 15-MAY-2012 Project: Central Waterfront

CCal Date: 11-JUL-2012 SDG No.: VB51

Lab File Name: 0711a014.d Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	732247	2.15	2.50	-14.2
AKGas (C6-C10)	1171708	2.18	2.50	-12.9
NWGas (Tol-Nap)	764876	2.13	2.50	-14.9
8015C (2MP-TMB)	1449393	2.14	2.50	-14.5

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Anchor QEA

ICal Date: 15-MAY-2012 Project: Central Waterfront

CCal Date: 11-JUL-2012 SDG No.: VB51

Lab File Name: 0711a014.d Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	42751	101.0	100.0	1.0
Bromoflrbenz	16658	98.9	100.0	-1.1

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Anchor QEA

ICal Date: 15-MAY-2012 Project: Central Waterfront

CCal Date: 12-JUL-2012 SDG No.: VB51

Lab File Name: 0712a003.d Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	776351	2.28	2.50	-9.0
AKGas (C6-C10)	1250666	2.32	2.50	-7.1
NWGas (Tol-Nap)	815242	2.27	2.50	-9.3
8015C (2MP-TMB)	1540564	2.27	2.50	-9.2

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Anchor QEA

ICal Date: 15-MAY-2012 Project: Central Waterfront

CCal Date: 12-JUL-2012 SDG No.: VB51

Lab File Name: 0712a014.d Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	764737	2.24	2.50	-10.3
AKGas (C6-C10)	1225272	2.28	2.50	-9.0
NWGas (Tol-Nap)	811973	2.26	2.50	-9.7
8015C (2MP-TMB)	1521175	2.24	2.50	-10.3

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Anchor QEA

ICal Date: 15-MAY-2012 Project: Central Waterfront

CCal Date: 12-JUL-2012 SDG No.: VB51

Lab File Name: 0712a014.d Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	42948	102.0	100.0	2.0
Bromoflrbenz	16958	97.6	100.0	-2.4

7a

GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Anchor QEA

ICal Date: 15-MAY-2012 Project: Central Waterfront

CCal Date: 12-JUL-2012 SDG No.: VB51

Lab File Name: 0712a020.d Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmnt	NomAmnt	%D
WAGas (Tol-C12)	716394	2.10	2.50	-16.0
AKGas (C6-C10)	1149077	2.13	2.50	-14.6
NWGas (Tol-Nap)	750664	2.09	2.50	-16.5
8015C (2MP-TMB)	1432995	2.11	2.50	-15.5

* Surrogate areas are subtracted from Total Area

<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Anchor QEA

ICal Date: 15-MAY-2012 Project: Central Waterfront

CCal Date: 12-JUL-2012 SDG No.: VB51

Lab File Name: 0712a020.d Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmnt	NomAmnt	RPD
Trifluorotol	41362	98.0	100.0	-2.0
Bromoflrbenz	16453	94.9	100.0	-5.1

BETX/GAS ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB51,VB54 Project: CENTRAL WATERFRONT RI

Instrument ID: PID1 GC Detector: RTX 502-2 FID

Run Date: 07/11/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

METHOD SURROGATE RT
S1 : 7.88 S2 : 15.41

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	S1 #	S2 RT	S2 #
01	RT+BCAL	RT+BCAL	07/11/12	0930	7.88		15.40	
02	CENTRAL WATE	GCAL	07/11/12	0959	7.88		15.41	
03	0711LCS1	0711LCS1	07/11/12	1029	7.88		15.41	
04	0711LCSD1	0711LCSD1	07/11/12	1058	7.88		15.41	
05	0711MB1	0711MB1	07/11/12	1127	7.88		15.41	
06	ZZZZZ	ZZZZZ	07/11/12	1605	7.88		15.41	
07	CW-TB	VB54W	07/11/12	1634	7.88		15.41	
08	ZZZZZ	ZZZZZ	07/11/12	1703	7.88		15.41	
09	CW-TP-06-5.5	VB51A	07/11/12	1732	7.88		15.41	
10	CW-TP-06-5.5	VB51AMS	07/11/12	1801	7.88		15.41	
11	CW-TP-06-5.5	VB51AMSD	07/11/12	1831	7.88		15.41	
12	ZZZZZ	ZZZZZ	07/11/12	1900	7.88		15.41	
13	CENTRAL WATE	GCAL#2	07/11/12	1929	7.88		15.41	

QC LIMITS

S1 = TFT(Surr) (+/- 0.07 MINUTES)
S2 = BB(Surr) (+/- 0.07 MINUTES)

* Values outside of QC limits.

BETX/GAS ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

SDG No.: VB51,VB54 Project: CENTRAL WATERFRONT RI

Instrument ID: PID1 GC Detector: RTX 502-2 FID

Run Date: 07/12/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

METHOD SURROGATE RT
S1 : 7.88 S2 : 15.41

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	S1 #	S2 RT	S2 #
01	RT+BCAL	RT+BCAL	07/12/12	0816	7.88		15.41	
02	CENTRAL WATE	GCAL	07/12/12	0845	7.88		15.41	
03	0712LCS1	0712LCS1	07/12/12	0914	7.88		15.41	
04	0712LCSD1	0712LCSD1	07/12/12	0944	7.88		15.41	
05	0712MB1	0712MB1	07/12/12	1013	7.88		15.41	
06	CW-TP-07-9-1	VB51F	07/12/12	1355	7.88		15.41	
07	CW-TP-09-6.3	VB51I	07/12/12	1424	7.88		15.41	
08	CW-TP-09-10-	VB51L	07/12/12	1454	7.88		15.41	
09	CW-TP-05-7-8	VB54A	07/12/12	1523	7.88		15.41	
10	CW-TP-03-7-8	VB54D	07/12/12	1552	7.88		15.41	
11	CW-TP-02-8.2	VB54G	07/12/12	1622	7.88		15.41	
12		BCAL#2	07/12/12	1651	7.88		15.41	
13	CENTRAL WATE	GCAL#2	07/12/12	1720	7.88		15.41	
14	CW-TP-01-8-9	VB54J	07/12/12	1749	7.88		15.41	
15	CW-TP-08-7-8	VB54N	07/12/12	1818	7.88		15.41	
16	CW-TP-04-8-9	VB54Q	07/12/12	1848	7.88		15.41	
17	CW-TP-54-8-9	VB54T	07/12/12	1917	7.88		15.41	
18		BCAL#3	07/12/12	1946	7.88		15.41	
19	CENTRAL WATE	GCAL#3	07/12/12	2015	7.88		15.41	

QC LIMITS

S1 = TFT(Surr) (+/- 0.07 MINUTES)
S2 = BB(Surr) (+/- 0.07 MINUTES)

* Values outside of QC limits.

BETX/GAS ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: Anchor QEA

SDG No.: VB51,VB54 Project: Central Waterfront RI

Instrument ID: PID1 GC Detector: RTX 502-2 FID

Run Date: 05/15/12

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

METHOD SURROGATE RT
S1 : 7.88 S2 : 15.41

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	S1 #	S2 RT	S2 #
01		RT+BCAL1	05/15/12	1445	7.88		15.40	
02		B200	05/15/12	1515	7.88		15.40	
03		B100	05/15/12	1544	7.88		15.41	
04		B50	05/15/12	1613	7.88		15.40	
05		B25	05/15/12	1642	7.88		15.41	
06		B5	05/15/12	1711	7.88		15.41	
07		B0.50	05/15/12	1740	7.88		15.41	
08		B0.25	05/15/12	1809	7.88		15.41	
09		BICV25	05/15/12	1838	7.88		15.41	
10		G10	05/15/12	1907	7.87		15.41	
11		G5	05/15/12	1937	7.88		15.41	
12		G2.5	05/15/12	2006	7.88		15.41	
13		G1.0	05/15/12	2036	7.88		15.41	
14		G0.25	05/15/12	2105	7.88		15.41	
15		G0.10	05/15/12	2134	7.87		15.41	
16		GICV2.5	05/15/12	2203	7.88		15.41	

QC LIMITS

S1 = TFT(Surr) (+/- 0.07 MINUTES)

S2 = BB(Surr) (+/- 0.07 MINUTES)

* Values outside of QC limits.

Total Solids

ARI Job ID: VB51, VB54

Volatiles Total Solids-voats
Data By: Pat Basilio
Created: 7/11/12

Worklist: 7379
Analyst: PAB
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids
1.	VB51A 12-12906	1.11	10.44	8.77	82.10
2.	VB51F 12-12911	1.10	8.96	7.36	79.64
3.	VB51I 12-12914	1.14	7.55	6.91	90.02
4.	VB51L 12-12917	1.14	7.46	6.96	92.09

* - VOA TS Copied From BETX TS
% - VOA TS Copied From Metals TS
$ - VOA TS Copied From Extraction TS

Volatiles Total Solids-voats
Data By: Pat Basilio
Created: 7/11/12

Worklist: 7380
Analyst: PAB
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids
1.	VB54A 12-12940	1.13	8.06	6.97	84.27
2.	VB54D 12-12943	1.12	7.86	6.88	85.46
3.	VB54G 12-12946	1.12	10.42	8.97	84.41
4.	VB54J 12-12949	1.16	10.61	9.25	85.61
5.	VB54N 12-12953	1.16	8.72	7.39	82.41
6.	VB54Q 12-12956	1.40	8.09	6.36	74.14
7.	VB54T 12-12959	1.18	8.70	6.70	73.40

* - VOA TS Copied From BETX TS
% - VOA TS Copied From Metals TS
$ - VOA TS Copied From Extraction TS

BETX/TPHG Total Solids-betxts
Data By: Jonathon L. Walter
Created: 7/13/12

Worklist: 8482
Analyst: JLW
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids
1.	VB51A 12-12906			*	82.1
2.	VB51F 12-12911			*	79.6
3.	VB51I 12-12914			*	90.0
4.	VB51L 12-12917			*	92.1
5.	VB54A 12-12940			*	84.3
6.	VB54D 12-12943			*	85.5
7.	VB54G 12-12946			*	84.4
8.	VB54J 12-12949			*	85.6
9.	VB54N 12-12953			*	82.4
10.	VB54Q 12-12956			*	74.1
11.	VB54T 12-12959			*	73.4

* - BETX TS Copied From VOA TS
% - BETX TS Copied From Metals TS
$ - BETX TS Copied From Extraction TS

BETX/TPHG Total Solids-betxts
Data By: Jonathon L. Walter
Created: 7/13/12

Worklist: 8482
Analyst: JLW
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids
1.	VB51A 12-12906			*	82.1
2.	VB51F 12-12911			*	79.6
3.	VB51I 12-12914			*	90.0
4.	VB51L 12-12917			*	92.1
5.	VB54A 12-12940			*	84.3
6.	VB54D 12-12943			*	85.5
7.	VB54G 12-12946			*	84.4
8.	VB54J 12-12949			*	85.6
9.	VB54N 12-12953			*	82.4
10.	VB54Q 12-12956			*	74.1
11.	VB54T 12-12959			*	73.4

* - BETX TS Copied From VOA TS
% - BETX TS Copied From Metals TS
$ - BETX TS Copied From Extraction TS

Extractions Total Solids-extts
Data By: Steve Potter
Created: 7/12/12

Worklist: 7654
Analyst: RVR
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1.	VB51B 12-12907 CW-TP-06-5.5-6.5	1.15	11.69	9.77	81.8	NR
2.	VB51G 12-12912 CW-TP-07-9-10	1.13	12.29	10.35	82.6	NR
3.	VB51J 12-12915 CW-TP-09-6.3-7.3	1.15	11.62	10.45	88.8	NR
4.	VB51M 12-12918 CW-TP-09-10-11	1.14	12.12	10.17	82.2	NR

Extractions Total Solids-extts
Data By: Steve Potter
Created: 7/12/12

Worklist: 7654
Analyst: SDP
Comments:

Oven ID: Ø15

Balance ID: B146426l4

Samples In: Date: 7/12/12 Time: 15:22 Temp: 165° Analyst: YL

Samples Out: Date: ~~7/13/12~~ Time: ~~07:30~~ Temp: 187° Analyst: RR

	ARI ID / CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1.	VB51B 12-12907 CW-TP-06-5.5-6.5	1.15	11.69	9.77		NR
2.	VB51G 12-12912 CW-TP-07-9-10	1.13	12.29	10.35		NR
3.	VB51J 12-12915 CW-TP-09-6.3-7.3	1.15	11.62	10.45		NR
4.	VB51M 12-12918 CW-TP-09-10-11	1.14	12.12	10.17		NR

Extractions Total Solids-extts
Data By: Adam L. Rains
Created: 7/11/12

Worklist: 7460
Analyst: ALR
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1.	VB54B 12-12941 CW-TP-05-7-8	1.13	12.54	10.07	78.4	NR
2.	VB54C 12-12942 CW-TP-05-7-8	1.15	12.15	10.16	81.9	NR
3.	VB54E 12-12944 CW-TP-03-7-8	1.12	10.28	8.82	84.1	NR
4.	VB54F 12-12945 CW-TP-03-7-8	1.15	13.02	11.12	84.0	NR
5.	VB54H 12-12947 CW-TP-02-8.2-9.2	1.13	11.29	9.82	85.5	NR
6.	VB54I 12-12948 CW-TP-02-8.2-9.2	1.15	11.63	10.07	85.1	NR
7.	VB54K 12-12950 CW-TP-01-8-9	1.14	11.90	10.63	88.2	NR
8.	VB54L 12-12951 CW-TP-01-8-9	1.15	10.61	9.52	88.5	NR
9.	VB54O 12-12954 CW-TP-08-7-8	1.13	10.71	9.36	85.9	NR
10.	VB54P 12-12955 CW-TP-08-7-8	1.12	13.12	11.78	88.8	NR
11.	VB54R 12-12957 CW-TP-04-8-9	1.13	13.52	10.58	76.3	NR
12.	VB54S 12-12958 CW-TP-04-8-9	1.13	12.17	9.53	76.1	NR
13.	VB54U 12-12960 CW-TP-54-8-9	1.15	10.65	8.44	76.7	NR

Extractions Total Solids-extts
Data By: Adam L. Rains
Created: 7/11/12

Worklist: 7460
Analyst: ALR
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
14.	VB54V 12-12961 CW-TP-54-8-9	1.13	13.88	10.83	76.1	NR

Extractions Total Solids-extts
Data By: Adam L. Rains
Created: 7/11/12

Worklist: 7460
Analyst: ALR
Comments:

Oven ID: 015

Balance ID: B14642614

Samples In: Date: 07/11/12 Time: 13:00 Temp: 103°C Analyst: ALR

Samples Out: Date: 07/12/12 Time: 07:15 Temp: 103°C Analyst: ALR

	ARI ID / CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1.	VB54B 12-12941 CW-TP-05-7-8	1.13	12.54	10.07		NR
2.	VB54C 12-12942 CW-TP-05-7-8	1.15	12.15	10.16		NR
3.	VB54E 12-12944 CW-TP-03-7-8	1.12	10.28	8.82		NR
4.	VB54F 12-12945 CW-TP-03-7-8	1.15	13.02	11.12		NR
5.	VB54H 12-12947 CW-TP-02-8.2-9.2	1.13	11.29	9.82		NR
6.	VB54I 12-12948 CW-TP-02-8.2-9.2	1.15	11.63	10.07		NR
7.	VB54K 12-12950 CW-TP-01-8-9	1.14	11.90	10.63		NR
8.	VB54L 12-12951 CW-TP-01-8-9	1.15	10.61	9.52		NR
9.	VB54O 12-12954 CW-TP-08-7-8	1.13	10.71	9.36		NR
10.	VB54P 12-12955 CW-TP-08-7-8	1.12	13.12	11.78		NR
11.	VB54R 12-12957 CW-TP-04-8-9	1.13	13.52	10.58		NR
12.	VB54S 12-12958 CW-TP-04-8-9	1.13	12.17	9.53		NR
13.	VB54U 12-12960 CW-TP-54-8-9	1.15	10.65	8.44		NR

Extractions Total Solids-extts
Data By: Adam L. Rains
Created: 7/11/12

Worklist: 7460
Analyst: ALR
Comments:

Oven ID: _____

Balance ID: B14642614

Samples In: Date: 07/11/12 Time: 13:00 Temp: 103°C Analyst: ALR

Samples Out: Date: 07/12/12 Time: 07:15 Temp: 103°C Analyst: ALR

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
14.	VB54V 12-12961 CW-TP-54-8-9	1.13	13.88	10.83		NR

Volatile Raw Data
Preparation Log

ARI Job ID: VB51, VB54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Volatile Organics Extraction Bench Sheet

(8260B, 8260B-SIM, 8021, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

ARI Project No.: VB51 | Client ID/Project: | Extraction Date: 1st Extraction: 4/30/04 2nd Extraction: | MeOH Lot No.: 1st: 06694 2nd: | Analyst: 1st: JA 2nd:

	Lab ID	Vial No.	Preservative: $NaHSO_3$	Preservative: CH_3OH	Method 5035 Sample Weight: Vial Weight (g)	Tare (from vial) (g)	Sample Weight (g)	Extract Volume (mL)	MeOH Spilt Volume (µL)	Comments
	MB:									
	LCS:									
	LCSD:									
1	VB51 A	2		—	36.36	28.154	8.206	5mL	25mL	
2	D	2		—	36.97	28.087	8.883	"	5mL	
3	G	2		—	35.20	28.006	7.194	"	15mL	
4	J	2		✓	36.58	27.990	8.590	"	5mL	
5	M	1					5mL			
6	N	5	—		44.10	34.73	9.37			
7	Q	4	—		43.79	34.63	9.16			
8	T	4	—		40.82	34.79	6.03			
9	Q2	5		—	35.00	28.219	6.781	5mL	100mL	
10										
11										
12										
13										
14										
15										
16										
17										
18										—
19										
20										
	Balance ID:									

	Solution ID	Concentration	Amount Spiked	Analyst	Witness
Surrogate:					
Spike:					

VB51:00165

Volatile Raw Data
Initial Calibration Notes and Raw Data

ARI Job ID: VB51, VB54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Initial Calibration Notes

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.3) **710S**(RSK-175)

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6

Curve Date(s): 6/24/12 Internal Standard ID W756-3 Expiration 12/26/12

BFB Tune Meets Criteria?	YES / NO	ICV Exceeding ±20%?	YES / NO
ICal Meets %RSD & r^2 Criteria?	YES / NO	ICV Exceeding ±30%?	YES / NO
Q flag applied?	YES / NO	Linear Fits Used?	YES / NO
Manual Integrations for ICal?	YES / NO	Quadratic Fits Used?	YES / NO
Spectral Library Updated?	YES / NO	Calibration Points Dropped?	YES / NO
Minimum Response Factors Met	YES / NO	Purge Volume (mL)	5

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
ultra	W752-2	12/20/12	acetate	W747-3	11/18/12
ultra/cyclo	W754-1	12/23/12	SPEX	W747-1	11/14/12
cyclo	W755-3	8/31/12	supelco	W747-1	11/4/12
cyclo	W753-4	12/23/12	ultra	I747-1	6/30/12

Detail problems, corrective actions and/or other pertinent information below:

ICV - acetate - 75% R, VA 79% R, 1,3,5 TMB 121% R, naphthalene 129% R

Analyst: _____ **Date:** 6/24/12

Reviewer: _____ **Date:** 7/3/12

Analytical Resources Inc.: Volatile Organics Instrument Log

NT-5 Serial No.:GC=US10228086, MS=US10462818

Date: 6/29/12 Analysis: 8260C Analyst: LP

GC Program: VOA10A Column No: 938152 Column Type: RTXVM

Instrument Tune (.U or .CT.): bfb0629q EM Voltage: 1353

Inj. Vol: 5 Calibration File: 1200629q Curve Date: 6/29/12

IS/SS	Ical/Ccal	LCS/ICV
w756-3	w756-1	w747-3
	w756-2	w747-4
		I747-3

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt5.i/29JUN12.b

	Time	Filename	LabID	ClientID	Vial#	pH	DF							
1	0808	bfb0629 d	BFB0629	BFB0629			1							
2	1056	bfb0629a d	BFB0629	BFB0629			1							
3	1134	0010629 d	IC0629	VSTD1			1 | 4.69	309686 | | 5.14	737674 | | 7.62	848716 | | 9.71	456011 |			
4	1157	0020629 d	IC0629	VSTD2			1 | 4.69	287798 | | 5.14	684800 | | 7.62	806853 | | 9.70	446259 |			
5	1220	0050629 d	IC0629	VSTD5			1 | 4.68	317005 | | 5.14	749838 | | 7.62	877214 | | 9.70	479402 |			
6	1242	0100629 d	IC0629	VSTD10			1 | 4.69	293236 | | 5.14	694035 | | 7.62	808184 | | 9.70	454284 |			
7	1305	0500629 d	IC0629	VSTD50			1 | 4.68	291805 | | 5.14	682850 | | 7.62	802138 | | 9.70	452585 |			
8	1328	1000629 d	IC0629	VSTD100			1 | 4.69	307867 | | 5.14	728904 | | 7.63	873397 | | 9.71	522000 |			
9	1351	1500629 d	IC0629	VSTD150			1 | 4.68	349830 | | 5.14	824770 | | 7.63	996961 | | 9.71	643395 |			
10	1428	icv0629 d	ICV0629	ICV0629			1 | 4.68	307[illegible] | | 5.14	727150 | | 7.62	839061 | | 9.71	472181 |			

Maintenance / Comments

Maintenance Verification (Identify ICal or CCal that demonstrates the instrument is in control):

very line must contain information or be lined out. Make all entries legible. Start a new page for each QC period.

Data File: /chem1/nt5.1/29JUN12.b/bfb0629a.d

Date : 29-JUN-2012 10:56

Client ID: BFB0629

Instrument: nt5.1

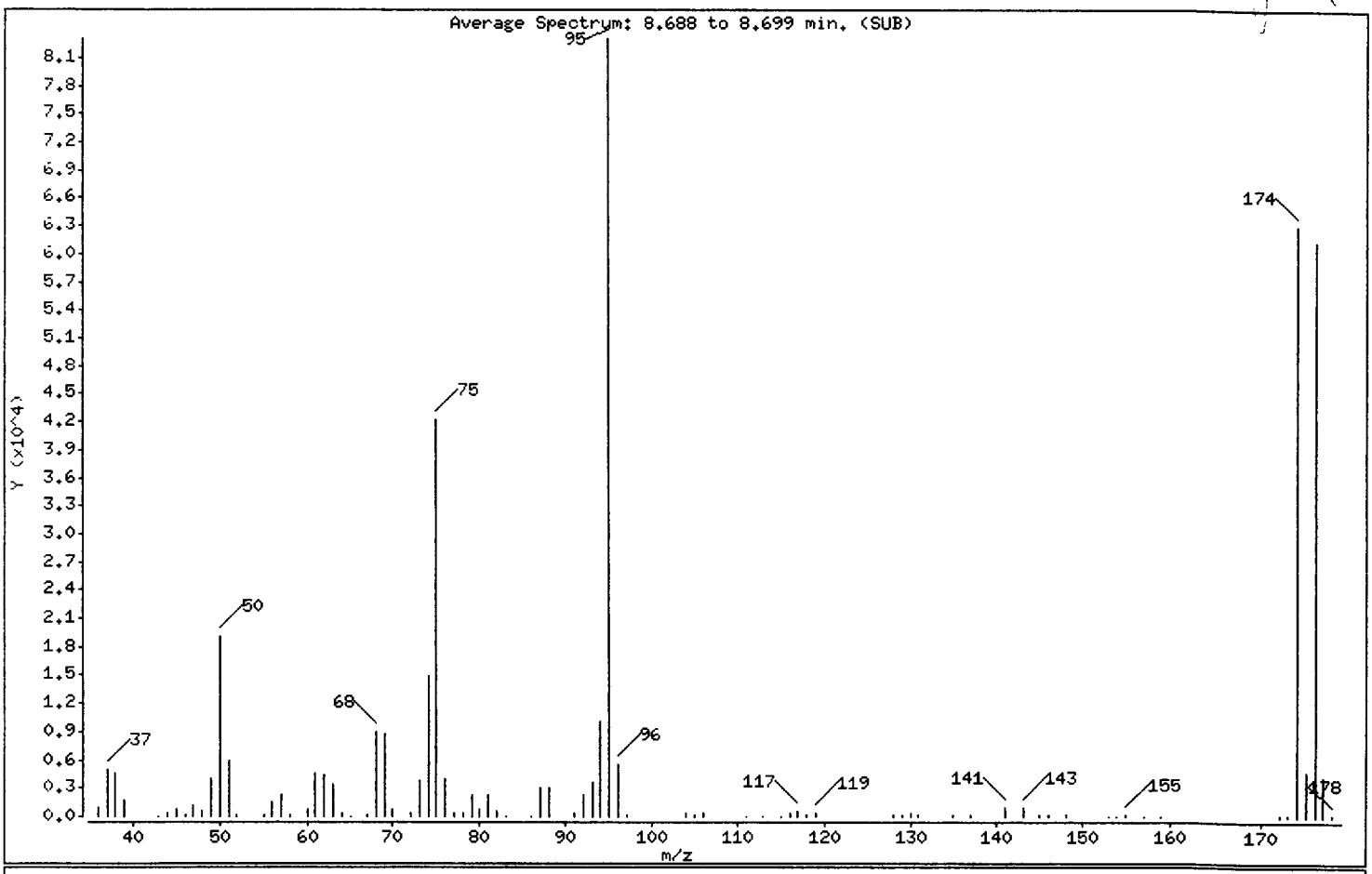
Sample Info: BFB0629,BFB0629,,1,29JUN12,,

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	22.94
75	30.00 - 66.00% of mass 95	50.89
96	5.00 - 9.00% of mass 95	6.58
173	Less than 2.00% of mass 174	0.13 (0.17)
174	50.00 - 101.00% of mass 95	75.83
175	4.00 - 9.00% of mass 174	5.78 (7.62)
176	95.00 - 101.00% of mass 174	73.90 (97.47)
177	5.00 - 9.00% of mass 176	5.03 (6.81)

Data File: /chem1/nt5.i/29JUN12.b/bfb0629a.d

Date : 29-JUN-2012 10:56

Client ID: BFB0629

Instrument: nt5.i

Sample Info: BFB0629,BFB0629,,1,29JUN12,,

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0629a.d

Spectrum: Average Spectrum: 8.688 to 8.699 min. (SUB)

Location of Maximum: 95.00

Number of points: 87

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	964	63.00	3388	91.00	315	135.00	108
37.00	4892	64.00	364	92.00	2327	137.00	135
38.00	4551	65.00	36	93.00	3541	141.00	889
39.00	1635	67.00	222	94.00	10133	142.00	45
40.00	48	68.00	8992	95.00	83088	143.00	894
43.00	35	69.00	8830	96.00	5465	145.00	108
44.00	422	70.00	671	97.00	199	146.00	103
45.00	788	72.00	424	104.00	419	148.00	179
46.00	124	73.00	3754	105.00	126	153.00	37
47.00	1064	74.00	14851	106.00	392	154.00	42
48.00	617	75.00	42280	111.00	37	155.00	120
49.00	4038	76.00	3939	112.00	55	157.00	82
50.00	19056	77.00	412	113.00	74	159.00	36
51.00	5926	78.00	359	115.00	69	161.00	37
52.00	207	79.00	2290	116.00	296	172.00	123
55.00	276	80.00	733	117.00	572	173.00	109
56.00	1551	81.00	2314	118.00	266	174.00	63000
57.00	2340	82.00	505	119.00	441	175.00	4799
58.00	138	83.00	41	128.00	253	176.00	61400
60.00	848	86.00	80	129.00	191	177.00	4181
61.00	4491	87.00	3028	130.00	356	178.00	119
62.00	4360	88.00	2999	131.00	144		

Data File: /chem1/nt5.i/29JUN12.b/bfb0629a.d

Date : 29-JUN-2012 10:56

Client ID: BFB0629

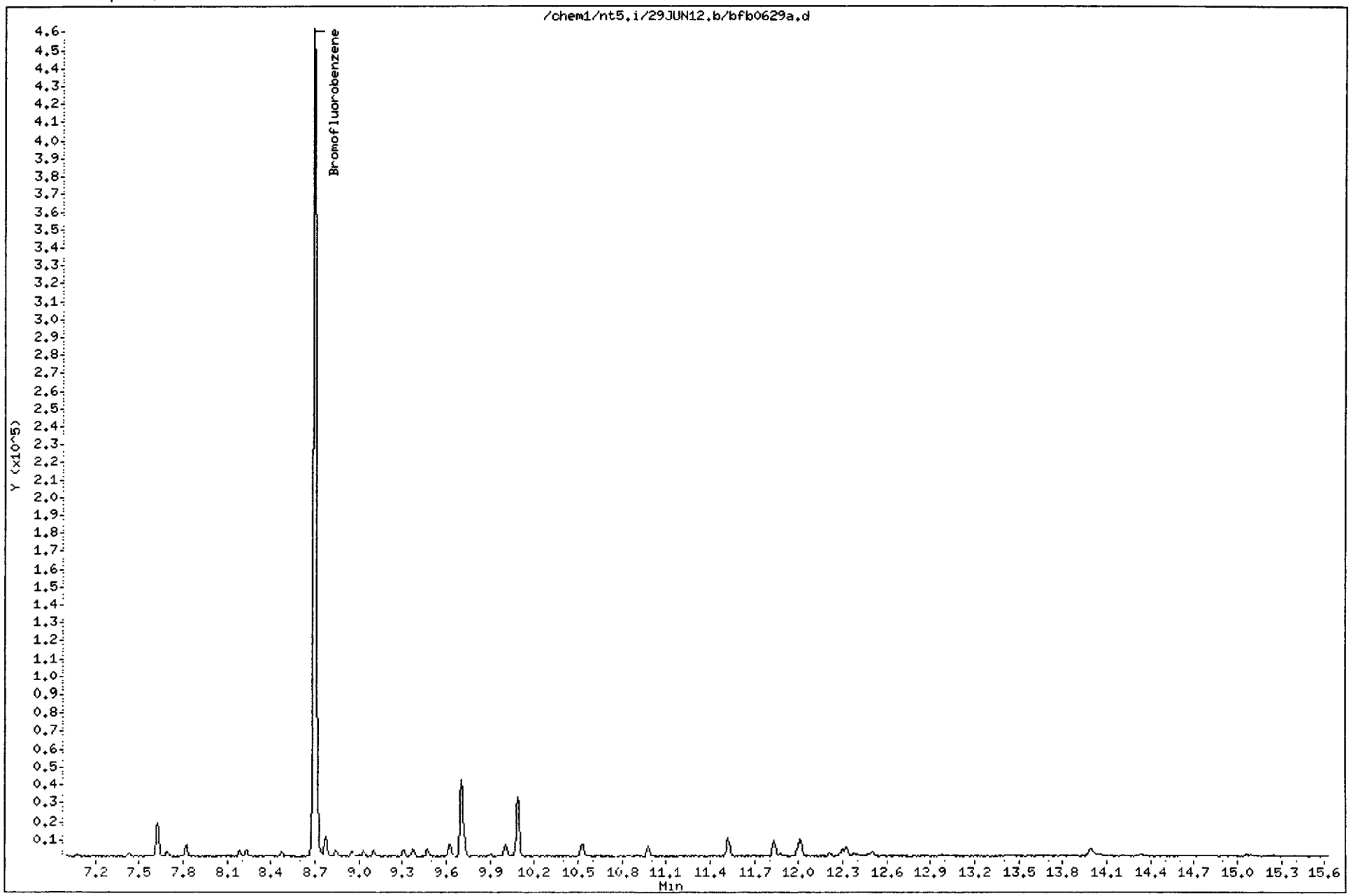
Sample Info: BFB0629,BFB0629,,1,29JUN12,,

Instrument: nt5.i

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18



Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-JUN-2012 11:34
End Cal Date : 29-JUN-2012 13:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt5.i/29JUN12.b/VO010412S.m
Cal Date : 29-Jun-2012 14:55 patrickb
Curve Type : Average

7/2/12

Calibration File Names:
Level 1: /chem1/nt5.i/29JUN12.b/0010629.d
Level 2: /chem1/nt5.i/29JUN12.b/0020629.d
Level 3: /chem1/nt5.i/29JUN12.b/0050629.d
Level 4: /chem1/nt5.i/29JUN12.b/0100629.d
Level 5: /chem1/nt5.i/29JUN12.b/0500629.d
Level 6: /chem1/nt5.i/29JUN12.b/1000629.d
Level 7: /chem1/nt5.i/29JUN12.b/1500629.d

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	150.000 Level 7	RRF	% RSD
1 Dichlorodifluoromethane	0.65841	0.63413	0.56520	0.64804	0.72656	0.71334	0.61569	0.65162	8.533
2 Chloromethane	0.83891	0.95084	0.83507	0.94543	0.96885	0.95444	0.85769	0.90732	6.631
3 Vinyl Chloride	0.88267	0.90324	0.79447	0.92990	0.97679	0.97218	0.84654	0.90082	7.350
4 Bromomethane	0.53958	0.53614	0.46135	0.48459	0.47090	0.46342	0.41152	0.48107	9.338
5 Chloroethane	0.58559	0.64733	0.51441	0.55304	0.58704	0.55831	0.47708	0.56040	9.779
6 Trichlorofluoromethane	1.03750	0.84964	0.71948	0.77501	0.75916	0.74071	0.63259	0.78773	16.235

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-JUN-2012 11:34
End Cal Date : 29-JUN-2012 13:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt5.i/29JUN12.b/V0010412S.m
Cal Date : 29-Jun-2012 14:55 patrickb
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	150.000 Level 7							
7 1,1-Dichloroethene	0.57881	0.61727	0.56974	0.64484	0.62002	0.63316		
	+++++						0.61064	4.910
8 Carbon Disulfide	2.19384	2.23577	2.02274	2.27244	2.22572	2.27030		
	+++++						2.20347	4.234
9 112Trichloro122Trifluoroethan	0.61159	0.63656	0.57539	0.64155	0.61781	0.62911		
	0.49951						0.60164	8.324
10 Iodomethane	0.56864	0.57931	0.51589	0.63960	0.83246	0.85407		
	0.74425						0.67632	19.900
11 Bromoethane	0.44061	0.48037	0.43409	0.48574	0.47109	0.48400		
	0.42476						0.46009	5.658
12 Acrolein	0.10779	0.11849	0.11625	0.12995	0.11729	0.11935		
	0.11110						0.11717	5.990
13 Methylene Chloride	0.97712	0.87127	0.72141	0.77953	0.74437	0.75539		
	0.66290						0.78743	13.301
14 Acetone	0.30734	0.27292	0.23062	0.24468	0.22351	0.22575		
	0.20111						0.24370	14.623
15 Trans-1,2-Dichloroethene	0.72945	0.71126	0.66955	0.73308	0.72310	0.73871		
	0.65373						0.70841	4.715

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-JUN-2012 11:34
End Cal Date : 29-JUN-2012 13:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt5.i/29JUN12.b/VO010412S.m
Cal Date : 29-Jun-2012 14:55 patrickb
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD	
	150.000 Level 7								
16 Methyl tert butyl ether	1.84994	2.02416	1.97353	2.27378	2.21554	2.27123			
	2.03868						2.09241	7.817	
17 1,1-Dichloroethane	1.37155	1.48785	1.31932	1.53126	1.47857	1.49193			
	1.32171						1.42888	6.206	
18 Acrylonitrile	0.24283	0.25930	0.24883	0.28112	0.27699	0.27803			
	0.25465						0.26311	5.890	
19 Vinyl Acetate	1.22931	1.28675	1.22288	1.41182	1.37659	1.43153			
	1.28818						1.32101	6.471	
20 Cis-1,2-Dichloroethene	0.72913	0.77320	0.69172	0.80689	0.77441	0.78800			
	0.70316						0.75236	5.895	
21 Allyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
22 2,2-Dichloropropane	1.09498	1.16757	1.04850	1.17291	1.13436	1.14975			
	1.01455						1.11180	5.513	
23 Bromochloromethane	0.32662	0.34999	0.31539	0.36315	0.35197	0.35599			
	0.31787						0.34014	5.768	
24 Chloroform	1.20057	1.27329	1.17251	1.34821	1.30205	1.33008			
	1.17495						1.25738	5.899	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-JUN-2012 11:34
End Cal Date : 29-JUN-2012 13:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt5.i/29JUN12.b/VO010412S.m
Cal Date : 29-Jun-2012 14:55 patrickb
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	150.000 Level 7	RRF	% RSD	
25 Carbon Tetrachloride	0.36778	0.39793	0.35110	0.39366	0.40638	0.41491				
	0.36736							0.38559	6.126	
26 1,1,1-Trichloroethane	1.07318	1.14933	1.02992	1.17508	1.16564	1.18389				
	1.05056							1.11823	5.792	
28 1,1-Dichloropropene	0.40573	0.41665	0.38224	0.43207	0.43070	0.43850				
	0.39232							0.41403	5.180	
29 2-Butanone	0.07123	0.07130	0.07131	0.08116	0.08023	0.08199				
	0.07528							0.07607	6.520	
30 Benzene	1.15749	1.19907	1.10612	1.25891	1.26974	1.28322				
	1.14686							1.20306	5.743	
33 1,2-Dichloroethane	0.44451	0.45813	0.44050	0.49968	0.48142	0.48730				
	0.43819							0.46425	5.387	
34 Trichloroethene	0.31294	0.30191	0.27678	0.32276	0.31648	0.32213				
	0.28978							0.30611	5.709	
36 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++				
	+++++							+++++	+++++	<-
37 Dibromomethane	0.14702	0.17859	0.15791	0.18531	0.18004	0.18459				
	0.16614							0.17137	8.583	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-JUN-2012 11:34
End Cal Date : 29-JUN-2012 13:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt5.i/29JUN12.b/VO010412S.m
Cal Date : 29-Jun-2012 14:55 patrickb
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	150.000 Level 7							
38 1,2-Dichloropropane	0.30250	0.32630	0.30223	0.34167	0.33724	0.34755		
	0.31322						0.32439	5.765
39 Bromodichloromethane	0.37632	0.39979	0.37655	0.42746	0.42969	0.43893		
	0.39404						0.40611	6.386
40 2-Chloroethyl Vinyl Ether	0.14851	0.16435	0.15834	0.20620	0.21162	0.21850		
	0.20032						0.18683	15.389
41 Cis 1,3-dichloropropene	0.43705	0.46521	0.43644	0.50237	0.53148	0.54511		
	0.49119						0.48698	8.846
43 Toluene	0.80720	0.81929	0.72904	0.81782	0.82293	0.84258		
	0.76570						0.80065	4.915
44 Tetrachloroethene	0.25645	0.27561	0.24971	0.28671	0.27932	0.27553		
	0.24115						0.26635	6.435
45 4-Methyl-2-Pentanone	0.09774	0.11506	0.11559	0.13365	0.13716	0.14306		
	0.13526						0.12536	12.960
46 Trans 1,3-Dichloropropene	0.39076	0.43936	0.40270	0.47461	0.49795	0.52127		
	0.47184						0.45693	10.566
47 1,1,2-Trichloroethane	0.23716	0.24642	0.22773	0.26358	0.26122	0.26718		
	0.24315						0.24949	5.955

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-JUN-2012 11:34
End Cal Date : 29-JUN-2012 13:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt5.i/29JUN12.b/VO010412S.m
Cal Date : 29-Jun-2012 14:55 patrickb
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	150.000 Level 7							
48 Chlorodibromomethane	0.22493	0.22498	0.21680	0.24678	0.25639	0.25952		
	0.23179						0.23731	7.100
49 1,3-Dichloropropane	0.34841	0.35945	0.35341	0.40881	0.40631	0.40345		
	0.36465						0.37779	7.169
50 1,2-Dibromoethane	0.22618	0.22306	0.21955	0.25409	0.25396	0.25885		
	0.23393						0.23852	6.987
51 2-Hexanone	0.16055	0.16804	0.17134	0.20440	0.20284	0.20065		
	0.18126						0.18415	9.966
53 Chlorobenzene	0.66724	0.70465	0.65931	0.77041	0.75662	0.75306		
	0.67150						0.71183	6.679
54 Ethyl Benzene	1.23204	1.24654	1.12999	1.31625	1.34050	1.36875		
	1.19894						1.26186	6.712
55 1,1,1,2-Tetrachloroethane	0.23005	0.23750	0.21745	0.25519	0.26696	0.28944		
	0.24581						0.24892	9.694
56 m,p-xylene	0.42638	0.43693	0.42168	0.49436	0.50435	0.51019		
	0.30781						0.44310	15.948
57 o-Xylene	0.39177	0.41860	0.39557	0.46652	0.48339	0.49069		
	0.44801						0.44208	9.210

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-JUN-2012 11:34
End Cal Date : 29-JUN-2012 13:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt5.i/29JUN12.b/VO010412S.m
Cal Date : 29-Jun-2012 14:55 patrickb
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD	
	150.000 Level 7								
58 Styrene	0.70318	0.71593	0.66448	0.79812	0.82340	0.89630			
	0.64587						0.74961	12.253	
59 Bromoform	0.25800	0.27064	0.26335	0.28677	0.30769	0.31120			
	0.25114						0.27840	8.613	
60 Isopropyl Benzene	1.88987	1.98063	1.91985	2.18304	2.23009	2.11125			
	1.74531						2.00858	8.674	
61 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
63 Bromobenzene	0.56314	0.50290	0.49082	0.55537	0.55023	0.52127			
	0.43729						0.51729	8.631	
64 N-Propyl Benzene	2.52362	2.50959	2.31747	2.64279	2.67781	2.50932			
	2.04632						2.46099	8.797	
65 1,1,2,2-Tetrachloroethane	0.44703	0.44061	0.43348	0.50529	0.48677	0.46975			
	0.40082						0.45482	7.735	
66 2-Chloro Toluene	1.56169	1.50731	1.39701	1.62597	1.63630	1.56304			
	1.31224						1.51479	7.932	
67 1,3,5-Trimethyl Benzene	1.66356	1.65711	1.61789	1.84505	1.87010	1.80669			
	1.51508						1.71078	7.720	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-JUN-2012 11:34
End Cal Date : 29-JUN-2012 13:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt5.i/29JUN12.b/V0010412S.m
Cal Date : 29-Jun-2012 14:55 patrickb
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	150.000 Level 7	___ RRF	% RSD
68 1,2,3-Trichloropropane	0.12719	0.14437	0.14174	0.16206	0.15884	0.15290	0.13061	0.14539	9.224
69 Trans-1,4-Dichloro 2-Butene	0.15482	0.18112	0.17386	0.20203	0.20141	0.19278	0.14739	0.17906	12.144
70 4-Chloro Toluene	1.63033	1.57470	1.46631	1.67318	1.71016	1.65269	1.33576	1.57759	8.426
71 T-Butyl Benzene	1.46104	1.47330	1.39301	1.58847	1.66101	1.57661	1.32201	1.49649	7.948
72 1,2,4-Trimethylbenzene	1.66136	1.63896	1.58053	1.84343	1.89330	1.82545	1.51008	1.70759	8.581
73 S-Butyl Benzene	2.09819	2.18752	2.10156	2.37135	2.44020	2.31702	1.85539	2.19589	9.100
74 4-Isopropyl Toluene	1.71641	1.71784	1.67749	1.93320	2.02486	1.92948	1.59350	1.79897	8.976
75 1,3-Dichlorobenzene	1.01335	0.99572	0.93037	1.04850	1.05731	1.03898	0.82224	0.98664	8.535
77 1,4-Dichlorobenzene	1.15381	1.04513	0.98283	1.08058	1.07333	1.04232	0.85338	1.03305	9.141

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-JUN-2012 11:34
End Cal Date : 29-JUN-2012 13:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt5.i/29JUN12.b/VO010412S.m
Cal Date : 29-Jun-2012 14:55 patrickb
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	150.000 Level 7							
78 N-Butyl Benzene	1.78899	1.61481	1.58844	1.78173	1.85077	1.75910		
	1.45248						1.69090	8.406
80 1,2-Dichlorobenzene	1.02969	0.98250	0.90673	1.03050	1.02172	0.96888		
	0.82883						0.96698	7.776
81 1,2-Dibromo 3-Chloropropane	0.08377	0.08353	0.09641	0.09441	0.10007	0.09458		
	0.07559						0.08976	9.869
82 Hexachloro 1,3-Butadiene	0.42773	0.42615	0.38079	0.42401	0.42613	0.40167		
	0.32284						0.40133	9.664
83 1,2,4-Trichlorobenzene	0.74658	0.65321	0.57217	0.66430	0.68922	0.65673		
	0.51595						0.64259	11.847
84 Naphthalene	1.41170	1.32748	1.26180	1.41087	1.49877	1.41535		
	1.12867						1.35066	9.127
85 1,2,3-Trichlorobenzene	0.64626	0.61825	0.57680	0.63144	0.65292	0.61065		
	0.48006						0.60234	9.883
$ 27 Dibromofluoromethane	0.78599	0.79460	0.79569	0.79174	0.79239	0.79344		
	0.78605						0.79141	0.494
$ 32 d4-1,2-Dichloroethane	0.92338	0.95266	0.95818	0.95264	0.95049	0.93585		
	0.94188						0.94501	1.283

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 29-JUN-2012 11:34
End Cal Date : 29-JUN-2012 13:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt5.i/29JUN12.b/VO010412S.m
Cal Date : 29-Jun-2012 14:55 patrickb
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	150.000 Level 7							
$ 42 d8-Toluene	1.35344	1.36841	1.36630	1.36376	1.36881	1.36283		
	1.37145						1.36500	0.433
$ 62 4-Bromofluorobenzene	0.54699	0.55567	0.55501	0.55851	0.56177	0.56473		
	0.56250						0.55788	1.074
$ 79 d4-1,2-Dichlorobenzene	0.93529	0.93990	0.93682	0.92003	0.93179	0.91076		
	0.85031						0.91784	3.434

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt5.i/29JUN12.b

ARI Job No.: BFB0 Method: bfb8260.m Instrument: nt5.i Date: 29-JUN-2012

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1056	bfb0629a.d	BFB0629	BFB0629	1	NO MANUAL INTEGRATION
1134	0010629.d	IC0629	VSTD1	1	1,2,3-Trichloropropane,
1157	0020629.d	IC0629	VSTD2	1	1,2,3-Trichloropropane,
1220	0050629.d	IC0629	VSTD5	1	Chloromethane,
1242	0100629.d	IC0629	VSTD10	1	Chloromethane,
1305	0500629.d	IC0629	VSTD50	1	NO MANUAL INTEGRATION
1328	1000629.d	IC0629	VSTD100	1	Chloromethane,
1351	1500629.d	IC0629	VSTD150	1	NO MANUAL INTEGRATION
1428	icv0629.d	ICV0629	ICV0629	1	NO MANUAL INTEGRATION

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Batch File: /chem1/nt5.i/29JUN12.b
Inst ID: nt5.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07
FILENAME:	0010629	0020629	0050629	0100629	0500629	1000629	1500629
INJ.DATE:	29-JUN-2012	29-JUN-2012	29-JUN-2012	29-JUN-2012	29-JUN-2012	29-JUN-2012	29-JUN-2012
INJ.TIME:	11:34	11:57	12:20	12:42	13:05	13:28	13:51

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Dichlorodifluoromethan	1.017	1.011	1.006	1.006	1.006	1.006	1.000	1.006	0.912-1.100	1.007	0.005
2 Chloromethane	1.136	1.130	1.125	1.130	1.125	1.130	1.125	1.125	1.031-1.218	1.129	0.004
3 Vinyl Chloride	1.192	1.187	1.181	1.181	1.176	1.181	1.175	1.176	1.082-1.269	1.182	0.006
4 Bromomethane	1.402	1.396	1.396	1.396	1.396	1.396	1.390	1.396	1.303-1.490	1.396	0.003
5 Chloroethane	1.498	1.481	1.475	1.475	1.475	1.481	1.470	1.475	1.382-1.569	1.479	0.009
6 Trichlorofluoromethane	1.594	1.571	1.566	1.566	1.566	1.566	1.560	1.566	1.472-1.660	1.570	0.011
7 1,1-Dichloroethene	1.967	1.956	1.939	1.922	1.939	1.928	1.911	1.939	1.846-2.033	1.938	0.020
8 Carbon Disulfide	1.967	1.956	1.939	1.922	1.939	1.922	1.905	1.939	1.846-2.033	1.936	0.021
9 112Trichloro122Trifluo	2.013	2.001	1.990	1.967	1.985	1.973	1.950	1.985	1.891-2.078	1.983	0.021
10 Iodomethane	2.069	2.058	2.047	2.035	2.047	2.035	2.018	2.047	1.953-2.140	2.044	0.017
11 Bromoethane	2.177	2.160	2.149	2.143	2.149	2.143	2.126	2.149	2.055-2.242	2.149	0.016
12 Acrolein	2.256	2.250	2.250	2.262	2.250	2.262	2.262	2.250	2.157-2.344	2.256	0.006
13 Methylene Chloride	2.448	2.443	2.431	2.431	2.432	2.431	2.426	2.432	2.338-2.525	2.435	0.008
14 Acetone	2.550	2.527	2.539	2.561	2.533	2.561	2.578	2.533	2.440-2.627	2.550	0.018
15 Trans-1,2-Dichloroethe	2.601	2.584	2.578	2.573	2.579	2.573	2.561	2.579	2.485-2.672	2.578	0.012
16 Methyl tert butyl ethe	2.754	2.748	2.759	2.776	2.754	2.776	2.788	2.754	2.660-2.848	2.765	0.015
17 1,1-Dichloroethane	3.206	3.201	3.201	3.201	3.201	3.201	3.189	3.201	3.107-3.294	3.200	0.005

Reviewer 1 _____ Date: 7/4/12
Reviewer 2 _____ Date: _____

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Batch File: /chem1/nt5.i/29JUN12.b
Inst ID: nt5.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	18 Acrylonitrile	3.297	3.280	3.286	3.297	3.280	3.297	3.308	3.280	3.186-3.374	3.292	0.010
	19 Vinyl Acetate	3.540	3.534	3.534	3.540	3.535	3.546	3.546	3.535	3.441-3.628	3.539	0.005
	20 Cis-1,2-Dichloroethene	3.755	3.749	3.744	3.749	3.750	3.749	3.749	3.750	3.656-3.843	3.749	0.003
	21 Allyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.560	4.466-4.654	+++++	+++++
	22 2,2-Dichloropropane	3.857	3.857	3.846	3.845	3.846	3.845	3.840	3.846	3.752-3.939	3.848	0.006
	23 Bromochloromethane	3.936	3.936	3.930	3.936	3.931	3.936	3.930	3.931	3.837-4.024	3.934	0.003
	24 Chloroform	4.043	4.038	4.038	4.038	4.038	4.043	4.044	4.038	3.944-4.132	4.040	0.003
	25 Carbon Tetrachloride	4.134	4.134	4.128	4.123	4.123	4.123	4.117	4.123	4.020-4.226	4.126	0.006
	26 1,1,1-Trichloroethane	4.202	4.202	4.196	4.196	4.196	4.196	4.191	4.196	4.103-4.290	4.197	0.004
$	27 Dibromofluoromethane	4.213	4.208	4.202	4.208	4.202	4.208	4.208	4.202	4.108-4.296	4.207	0.004
	28 1,1-Dichloropropene	4.326	4.321	4.321	4.315	4.315	4.315	4.309	4.315	4.212-4.418	4.318	0.006
	29 2-Butanone	4.383	4.372	4.377	4.389	4.372	4.389	4.400	4.372	4.278-4.465	4.383	0.010
	30 Benzene	4.553	4.547	4.547	4.547	4.547	4.547	4.541	4.547	4.444-4.650	4.547	0.003
*	31 Pentafluorobenzene	4.694	4.688	4.683	4.688	4.683	4.688	4.683	4.683	4.589-4.777	4.687	0.004
$	32 d4-1,2-Dichloroethane	4.683	4.677	4.677	4.677	4.677	4.677	4.677	4.677	4.584-4.771	4.678	0.002
	33 1,2-Dichloroethane	4.739	4.739	4.734	4.739	4.734	4.739	4.739	4.734	4.631-4.837	4.738	0.003
	34 Trichloroethene	5.090	5.084	5.084	5.084	5.085	5.084	5.084	5.085	4.982-5.187	5.085	0.002
*	35 1,4-Difluorobenzene	5.141	5.141	5.141	5.141	5.136	5.141	5.135	5.136	5.033-5.238	5.139	0.003
	36 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.693	5.590-5.796	+++++	+++++
	37 Dibromomethane	5.446	5.441	5.435	5.441	5.441	5.441	5.441	5.441	5.338-5.544	5.441	0.003
	38 1,2-Dichloropropane	5.537	5.537	5.537	5.537	5.531	5.537	5.537	5.531	5.429-5.634	5.536	0.002
	39 Bromodichloromethane	5.610	5.611	5.611	5.610	5.611	5.610	5.616	5.611	5.508-5.713	5.611	0.002

VBS1 - 06181

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Batch File: /chem1/nt5.i/29JUN12.b
Inst ID: nt5.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	40 2-Chloroethyl Vinyl Et	6.148	6.148	6.142	6.148	6.142	6.148	6.148	6.142	6.040-6.245	6.146	0.003
	41 Cis 1,3-dichloropropen	6.159	6.159	6.159	6.159	6.159	6.159	6.165	6.159	6.057-6.262	6.160	0.002
$	42 d8-Toluene	6.318	6.318	6.318	6.318	6.318	6.318	6.318	6.318	6.215-6.420	6.318	0.000
	43 Toluene	6.363	6.363	6.357	6.357	6.357	6.363	6.363	6.357	6.255-6.460	6.360	0.003
	44 Tetrachloroethene	6.680	6.674	6.674	6.674	6.674	6.674	6.674	6.674	6.522-6.827	6.675	0.002
	45 4-Methyl-2-Pentanone	6.719	6.719	6.719	6.725	6.719	6.725	6.736	6.719	6.617-6.822	6.723	0.006
	46 Trans 1,3-Dichloroprop	6.725	6.725	6.725	6.725	6.725	6.731	6.731	6.725	6.622-6.828	6.727	0.003
	47 1,1,2-Trichloroethane	6.855	6.855	6.855	6.855	6.855	6.855	6.861	6.855	6.752-6.958	6.856	0.002
	48 Chlorodibromomethane	6.996	6.991	6.991	6.991	6.991	6.996	6.996	6.991	6.838-7.143	6.993	0.003
	49 1,3-Dichloropropane	7.076	7.076	7.076	7.076	7.076	7.076	7.081	7.076	6.923-7.228	7.076	0.002
	50 1,2-Dibromoethane	7.166	7.172	7.166	7.166	7.166	7.172	7.172	7.166	7.064-7.269	7.169	0.003
	51 2-Hexanone	7.438	7.432	7.432	7.438	7.438	7.438	7.443	7.438	7.285-7.590	7.437	0.004
*	52 d5-Chlorobenzene	7.624	7.624	7.624	7.624	7.625	7.630	7.630	7.625	7.472-7.777	7.626	0.003
	53 Chlorobenzene	7.641	7.641	7.636	7.636	7.642	7.641	7.641	7.642	7.489-7.794	7.640	0.003
	54 Ethyl Benzene	7.692	7.687	7.687	7.687	7.692	7.692	7.692	7.692	7.540-7.845	7.690	0.003
	55 1,1,1,2-Tetrachloroeth	7.704	7.704	7.704	7.704	7.704	7.709	7.709	7.704	7.551-7.856	7.705	0.003
	56 m,p-xylene	7.822	7.822	7.822	7.822	7.823	7.828	7.822	7.823	7.670-7.975	7.823	0.002
	57 o-Xylene	8.184	8.184	8.184	8.184	8.185	8.190	8.190	8.185	8.032-8.337	8.186	0.003
	58 Styrene	8.235	8.230	8.230	8.230	8.235	8.235	8.235	8.235	8.083-8.388	8.233	0.003
	59 Bromoform	8.224	8.224	8.224	8.224	8.224	8.230	8.230	8.224	8.030-8.418	8.226	0.003
	60 Isopropyl Benzene	8.473	8.473	8.473	8.473	8.473	8.473	8.479	8.473	8.279-8.667	8.474	0.002
	61 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.568	8.415-8.721	+++++	+++++
$	62 4-Bromofluorobenzene	8.699	8.694	8.694	8.693	8.694	8.693	8.699	8.694	8.541-8.846	8.695	0.003
	63 Bromobenzene	8.773	8.773	8.773	8.773	8.773	8.773	8.773	8.773	8.579-8.967	8.773	0.000

7/2/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Batch File: /chem1/nt5.i/29JUN12.b
Inst ID: nt5.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	64 N-Propyl Benzene	8.841	8.841	8.841	8.841	8.841	8.846	8.846	8.841	8.647-9.035	8.842	0.003
	65 1,1,2,2-Tetrachloroeth	8.903	8.903	8.897	8.903	8.903	8.903	8.903	8.903	8.709-9.097	8.902	0.002
	66 2-Chloro Toluene	8.954	8.954	8.948	8.948	8.954	8.954	8.954	8.954	8.760-9.148	8.952	0.003
	67 1,3,5-Trimethyl Benzen	9.033	9.027	9.027	9.027	9.033	9.033	9.039	9.033	8.839-9.227	9.031	0.004
	68 1,2,3-Trichloropropane	9.005	8.999	8.999	8.999	8.999	9.005	9.005	8.999	8.805-9.193	9.001	0.003
	69 Trans-1,4-Dichloro 2-B	9.056	9.056	9.056	9.056	9.056	9.061	9.061	9.056	8.862-9.250	9.057	0.003
	70 4-Chloro Toluene	9.106	9.101	9.101	9.101	9.101	9.106	9.106	9.101	8.907-9.295	9.103	0.003
	71 T-Butyl Benzene	9.310	9.304	9.305	9.304	9.305	9.310	9.310	9.305	9.111-9.499	9.307	0.003
	72 1,2,4-Trimethylbenzene	9.372	9.372	9.372	9.372	9.373	9.372	9.378	9.373	9.178-9.566	9.373	0.002
	73 S-Butyl Benzene	9.474	9.469	9.469	9.468	9.469	9.474	9.474	9.469	9.275-9.663	9.471	0.003
	74 4-Isopropyl Toluene	9.616	9.616	9.616	9.616	9.616	9.616	9.621	9.616	9.422-9.810	9.616	0.002
	75 1,3-Dichlorobenzene	9.633	9.627	9.627	9.627	9.627	9.633	9.633	9.627	9.433-9.821	9.629	0.003
*	76 d4-1,4-Dichlorobenzene	9.706	9.700	9.700	9.700	9.701	9.706	9.706	9.701	9.507-9.895	9.703	0.003
	77 1,4-Dichlorobenzene	9.717	9.712	9.712	9.712	9.712	9.717	9.717	9.712	9.518-9.906	9.714	0.003
	78 N-Butyl Benzene	10.006	10.000	10.000	10.000	10.000	10.000	10.000	10.000	9.806-10.194	10.001	0.002
$	79 d4-1,2-Dichlorobenzene	10.091	10.085	10.085	10.085	10.085	10.085	10.091	10.085	9.891-10.279	10.087	0.003
	80 1,2-Dichlorobenzene	10.096	10.091	10.091	10.091	10.091	10.096	10.096	10.091	9.897-10.285	10.093	0.003
	81 1,2-Dibromo 3-Chloropr	10.849	10.849	10.843	10.843	10.843	10.843	10.843	10.843	10.649-11.037	10.845	0.003
	82 Hexachloro 1,3-Butadie	11.533	11.522	11.522	11.522	11.522	11.522	11.522	11.522	11.328-11.716	11.524	0.004
	83 1,2,4-Trichlorobenzene	11.516	11.511	11.511	11.505	11.511	11.511	11.511	11.511	11.317-11.705	11.511	0.003
	84 Naphthalene	11.833	11.822	11.822	11.822	11.822	11.822	11.822	11.822	11.628-12.016	11.823	0.004
	85 1,2,3-Trichlorobenzene	12.020	12.008	12.003	12.003	12.003	12.003	12.003	12.003	11.809-12.197	12.006	0.006

7/2/12

VOA1 SS186

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/29JUN12.b/0010629.d
Lab Smp Id: IC0629 Client Smp ID: VSTD1
Inj Date : 29-JUN-2012 11:34
Operator : PB Inst ID: nt5.i
Smp Info : IC0629,5,5,0
Misc Info : 11-
Comment :
Method : /chem1/nt5.i/29JUN12.b/VO010412S.m
Meth Date : 02-Jul-2012 13:34 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 11:34 Cal File: 0010629.d
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.017	1.006	(0.217)	4078	1.00000	1.010
2 Chloromethane	50	1.136	1.125	(0.242)	5196	1.00000	0.9246
3 Vinyl Chloride	62	1.192	1.176	(0.254)	5467	1.00000	0.9798
4 Bromomethane	94	1.402	1.396	(0.299)	3342	1.00000	1.122
5 Chloroethane	64	1.498	1.475	(0.319)	3627	1.00000	1.045
6 Trichlorofluoromethane	101	1.594	1.566	(0.340)	6426	1.00000	1.317
7 1,1-Dichloroethene	96	1.967	1.939	(0.419)	3585	1.00000	0.9479
8 Carbon Disulfide	76	1.967	1.939	(0.419)	13588	1.00000	0.9956(T)
9 112Trichloro122Trifluoroethane	101	2.013	1.985	(0.429)	3788	1.00000	1.017
10 Iodomethane	142	2.069	2.047	(0.441)	3522	1.00000	0.8408
11 Bromoethane	108	2.177	2.149	(0.464)	2729	1.00000	0.9576
12 Acrolein	56	2.256	2.250	(0.481)	3338	5.00000	4.599
13 Methylene Chloride	84	2.448	2.432	(0.522)	6052	1.00000	1.241
14 Acetone	43	2.550	2.533	(0.543)	9518	5.00000	6.306

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.601	2.579	(0.554)	4518	1.00000	1.030
	16 Methyl tert butyl ether	73	2.754	2.754	(0.587)	11458	1.00000	0.8841
	17 1,1-Dichloroethane	63	3.206	3.201	(0.683)	8495	1.00000	0.9599
	18 Acrylonitrile	53	3.297	3.280	(0.702)	1504	1.00000	0.9229(T)
	19 Vinyl Acetate	43	3.540	3.535	(0.754)	7614	1.00000	0.9306
	20 Cis-1,2-Dichloroethene	96	3.755	3.750	(0.800)	4516	1.00000	0.9691
	22 2,2-Dichloropropane	77	3.857	3.846	(0.822)	6782	1.00000	0.9849
	23 Bromochloromethane	128	3.936	3.931	(0.838)	2023	1.00000	0.9603
	24 Chloroform	83	4.043	4.038	(0.861)	7436	1.00000	0.9548
	25 Carbon Tetrachloride	117	4.134	4.123	(0.804)	5426	1.00000	0.9538
$	27 Dibromofluoromethane	111	4.213	4.202	(0.898)	243409	50.0000	49.657
	26 1,1,1-Trichloroethane	97	4.202	4.196	(0.895)	6647	1.00000	0.9597
	28 1,1-Dichloropropene	75	4.326	4.315	(0.842)	5986	1.00000	0.9800
	29 2-Butanone	72	4.383	4.372	(0.934)	2206	5.00000	4.682
	30 Benzene	78	4.553	4.547	(0.886)	17077	1.00000	0.9621
*	31 Pentafluorobenzene	168	4.694	4.683	(1.000)	309686	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.683	4.677	(0.998)	285959	50.0000	48.856
	33 1,2-Dichloroethane	62	4.739	4.734	(0.922)	6558	1.00000	0.9575
	34 Trichloroethene	95	5.090	5.085	(0.990)	4617	1.00000	1.022
*	35 1,4-Difluorobenzene	114	5.141	5.136	(1.000)	737674	50.0000	
	37 Dibromomethane	93	5.446	5.441	(1.059)	2169	1.00000	0.8579
	38 1,2-Dichloropropane	63	5.537	5.531	(1.077)	4463	1.00000	0.9325
	39 Bromodichloromethane	83	5.610	5.611	(1.091)	5552	1.00000	0.9266
	40 2-Chloroethyl Vinyl Ether	63	6.148	6.142	(1.196)	2191	1.00000	0.7949
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.198)	6448	1.00000	0.8975
$	42 d8-Toluene	98	6.318	6.318	(1.229)	998397	50.0000	49.577
	43 Toluene	92	6.363	6.357	(1.238)	11909	1.00000	1.008
	44 Tetrachloroethene	166	6.680	6.674	(0.876)	4353	1.00000	0.9628
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.307)	7210	5.00000	3.898
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.308)	5765	1.00000	0.8552
	47 1,1,2-Trichloroethane	97	6.855	6.855	(1.333)	3499	1.00000	0.9506
	48 Chlorodibromomethane	129	6.996	6.991	(0.918)	3818	1.00000	0.9478
	49 1,3-Dichloropropane	76	7.076	7.076	(0.928)	5914	1.00000	0.9222
	50 1,2-Dibromoethane	107	7.166	7.166	(1.394)	3337	1.00000	0.9483
	51 2-Hexanone	43	7.438	7.438	(0.976)	13626	5.00000	4.359
*	52 d5-Chlorobenzene	117	7.624	7.625	(1.000)	848716	50.0000	
	53 Chlorobenzene	112	7.641	7.642	(1.002)	11326	1.00000	0.9374
	54 Ethyl Benzene	91	7.692	7.692	(1.009)	20913	1.00000	0.9764
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	3905	1.00000	0.9242
	56 m,p-xylene	106	7.822	7.823	(1.026)	14475	2.00000	1.925
	57 o-Xylene	106	8.184	8.185	(1.073)	6650	1.00000	0.8862
	58 Styrene	104	8.235	8.235	(1.080)	11936	1.00000	0.9381
	59 Bromoform	173	8.224	8.224	(0.847)	2353	1.00000	0.9267
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	17236	1.00000	0.9409
$	62 4-Bromofluorobenzene	95	8.699	8.694	(1.141)	464242	50.0000	49.024
	63 Bromobenzene	156	8.773	8.773	(0.904)	5136	1.00000	1.089
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	23016	1.00000	1.025

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.903	8.903	(0.917)	4077	1.00000	0.9829
66	2-Chloro Toluene	91	8.954	8.954	(0.922)	14243	1.00000	1.031
67	1,3,5-Trimethyl Benzene	105	9.033	9.033	(0.931)	15172	1.00000	0.9724
68	1,2,3-Trichloropropane	110	9.005	8.999	(0.928)	1160	1.00000	0.8748(TM)
69	Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.933)	1412	1.00000	0.8646
70	4-Chloro Toluene	91	9.106	9.101	(0.938)	14869	1.00000	1.033
71	T-Butyl Benzene	119	9.310	9.305	(0.959)	13325	1.00000	0.9763
72	1,2,4-Trimethylbenzene	105	9.372	9.373	(0.966)	15152	1.00000	0.9729
73	S-Butyl Benzene	105	9.474	9.469	(0.976)	19136	1.00000	0.9555
74	4-Isopropyl Toluene	119	9.616	9.616	(0.991)	15654	1.00000	0.9541
75	1,3-Dichlorobenzene	146	9.633	9.627	(0.992)	9242	1.00000	1.027
* 76	d4-1,4-Dichlorobenzene	152	9.706	9.701	(1.000)	456011	50.0000	
77	1,4-Dichlorobenzene	146	9.717	9.712	(1.001)	10523	1.00000	1.117
78	N-Butyl Benzene	91	10.006	10.000	(1.031)	16316	1.00000	1.058
$ 79	d4-1,2-Dichlorobenzene	152	10.091	10.085	(1.040)	426503	50.0000	50.951
80	1,2-Dichlorobenzene	146	10.096	10.091	(1.040)	9391	1.00000	1.065
81	1,2-Dibromo 3-Chloropropane	75	10.849	10.843	(1.118)	764	1.00000	0.9332
82	Hexachloro 1,3-Butadiene	225	11.533	11.522	(1.188)	3901	1.00000	1.066
83	1,2,4-Trichlorobenzene	180	11.516	11.511	(1.187)	6809	1.00000	1.162
84	Naphthalene	128	11.833	11.822	(1.219)	12875	1.00000	1.045
85	1,2,3-Trichlorobenzene	180	12.020	12.003	(1.238)	5894	1.00000	1.073

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: 0010629.d
Lab Smp Id: IC0629
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Misc Info: 11-

Calibration Date: 29-JUN-2012
Calibration Time: 13:05
Client Smp ID: VSTD1
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	309686	6.13
35 1,4-Difluorobenze	682850	341425	1365700	737674	8.03
52 d5-Chlorobenzene	802138	401069	1604276	848716	5.81
76 d4-1,4-Dichlorobe	452585	226292	905170	456011	0.76

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.24
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.71	0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

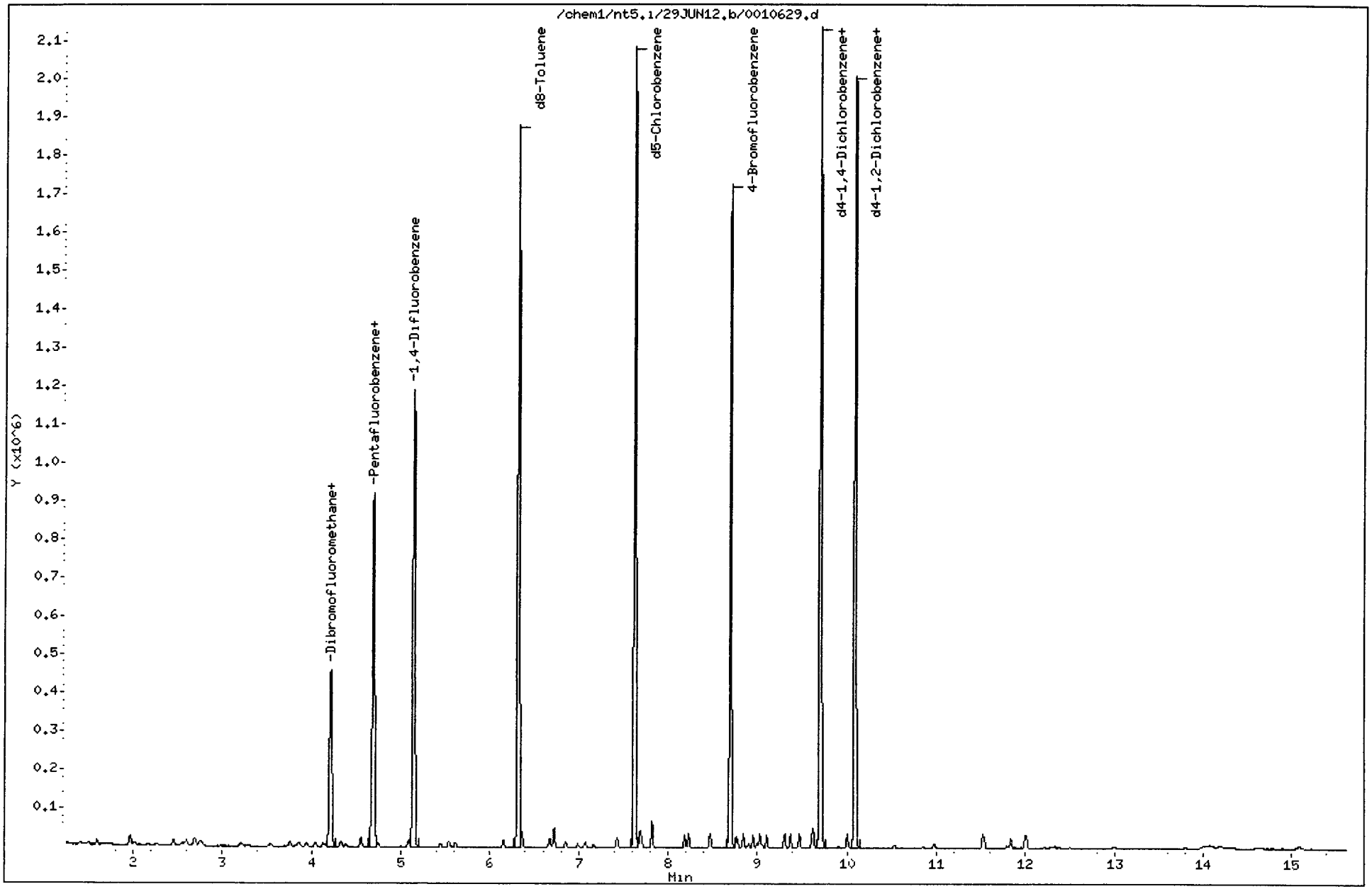
Data File: /chem1/nt5.i/29JUN12.b/0010629.d
Date : 29-JUN-2012 11:34
Client ID: VSTD1
Sample Info: IC0629,5,5,0

Column phase: RTXVMS

Instrument: nt5.i

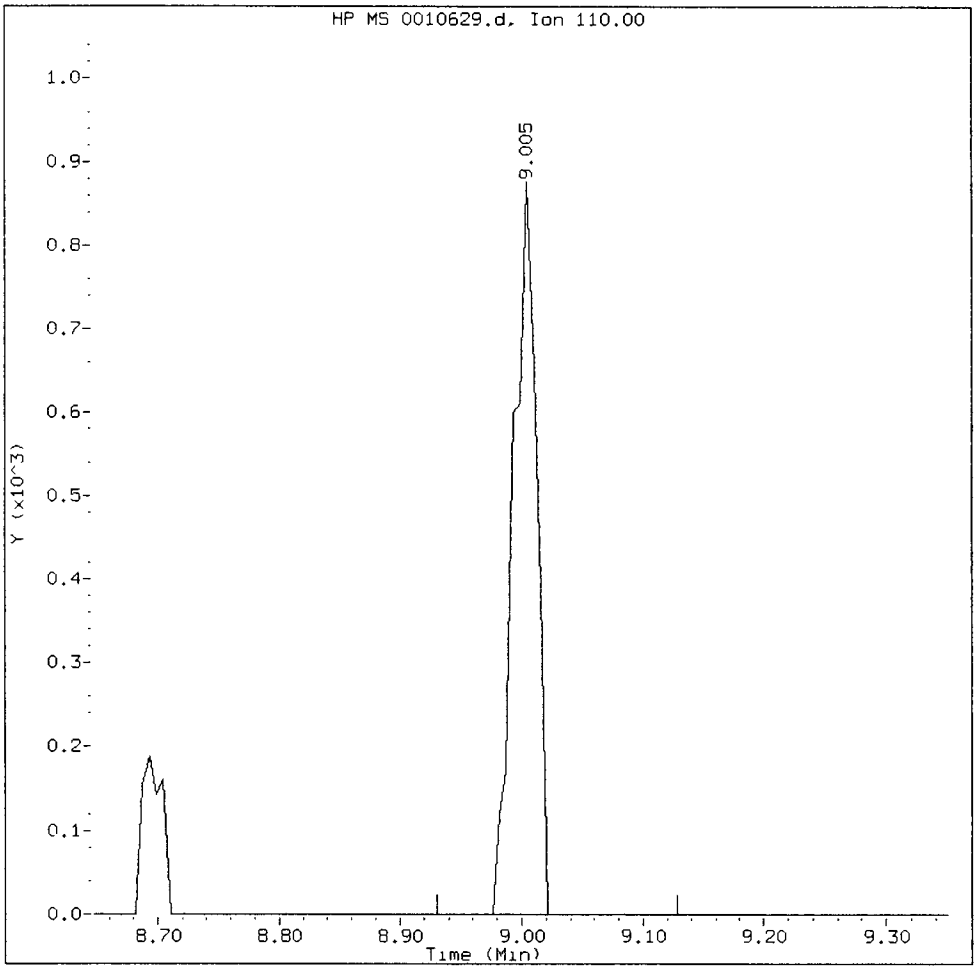
Operator: PB
Column diameter: 0.18

VB51 : 061131



IC0629, /chem1/nt5.i/29JUN12.b/0010629.d

1,2,3-Trichloropropane Amount: 0.87 Area: 1160



MANUAL INTEGRATION for 1,2,3-Trichloropropane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: _____

CO-ELUTION SUMMARY FOR FILE - 0010629.d

Lab ID: IC0629, Method: VO010412S.m, Instrument: nt5.i, Date: 29-JUN-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/29JUN12.b/0020629.d
Lab Smp Id: IC0629 Client Smp ID: VSTD2
Inj Date : 29-JUN-2012 11:57
Operator : PB Inst ID: nt5.i
Smp Info : IC0629,5,5,0
Misc Info : 11-
Comment :
Method : /chem1/nt5.i/29JUN12.b/V0010412S.m
Meth Date : 02-Jul-2012 13:34 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 11:57 Cal File: 0020629.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.011	1.006	(0.216)	7300	2.00000	1.946
2 Chloromethane	50	1.130	1.125	(0.241)	10946	2.00000	2.096
3 Vinyl Chloride	62	1.187	1.176	(0.253)	10398	2.00000	2.005
4 Bromomethane	94	1.396	1.396	(0.298)	6172	2.00000	2.229
5 Chloroethane	64	1.481	1.475	(0.316)	7452	2.00000	2.310
6 Trichlorofluoromethane	101	1.571	1.566	(0.335)	9781	2.00000	2.157
7 1,1-Dichloroethene	96	1.956	1.939	(0.417)	7106	2.00000	2.022
8 Carbon Disulfide	76	1.956	1.939	(0.417)	25738	2.00000	2.029
9 112Trichloro122Trifluoroethane	101	2.001	1.985	(0.427)	7328	2.00000	2.116
10 Iodomethane	142	2.058	2.047	(0.439)	6669	2.00000	1.713
11 Bromoethane	108	2.160	2.149	(0.461)	5530	2.00000	2.088
12 Acrolein	56	2.250	2.250	(0.480)	6820	10.0000	10.112
13 Methylene Chloride	84	2.443	2.432	(0.521)	10030	2.00000	2.213
14 Acetone	43	2.527	2.533	(0.539)	15709	10.0000	11.199

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.584	2.579	(0.551)	8188	2.00000	2.008
	16 Methyl tert butyl ether	73	2.748	2.754	(0.586)	23302	2.00000	1.935
	17 1,1-Dichloroethane	63	3.201	3.201	(0.683)	17128	2.00000	2.083
	18 Acrylonitrile	53	3.280	3.280	(0.700)	2985	2.00000	1.971
	19 Vinyl Acetate	43	3.534	3.535	(0.754)	14813	2.00000	1.948
	20 Cis-1,2-Dichloroethene	96	3.749	3.750	(0.800)	8901	2.00000	2.055
	22 2,2-Dichloropropane	77	3.857	3.846	(0.823)	13441	2.00000	2.100
	23 Bromochloromethane	128	3.936	3.931	(0.840)	4029	2.00000	2.058
	24 Chloroform	83	4.038	4.038	(0.861)	14658	2.00000	2.025
	25 Carbon Tetrachloride	117	4.134	4.123	(0.804)	10900	2.00000	2.064
$	27 Dibromofluoromethane	111	4.208	4.202	(0.897)	228685	50.0000	50.201
	26 1,1,1-Trichloroethane	97	4.202	4.196	(0.896)	13231	2.00000	2.056
	28 1,1-Dichloropropene	75	4.321	4.315	(0.840)	11413	2.00000	2.013
	29 2-Butanone	72	4.372	4.372	(0.932)	4104	10.0000	9.373
	30 Benzene	78	4.547	4.547	(0.884)	32845	2.00000	1.993
*	31 Pentafluorobenzene	168	4.688	4.683	(1.000)	287798	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	274174	50.0000	50.405
	33 1,2-Dichloroethane	62	4.739	4.734	(0.922)	12549	2.00000	1.974
	34 Trichloroethene	95	5.084	5.085	(0.989)	8270	2.00000	1.973
*	35 1,4-Difluorobenzene	114	5.141	5.136	(1.000)	684800	50.0000	
	37 Dibromomethane	93	5.441	5.441	(1.058)	4892	2.00000	2.084
	38 1,2-Dichloropropane	63	5.537	5.531	(1.077)	8938	2.00000	2.012
	39 Bromodichloromethane	83	5.611	5.611	(1.091)	10951	2.00000	1.969
	40 2-Chloroethyl Vinyl Ether	63	6.148	6.142	(1.196)	4502	2.00000	1.759
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.198)	12743	2.00000	1.911
$	42 d8-Toluene	98	6.318	6.318	(1.229)	937087	50.0000	50.125
	43 Toluene	92	6.363	6.357	(1.238)	22442	2.00000	2.047
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	8895	2.00000	2.069
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.307)	15759	10.0000	9.178
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.308)	12035	2.00000	1.923
	47 1,1,2-Trichloroethane	97	6.855	6.855	(1.333)	6750	2.00000	1.975
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	7261	2.00000	1.896
	49 1,3-Dichloropropane	76	7.076	7.076	(0.928)	11601	2.00000	1.903
	50 1,2-Dibromoethane	107	7.172	7.166	(1.395)	6110	2.00000	1.870
	51 2-Hexanone	43	7.432	7.438	(0.975)	27116	10.0000	9.125
*	52 d5-Chlorobenzene	117	7.624	7.625	(1.000)	806853	50.0000	
	53 Chlorobenzene	112	7.641	7.642	(1.002)	22742	2.00000	1.980
	54 Ethyl Benzene	91	7.687	7.692	(1.008)	40231	2.00000	1.976
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	7665	2.00000	1.908
	56 m,p-xylene	106	7.822	7.823	(1.026)	28203	4.00000	3.944
	57 o-Xylene	106	8.184	8.185	(1.073)	13510	2.00000	1.894
	58 Styrene	104	8.230	8.235	(1.079)	23106	2.00000	1.910
	59 Bromoform	173	8.224	8.224	(0.848)	4831	2.00000	1.944
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	35355	2.00000	1.972
$	62 4-Bromofluorobenzene	95	8.694	8.694	(1.140)	448344	50.0000	49.802
	63 Bromobenzene	156	8.773	8.773	(0.904)	8977	2.00000	1.944
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	44797	2.00000	2.039

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
	65 1,1,2,2-Tetrachloroethane	83	8.903	8.903	(0.918)	7865	2.00000	1.937
	66 2-Chloro Toluene	91	8.954	8.954	(0.923)	26906	2.00000	1.990
	67 1,3,5-Trimethyl Benzene	105	9.027	9.033	(0.931)	29580	2.00000	1.937
	68 1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	2577	2.00000	1.986 (TM)
	69 Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	3233	2.00000	2.023
	70 4-Chloro Toluene	91	9.101	9.101	(0.938)	28109	2.00000	1.996
	71 T-Butyl Benzene	119	9.304	9.305	(0.959)	26299	2.00000	1.969
	72 1,2,4-Trimethylbenzene	105	9.372	9.373	(0.966)	29256	2.00000	1.920
	73 S-Butyl Benzene	105	9.469	9.469	(0.976)	39048	2.00000	1.992
	74 4-Isopropyl Toluene	119	9.616	9.616	(0.991)	30664	2.00000	1.910
	75 1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	17774	2.00000	2.018
*	76 d4-1,4-Dichlorobenzene	152	9.700	9.701	(1.000)	446259	50.0000	
	77 1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	18656	2.00000	2.023
	78 N-Butyl Benzene	91	10.000	10.000	(1.031)	28825	2.00000	1.910
$	79 d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.040)	419438	50.0000	51.202
	80 1,2-Dichlorobenzene	146	10.091	10.091	(1.040)	17538	2.00000	2.032
	81 1,2-Dibromo 3-Chloropropane	75	10.849	10.843	(1.118)	1491	2.00000	1.861
	82 Hexachloro 1,3-Butadiene	225	11.522	11.522	(1.188)	7607	2.00000	2.124
	83 1,2,4-Trichlorobenzene	180	11.511	11.511	(1.187)	11660	2.00000	2.033
	84 Naphthalene	128	11.822	11.822	(1.219)	23696	2.00000	1.966
	85 1,2,3-Trichlorobenzene	180	12.008	12.003	(1.238)	11036	2.00000	2.053

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: 0020629.d
Lab Smp Id: IC0629
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Misc Info: 11-

Calibration Date: 29-JUN-2012
Calibration Time: 13:05
Client Smp ID: VSTD2
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	287798	-1.37
35 1,4-Difluorobenze	682850	341425	1365700	684800	0.29
52 d5-Chlorobenzene	802138	401069	1604276	806853	0.59
76 d4-1,4-Dichlorobe	452585	226292	905170	446259	-1.40

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

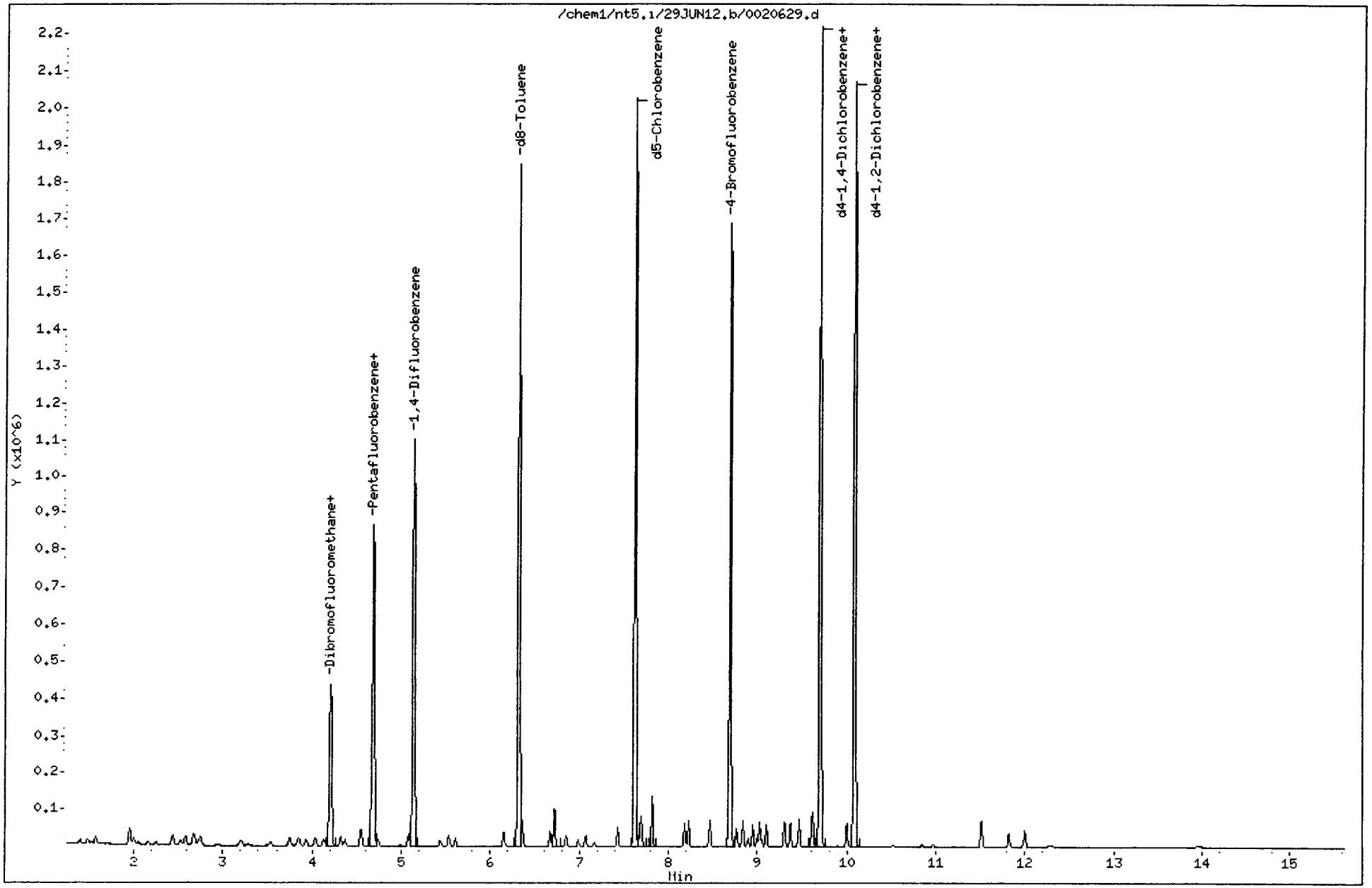
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt5.i/29JUN12.b/0020629.d
Date : 29-JUN-2012 11:57
Client ID: VSTD2
Sample Info: IC0629,5,5,0

Instrument: nt5.i

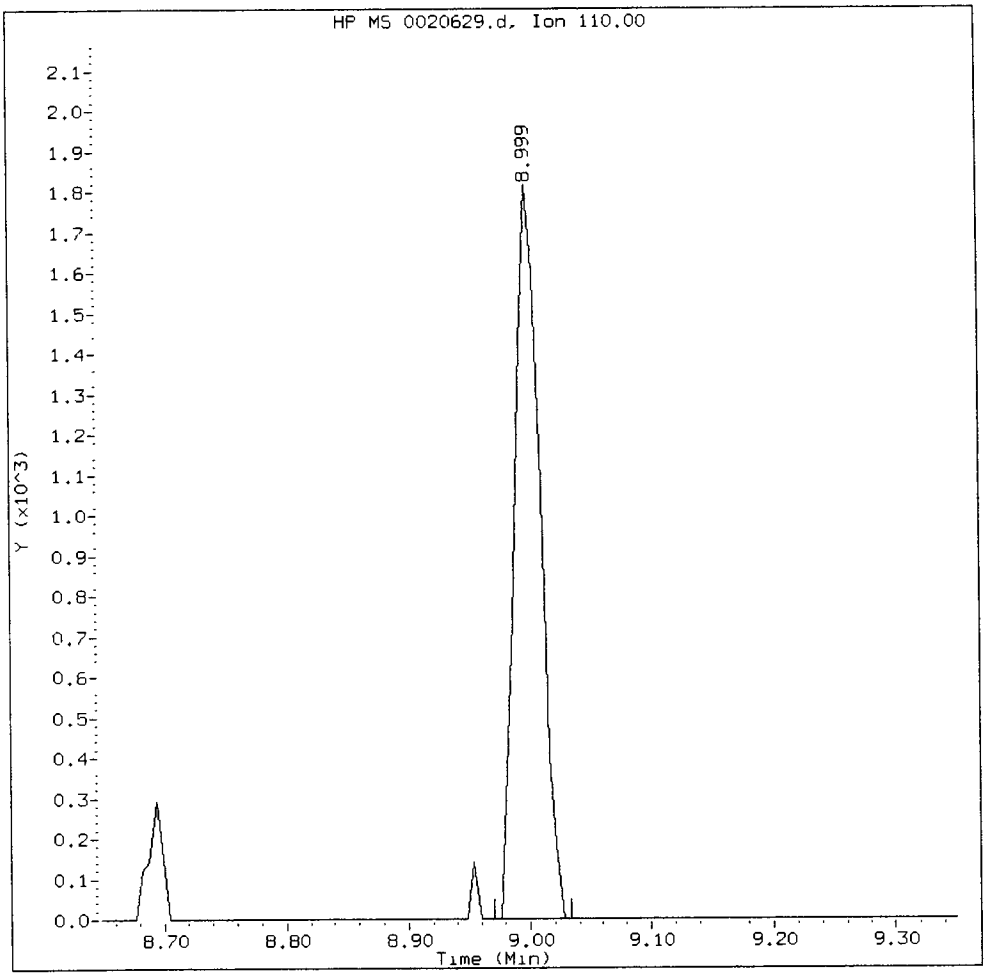
Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



IC0629, /chem1/nt5.i/29JUN12.b/0020629.d

1,2,3-Trichloropropane Amount: 1.99 Area: 2577



MANUAL INTEGRATION for 1,2,3-Trichloropropane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: 7/12/12

CO-ELUTION SUMMARY FOR FILE - 0020629.d

Lab ID: IC0629, Method: VO010412S.m, Instrument: nt5.i, Date: 29-JUN-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/29JUN12.b/0050629.d
Lab Smp Id: IC0629 Client Smp ID: VSTD5
Inj Date : 29-JUN-2012 12:20
Operator : PB Inst ID: nt5.i
Smp Info : IC0629,5,5,0
Misc Info : 11-
Comment :
Method : /chem1/nt5.i/29JUN12.b/VO010412S.m
Meth Date : 02-Jul-2012 13:34 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 12:20 Cal File: 0050629.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.006	1.006	(0.215)	17917	5.00000	4.337
2 Chloromethane	50	1.125	1.125	(0.240)	26472	5.00000	4.602(M)
3 Vinyl Chloride	62	1.181	1.176	(0.252)	25185	5.00000	4.410
4 Bromomethane	94	1.396	1.396	(0.298)	14625	5.00000	4.795
5 Chloroethane	64	1.475	1.475	(0.315)	16307	5.00000	4.590
6 Trichlorofluoromethane	101	1.566	1.566	(0.334)	22808	5.00000	4.567
7 1,1-Dichloroethene	96	1.939	1.939	(0.414)	18061	5.00000	4.665
8 Carbon Disulfide	76	1.939	1.939	(0.414)	64122	5.00000	4.590
9 112Trichloro122Trifluoroethane	101	1.990	1.985	(0.425)	18240	5.00000	4.782
10 Iodomethane	142	2.047	2.047	(0.437)	16354	5.00000	3.814
11 Bromoethane	108	2.149	2.149	(0.459)	13761	5.00000	4.717
12 Acrolein	56	2.250	2.250	(0.481)	18426	25.0000	24.803
13 Methylene Chloride	84	2.431	2.432	(0.519)	22869	5.00000	4.581
14 Acetone	43	2.539	2.533	(0.542)	36554	25.0000	23.658

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.578	2.579	(0.551)	21225	5.00000	4.726
	16 Methyl tert butyl ether	73	2.759	2.754	(0.589)	62562	5.00000	4.716
	17 1,1-Dichloroethane	63	3.201	3.201	(0.683)	41823	5.00000	4.617
	18 Acrylonitrile	53	3.286	3.280	(0.702)	7888	5.00000	4.729
	19 Vinyl Acetate	43	3.534	3.535	(0.755)	38766	5.00000	4.629
	20 Cis-1,2-Dichloroethene	96	3.744	3.750	(0.799)	21928	5.00000	4.597
	22 2,2-Dichloropropane	77	3.846	3.846	(0.821)	33238	5.00000	4.715
	23 Bromochloromethane	128	3.930	3.931	(0.839)	9998	5.00000	4.636
	24 Chloroform	83	4.038	4.038	(0.862)	37169	5.00000	4.662
	25 Carbon Tetrachloride	117	4.128	4.123	(0.803)	26327	5.00000	4.553
$	27 Dibromofluoromethane	111	4.202	4.202	(0.897)	252237	50.0000	50.270
	26 1,1,1-Trichloroethane	97	4.196	4.196	(0.896)	32649	5.00000	4.605
	28 1,1-Dichloropropene	75	4.321	4.315	(0.840)	28662	5.00000	4.616
	29 2-Butanone	72	4.377	4.372	(0.935)	11303	25.0000	23.436
	30 Benzene	78	4.547	4.547	(0.884)	82941	5.00000	4.597
*	31 Pentafluorobenzene	168	4.683	4.683	(1.000)	317005	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	303747	50.0000	50.697
	33 1,2-Dichloroethane	62	4.734	4.734	(0.921)	33030	5.00000	4.744
	34 Trichloroethene	95	5.084	5.085	(0.989)	20754	5.00000	4.521
*	35 1,4-Difluorobenzene	114	5.141	5.136	(1.000)	749838	50.0000	
	37 Dibromomethane	93	5.435	5.441	(1.057)	11841	5.00000	4.607
	38 1,2-Dichloropropane	63	5.537	5.531	(1.077)	22662	5.00000	4.658
	39 Bromodichloromethane	83	5.611	5.611	(1.091)	28235	5.00000	4.636
	40 2-Chloroethyl Vinyl Ether	63	6.142	6.142	(1.195)	11873	5.00000	4.237
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.198)	32726	5.00000	4.481
$	42 d8-Toluene	98	6.318	6.318	(1.229)	1024504	50.0000	50.048
	43 Toluene	92	6.357	6.357	(1.237)	54666	5.00000	4.553
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	21905	5.00000	4.688
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.307)	43337	25.0000	23.051
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.308)	30196	5.00000	4.407
	47 1,1,2-Trichloroethane	97	6.855	6.855	(1.333)	17076	5.00000	4.564
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	19018	5.00000	4.568
	49 1,3-Dichloropropane	76	7.076	7.076	(0.928)	31002	5.00000	4.677
	50 1,2-Dibromoethane	107	7.166	7.166	(1.394)	16463	5.00000	4.602
	51 2-Hexanone	43	7.432	7.438	(0.975)	75149	25.0000	23.260
*	52 d5-Chlorobenzene	117	7.624	7.625	(1.000)	877214	50.0000	
	53 Chlorobenzene	112	7.636	7.642	(1.001)	57836	5.00000	4.631
	54 Ethyl Benzene	91	7.687	7.692	(1.008)	99124	5.00000	4.477
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	19075	5.00000	4.368
	56 m,p-xylene	106	7.822	7.823	(1.026)	73980	10.0000	9.517
	57 o-Xylene	106	8.184	8.185	(1.073)	34700	5.00000	4.474
	58 Styrene	104	8.230	8.235	(1.079)	58289	5.00000	4.432
	59 Bromoform	173	8.224	8.224	(0.848)	12625	5.00000	4.730
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	92038	5.00000	4.779
$	62 4-Bromofluorobenzene	95	8.694	8.694	(1.140)	486864	50.0000	49.743
	63 Bromobenzene	156	8.773	8.773	(0.904)	23530	5.00000	4.744
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	111100	5.00000	4.708

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.897	8.903	(0.917)	20781	5.00000	4.765
66	2-Chloro Toluene	91	8.948	8.954	(0.922)	66973	5.00000	4.611
67	1,3,5-Trimethyl Benzene	105	9.027	9.033	(0.931)	77562	5.00000	4.729
68	1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	6795	5.00000	4.875
69	Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	8335	5.00000	4.855
70	4-Chloro Toluene	91	9.101	9.101	(0.938)	70295	5.00000	4.647
71	T-Butyl Benzene	119	9.305	9.305	(0.959)	66781	5.00000	4.654
72	1,2,4-Trimethylbenzene	105	9.372	9.373	(0.966)	75771	5.00000	4.628
73	S-Butyl Benzene	105	9.469	9.469	(0.976)	100749	5.00000	4.785
74	4-Isopropyl Toluene	119	9.616	9.616	(0.991)	80419	5.00000	4.662
75	1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	44602	5.00000	4.715
* 76	d4-1,4-Dichlorobenzene	152	9.700	9.701	(1.000)	479402	50.0000	
77	1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	47117	5.00000	4.757
78	N-Butyl Benzene	91	10.000	10.000	(1.031)	76150	5.00000	4.697
$ 79	d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.040)	449112	50.0000	51.034
80	1,2-Dichlorobenzene	146	10.091	10.091	(1.040)	43469	5.00000	4.688
81	1,2-Dibromo 3-Chloropropane	75	10.843	10.843	(1.118)	4622	5.00000	5.370
82	Hexachloro 1,3-Butadiene	225	11.522	11.522	(1.188)	18255	5.00000	4.744
83	1,2,4-Trichlorobenzene	180	11.511	11.511	(1.187)	27430	5.00000	4.452
84	Naphthalene	128	11.822	11.822	(1.219)	60491	5.00000	4.671
85	1,2,3-Trichlorobenzene	180	12.003	12.003	(1.237)	27652	5.00000	4.788

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: 0050629.d
Lab Smp Id: IC0629
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Misc Info: 11-

Calibration Date: 29-JUN-2012
Calibration Time: 13:05
Client Smp ID: VSTD5
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	317005	8.64
35 1,4-Difluorobenze	682850	341425	1365700	749838	9.81
52 d5-Chlorobenzene	802138	401069	1604276	877214	9.36
76 d4-1,4-Dichlorobe	452585	226292	905170	479402	5.93

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.68	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

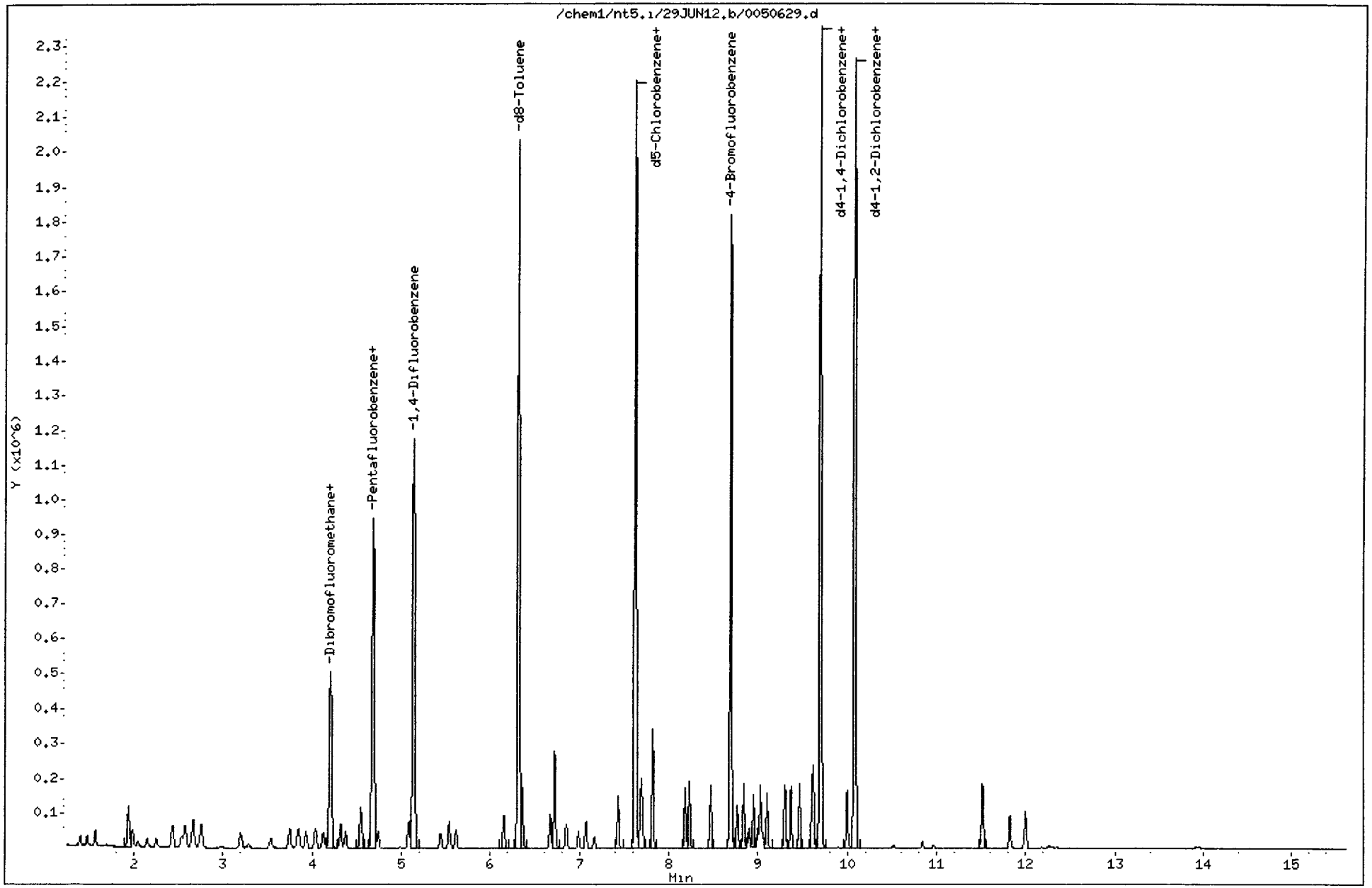
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt5.i/29JUN12.b/0050629.d
Date : 29-JUN-2012 12:20
Client ID: VSTD5
Sample Info: IC0629,5,5,0

Instrument: nt5.i

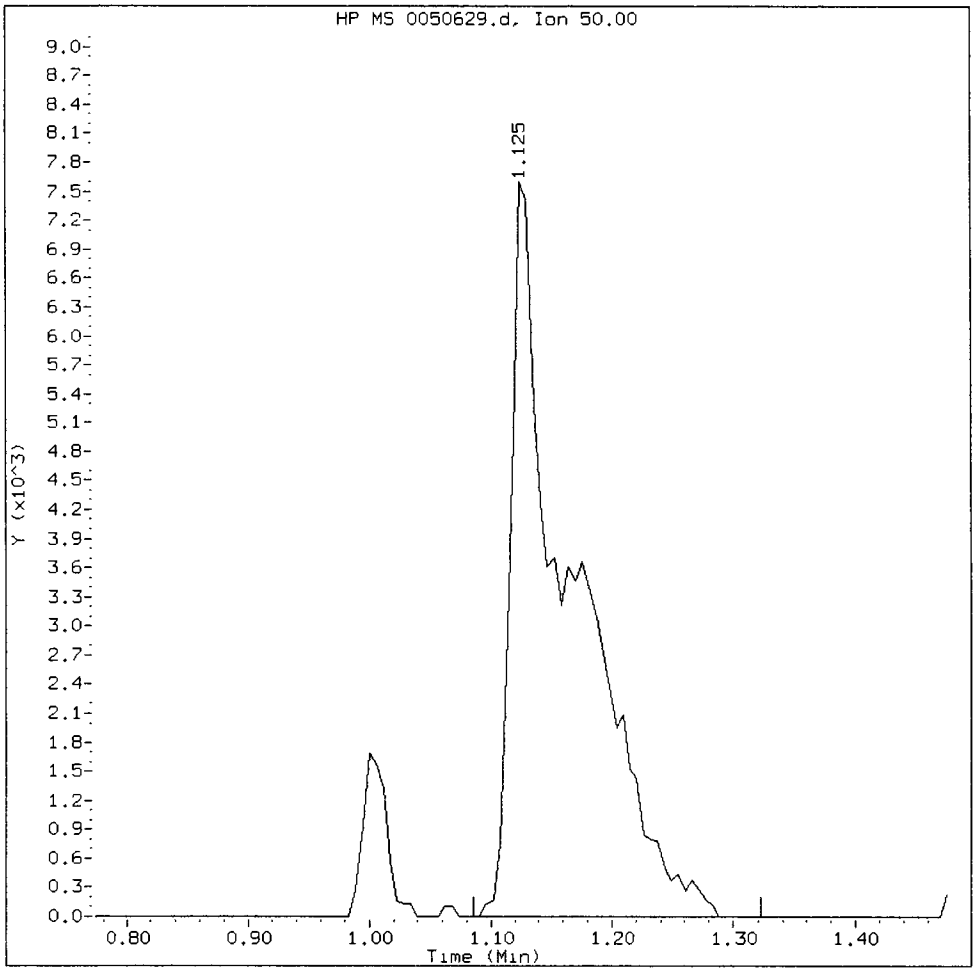
Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



IC0629, /chem1/nt5.i/29JUN12.b/0050629.d

Chloromethane Amount: 4.60 Area: 26472



MANUAL INTEGRATION for Chloromethane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: _____

CO-ELUTION SUMMARY FOR FILE - 0050629.d

Lab ID: IC0629, Method: VO010412S.m, Instrument: nt5.i, Date: 29-JUN-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/29JUN12.b/0100629.d
Lab Smp Id: IC0629 Client Smp ID: VSTD10
Inj Date : 29-JUN-2012 12:42
Operator : PB Inst ID: nt5.i
Smp Info : IC0629,5,5,0
Misc Info : 11-
Comment :
Method : /chem1/nt5.i/29JUN12.b/VO010412S.m
Meth Date : 02-Jul-2012 13:34 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 12:42 Cal File: 0100629.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.006	1.006	(0.214)	38006	10.0000	9.945
2 Chloromethane	50	1.130	1.125	(0.241)	55447	10.0000	10.420(M)
3 Vinyl Chloride	62	1.181	1.176	(0.252)	54536	10.0000	10.323
4 Bromomethane	94	1.396	1.396	(0.298)	28420	10.0000	10.073
5 Chloroethane	64	1.475	1.475	(0.315)	32434	10.0000	9.869
6 Trichlorofluoromethane	101	1.566	1.566	(0.334)	45452	10.0000	9.839
7 1,1-Dichloroethene	96	1.922	1.939	(0.410)	37818	10.0000	10.560
8 Carbon Disulfide	76	1.922	1.939	(0.410)	133272	10.0000	10.313
9 112Trichloro122Trifluoroethane	101	1.967	1.985	(0.420)	37625	10.0000	10.663
10 Iodomethane	142	2.035	2.047	(0.434)	37511	10.0000	9.457
11 Bromoethane	108	2.143	2.149	(0.457)	28487	10.0000	10.557
12 Acrolein	56	2.262	2.250	(0.482)	38106	50.0000	55.452
13 Methylene Chloride	84	2.431	2.432	(0.519)	45717	10.0000	9.900
14 Acetone	43	2.561	2.533	(0.546)	71749	50.0000	50.200

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.573	2.579	(0.549)	42993	10.0000	10.348
	16 Methyl tert butyl ether	73	2.776	2.754	(0.592)	133351	10.0000	10.867
	17 1,1-Dichloroethane	63	3.201	3.201	(0.683)	89804	10.0000	10.716
	18 Acrylonitrile	53	3.297	3.280	(0.703)	16487	10.0000	10.685
	19 Vinyl Acetate	43	3.540	3.535	(0.755)	82799	10.0000	10.687
	20 Cis-1,2-Dichloroethene	96	3.749	3.750	(0.800)	47322	10.0000	10.725
	22 2,2-Dichloropropane	77	3.845	3.846	(0.820)	68788	10.0000	10.550
	23 Bromochloromethane	128	3.936	3.931	(0.840)	21298	10.0000	10.677
	24 Chloroform	83	4.038	4.038	(0.861)	79069	10.0000	10.722
	25 Carbon Tetrachloride	117	4.123	4.123	(0.802)	54643	10.0000	10.209
$	27 Dibromofluoromethane	111	4.208	4.202	(0.897)	232167	50.0000	50.021
	26 1,1,1-Trichloroethane	97	4.196	4.196	(0.895)	68915	10.0000	10.508
	28 1,1-Dichloropropene	75	4.315	4.315	(0.839)	59975	10.0000	10.436
	29 2-Butanone	72	4.389	4.372	(0.936)	23798	50.0000	53.343
	30 Benzene	78	4.547	4.547	(0.884)	174746	10.0000	10.464
*	31 Pentafluorobenzene	168	4.688	4.683	(1.000)	293236	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	279348	50.0000	50.404
	33 1,2-Dichloroethane	62	4.739	4.734	(0.922)	69359	10.0000	10.763
	34 Trichloroethene	95	5.084	5.085	(0.989)	44801	10.0000	10.544
*	35 1,4-Difluorobenzene	114	5.141	5.136	(1.000)	694035	50.0000	
	37 Dibromomethane	93	5.441	5.441	(1.058)	25722	10.0000	10.813
	38 1,2-Dichloropropane	63	5.537	5.531	(1.077)	47426	10.0000	10.533
	39 Bromodichloromethane	83	5.610	5.611	(1.091)	59335	10.0000	10.526
	40 2-Chloroethyl Vinyl Ether	63	6.148	6.142	(1.196)	28622	10.0000	11.036
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.198)	69732	10.0000	10.316
$	42 d8-Toluene	98	6.318	6.318	(1.229)	946495	50.0000	49.954
	43 Toluene	92	6.357	6.357	(1.237)	113519	10.0000	10.214
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	46343	10.0000	10.764
	45 4-Methyl-2-Pentanone	58	6.725	6.719	(1.308)	92760	50.0000	53.307
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.308)	65879	10.0000	10.387
	47 1,1,2-Trichloroethane	97	6.855	6.855	(1.333)	36587	10.0000	10.565
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	39888	10.0000	10.399
	49 1,3-Dichloropropane	76	7.076	7.076	(0.928)	66078	10.0000	10.821
	50 1,2-Dibromoethane	107	7.166	7.166	(1.394)	35270	10.0000	10.653
	51 2-Hexanone	43	7.438	7.438	(0.976)	165189	50.0000	55.496
*	52 d5-Chlorobenzene	117	7.624	7.625	(1.000)	808184	50.0000	
	53 Chlorobenzene	112	7.636	7.642	(1.001)	124526	10.0000	10.823
	54 Ethyl Benzene	91	7.687	7.692	(1.008)	212754	10.0000	10.431
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	41248	10.0000	10.252
	56 m,p-xylene	106	7.822	7.823	(1.026)	159814	20.0000	22.314
	57 o-Xylene	106	8.184	8.185	(1.073)	75406	10.0000	10.553
	58 Styrene	104	8.230	8.235	(1.079)	129005	10.0000	10.647
	59 Bromoform	173	8.224	8.224	(0.848)	26055	10.0000	10.301
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	198344	10.0000	10.869
$	62 4-Bromofluorobenzene	95	8.693	8.694	(1.140)	451375	50.0000	50.056
	63 Bromobenzene	156	8.773	8.773	(0.904)	50459	10.0000	10.736
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	240115	10.0000	10.739

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.903	8.903	(0.918)	45909	10.0000	11.110
66	2-Chloro Toluene	91	8.948	8.954	(0.922)	147730	10.0000	10.734
67	1,3,5-Trimethyl Benzene	105	9.027	9.033	(0.931)	167635	10.0000	10.785
68	1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	14724	10.0000	11.147
69	Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	18356	10.0000	11.283
70	4-Chloro Toluene	91	9.101	9.101	(0.938)	152020	10.0000	10.606
71	T-Butyl Benzene	119	9.304	9.305	(0.959)	144323	10.0000	10.615
72	1,2,4-Trimethylbenzene	105	9.372	9.373	(0.966)	167488	10.0000	10.796
73	S-Butyl Benzene	105	9.468	9.469	(0.976)	215453	10.0000	10.799
74	4-Isopropyl Toluene	119	9.616	9.616	(0.991)	175644	10.0000	10.746
75	1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	95263	10.0000	10.627
* 76	d4-1,4-Dichlorobenzene	152	9.700	9.701	(1.000)	454284	50.0000	
77	1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	98178	10.0000	10.460
78	N-Butyl Benzene	91	10.000	10.000	(1.031)	161882	10.0000	10.537
$ 79	d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.040)	417953	50.0000	50.119
80	1,2-Dichlorobenzene	146	10.091	10.091	(1.040)	93628	10.0000	10.657
81	1,2-Dibromo 3-Chloropropane	75	10.843	10.843	(1.118)	8578	10.0000	10.518
82	Hexachloro 1,3-Butadiene	225	11.522	11.522	(1.188)	38524	10.0000	10.565
83	1,2,4-Trichlorobenzene	180	11.505	11.511	(1.186)	60356	10.0000	10.338
84	Naphthalene	128	11.822	11.822	(1.219)	128187	10.0000	10.446
85	1,2,3-Trichlorobenzene	180	12.003	12.003	(1.237)	57371	10.0000	10.483

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: 0100629.d
Lab Smp Id: IC0629
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Misc Info: 11-

Calibration Date: 29-JUN-2012
Calibration Time: 13:05
Client Smp ID: VSTD10
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	293236	0.49
35 1,4-Difluorobenze	682850	341425	1365700	694035	1.64
52 d5-Chlorobenzene	802138	401069	1604276	808184	0.75
76 d4-1,4-Dichlorobe	452585	226292	905170	454284	0.38

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

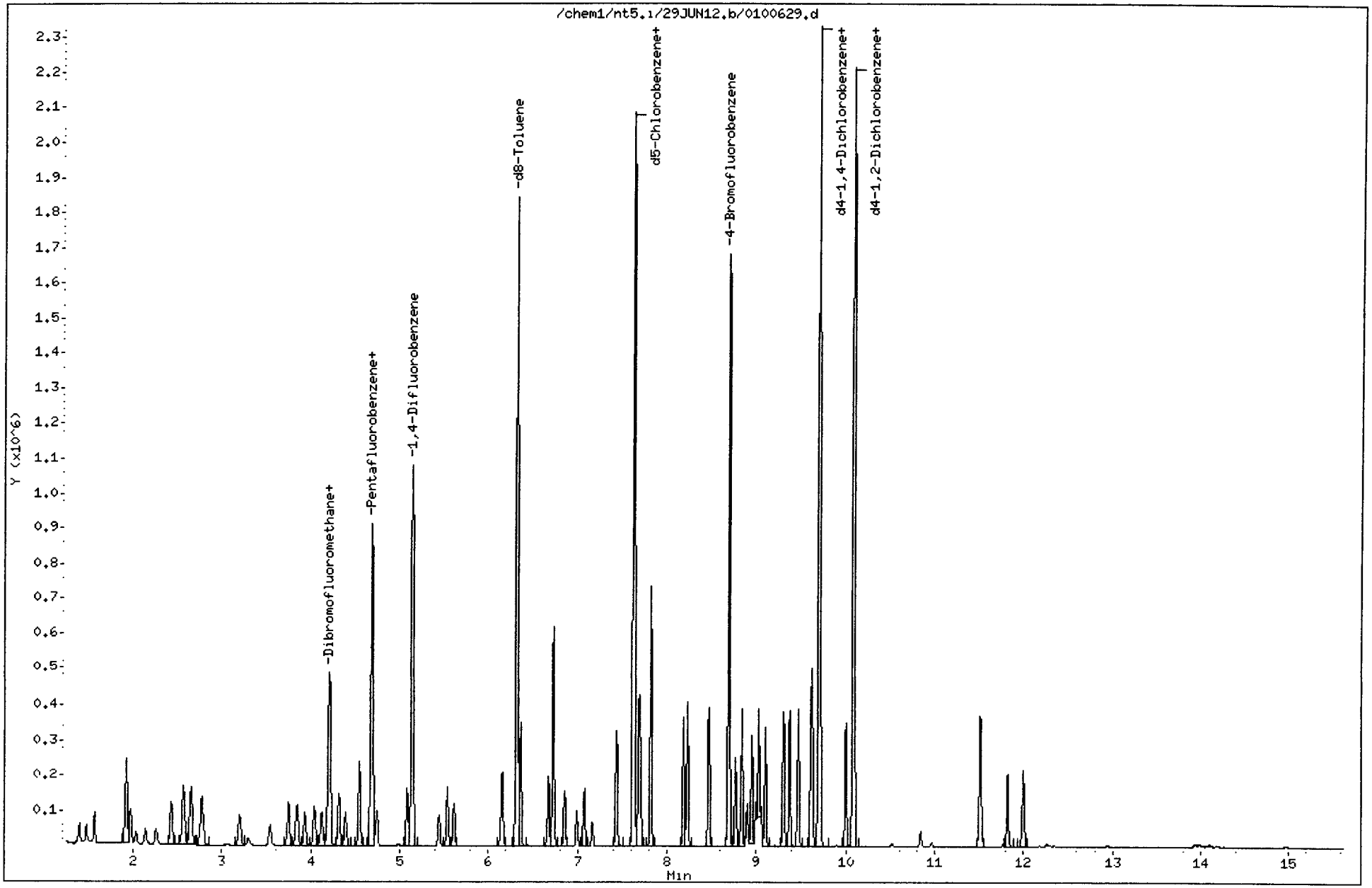
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt5.i/29JUN12.b/0100629.d
Date : 29-JUN-2012 12:42
Client ID: VSTD10
Sample Info: IC0629,5,5,0

Instrument: nt5.i

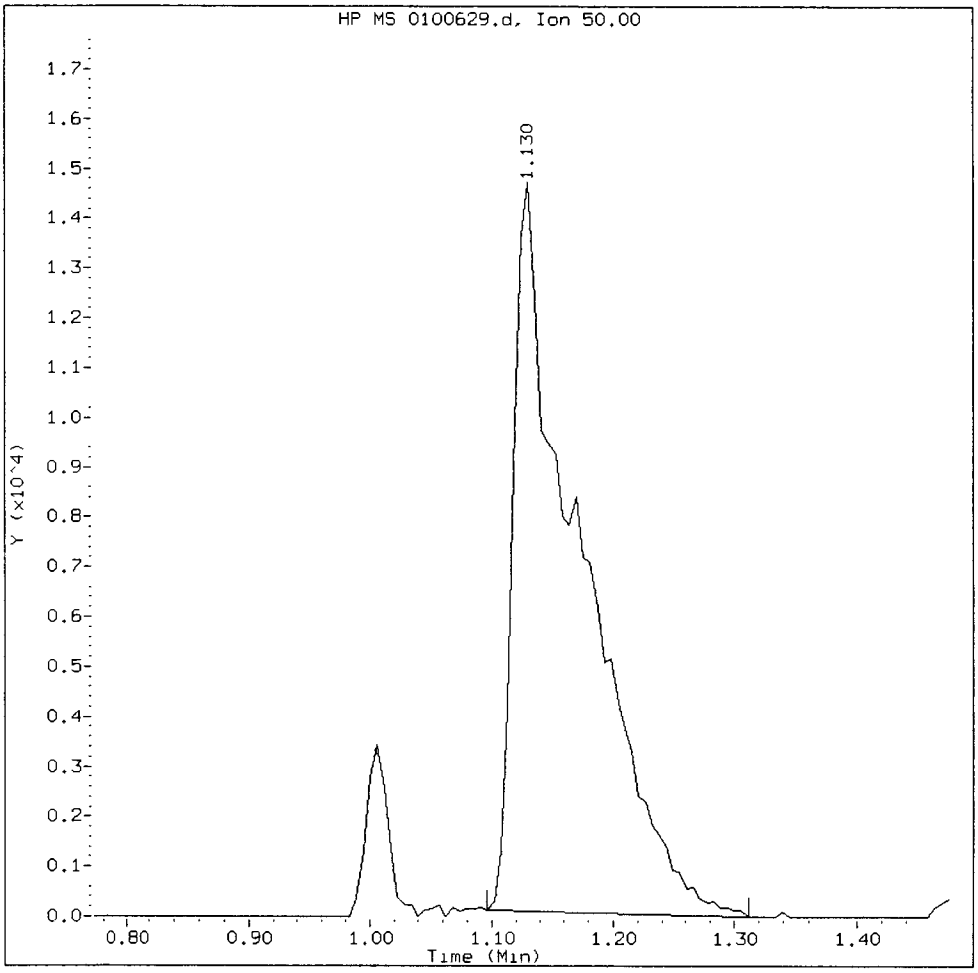
Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



IC0629, /chem1/nt5.i/29JUN12.b/0100629.d

Chloromethane Amount: 10.42 Area: 55447



MANUAL INTEGRATION for Chloromethane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: _____

CO-ELUTION SUMMARY FOR FILE - 0100629.d

Lab ID: IC0629, Method: VO010412S.m, Instrument: nt5.i, Date: 29-JUN-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/29JUN12.b/0500629.d
Lab Smp Id: IC0629 Client Smp ID: VSTD50
Inj Date : 29-JUN-2012 13:05
Operator : PB Inst ID: nt5.i
Smp Info : IC0629,5,5,0
Misc Info : 11-
Comment :
Method : /chem1/nt5.i/29JUN12.b/VO010412S.m
Meth Date : 02-Jul-2012 13:34 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:05 Cal File: 0500629.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.006	1.006	(0.215)	212014	50.0000	55.750
2 Chloromethane	50	1.125	1.125	(0.240)	282714	50.0000	53.391
3 Vinyl Chloride	62	1.176	1.176	(0.251)	285031	50.0000	54.216
4 Bromomethane	94	1.396	1.396	(0.298)	137410	50.0000	48.942
5 Chloroethane	64	1.475	1.475	(0.315)	171301	50.0000	52.377
6 Trichlorofluoromethane	101	1.566	1.566	(0.334)	221526	50.0000	48.187
7 1,1-Dichloroethene	96	1.939	1.939	(0.414)	180925	50.0000	50.768
8 Carbon Disulfide	76	1.939	1.939	(0.414)	649476	50.0000	50.505
9 112Trichloro122Trifluoroethane	101	1.985	1.985	(0.424)	180279	50.0000	51.343
10 Iodomethane	142	2.047	2.047	(0.437)	242916	50.0000	61.544
11 Bromoethane	108	2.149	2.149	(0.459)	137467	50.0000	51.195
12 Acrolein	56	2.250	2.250	(0.481)	171135	250.000	250.26
13 Methylene Chloride	84	2.432	2.432	(0.519)	217211	50.0000	47.266
14 Acetone	43	2.533	2.533	(0.541)	326103	250.000	229.28

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.579	2.579	(0.551)	211005	50.0000	51.037
	16 Methyl tert butyl ether	73	2.754	2.754	(0.588)	646506	50.0000	52.942
	17 1,1-Dichloroethane	63	3.201	3.201	(0.684)	431455	50.0000	51.739
	18 Acrylonitrile	53	3.280	3.280	(0.700)	80828	50.0000	52.639
	19 Vinyl Acetate	43	3.535	3.535	(0.755)	401695	50.0000	52.104
	20 Cis-1,2-Dichloroethene	96	3.750	3.750	(0.801)	225976	50.0000	51.465
	22 2,2-Dichloropropane	77	3.846	3.846	(0.821)	331012	50.0000	51.014
	23 Bromochloromethane	128	3.931	3.931	(0.839)	102707	50.0000	51.739
	24 Chloroform	83	4.038	4.038	(0.862)	379946	50.0000	51.776
	25 Carbon Tetrachloride	117	4.123	4.123	(0.803)	277497	50.0000	52.696
$	27 Dibromofluoromethane	111	4.202	4.202	(0.897)	231223	50.0000	50.062
	26 1,1,1-Trichloroethane	97	4.196	4.196	(0.896)	340140	50.0000	52.120
	28 1,1-Dichloropropene	75	4.315	4.315	(0.840)	294102	50.0000	52.013
	29 2-Butanone	72	4.372	4.372	(0.934)	117057	250.000	263.67
	30 Benzene	78	4.547	4.547	(0.885)	867044	50.0000	52.771
*	31 Pentafluorobenzene	168	4.683	4.683	(1.000)	291805	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	277359	50.0000	50.290
	33 1,2-Dichloroethane	62	4.734	4.734	(0.922)	328740	50.0000	51.850
	34 Trichloroethene	95	5.085	5.085	(0.990)	216106	50.0000	51.693
*	35 1,4-Difluorobenzene	114	5.136	5.136	(1.000)	682850	50.0000	
	37 Dibromomethane	93	5.441	5.441	(1.059)	122940	50.0000	52.529
	38 1,2-Dichloropropane	63	5.531	5.531	(1.077)	230281	50.0000	51.981
	39 Bromodichloromethane	83	5.611	5.611	(1.093)	293411	50.0000	52.903
	40 2-Chloroethyl Vinyl Ether	63	6.142	6.142	(1.196)	144507	50.0000	56.634
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.199)	362921	50.0000	54.569
$	42 d8-Toluene	98	6.318	6.318	(1.230)	934693	50.0000	50.140
	43 Toluene	92	6.357	6.357	(1.238)	561936	50.0000	51.391
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	224052	50.0000	52.434
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.308)	468297	250.000	273.53
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.310)	340026	50.0000	54.489
	47 1,1,2-Trichloroethane	97	6.855	6.855	(1.335)	178374	50.0000	52.350
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	205657	50.0000	54.019
	49 1,3-Dichloropropane	76	7.076	7.076	(0.928)	325920	50.0000	53.776
	50 1,2-Dibromoethane	107	7.166	7.166	(1.395)	173419	50.0000	53.238
	51 2-Hexanone	43	7.438	7.438	(0.976)	813526	250.000	275.37
*	52 d5-Chlorobenzene	117	7.625	7.625	(1.000)	802138	50.0000	
	53 Chlorobenzene	112	7.642	7.642	(1.002)	606911	50.0000	53.146
	54 Ethyl Benzene	91	7.692	7.692	(1.009)	1075264	50.0000	53.116
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	214142	50.0000	53.626
	56 m,p-xylene	106	7.823	7.823	(1.026)	809110	100.000	113.82
	57 o-Xylene	106	8.185	8.185	(1.073)	387748	50.0000	54.673
	58 Styrene	104	8.235	8.235	(1.080)	660480	50.0000	54.922
	59 Bromoform	173	8.224	8.224	(0.848)	139255	50.0000	55.260
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	1009306	50.0000	55.514
$	62 4-Bromofluorobenzene	95	8.694	8.694	(1.140)	450621	50.0000	50.349
	63 Bromobenzene	156	8.773	8.773	(0.904)	249028	50.0000	53.184
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	1211938	50.0000	54.405

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.903	8.903	(0.918)	220306	50.0000	53.513
66	2-Chloro Toluene	91	8.954	8.954	(0.923)	740567	50.0000	54.011
67	1,3,5-Trimethyl Benzene	105	9.033	9.033	(0.931)	846380	50.0000	54.656
68	1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	71887	50.0000	54.626
69	Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	91156	50.0000	56.242
70	4-Chloro Toluene	91	9.101	9.101	(0.938)	773995	50.0000	54.202
71	T-Butyl Benzene	119	9.305	9.305	(0.959)	751748	50.0000	55.497
72	1,2,4-Trimethylbenzene	105	9.373	9.373	(0.966)	856878	50.0000	55.438
73	S-Butyl Benzene	105	9.469	9.469	(0.976)	1104396	50.0000	55.563
74	4-Isopropyl Toluene	119	9.616	9.616	(0.991)	916423	50.0000	56.279
75	1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	478523	50.0000	53.582
* 76	d4-1,4-Dichlorobenzene	152	9.701	9.701	(1.000)	452585	50.0000	
77	1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	485772	50.0000	51.949
78	N-Butyl Benzene	91	10.000	10.000	(1.031)	837633	50.0000	54.727
$ 79	d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.040)	421713	50.0000	50.760
80	1,2-Dichlorobenzene	146	10.091	10.091	(1.040)	462417	50.0000	52.831
81	1,2-Dibromo 3-Chloropropane	75	10.843	10.843	(1.118)	45288	50.0000	55.737
82	Hexachloro 1,3-Butadiene	225	11.522	11.522	(1.188)	192860	50.0000	53.090
83	1,2,4-Trichlorobenzene	180	11.511	11.511	(1.187)	311932	50.0000	53.628
84	Naphthalene	128	11.822	11.822	(1.219)	678320	50.0000	55.483
85	1,2,3-Trichlorobenzene	180	12.003	12.003	(1.237)	295503	50.0000	54.199

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: 0500629.d
Lab Smp Id: IC0629
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Misc Info: 11-

Calibration Date: 29-JUN-2012
Calibration Time: 13:05
Client Smp ID: VSTD50
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	291805	0.00
35 1,4-Difluorobenze	682850	341425	1365700	682850	0.00
52 d5-Chlorobenzene	802138	401069	1604276	802138	0.00
76 d4-1,4-Dichlorobe	452585	226292	905170	452585	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.68	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

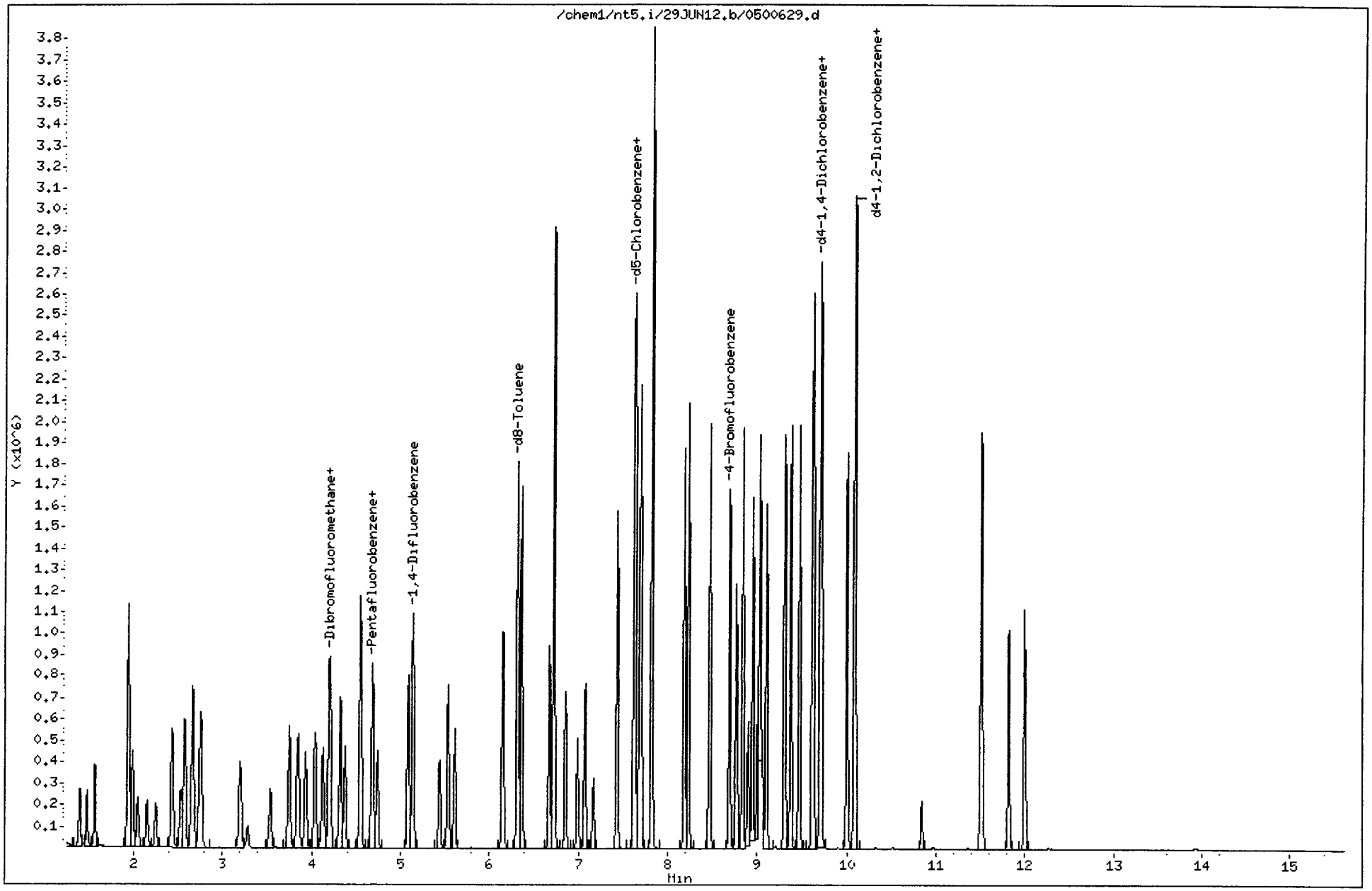
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt5.i/29JUN12.b/0500629.d
Date : 29-JUN-2012 13:05
Client ID: VSTD50
Sample Info: IC0629,5,5,0

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - 0500629.d

Lab ID: IC0629, Method: VO010412S.m, Instrument: nt5.i, Date: 29-JUN-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/29JUN12.b/1000629.d
Lab Smp Id: IC0629 Client Smp ID: VSTD100
Inj Date : 29-JUN-2012 13:28
Operator : PB Inst ID: nt5.i
Smp Info : IC0629,5,5,0
Misc Info : 11-
Comment :
Method : /chem1/nt5.i/29JUN12.b/VO010412S.m
Meth Date : 02-Jul-2012 13:34 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:28 Cal File: 1000629.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.006	1.006	(0.214)	439228	100.000	109.47
2 Chloromethane	50	1.130	1.125	(0.241)	587684	100.000	105.19(M)
3 Vinyl Chloride	62	1.181	1.176	(0.252)	598603	100.000	107.92
4 Bromomethane	94	1.396	1.396	(0.298)	285345	100.000	96.331
5 Chloroethane	64	1.481	1.475	(0.316)	343768	100.000	99.627
6 Trichlorofluoromethane	101	1.566	1.566	(0.334)	456083	100.000	94.032
7 1,1-Dichloroethene	96	1.928	1.939	(0.411)	389861	100.000	103.69
8 Carbon Disulfide	76	1.922	1.939	(0.410)	1397898	100.000	103.03
9 112Trichloro122Trifluoroethane	101	1.973	1.985	(0.421)	387366	100.000	104.57
10 Iodomethane	142	2.035	2.047	(0.434)	525877	100.000	126.28
11 Bromoethane	108	2.143	2.149	(0.457)	298016	100.000	105.20
12 Acrolein	56	2.262	2.250	(0.482)	367437	500.000	509.29
13 Methylene Chloride	84	2.431	2.432	(0.519)	465117	100.000	95.931
14 Acetone	43	2.561	2.533	(0.546)	695019	500.000	463.17

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.573	2.579	(0.549)	454848	100.000	104.28
	16 Methyl tert butyl ether	73	2.776	2.754	(0.592)	1398472	100.000	108.55
	17 1,1-Dichloroethane	63	3.201	3.201	(0.683)	918632	100.000	104.41
	18 Acrylonitrile	53	3.297	3.280	(0.703)	171190	100.000	105.67
	19 Vinyl Acetate	43	3.546	3.535	(0.756)	881440	100.000	108.37
	20 Cis-1,2-Dichloroethene	96	3.749	3.750	(0.800)	485199	100.000	104.74
	22 2,2-Dichloropropane	77	3.845	3.846	(0.820)	707942	100.000	103.41
	23 Bromochloromethane	128	3.936	3.931	(0.840)	219196	100.000	104.66
	24 Chloroform	83	4.043	4.038	(0.862)	818975	100.000	105.78
	25 Carbon Tetrachloride	117	4.123	4.123	(0.802)	604856	100.000	107.60
$	27 Dibromofluoromethane	111	4.208	4.202	(0.897)	244275	50.0000	50.128
	26 1,1,1-Trichloroethane	97	4.196	4.196	(0.895)	728962	100.000	105.87
	28 1,1-Dichloropropene	75	4.315	4.315	(0.839)	639246	100.000	105.91
	29 2-Butanone	72	4.389	4.372	(0.936)	252407	500.000	538.88
	30 Benzene	78	4.547	4.547	(0.884)	1870683	100.000	106.66
*	31 Pentafluorobenzene	168	4.688	4.683	(1.000)	307867	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	288117	50.0000	49.515
	33 1,2-Dichloroethane	62	4.739	4.734	(0.922)	710393	100.000	104.97
	34 Trichloroethene	95	5.084	5.085	(0.989)	469601	100.000	105.23
*	35 1,4-Difluorobenzene	114	5.141	5.136	(1.000)	728904	50.0000	
	37 Dibromomethane	93	5.441	5.441	(1.058)	269099	100.000	107.71
	38 1,2-Dichloropropane	63	5.537	5.531	(1.077)	506656	100.000	107.14
	39 Bromodichloromethane	83	5.610	5.611	(1.091)	639870	100.000	108.08
	40 2-Chloroethyl Vinyl Ether	63	6.148	6.142	(1.196)	318524	100.000	116.95
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.198)	794668	100.000	111.94
$	42 d8-Toluene	98	6.318	6.318	(1.229)	993371	50.0000	49.920
	43 Toluene	92	6.363	6.357	(1.238)	1228324	100.000	105.24
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	481291	100.000	103.44
	45 4-Methyl-2-Pentanone	58	6.725	6.719	(1.308)	1042804	500.000	570.61
	46 Trans 1,3-Dichloropropene	75	6.731	6.725	(1.309)	759911	100.000	114.08
	47 1,1,2-Trichloroethane	97	6.855	6.855	(1.333)	389500	100.000	107.09
	48 Chlorodibromomethane	129	6.996	6.991	(0.917)	453331	100.000	109.36
	49 1,3-Dichloropropane	76	7.076	7.076	(0.927)	704752	100.000	106.79
	50 1,2-Dibromoethane	107	7.172	7.166	(1.395)	377358	100.000	108.53
	51 2-Hexanone	43	7.438	7.438	(0.975)	1752505	500.000	544.80
*	52 d5-Chlorobenzene	117	7.630	7.625	(1.000)	873397	50.0000	
	53 Chlorobenzene	112	7.641	7.642	(1.001)	1315444	100.000	105.79
	54 Ethyl Benzene	91	7.692	7.692	(1.008)	2390924	100.000	108.47
	55 1,1,1,2-Tetrachloroethane	131	7.709	7.704	(1.010)	505593	100.000	116.28
	56 m,p-xylene	106	7.828	7.823	(1.026)	1782393	200.000	230.28
	57 o-Xylene	106	8.190	8.185	(1.073)	857126	100.000	111.00
	58 Styrene	104	8.235	8.235	(1.079)	1565650	100.000	119.57
	59 Bromoform	173	8.230	8.224	(0.848)	324898	100.000	111.78
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	2204150	100.000	105.11
$	62 4-Bromofluorobenzene	95	8.693	8.694	(1.139)	493236	50.0000	50.614
	63 Bromobenzene	156	8.773	8.773	(0.904)	544209	100.000	100.77
	64 N-Propyl Benzene	91	8.846	8.841	(0.911)	2619730	100.000	101.96

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.903	8.903	(0.917)	490420	100.000	103.28
66	2-Chloro Toluene	91	8.954	8.954	(0.922)	1631813	100.000	103.18
67	1,3,5-Trimethyl Benzene	105	9.033	9.033	(0.931)	1886182	100.000	105.61
68	1,2,3-Trichloropropane	110	9.005	8.999	(0.928)	159625	100.000	105.17
69	Trans-1,4-Dichloro 2-Butene	53	9.061	9.056	(0.934)	201258	100.000	107.66
70	4-Chloro Toluene	91	9.106	9.101	(0.938)	1725408	100.000	104.76
71	T-Butyl Benzene	119	9.310	9.305	(0.959)	1645980	100.000	105.35
72	1,2,4-Trimethylbenzene	105	9.372	9.373	(0.966)	1905765	100.000	106.90
73	S-Butyl Benzene	105	9.474	9.469	(0.976)	2418969	100.000	105.52
74	4-Isopropyl Toluene	119	9.616	9.616	(0.991)	2014379	100.000	107.26
75	1,3-Dichlorobenzene	146	9.633	9.627	(0.992)	1084690	100.000	105.30
* 76	d4-1,4-Dichlorobenzene	152	9.706	9.701	(1.000)	522000	50.0000	
77	1,4-Dichlorobenzene	146	9.717	9.712	(1.001)	1088182	100.000	100.90
78	N-Butyl Benzene	91	10.000	10.000	(1.030)	1836498	100.000	104.03
$ 79	d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.039)	475418	50.0000	49.614
80	1,2-Dichlorobenzene	146	10.096	10.091	(1.040)	1011511	100.000	100.20
81	1,2-Dibromo 3-Chloropropane	75	10.843	10.843	(1.117)	98739	100.000	105.36
82	Hexachloro 1,3-Butadiene	225	11.522	11.522	(1.187)	419348	100.000	100.09
83	1,2,4-Trichlorobenzene	180	11.511	11.511	(1.186)	685621	100.000	102.20
84	Naphthalene	128	11.822	11.822	(1.218)	1477628	100.000	104.79
85	1,2,3-Trichlorobenzene	180	12.003	12.003	(1.237)	637519	100.000	101.38

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: 1000629.d
Lab Smp Id: IC0629
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Misc Info: 11-

Calibration Date: 29-JUN-2012
Calibration Time: 13:05
Client Smp ID: VSTD100
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	307867	5.50
35 1,4-Difluorobenze	682850	341425	1365700	728904	6.74
52 d5-Chlorobenzene	802138	401069	1604276	873397	8.88
76 d4-1,4-Dichlorobe	452585	226292	905170	522000	15.34

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.63	0.07
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.71	0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

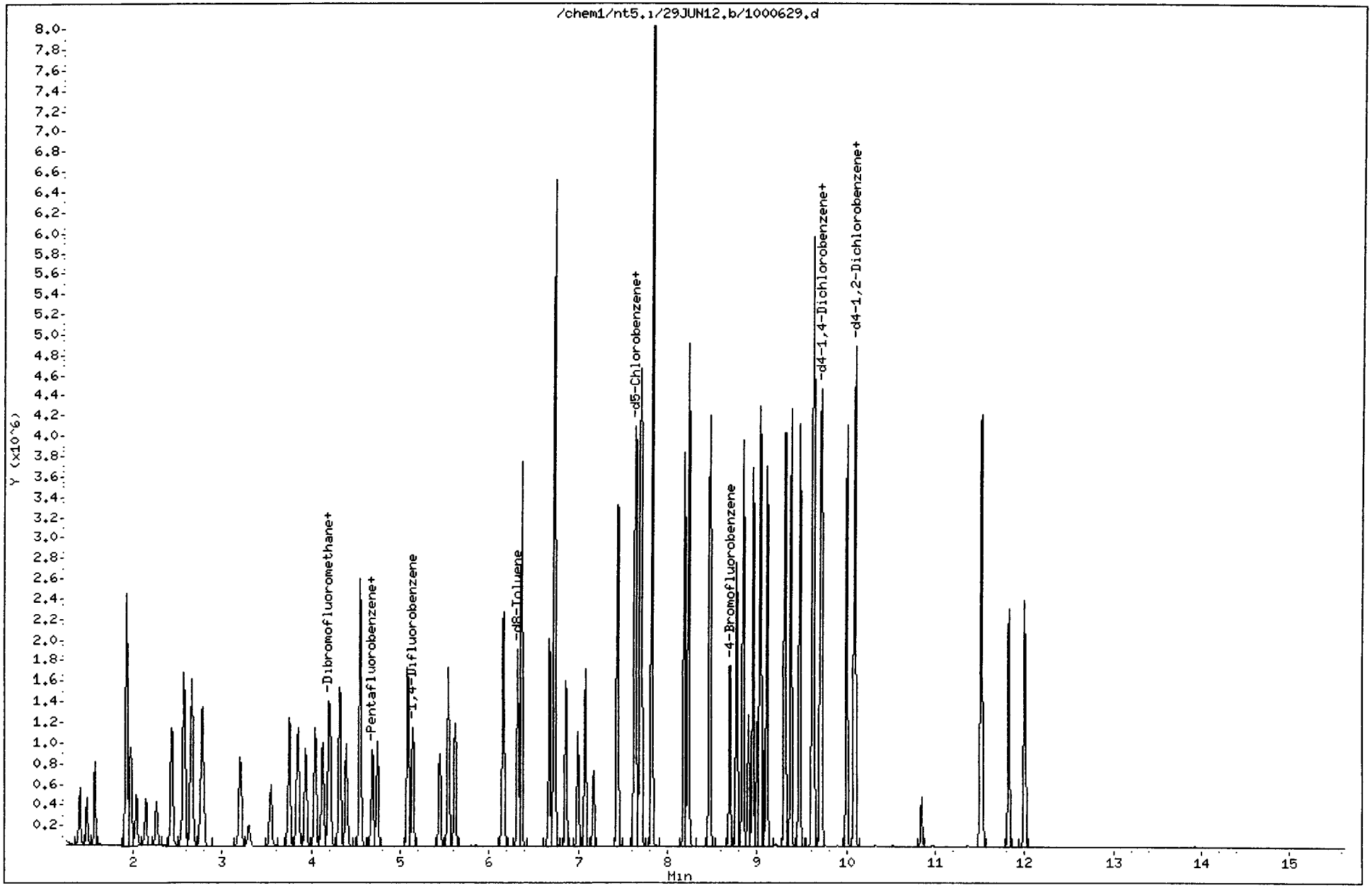
Data File: /chem1/nt5.i/29JUN12.b/1000629.d
Date : 29-JUN-2012 13:28
Client ID: VSTD100
Sample Info: IC0629,5,5,0

Instrument: nt5.i

Operator: PB

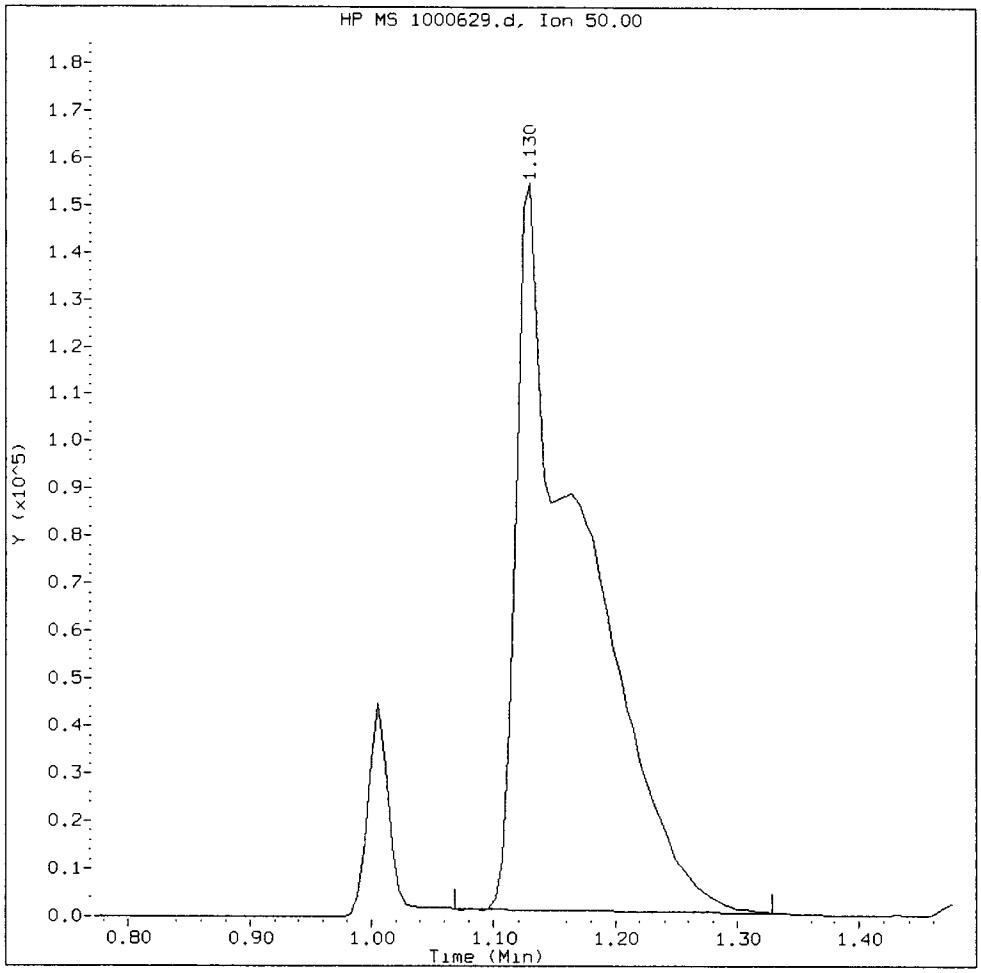
Column phase: RTXVMS
Column diameter: 0.18

VB51 : 00225



IC0629, /chem1/nt5.i/29JUN12.b/1000629.d

Chloromethane Amount: 105.19 Area: 587684



MANUAL INTEGRATION for Chloromethane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: _____

CO-ELUTION SUMMARY FOR FILE - 1000629.d

Lab ID: IC0629, Method: VO010412S.m, Instrument: nt5.i, Date: 29-JUN-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/29JUN12.b/1500629.d
Lab Smp Id: IC0629 Client Smp ID: VSTD150
Inj Date : 29-JUN-2012 13:51
Operator : PB Inst ID: nt5.i
Smp Info : IC0629,5,5,0
Misc Info : 11-
Comment :
Method : /chem1/nt5.i/29JUN12.b/VO010412S.m
Meth Date : 02-Jul-2012 13:34 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.000	1.006	(0.214)	646165	150.000	141.73
2 Chloromethane	50	1.125	1.125	(0.240)	900137	150.000	141.80
3 Vinyl Chloride	62	1.175	1.176	(0.251)	888432	150.000	140.96
4 Bromomethane	94	1.390	1.396	(0.297)	431887	150.000	128.31
5 Chloroethane	64	1.470	1.475	(0.314)	500689	150.000	127.70
6 Trichlorofluoromethane	101	1.560	1.566	(0.333)	663898	150.000	120.46
7 1,1-Dichloroethene	96	1.911	1.939	(0.408)	275787	150.000	64.551
8 Carbon Disulfide	76	1.905	1.939	(0.407)	875737	150.000	56.804
9 112Trichloro122Trifluoroethane	101	1.950	1.985	(0.417)	524230	150.000	124.54
10 Iodomethane	142	2.018	2.047	(0.431)	781084	150.000	165.07
11 Bromoethane	108	2.126	2.149	(0.454)	445779	150.000	138.48
12 Acrolein	56	2.262	2.250	(0.483)	582976	750.000	711.11
13 Methylene Chloride	84	2.426	2.432	(0.518)	695712	150.000	126.28
14 Acetone	43	2.578	2.533	(0.551)	1055310	750.000	618.91

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.561	2.579	(0.547)	686086	150.000	138.42
	16 Methyl tert butyl ether	73	2.788	2.754	(0.595)	2139573	150.000	146.15
	17 1,1-Dichloroethane	63	3.189	3.201	(0.681)	1387118	150.000	138.75
	18 Acrylonitrile	53	3.308	3.280	(0.706)	267255	150.000	145.18
	19 Vinyl Acetate	43	3.546	3.535	(0.757)	1351936	150.000	146.27
	20 Cis-1,2-Dichloroethene	96	3.749	3.750	(0.801)	737957	150.000	140.19
	22 2,2-Dichloropropane	77	3.840	3.846	(0.820)	1064762	150.000	136.88
	23 Bromochloromethane	128	3.930	3.931	(0.839)	333603	150.000	140.18
	24 Chloroform	83	4.044	4.038	(0.863)	1233098	150.000	140.17
	25 Carbon Tetrachloride	117	4.117	4.123	(0.802)	908966	150.000	142.91
$	27 Dibromofluoromethane	111	4.208	4.202	(0.899)	274984	50.0000	49.661
	26 1,1,1-Trichloroethane	97	4.191	4.196	(0.895)	1102547	150.000	140.92
	28 1,1-Dichloropropene	75	4.309	4.315	(0.839)	970711	150.000	142.13
	29 2-Butanone	72	4.400	4.372	(0.940)	395034	750.000	742.21
	30 Benzene	78	4.541	4.547	(0.884)	2837676	150.000	142.99
*	31 Pentafluorobenzene	168	4.683	4.683	(1.000)	349830	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	329499	50.0000	49.834
	33 1,2-Dichloroethane	62	4.739	4.734	(0.923)	1084216	150.000	141.58
	34 Trichloroethene	95	5.084	5.085	(0.990)	717003	150.000	142.00
*	35 1,4-Difluorobenzene	114	5.135	5.136	(1.000)	824770	50.0000	
	37 Dibromomethane	93	5.441	5.441	(1.059)	411072	150.000	145.42
	38 1,2-Dichloropropane	63	5.537	5.531	(1.078)	775006	150.000	144.84
	39 Bromodichloromethane	83	5.616	5.611	(1.094)	974975	150.000	145.54
	40 2-Chloroethyl Vinyl Ether	63	6.148	6.142	(1.197)	495658	150.000	160.83
	41 Cis 1,3-dichloropropene	75	6.165	6.159	(1.200)	1215362	150.000	151.30
$	42 d8-Toluene	98	6.318	6.318	(1.230)	1131134	50.0000	50.236
	43 Toluene	92	6.363	6.357	(1.239)	1894572	150.000	143.45
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	721250	150.000	135.81
	45 4-Methyl-2-Pentanone	58	6.736	6.719	(1.312)	1673398	750.000	809.23
	46 Trans 1,3-Dichloropropene	75	6.731	6.725	(1.311)	1167475	150.000	154.90
	47 1,1,2-Trichloroethane	97	6.861	6.855	(1.336)	601620	150.000	146.18
	48 Chlorodibromomethane	129	6.996	6.991	(0.917)	693250	150.000	146.51
	49 1,3-Dichloropropane	76	7.081	7.076	(0.928)	1090637	150.000	144.79
	50 1,2-Dibromoethane	107	7.172	7.166	(1.397)	578810	150.000	147.11
	51 2-Hexanone	43	7.443	7.438	(0.976)	2710607	750.000	738.21
*	52 d5-Chlorobenzene	117	7.630	7.625	(1.000)	996961	50.0000	
	53 Chlorobenzene	112	7.641	7.642	(1.001)	2008374	150.000	141.50
	54 Ethyl Benzene	91	7.692	7.692	(1.008)	3585896	150.000	142.52
	55 1,1,1,2-Tetrachloroethane	131	7.709	7.704	(1.010)	735194	150.000	148.13
	56 m,p-xylene	106	7.822	7.823	(1.025)	1841249	300.000	208.40
	57 o-Xylene	106	8.190	8.185	(1.073)	1339954	150.000	152.01
	58 Styrene	104	8.235	8.235	(1.079)	1931715	150.000	129.24
	59 Bromoform	173	8.230	8.224	(0.848)	484755	150.000	135.32
	60 Isopropyl Benzene	105	8.479	8.473	(0.874)	3368771	150.000	130.34
$	62 4-Bromofluorobenzene	95	8.699	8.694	(1.140)	560792	50.0000	50.414
	63 Bromobenzene	156	8.773	8.773	(0.904)	844052	150.000	126.80
	64 N-Propyl Benzene	91	8.846	8.841	(0.911)	3949773	150.000	124.73

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.903	8.903	(0.917)	773659	150.000	132.19
66	2-Chloro Toluene	91	8.954	8.954	(0.922)	2532858	150.000	129.94
67	1,3,5-Trimethyl Benzene	105	9.039	9.033	(0.931)	2924389	150.000	132.84
68	1,2,3-Trichloropropane	110	9.005	8.999	(0.928)	252107	150.000	134.76
69	Trans-1,4-Dichloro 2-Butene	53	9.061	9.056	(0.934)	284494	150.000	123.47
70	4-Chloro Toluene	91	9.106	9.101	(0.938)	2578271	150.000	127.01
71	T-Butyl Benzene	119	9.310	9.305	(0.959)	2551726	150.000	132.51
72	1,2,4-Trimethylbenzene	105	9.378	9.373	(0.966)	2914735	150.000	132.65
73	S-Butyl Benzene	105	9.474	9.469	(0.976)	3581250	150.000	126.74
74	4-Isopropyl Toluene	119	9.621	9.616	(0.991)	3075745	150.000	132.87
75	1,3-Dichlorobenzene	146	9.633	9.627	(0.992)	1587066	150.000	125.01
* 76	d4-1,4-Dichlorobenzene	152	9.706	9.701	(1.000)	643395	50.0000	
77	1,4-Dichlorobenzene	146	9.717	9.712	(1.001)	1647184	150.000	123.91
78	N-Butyl Benzene	91	10.000	10.000	(1.030)	2803553	150.000	128.85
$ 79	d4-1,2-Dichlorobenzene	152	10.091	10.085	(1.040)	547085	50.0000	46.321
80	1,2-Dichlorobenzene	146	10.096	10.091	(1.040)	1599804	150.000	128.57
81	1,2-Dibromo 3-Chloropropane	75	10.843	10.843	(1.117)	145900	150.000	126.31
82	Hexachloro 1,3-Butadiene	225	11.522	11.522	(1.187)	623136	150.000	120.66
83	1,2,4-Trichlorobenzene	180	11.511	11.511	(1.186)	995871	150.000	120.44
84	Naphthalene	128	11.822	11.822	(1.218)	2178546	150.000	125.35
85	1,2,3-Trichlorobenzene	180	12.003	12.003	(1.237)	926610	150.000	119.55

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: 1500629.d
Lab Smp Id: IC0629
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Misc Info: 11-

Calibration Date: 29-JUN-2012
Calibration Time: 13:05
Client Smp ID: VSTD150
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	349830	19.88
35 1,4-Difluorobenze	682850	341425	1365700	824770	20.78
52 d5-Chlorobenzene	802138	401069	1604276	996961	24.29
76 d4-1,4-Dichlorobe	452585	226292	905170	643395	42.16

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.68	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.63	0.07
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.71	0.06

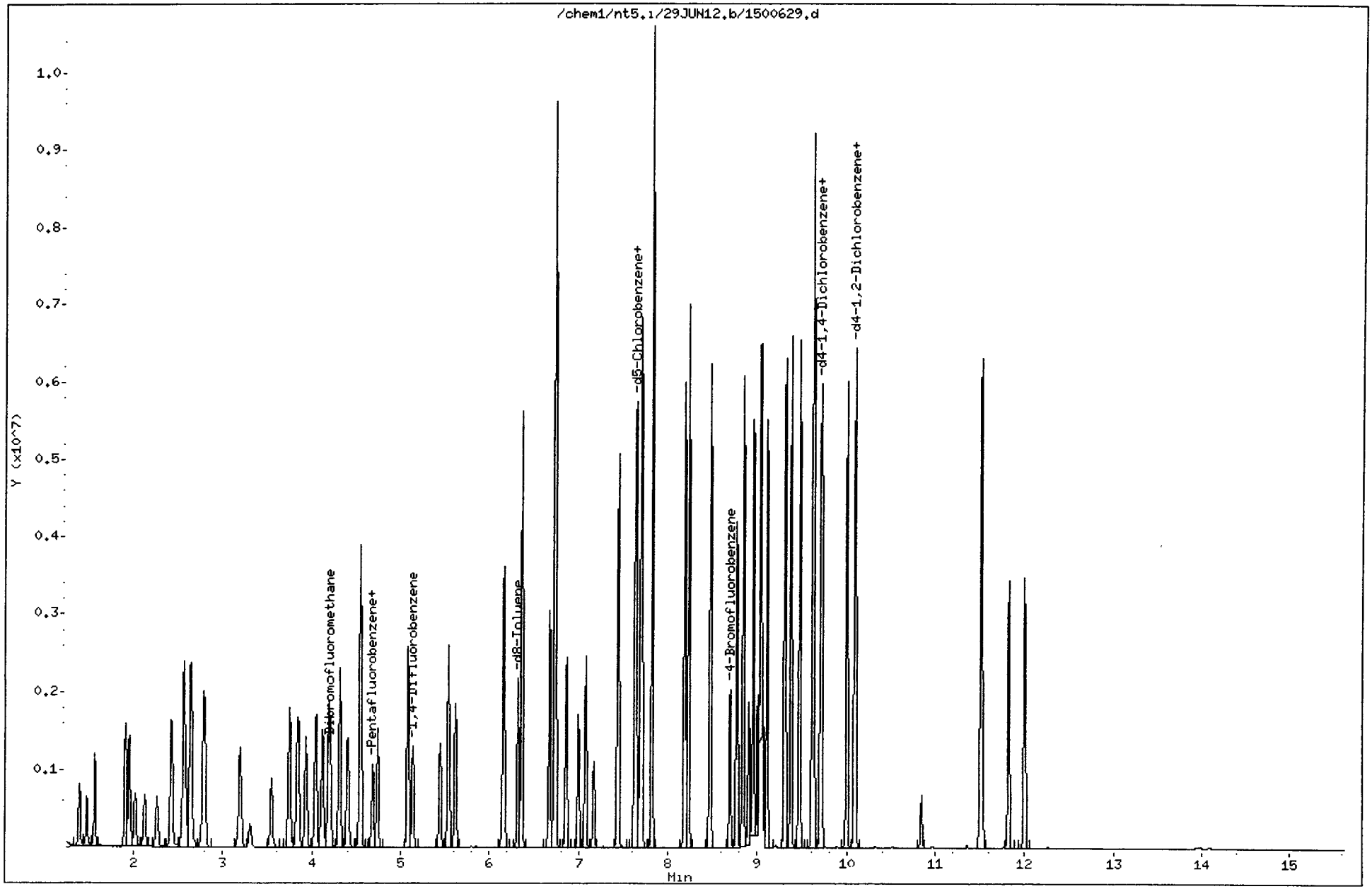
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt5.i/29JUN12.b/1500629.d
Date : 29-JUN-2012 13:51
Client ID: VSTD150
Sample Info: IC0629,5,5,0

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - 1500629.d

Lab ID: IC0629, Method: VO010412S.m, Instrument: nt5.i, Date: 29-JUN-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/29JUN12.b/icv0629.d
Lab Smp Id: ICV0629 Client Smp ID: ICV0629
Inj Date : 29-JUN-2012 14:28
Operator : PB Inst ID: nt5.i
Smp Info : ICV0629,5,5,0
Misc Info : 11-
Comment :
Method : /chem1/nt5.i/29JUN12.b/VO010412S.m
Meth Date : 02-Jul-2012 13:34 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	1.006	1.006	(0.215)	169238	42.2528	42.253
2 Chloromethane	50	1.125	1.125	(0.240)	272948	48.9412	48.941
3 Vinyl Chloride	62	1.175	1.176	(0.251)	310462	56.0691	56.069
4 Bromomethane	94	1.396	1.396	(0.298)	160313	54.2144	54.214
5 Chloroethane	64	1.475	1.475	(0.315)	178062	51.6927	51.693
6 Trichlorofluoromethane	101	1.566	1.566	(0.334)	249835	51.5979	51.598
7 1,1-Dichloroethene	96	1.939	1.939	(0.414)	213655	56.9222	56.922(Q)
8 Carbon Disulfide	76	1.939	1.939	(0.414)	599754	44.2815	44.281
9 112Trichloro122Trifluoroethane	101	1.984	1.985	(0.424)	207067	55.9921	55.992
10 Iodomethane	142	2.047	2.047	(0.437)	217291	52.2692	52.269
11 Bromoethane	108	2.148	2.149	(0.459)	148796	52.6138	52.614
12 Acrolein	56	2.250	2.250	(0.481)	27046	37.5517	37.552(R)
13 Methylene Chloride	84	2.431	2.432	(0.519)	234909	48.5339	48.534
14 Acetone	43	2.533	2.533	(0.541)	81689	54.5325	54.532

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.578	2.579	(0.551)	221974	50.9767	50.977
	16 Methyl tert butyl ether	73	2.754	2.754	(0.588)	660883	51.3846	51.385
	17 1,1-Dichloroethane	63	3.195	3.201	(0.682)	458694	52.2254	52.225
	18 Acrylonitrile	53	3.285	3.280	(0.702)	87405	54.0456	54.046
	19 Vinyl Acetate	43	3.534	3.535	(0.755)	320476	39.4680	39.468(R)
	20 Cis-1,2-Dichloroethene	96	3.749	3.750	(0.801)	253157	54.7420	54.742
	22 2,2-Dichloropropane	77	3.846	3.846	(0.821)	369550	54.0754	54.075
	23 Bromochloromethane	128	3.930	3.931	(0.839)	214926	102.798	102.80
	24 Chloroform	83	4.032	4.038	(0.861)	398775	51.5960	51.596
	25 Carbon Tetrachloride	117	4.123	4.123	(0.803)	307782	54.8865	54.886
$	27 Dibromofluoromethane	111	4.202	4.202	(0.897)	242358	49.8206	49.821
	26 1,1,1-Trichloroethane	97	4.196	4.196	(0.896)	370914	53.9632	53.963
	28 1,1-Dichloropropene	75	4.315	4.315	(0.840)	326594	54.2402	54.240
	29 2-Butanone	72	4.372	4.372	(0.934)	24295	51.9580	51.958
	30 Benzene	78	4.541	4.547	(0.884)	932391	53.2914	53.291
*	31 Pentafluorobenzene	168	4.683	4.683	(1.000)	307337	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	288437	49.6556	49.656
	33 1,2-Dichloroethane	62	4.734	4.734	(0.922)	336227	49.8001	49.800
	34 Trichloroethene	95	5.084	5.085	(0.990)	239438	53.7849	53.785
*	35 1,4-Difluorobenzene	114	5.135	5.136	(1.000)	727150	50.0000	
	37 Dibromomethane	93	5.441	5.441	(1.059)	125659	50.4199	50.420
	38 1,2-Dichloropropane	63	5.537	5.531	(1.078)	245231	51.9828	51.983
	39 Bromodichloromethane	83	5.610	5.611	(1.093)	311730	52.7814	52.781
	40 2-Chloroethyl Vinyl Ether	63	6.142	6.142	(1.196)	147422	54.2564	54.256
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.199)	369623	52.1909	52.191
$	42 d8-Toluene	98	6.318	6.318	(1.230)	979049	49.3194	49.319
	43 Toluene	92	6.357	6.357	(1.238)	610151	52.4011	52.401
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	247983	55.4805	55.481
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.308)	92309	50.6320	50.632(Q)
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.310)	316387	47.6122	47.612(Q)
	47 1,1,2-Trichloroethane	97	6.855	6.855	(1.335)	181108	49.9145	49.914
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	212524	53.3662	53.366
	49 1,3-Dichloropropane	76	7.076	7.076	(0.928)	330586	52.1453	52.145
	50 1,2-Dibromoethane	107	7.166	7.166	(1.395)	174422	50.2833	50.283
	51 2-Hexanone	43	7.438	7.438	(0.976)	160433	51.9150	51.915
*	52 d5-Chlorobenzene	117	7.624	7.625	(1.000)	839061	50.0000	
	53 Chlorobenzene	112	7.641	7.642	(1.002)	636853	53.3140	53.314
	54 Ethyl Benzene	91	7.692	7.692	(1.009)	1173827	55.4332	55.433
	55 1,1,1,2-Tetrachloroethane	131	7.709	7.704	(1.011)	218484	52.3052	52.305
	56 m,p-xylene	106	7.822	7.823	(1.026)	882750	118.717	118.72
	57 o-Xylene	106	8.184	8.185	(1.073)	414270	55.8420	55.842
	58 Styrene	104	8.235	8.235	(1.080)	710203	56.4577	56.458
	59 Bromoform	173	8.230	8.224	(0.848)	140221	53.3343	53.334
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	969136	51.0925	51.093
$	62 4-Bromofluorobenzene	95	8.699	8.694	(1.141)	467312	49.9159	49.916
	63 Bromobenzene	156	8.773	8.773	(0.904)	262356	53.7054	53.705
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	1349071	58.0479	58.048

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.903	8.903	(0.917)	227143	52.8835	52.884
66	2-Chloro Toluene	91	8.954	8.954	(0.922)	805667	56.3201	56.320
67	1,3,5-Trimethyl Benzene	105	9.033	9.033	(0.931)	974283	60.3048	60.305(R)
68	1,2,3-Trichloropropane	110	9.005	8.999	(0.928)	72451	52.7696	52.770
69	Trans-1,4-Dichloro 2-Butene	53	9.061	9.056	(0.934)	74978	44.3404	44.340
70	4-Chloro Toluene	91	9.106	9.101	(0.938)	825186	55.3884	55.388
71	T-Butyl Benzene	119	9.310	9.305	(0.959)	816895	57.8034	57.803
72	1,2,4-Trimethylbenzene	105	9.378	9.373	(0.966)	960056	59.5354	59.535
73	S-Butyl Benzene	105	9.474	9.469	(0.976)	1232886	59.4530	59.453
74	4-Isopropyl Toluene	119	9.616	9.616	(0.991)	1001565	58.9546	58.955
75	1,3-Dichlorobenzene	146	9.633	9.627	(0.992)	516986	55.4859	55.486
* 76	d4-1,4-Dichlorobenzene	152	9.706	9.701	(1.000)	472181	50.0000	
77	1,4-Dichlorobenzene	146	9.717	9.712	(1.001)	525966	53.9133	53.913
78	N-Butyl Benzene	91	10.006	10.000	(1.031)	985446	61.7129	61.713(R)
$ 79	d4-1,2-Dichlorobenzene	152	10.091	10.085	(1.040)	439084	50.6572	50.657
80	1,2-Dichlorobenzene	146	10.096	10.091	(1.040)	481979	52.7803	52.780
81	1,2-Dibromo 3-Chloropropane	75	10.849	10.843	(1.118)	45530	53.7098	53.710
82	Hexachloro 1,3-Butadiene	225	11.528	11.522	(1.188)	215010	56.7305	56.731
83	1,2,4-Trichlorobenzene	180	11.516	11.511	(1.187)	347291	57.2293	57.229
84	Naphthalene	128	11.827	11.822	(1.219)	718712	56.3468	56.347
85	1,2,3-Trichlorobenzene	180	12.014	12.003	(1.238)	319893	56.2372	56.237

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: icv0629.d
Lab Smp Id: ICV0629
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Misc Info: 11-

Calibration Date: 29-JUN-2012
Calibration Time: 13:05
Client Smp ID: ICV0629
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	307337	5.32
35 1,4-Difluorobenze	682850	341425	1365700	727150	6.49
52 d5-Chlorobenzene	802138	401069	1604276	839061	4.60
76 d4-1,4-Dichlorobe	452585	226292	905170	472181	4.33

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.68	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.71	0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: ICV0629
Level: LOW
Data Type: MS DATA
SpikeList File: icv.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/29JUN12.b/VO010412S.m
Misc Info: 11-

Client SDG: 29JUN12
Fraction: VOA
Client Smp ID: ICV0629
Operator: PB
SampleType: LCS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	42.253	84.51	80-120
2 Chloromethane	50.000	48.941	97.88	80-120
3 Vinyl Chloride	50.000	56.069	112.14	80-120
4 Bromomethane	50.000	54.214	108.43	80-120
5 Chloroethane	50.000	51.693	103.39	80-120
6 Trichlorofluoromet	50.000	51.598	103.20	80-120
12 Acrolein	50.000	37.552	75.10*	80-120
9 112Trichloro122Tri	50.000	55.992	111.98	80-120
14 Acetone	50.000	54.532	109.06	80-120
7 1,1-Dichloroethene	50.000	56.922	113.84	80-120
11 Bromoethane	50.000	52.614	105.23	80-120
10 Iodomethane	50.000	52.269	104.54	80-120
13 Methylene Chloride	50.000	48.534	97.07	80-120
8 Carbon Disulfide	50.000	44.281	88.56	80-120
18 Acrylonitrile	50.000	54.046	108.09	80-120
15 Trans-1,2-Dichloro	50.000	50.977	101.95	80-120
16 Methyl tert butyl	50.000	51.385	102.77	80-120
19 Vinyl Acetate	50.000	39.468	78.94*	80-120
17 1,1-Dichloroethane	50.000	52.225	104.45	80-120
29 2-Butanone	50.000	51.958	103.92	80-120
22 2,2-Dichloropropan	50.000	54.075	108.15	80-120
20 Cis-1,2-Dichloroet	50.000	54.742	109.48	80-120
24 Chloroform	50.000	51.596	103.19	80-120
23 Bromochloromethane	100.00	102.80	102.80	80-120
26 1,1,1-Trichloroeth	50.000	53.963	107.93	80-120
28 1,1-Dichloropropen	50.000	54.240	108.48	80-120
25 Carbon Tetrachlori	50.000	54.886	109.77	80-120
33 1,2-Dichloroethane	50.000	49.800	99.60	80-120
30 Benzene	50.000	53.291	106.58	80-120
34 Trichloroethene	50.000	53.785	107.57	80-120
38 1,2-Dichloropropan	50.000	51.983	103.97	80-120
39 Bromodichlorometha	50.000	52.781	105.56	80-120
37 Dibromomethane	50.000	50.420	100.84	80-120

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
40 2-Chloroethyl Viny	50.000	54.256	108.51	80-120
45 4-Methyl-2-Pentano	50.000	50.632	101.26	80-120
41 Cis 1,3-dichloropr	50.000	52.191	104.38	80-120
43 Toluene	50.000	52.401	104.80	80-120
46 Trans 1,3-Dichloro	50.000	47.612	95.22	80-120
51 2-Hexanone	50.000	51.915	103.83	80-120
47 1,1,2-Trichloroeth	50.000	49.914	99.83	80-120
49 1,3-Dichloropropan	50.000	52.145	104.29	80-120
44 Tetrachloroethene	50.000	55.481	110.96	80-120
48 Chlorodibromometha	50.000	53.366	106.73	80-120
50 1,2-Dibromoethane	50.000	50.283	100.57	80-120
53 Chlorobenzene	50.000	53.314	106.63	80-120
55 1,1,1,2-Tetrachlor	50.000	52.305	104.61	80-120
54 Ethyl Benzene	50.000	55.433	110.87	80-120
56 m,p-xylene	100.00	118.72	118.72	80-120
57 o-Xylene	50.000	55.842	111.68	80-120
58 Styrene	50.000	56.458	112.92	80-120
60 Isopropyl Benzene	50.000	51.093	102.19	80-120
59 Bromoform	50.000	53.334	106.67	80-120
65 1,1,2,2-Tetrachlor	50.000	52.884	105.77	80-120
68 1,2,3-Trichloropro	50.000	52.770	105.54	80-120
69 Trans-1,4-Dichloro	50.000	44.340	88.68	80-120
64 N-Propyl Benzene	50.000	58.048	116.10	80-120
63 Bromobenzene	50.000	53.705	107.41	80-120
67 1,3,5-Trimethyl Be	50.000	60.305	120.61*	80-120
66 2-Chloro Toluene	50.000	56.320	112.64	80-120
70 4-Chloro Toluene	50.000	55.388	110.78	80-120
71 T-Butyl Benzene	50.000	57.803	115.61	80-120
72 1,2,4-Trimethylben	50.000	59.535	119.07	80-120
73 S-Butyl Benzene	50.000	59.453	118.91	80-120
74 4-Isopropyl Toluen	50.000	58.955	117.91	80-120
75 1,3-Dichlorobenzen	50.000	55.486	110.97	80-120
77 1,4-Dichlorobenzen	50.000	53.913	107.83	80-120
78 N-Butyl Benzene	50.000	61.713	123.43*	80-120
80 1,2-Dichlorobenzen	50.000	52.780	105.56	80-120
81 1,2-Dibromo 3-Chlo	50.000	53.710	107.42	80-120
83 1,2,4-Trichloroben	50.000	57.229	114.46	80-120
82 Hexachloro 1,3-But	50.000	56.731	113.46	80-120
84 Naphthalene	50.000	56.347	112.69	80-120
85 1,2,3-Trichloroben	50.000	56.237	112.47	80-120

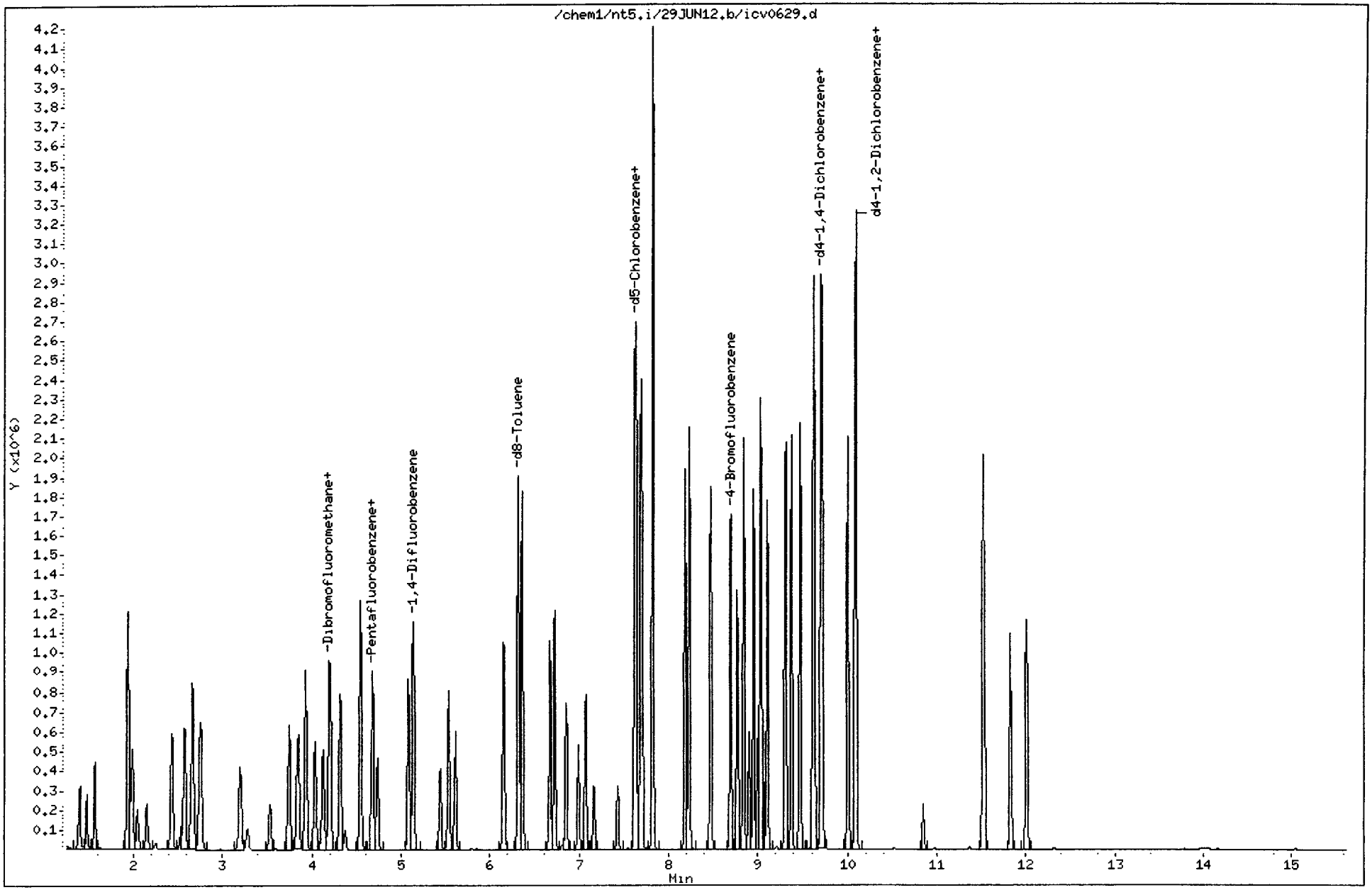
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	49.821	99.64	30-160

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 32 d4-1,2-Dichloroeth	50.000	49.656	99.31	75-152
$ 42 d8-Toluene	50.000	49.319	98.64	82-115
$ 62 4-Bromofluorobenze	50.000	49.916	99.83	64-120
$ 79 d4-1,2-Dichloroben	50.000	50.657	101.31	80-120

Data File: /chem1/nt5.i/29JUN12.b/icv0629.d
Date : 29-JUN-2012 14:28
Client ID: ICV0629
Sample Info: ICV0629,5,5,0

Instrument: nt5.i
Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



VB51:00241

CO-ELUTION SUMMARY FOR FILE - icv0629.d

Lab ID: ICV0629, Method: VO010412S.m, Instrument: nt5.i, Date: 29-JUN-2012

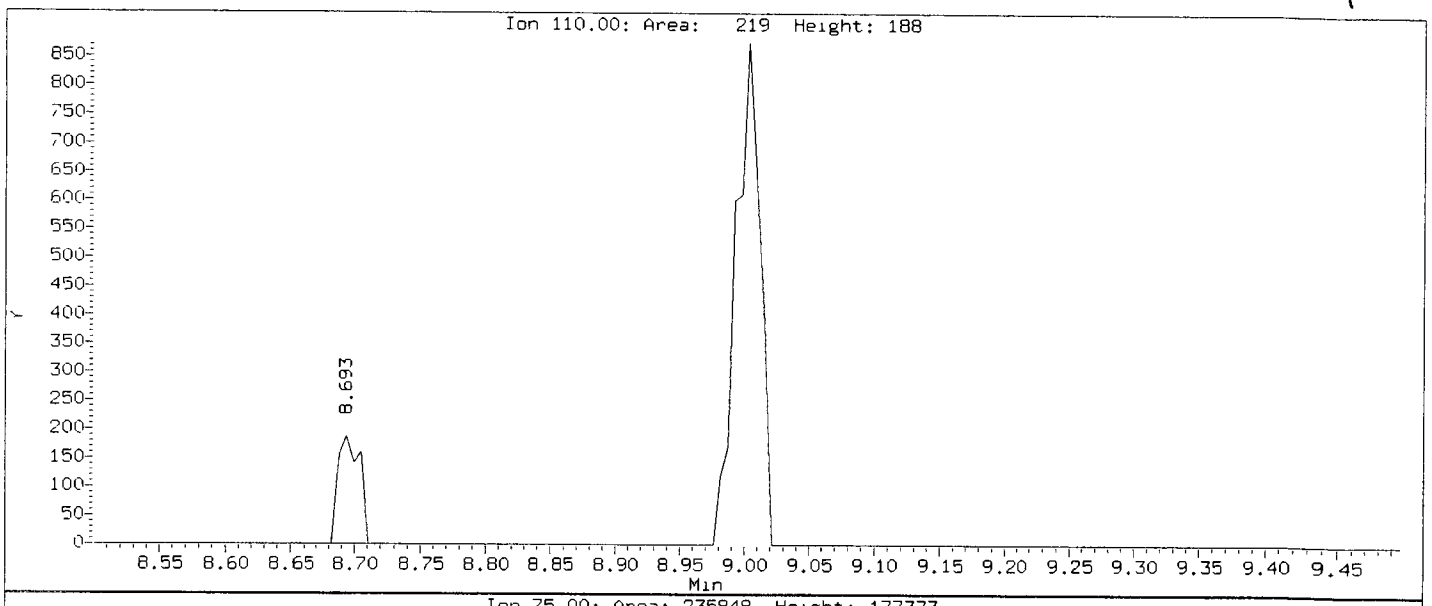
RT	CO-ELUTION COMPOUNDS

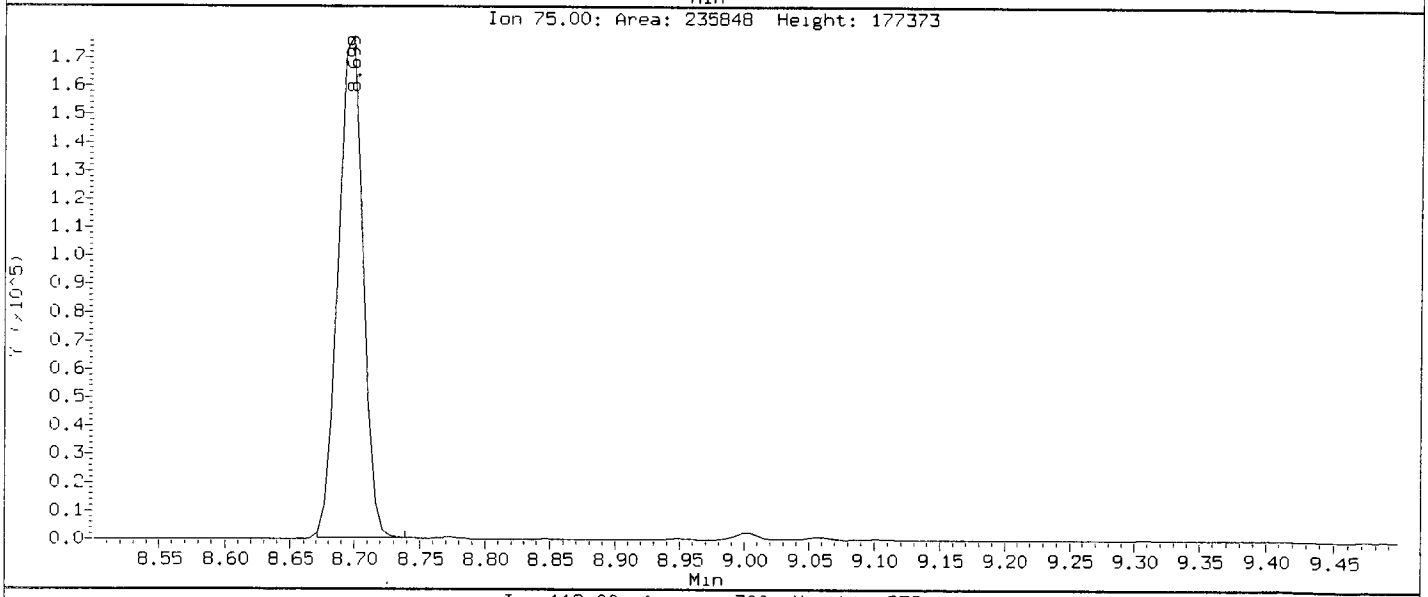
NO CO-ELUTIONS

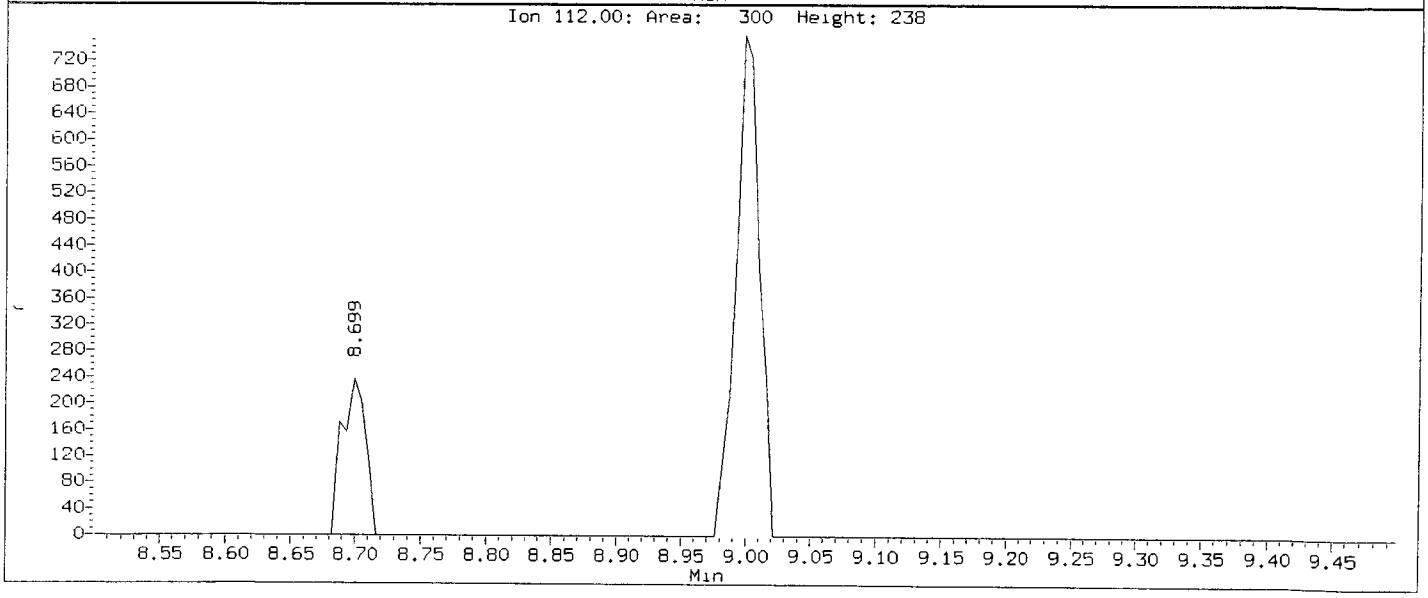
Data File: /chem1/nt5.i/29JUN12.b/0010629.d
Injection Date: 29-JUN-2012 11:34
Instrument: nt5.i
Client Sample ID: VSTD1

Compound: 1.2.3-Trichloropropane
CAS Number:

6/29/12

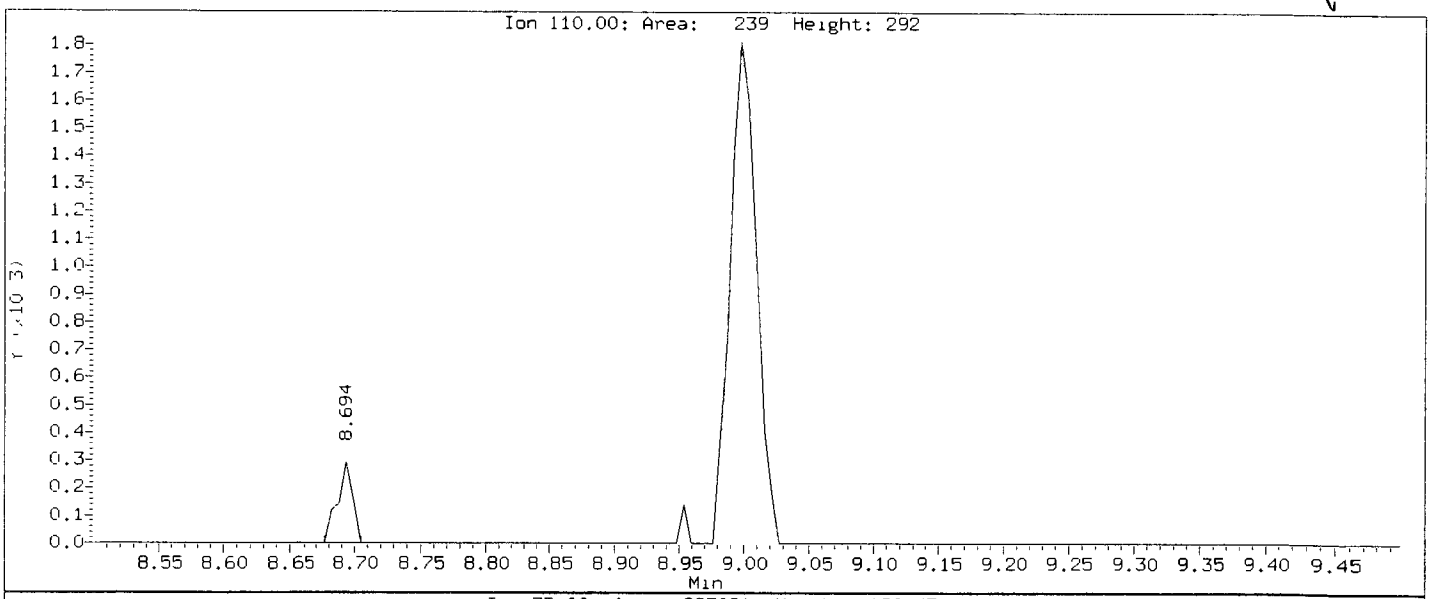


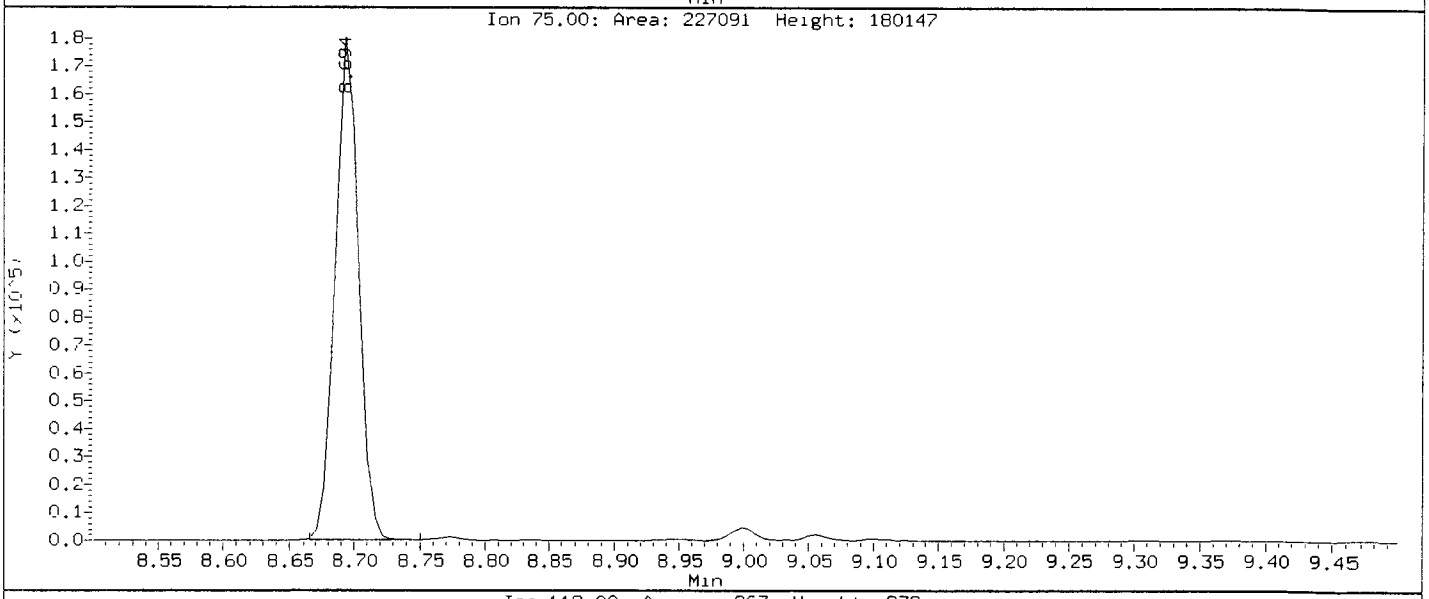


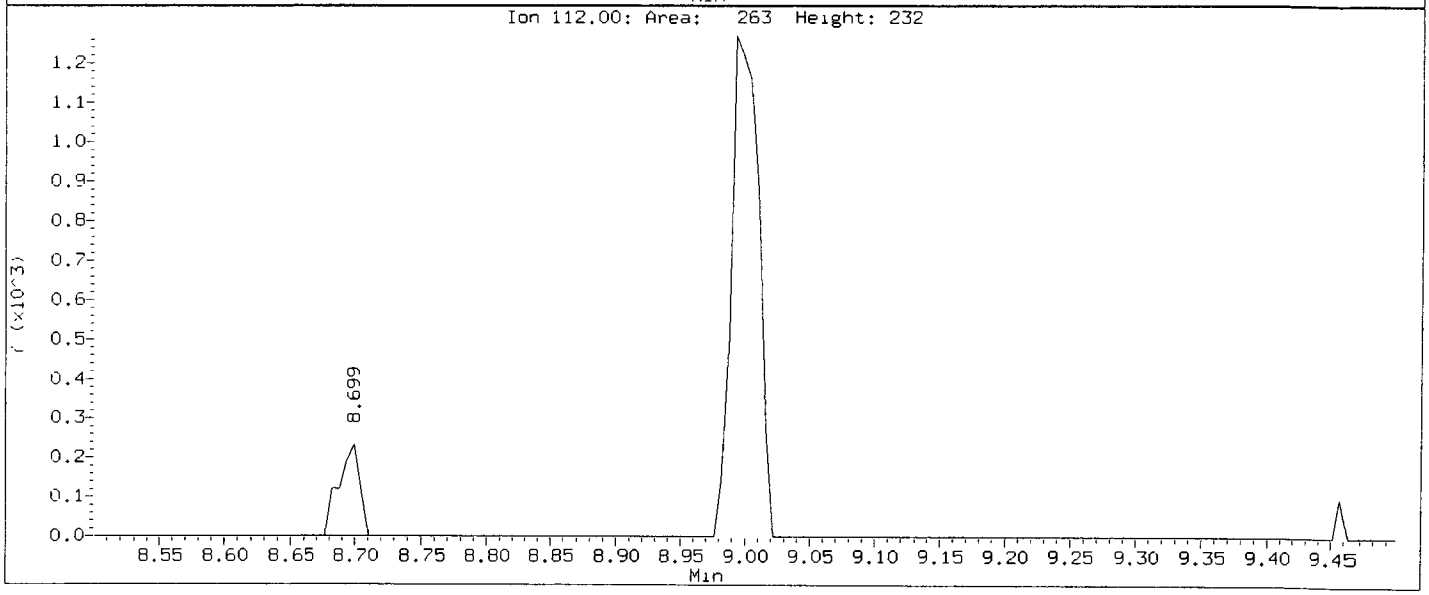


Data File: /chem1/nt5.1/29JUN12.b/0020629.d
Injection Date: 29-JUN-2012 11:57
Instrument: nt5.1
Client Sample ID: VSTD2

Compound: 1,2,3-Trichloropropane
CAS Number:

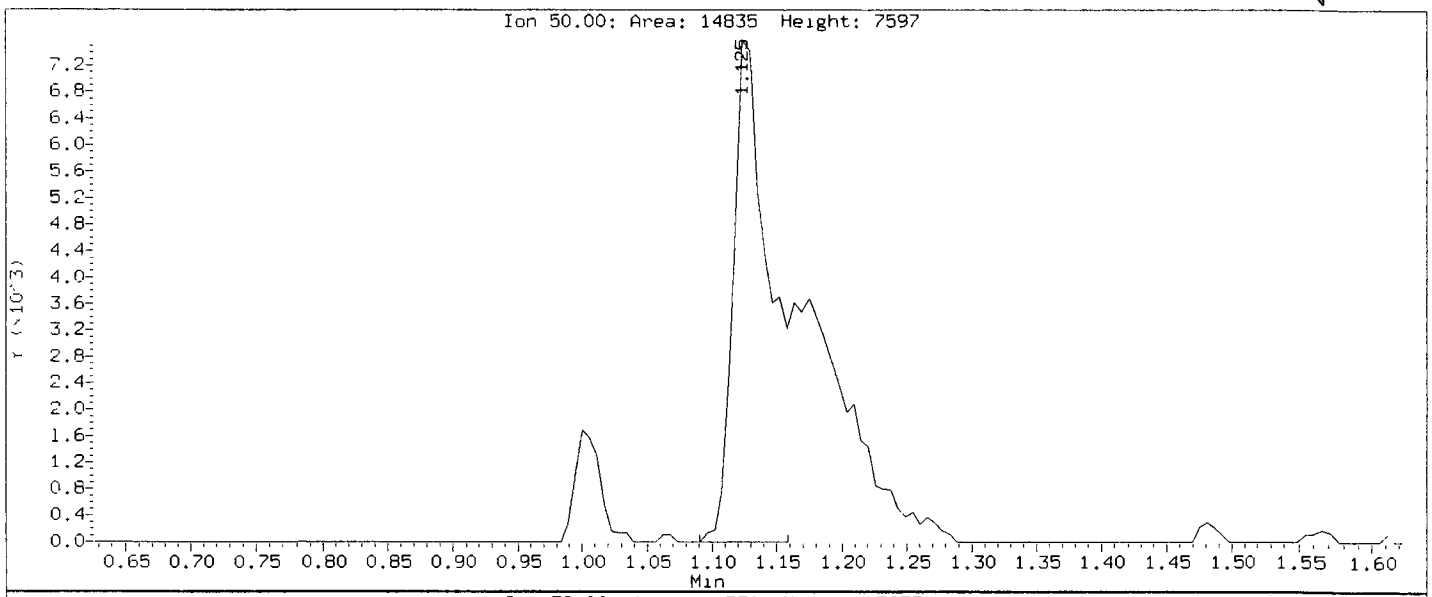


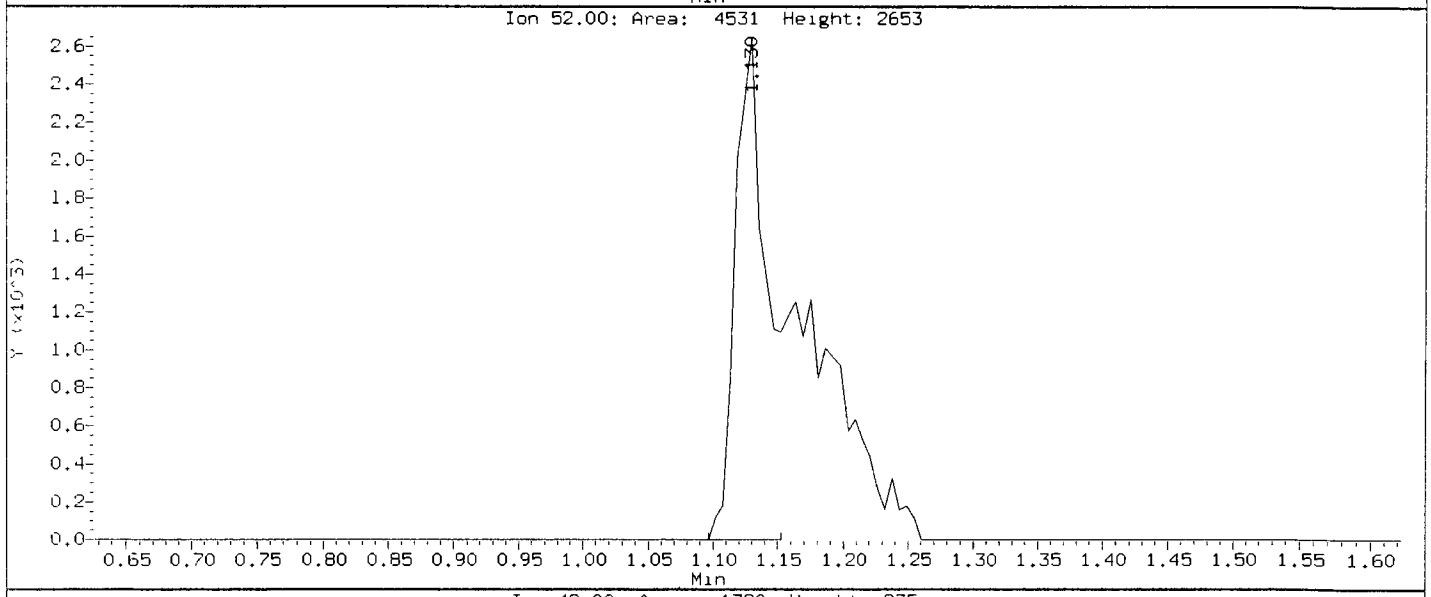


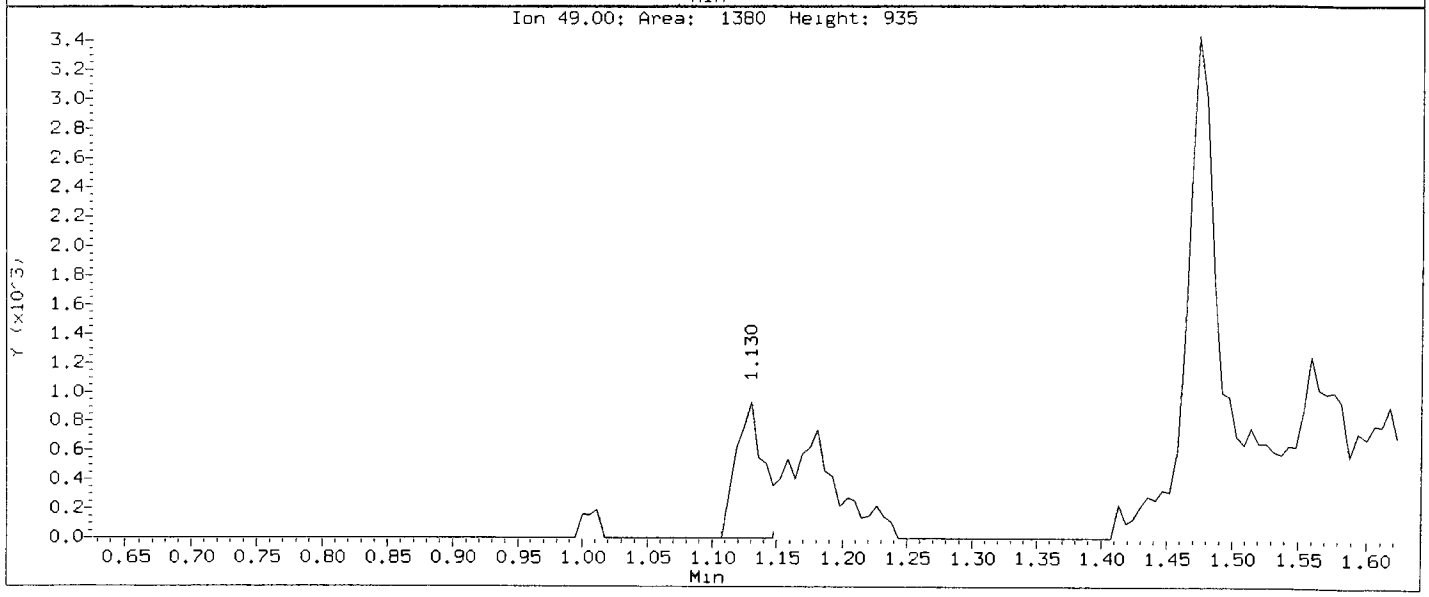


Data File: /chem1/nt5.i/29JUN12.b/0050629.d
Injection Date: 29-JUN-2012 12:20
Instrument: nt5.i
Client Sample ID: VSTD5

Compound: Chloromethane
CAS Number:

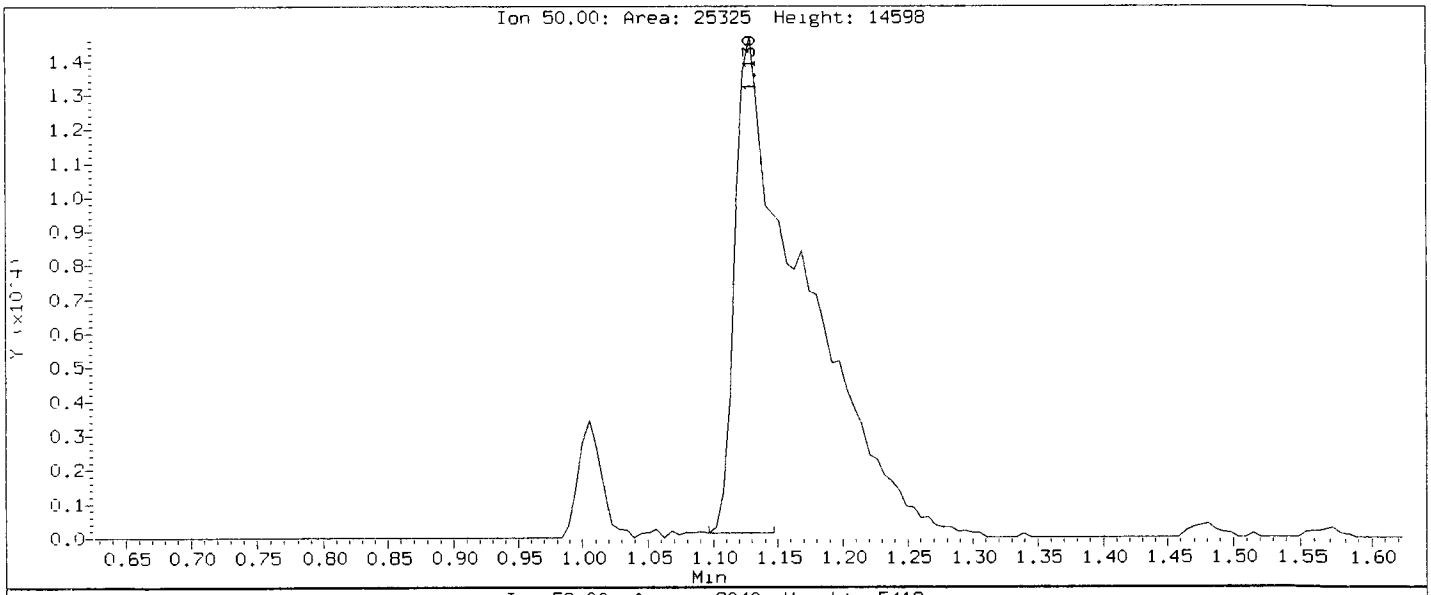


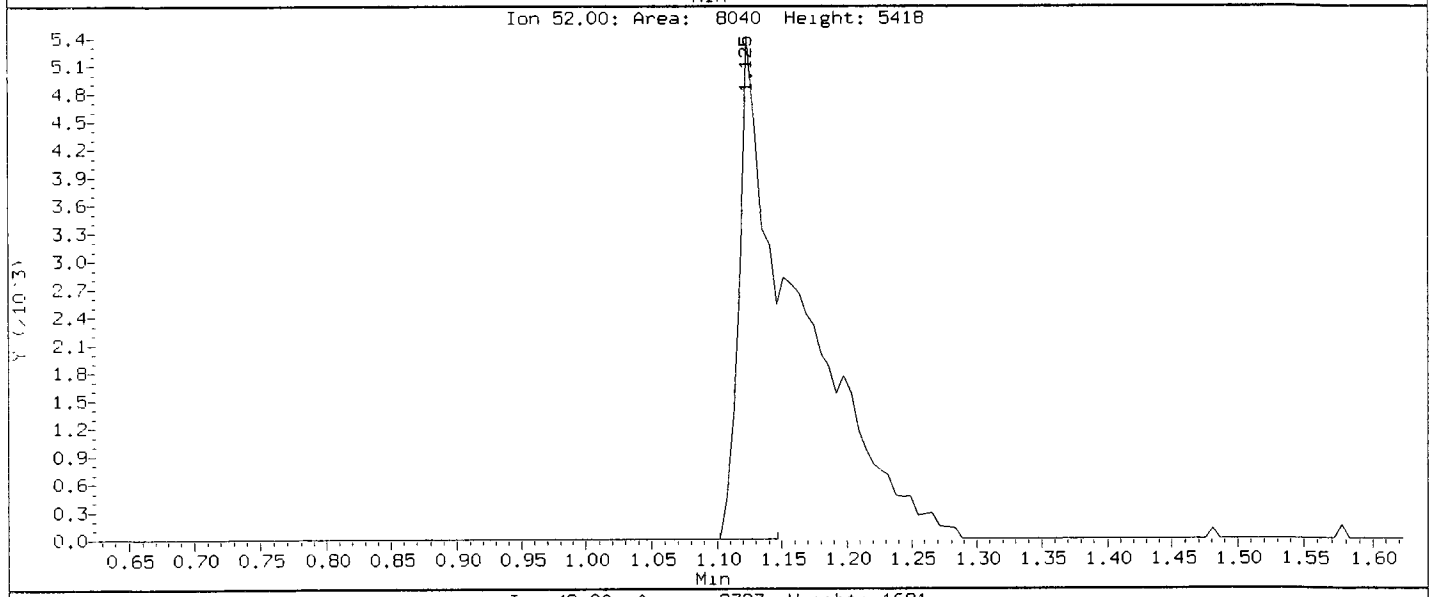


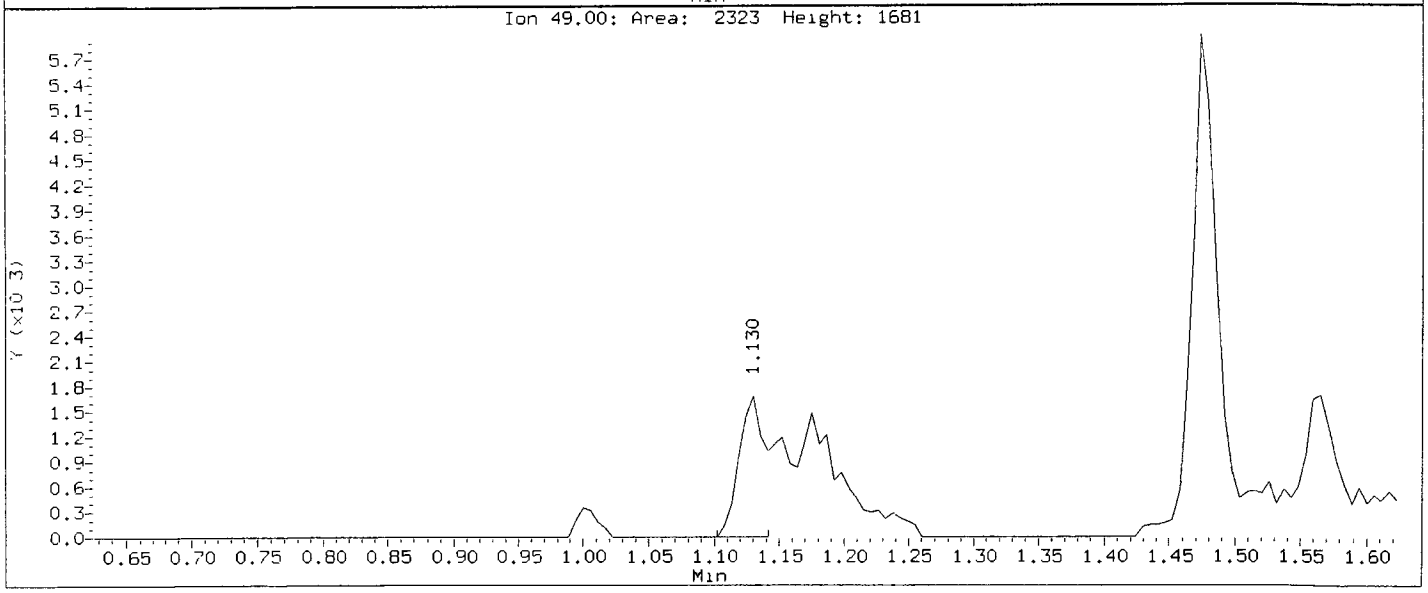


Data File: /chem1/nt5.1/29JUN12.b/0100629.d
Injection Date: 29-JUN-2012 12:42
Instrument: nt5.1
Client Sample ID: VSTD10

Compound: Chloromethane
CAS Number:



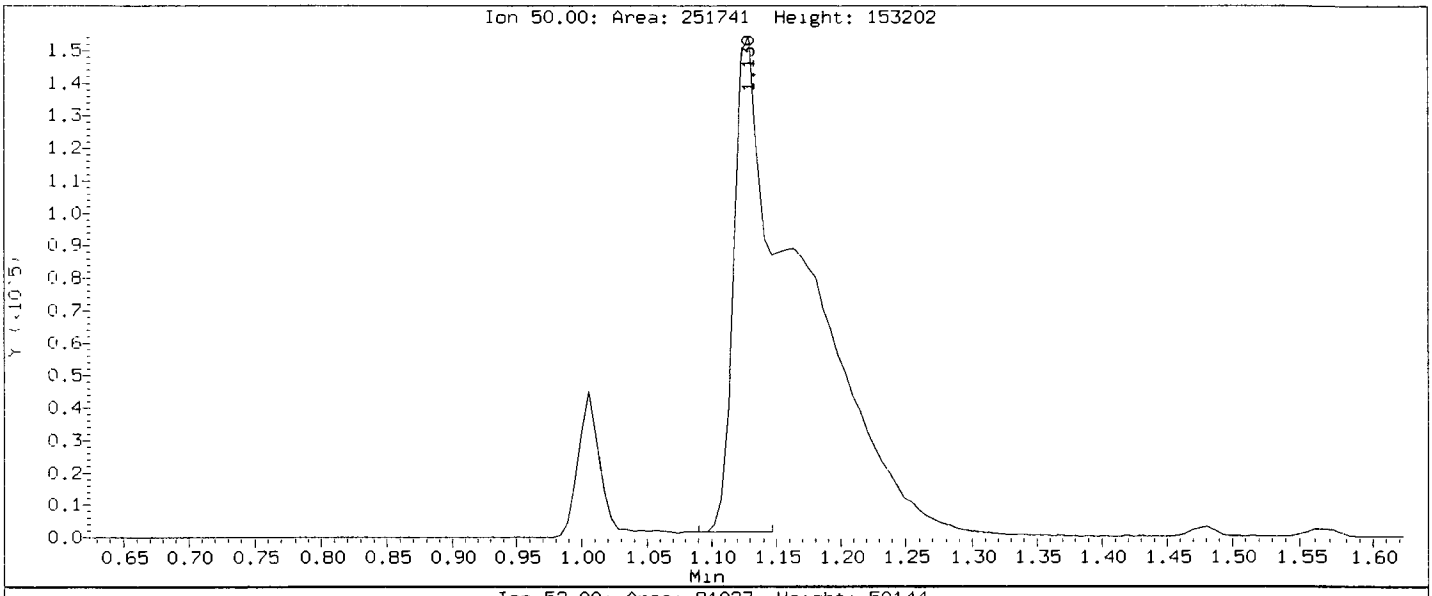


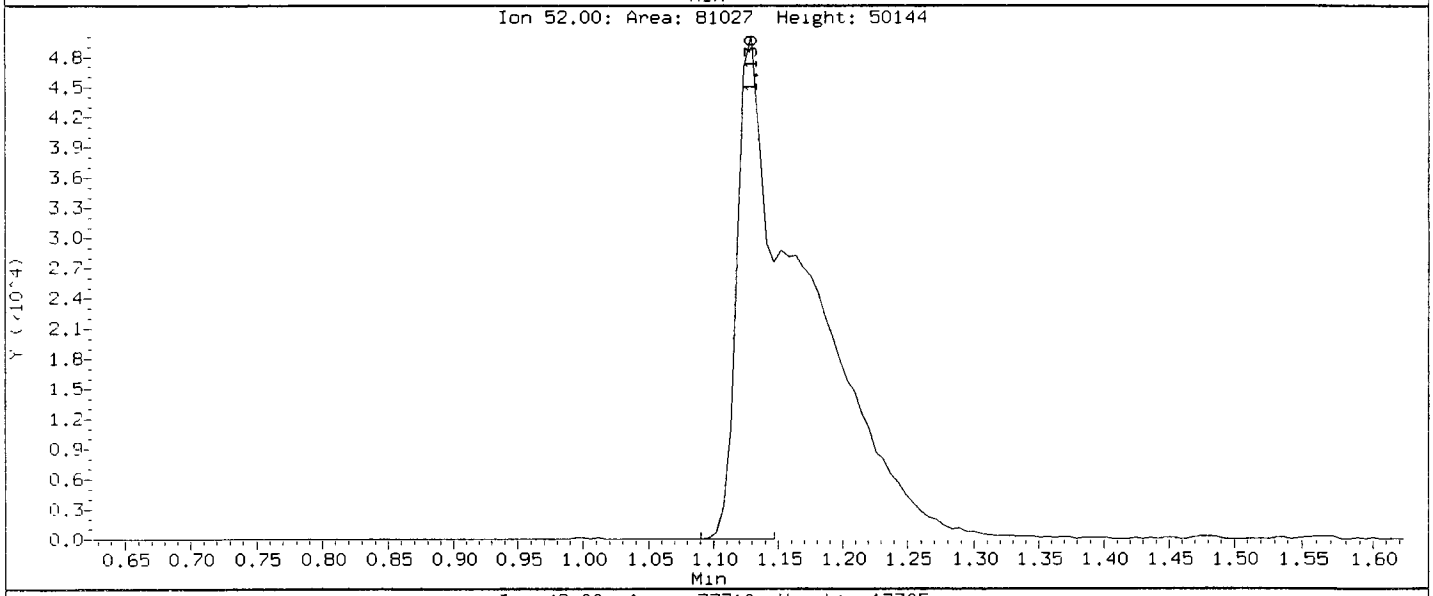


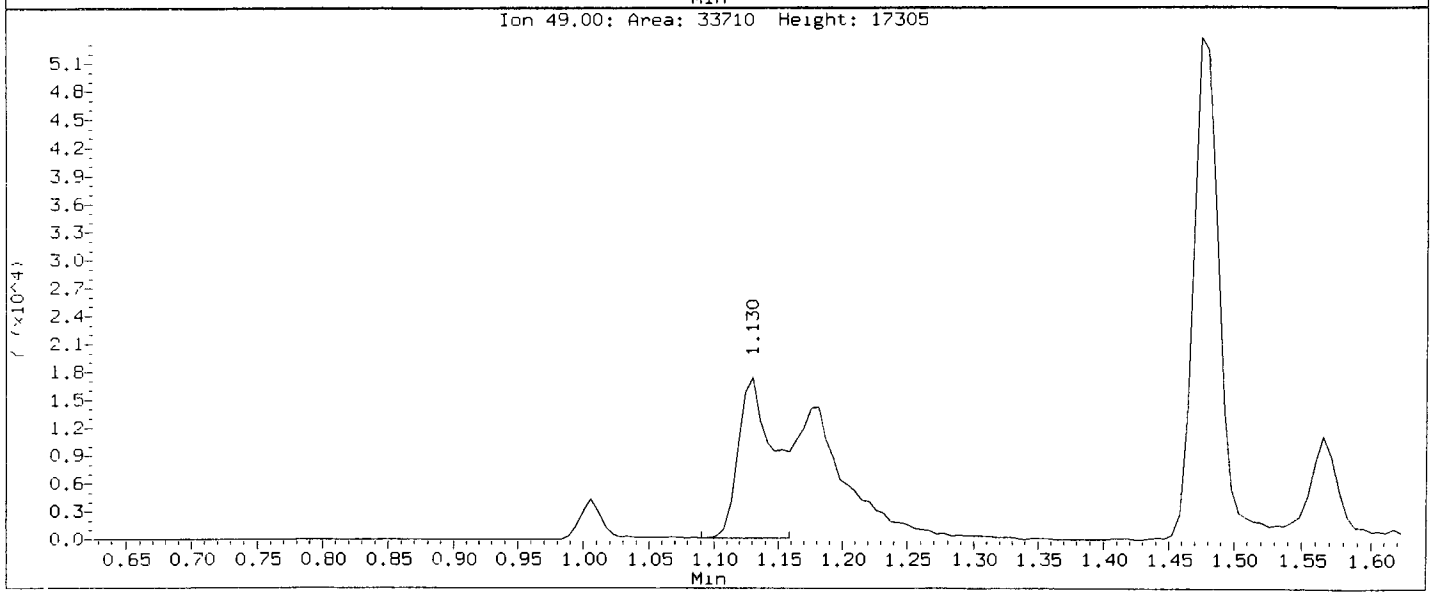
Data File: /chem1/nt5.i/29JUN12.b/1000629.d
Injection Date: 29-JUN-2012 13:28
Instrument: nt5.i
Client Sample ID: VSTD100

Compound: Chloromethane
CAS Number:

6/29/12







Volatile Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: VB51, VB54

VOA Analyst Notes / Corrective Action Log

ARI Project ID: VB51 Client ID: _____

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.2) **710S**(RSK-175)

Parameter(s): _____

Instrument: NT-2 NT-3 **NT-5** NT-7 NT-9 PID-1 PID-2 PID-3 FID-6 FINN-5

Purge Volume (mL) 5 Curve Date: 6/14/11 Analysis Start Date: 7/11/11

pH ≤ 2.0	YES / NO / **NA**	Method Blank In Control?	**YES** / NO
BFB Tune Meets Criteria?	**YES** / NO / NA	LCS / LCSD Recovery In Control?	**YES** / NO
Internal Standard Meets Criteria?	**YES** / NO / NA	Surrogate Recovery In Control?	**YES** / NO
ICal acceptable?	**YES** / NO	CCal acceptable?	**YES** / NO
Q flag applied?	YES / **NO** / NA	Q flag applied?	YES / **NO** / NA
Manual Integrations for ICal?	**YES** / NO	Manual Integrations for Samples?	Yes / **NO**
Special Analysis Criteria Met?	YES / NO / **NA**		

Bubbles/Headspace: None SM (≤ 2mm •) PB (2-4mm) LG (> 4mm ●) Head Space

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

Additional Details on Reverse: Yes / No

Analyst: _____ **Date:** 7/12/11

Reviewer: _____ **Date:** 7/13

Analytical Resources Inc.: Volatile Organics Instrument Log

NT-5 Serial No.:GC=US10228086, MS=US10462818

Date: 7/11/12 Analysis: 8260C Analyst: BJ

GC Program: VOA_A Column No: 93815L Column Type: RTX-624

Instrument Tune (.U or .CT.): bfb0711 EM Voltage: 1351

Inj. Vol: 5 Calibration File: 0500711 Curve Date: 6/29/12

IS/SS	Ical/Ccal	LCS/ICV
W756-3	W756-1	W756-4

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt5.i/11JUL12.b

	Time	Filename	LabID	ClientID	Vial#	pH	DF							
1	0800	bfb0711.d	BFB0711	BFB0711			1							
2	0822	0500711 d	CC0711	VSTD50			1	4 69	313183	5 14	707336	7 62	851906	9.70 491217
3	0909	lcs0711.d	LCS0711	LCS0711			1	4 69	326836	5 14	735118	7 62	884851	9 70 502866
4	0932	lcs0711a.d	LCS0711	LCS0711			1	4.69	353341	5 14	790781	7 62	950724	9.70 545607
5	0955	mb0711.d	MB0711	MB0711			1	4 69	353026	5 14	789004	7 62	936440	9.69 523077
6	1047	va85d2 d	VA85D	MCS-03-324-B			1	4.68	351158	5 14	803747	7 62	943648	9 70 515760
7	1110	va85l.d	VA85L	MCS-03-340-A			1	4.69	384693	5.14	849018	7.62	976721	9.69 481554
8	1133	va85m d	VA85M	MCS-03-340-B			1	4 69	306795	5 14	688999	7 62	843062	9 69 485233
9	1156	va88e.d	VA88E	SS-1			1	4.69	335817	5.14	758944	7.62	899753	9.69 480216
10	1218	vb10j d	VB10J	SC3A-02-N			1	4.69	334375	5 14	756465	7 62	901336	9.69 487648
11	1241	vb10k d	VB10K	SC3A-04-N			1	4 69	329227	5 14	738072	7.62	879658	9.69 481555
12	1304	vb10l d	VB10L	SC3B-06-N			1	4.69	288591	5 14	657383	7 62	788299	9 69 447881
13	1327	vb10m d	VB10M	SC3B-08-N			1	4 69	325005	5.14	733611	7 62	874453	9.69 485837
14	1349	vb10n d	VB10N	SC3C-10-N			1	4 69	311534	5 14	714287	7 62	855509	9 69 470340
15	1412	vb10o.d	VB10O	SC3C-12-N			1	4 69	307491	5 14	690162	7 62	831600	9.69 464883
16	1435	vb10p.d	VB10P	SC3D-14-N			1	4.69	70209	5.14	150037	7.62	169684	9.69 85804
17	1458	vb10q d	VB10Q	SC3D-16-N			1	4 69	326839	5 14	741159	7.62	887163	9.69 493776
18	1521	vb10r.d	VB10R	SC3A-W-100	2	cc	1	4 69	300735	5 14	688510	7 62	829525	9.69 464732
19	1544	vb51a.d	VB51A	CW-TP-06-5 5-6.5			1	4.69	301936	5.14	688350	7.62	830244	9 69 466045
20	1606	vb51f d	VB51F	CW-TP-07-9-10			1	4 68	321784	5 14	711684	7.62	853720	9.69 495401
21	1629	vb51i d	VB51I	CW-TP-09-6 3-7 3			1	4 68	356277	5 14	792068	7 62	957371	9 69 557771
22	1652	vb51l d	VB51L	CW-TP-09-10-11			1	4 68	336687	5 14	741826	7 62	907529	9 69 535771
23	1715	vb10p2 d	VB10P	SC3D-14-N			1	4.69	387008	5.14	864598	7 62	1043180	9 69 594456
24	1737	vb10jms d	VB10JMS	SC3A-02-N MS			1	4.68	347754	5.14	768282	7 62	919165	9 69 460485
25	1800	vb10jmsd.d	VB10JMSD	SC3A-02-N MSD			1	4.69	388403	5 14	869148	7.62	1037673	9.70 584159

Maint

Maint

Every line must contain information or be lined out. Make all entries legible. Start a new page for each QC period.

7/11/12 B51 : 00250

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt5.i/11JUL12.b

ARI Job No.: BFB0 Method: bfb8260.m Instrument: nt5.i Date: 11-JUL-2012

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0800	bfb0711.d	BFB0711	BFB0711	1	NO MANUAL INTEGRATION
0822	0500711.d	CC0711	VSTD50	1	NO MANUAL INTEGRATION
0909	lcs0711.d	LCS0711	LCS0711	1	NO MANUAL INTEGRATION
0932	lcs0711a.d	LCS0711	LCS0711	1	NO MANUAL INTEGRATION
0955	mb0711.d	MB0711	MB0711	1	NO MANUAL INTEGRATION
1047	va85d2.d	VA85D	MCS-03-324	1	NO MANUAL INTEGRATION
1110	va85l.d	VA85L	MCS-03-340	1	NO MANUAL INTEGRATION
1133	va85m.d	VA85M	MCS-03-340	1	NO MANUAL INTEGRATION
1156	va88e.d	VA88E	SS-1	1	NO MANUAL INTEGRATION
1218	vb10j.d	VB10J	SC3A-02-N	1	NO MANUAL INTEGRATION
1241	vb10k.d	VB10K	SC3A-04-N	1	NO MANUAL INTEGRATION
1304	vb10l.d	VB10L	SC3B-06-N	1	NO MANUAL INTEGRATION
1327	vb10m.d	VB10M	SC3B-08-N	1	NO MANUAL INTEGRATION
1349	vb10n.d	VB10N	SC3C-10-N	1	NO MANUAL INTEGRATION
1412	vb10o.d	VB10O	SC3C-12-N	1	NO MANUAL INTEGRATION
1458	vb10q.d	VB10Q	SC3D-16-N	1	NO MANUAL INTEGRATION
1521	vb10r.d	VB10R	SC3A-W-100	1	NO MANUAL INTEGRATION
1544	vb51a.d	VB51A	CW-TP-06-5	1	NO MANUAL INTEGRATION
1606	vb51f.d	VB51F	CW-TP-07-9	1	NO MANUAL INTEGRATION
1629	vb51i.d	VB51I	CW-TP-09-6	1	NO MANUAL INTEGRATION

1652 vb51l.d VB51L CW-TP-09-1 1 NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt5.i/11JUL12.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1715	vb10p2.d	VB10P	SC3D-14-N	1	NO MANUAL INTEGRATION
1737	vb10jms.d	VB10JMS	SC3A-02-N	1	NO MANUAL INTEGRATION
1800	vb10jmsd.d	VB10JMSD	SC3A-02-N	1	NO MANUAL INTEGRATION

Data File: /chem1/nt5.1/11JUL12.b/bfb0711.d

Date : 11-JUL-2012 08:00

Client ID: BFB0711

Instrument: nt5.1

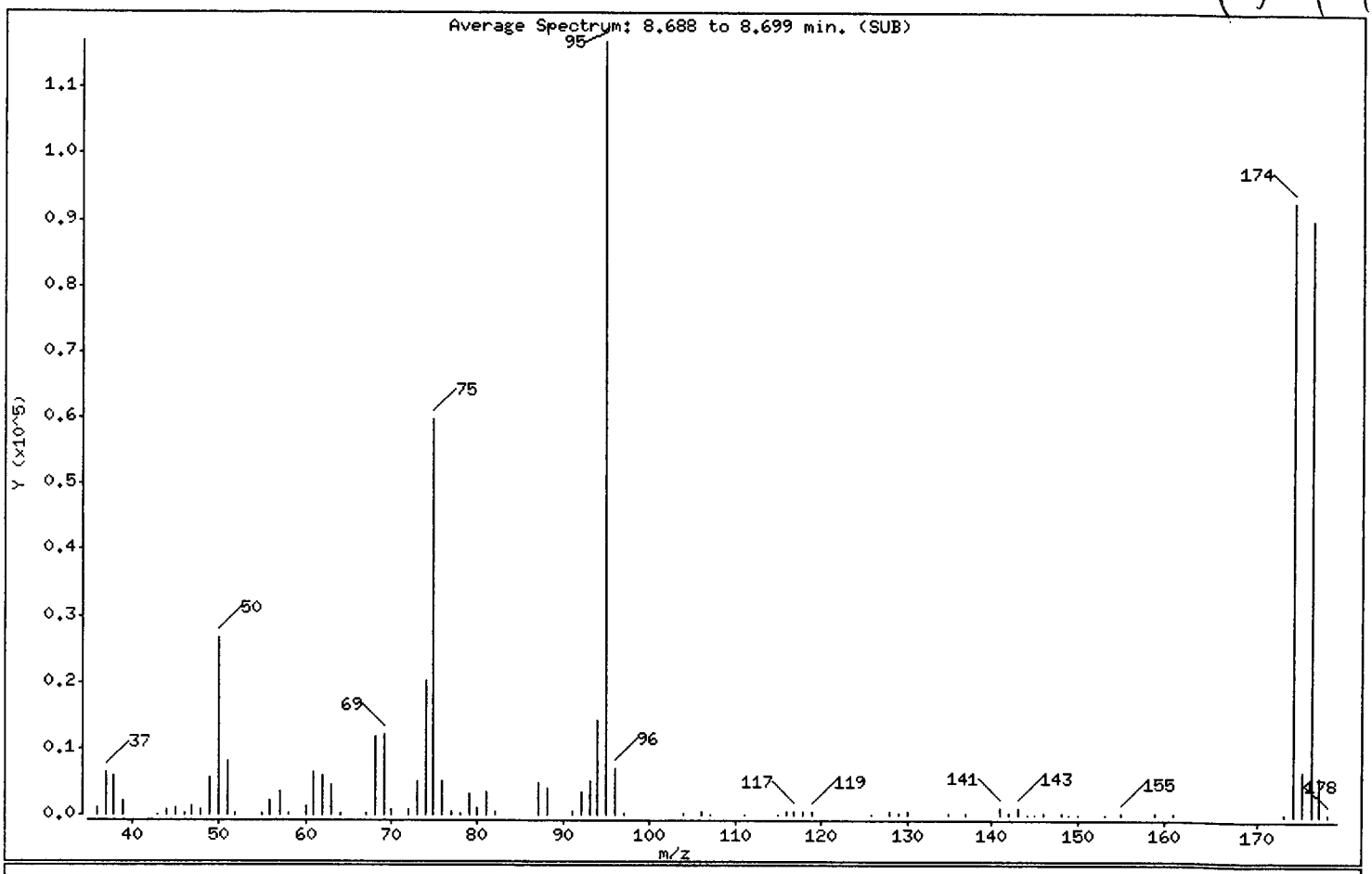
Sample Info: BFB0711,BFB0711,,1,11JUL12,,

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	22.69
75	30.00 - 66.00% of mass 95	50.97
96	5.00 - 9.00% of mass 95	6.06
173	Less than 2.00% of mass 174	0.22 (0.27)
174	50.00 - 101.00% of mass 95	79.24
175	4.00 - 9.00% of mass 174	5.66 (7.14)
176	95.00 - 101.00% of mass 174	76.91 (97.05)
177	5.00 - 9.00% of mass 176	5.01 (6.52)

Data File: /chem1/nt5.1/11JUL12.b/bfb0711.d

Date : 11-JUL-2012 08:00

Client ID: BFB0711

Instrument: nt5.1

Sample Info: BFB0711,BFB0711,,1,11JUL12,,

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0711.d

Spectrum: Average Spectrum: 8.688 to 8.699 min. (SUB)

Location of Maximum: 95.00

Number of points: 92

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1129	67.00	303	96.00	7097	144.00	106
37.00	6560	68.00	11959	97.00	244	145.00	92
38.00	5952	69.00	11988	104.00	398	146.00	156
39.00	2239	70.00	888	105.00	133	147.00	70
40.00	88	72.00	761	106.00	514	148.00	338
43.00	38	73.00	5213	107.00	44	149.00	36
44.00	891	74.00	20272	110.00	78	150.00	126
45.00	1130	75.00	59664	111.00	79	153.00	42
46.00	154	76.00	5186	113.00	77	155.00	301
47.00	1464	77.00	570	115.00	89	157.00	94
48.00	799	78.00	368	116.00	417	159.00	152
49.00	5768	79.00	3109	117.00	634	161.00	160
50.00	26560	80.00	961	118.00	483	171.00	93
51.00	8092	81.00	3372	119.00	558	172.00	47
52.00	324	82.00	656	126.00	34	173.00	255
55.00	315	83.00	49	128.00	420	174.00	92768
56.00	2037	86.00	130	129.00	226	175.00	6623
57.00	3595	87.00	4827	130.00	481	176.00	90032
58.00	143	88.00	4133	131.00	115	177.00	5871
60.00	1218	91.00	415	135.00	162	178.00	170
61.00	6382	92.00	3491	137.00	210		
62.00	5933	93.00	5023	141.00	1180		
63.00	4497	94.00	14147	142.00	142		
64.00	403	95.00	117064	143.00	1150		

Data File: /chem1/nt5.1/11JUL12.b/bfb0711.d

Date : 11-JUL-2012 08:00

Client ID: BFB0711

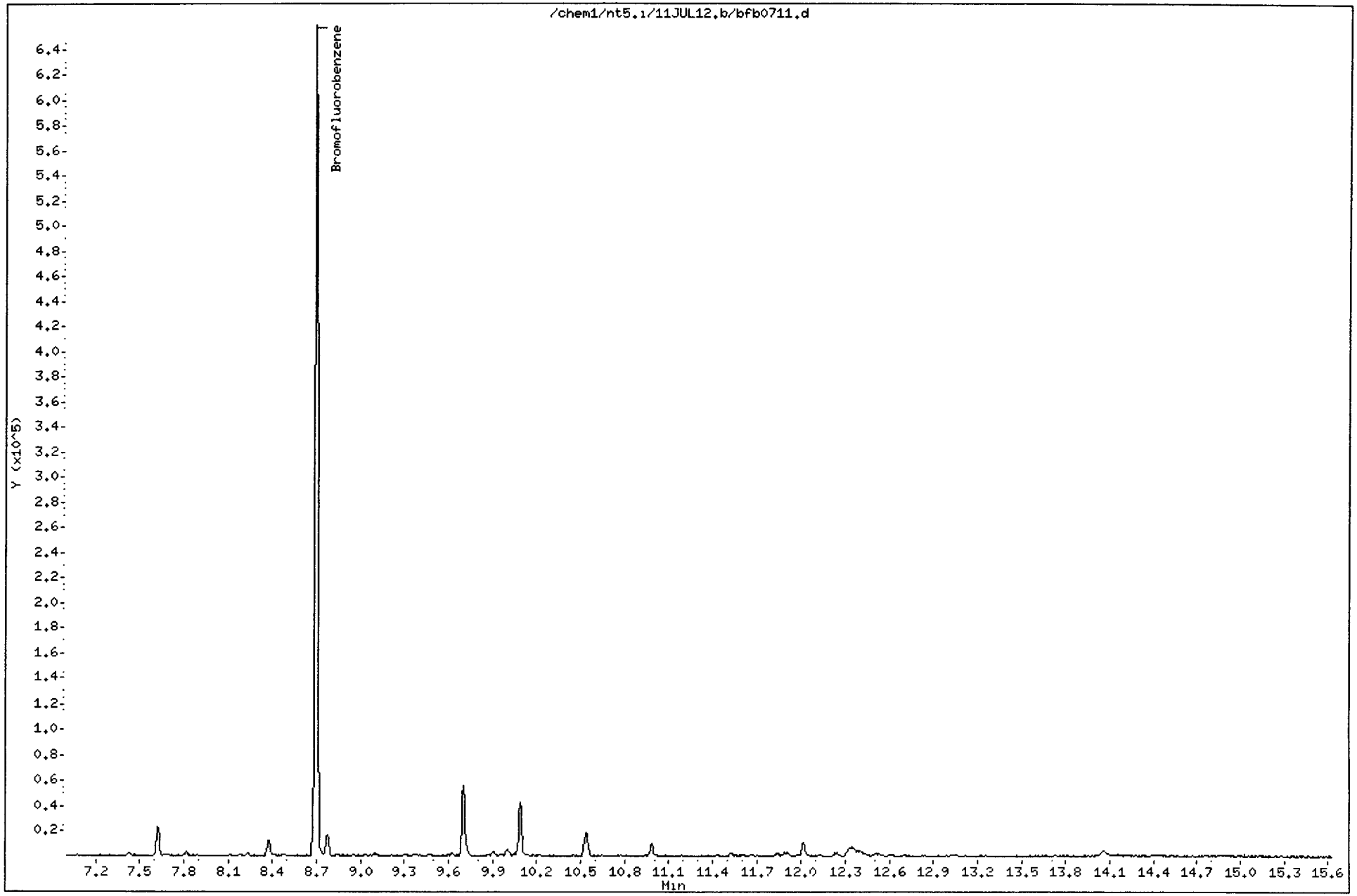
Instrument: nt5.1

Sample Info: BFB0711,BFB0711,,1,11JUL12,,

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18



Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/11JUL12.b/0500711.d
Lab Smp Id: CC0711 Client Smp ID: VSTD50
Inj Date : 11-JUL-2012 08:22
Operator : PB Inst ID: nt5.i
Smp Info : CC0711,5,5,0
Misc Info : 12-
Comment :
Method : /chem1/nt5.i/11JUL12.b/VO010412S.m
Meth Date : 11-Jul-2012 09:00 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.017	1.017	(0.217)	187545	50.0000	45.950
2 Chloromethane	50	1.136	1.136	(0.242)	266473	50.0000	46.888
3 Vinyl Chloride	62	1.187	1.187	(0.253)	280959	50.0000	49.794
4 Bromomethane	94	1.407	1.407	(0.300)	146445	50.0000	48.600
5 Chloroethane	64	1.487	1.487	(0.317)	170868	50.0000	48.678
6 Trichlorofluoromethane	101	1.577	1.577	(0.336)	233366	50.0000	47.297
7 1,1-Dichloroethene	96	1.945	1.945	(0.415)	188500	50.0000	49.283
8 Carbon Disulfide	76	1.945	1.945	(0.415)	660509	50.0000	47.857
9 112Trichloro122Trifluoroethane	101	1.990	1.990	(0.424)	196583	50.0000	52.165
10 Iodomethane	142	2.052	2.052	(0.438)	263463	50.0000	62.193
11 Bromoethane	108	2.160	2.160	(0.461)	140061	50.0000	48.601
12 Acrolein	56	2.262	2.262	(0.482)	188834	250.000	257.29
13 Methylene Chloride	84	2.443	2.443	(0.521)	221392	50.0000	44.887
14 Acetone	43	2.545	2.545	(0.543)	316945	250.000	207.63

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.584	2.584	(0.551)	220753	50.0000	49.750
	16 Methyl tert butyl ether	73	2.765	2.765	(0.590)	656110	50.0000	50.061
	17 1,1-Dichloroethane	63	3.206	3.206	(0.684)	438657	50.0000	49.012
	18 Acrylonitrile	53	3.291	3.291	(0.702)	75244	50.0000	45.658
	19 Vinyl Acetate	43	3.540	3.540	(0.755)	381386	50.0000	46.093
	20 Cis-1,2-Dichloroethene	96	3.755	3.755	(0.801)	234975	50.0000	49.862
	22 2,2-Dichloropropane	77	3.851	3.851	(0.821)	369038	50.0000	52.993
	23 Bromochloromethane	128	3.936	3.936	(0.840)	103812	50.0000	48.726
	24 Chloroform	83	4.038	4.038	(0.861)	400320	50.0000	50.829
	25 Carbon Tetrachloride	117	4.128	4.128	(0.803)	310736	50.0000	56.966
$	27 Dibromofluoromethane	111	4.208	4.208	(0.897)	234425	50.0000	47.290
	26 1,1,1-Trichloroethane	97	4.196	4.196	(0.895)	371574	50.0000	53.050
	28 1,1-Dichloropropene	75	4.321	4.321	(0.840)	325041	50.0000	55.495
	29 2-Butanone	72	4.377	4.377	(0.934)	113285	250.000	237.75
	30 Benzene	78	4.547	4.547	(0.884)	914406	50.0000	53.728
*	31 Pentafluorobenzene	168	4.688	4.688	(1.000)	313183	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	282585	50.0000	47.740
	33 1,2-Dichloroethane	62	4.739	4.739	(0.922)	334962	50.0000	51.003
	34 Trichloroethene	95	5.084	5.084	(0.989)	242255	50.0000	55.942
*	35 1,4-Difluorobenzene	114	5.141	5.141	(1.000)	707336	50.0000	
	37 Dibromomethane	93	5.441	5.441	(1.058)	126156	50.0000	52.038
	38 1,2-Dichloropropane	63	5.537	5.537	(1.077)	240435	50.0000	52.394
	39 Bromodichloromethane	83	5.611	5.611	(1.091)	305633	50.0000	53.199
	40 2-Chloroethyl Vinyl Ether	63	6.142	6.142	(1.195)	140278	50.0000	53.073
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.198)	373773	50.0000	54.255
$	42 d8-Toluene	98	6.318	6.318	(1.229)	969842	50.0000	50.224
	43 Toluene	92	6.357	6.357	(1.237)	597033	50.0000	52.711
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	248259	50.0000	54.705
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.307)	452754	250.000	255.29
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.308)	352246	50.0000	54.493
	47 1,1,2-Trichloroethane	97	6.849	6.849	(1.332)	181755	50.0000	51.496
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	211596	50.0000	52.332
	49 1,3-Dichloropropane	76	7.070	7.070	(0.927)	329149	50.0000	51.136
	50 1,2-Dibromoethane	107	7.166	7.166	(1.394)	176152	50.0000	52.205
	51 2-Hexanone	43	7.432	7.432	(0.975)	781328	250.000	249.02
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	851906	50.0000	
	53 Chlorobenzene	112	7.636	7.636	(1.001)	634197	50.0000	52.291
	54 Ethyl Benzene	91	7.687	7.687	(1.008)	1155152	50.0000	53.729
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	225138	50.0000	53.086
	56 m,p-xylene	106	7.822	7.822	(1.026)	861275	100.000	114.08
	57 o-Xylene	106	8.184	8.184	(1.073)	407694	50.0000	54.127
	58 Styrene	104	8.230	8.230	(1.079)	694324	50.0000	54.363
	59 Bromoform	173	8.224	8.224	(0.848)	139224	50.0000	50.903
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	1091877	50.0000	55.333
$	62 4-Bromofluorobenzene	95	8.694	8.694	(1.140)	486688	50.0000	51.202
	63 Bromobenzene	156	8.773	8.773	(0.904)	258765	50.0000	50.918
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	1313509	50.0000	54.328

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.897	8.897	(0.917)	210904	50.0000	47.200
66	2-Chloro Toluene	91	8.948	8.948	(0.922)	785867	50.0000	52.807
67	1,3,5-Trimethyl Benzene	105	9.027	9.027	(0.931)	908118	50.0000	54.031
68	1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	69899	50.0000	48.938
69	Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	91323	50.0000	51.914
70	4-Chloro Toluene	91	9.101	9.101	(0.938)	826365	50.0000	53.318
71	T-Butyl Benzene	119	9.305	9.305	(0.959)	802506	50.0000	54.585
72	1,2,4-Trimethylbenzene	105	9.372	9.372	(0.966)	913965	50.0000	54.481
73	S-Butyl Benzene	105	9.469	9.469	(0.976)	1196186	50.0000	55.448
74	4-Isopropyl Toluene	119	9.616	9.616	(0.991)	992184	50.0000	56.139
75	1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	506230	50.0000	52.226
* 76	d4-1,4-Dichlorobenzene	152	9.700	9.700	(1.000)	491217	50.0000	
77	1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	513033	50.0000	50.550
78	N-Butyl Benzene	91	10.000	10.000	(1.031)	951622	50.0000	57.285
$ 79	d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.040)	457357	50.0000	50.721
80	1,2-Dichlorobenzene	146	10.091	10.091	(1.040)	478665	50.0000	50.386
81	1,2-Dibromo 3-Chloropropane	75	10.843	10.843	(1.118)	44410	50.0000	50.359
82	Hexachloro 1,3-Butadiene	225	11.522	11.522	(1.188)	213537	50.0000	54.159
83	1,2,4-Trichlorobenzene	180	11.511	11.511	(1.187)	349924	50.0000	55.429
84	Naphthalene	128	11.822	11.822	(1.219)	721055	50.0000	54.340
85	1,2,3-Trichlorobenzene	180	12.003	12.003	(1.237)	320521	50.0000	54.164

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: 0500711.d
Lab Smp Id: CC0711
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-

Calibration Date: 11-JUL-2012
Calibration Time: 08:22
Client Smp ID: VSTD50
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	313183	7.33
35 1,4-Difluorobenze	682850	341425	1365700	707336	3.59
52 d5-Chlorobenzene	802138	401069	1604276	851906	6.20
76 d4-1,4-Dichlorobe	452585	226292	905170	491217	8.54

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 0500711.d
Analysis Type: SOIL
Lab Sample ID: CC0711
Method: /chem1/nt5.i/11JUL12.b/VO010412S.m

Injection Date: 11-JUL-2012 08:22
Init. Cal. Date(s): 29-JUN-2012 29-JUN-2012
Init. Cal. Times: 11:34 13:51
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.65162	0.59884	0.100	-8.10080	20.00000	Averaged	
2 Chloromethane	0.90732	0.85085	0.100	-6.22316	20.00000	Averaged	
3 Vinyl Chloride	0.90082	0.89711	0.100	-0.41264	20.00000	Averaged	
4 Bromomethane	0.48107	0.46760	0.100	-2.79993	20.00000	Averaged	
5 Chloroethane	0.56040	0.54559	0.100	-2.64314	20.00000	Averaged	
6 Trichlorofluoromethane	0.78773	0.74514	0.100	-5.40596	20.00000	Averaged	
7 1,1-Dichloroethene	0.61064	0.60189	0.100	-1.43371	20.00000	Averaged	
8 Carbon Disulfide	2.20347	2.10902	0.010	-4.28640	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.60164	0.62769	0.010	4.32970	20.00000	Averaged	
10 Iodomethane	0.67632	0.84124	0.010	24.38569	20.00000	Averaged	<-
11 Bromoethane	0.46009	0.44722	0.100	-2.79853	20.00000	Averaged	
12 Acrolein	0.11717	0.12059	0.000	2.91635	20.00000	Averaged	
13 Methylene Chloride	0.78743	0.70691	0.010	-10.22518	20.00000	Averaged	
14 Acetone	0.24370	0.20240	0.001	-16.94761	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	0.70841	0.70487	0.010	-0.50012	20.00000	Averaged	
16 Methyl tert butyl ether	2.09241	2.09497	0.100	0.12252	20.00000	Averaged	
17 1,1-Dichloroethane	1.42888	1.40064	0.100	-1.97644	20.00000	Averaged	
18 Acrylonitrile	0.26311	0.24026	0.001	-8.68444	20.00000	Averaged	
19 Vinyl Acetate	1.32101	1.21777	0.010	-7.81491	20.00000	Averaged	
20 Cis-1,2-Dichloroethene	0.75236	0.75028	0.010	-0.27611	20.00000	Averaged	
22 2,2-Dichloropropane	1.11180	1.17835	0.010	5.98511	20.00000	Averaged	
23 Bromochloromethane	0.34014	0.33148	0.050	-2.54749	20.00000	Averaged	
24 Chloroform	1.25738	1.27823	0.100	1.65821	20.00000	Averaged	
25 Carbon Tetrachloride	0.38559	0.43931	0.100	13.93130	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.79141	0.74852	0.100	-5.41948	20.00000	Averaged	
26 1,1,1-Trichloroethane	1.11823	1.18644	0.100	6.10036	20.00000	Averaged	
28 1,1-Dichloropropene	0.41403	0.45953	0.010	10.98907	20.00000	Averaged	
29 2-Butanone	0.07607	0.07234	0.001	-4.89873	20.00000	Averaged	
30 Benzene	1.20306	1.29275	0.100	7.45508	20.00000	Averaged	
$ 32 d4-1,2-Dichloroethane	0.94501	0.90230	0.010	-4.51975	20.00000	Averaged	
33 1,2-Dichloroethane	0.46425	0.47355	0.100	2.00517	20.00000	Averaged	
34 Trichloroethene	0.30611	0.34249	0.100	11.88427	20.00000	Averaged	
37 Dibromomethane	0.17137	0.17835	0.010	4.07512	20.00000	Averaged	
38 1,2-Dichloropropane	0.32439	0.33992	0.100	4.78771	20.00000	Averaged	
39 Bromodichloromethane	0.40611	0.43209	0.100	6.39770	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 0500711.d
Analysis Type: SOIL
Lab Sample ID: CC0711
Method: /chem1/nt5.i/11JUL12.b/VO010412S.m

Injection Date: 11-JUL-2012 08:22
Init. Cal. Date(s): 29-JUN-2012 29-JUN-2012
Init. Cal. Times: 11:34 13:51
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
40 2-Chloroethyl Vinyl Ether	0.18683	0.19832	0.000	6.14664	20.00000	Averaged
41 Cis 1,3-dichloropropene	0.48698	0.52842	0.100	8.51072	20.00000	Averaged
$ 42 d8-Toluene	1.36500	1.37112	0.010	0.44829	20.00000	Averaged
43 Toluene	0.80065	0.84406	0.100	5.42172	20.00000	Averaged
44 Tetrachloroethene	0.26635	0.29142	0.100	9.40983	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.12536	0.12802	0.000	2.11789	20.00000	Averaged
46 Trans 1,3-Dichloropropene	0.45693	0.49799	0.010	8.98684	20.00000	Averaged
47 1,1,2-Trichloroethane	0.24949	0.25696	0.100	2.99204	20.00000	Averaged
48 Chlorodibromomethane	0.23731	0.24838	0.100	4.66414	20.00000	Averaged
49 1,3-Dichloropropane	0.37779	0.38637	0.100	2.27153	20.00000	Averaged
50 1,2-Dibromoethane	0.23852	0.24904	0.010	4.40959	20.00000	Averaged
51 2-Hexanone	0.18415	0.18343	0.010	-0.39191	20.00000	Averaged
53 Chlorobenzene	0.71183	0.74444	0.300	4.58216	20.00000	Averaged
54 Ethyl Benzene	1.26186	1.35596	0.100	7.45751	20.00000	Averaged
55 1,1,1,2-Tetrachloroethane	0.24892	0.26428	0.010	6.17130	20.00000	Averaged
56 m,p-xylene	0.44310	0.50550	0.100	14.08252	20.00000	Averaged
57 o-Xylene	0.44208	0.47857	0.100	8.25396	20.00000	Averaged
58 Styrene	0.74961	0.81502	0.100	8.72638	20.00000	Averaged
59 Bromoform	0.27840	0.28343	0.100	1.80611	20.00000	Averaged
60 Isopropyl Benzene	2.00858	2.22280	0.010	10.66527	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.55788	0.57129	0.200	2.40347	20.00000	Averaged
63 Bromobenzene	0.51729	0.52678	0.010	1.83513	20.00000	Averaged
64 N-Propyl Benzene	2.46099	2.67399	0.010	8.65508	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.45482	0.42935	0.300	-5.60028	20.00000	Averaged
66 2-Chloro Toluene	1.51479	1.59984	0.010	5.61415	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	1.71078	1.84871	0.010	8.06230	20.00000	Averaged
68 1,2,3-Trichloropropane	0.14539	0.14230	0.010	-2.12308	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.17906	0.18591	0.001	3.82718	20.00000	Averaged
70 4-Chloro Toluene	1.57759	1.68228	0.010	6.63598	20.00000	Averaged
71 T-Butyl Benzene	1.49649	1.63371	0.010	9.16926	20.00000	Averaged
72 1,2,4-Trimethylbenzene	1.70759	1.86061	0.010	8.96159	20.00000	Averaged
73 S-Butyl Benzene	2.19589	2.43515	0.010	10.89570	20.00000	Averaged
74 4-Isopropyl Toluene	1.79897	2.01985	0.010	12.27829	20.00000	Averaged
75 1,3-Dichlorobenzene	0.98664	1.03056	0.100	4.45213	20.00000	Averaged
77 1,4-Dichlorobenzene	1.03305	1.04441	0.100	1.09941	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 0500711.d
Analysis Type: SOIL
Lab Sample ID: CC0711
Method: /chem1/nt5.i/11JUL12.b/VO010412S.m

Injection Date: 11-JUL-2012 08:22
Init. Cal. Date(s): 29-JUN-2012 29-JUN-2012
Init. Cal. Times: 11:34 13:51
Quant Type: ISTD

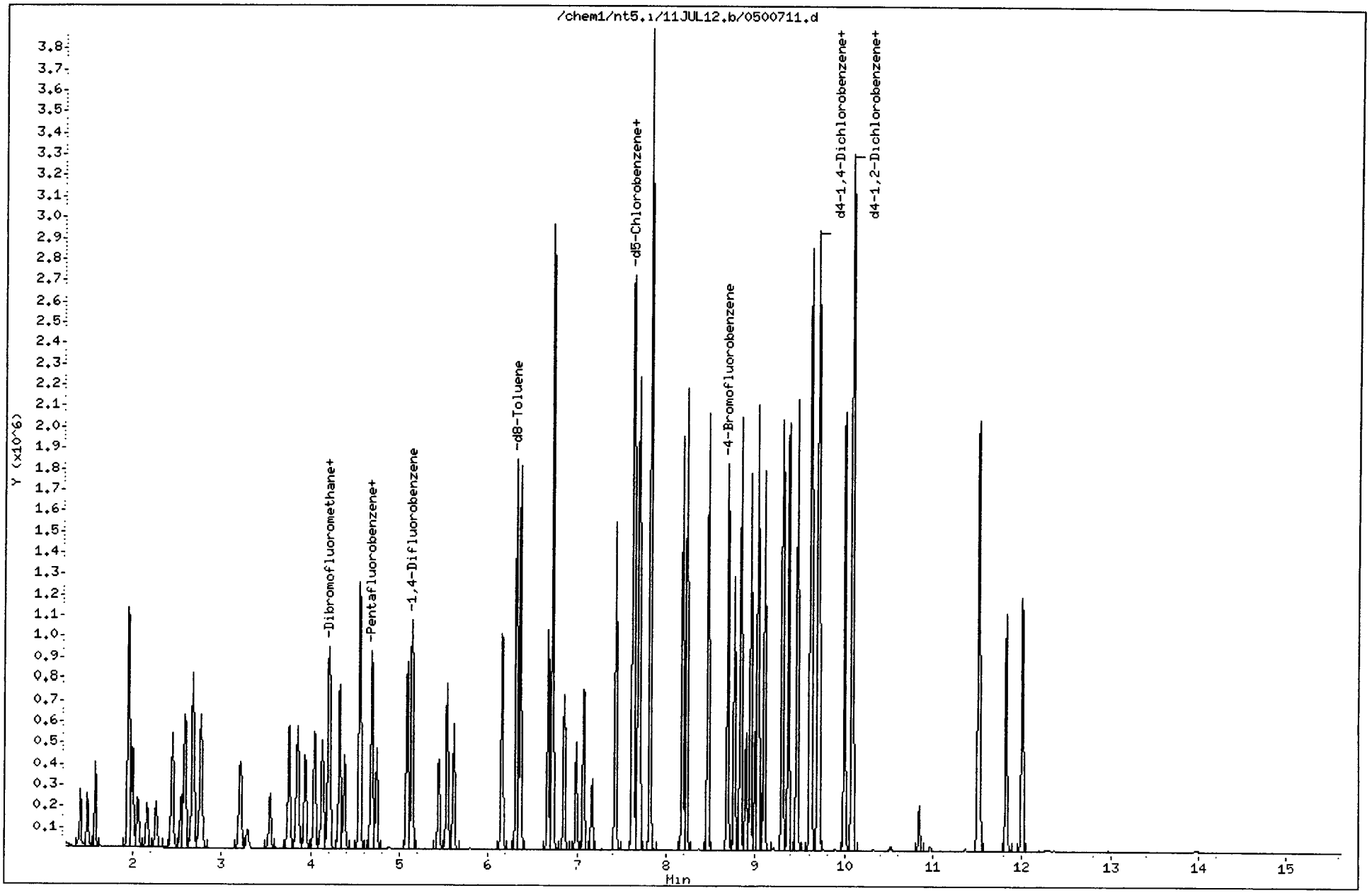
COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	1.69090	1.93727	0.010	14.57031	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.91784	0.93107	0.010	1.44119	20.00000	Averaged
80 1,2-Dichlorobenzene	0.96698	0.97445	0.100	0.77225	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.08976	0.09041	0.010	0.71731	20.00000	Averaged
82 Hexachloro 1,3-Butadiene	0.40133	0.43471	0.010	8.31732	20.00000	Averaged
83 1,2,4-Trichlorobenzene	0.64259	0.71236	0.010	10.85738	20.00000	Averaged
84 Naphthalene	1.35066	1.46790	0.010	8.67961	20.00000	Averaged
85 1,2,3-Trichlorobenzene	0.60234	0.65250	0.010	8.32792	20.00000	Averaged

Data File: /chem1/nt5.i/11JUL12.b/0500711.d
Date : 11-JUL-2012 08:22
Client ID: VSTD50
Sample Info: CC0711,5,5,0

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



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8260C

Data file : /chem1/nt5.i/11JUL12.b/lcs0711.d
Lab Smp Id: LCS0711 Client Smp ID: LCS0711
Inj Date : 11-JUL-2012 09:09
Operator : PB Inst ID: nt5.i
Smp Info : LCS0711,5,5,0
Misc Info : 12-12671
Comment :
Method : /chem1/nt5.i/11JUL12.b/VO010412S.m
Meth Date : 12-Jul-2012 15:35 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	1.017	1.017	(0.217)	167951	39.4299	39.430
2 Chloromethane	50	1.136	1.136	(0.242)	251055	42.3301	42.330
3 Vinyl Chloride	62	1.187	1.187	(0.253)	260198	44.1879	44.188
4 Bromomethane	94	1.407	1.407	(0.300)	136163	43.3002	43.300
5 Chloroethane	64	1.487	1.487	(0.317)	160390	43.7845	43.785
6 Trichlorofluoromethane	101	1.577	1.577	(0.336)	212292	41.2285	41.228
7 1,1-Dichloroethene	96	1.951	1.945	(0.416)	174278	43.6613	43.661
8 Carbon Disulfide	76	1.951	1.945	(0.416)	610336	42.3743	42.374
9 112Trichloro122Trifluoroethane	101	1.996	1.990	(0.426)	178261	45.3270	45.327
10 Iodomethane	142	2.052	2.052	(0.438)	246281	55.7084	55.708
11 Bromoethane	108	2.160	2.160	(0.461)	130709	43.4609	43.461
12 Acrolein	56	2.256	2.262	(0.481)	174704	228.094	228.09
13 Methylene Chloride	84	2.443	2.443	(0.521)	204174	39.6671	39.667
14 Acetone	43	2.539	2.545	(0.542)	294443	184.832	184.83

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.584	2.584	(0.551)	204294	44.1174	44.117
	16 Methyl tert butyl ether	73	2.759	2.765	(0.589)	601324	43.9645	43.964
	17 1,1-Dichloroethane	63	3.206	3.206	(0.684)	404587	43.3167	43.317
	18 Acrylonitrile	53	3.291	3.291	(0.702)	69125	40.1924	40.192
	19 Vinyl Acetate	43	3.540	3.540	(0.755)	354351	41.0363	41.036
	20 Cis-1,2-Dichloroethene	96	3.749	3.755	(0.800)	213690	43.4510	43.451
	22 2,2-Dichloropropane	77	3.851	3.851	(0.821)	338380	46.5604	46.560
	23 Bromochloromethane	128	3.936	3.936	(0.840)	99137	44.5879	44.588
	24 Chloroform	83	4.038	4.038	(0.861)	367519	44.7150	44.715
	25 Carbon Tetrachloride	117	4.128	4.128	(0.803)	284130	50.1194	50.119
$	27 Dibromofluoromethane	111	4.208	4.208	(0.897)	245907	47.5343	47.534
	26 1,1,1-Trichloroethane	97	4.196	4.196	(0.895)	334260	45.7292	45.729
	28 1,1-Dichloropropene	75	4.321	4.321	(0.840)	298433	49.0260	49.026
	29 2-Butanone	72	4.372	4.377	(0.932)	104347	209.846	209.85
	30 Benzene	78	4.547	4.547	(0.884)	839364	47.4544	47.454
*	31 Pentafluorobenzene	168	4.688	4.688	(1.000)	326836	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	292340	47.3250	47.325
	33 1,2-Dichloroethane	62	4.739	4.739	(0.922)	307921	45.1133	45.113
	34 Trichloroethene	95	5.084	5.084	(0.989)	221666	49.2530	49.253
*	35 1,4-Difluorobenzene	114	5.141	5.141	(1.000)	735118	50.0000	
	37 Dibromomethane	93	5.441	5.441	(1.058)	116411	46.2029	46.203
	38 1,2-Dichloropropane	63	5.531	5.537	(1.076)	218563	45.8277	45.828
	39 Bromodichloromethane	83	5.611	5.611	(1.091)	283247	47.4389	47.439
	40 2-Chloroethyl Vinyl Ether	63	6.142	6.142	(1.195)	130124	47.3710	47.371
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.198)	344330	48.0926	48.093
$	42 d8-Toluene	98	6.318	6.318	(1.229)	995996	49.6293	49.629
	43 Toluene	92	6.357	6.357	(1.237)	545753	46.3624	46.362
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	228852	48.5508	48.551
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.307)	413444	224.318	224.32
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.308)	323606	48.1707	48.171
	47 1,1,2-Trichloroethane	97	6.849	6.849	(1.332)	166751	45.4595	45.459
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	193642	46.1085	46.109
	49 1,3-Dichloropropane	76	7.076	7.070	(0.928)	304535	45.5503	45.550
	50 1,2-Dibromoethane	107	7.166	7.166	(1.394)	162812	46.4276	46.428
	51 2-Hexanone	43	7.432	7.432	(0.975)	707560	217.113	217.11
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	884851	50.0000	
	53 Chlorobenzene	112	7.636	7.636	(1.001)	584770	46.4205	46.421
	54 Ethyl Benzene	91	7.687	7.687	(1.008)	1061478	47.5336	47.534
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	206822	46.9511	46.951
	56 m,p-xylene	106	7.822	7.822	(1.026)	792619	101.080	101.08
	57 o-Xylene	106	8.184	8.184	(1.073)	370856	47.4030	47.403
	58 Styrene	104	8.230	8.230	(1.079)	640388	48.2734	48.273
	59 Bromoform	173	8.224	8.224	(0.848)	128553	45.9126	45.913
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	997410	49.3745	49.375
$	62 4-Bromofluorobenzene	95	8.694	8.694	(1.140)	500003	50.6440	50.644
	63 Bromobenzene	156	8.773	8.773	(0.904)	238147	45.7750	45.775
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	1213889	49.0442	49.044

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.897	8.897	(0.917)	191511	41.8669	41.867
66	2-Chloro Toluene	91	8.948	8.948	(0.922)	724018	47.5241	47.524
67	1,3,5-Trimethyl Benzene	105	9.033	9.027	(0.931)	840689	48.8606	48.861
68	1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	65202	44.5920	44.592
69	Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	84030	46.6612	46.661
70	4-Chloro Toluene	91	9.101	9.101	(0.938)	770533	48.5640	48.564
71	T-Butyl Benzene	119	9.305	9.305	(0.959)	729417	48.4640	48.464
72	1,2,4-Trimethylbenzene	105	9.372	9.372	(0.966)	841744	49.0134	49.013
73	S-Butyl Benzene	105	9.469	9.469	(0.976)	1090304	49.3691	49.369
74	4-Isopropyl Toluene	119	9.616	9.616	(0.991)	925695	51.1638	51.164
75	1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	468731	47.2372	47.237
* 76	d4-1,4-Dichlorobenzene	152	9.700	9.700	(1.000)	502866	50.0000	
77	1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	483165	46.5040	46.504
78	N-Butyl Benzene	91	10.000	10.000	(1.031)	882662	51.9031	51.903
$ 79	d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.040)	468366	50.7382	50.738
80	1,2-Dichlorobenzene	146	10.096	10.091	(1.041)	441748	45.4229	45.423
81	1,2-Dibromo 3-Chloropropane	75	10.849	10.843	(1.118)	40331	44.6736	44.674
82	Hexachloro 1,3-Butadiene	225	11.533	11.522	(1.189)	195294	48.3842	48.384
83	1,2,4-Trichlorobenzene	180	11.516	11.511	(1.187)	331065	51.2265	51.227
84	Naphthalene	128	11.833	11.822	(1.220)	660151	48.5975	48.598
85	1,2,3-Trichlorobenzene	180	12.014	12.003	(1.238)	296535	48.9498	48.950

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: lcs0711.d
Lab Smp Id: LCS0711
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12671

Calibration Date: 11-JUL-2012
Calibration Time: 08:22
Client Smp ID: LCS0711
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	326836	12.00
35 1,4-Difluorobenze	682850	341425	1365700	735118	7.65
52 d5-Chlorobenzene	802138	401069	1604276	884851	10.31
76 d4-1,4-Dichlorobe	452585	226292	905170	502866	11.11

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.69	4.19	5.19	4.69	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Client SDG: 11JUL12
Sample Matrix: SOLID Fraction: VOA
Lab Smp Id: LCS0711 Client Smp ID: LCS0711
Level: LOW Operator: PB
Data Type: MS DATA SampleType: LCS
SpikeList File: all.spk Quant Type: ISTD
Sublist File: voa.sub
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12671

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	39.430	78.86	53-148
2 Chloromethane	50.000	42.330	84.66	64-125
3 Vinyl Chloride	50.000	44.188	88.38	63-137
4 Bromomethane	50.000	43.300	86.60	57-136
5 Chloroethane	50.000	43.785	87.57	64-131
6 Trichlorofluoromet	50.000	41.228	82.46	69-132
12 Acrolein	250.00	228.09	91.24	54-137
9 112Trichloro122Tri	50.000	45.327	90.65	74-130
14 Acetone	250.00	184.83	73.93	60-131
7 1,1-Dichloroethene	50.000	43.661	87.32	75-126
11 Bromoethane	50.000	43.461	86.92	76-126
10 Iodomethane	50.000	55.708	111.42	65-139
13 Methylene Chloride	50.000	39.667	79.33	70-123
8 Carbon Disulfide	50.000	42.374	84.75	71-129
18 Acrylonitrile	50.000	40.192	80.38	67-125
15 Trans-1,2-Dichloro	50.000	44.117	88.23	80-120
19 Vinyl Acetate	50.000	41.036	82.07	60-136
17 1,1-Dichloroethane	50.000	43.317	86.63	80-120
29 2-Butanone	250.00	209.85	83.94	70-120
22 2,2-Dichloropropan	50.000	46.560	93.12	74-123
20 Cis-1,2-Dichloroet	50.000	43.451	86.90	80-120
24 Chloroform	50.000	44.715	89.43	80-120
23 Bromochloromethane	50.000	44.588	89.18	80-120
26 1,1,1-Trichloroeth	50.000	45.729	91.46	77-121
28 1,1-Dichloropropen	50.000	49.026	98.05	80-120
25 Carbon Tetrachlori	50.000	50.119	100.24	77-122
33 1,2-Dichloroethane	50.000	45.113	90.23	76-120
30 Benzene	50.000	47.454	94.91	80-120
34 Trichloroethene	50.000	49.253	98.51	80-120
38 1,2-Dichloropropan	50.000	45.828	91.66	80-120
39 Bromodichlorometha	50.000	47.439	94.88	77-121
37 Dibromomethane	50.000	46.203	92.41	80-120
40 2-Chloroethyl Viny	50.000	47.371	94.74	10-191

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
45 4-Methyl-2-Pentano	250.00	224.32	89.73	67-120
41 Cis 1,3-dichloropr	50.000	48.093	96.19	74-120
43 Toluene	50.000	46.362	92.72	80-120
46 Trans 1,3-Dichloro	50.000	48.171	96.34	65-120
51 2-Hexanone	250.00	217.11	86.85	65-130
47 1,1,2-Trichloroeth	50.000	45.459	90.92	80-120
49 1,3-Dichloropropan	50.000	45.550	91.10	80-120
44 Tetrachloroethene	50.000	48.551	97.10	80-121
48 Chlorodibromometha	50.000	46.109	92.22	64-120
50 1,2-Dibromoethane	50.000	46.428	92.86	75-120
53 Chlorobenzene	50.000	46.421	92.84	80-120
55 1,1,1,2-Tetrachlor	50.000	46.951	93.90	69-121
54 Ethyl Benzene	50.000	47.534	95.07	80-127
56 m,p-xylene	100.00	101.08	101.08	80-125
57 o-Xylene	50.000	47.403	94.81	78-120
58 Styrene	50.000	48.273	96.55	80-123
60 Isopropyl Benzene	50.000	49.375	98.75	80-127
59 Bromoform	50.000	45.913	91.83	60-120
65 1,1,2,2-Tetrachlor	50.000	41.867	83.73	74-120
68 1,2,3-Trichloropro	50.000	44.592	89.18	72-121
69 Trans-1,4-Dichloro	50.000	46.661	93.32	65-126
64 N-Propyl Benzene	50.000	49.044	98.09	80-132
63 Bromobenzene	50.000	45.775	91.55	80-120
67 1,3,5-Trimethyl Be	50.000	48.861	97.72	80-125
66 2-Chloro Toluene	50.000	47.524	95.05	80-125
70 4-Chloro Toluene	50.000	48.564	97.13	80-127
71 T-Butyl Benzene	50.000	48.464	96.93	87-122
72 1,2,4-Trimethylben	50.000	49.013	98.03	80-126
73 S-Butyl Benzene	50.000	49.369	98.74	80-134
74 4-Isopropyl Toluen	50.000	51.164	102.33	80-131
75 1,3-Dichlorobenzen	50.000	47.237	94.47	80-120
77 1,4-Dichlorobenzen	50.000	46.504	93.01	80-120
78 N-Butyl Benzene	50.000	51.903	103.81	80-138
80 1,2-Dichlorobenzen	50.000	45.423	90.85	80-120
81 1,2-Dibromo 3-Chlo	50.000	44.674	89.35	59-120
83 1,2,4-Trichloroben	50.000	51.227	102.45	78-130
82 Hexachloro 1,3-But	50.000	48.384	96.77	76-129
84 Naphthalene	50.000	48.598	97.20	66-120
85 1,2,3-Trichloroben	50.000	48.950	97.90	73-123

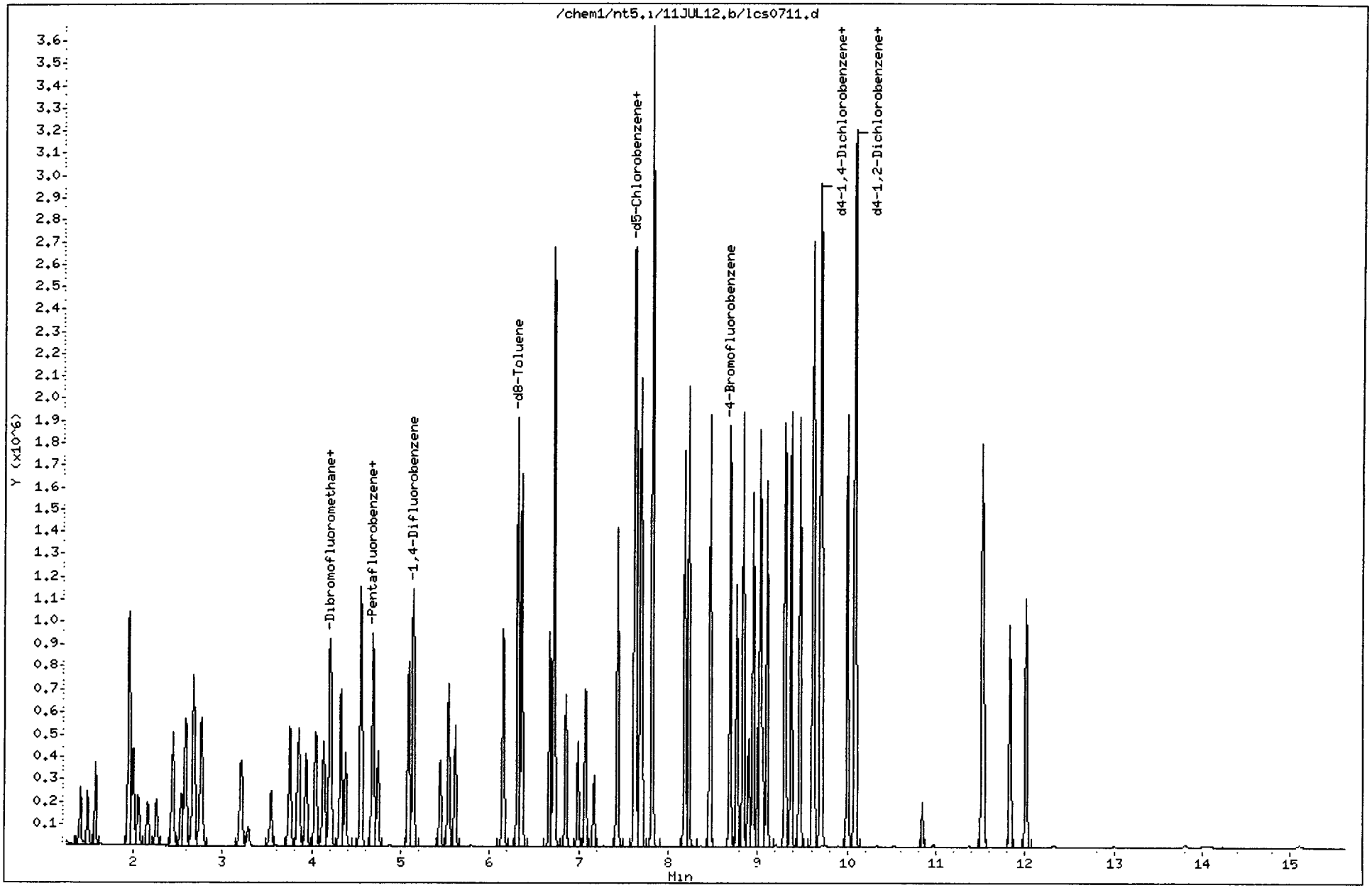
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	47.534	95.07	30-160

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 32 d4-1,2-Dichloroeth	50.000	47.325	94.65	75-152
$ 42 d8-Toluene	50.000	49.629	99.26	82-115
$ 62 4-Bromofluorobenze	50.000	50.644	101.29	64-120
$ 79 d4-1,2-Dichloroben	50.000	50.738	101.48	80-120

Data File: /chem1/nt5.1/11JUL12.b/lcs0711.d
Date : 11-JUL-2012 09:09
Client ID: LCS0711
Sample Info: LCS0711,5,5,0

Instrument: nt5.1

Operator: PB
Column phase: RTXVMS
Column diameter: 0.18



CO-ELUTION SUMMARY FOR FILE - lcs0711.d

Lab ID: LCS0711, Method: VO010412S.m, Instrument: nt5.i, Date: 11-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/11JUL12.b/lcs0711a.d
Lab Smp Id: LCS0711 Client Smp ID: LCS0711
Inj Date : 11-JUL-2012 09:32
Operator : PB Inst ID: nt5.i
Smp Info : LCS0711,5,5,0
Misc Info : 12-12671
Comment :
Method : /chem1/nt5.i/11JUL12.b/VO010412S.m
Meth Date : 12-Jul-2012 15:35 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

7/12/12

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	1.017	1.017	(0.217)	177250	38.4915	38.492
2 Chloromethane	50	1.142	1.136	(0.243)	255974	39.9220	39.922
3 Vinyl Chloride	62	1.192	1.187	(0.254)	265730	41.7423	41.742
4 Bromomethane	94	1.407	1.407	(0.300)	139836	41.1325	41.133
5 Chloroethane	64	1.487	1.487	(0.317)	161727	40.8377	40.838
6 Trichlorofluoromethane	101	1.577	1.577	(0.336)	222053	39.8893	39.889
7 1,1-Dichloroethene	96	1.950	1.945	(0.416)	177310	41.0888	41.089
8 Carbon Disulfide	76	1.950	1.945	(0.416)	624238	40.0885	40.088
9 112Trichloro122Trifluoroethane	101	1.996	1.990	(0.426)	186118	43.7749	43.775
10 Iodomethane	142	2.052	2.052	(0.438)	255540	53.4668	53.467
11 Bromoethane	108	2.160	2.160	(0.461)	134312	41.3089	41.309
12 Acrolein	56	2.262	2.262	(0.482)	182988	220.989	220.99
13 Methylene Chloride	84	2.443	2.443	(0.521)	212189	38.1319	38.132
14 Acetone	43	2.544	2.545	(0.543)	312415	181.403	181.40

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.584	2.584	(0.551)	211086	42.1648	42.165
	16 Methyl tert butyl ether	73	2.765	2.765	(0.590)	640259	43.2997	43.300
	17 1,1-Dichloroethane	63	3.206	3.206	(0.684)	421404	41.7328	41.733
	18 Acrylonitrile	53	3.291	3.291	(0.702)	73314	39.4304	39.430
	19 Vinyl Acetate	43	3.540	3.540	(0.755)	373001	39.9559	39.956
	20 Cis-1,2-Dichloroethene	96	3.755	3.755	(0.801)	225538	42.4200	42.420
	22 2,2-Dichloropropane	77	3.851	3.851	(0.821)	347735	44.2584	44.258
	23 Bromochloromethane	128	3.936	3.936	(0.840)	98819	41.1110	41.111
	24 Chloroform	83	4.044	4.038	(0.862)	383501	43.1594	43.159
	25 Carbon Tetrachloride	117	4.128	4.128	(0.803)	293863	48.1876	48.188
$	27 Dibromofluoromethane	111	4.208	4.208	(0.897)	264683	47.3258	47.326
	26 1,1,1-Trichloroethane	97	4.202	4.196	(0.896)	350985	44.4154	44.415
	28 1,1-Dichloropropene	75	4.321	4.321	(0.840)	308515	47.1148	47.115
	29 2-Butanone	72	4.377	4.377	(0.934)	112272	208.847	208.85
	30 Benzene	78	4.547	4.547	(0.884)	871863	45.8221	45.822
*	31 Pentafluorobenzene	168	4.688	4.688	(1.000)	353341	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	318806	47.7381	47.738
	33 1,2-Dichloroethane	62	4.739	4.739	(0.922)	325529	44.3359	44.336
	34 Trichloroethene	95	5.084	5.084	(0.989)	230098	47.5278	47.528
*	35 1,4-Difluorobenzene	114	5.141	5.141	(1.000)	790781	50.0000	
	37 Dibromomethane	93	5.441	5.441	(1.058)	122873	45.3349	45.335
	38 1,2-Dichloropropane	63	5.537	5.537	(1.077)	230913	45.0091	45.009
	39 Bromodichloromethane	83	5.611	5.611	(1.091)	297235	46.2775	46.278
	40 2-Chloroethyl Vinyl Ether	63	6.142	6.142	(1.195)	137798	46.6336	46.634
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.198)	363559	47.2040	47.204
$	42 d8-Toluene	98	6.318	6.318	(1.229)	1070495	49.5868	49.587
	43 Toluene	92	6.357	6.357	(1.237)	565925	44.6920	44.692
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	234798	46.3609	46.361
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.307)	445858	224.877	224.88
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.308)	342228	47.3569	47.357
	47 1,1,2-Trichloroethane	97	6.855	6.849	(1.333)	176487	44.7270	44.727
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	204081	45.2272	45.227
	49 1,3-Dichloropropane	76	7.070	7.070	(0.927)	322608	44.9102	44.910
	50 1,2-Dibromoethane	107	7.166	7.166	(1.394)	173489	45.9899	45.990
	51 2-Hexanone	43	7.432	7.432	(0.975)	769862	219.863	219.86
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	950724	50.0000	
	53 Chlorobenzene	112	7.636	7.636	(1.001)	613619	45.3356	45.336
	54 Ethyl Benzene	91	7.687	7.687	(1.008)	1107042	46.1391	46.139
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	216332	45.7072	45.707
	56 m,p-xylene	106	7.822	7.822	(1.026)	829602	98.4656	98.466
	57 o-Xylene	106	8.184	8.184	(1.073)	393428	46.8039	46.804
	58 Styrene	104	8.230	8.230	(1.079)	662158	46.4560	46.456
	59 Bromoform	173	8.224	8.224	(0.848)	136168	44.8226	44.823
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	1042753	47.5754	47.575
$	62 4-Bromofluorobenzene	95	8.694	8.694	(1.140)	537763	50.6947	50.695
	63 Bromobenzene	156	8.773	8.773	(0.904)	251369	44.5315	44.531
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	1260171	46.9256	46.926

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.897	8.897	(0.917)	208878	42.0864	42.086
66	2-Chloro Toluene	91	8.948	8.948	(0.922)	759466	45.9457	45.946
67	1,3,5-Trimethyl Benzene	105	9.027	9.027	(0.931)	877535	47.0067	47.007
68	1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	70141	44.2120	44.212
69	Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	88338	45.2108	45.211
70	4-Chloro Toluene	91	9.101	9.101	(0.938)	796479	46.2668	46.267
71	T-Butyl Benzene	119	9.304	9.305	(0.959)	769791	47.1399	47.140
72	1,2,4-Trimethylbenzene	105	9.372	9.372	(0.966)	883463	47.4128	47.413
73	S-Butyl Benzene	105	9.469	9.469	(0.976)	1146432	47.8441	47.844
74	4-Isopropyl Toluene	119	9.616	9.616	(0.991)	954525	48.6244	48.624
75	1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	490694	45.5768	45.577
* 76	d4-1,4-Dichlorobenzene	152	9.700	9.700	(1.000)	545607	50.0000	
77	1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	499483	44.3086	44.309
78	N-Butyl Benzene	91	10.000	10.000	(1.031)	904760	49.0348	49.035
$ 79	d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.040)	509129	50.8335	50.834
80	1,2-Dichlorobenzene	146	10.091	10.091	(1.040)	466015	44.1644	44.164
81	1,2-Dibromo 3-Chloropropane	75	10.843	10.843	(1.118)	43978	44.8973	44.897
82	Hexachloro 1,3-Butadiene	225	11.522	11.522	(1.188)	205350	46.8901	46.890
83	1,2,4-Trichlorobenzene	180	11.505	11.511	(1.186)	345568	49.2819	49.282
84	Naphthalene	128	11.822	11.822	(1.219)	721835	48.9757	48.976
85	1,2,3-Trichlorobenzene	180	12.003	12.003	(1.237)	315698	48.0307	48.031

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: lcs0711a.d
Lab Smp Id: LCS0711
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12671

Calibration Date: 11-JUL-2012
Calibration Time: 08:22
Client Smp ID: LCS0711
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	353341	21.09
35 1,4-Difluorobenze	682850	341425	1365700	790781	15.81
52 d5-Chlorobenzene	802138	401069	1604276	950724	18.52
76 d4-1,4-Dichlorobe	452585	226292	905170	545607	20.55

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.69	4.19	5.19	4.69	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: LCS0711
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12671

Client SDG: 11JUL12
Fraction: VOA
Client Smp ID: LCS0711
Operator: PB
SampleType: LCSD
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	38.492	76.98	53-148
2 Chloromethane	50.000	39.922	79.84	64-125
3 Vinyl Chloride	50.000	41.742	83.48	63-137
4 Bromomethane	50.000	41.133	82.27	57-136
5 Chloroethane	50.000	40.838	81.68	64-131
6 Trichlorofluoromet	50.000	39.889	79.78	69-132
12 Acrolein	250.00	220.99	88.40	54-137
9 112Trichloro122Tri	50.000	43.775	87.55	74-130
14 Acetone	250.00	181.40	72.56	60-131
7 1,1-Dichloroethene	50.000	41.089	82.18	75-126
11 Bromoethane	50.000	41.309	82.62	76-126
10 Iodomethane	50.000	53.467	106.93	65-139
13 Methylene Chloride	50.000	38.132	76.26	70-123
8 Carbon Disulfide	50.000	40.088	80.18	71-129
18 Acrylonitrile	50.000	39.430	78.86	67-125
15 Trans-1,2-Dichloro	50.000	42.165	84.33	80-120
19 Vinyl Acetate	50.000	39.956	79.91	60-136
17 1,1-Dichloroethane	50.000	41.733	83.47	80-120
29 2-Butanone	250.00	208.85	83.54	70-120
22 2,2-Dichloropropan	50.000	44.258	88.52	74-123
20 Cis-1,2-Dichloroet	50.000	42.420	84.84	80-120
24 Chloroform	50.000	43.159	86.32	80-120
23 Bromochloromethane	50.000	41.111	82.22	80-120
26 1,1,1-Trichloroeth	50.000	44.415	88.83	77-121
28 1,1-Dichloropropen	50.000	47.115	94.23	80-120
25 Carbon Tetrachlori	50.000	48.188	96.38	77-122
33 1,2-Dichloroethane	50.000	44.336	88.67	76-120
30 Benzene	50.000	45.822	91.64	80-120
34 Trichloroethene	50.000	47.528	95.06	80-120
38 1,2-Dichloropropan	50.000	45.009	90.02	80-120
39 Bromodichlorometha	50.000	46.278	92.56	77-121
37 Dibromomethane	50.000	45.335	90.67	80-120
40 2-Chloroethyl Viny	50.000	46.634	93.27	10-191

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
45 4-Methyl-2-Pentano	250.00	224.88	89.95	67-120
41 Cis 1,3-dichloropr	50.000	47.204	94.41	74-120
43 Toluene	50.000	44.692	89.38	80-120
46 Trans 1,3-Dichloro	50.000	47.357	94.71	65-120
51 2-Hexanone	250.00	219.86	87.95	65-130
47 1,1,2-Trichloroeth	50.000	44.727	89.45	80-120
49 1,3-Dichloropropan	50.000	44.910	89.82	80-120
44 Tetrachloroethene	50.000	46.361	92.72	80-121
48 Chlorodibromometha	50.000	45.227	90.45	64-120
50 1,2-Dibromoethane	50.000	45.990	91.98	75-120
53 Chlorobenzene	50.000	45.336	90.67	80-120
55 1,1,1,2-Tetrachlor	50.000	45.707	91.41	69-121
54 Ethyl Benzene	50.000	46.139	92.28	80-127
56 m,p-xylene	100.00	98.466	98.47	80-125
57 o-Xylene	50.000	46.804	93.61	78-120
58 Styrene	50.000	46.456	92.91	80-123
60 Isopropyl Benzene	50.000	47.575	95.15	80-127
59 Bromoform	50.000	44.823	89.65	60-120
65 1,1,2,2-Tetrachlor	50.000	42.086	84.17	74-120
68 1,2,3-Trichloropro	50.000	44.212	88.42	72-121
69 Trans-1,4-Dichloro	50.000	45.211	90.42	65-126
64 N-Propyl Benzene	50.000	46.926	93.85	80-132
63 Bromobenzene	50.000	44.531	89.06	80-120
67 1,3,5-Trimethyl Be	50.000	47.007	94.01	80-125
66 2-Chloro Toluene	50.000	45.946	91.89	80-125
70 4-Chloro Toluene	50.000	46.267	92.53	80-127
71 T-Butyl Benzene	50.000	47.140	94.28	87-122
72 1,2,4-Trimethylben	50.000	47.413	94.83	80-126
73 S-Butyl Benzene	50.000	47.844	95.69	80-134
74 4-Isopropyl Toluen	50.000	48.624	97.25	80-131
75 1,3-Dichlorobenzen	50.000	45.577	91.15	80-120
77 1,4-Dichlorobenzen	50.000	44.309	88.62	80-120
78 N-Butyl Benzene	50.000	49.035	98.07	80-138
80 1,2-Dichlorobenzen	50.000	44.164	88.33	80-120
81 1,2-Dibromo 3-Chlo	50.000	44.897	89.79	59-120
83 1,2,4-Trichloroben	50.000	49.282	98.56	78-130
82 Hexachloro 1,3-But	50.000	46.890	93.78	76-129
84 Naphthalene	50.000	48.976	97.95	66-120
85 1,2,3-Trichloroben	50.000	48.031	96.06	73-123

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	47.326	94.65	30-160

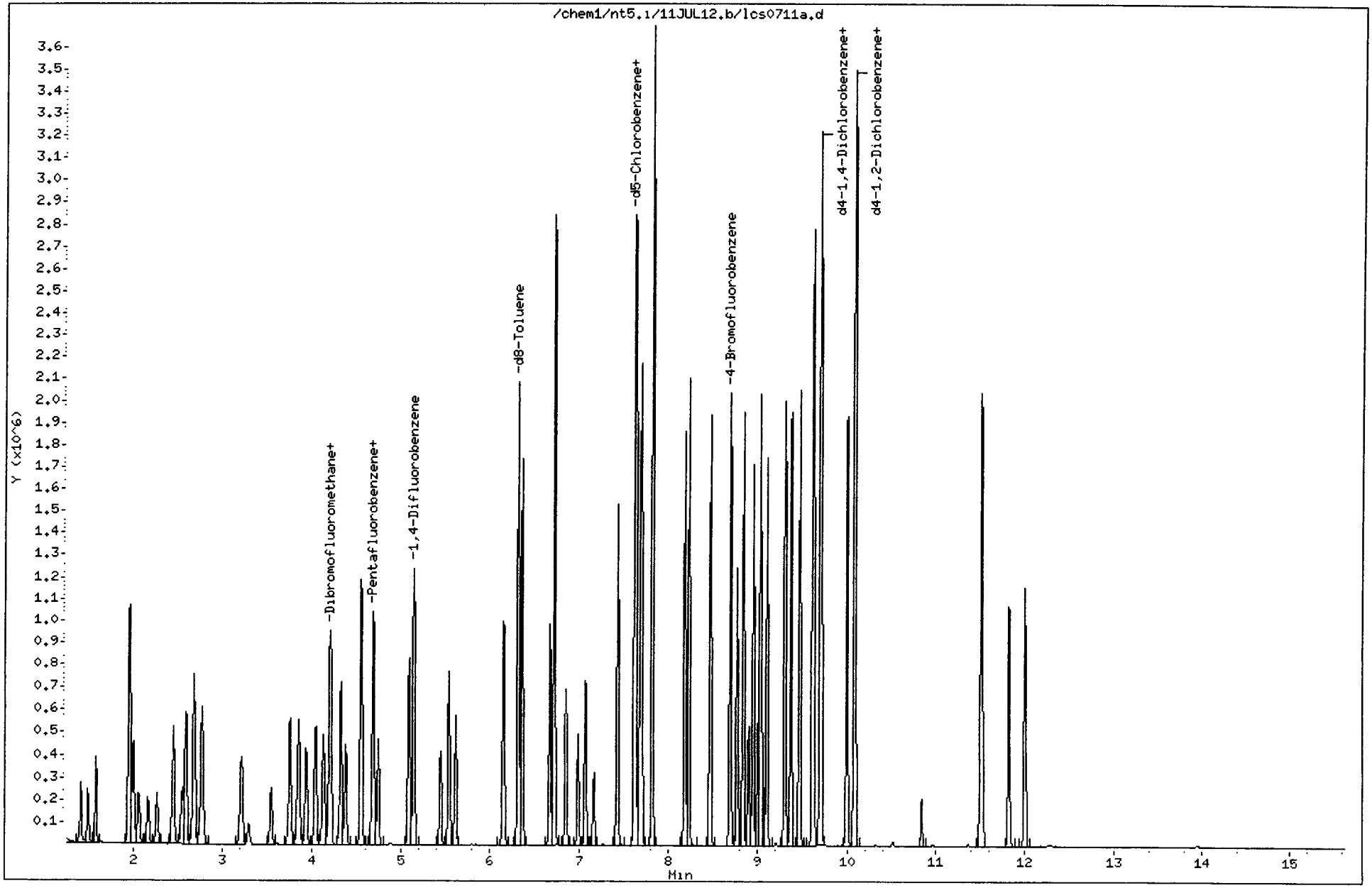
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 32 d4-1,2-Dichloroeth	50.000	47.738	95.48	75-152
$ 42 d8-Toluene	50.000	49.587	99.17	82-115
$ 62 4-Bromofluorobenze	50.000	50.695	101.39	64-120
$ 79 d4-1,2-Dichloroben	50.000	50.834	101.67	80-120

Data File: /chem1/nt5.i/11JUL12.b/lcs0711a.d
Date : 11-JUL-2012 09:32
Client ID: LCS0711
Sample Info: LCS0711,5,5,0

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - lcs0711a.d

Lab ID: LCS0711, Method: VO010412S.m, Instrument: nt5.i, Date: 11-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/11JUL12.b/mb0711.d
Lab Smp Id: MB0711 Client Smp ID: MB0711
Inj Date : 11-JUL-2012 09:55
Operator : PB Inst ID: nt5.i
Smp Info : MB0711,5,5,0
Misc Info : 12-12671
Comment :
Method : /chem1/nt5.i/11JUL12.b/VO010412S.m
Meth Date : 12-Jul-2012 15:35 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.448	2.443	(0.522)	3905	0.70238	0.7024
14 Acetone	43	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.208	4.208	(0.897)	260800	46.6731	46.673
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	Compound Not Detected.					
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	4.689	4.688	(1.000)	353026	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	318417	47.7224	47.722
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.141	5.141	(1.000)	789004	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.318	6.318	(1.229)	1076150	49.9610	49.961
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	936440	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	Compound Not Detected.					
$	62 4-Bromofluorobenzene	95	8.694	8.694	(1.140)	528883	50.6181	50.618
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
66	2-Chloro Toluene	91	Compound Not Detected.					
67	1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
68	1,2,3-Trichloropropane	110	Compound Not Detected.					
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	Compound Not Detected.					
74	4-Isopropyl Toluene	119	Compound Not Detected.					
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	523077	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	Compound Not Detected.					
$ 79	d4-1,2-Dichlorobenzene	152	10.080	10.085	(1.040)	489243	50.9520	50.952
80	1,2-Dichlorobenzene	146	Compound Not Detected.					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
84	Naphthalene	128	11.816	11.822	(1.219)	8959	0.63404	0.6340
85	1,2,3-Trichlorobenzene	180	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: mb0711.d
Lab Smp Id: MB0711
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12671

Calibration Date: 11-JUL-2012
Calibration Time: 08:22
Client Smp ID: MB0711
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	353026	20.98
35 1,4-Difluorobenze	682850	341425	1365700	789004	15.55
52 d5-Chlorobenzene	802138	401069	1604276	936440	16.74
76 d4-1,4-Dichlorobe	452585	226292	905170	523077	15.58

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.69	4.19	5.19	4.69	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name:
Client SDG: 11JUL12
Sample Matrix: SOLID
Fraction: VOA
Lab Smp Id: MB0711
Client Smp ID: MB0711
Level: LOW
Operator: PB
Data Type: MS DATA
SampleType: BLANK
SpikeList File: all.spk
Quant Type: ISTD
Sublist File: voa.sub
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12671

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	46.673	93.35	30-160
$ 32 d4-1,2-Dichloroeth	50.000	47.722	95.44	75-152
$ 42 d8-Toluene	50.000	49.961	99.92	82-115
$ 62 4-Bromofluorobenze	50.000	50.618	101.24	64-120
$ 79 d4-1,2-Dichloroben	50.000	50.952	101.90	80-120

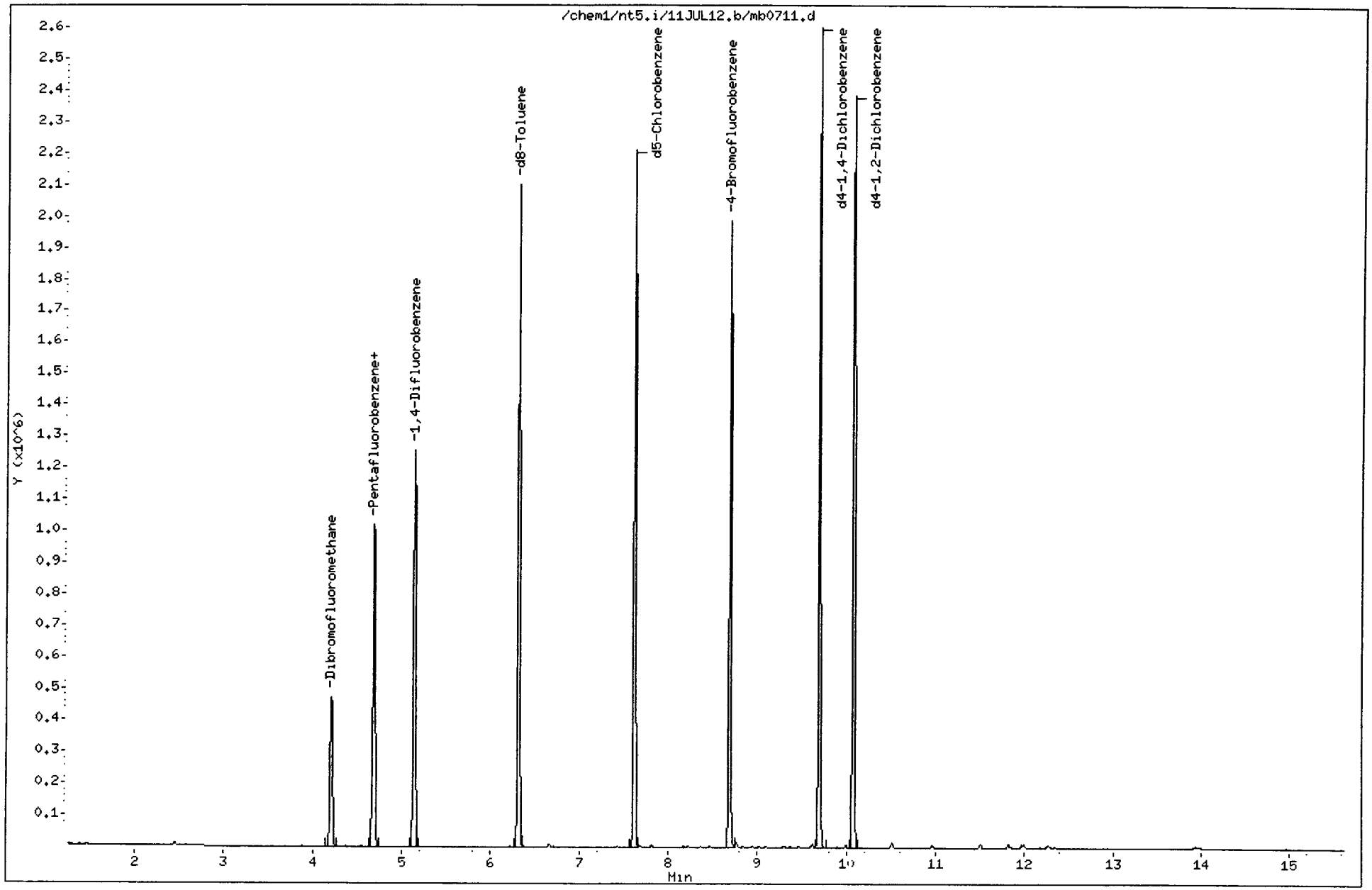
Data File: /chem1/nt5.i/11JUL12.b/mb0711.d
Date : 11-JUL-2012 09:55
Client ID: MB0711
Sample Info: MB0711,5,5,0

Instrument: nt5.i

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18



CO-ELUTION SUMMARY FOR FILE - mb0711.d

Lab ID: MB0711, Method: VO010412S.m, Instrument: nt5.i, Date: 11-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/11JUL12.b/vb51a.d
Lab Smp Id: VB51A Client Smp ID: CW-TP-06-5.5-6.5
Inj Date : 11-JUL-2012 15:44
Operator : PB Inst ID: nt5.i
Smp Info : VB51A,5,6.81,0
Misc Info : 12-12906
Comment :
Method : /chem1/nt5.i/11JUL12.b/VO010412S.m
Meth Date : 12-Jul-2012 15:37 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	6.81000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.443	2.443	(0.521)	6625	1.39226	1.023
14 Acetone	43	2.522	2.545	(0.538)	16396	11.1411	8.180
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					

			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	16	Methyl tert butyl ether	73	Compound Not Detected.					
	17	1,1-Dichloroethane	63	Compound Not Detected.					
	18	Acrylonitrile	53	Compound Not Detected.					
	19	Vinyl Acetate	43	Compound Not Detected.					
	20	Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22	2,2-Dichloropropane	77	Compound Not Detected.					
	23	Bromochloromethane	128	Compound Not Detected.					
	24	Chloroform	83	Compound Not Detected.					
	25	Carbon Tetrachloride	117	Compound Not Detected.					
$	27	Dibromofluoromethane	111	4.202	4.208	(0.896)	230990	48.3331	35.487
	26	1,1,1-Trichloroethane	97	Compound Not Detected.					
	28	1,1-Dichloropropene	75	Compound Not Detected.					
	29	2-Butanone	72	Compound Not Detected.					
	30	Benzene	78	Compound Not Detected.					
*	31	Pentafluorobenzene	168	4.689	4.688	(1.000)	301936	50.0000	
$	32	d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	296296	51.9210	38.121
	33	1,2-Dichloroethane	62	Compound Not Detected.					
	34	Trichloroethene	95	Compound Not Detected.					
*	35	1,4-Difluorobenzene	114	5.136	5.141	(1.000)	688350	50.0000	
	37	Dibromomethane	93	Compound Not Detected.					
	38	1,2-Dichloropropane	63	Compound Not Detected.					
	39	Bromodichloromethane	83	Compound Not Detected.					
	40	2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41	Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42	d8-Toluene	98	6.318	6.318	(1.230)	942279	50.1427	36.815
	43	Toluene	92	Compound Not Detected.					
	44	Tetrachloroethene	166	6.674	6.674	(0.876)	3728	0.84291	0.6189
	45	4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46	Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47	1,1,2-Trichloroethane	97	Compound Not Detected.					
	48	Chlorodibromomethane	129	Compound Not Detected.					
	49	1,3-Dichloropropane	76	Compound Not Detected.					
	50	1,2-Dibromoethane	107	Compound Not Detected.					
	51	2-Hexanone	43	Compound Not Detected.					
*	52	d5-Chlorobenzene	117	7.619	7.624	(1.000)	830244	50.0000	
	53	Chlorobenzene	112	Compound Not Detected.					
	54	Ethyl Benzene	91	Compound Not Detected.					
	55	1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56	m,p-xylene	106	Compound Not Detected.					
	57	o-Xylene	106	Compound Not Detected.					
	58	Styrene	104	Compound Not Detected.					
	59	Bromoform	173	Compound Not Detected.					
	60	Isopropyl Benzene	105	Compound Not Detected.					
$	62	4-Bromofluorobenzene	95	8.694	8.694	(1.141)	472978	51.0577	37.487
	63	Bromobenzene	156	Compound Not Detected.					
	64	N-Propyl Benzene	91	Compound Not Detected.					
	65	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
66	2-Chloro Toluene	91	Compound Not Detected.					
67	1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
68	1,2,3-Trichloropropane	110	Compound Not Detected.					
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	Compound Not Detected.					
74	4-Isopropyl Toluene	119	Compound Not Detected.					
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	466045	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	Compound Not Detected.					
$ 79	d4-1,2-Dichlorobenzene	152	10.080	10.085	(1.040)	442425	51.7147	37.970
80	1,2-Dichlorobenzene	146	Compound Not Detected.					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
84	Naphthalene	128	Compound Not Detected.					
85	1,2,3-Trichlorobenzene	180	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb51a.d
Lab Smp Id: VB51A
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12906

Calibration Date: 11-JUL-2012
Calibration Time: 08:22
Client Smp ID: CW-TP-06-5.5-6.5
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	301936	3.47
35 1,4-Difluorobenze	682850	341425	1365700	688350	0.81
52 d5-Chlorobenzene	802138	401069	1604276	830244	3.50
76 d4-1,4-Dichlorobe	452585	226292	905170	466045	2.97

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.69	4.19	5.19	4.69	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	-0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	-0.07
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB51A
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12906

Client SDG: VB51
Fraction: VOA
Client Smp ID: CW-TP-06-5.5-6.5
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

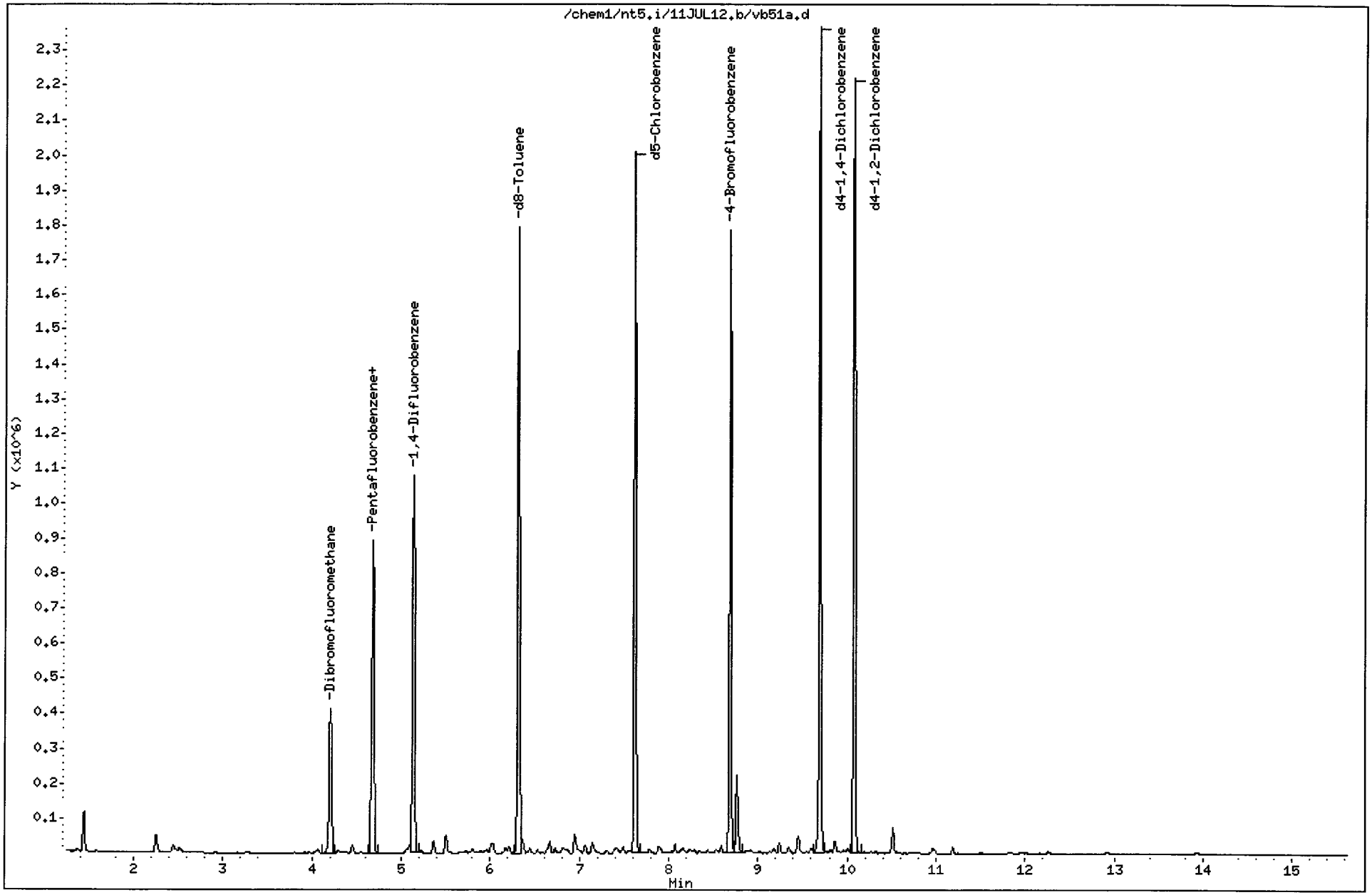
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	48.333	96.67	30-160
$ 32 d4-1,2-Dichloroeth	50.000	51.921	103.84	75-152
$ 42 d8-Toluene	50.000	50.143	100.29	82-115
$ 62 4-Bromofluorobenze	50.000	51.058	102.12	64-120
$ 79 d4-1,2-Dichloroben	50.000	51.715	103.43	80-120

Data File: /chem1/nt5.i/11JUL12.b/vb51a.d
Date : 11-JUL-2012 15:44
Client ID: CW-TP-06-5.5-6.5
Sample Info: VB51A,5,6.81,0

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



VB51 : 00255

Data File: /chem1/nt5.i/11JUL12.b/vb51a.d

Date : 11-JUL-2012 15:44

Client ID: CW-TP-06-5.5-6.5

Instrument: nt5.i

Sample Info: VB51A,5,6.81,0

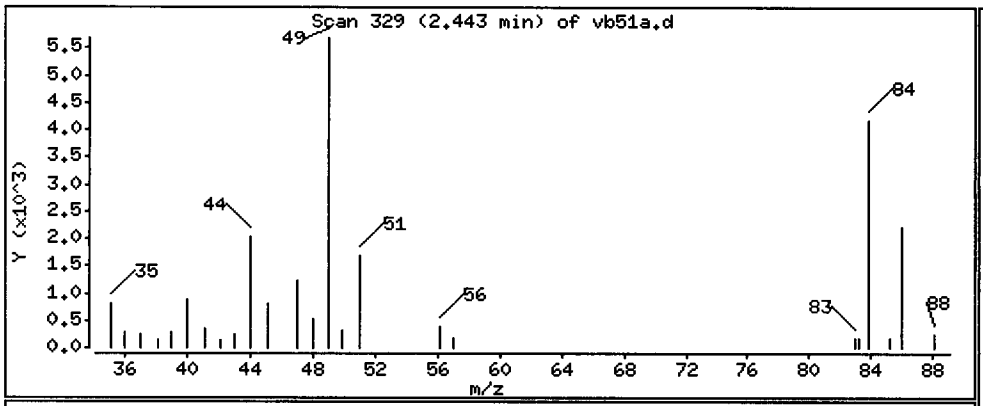
Operator: PB

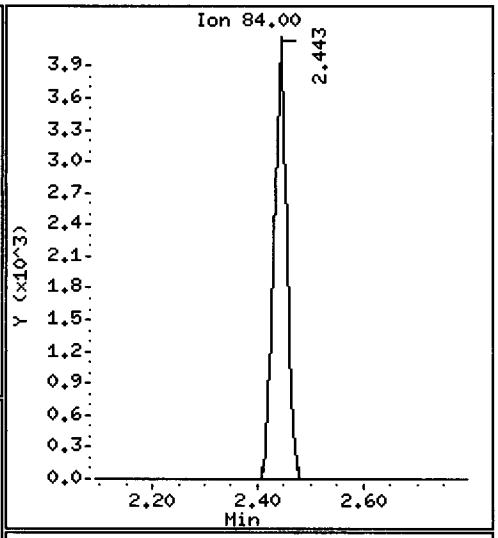
Column phase: RTXVMS

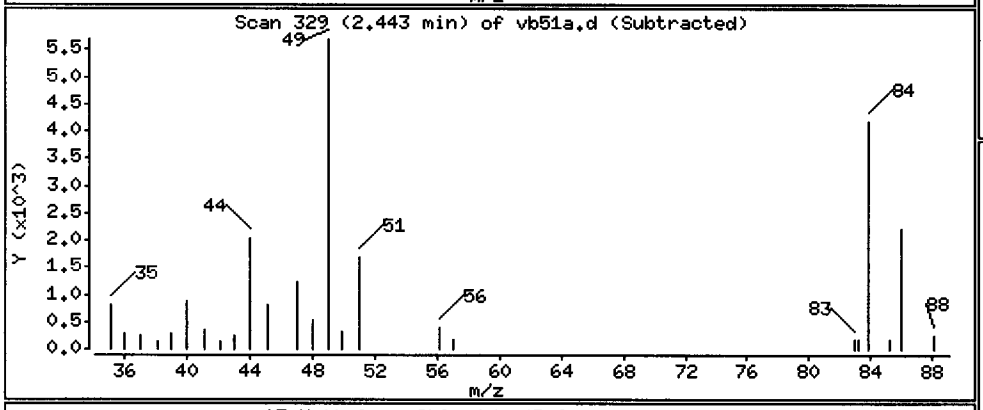
Column diameter: 0.18

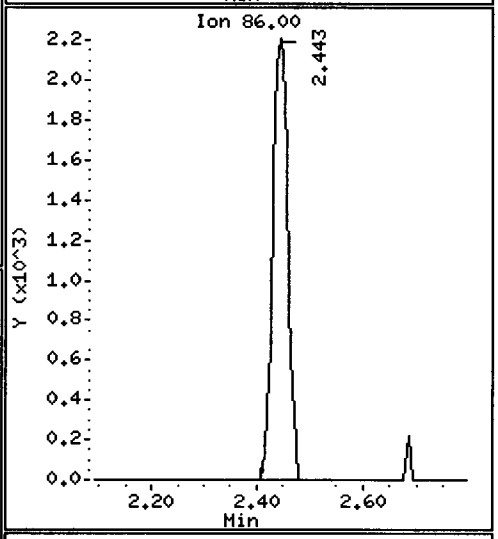
13 Methylene Chloride

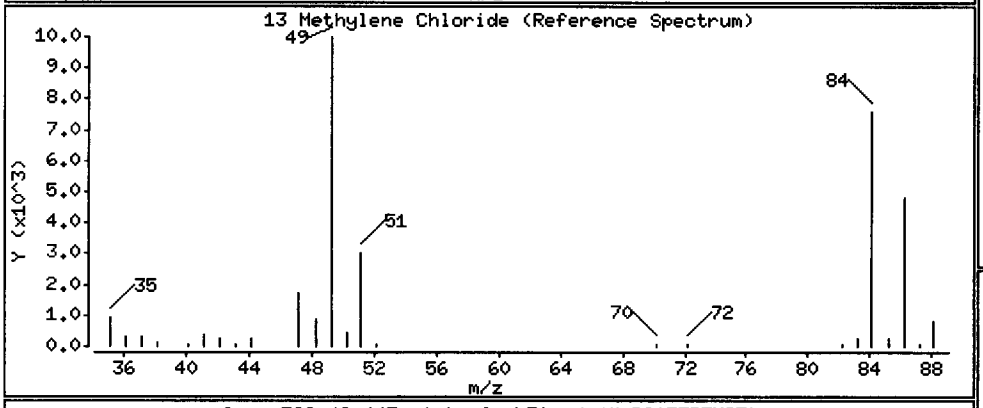
Concentration: 1.023 ug/Kg

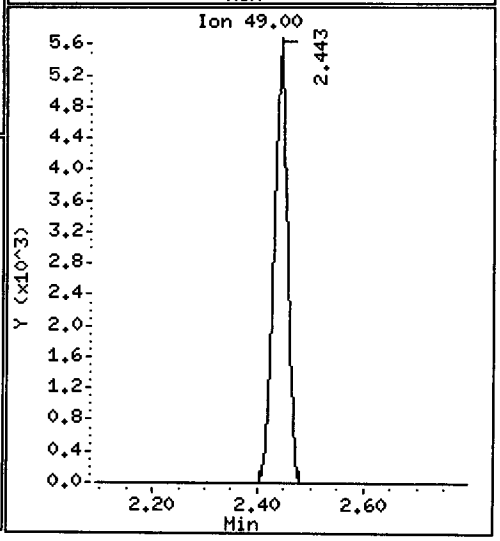


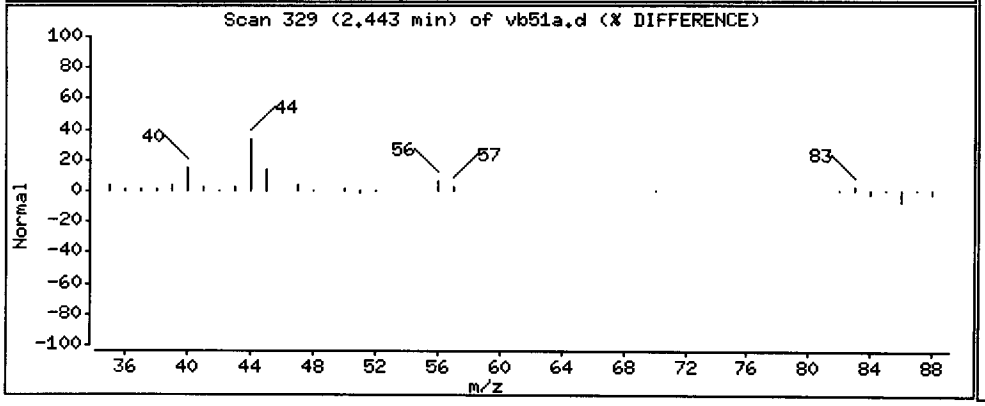












Data File: /chem1/nt5.i/11JUL12.b/vb51a.d

Date : 11-JUL-2012 15:44

Client ID: CW-TP-06-5.5-6.5

Instrument: nt5.i

Sample Info: VB51A,5,6.81,0

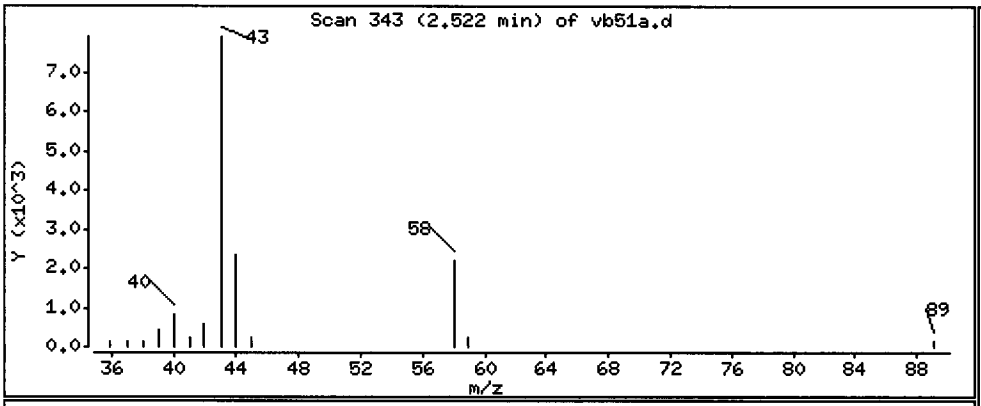
Operator: PB

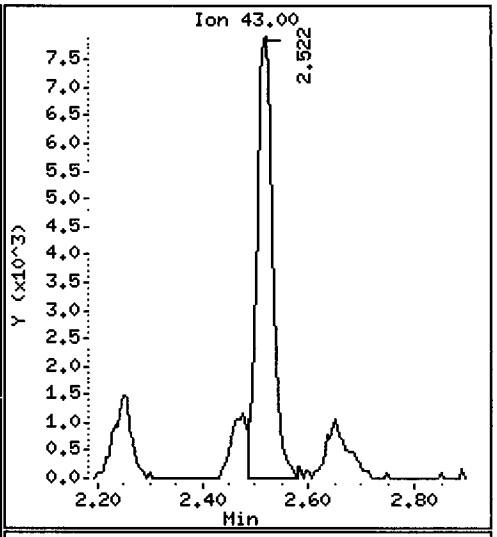
Column phase: RTXVMS

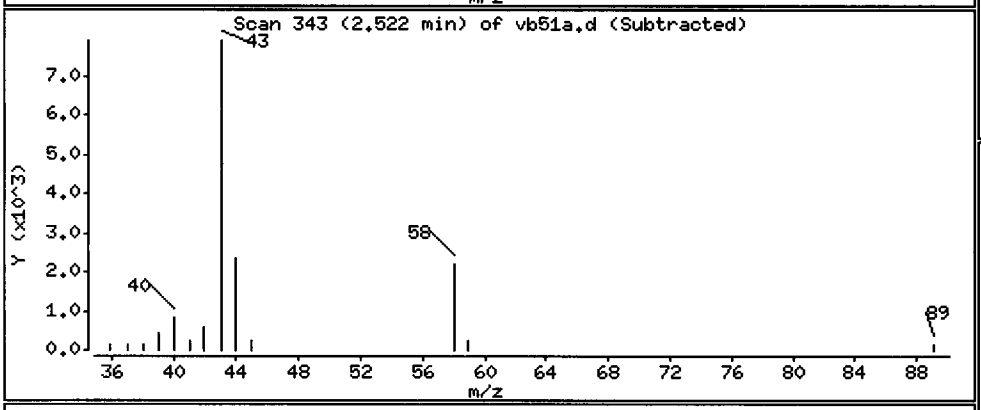
Column diameter: 0.18

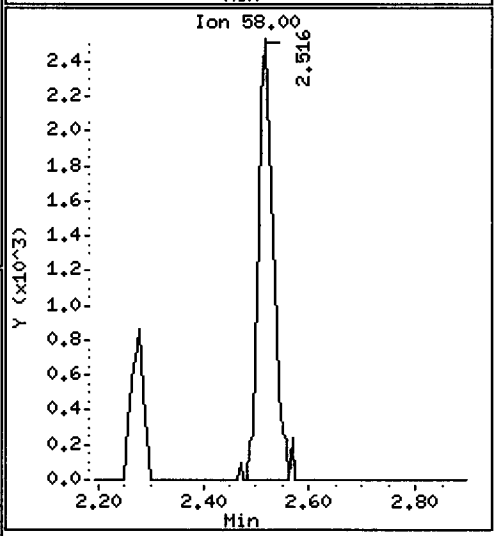
14 Acetone

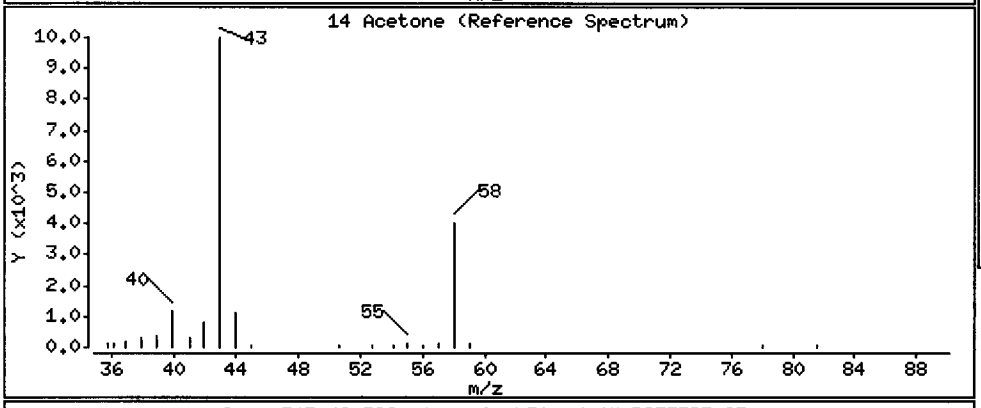
Concentration: 8.180 ug/Kg

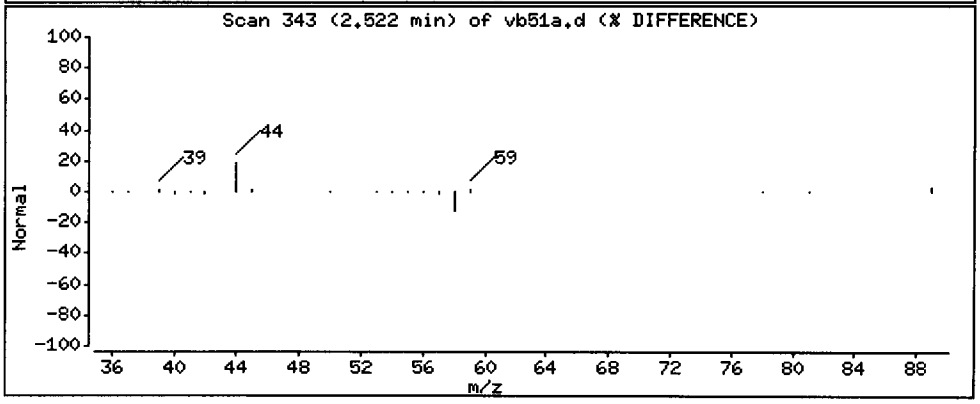












Data File: /chem1/nt5.i/11JUL12.b/vb51a.d

Date : 11-JUL-2012 15:44

Client ID: CW-TP-06-5.5-6.5

Instrument: nt5.i

Sample Info: VB51A,5,6.81,0

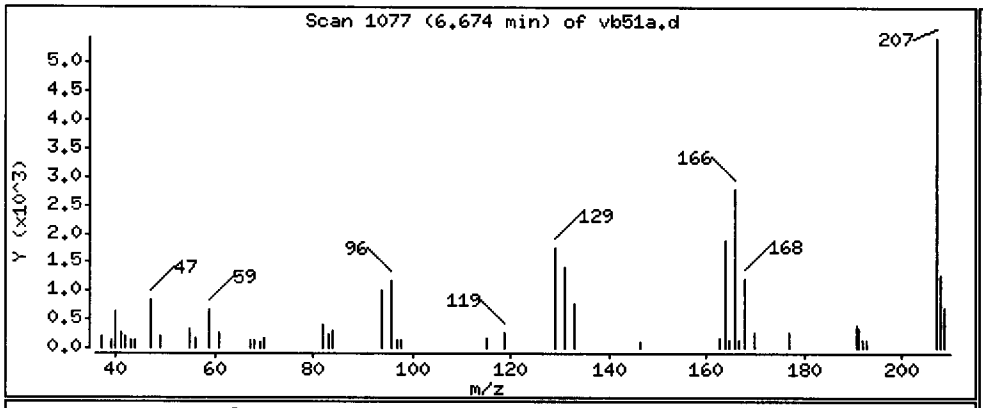
Operator: PB

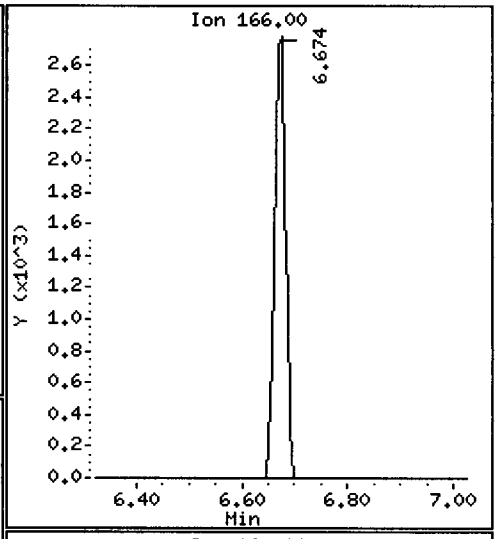
Column phase: RTXVMS

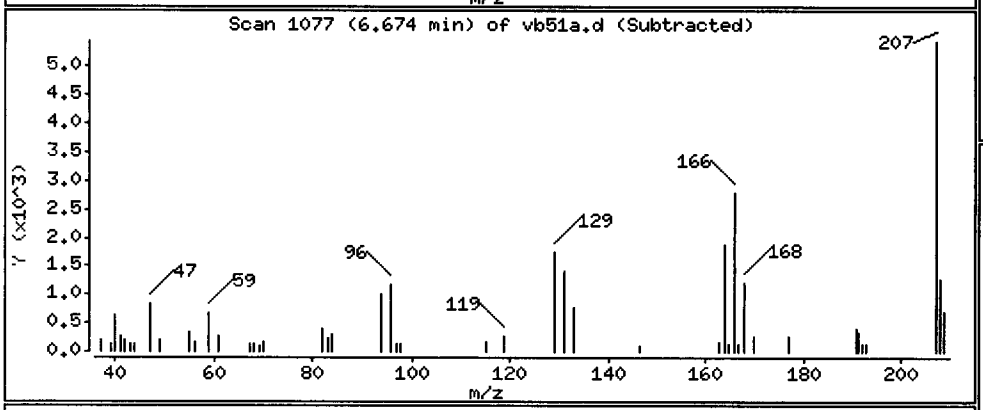
Column diameter: 0.18

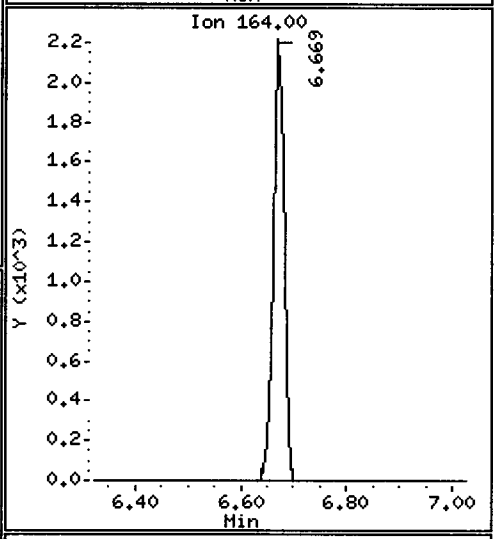
44 Tetrachloroethene

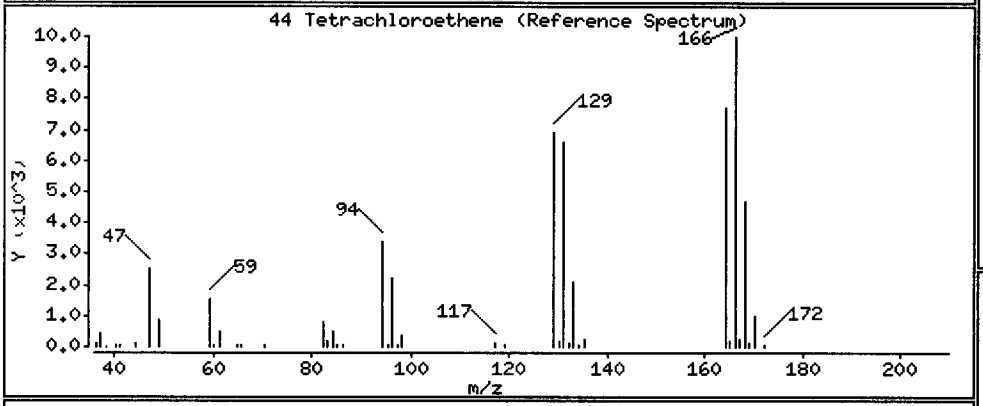
Concentration: 0.6189 ug/Kg

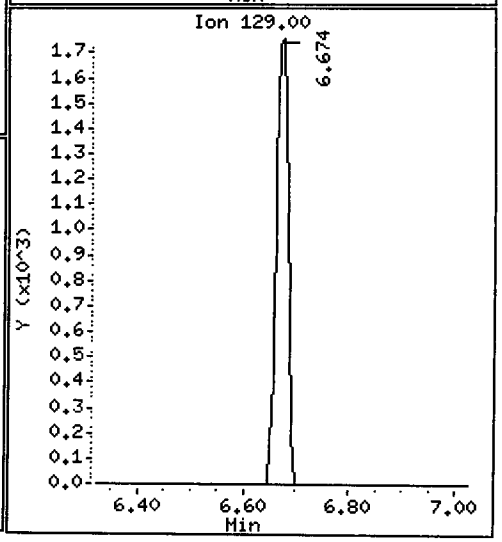


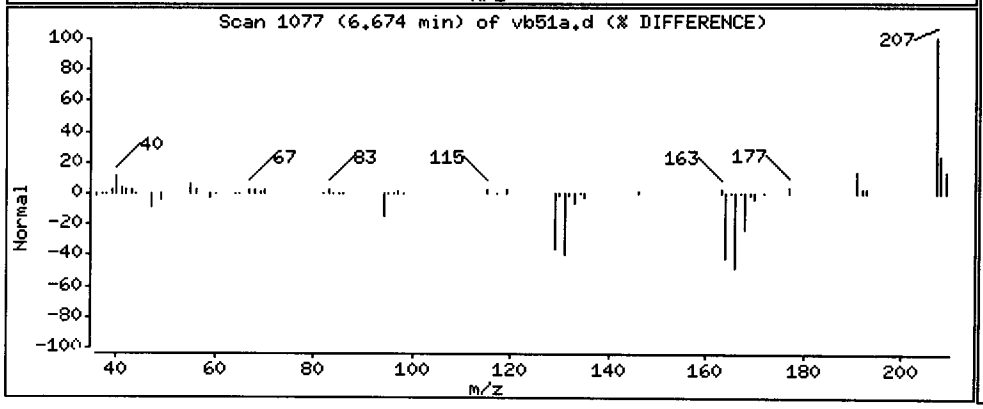












CO-ELUTION SUMMARY FOR FILE - vb51a.d

Lab ID: VB51A, Method: VO010412S.m, Instrument: nt5.i, Date: 11-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/11JUL12.b/vb51f.d
Lab Smp Id: VB51F Client Smp ID: CW-TP-07-9-10
Inj Date : 11-JUL-2012 16:06
Operator : PB Inst ID: nt5.i
Smp Info : VB51F,5,8.662,0
Misc Info : 12-12911
Comment :
Method : /chem1/nt5.i/11JUL12.b/VO010412S.m
Meth Date : 12-Jul-2012 15:37 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	8.66200	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.426	2.443	(0.518)	11317	2.23320	1.289
14 Acetone	43	2.567	2.545	(0.548)	5250	3.34735	1.932
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.208	4.208	(0.899)	226850	44.5390	25.709
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	Compound Not Detected.					
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	4.683	4.688	(1.000)	321784	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	283143	46.5558	26.874
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.136	5.141	(1.000)	711684	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.312	6.318	(1.229)	973198	50.0900	28.914
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.619	7.624	(1.000)	853720	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	Compound Not Detected.					
$	62 4-Bromofluorobenzene	95	8.694	8.694	(1.141)	533421	55.9990	32.325
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	Compound Not Detected.					
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
66	2-Chloro Toluene	91	Compound Not Detected.					
67	1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
68	1,2,3-Trichloropropane	110	Compound Not Detected.					
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	Compound Not Detected.					
74	4-Isopropyl Toluene	119	Compound Not Detected.					
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	495401	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	Compound Not Detected.					
$ 79	d4-1,2-Dichlorobenzene	152	10.080	10.085	(1.040)	478433	52.6098	30.368
80	1,2-Dichlorobenzene	146	Compound Not Detected.					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
84	Naphthalene	128	Compound Not Detected.					
85	1,2,3-Trichlorobenzene	180	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb51f.d
Lab Smp Id: VB51F
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12911

Calibration Date: 11-JUL-2012
Calibration Time: 08:22
Client Smp ID: CW-TP-07-9-10
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	321784	10.27
35 1,4-Difluorobenze	682850	341425	1365700	711684	4.22
52 d5-Chlorobenzene	802138	401069	1604276	853720	6.43
76 d4-1,4-Dichlorobe	452585	226292	905170	495401	9.46

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.69	4.19	5.19	4.68	-0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	-0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	-0.07
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB51F
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12911

Client SDG: VB51
Fraction: VOA
Client Smp ID: CW-TP-07-9-10
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	44.539	89.08	30-160
$ 32 d4-1,2-Dichloroeth	50.000	46.556	93.11	75-152
$ 42 d8-Toluene	50.000	50.090	100.18	82-115
$ 62 4-Bromofluorobenze	50.000	55.999	112.00	64-120
$ 79 d4-1,2-Dichloroben	50.000	52.610	105.22	80-120

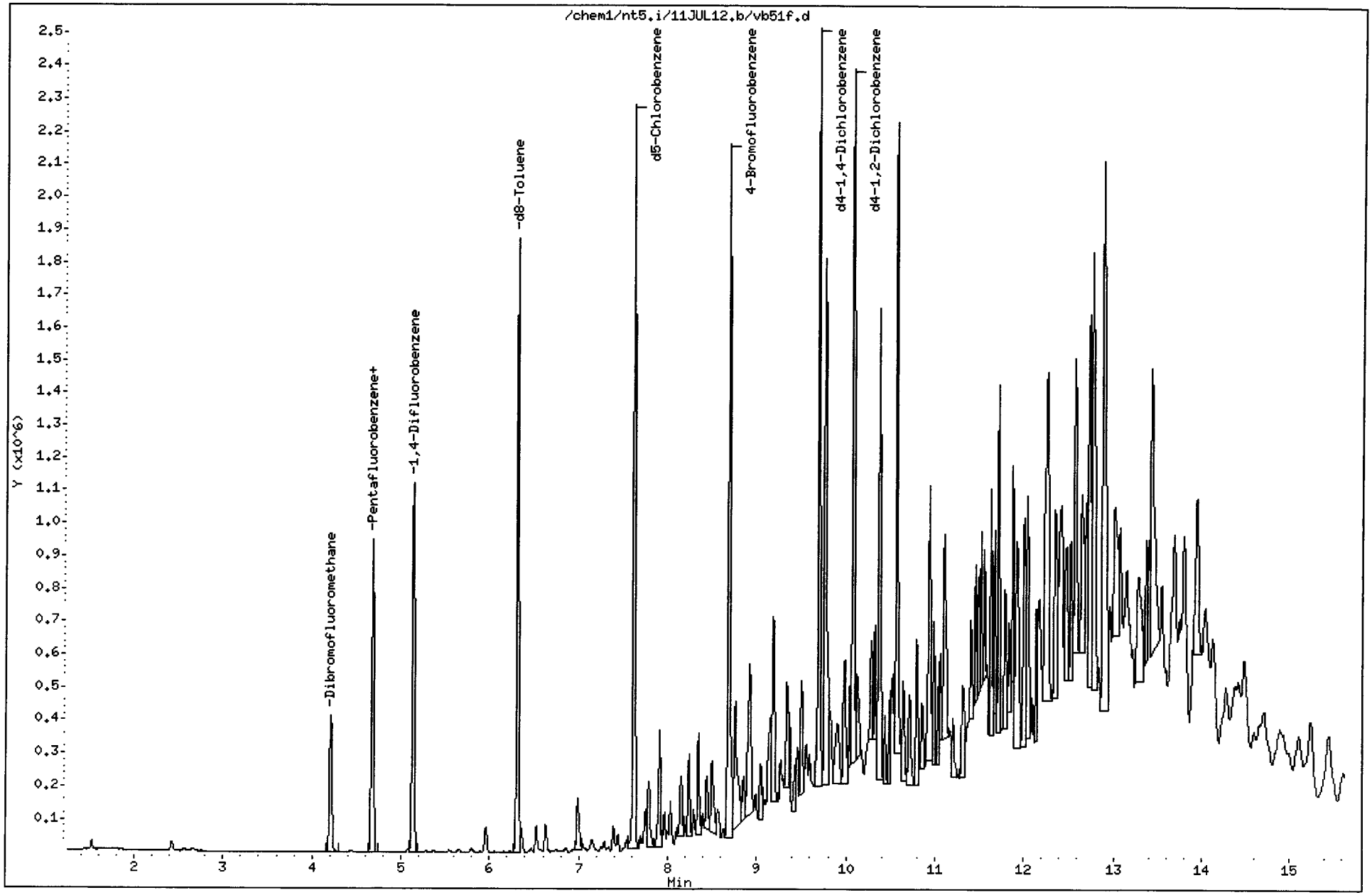
Data File: /chem1/nt5.i/11JUL12.b/vb51f.d
Date : 11-JUL-2012 16:06
Client ID: CW-TP-07-9-10
Sample Info: VB51F,5,8.662,0

Column phase: RTXVMS

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

VB51 09365



Data File: /chem1/nt5.i/11JUL12.b/vb51f.d

Date : 11-JUL-2012 16:06

Client ID: CW-TP-07-9-10

Instrument: nt5.i

Sample Info: VB51F,5,8.662,0

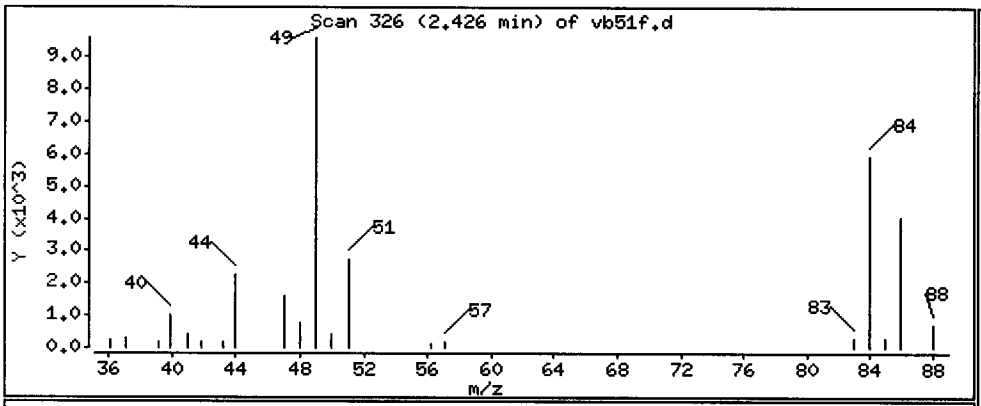
Operator: PB

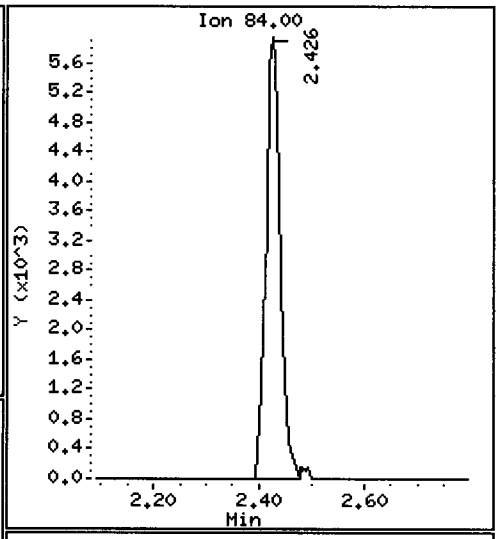
Column phase: RTXVMS

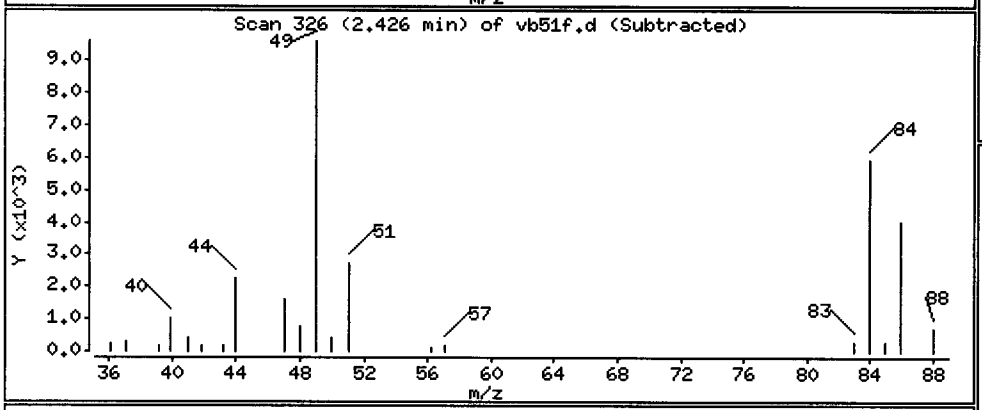
Column diameter: 0.18

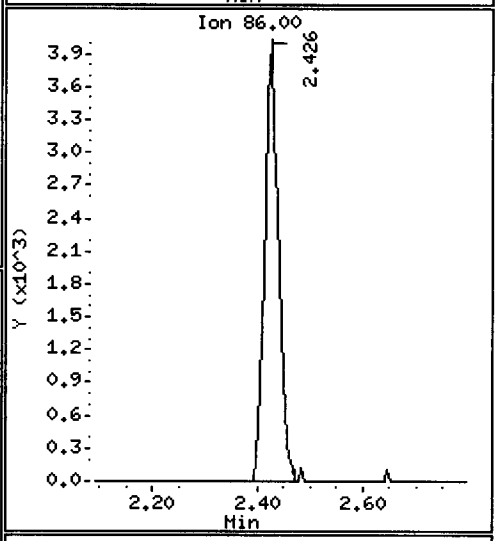
13 Methylene Chloride

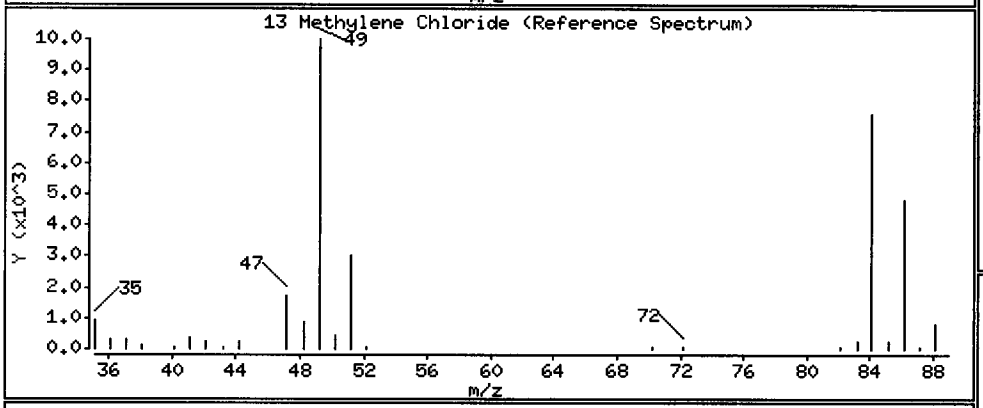
Concentration: 1.289 ug/Kg

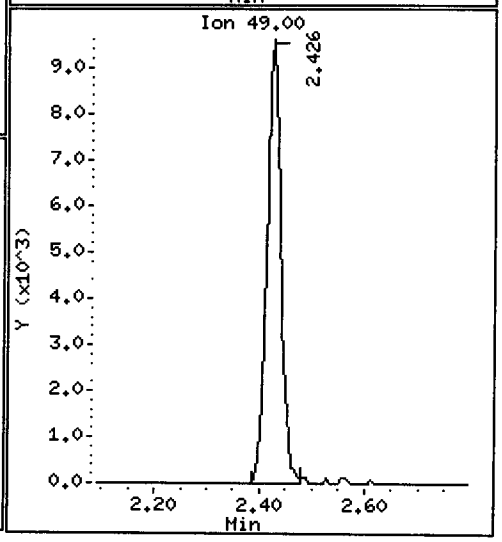


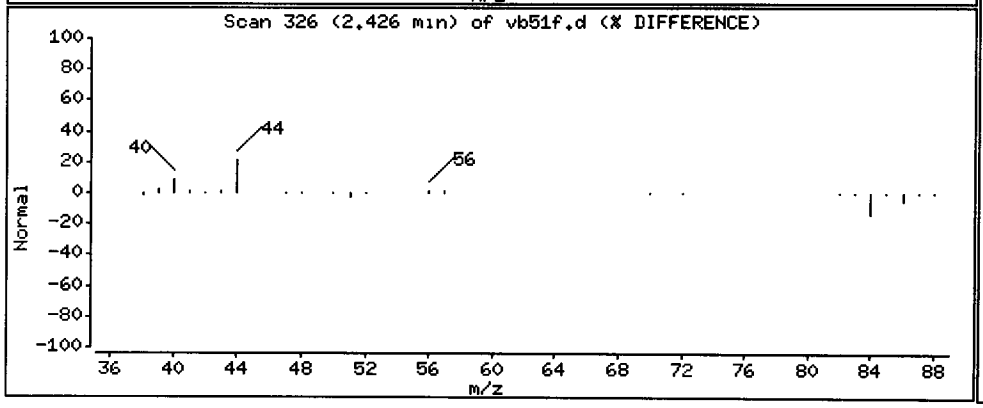












Data File: /chem1/nt5.i/11JUL12.b/vb51f.d

Date : 11-JUL-2012 16:06

Client ID: CW-TP-07-9-10

Instrument: nt5.i

Sample Info: VB51F,5,8.662,0

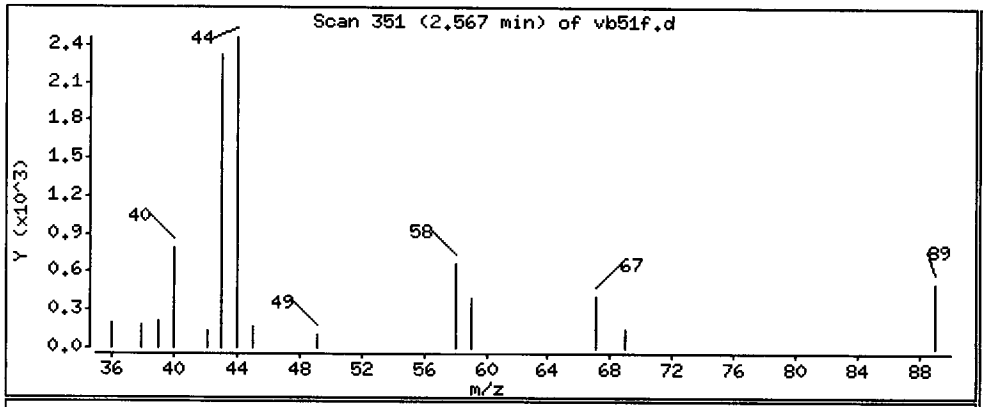
Operator: PB

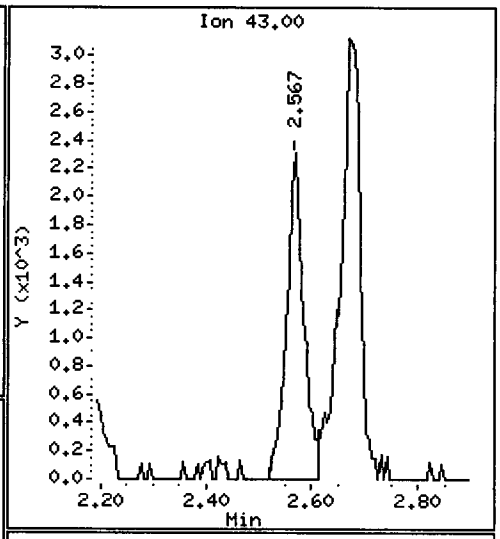
Column phase: RTXVMS

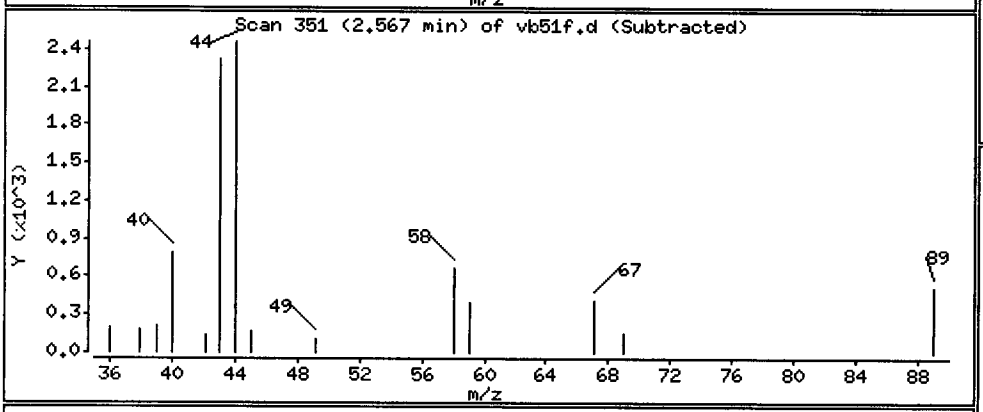
Column diameter: 0.18

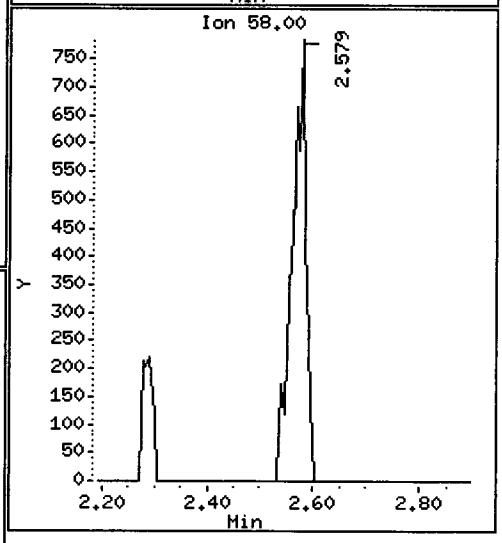
14 Acetone

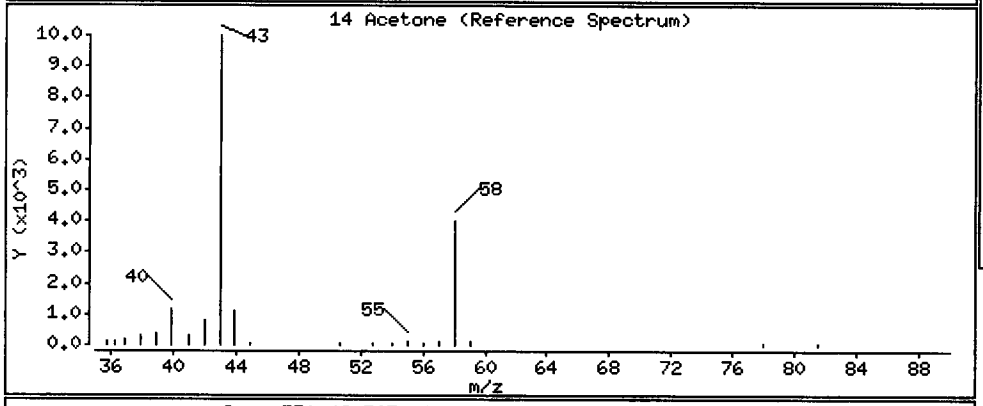
Concentration: 1.932 ug/Kg

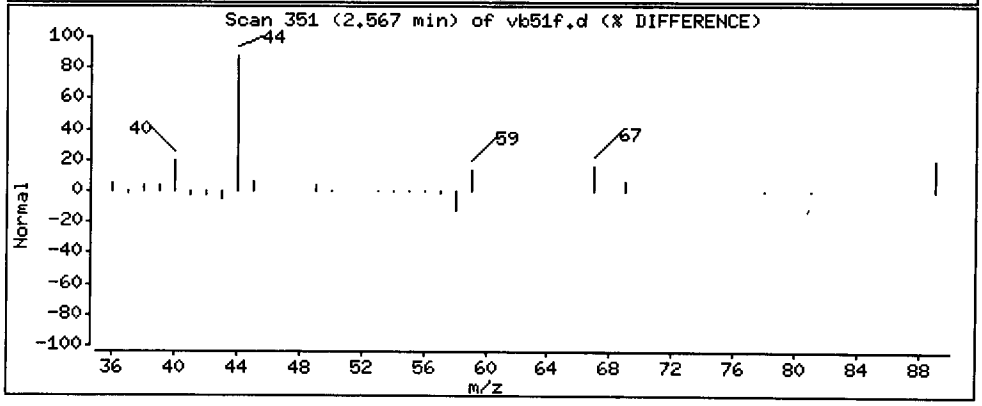












CO-ELUTION SUMMARY FOR FILE - vb51f.d

Lab ID: VB51F, Method: VO010412S.m, Instrument: nt5.i, Date: 11-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/11JUL12.b/vb51i.d
Lab Smp Id: VB51I Client Smp ID: CW-TP-09-6.3-7.3
Inj Date : 11-JUL-2012 16:29
Operator : PB Inst ID: nt5.i
Smp Info : VB51I,5,10.117,0
Misc Info : 12-12914
Comment :
Method : /chem1/nt5.i/11JUL12.b/VO010412S.m
Meth Date : 12-Jul-2012 15:37 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	10.11700	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.426	2.443	(0.518)	11495	2.04871	1.013
14 Acetone	43	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.208	4.208	(0.899)	258095	45.7676	22.619
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	Compound Not Detected.					
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	4.683	4.688	(1.000)	356277	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	319828	47.4964	23.474
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.135	5.141	(1.000)	792068	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.312	6.318	(1.229)	1099344	50.8403	25.126
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.619	7.624	(1.000)	957371	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	8.467	8.473	(0.873)	21330	0.95195	0.4705
$	62 4-Bromofluorobenzene	95	8.693	8.694	(1.141)	599263	56.1000	27.726
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	8.835	8.841	(0.911)	39391	1.43483	0.7091
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
66	2-Chloro Toluene	91	Compound Not Detected.					
67	1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
68	1,2,3-Trichloropropane	110	Compound Not Detected.					
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	9.463	9.469	(0.976)	61391	2.50616	1.239(Q)
74	4-Isopropyl Toluene	119	9.610	9.616	(0.991)	36823	1.83489	0.9068
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	557771	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	9.995	10.000	(1.031)	50012	2.65137	1.310
$ 79	d4-1,2-Dichlorobenzene	152	10.079	10.085	(1.040)	530312	51.7938	25.597
80	1,2-Dichlorobenzene	146	Compound Not Detected.					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
84	Naphthalene	128	Compound Not Detected.					
85	1,2,3-Trichlorobenzene	180	Compound Not Detected.					

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb51i.d
Lab Smp Id: VB51I
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12914

Calibration Date: 11-JUL-2012
Calibration Time: 08:22
Client Smp ID: CW-TP-09-6.3-7.3
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	356277	22.09
35 1,4-Difluorobenze	682850	341425	1365700	792068	15.99
52 d5-Chlorobenzene	802138	401069	1604276	957371	19.35
76 d4-1,4-Dichlorobe	452585	226292	905170	557771	23.24

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.69	4.19	5.19	4.68	-0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	-0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	-0.08
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB51I
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12914

Client SDG: VB51
Fraction: VOA
Client Smp ID: CW-TP-09-6.3-7.3
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

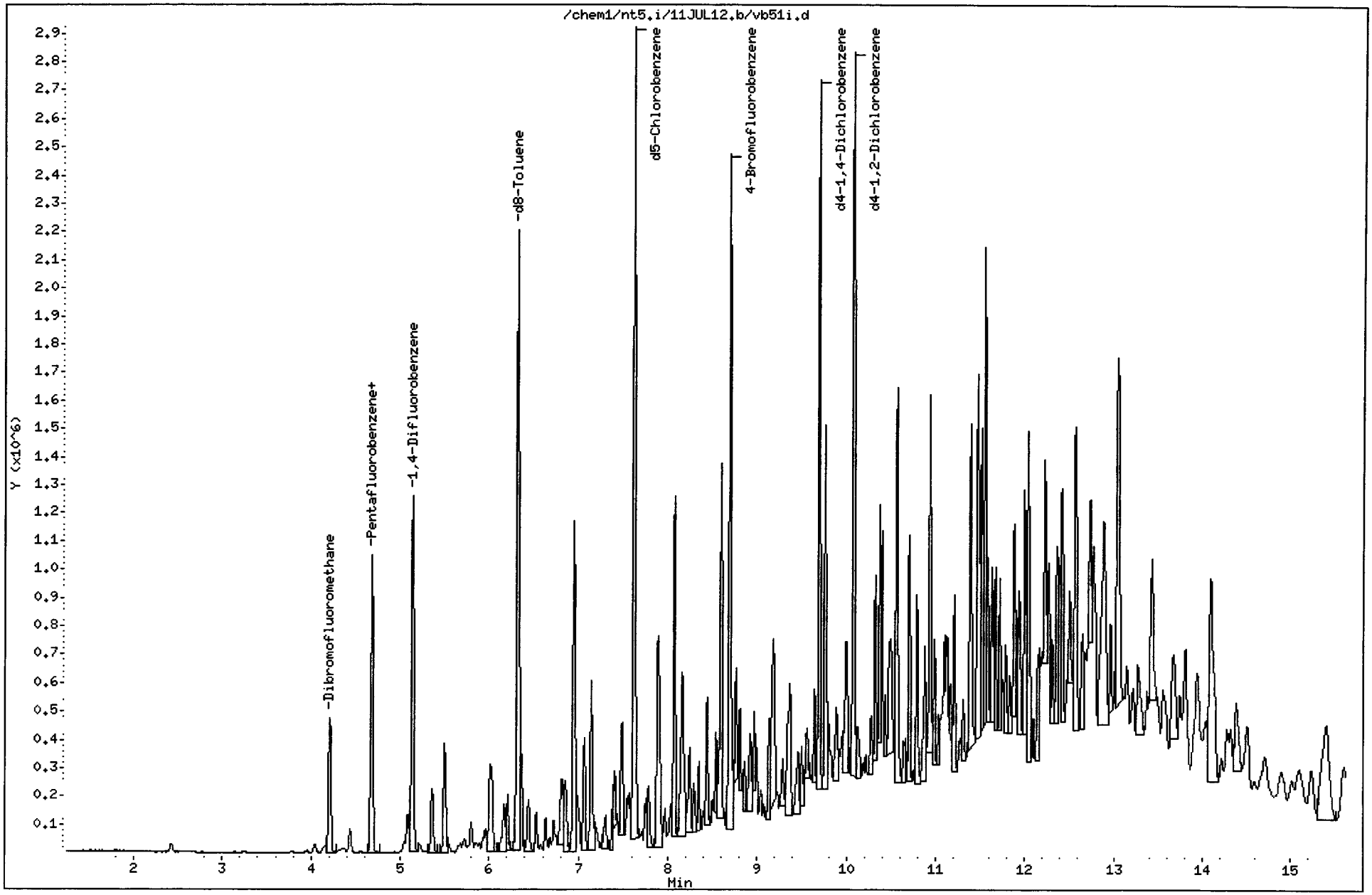
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	45.768	91.54	30-160
$ 32 d4-1,2-Dichloroeth	50.000	47.496	94.99	75-152
$ 42 d8-Toluene	50.000	50.840	101.68	82-115
$ 62 4-Bromofluorobenze	50.000	56.100	112.20	64-120
$ 79 d4-1,2-Dichloroben	50.000	51.794	103.59	80-120

Data File: /chem1/nt5.i/11JUL12.b/vb51i.d
Date : 11-JUL-2012 16:29
Client ID: CW-TP-09-6.3-7.3
Sample Info: VB51I,5,10.117,0

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



VB51 00311

Data File: /chem1/nt5.i/11JUL12.b/vb51i.d

Date : 11-JUL-2012 16:29

Client ID: CW-TP-09-6.3-7.3

Instrument: nt5.i

Sample Info: VB51I,5,10,117,0

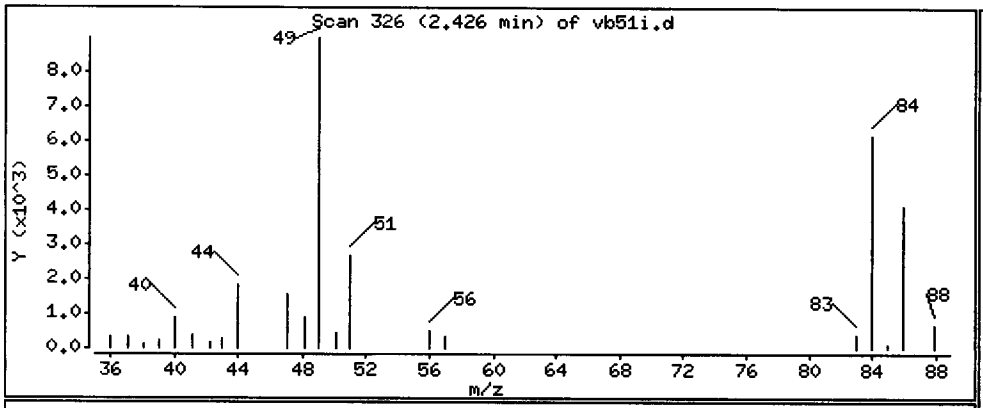
Operator: PB

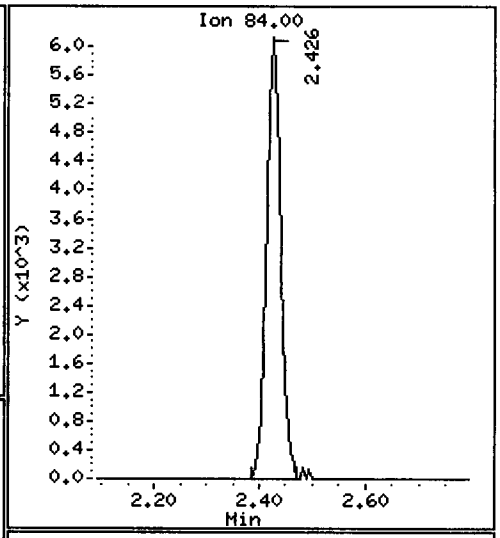
Column phase: RTXVMS

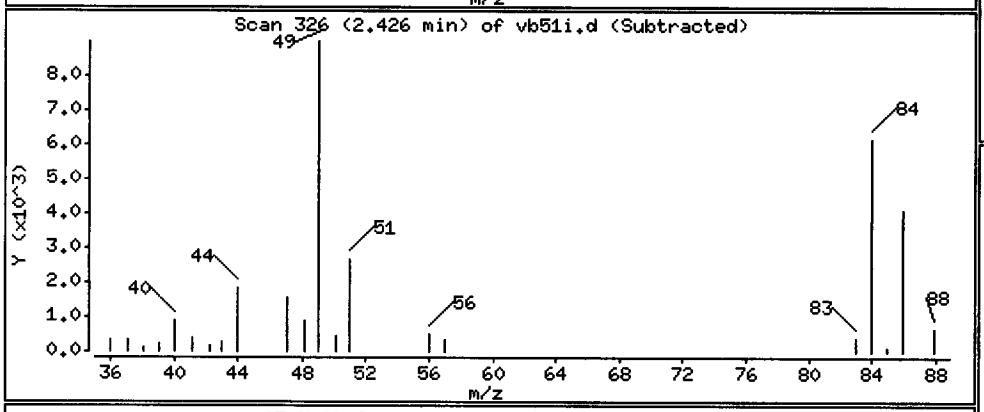
Column diameter: 0.18

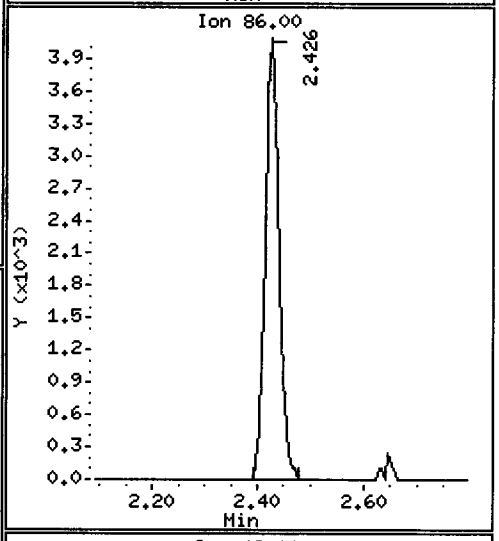
13 Methylene Chloride

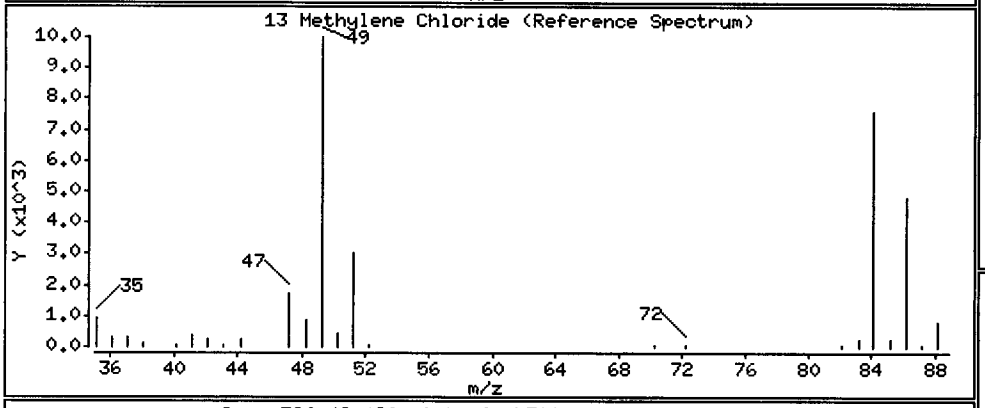
Concentration: 1.013 ug/Kg

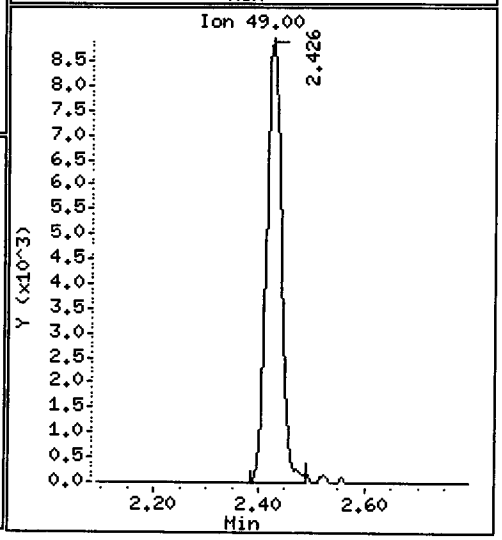


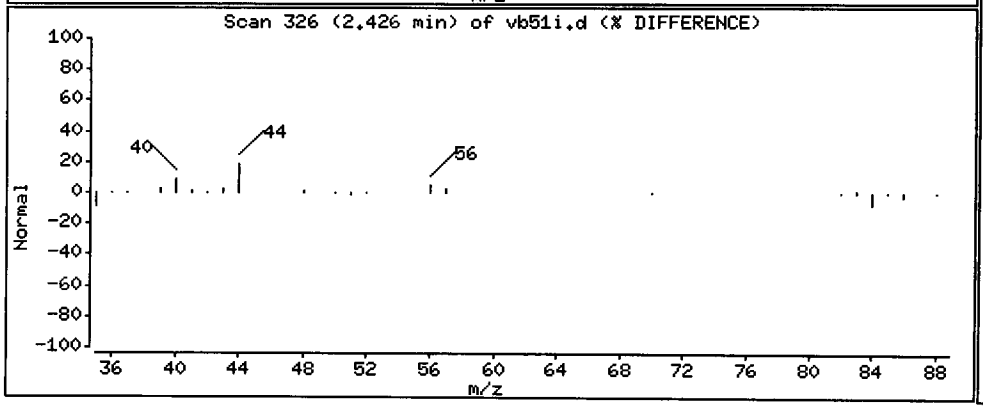












Data File: /chem1/nt5.i/11JUL12.b/vb51i.d

Date : 11-JUL-2012 16:29

Client ID: CW-TP-09-6.3-7.3

Instrument: nt5.i

Sample Info: VB51I,5,10,117,0

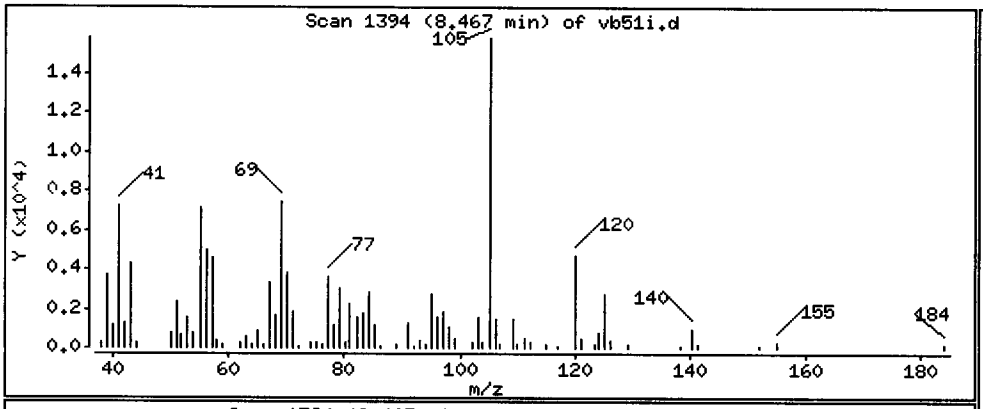
Operator: PB

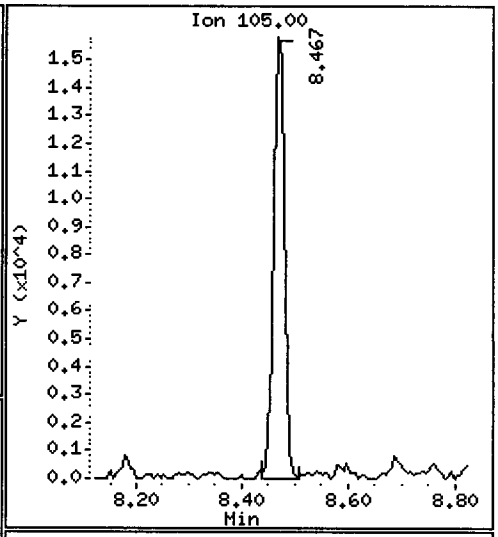
Column phase: RTXVMS

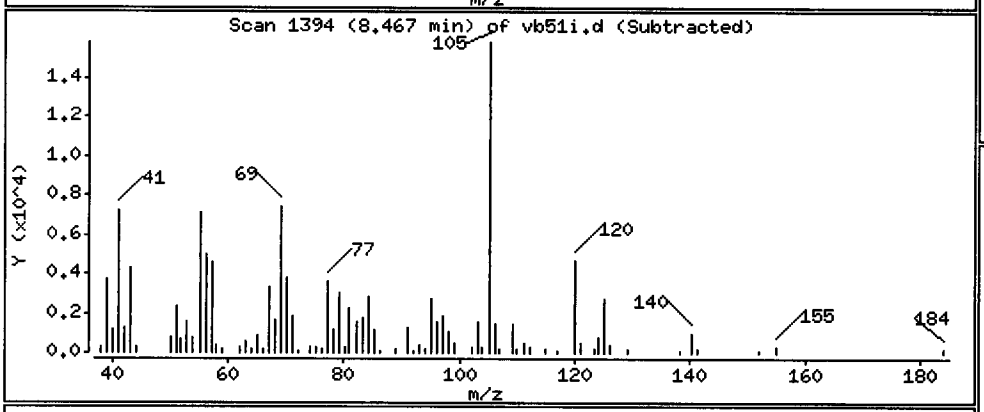
Column diameter: 0.18

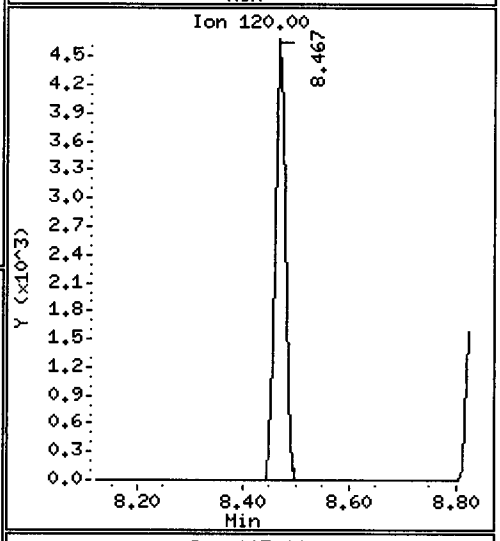
60 Isopropyl Benzene

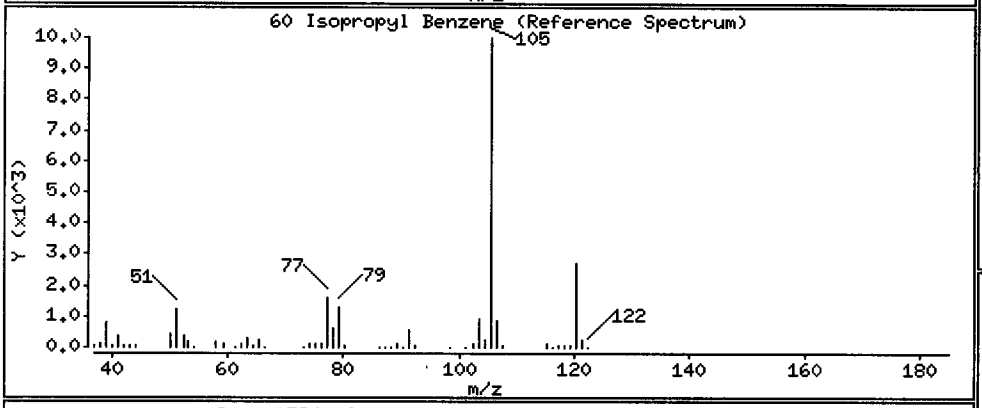
Concentration: 0.4705 ug/Kg

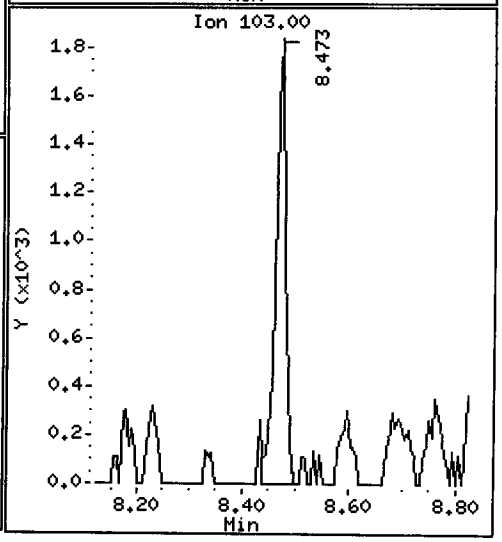


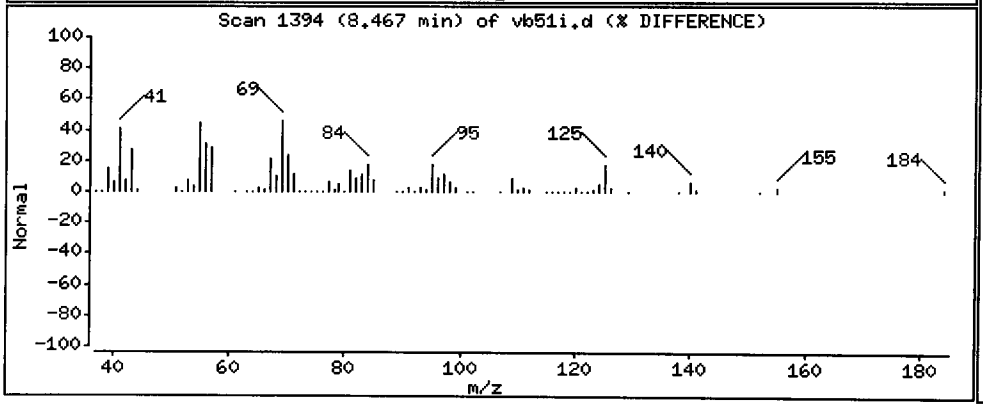












Data File: /chem1/nt5.i/11JUL12.b/vb51i.d

Date : 11-JUL-2012 16:29

Client ID: CW-TP-09-6.3-7.3

Instrument: nt5.i

Sample Info: VB51I,5,10.117,0

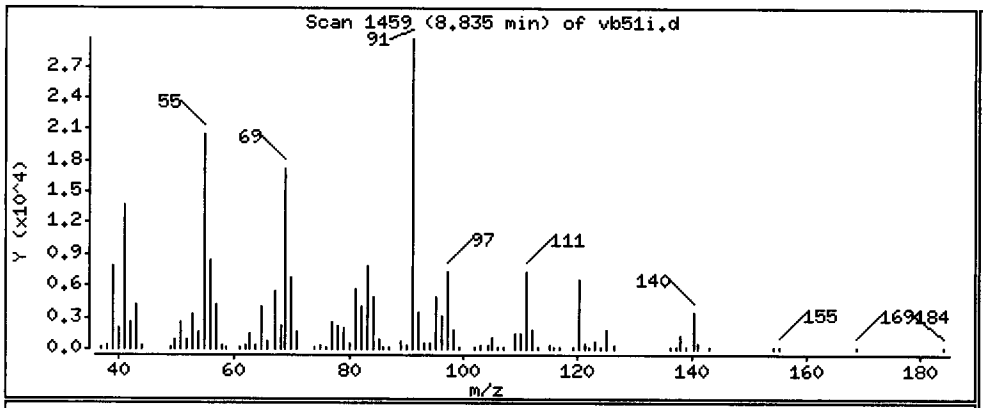
Operator: PB

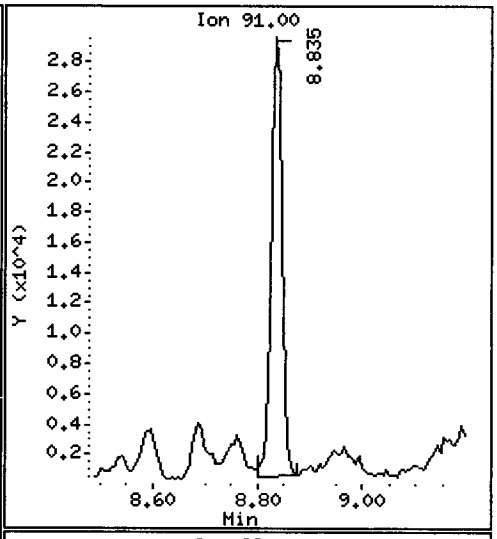
Column phase: RTXVMS

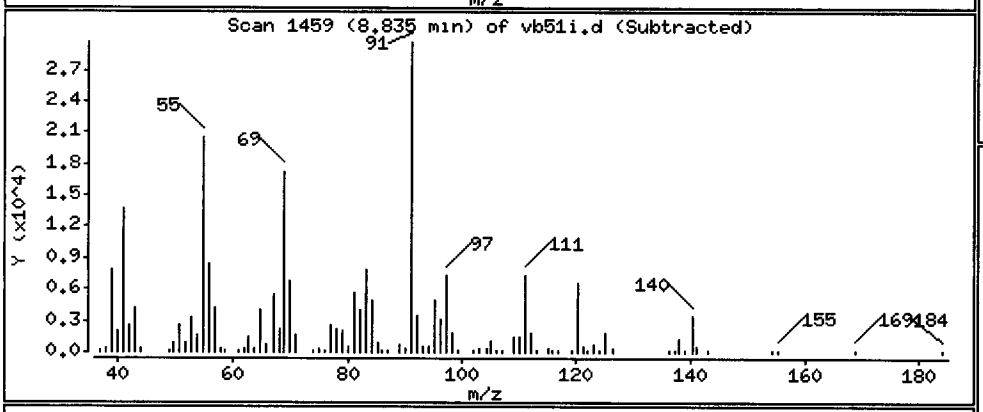
Column diameter: 0.18

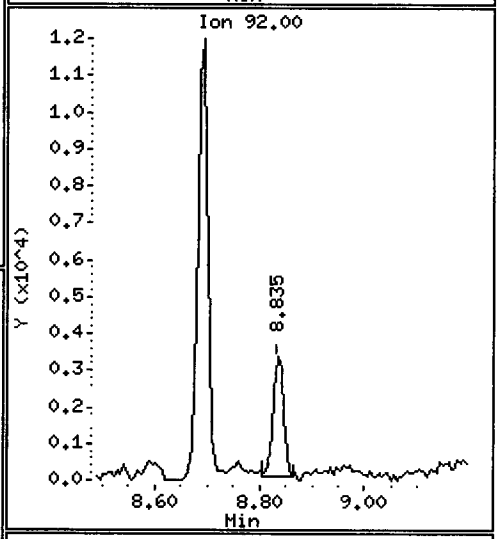
64 N-Propyl Benzene

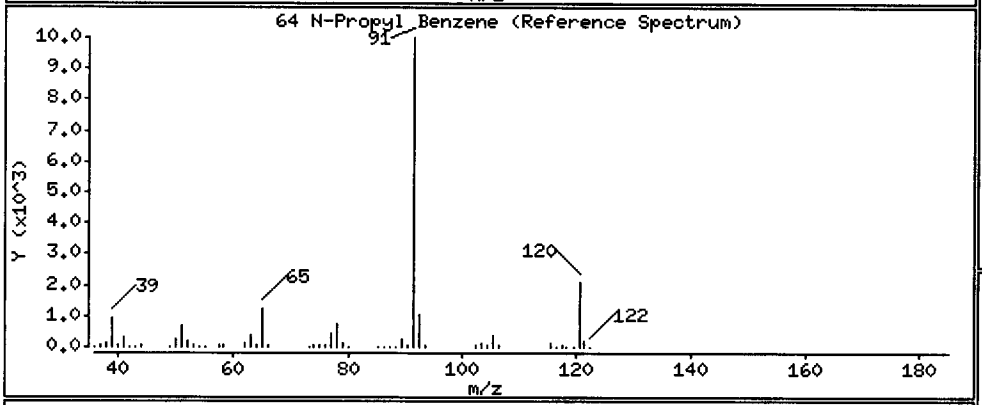
Concentration: 0.7091 ug/Kg

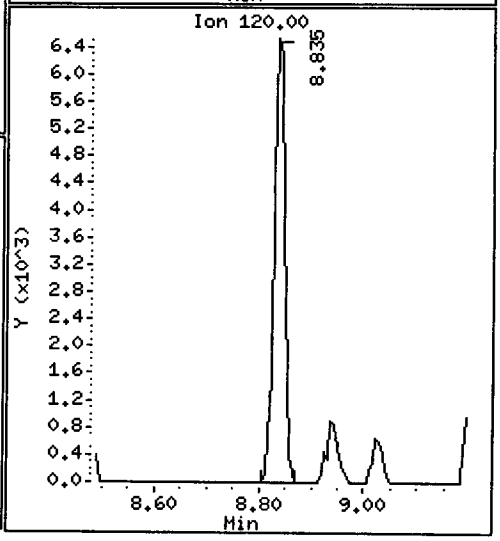


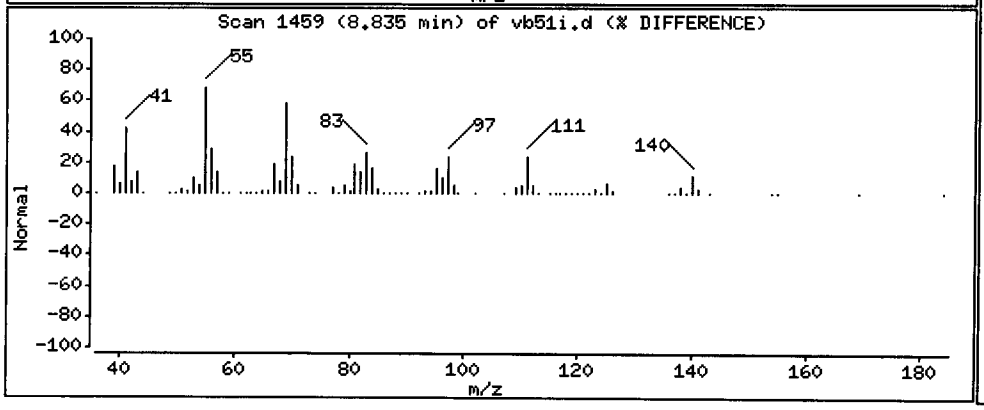












Data File: /chem1/nt5.i/11JUL12.b/vb51i.d

Date : 11-JUL-2012 16:29

Client ID: CW-TP-09-6.3-7.3

Instrument: nt5.i

Sample Info: VB51I,5,10.117,0

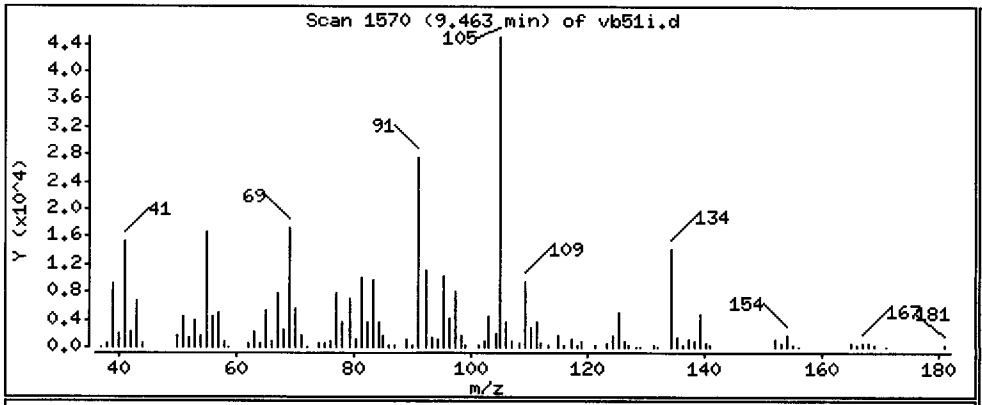
Operator: PB

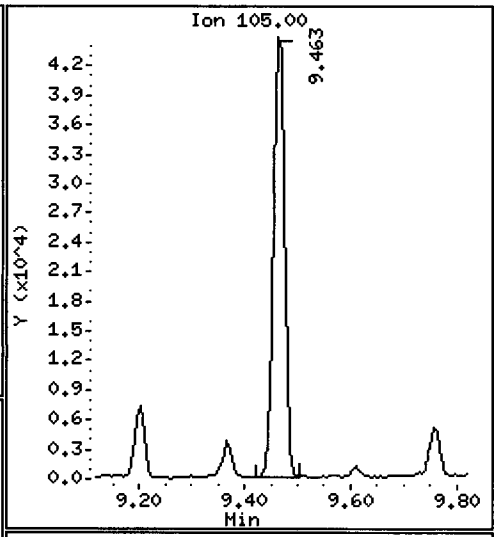
Column phase: RTXVMS

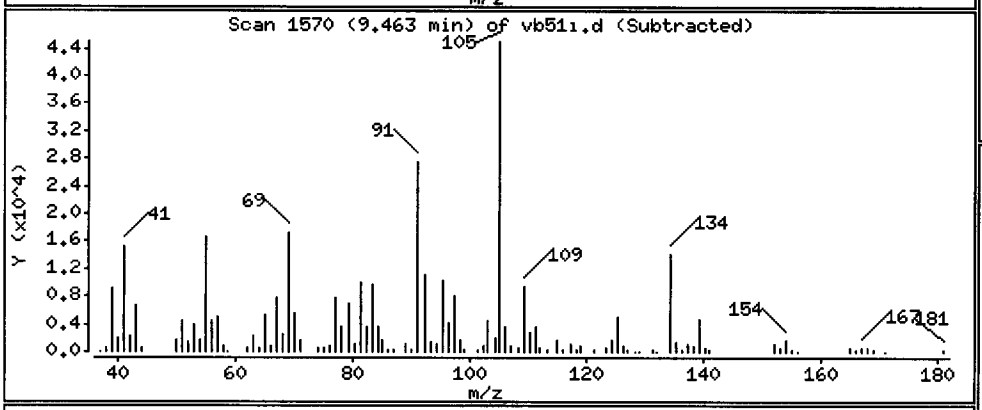
Column diameter: 0.18

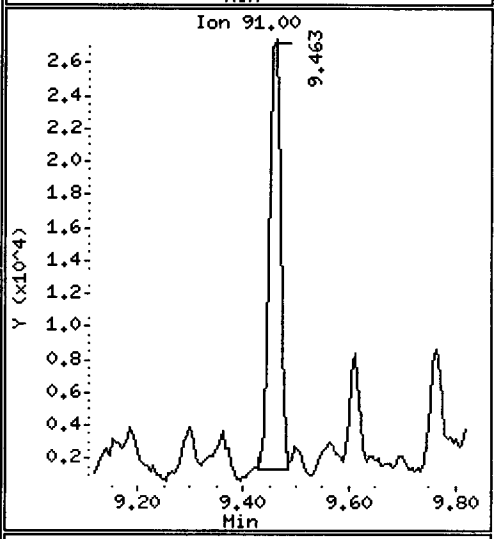
73 S-Butyl Benzene

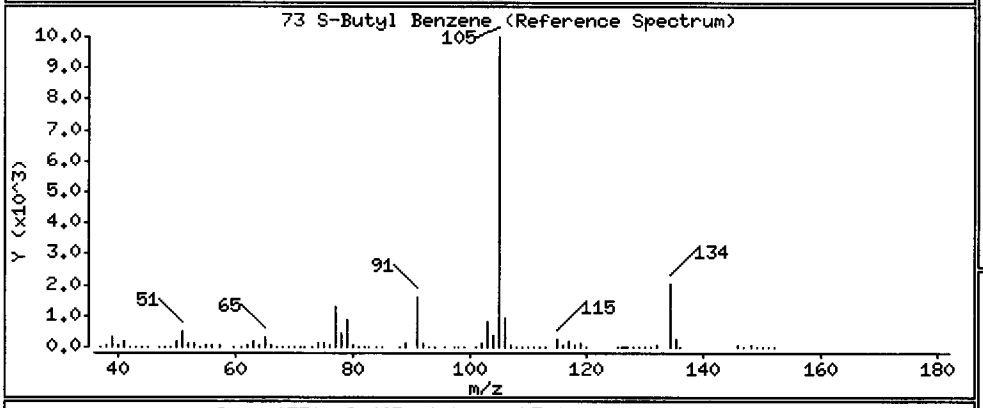
Concentration: 1.239 ug/Kg

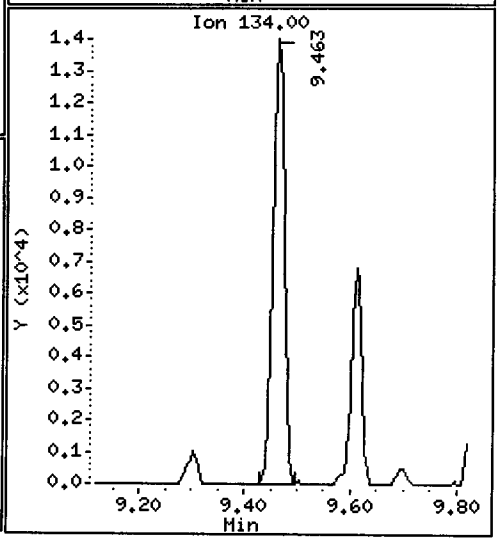


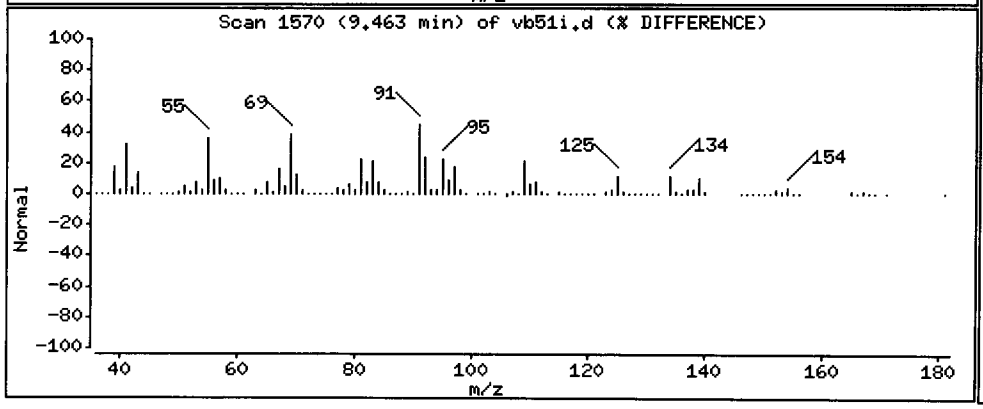












Data File: /chem1/nt5.i/11JUL12.b/vb51i.d

Date : 11-JUL-2012 16:29

Client ID: CW-TP-09-6.3-7.3

Instrument: nt5.i

Sample Info: VB51I,5,10,117,0

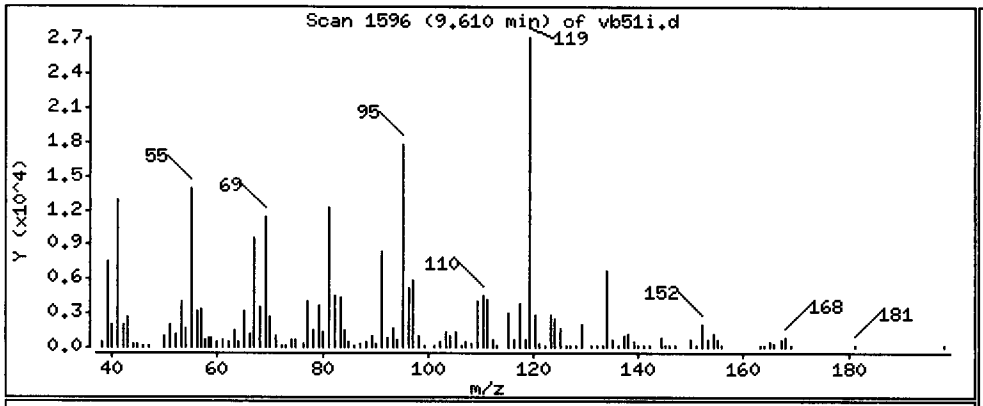
Operator: PB

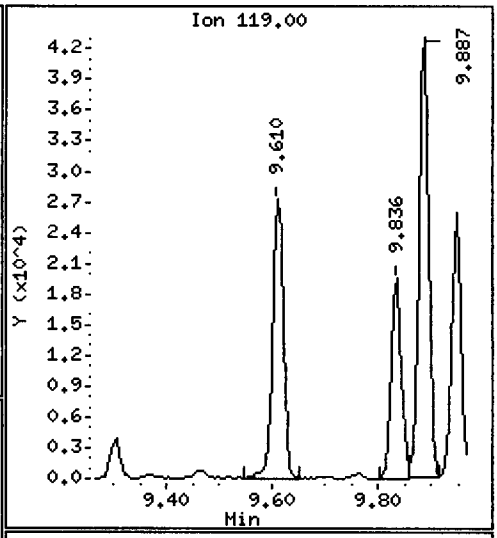
Column phase: RTXVMS

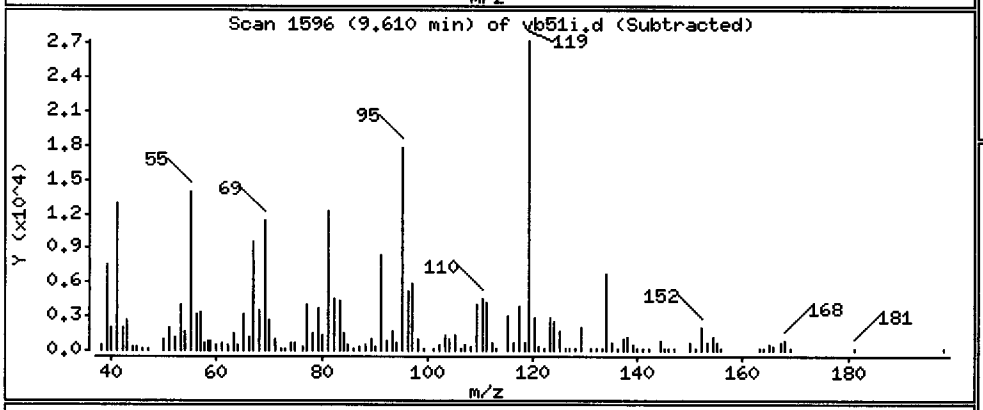
Column diameter: 0.18

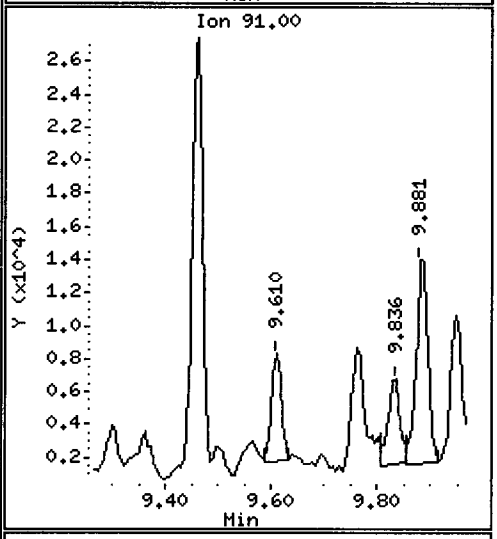
74 4-Isopropyl Toluene

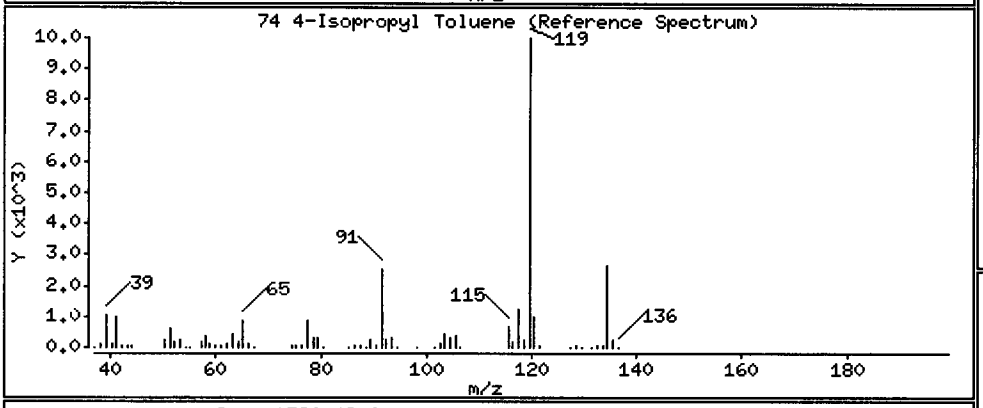
Concentration: 0.9068 ug/Kg

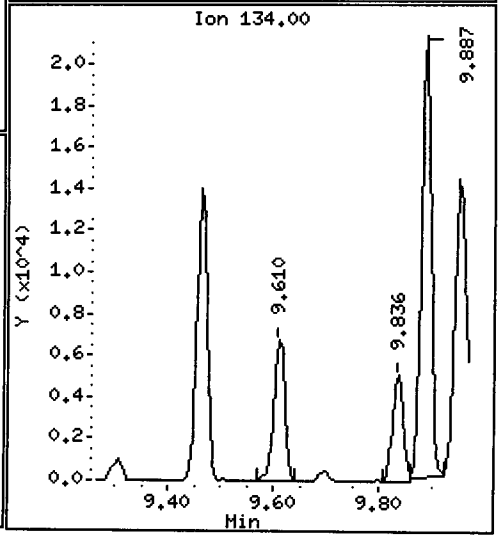


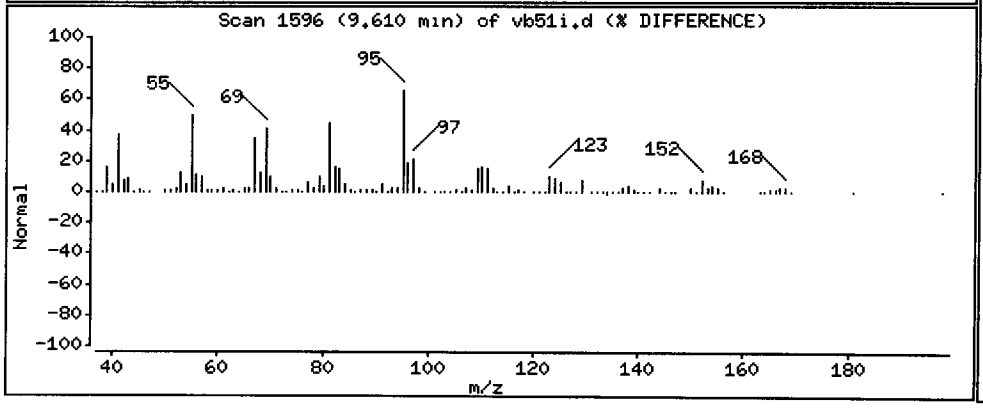












Data File: /chem1/nt5.i/11JUL12.b/vb51i.d

Date : 11-JUL-2012 16:29

Client ID: CW-TP-09-6.3-7.3

Instrument: nt5.i

Sample Info: VB51I,5,10,117,0

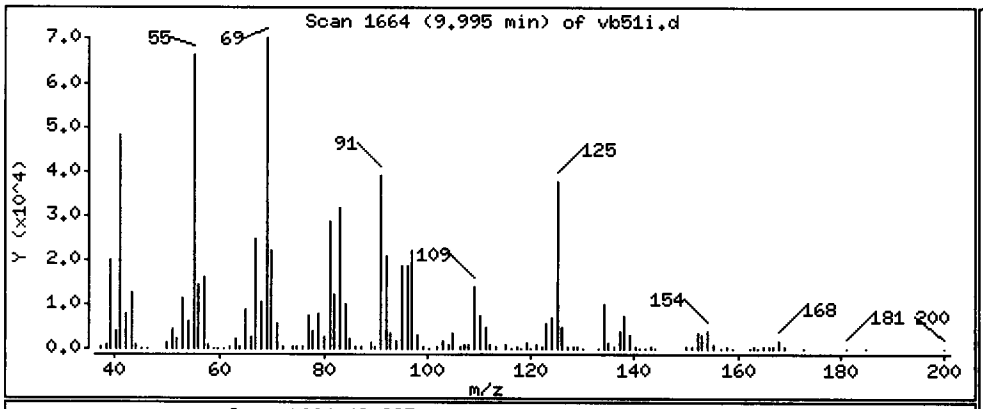
Operator: PB

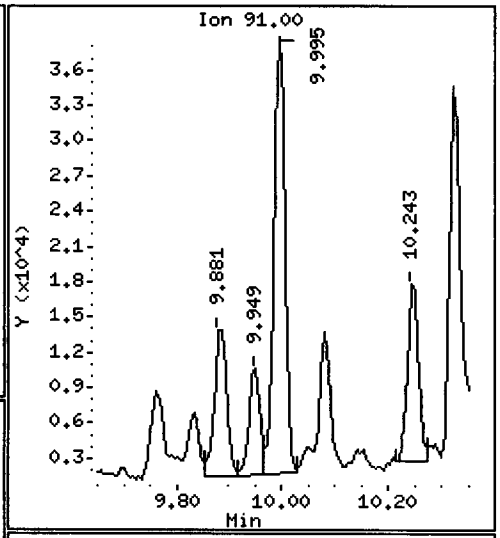
Column phase: RTXVMS

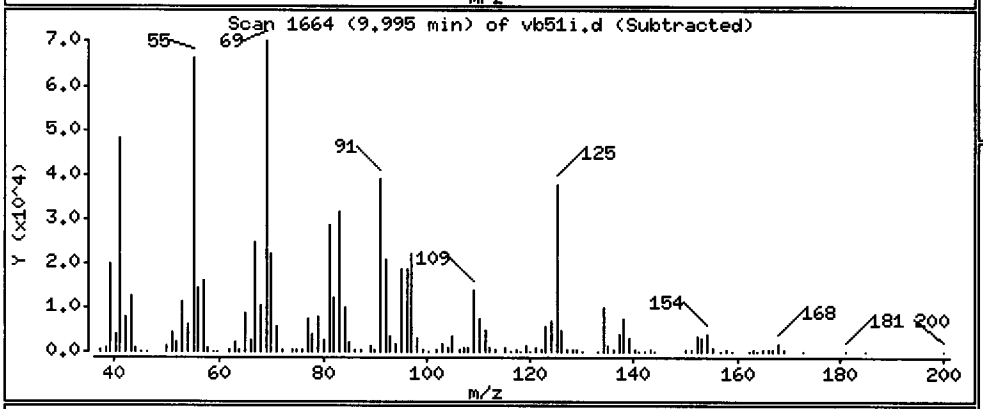
Column diameter: 0.18

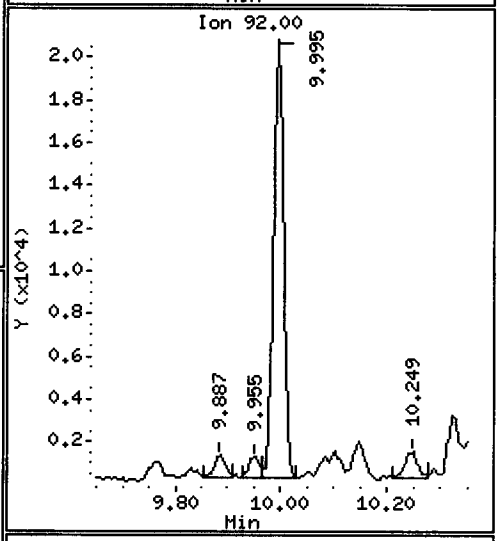
78 N-Butyl Benzene

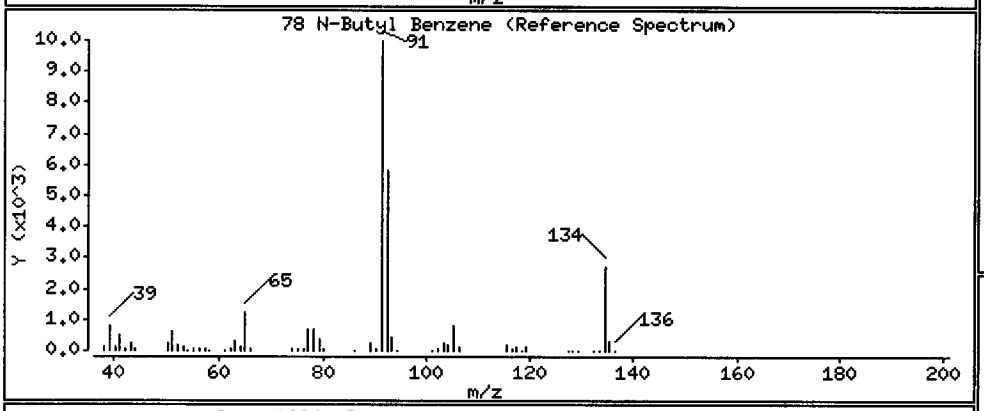
Concentration: 1.310 ug/Kg

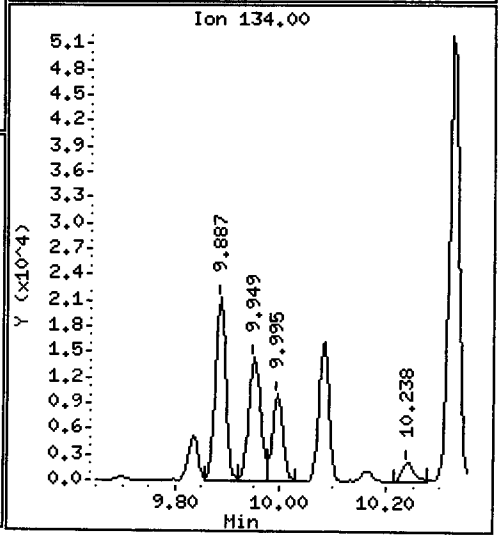


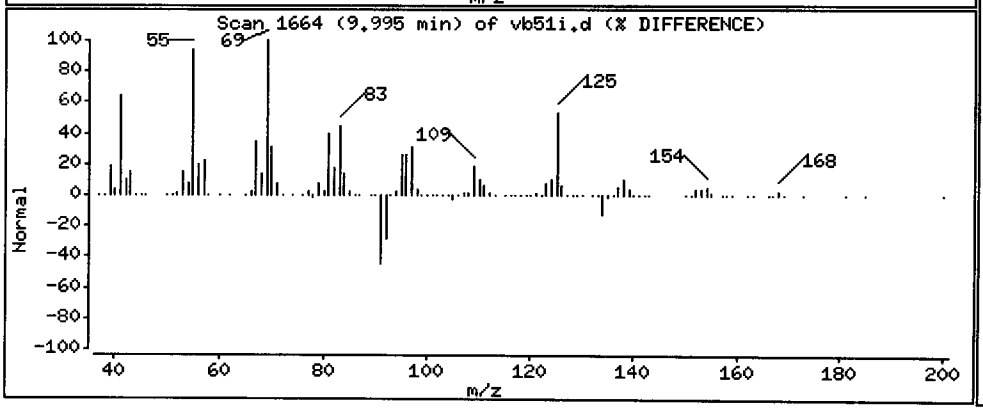












CO-ELUTION SUMMARY FOR FILE - vb51i.d

Lab ID: VB51I, Method: VO010412S.m, Instrument: nt5.i, Date: 11-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/11JUL12.b/vb51l.d
Lab Smp Id: VB51L Client Smp ID: CW-TP-09-10-11
Inj Date : 11-JUL-2012 16:52
Operator : PB Inst ID: nt5.i
Smp Info : VB51L,5,8.42,0
Misc Info : 12-12917
Comment :
Method : /chem1/nt5.i/11JUL12.b/VO010412S.m
Meth Date : 12-Jul-2012 15:37 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	8.42000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	1.962	1.945	(0.419)	177652	11.9731	7.110
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.443	2.443	(0.522)	6718	1.26699	0.7524
14 Acetone	43	2.516	2.545	(0.537)	43700	26.6294	15.813
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.202	4.208	(0.897)	247638	46.4683	27.594
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	4.366	4.377	(0.932)	2799	5.46421	3.245(Q)
	30 Benzene	78	4.547	4.547	(0.885)	13874	0.77729	0.4616
*	31 Pentafluorobenzene	168	4.683	4.688	(1.000)	336687	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	319473	50.2042	29.812
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.135	5.141	(1.000)	741826	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.318	6.318	(1.230)	1017718	50.2531	29.842
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.619	7.624	(1.000)	907529	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	8.467	8.473	(0.873)	13420	0.62353	0.3703
$	62 4-Bromofluorobenzene	95	8.694	8.694	(1.141)	554676	54.7778	32.528
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	8.835	8.841	(0.911)	22645	0.85972	0.5099
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
66 2-Chloro Toluene	91	Compound Not Detected.					
67 1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
68 1,2,3-Trichloropropane	110	Compound Not Detected.					
69 Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70 4-Chloro Toluene	91	Compound Not Detected.					
71 T-Butyl Benzene	119	Compound Not Detected.					
72 1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73 S-Butyl Benzene	105	9.463	9.469	(0.976)	27992	1.18964	0.7064(Q)
74 4-Isopropyl Toluene	119	Compound Not Detected.					
75 1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76 d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	535771	50.0000	
77 1,4-Dichlorobenzene	146	Compound Not Detected.					
78 N-Butyl Benzene	91	Compound Not Detected.					
$ 79 d4-1,2-Dichlorobenzene	152	10.080	10.085	(1.040)	511187	51.9760	30.865
80 1,2-Dichlorobenzene	146	Compound Not Detected.					
81 1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82 Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
84 Naphthalene	128	11.816	11.822	(1.219)	38181	2.67810	1.567
85 1,2,3-Trichlorobenzene	180	Compound Not Detected.					

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb511.d
Lab Smp Id: VB51L
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12917

Calibration Date: 11-JUL-2012
Calibration Time: 08:22
Client Smp ID: CW-TP-09-10-11
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	336687	15.38
35 1,4-Difluorobenze	682850	341425	1365700	741826	8.64
52 d5-Chlorobenzene	802138	401069	1604276	907529	13.14
76 d4-1,4-Dichlorobe	452585	226292	905170	535771	18.38

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.69	4.19	5.19	4.68	-0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	-0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	-0.07
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB51L
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/11JUL12.b/VO010412S.m
Misc Info: 12-12917

Client SDG: VB51
Fraction: VOA
Client Smp ID: CW-TP-09-10-11
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	46.468	92.94	30-160
$ 32 d4-1,2-Dichloroeth	50.000	50.204	100.41	75-152
$ 42 d8-Toluene	50.000	50.253	100.51	82-115
$ 62 4-Bromofluorobenze	50.000	54.778	109.56	64-120
$ 79 d4-1,2-Dichloroben	50.000	51.976	103.95	80-120

Data File: /chem1/nt5.i/11JUL12.b/vb511.d

Date : 11-JUL-2012 16:52

Client ID: CW-TP-09-10-11

Sample Info: VB51L,5,8.42,0

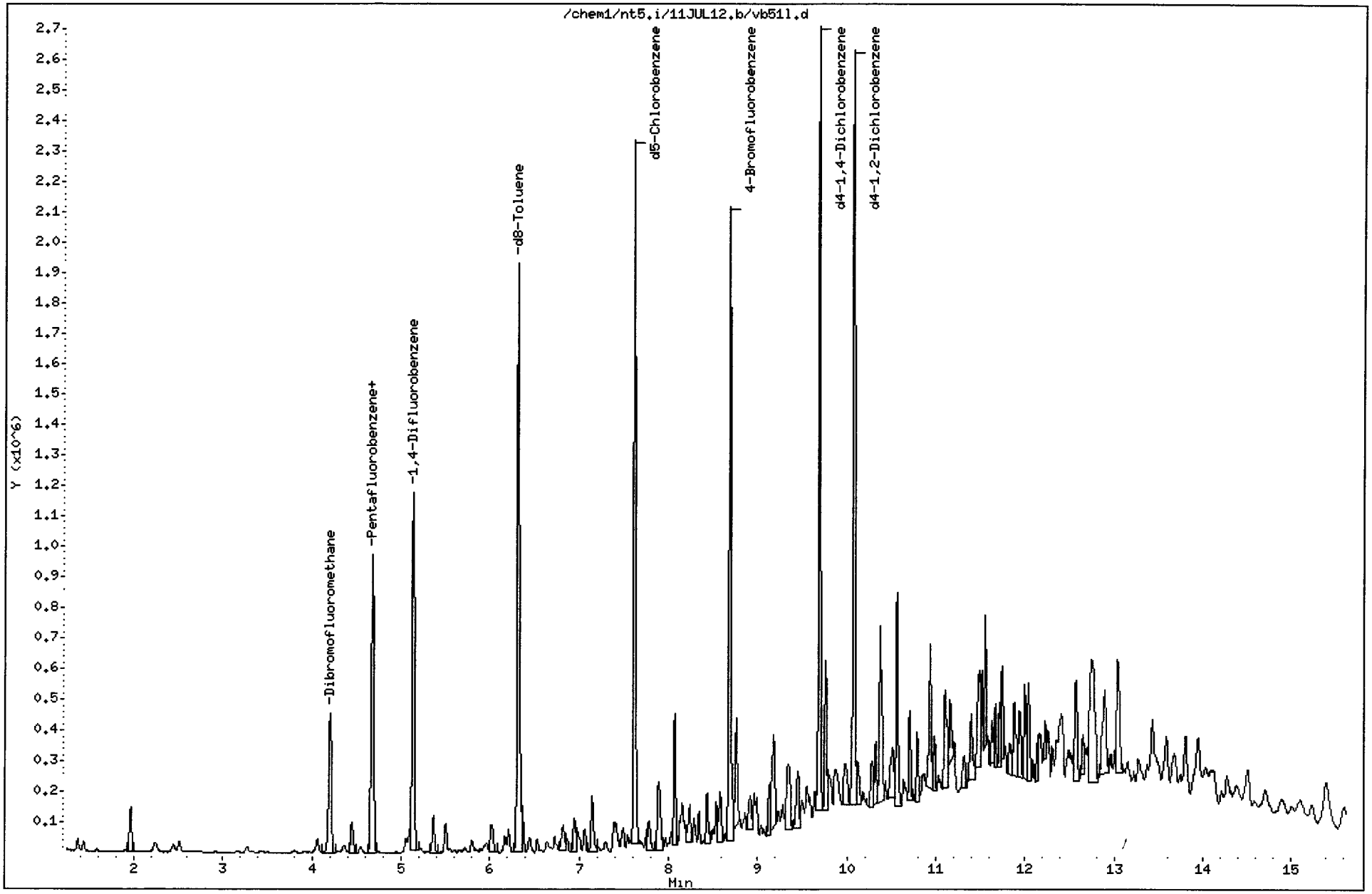
Column phase: RTXVMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18

VB51:00327



Data File: /chem1/nt5.i/11JUL12.b/vb511.d

Date : 11-JUL-2012 16:52

Client ID: CW-TP-09-10-11

Instrument: nt5.i

Sample Info: VB51L,5,8.42,0

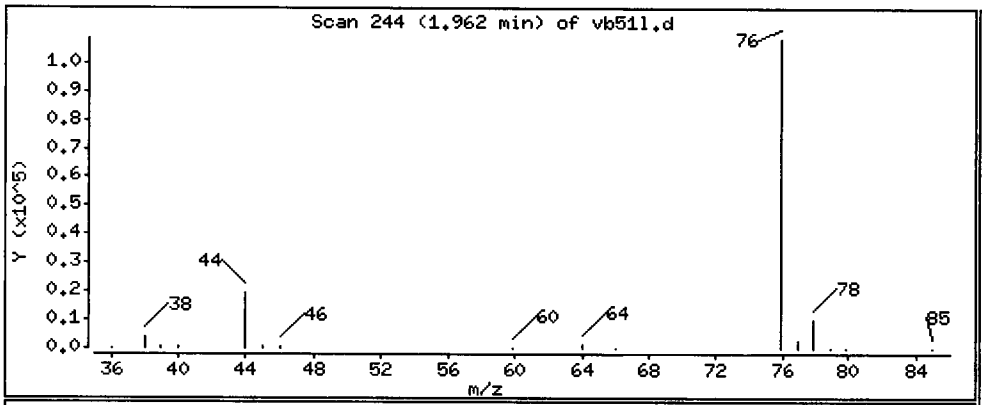
Operator: PB

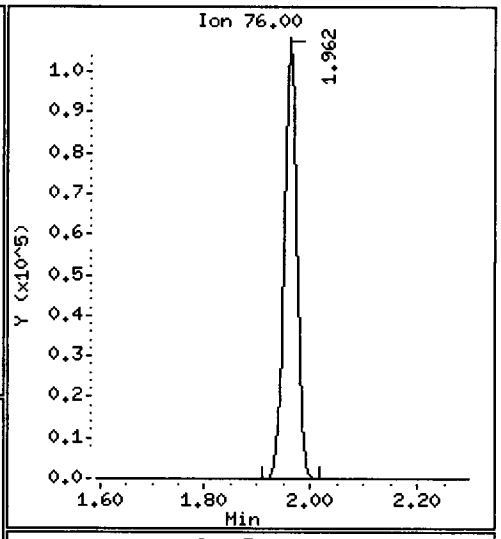
Column phase: RTXVMS

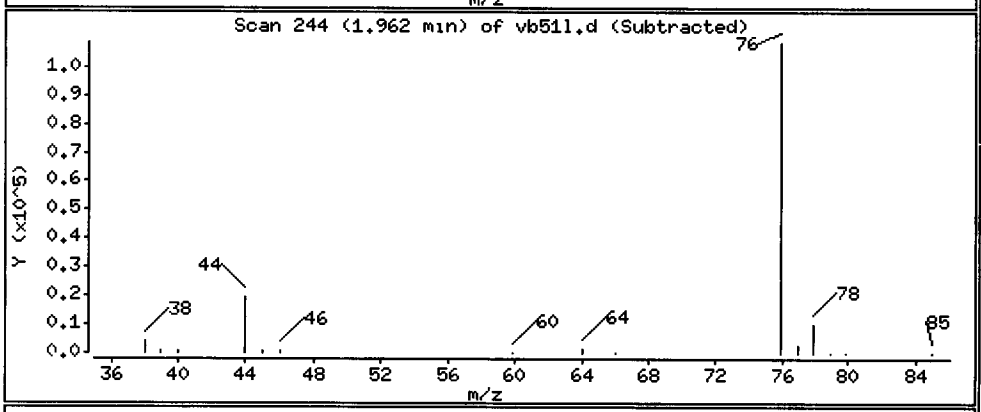
Column diameter: 0.18

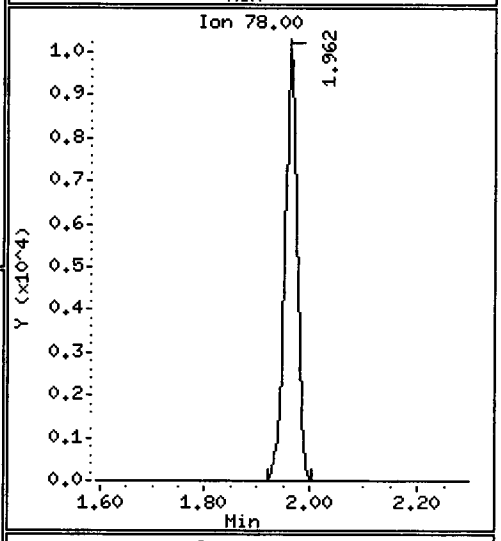
8 Carbon Disulfide

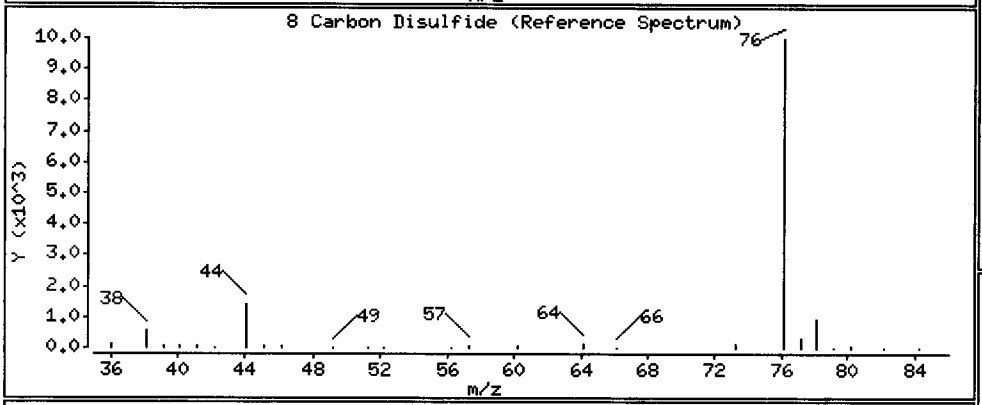
Concentration: 7.110 ug/Kg

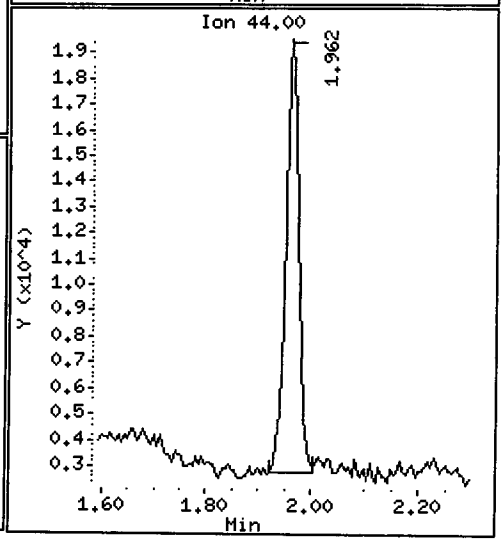


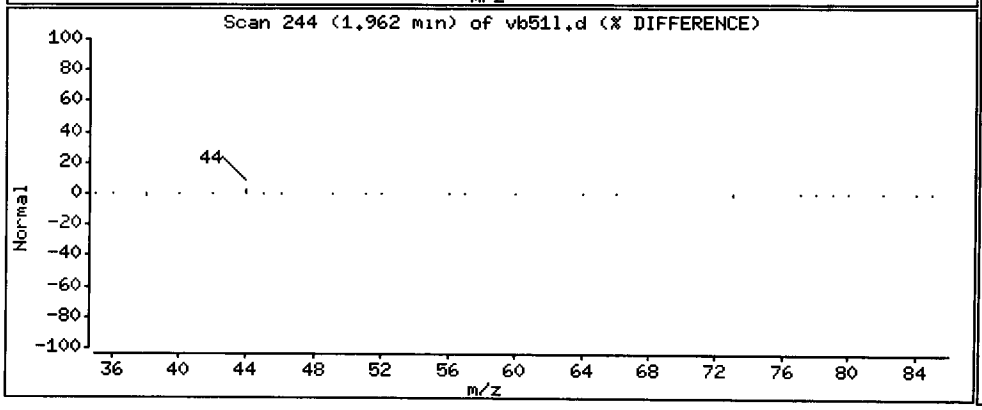












Data File: /chem1/nt5.i/11JUL12.b/vb511.d

Date : 11-JUL-2012 16:52

Client ID: CW-TP-09-10-11

Instrument: nt5.i

Sample Info: VB51L,5,8.42,0

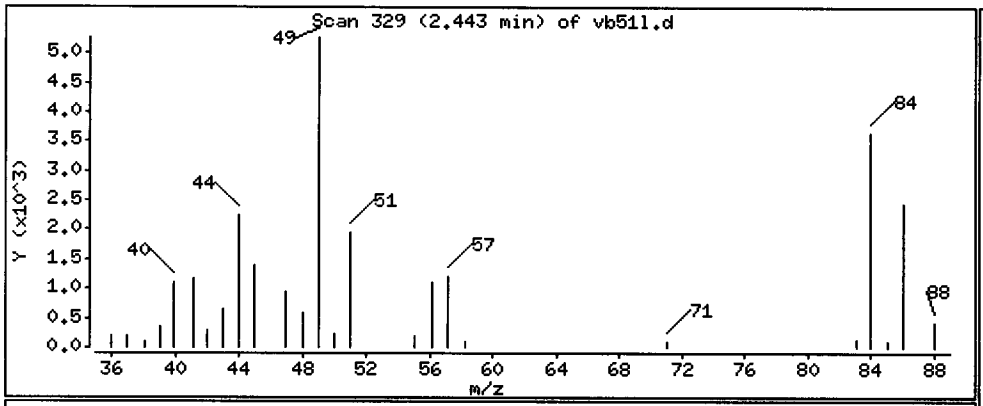
Operator: PB

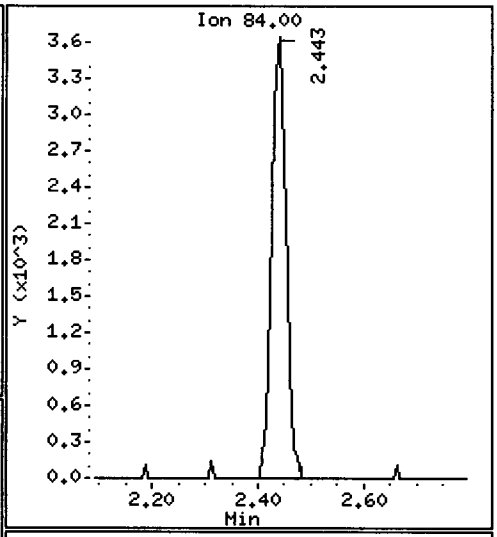
Column phase: RTXVMS

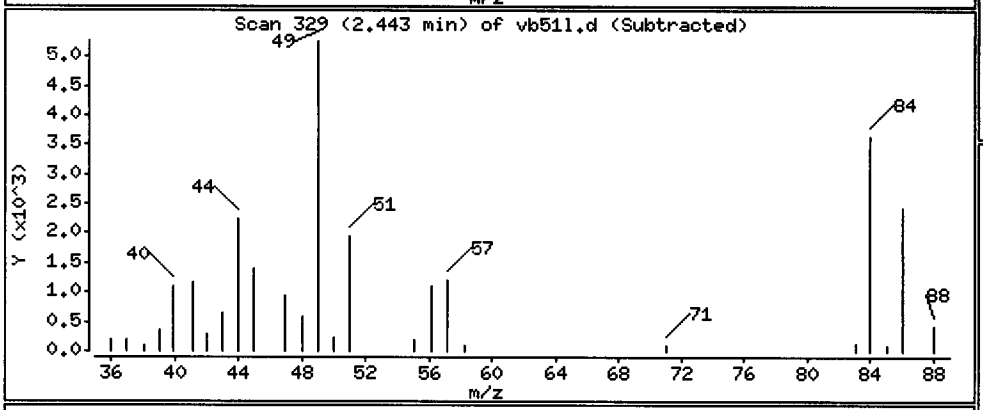
Column diameter: 0.18

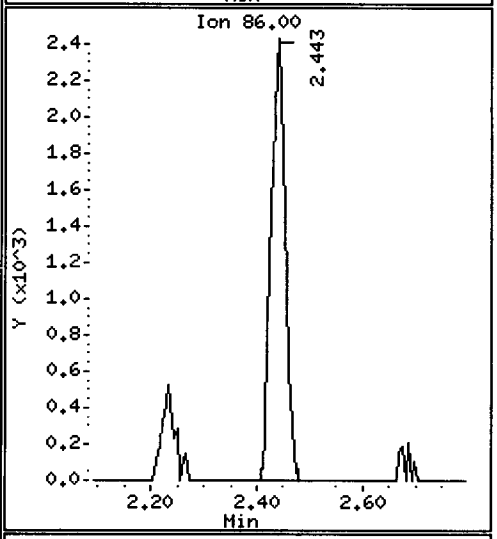
13 Methylene Chloride

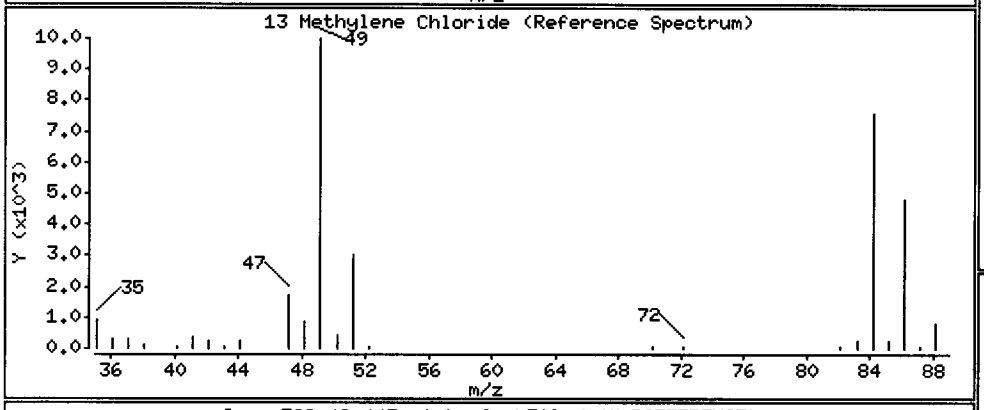
Concentration: 0.7524 ug/Kg

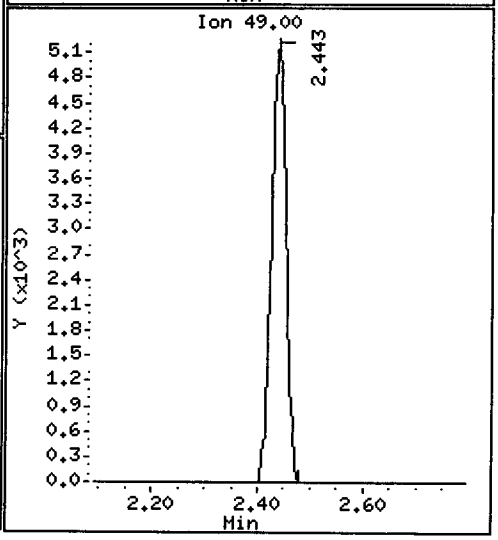


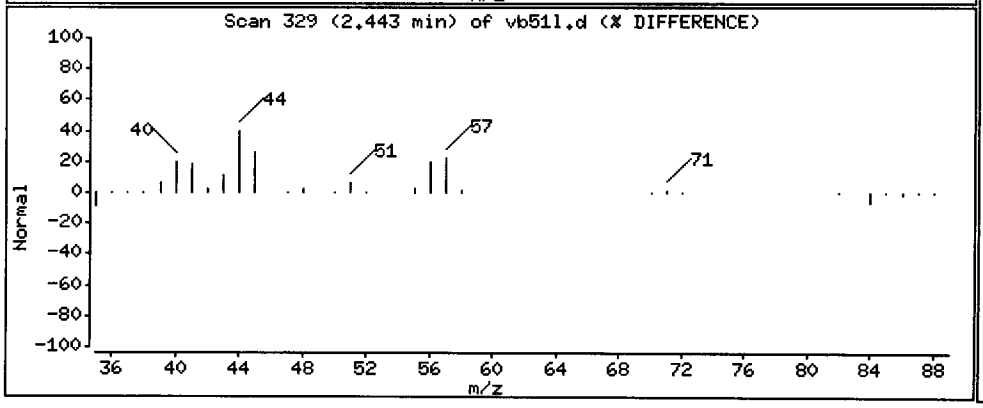












Data File: /chem1/nt5.i/11JUL12.b/vb511.d

Date : 11-JUL-2012 16:52

Client ID: CW-TP-09-10-11

Instrument: nt5.i

Sample Info: VB51L,5,8.42,0

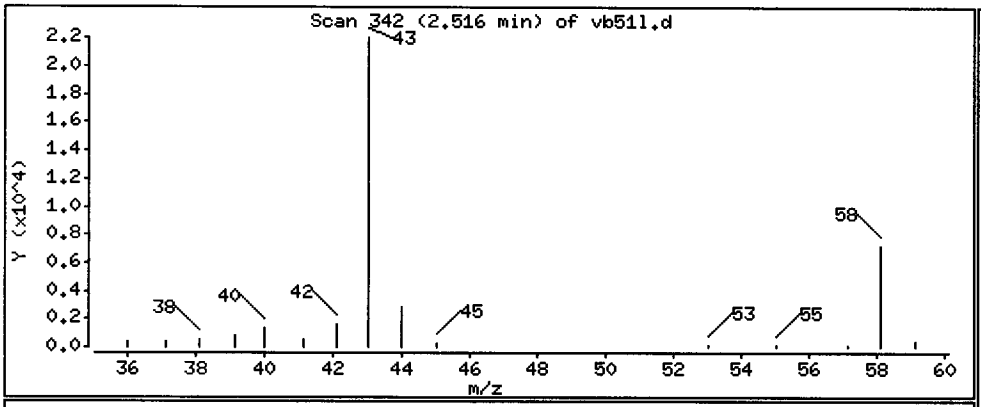
Operator: PB

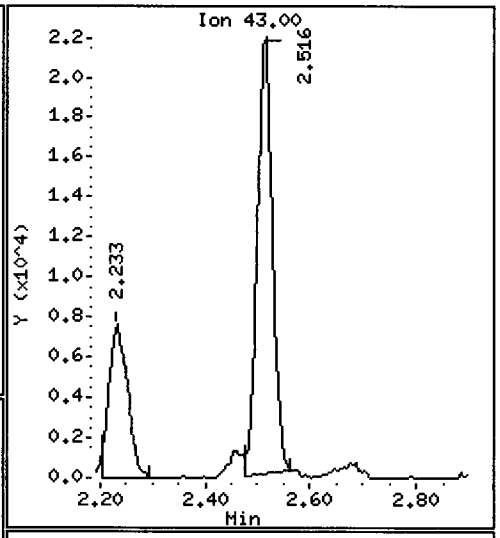
Column phase: RTXVMS

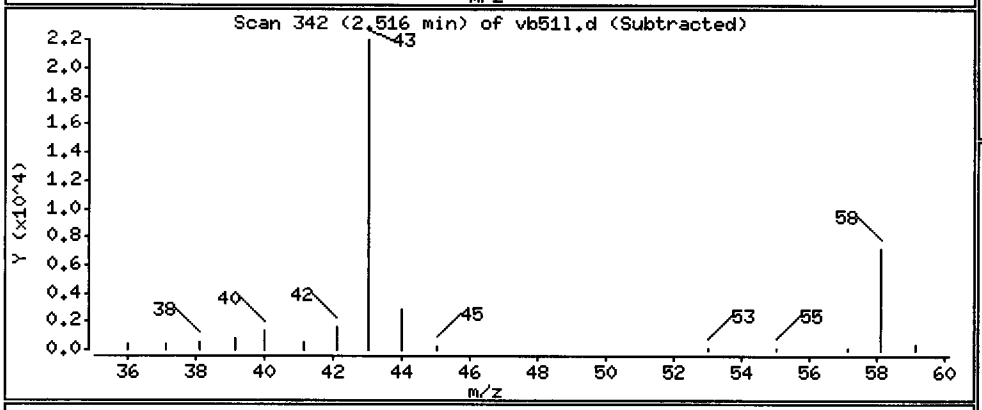
Column diameter: 0.18

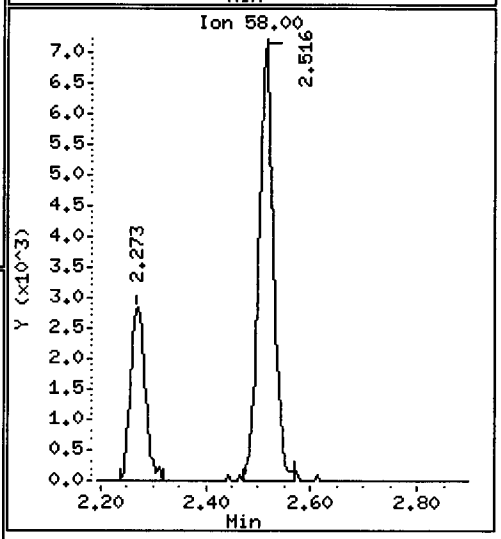
14 Acetone

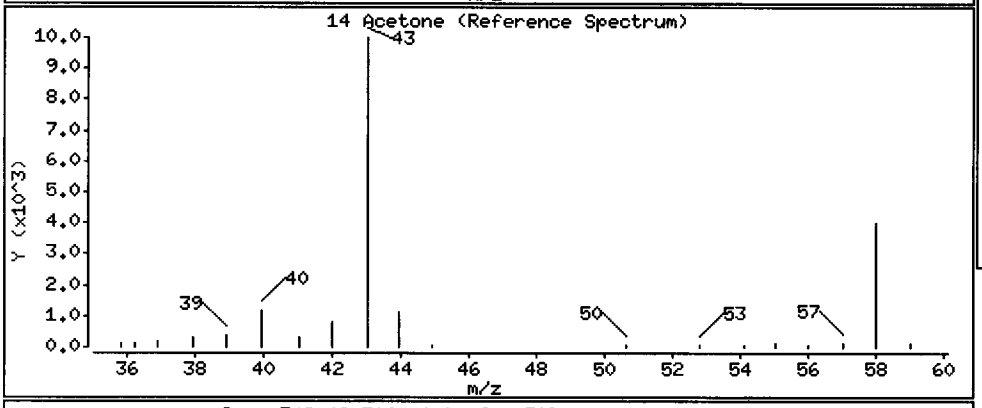
Concentration: 15.813 ug/Kg

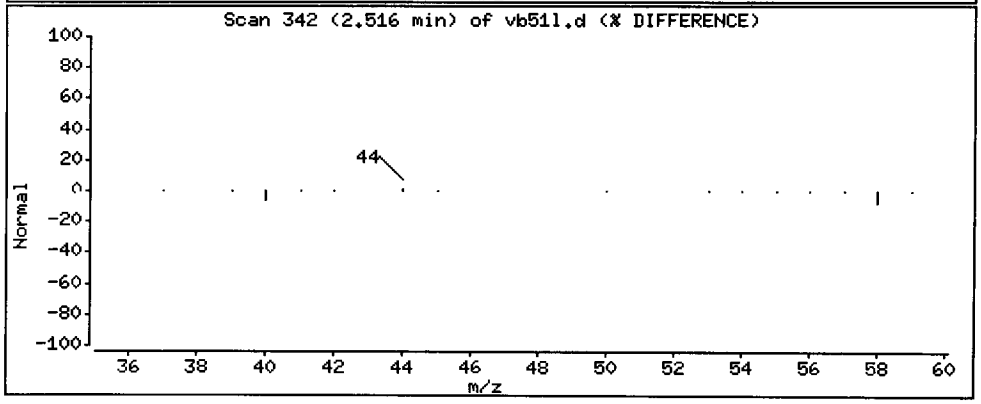












Data File: /chem1/nt5.i/11JUL12.b/vb511.d

Date : 11-JUL-2012 16:52

Client ID: CW-TP-09-10-11

Instrument: nt5.i

Sample Info: VB51L,5,8.42,0

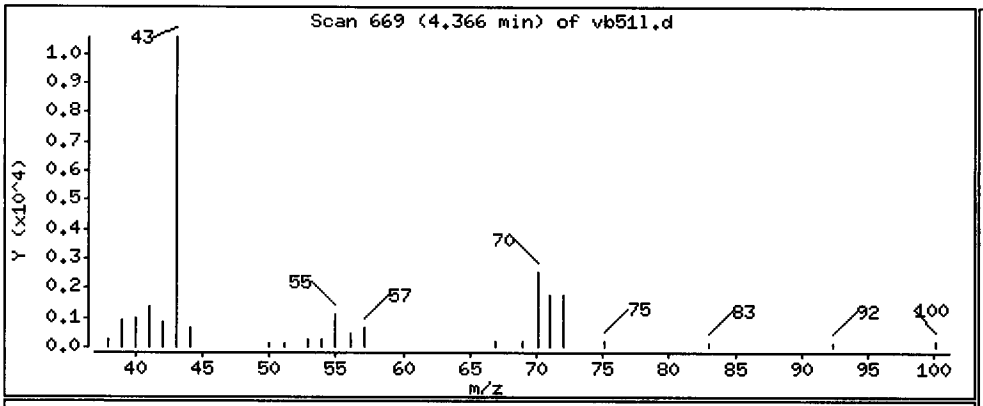
Operator: PB

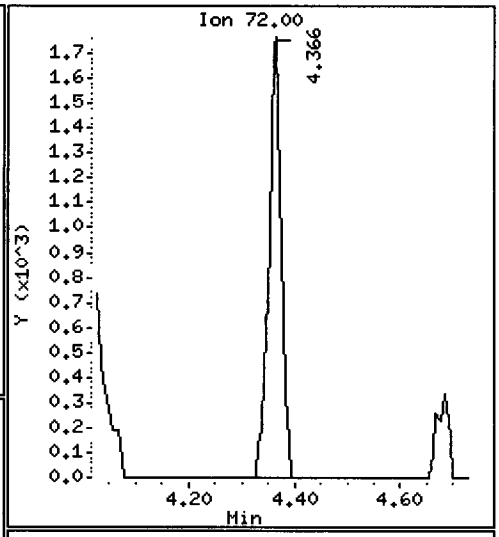
Column phase: RTXVMS

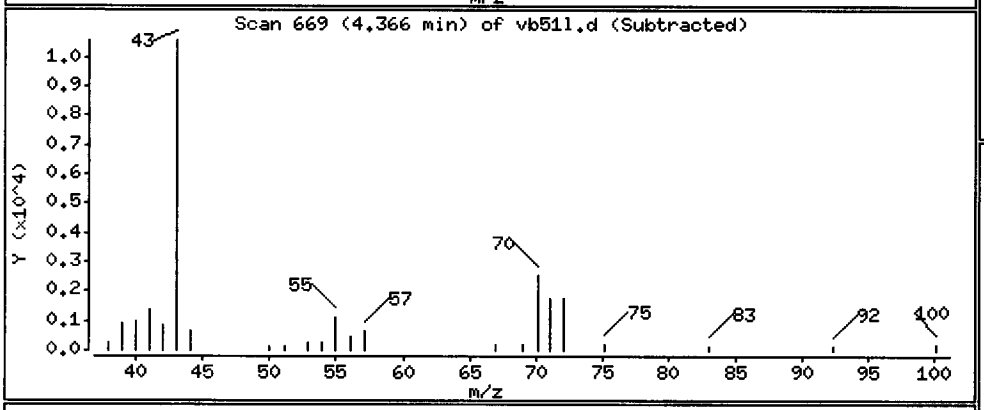
Column diameter: 0.18

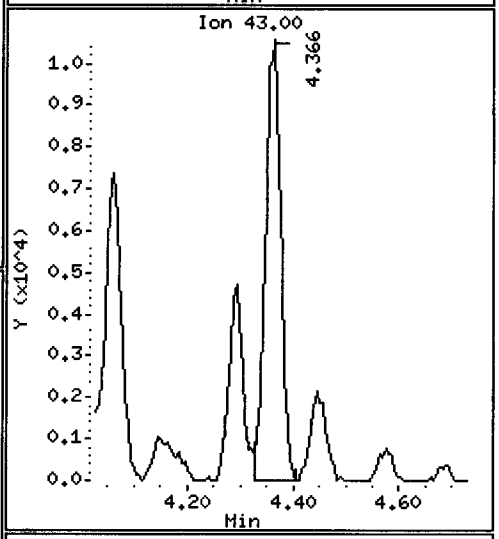
29 2-Butanone

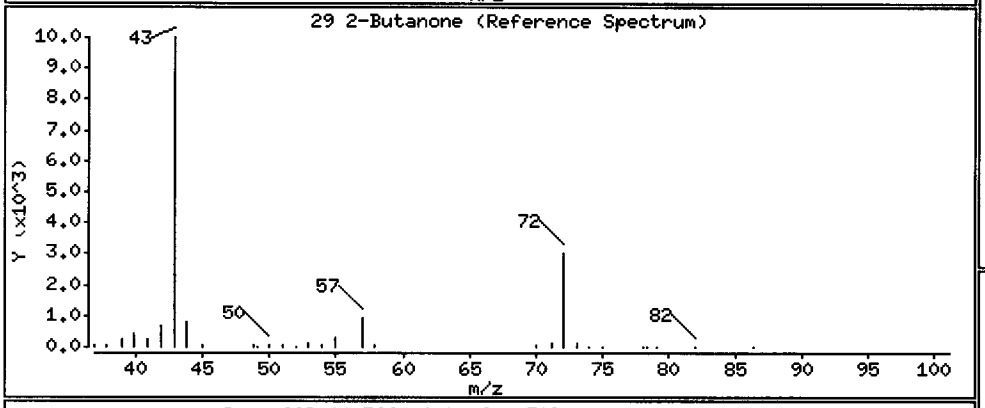
Concentration: 3.245 ug/Kg

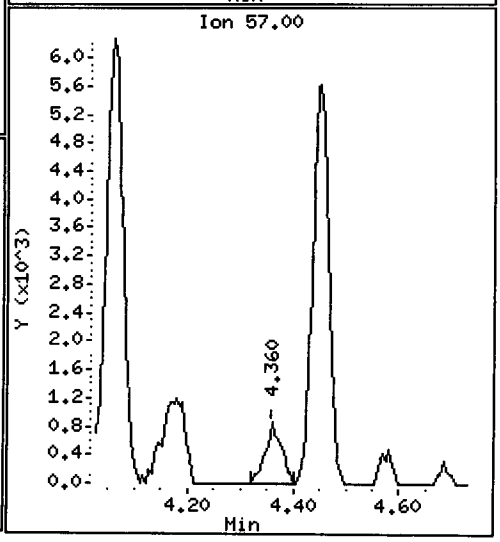


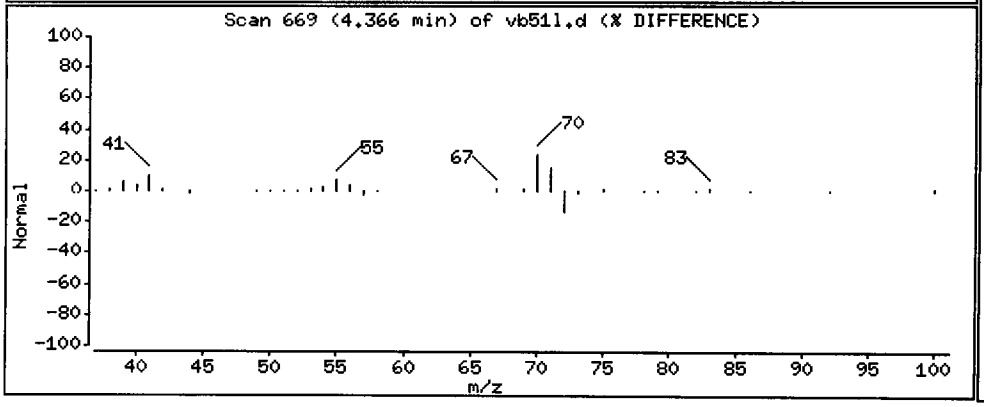












Data File: /chem1/nt5.i/11JUL12.b/vb511.d

Date : 11-JUL-2012 16:52

Client ID: CW-TP-09-10-11

Instrument: nt5.i

Sample Info: VB51L,5,8.42,0

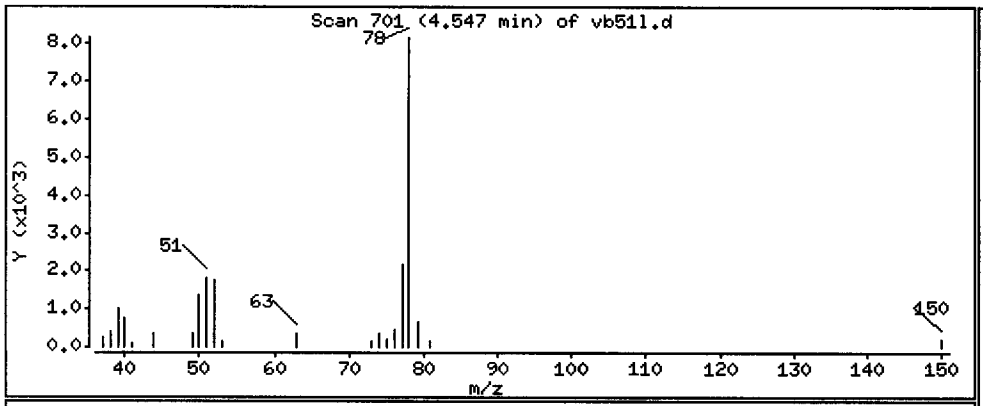
Operator: PB

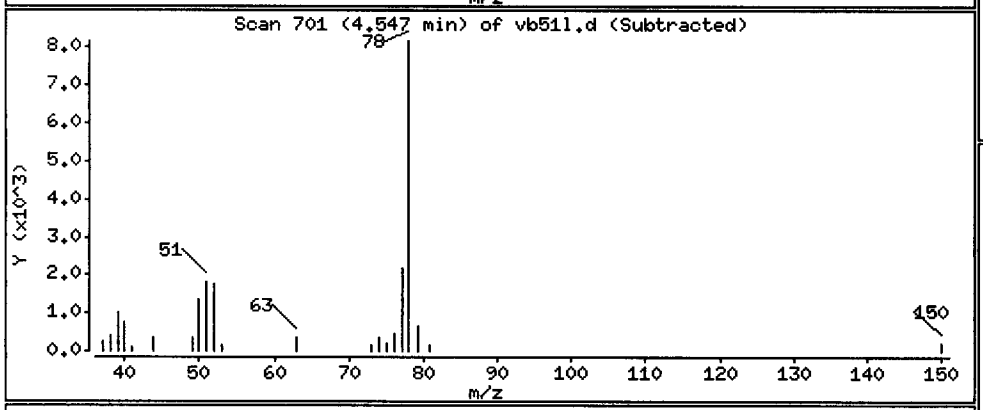
Column phase: RTXVMS

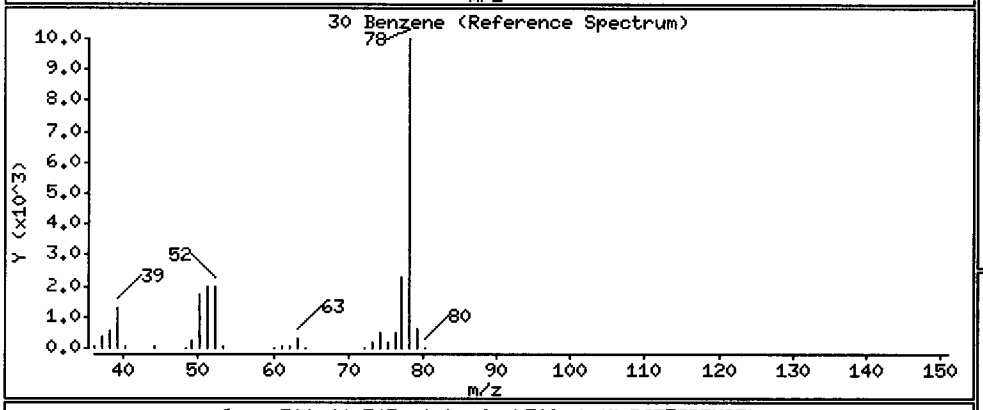
Column diameter: 0.18

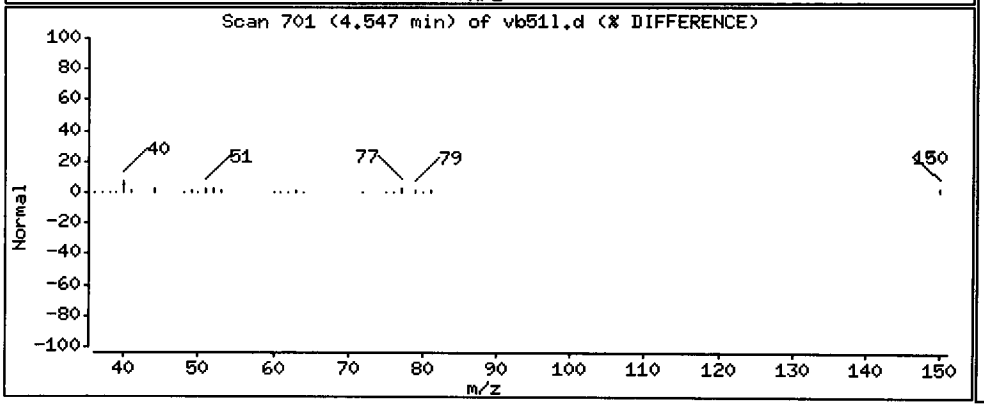
30 Benzene

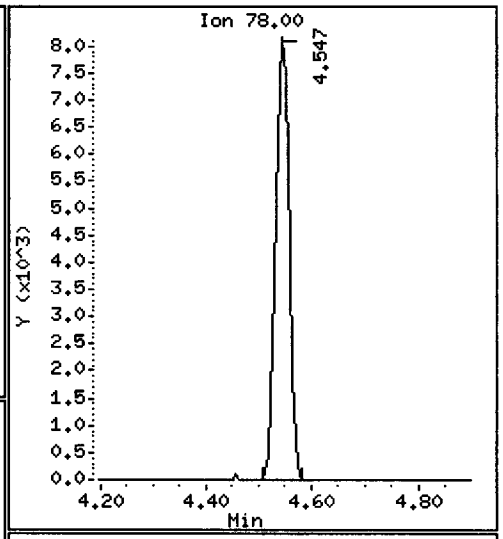
Concentration: 0.4616 ug/Kg

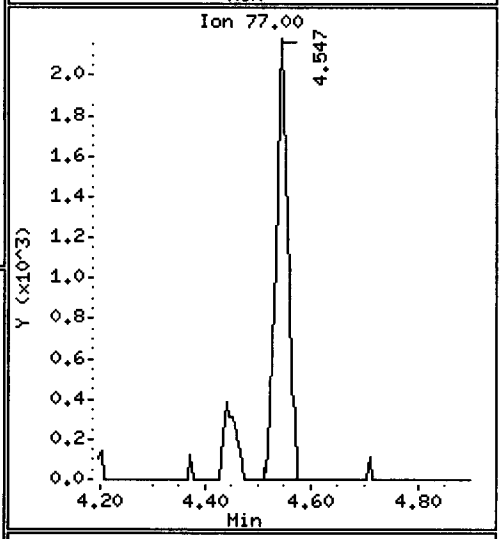


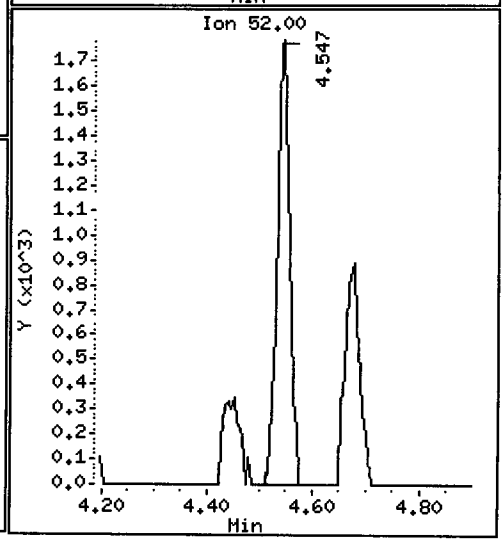












Data File: /chem1/nt5.i/11JUL12.b/vb511.d

Date : 11-JUL-2012 16:52

Client ID: CW-TP-09-10-11

Instrument: nt5.i

Sample Info: VB51L,5,8.42,0

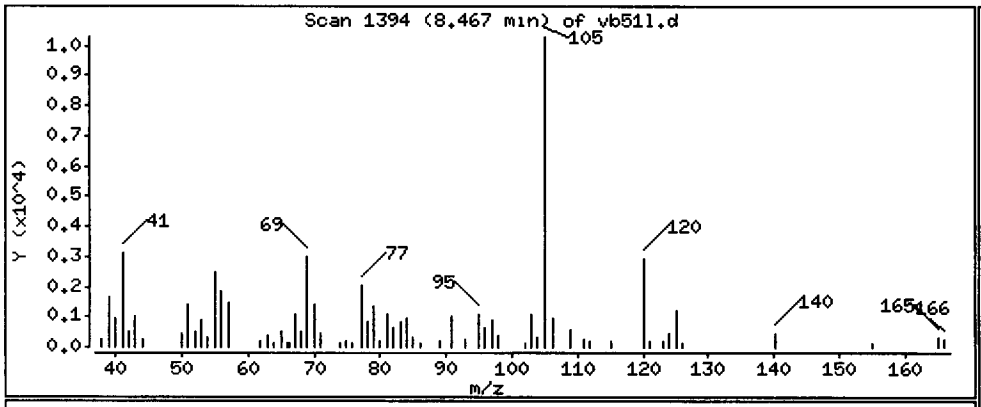
Operator: PB

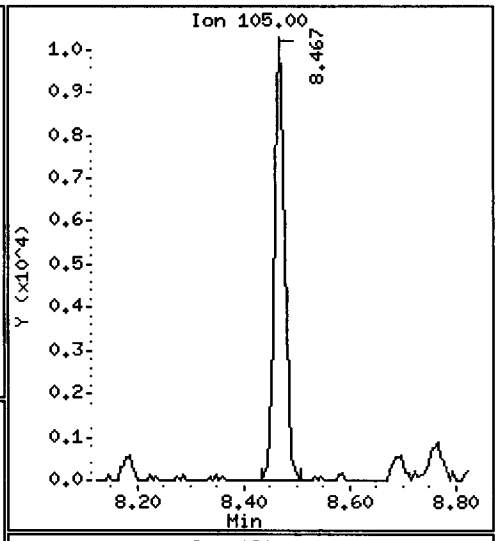
Column phase: RTXVMS

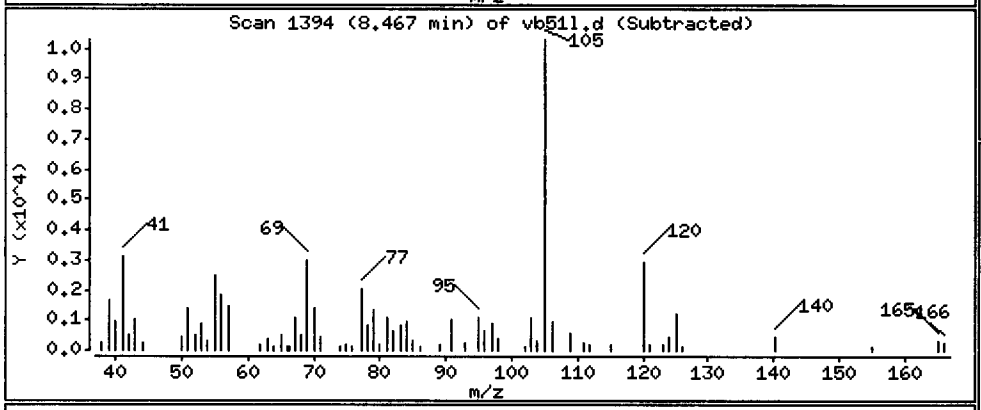
Column diameter: 0.18

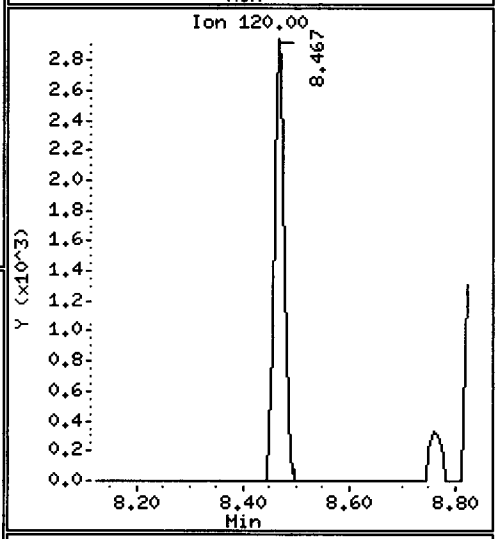
60 Isopropyl Benzene

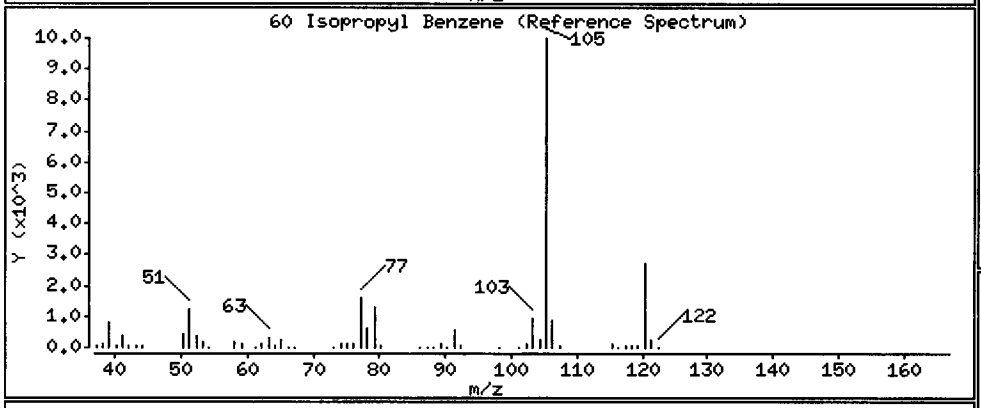
Concentration: 0.3703 ug/Kg

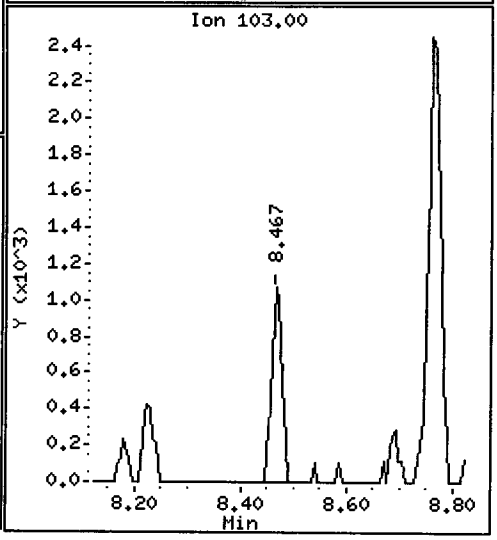


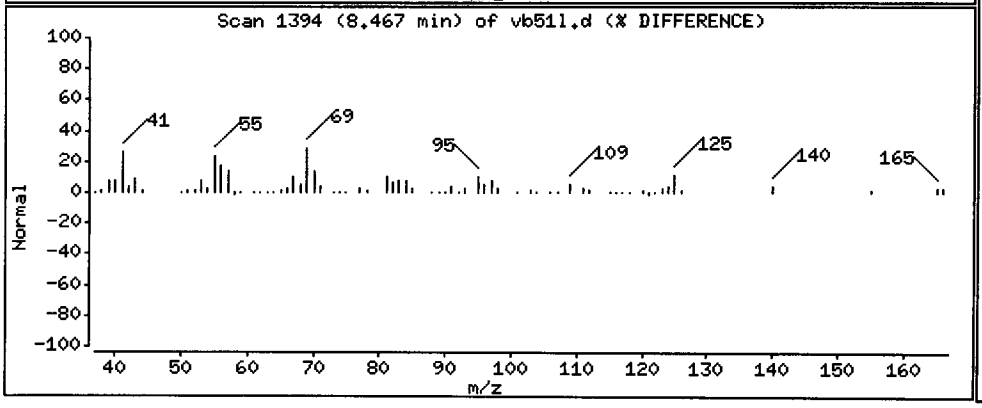












Data File: /chem1/nt5.i/11JUL12.b/vb511.d

Date : 11-JUL-2012 16:52

Client ID: CW-TP-09-10-11

Instrument: nt5.i

Sample Info: VB51L,5,8.42,0

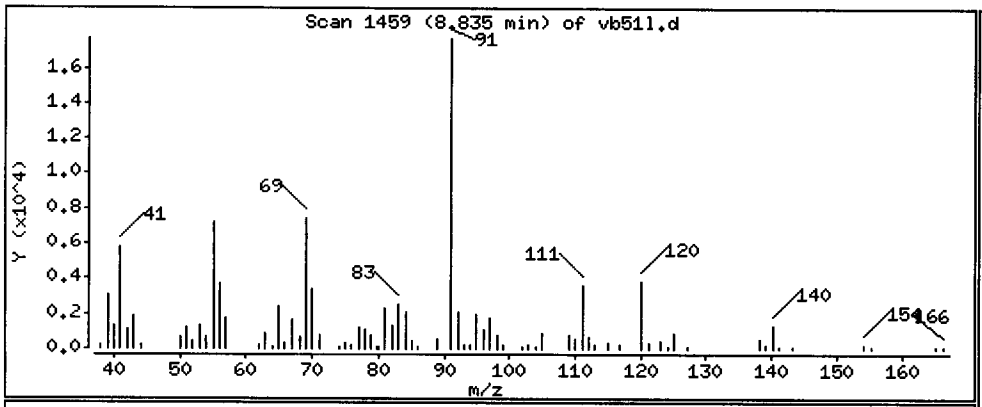
Operator: PB

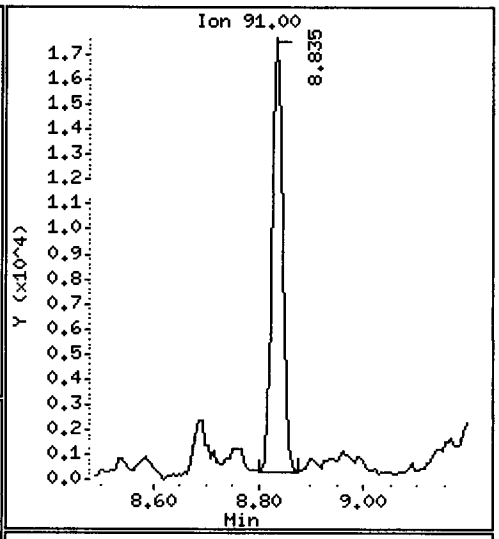
Column phase: RTXVMS

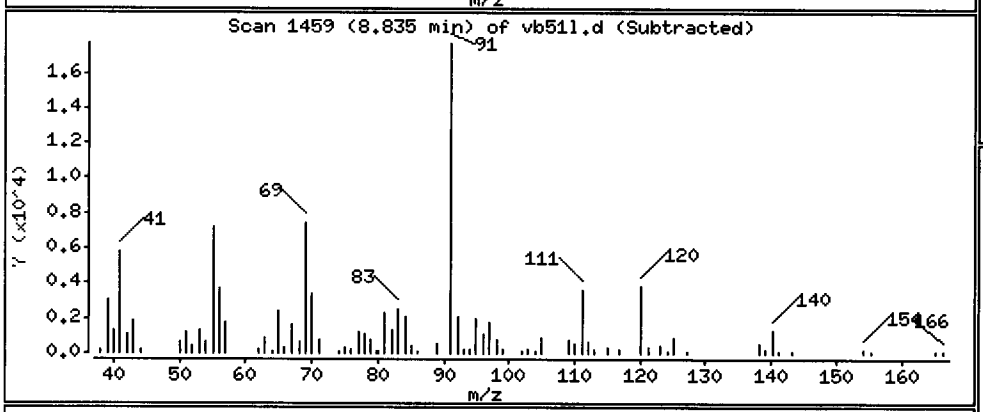
Column diameter: 0.18

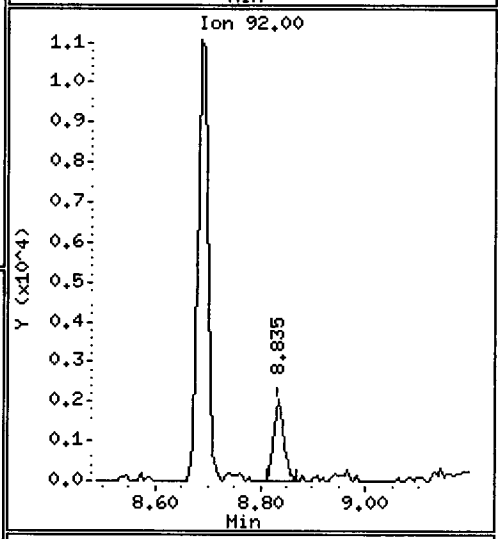
64 N-Propyl Benzene

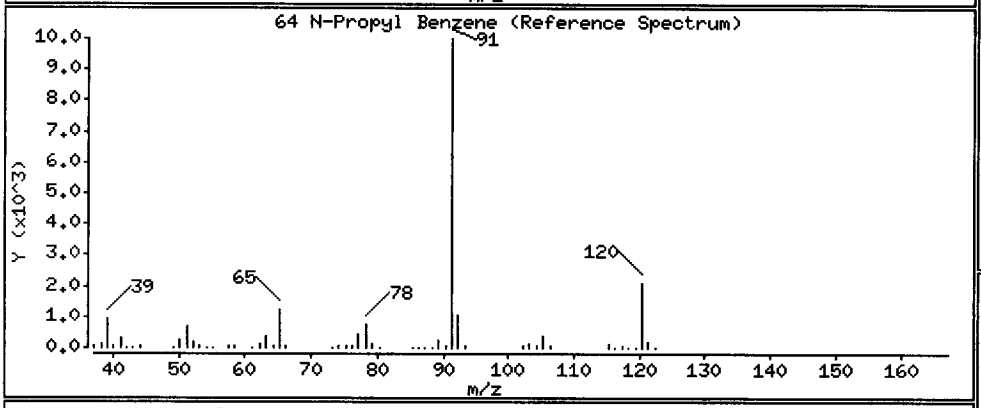
Concentration: 0.5099 ug/Kg

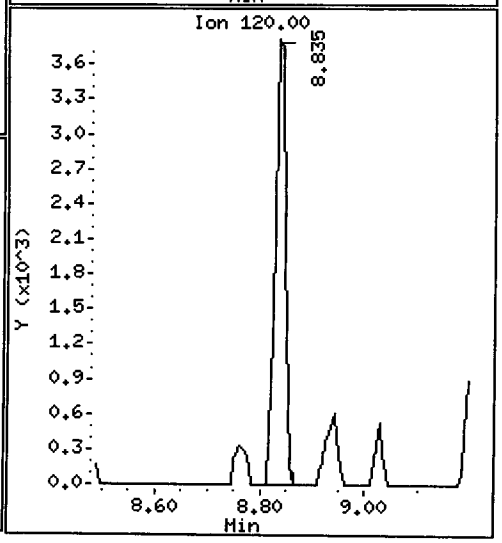


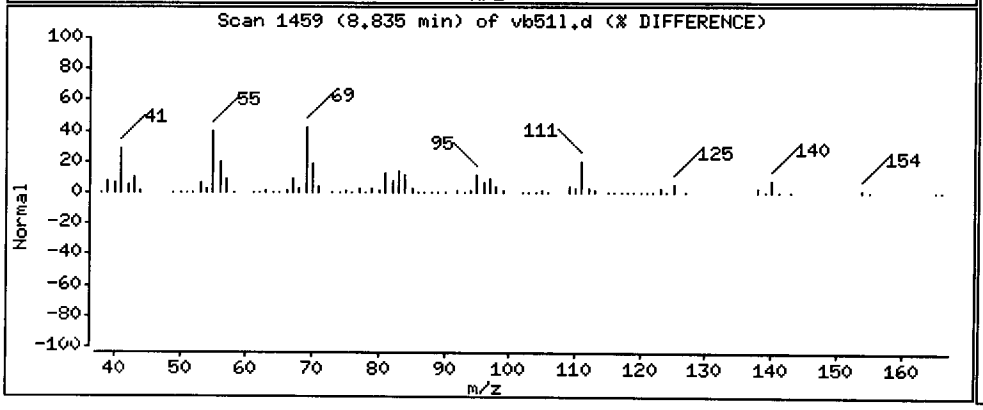












Data File: /chem1/nt5.i/11JUL12.b/vb511.d

Date : 11-JUL-2012 16:52

Client ID: CW-TP-09-10-11

Instrument: nt5.i

Sample Info: VB51L,5,8.42,0

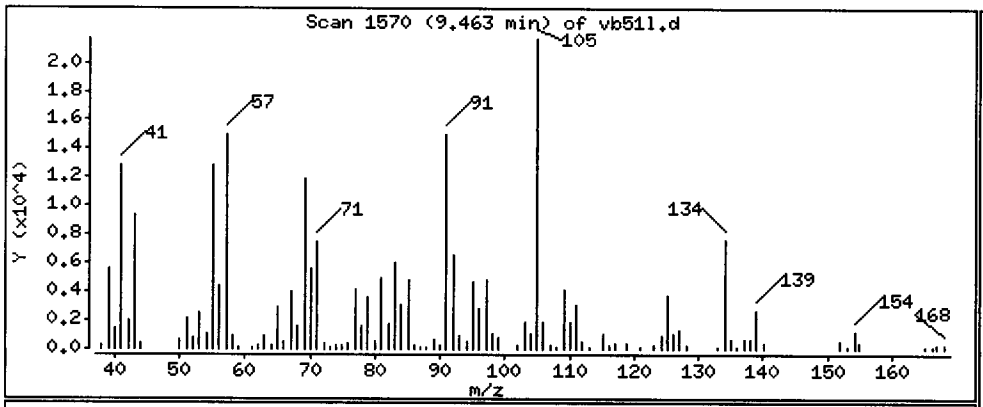
Operator: PB

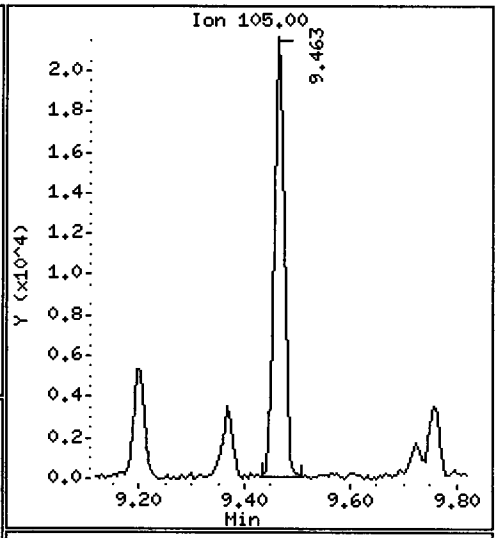
Column phase: RTXVMS

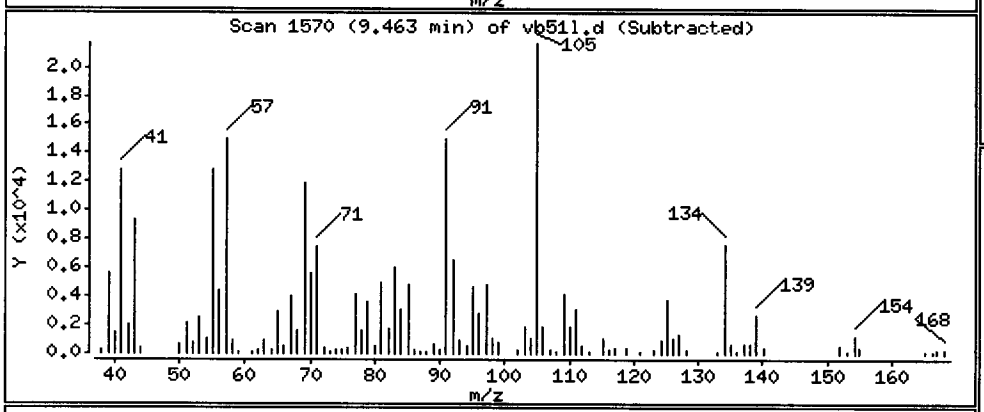
Column diameter: 0.18

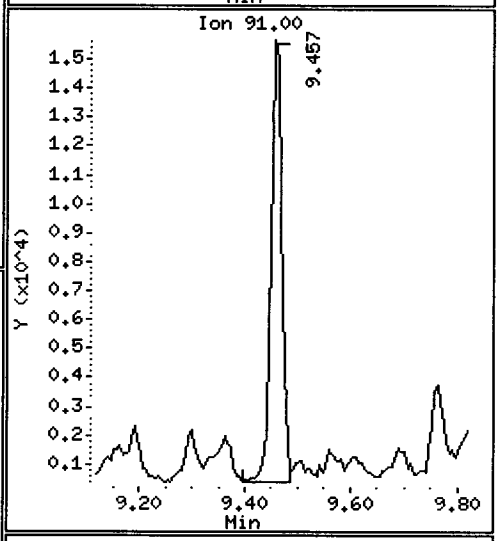
73 S-Butyl Benzene

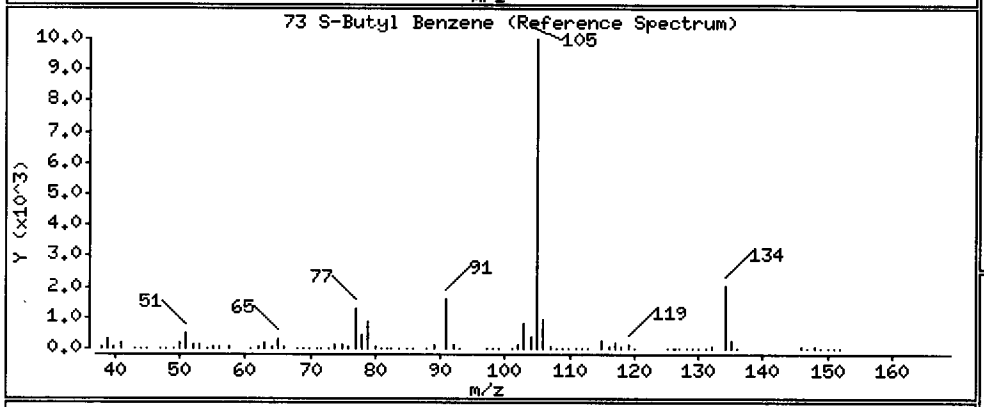
Concentration: 0.7064 ug/Kg

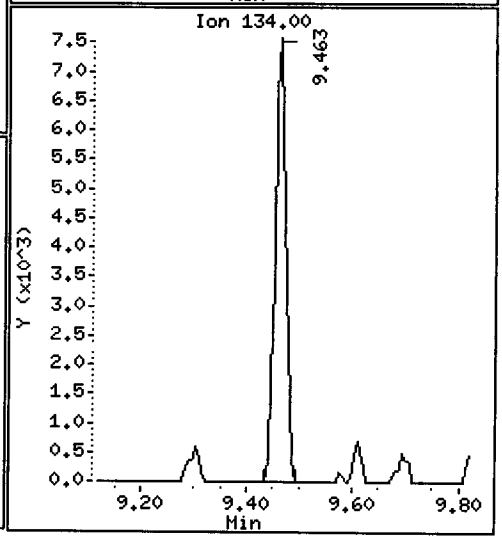


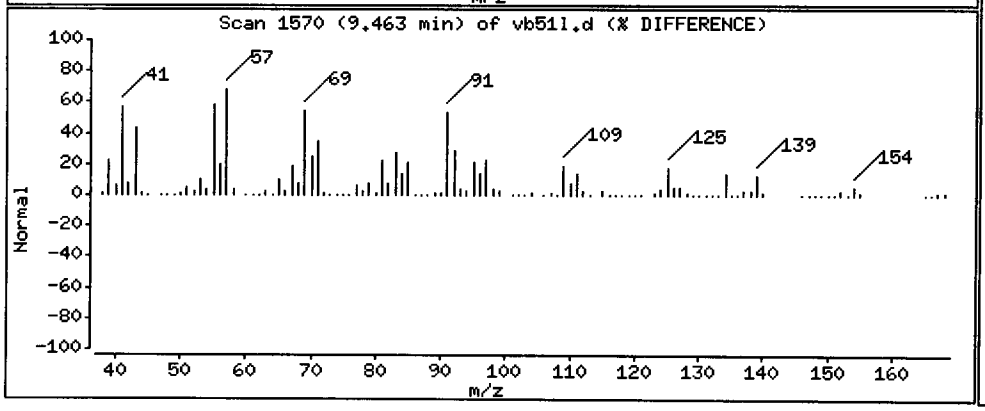












Data File: /chem1/nt5.i/11JUL12.b/vb511.d

Date : 11-JUL-2012 16:52

Client ID: CW-TP-09-10-11

Instrument: nt5.i

Sample Info: VB51L,5,8.42,0

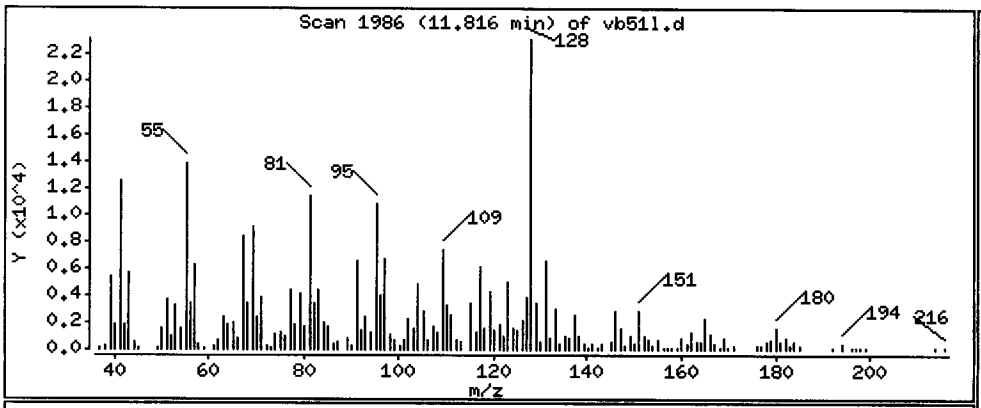
Operator: PB

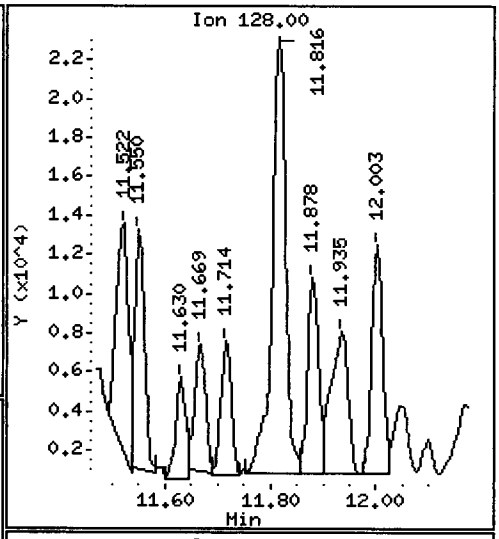
Column phase: RTXVMS

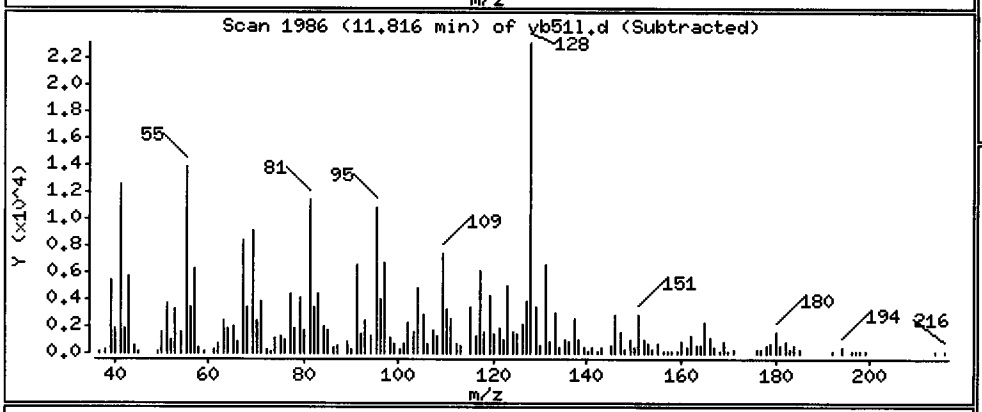
Column diameter: 0.18

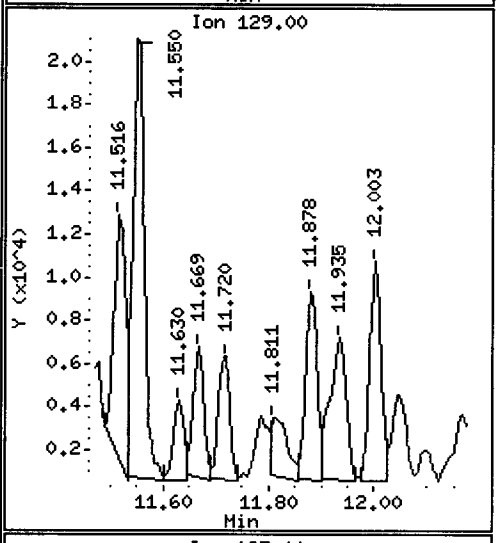
84 Naphthalene

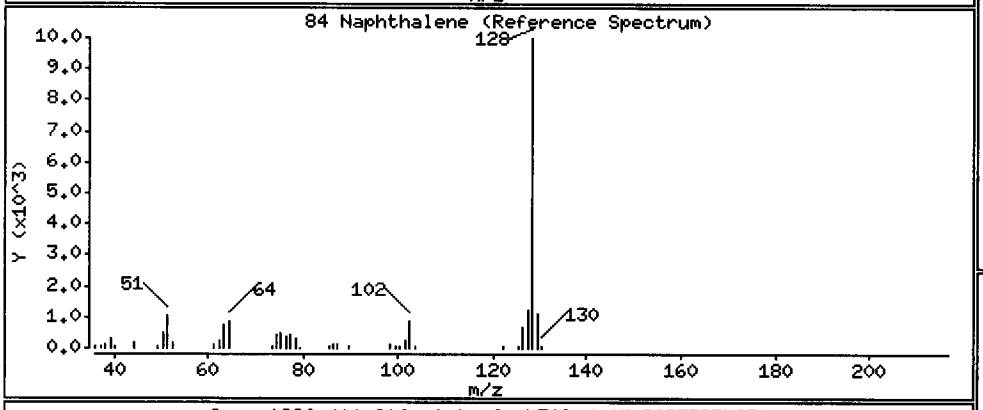
Concentration: 1.567 ug/Kg

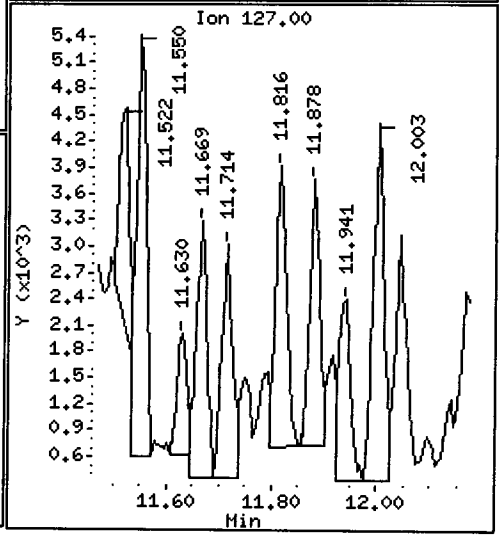


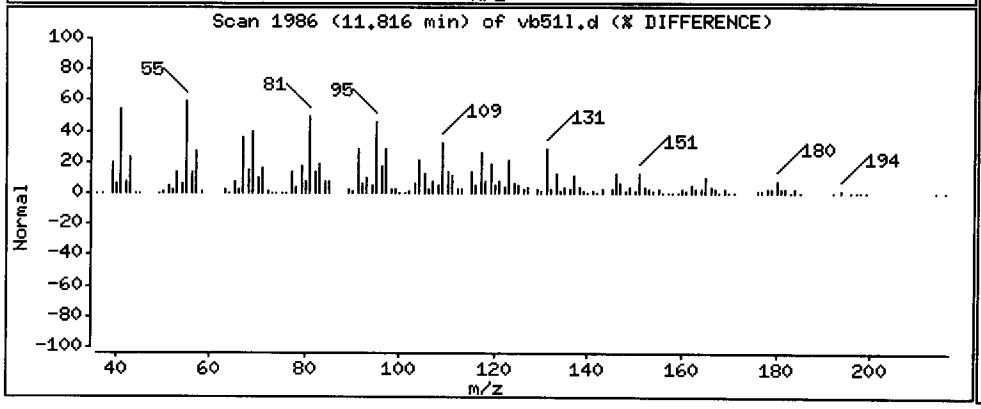












CO-ELUTION SUMMARY FOR FILE - vb51l.d

Lab ID: VB51L, Method: VO010412S.m, Instrument: nt5.i, Date: 11-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

VOA Analyst Notes / Corrective Action Log

ARI Project ID: VB54 Client ID: Anchor QEA

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.2) **710S**(RSK-175)

Parameter(s): _____

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6 FINN-5

Purge Volume (mL) 5 Curve Date: 6/14/11 Analysis Start Date: 7/11/11

pH ≤ 2.0	YES / NO / NA	Method Blank In Control?	YES / NO
BFB Tune Meets Criteria?	YES / NO / NA	LCS / LCSD Recovery In Control?	YES / NO
Internal Standard Meets Criteria?	YES / NO / NA	Surrogate Recovery In Control?	YES / NO
ICal acceptable?	YES / NO	CCal acceptable?	YES / NO
Q flag applied?	YES / NO / NA	Q flag applied?	YES / NO / NA
Manual Integrations for ICal?	YES / NO	Manual Integrations for Samples?	Yes / NO
Special Analysis Criteria Met?	YES / NO / NA		

Bubbles/Headspace: None SM (≤ 2mm •) PB (2-4mm) LG (> 4mm ●) Head Space

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

iCal on G

Samples that were run med level (A, D, G, J) were not run low level due to high hydrocarbon background

Additional Details on Reverse: Yes / No

Analyst: _____ **Date:** 7/13/11

Reviewer: _____ **Date:** 7/13

Analytical Resources Inc.: Volatile Organics Instrument Log

NT-5 Serial No.:GC=US10228086, MS=US10462818

Date: 7/12/12 Analysis: 8260C Analyst: [illegible]

GC Program: VOA60A Column No: 938152 Column Type: 624Vmg

Instrument Tune (.U or .CT.): bfb0712 EM Voltage: 1353

Inj. Vol: 5 Calibration File: 0506712 Curve Date: 6/26/12

IS/SS	Ical/Ccal	LCS/ICV
w756-3	w756-1	w756-1

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt5.i/12JUL12.b

	Time	Filename	LabID	ClientID	Vial#	pH	DF								
1	1138	bfb0712 d	BFB0712	BFB0712			1								
2	1201	0500712 d	CC0712	VSTD50			1 | 4 68	349919	5.14	761120	7 62	895880	9 70	514857
3	1237	lcs0712 d	LCS0712	LCS0712			1 | 4 69	377833	5 14	826188	7 62	976831	9.70	548462
4	1300	lcs0712a d	LCS0712	LCS0712			1 | 4 68	362946	5 14	791808	7 62	940304	9 70	545289
5	1323	mb0712 d	MB0712	MB0712			1 | 4 69	361662	5 14	786283	7 62	934814	9 69	530388
6	1414	vb54a d	VB54A	CW-TP-05-7-8			1 | 7 43	991256	9 66	558168					
7	1435	vb54d d	VB54D	CW-TP-03-7-8			1 | 4 69	383386	5 14	835123	7 62	985812	9 69	549942
8	1458	vb54g d	VB54G	CW-TP-02-8.2-9 2			1 | 4 68	341478	5 14	760339	7.62	922328	9 69	533815
9	1521	vb54j d	VB54J	CW-TP-01-8-9			1 | 4 69	92520	5 14	191998	7 62	216945	9.69	116536
10	1544	vb54m d	VB54M	CW-TB			1 | 4 69	348336	5 14	764914	7 62	904194	9 69	509429
11	1606	vb54n d	VB54N	CW-TP-08-7-8			1 | 4 69	368321	5 14	805022	7 62	912001	9 69	418075
12	1629	vb54q d	VB54Q	CW-TP-04-8-9			1 | 4 69	356179	5 14	775762	7 62	941164	9 70	620307
13	1652	vb54t d	VB54T	CW-TP-54-8-9			1 | 4 69	380275	5 14	821158	7 62	948771	9 69	514845
14	1721	vb54a2 d	VB54A	CW-TP-05-7-8			1 | 4 69	353324	5.14	762817	7 62	902584	9 70	509274
15	1744	vb54d2 d	VB54D	CW-TP-03-7-8			1 | 4.69	368303	5 14	796940	7 62	933542	9 69	523731
16	1806	vb54j2 d	VB54J	CW-TP-01-8-9			1 | 4 69	387611	5 14	855814	7 62	1023686	9.69	581217
17	1829	vb54q2 d	VB54Q	CW-TP-04-8-9			1 | 4 68	367769	5 14	803106	7 62	951194	9 69	550555
18	1852	vb54gms d	VB54GMS	CW-TP-02-8 2-9 2MS			1 | 4 68	369707	5 14	798637	7 62	946356	9 70	552267
19	1915	vb54gmsd d	VB54GMSD	CW-TP-02-8 2-9 2MSD			1 | 4 68	393258	5 14	855581	7 62	1023286	9 70	605084

Maintena

7/13/12

Maintenance Verification (Identify ICal or CCal that demonstrates the instrument is in control):

Every line mu[illegible]ontain information or be lined out. Make all entries legible. Start a new page for each QC period.

Data File: /chem1/nt5.i/12JUL12.b/bfb0712.d

Date : 12-JUL-2012 11:38

Client ID: BFB0712

Instrument: nt5.i

Sample Info: BFB0712,BFB0712,,1,12JUL12,,

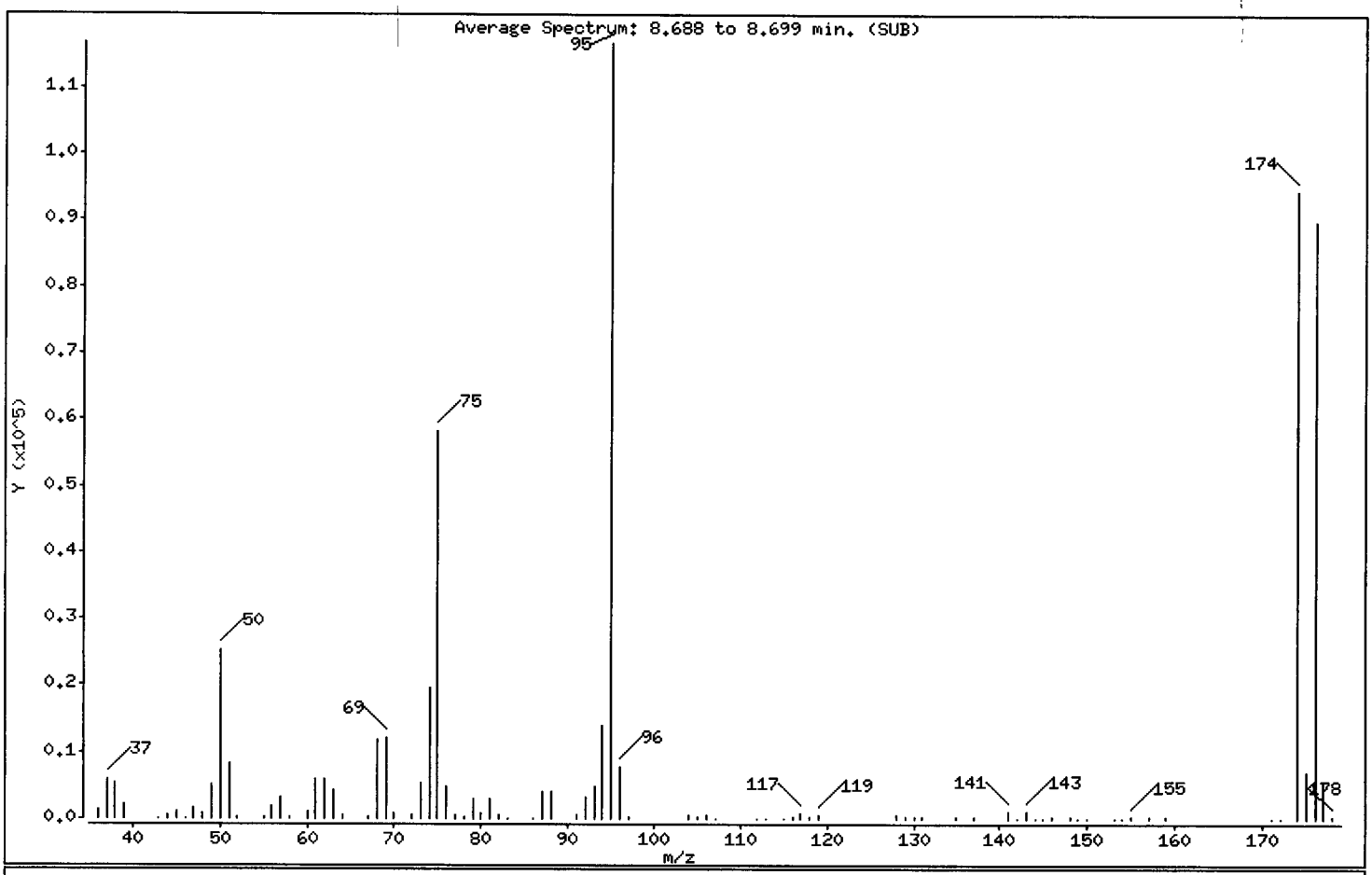
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Bromofluorobenzene

9 7/12/12



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	21.69
75	30.00 - 66.00% of mass 95	49.95
96	5.00 - 9.00% of mass 95	6.74
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 101.00% of mass 95	80.90
175	4.00 - 9.00% of mass 174	6.00 (7.42)
176	95.00 - 101.00% of mass 174	77.01 (95.19)
177	5.00 - 9.00% of mass 176	4.93 (6.41)

Data File: /chem1/nt5.i/12JUL12.b/bfb0712.d

Date : 12-JUL-2012 11:38

Client ID: BFB0712

Instrument: nt5.i

Sample Info: BFB0712,BFB0712,,1,12JUL12,,

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0712.d

Spectrum: Average Spectrum: 8.688 to 8.699 min. (SUB)

Location of Maximum: 95.00

Number of points: 90

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1297	67.00	282	95.00	116648	143.00	1170
37.00	5890	68.00	11692	96.00	7860	144.00	43
38.00	5447	69.00	12196	97.00	266	145.00	68
39.00	2027	70.00	879	104.00	438	146.00	169
43.00	51	72.00	614	105.00	163	148.00	269
44.00	518	73.00	5389	106.00	473	149.00	50
45.00	1115	74.00	19616	107.00	104	150.00	84
46.00	48	75.00	58264	111.00	115	153.00	66
47.00	1550	76.00	4879	112.00	40	154.00	43
48.00	797	77.00	556	113.00	38	155.00	243
49.00	5112	78.00	395	115.00	44	156.00	58
50.00	25296	79.00	2982	116.00	372	157.00	147
51.00	8233	80.00	750	117.00	689	159.00	171
52.00	354	81.00	3048	118.00	375	161.00	125
55.00	290	82.00	562	119.00	604	171.00	39
56.00	1809	83.00	41	128.00	434	172.00	123
57.00	3269	86.00	102	129.00	151	174.00	94368
58.00	192	87.00	4134	130.00	364	175.00	7003
60.00	1079	88.00	4147	131.00	169	176.00	89824
61.00	5805	91.00	468	135.00	248	177.00	5755
62.00	5843	92.00	3321	137.00	200	178.00	175
63.00	4341	93.00	4866	141.00	1107		
64.00	419	94.00	14002	142.00	73		

Data File: /chem1/nt5.i/12JUL12.b/bfb0712.d

Date : 12-JUL-2012 11:38

Client ID: BFB0712

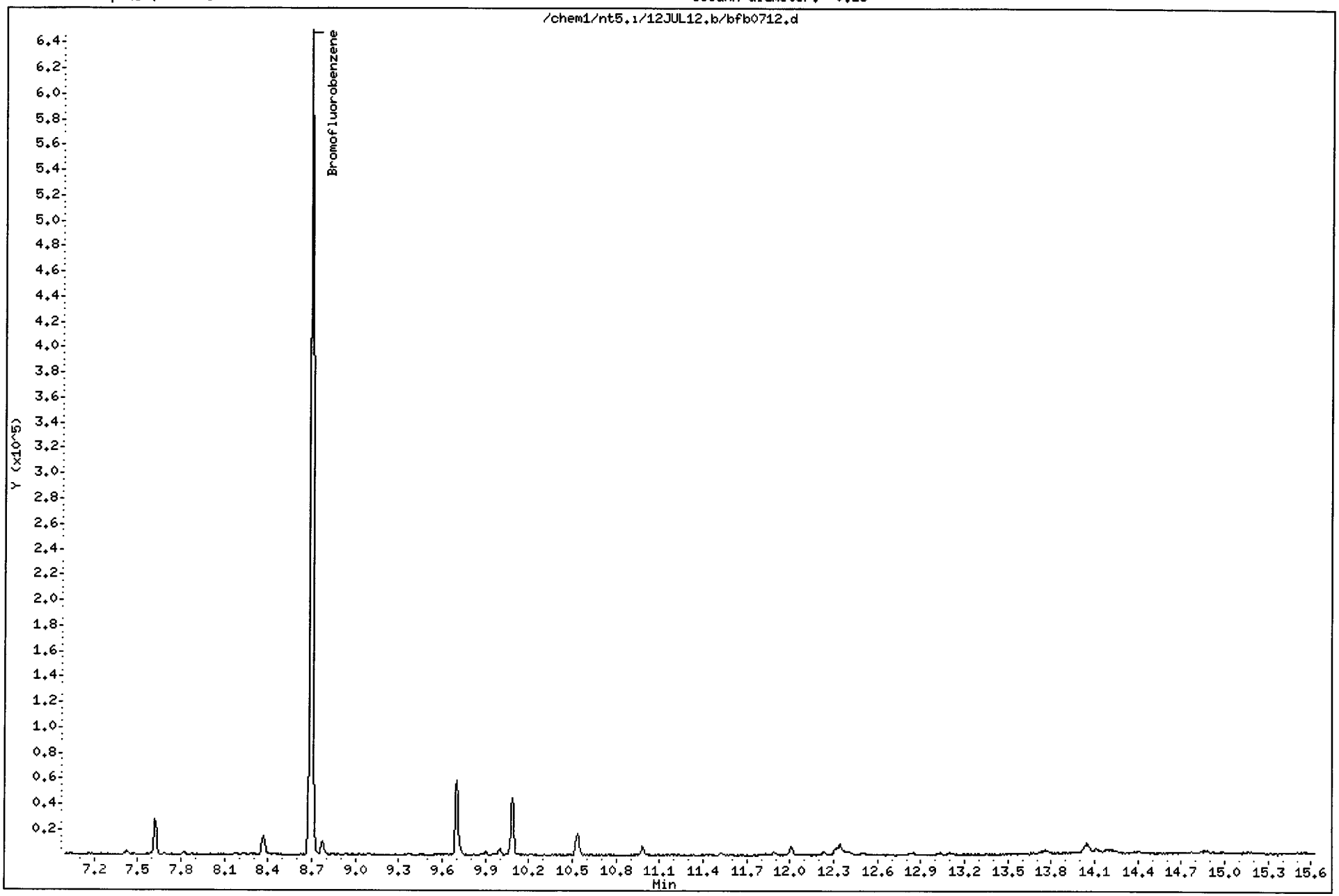
Instrument: nt5.i

Sample Info: BFB0712,BFB0712,,1,12JUL12,,

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18



Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/0500712.d
Lab Smp Id: CC0712 Client Smp ID: VSTD50
Inj Date : 12-JUL-2012 12:01
Operator : PB Inst ID: nt5.i
Smp Info : CC0712,5,5,0
Misc Info : 12-
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 12-Jul-2012 12:27 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.011	1.011	(0.216)	193318	50.0000	42.391
2 Chloromethane	50	1.130	1.130	(0.241)	284151	50.0000	44.750
3 Vinyl Chloride	62	1.181	1.181	(0.252)	298015	50.0000	47.272
4 Bromomethane	94	1.402	1.402	(0.299)	158733	50.0000	47.148
5 Chloroethane	64	1.481	1.481	(0.316)	167055	50.0000	42.596
6 Trichlorofluoromethane	101	1.571	1.571	(0.336)	227536	50.0000	41.274
7 1,1-Dichloroethene	96	1.945	1.945	(0.415)	194054	50.0000	45.409
8 Carbon Disulfide	76	1.945	1.945	(0.415)	680538	50.0000	44.132
9 112Trichloro122Trifluoroethane	101	1.990	1.990	(0.425)	202337	50.0000	48.055
10 Iodomethane	142	2.047	2.047	(0.437)	261955	50.0000	55.345
11 Bromoethane	108	2.154	2.154	(0.460)	148030	50.0000	45.973
12 Acrolein	56	2.250	2.250	(0.481)	191102	250.000	233.04
13 Methylene Chloride	84	2.437	2.437	(0.520)	234404	50.0000	42.536
14 Acetone	43	2.533	2.533	(0.541)	307051	250.000	180.03

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.578	2.578	(0.551)	231626	50.0000	46.720
	16 Methyl tert butyl ether	73	2.754	2.754	(0.588)	677606	50.0000	46.274
	17 1,1-Dichloroethane	63	3.201	3.201	(0.683)	460352	50.0000	46.036
	18 Acrylonitrile	53	3.285	3.285	(0.702)	75724	50.0000	41.125
	19 Vinyl Acetate	43	3.534	3.534	(0.755)	386476	50.0000	41.804
	20 Cis-1,2-Dichloroethene	96	3.749	3.749	(0.801)	245183	50.0000	46.566
	22 2,2-Dichloropropane	77	3.845	3.845	(0.821)	374626	50.0000	48.147
	23 Bromochloromethane	128	3.936	3.936	(0.841)	106747	50.0000	44.844
	24 Chloroform	83	4.038	4.038	(0.862)	421280	50.0000	47.875
	25 Carbon Tetrachloride	117	4.128	4.128	(0.804)	329355	50.0000	56.112
$	27 Dibromofluoromethane	111	4.202	4.202	(0.897)	248138	50.0000	44.802
	26 1,1,1-Trichloroethane	97	4.196	4.196	(0.896)	388799	50.0000	49.682
	28 1,1-Dichloropropene	75	4.315	4.315	(0.840)	339933	50.0000	53.936
	29 2-Butanone	72	4.372	4.372	(0.934)	115144	250.000	216.28
	30 Benzene	78	4.547	4.547	(0.885)	957899	50.0000	52.306
*	31 Pentafluorobenzene	168	4.683	4.683	(1.000)	349919	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	295471	50.0000	44.677
	33 1,2-Dichloroethane	62	4.734	4.734	(0.922)	348619	50.0000	49.331
	34 Trichloroethene	95	5.084	5.084	(0.990)	252954	50.0000	54.285
*	35 1,4-Difluorobenzene	114	5.135	5.135	(1.000)	761120	50.0000	
	37 Dibromomethane	93	5.435	5.435	(1.058)	131657	50.0000	50.469
	38 1,2-Dichloropropane	63	5.531	5.531	(1.077)	254761	50.0000	51.593
	39 Bromodichloromethane	83	5.610	5.610	(1.093)	325572	50.0000	52.665
	40 2-Chloroethyl Vinyl Ether	63	6.142	6.142	(1.196)	144890	50.0000	50.945
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.199)	395585	50.0000	53.364
$	42 d8-Toluene	98	6.318	6.318	(1.230)	1027952	50.0000	49.472
	43 Toluene	92	6.357	6.357	(1.238)	624272	50.0000	51.221
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	263605	50.0000	55.235
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.308)	453903	250.000	237.86
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.310)	367910	50.0000	52.895
	47 1,1,2-Trichloroethane	97	6.849	6.849	(1.334)	187600	50.0000	49.396
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	222661	50.0000	52.366
	49 1,3-Dichloropropane	76	7.070	7.070	(0.927)	345909	50.0000	51.102
	50 1,2-Dibromoethane	107	7.166	7.166	(1.395)	181166	50.0000	49.897
	51 2-Hexanone	43	7.432	7.432	(0.975)	772078	250.000	233.99
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	895880	50.0000	
	53 Chlorobenzene	112	7.636	7.636	(1.001)	665431	50.0000	52.173
	54 Ethyl Benzene	91	7.687	7.687	(1.008)	1210707	50.0000	53.549
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	236792	50.0000	53.093
	56 m,p-xylene	106	7.822	7.822	(1.026)	902440	100.000	113.67
	57 o-Xylene	106	8.184	8.184	(1.073)	429411	50.0000	54.212
	58 Styrene	104	8.230	8.230	(1.079)	727038	50.0000	54.131
	59 Bromoform	173	8.224	8.224	(0.848)	146547	50.0000	51.120
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	1142263	50.0000	55.228
$	62 4-Bromofluorobenzene	95	8.693	8.693	(1.140)	511879	50.0000	51.209
	63 Bromobenzene	156	8.773	8.773	(0.904)	272326	50.0000	51.126
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	1379190	50.0000	54.425

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.897	8.897	(0.917)	216478	50.0000	46.223
66	2-Chloro Toluene	91	8.948	8.948	(0.922)	832696	50.0000	53.385
67	1,3,5-Trimethyl Benzene	105	9.027	9.027	(0.931)	961829	50.0000	54.599
68	1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	71519	50.0000	47.773
69	Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	89936	50.0000	48.778
70	4-Chloro Toluene	91	9.101	9.101	(0.938)	869175	50.0000	53.505
71	T-Butyl Benzene	119	9.304	9.304	(0.959)	841067	50.0000	54.581
72	1,2,4-Trimethylbenzene	105	9.372	9.372	(0.966)	962040	50.0000	54.713
73	S-Butyl Benzene	105	9.468	9.468	(0.976)	1244457	50.0000	55.037
74	4-Isopropyl Toluene	119	9.616	9.616	(0.991)	1045213	50.0000	56.424
75	1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	534066	50.0000	52.568
* 76	d4-1,4-Dichlorobenzene	152	9.700	9.700	(1.000)	514857	50.0000	
77	1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	545124	50.0000	51.246
78	N-Butyl Benzene	91	10.000	10.000	(1.031)	996492	50.0000	57.232
$ 79	d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.040)	476492	50.0000	50.416
80	1,2-Dichlorobenzene	146	10.091	10.091	(1.040)	500201	50.0000	50.235
81	1,2-Dibromo 3-Chloropropane	75	10.843	10.843	(1.118)	44350	50.0000	47.981
82	Hexachloro 1,3-Butadiene	225	11.522	11.522	(1.188)	233954	50.0000	56.612
83	1,2,4-Trichlorobenzene	180	11.511	11.511	(1.187)	379415	50.0000	57.341
84	Naphthalene	128	11.822	11.822	(1.219)	747734	50.0000	53.763
85	1,2,3-Trichlorobenzene	180	12.003	12.003	(1.237)	341784	50.0000	55.105

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: 0500712.d
Lab Smp Id: CC0712
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: VSTD50
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	349919	19.92
35 1,4-Difluorobenze	682850	341425	1365700	761120	11.46
52 d5-Chlorobenzene	802138	401069	1604276	895880	11.69
76 d4-1,4-Dichlorobe	452585	226292	905170	514857	13.76

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.68	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i Injection Date: 12-JUL-2012 12:01
Lab File ID: 0500712.d Init. Cal. Date(s): 29-JUN-2012 29-JUN-2012
Analysis Type: SOIL Init. Cal. Times: 11:34 13:51
Lab Sample ID: CC0712 Quant Type: ISTD
Method: /chem1/nt5.i/12JUL12.b/VO010412S.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.65162	0.55247	0.100	-15.21705	20.00000	Averaged	
2 Chloromethane	0.90732	0.81205	0.100	-10.50005	20.00000	Averaged	
3 Vinyl Chloride	0.90082	0.85167	0.100	-5.45659	20.00000	Averaged	
4 Bromomethane	0.48107	0.45363	0.100	-5.70423	20.00000	Averaged	
5 Chloroethane	0.56040	0.47741	0.100	-14.80854	20.00000	Averaged	
6 Trichlorofluoromethane	0.78773	0.65026	0.100	-17.45177	20.00000	Averaged	
7 1,1-Dichloroethene	0.61064	0.55457	0.100	-9.18244	20.00000	Averaged	
8 Carbon Disulfide	2.20347	1.94485	0.010	-11.73695	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.60164	0.57824	0.010	-3.89000	20.00000	Averaged	
10 Iodomethane	0.67632	0.74862	0.010	10.69006	20.00000	Averaged	
11 Bromoethane	0.46009	0.42304	0.100	-8.05321	20.00000	Averaged	
12 Acrolein	0.11717	0.10923	0.000	-6.78207	20.00000	Averaged	
13 Methylene Chloride	0.78743	0.66988	0.010	-14.92750	20.00000	Averaged	
14 Acetone	0.24370	0.17550	0.001	-27.98721	20.00000	Averaged	<-
15 Trans-1,2-Dichloroethene	0.70841	0.66194	0.010	-6.55970	20.00000	Averaged	
16 Methyl tert butyl ether	2.09241	1.93647	0.100	-7.45282	20.00000	Averaged	
17 1,1-Dichloroethane	1.42888	1.31560	0.100	-7.92823	20.00000	Averaged	
18 Acrylonitrile	0.26311	0.21641	0.001	-17.74984	20.00000	Averaged	
19 Vinyl Acetate	1.32101	1.10447	0.010	-16.39166	20.00000	Averaged	
20 Cis-1,2-Dichloroethene	0.75236	0.70069	0.010	-6.86795	20.00000	Averaged	
22 2,2-Dichloropropane	1.11180	1.07061	0.010	-3.70532	20.00000	Averaged	
23 Bromochloromethane	0.34014	0.30506	0.050	-10.31241	20.00000	Averaged	
24 Chloroform	1.25738	1.20394	0.100	-4.25037	20.00000	Averaged	
25 Carbon Tetrachloride	0.38559	0.43272	0.100	12.22446	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.79141	0.70913	0.100	-10.39686	20.00000	Averaged	
26 1,1,1-Trichloroethane	1.11823	1.11111	0.100	-0.63627	20.00000	Averaged	
28 1,1-Dichloropropene	0.41403	0.44662	0.010	7.87169	20.00000	Averaged	
29 2-Butanone	0.07607	0.06581	0.001	-13.48619	20.00000	Averaged	
30 Benzene	1.20306	1.25854	0.100	4.61163	20.00000	Averaged	
$ 32 d4-1,2-Dichloroethane	0.94501	0.84440	0.010	-10.64684	20.00000	Averaged	
33 1,2-Dichloroethane	0.46425	0.45803	0.100	-1.33788	20.00000	Averaged	
34 Trichloroethene	0.30611	0.33235	0.100	8.57025	20.00000	Averaged	
37 Dibromomethane	0.17137	0.17298	0.010	0.93812	20.00000	Averaged	
38 1,2-Dichloropropane	0.32439	0.33472	0.100	3.18537	20.00000	Averaged	
39 Bromodichloromethane	0.40611	0.42775	0.100	5.32973	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 0500712.d
Analysis Type: SOIL
Lab Sample ID: CC0712
Method: /chem1/nt5.i/12JUL12.b/VO010412S.m

Injection Date: 12-JUL-2012 12:01
Init. Cal. Date(s): 29-JUN-2012 29-JUN-2012
Init. Cal. Times: 11:34 13:51
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
40 2-Chloroethyl Vinyl Ether	0.18683	0.19036	0.000	1.88944	20.00000	Averaged
41 Cis 1,3-dichloropropene	0.48698	0.51974	0.100	6.72783	20.00000	Averaged
$ 42 d8-Toluene	1.36500	1.35058	0.010	-1.05650	20.00000	Averaged
43 Toluene	0.80065	0.82020	0.100	2.44204	20.00000	Averaged
44 Tetrachloroethene	0.26635	0.29424	0.100	10.47044	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.12536	0.11927	0.000	-4.85726	20.00000	Averaged
46 Trans 1,3-Dichloropropene	0.45693	0.48338	0.010	5.78948	20.00000	Averaged
47 1,1,2-Trichloroethane	0.24949	0.24648	0.100	-1.20763	20.00000	Averaged
48 Chlorodibromomethane	0.23731	0.24854	0.100	4.73150	20.00000	Averaged
49 1,3-Dichloropropane	0.37779	0.38611	0.100	2.20371	20.00000	Averaged
50 1,2-Dibromoethane	0.23852	0.23803	0.010	-0.20673	20.00000	Averaged
51 2-Hexanone	0.18415	0.17236	0.010	-6.40247	20.00000	Averaged
53 Chlorobenzene	0.71183	0.74277	0.300	4.34659	20.00000	Averaged
54 Ethyl Benzene	1.26186	1.35142	0.100	7.09737	20.00000	Averaged
55 1,1,1,2-Tetrachloroethane	0.24892	0.26431	0.010	6.18571	20.00000	Averaged
56 m,p-xylene	0.44310	0.50366	0.100	13.66796	20.00000	Averaged
57 o-Xylene	0.44208	0.47932	0.100	8.42378	20.00000	Averaged
58 Styrene	0.74961	0.81154	0.100	8.26101	20.00000	Averaged
59 Bromoform	0.27840	0.28464	0.100	2.24099	20.00000	Averaged
60 Isopropyl Benzene	2.00858	2.21860	0.010	10.45637	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.55788	0.57137	0.200	2.41745	20.00000	Averaged
63 Bromobenzene	0.51729	0.52894	0.010	2.25110	20.00000	Averaged
64 N-Propyl Benzene	2.46099	2.67878	0.010	8.84988	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.45482	0.42046	0.300	-7.55440	20.00000	Averaged
66 2-Chloro Toluene	1.51479	1.61733	0.010	6.76924	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	1.71078	1.86815	0.010	9.19840	20.00000	Averaged
68 1,2,3-Trichloropropane	0.14539	0.13891	0.010	-4.45376	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.17906	0.17468	0.001	-2.44410	20.00000	Averaged
70 4-Chloro Toluene	1.57759	1.68819	0.010	7.01038	20.00000	Averaged
71 T-Butyl Benzene	1.49649	1.63359	0.010	9.16149	20.00000	Averaged
72 1,2,4-Trimethylbenzene	1.70759	1.86856	0.010	9.42685	20.00000	Averaged
73 S-Butyl Benzene	2.19589	2.41709	0.010	10.07352	20.00000	Averaged
74 4-Isopropyl Toluene	1.79897	2.03010	0.010	12.84828	20.00000	Averaged
75 1,3-Dichlorobenzene	0.98664	1.03731	0.100	5.13584	20.00000	Averaged
77 1,4-Dichlorobenzene	1.03305	1.05879	0.100	2.49102	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i Injection Date: 12-JUL-2012 12:01
Lab File ID: 0500712.d Init. Cal. Date(s): 29-JUN-2012 29-JUN-2012
Analysis Type: SOIL Init. Cal. Times: 11:34 13:51
Lab Sample ID: CC0712 Quant Type: ISTD
Method: /chem1/nt5.i/12JUL12.b/VO010412S.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	1.69090	1.93547	0.010	14.46390	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.91784	0.92549	0.010	0.83275	20.00000	Averaged
80 1,2-Dichlorobenzene	0.96698	0.97153	0.100	0.47091	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.08976	0.08614	0.010	-4.03718	20.00000	Averaged
82 Hexachloro 1,3-Butadiene	0.40133	0.45441	0.010	13.22485	20.00000	Averaged
83 1,2,4-Trichlorobenzene	0.64259	0.73693	0.010	14.68102	20.00000	Averaged
84 Naphthalene	1.35066	1.45231	0.010	7.52599	20.00000	Averaged
85 1,2,3-Trichlorobenzene	0.60234	0.66384	0.010	10.21046	20.00000	Averaged

Data File: /chem1/nt5.i/12JUL12.b/0500712.d

Date : 12-JUL-2012 12:01

Client ID: VSTD50

Sample Info: CC0712,5,5,0

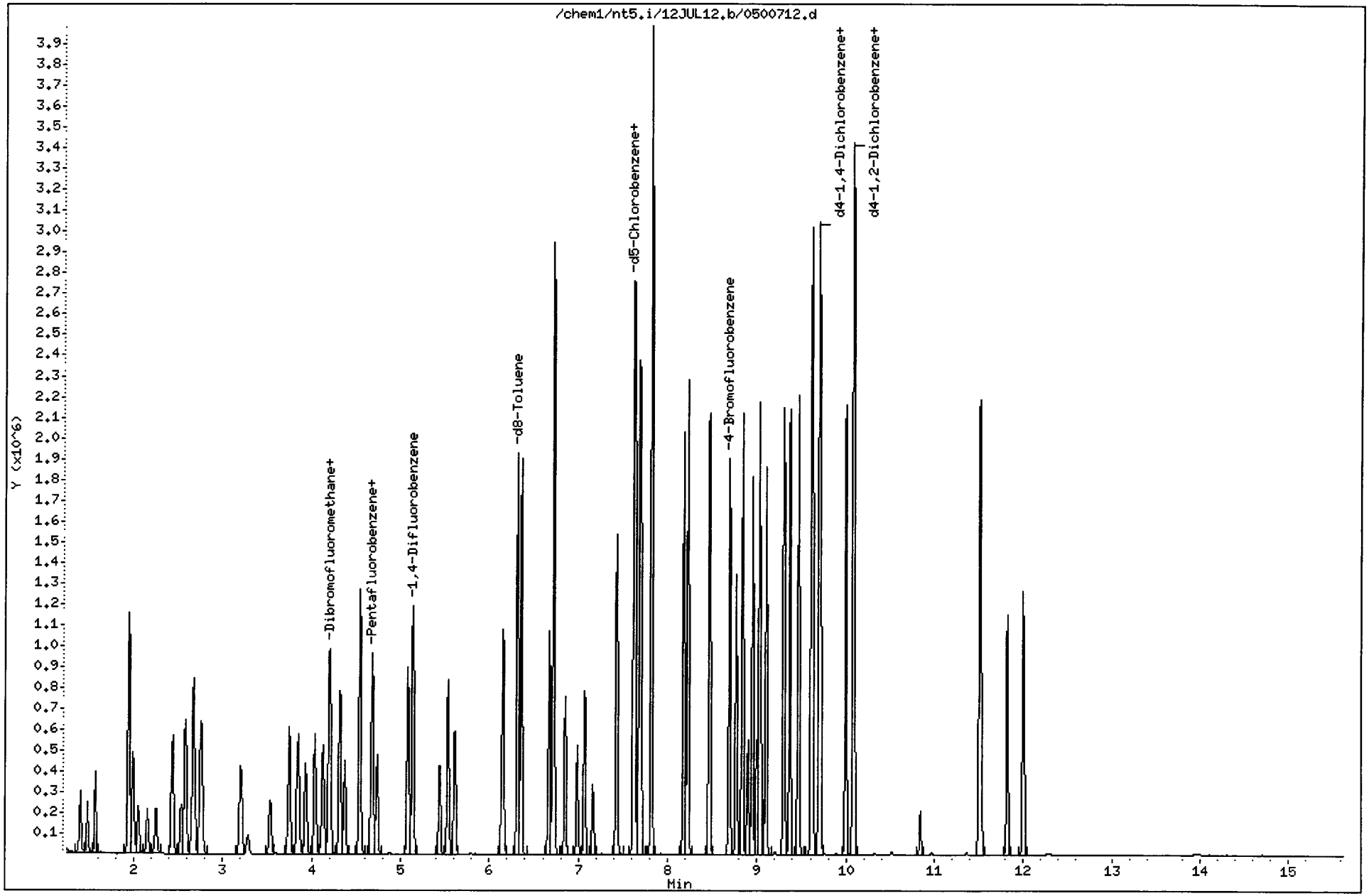
Column phase: RTXVMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18

VB51 : 00350



MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt5.i/12JUL12.b

ARI Job No.: BFB0 Method: bfb8260.m Instrument: nt5.i Date: 12-JUL-2012

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1138	bfb0712.d	BFB0712	BFB0712	1	NO MANUAL INTEGRATION
1201	0500712.d	CC0712	VSTD50	1	NO MANUAL INTEGRATION
1237	lcs0712.d	LCS0712	LCS0712	1	NO MANUAL INTEGRATION
1300	lcs0712a.d	LCS0712	LCS0712	1	NO MANUAL INTEGRATION
1323	mb0712.d	MB0712	MB0712	1	NO MANUAL INTEGRATION
1458	vb54g.d	VB54G	CW-TP-02-8	1	NO MANUAL INTEGRATION
1544	vb54m.d	VB54M	CW-TB	1	NO MANUAL INTEGRATION
1606	vb54n.d	VB54N	CW-TP-08-7	1	NO MANUAL INTEGRATION
1652	vb54t.d	VB54T	CW-TP-54-8	1	NO MANUAL INTEGRATION
1721	vb54a2.d	VB54A	CW-TP-05-7	1	NO MANUAL INTEGRATION
1744	vb54d2.d	VB54D	CW-TP-03-7	1	NO MANUAL INTEGRATION
1806	vb54j2.d	VB54J	CW-TP-01-8	1	NO MANUAL INTEGRATION
1829	vb54q2.d	VB54Q	CW-TP-04-8	1	NO MANUAL INTEGRATION
1852	vb54gms.d	VB54GMS	CW-TP-02-8	1	NO MANUAL INTEGRATION
1915	vb54gmsd.d	VB54GMSD	CW-TP-02-8	1	NO MANUAL INTEGRATION

Q-FLAG SUMMARY FOR DATABATCH - /chem1/nt5.i/12JUL12.b

Instrument: nt5.i Date: 12-JUL-2012 Method: VO010412S.m

INITIAL CAL: 29-JUN-2012

Compound	%RSD or R^2
NO Q-FLAGS	

CONTINUING CAL: 12-JUL-2012

Compound	%D
Acetone	-28.0

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/lcs0712.d
Lab Smp Id: LCS0712 Client Smp ID: LCS0712
Inj Date : 12-JUL-2012 12:37
Operator : PB Inst ID: nt5.i
Smp Info : LCS0712,5,5,0
Misc Info : 12-12946
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	1.017	1.011	(0.217)	194383	39.4758	39.476
2 Chloromethane	50	1.136	1.130	(0.242)	285927	41.7028	41.703
3 Vinyl Chloride	62	1.192	1.181	(0.254)	299290	43.9665	43.967
4 Bromomethane	94	1.407	1.402	(0.300)	153167	42.1333	42.133
5 Chloroethane	64	1.487	1.481	(0.317)	164862	38.9308	38.931
6 Trichlorofluoromethane	101	1.577	1.571	(0.336)	227875	38.2816	38.282
7 1,1-Dichloroethene	96	1.951	1.945	(0.416)	196069	42.4906	42.491
8 Carbon Disulfide	76	1.951	1.945	(0.416)	687359	41.2807	41.281
9 112Trichloro122Trifluoroethane	101	1.996	1.990	(0.426)	206370	45.3918	45.392
10 Iodomethane	142	2.052	2.047	(0.438)	278808	54.5538	54.554
11 Bromoethane	108	2.160	2.154	(0.461)	148343	42.6668	42.667
12 Acrolein	56	2.256	2.250	(0.481)	198378	224.045	224.04
13 Methylene Chloride	84	2.443	2.437	(0.521)	229511	38.5712	38.571
14 Acetone	43	2.539	2.533	(0.542)	326550	177.319	177.32

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.584	2.578	(0.551)	231740	43.2898	43.290
	16 Methyl tert butyl ether	73	2.759	2.754	(0.589)	672934	42.5595	42.559
	17 1,1-Dichloroethane	63	3.206	3.201	(0.684)	457578	42.3778	42.378
	18 Acrylonitrile	53	3.291	3.285	(0.702)	78262	39.3631	39.363
	19 Vinyl Acetate	43	3.540	3.534	(0.755)	391863	39.2554	39.255
	20 Cis-1,2-Dichloroethene	96	3.749	3.749	(0.800)	242270	42.6133	42.613
	22 2,2-Dichloropropane	77	3.851	3.845	(0.821)	378763	45.0826	45.083
	23 Bromochloromethane	128	3.936	3.936	(0.840)	108644	42.2686	42.269
	24 Chloroform	83	4.038	4.038	(0.861)	413449	43.5136	43.514
	25 Carbon Tetrachloride	117	4.128	4.128	(0.804)	330828	51.9242	51.924
$	27 Dibromofluoromethane	111	4.208	4.202	(0.897)	272855	45.6245	45.624
	26 1,1,1-Trichloroethane	97	4.196	4.196	(0.895)	388802	46.0117	46.012
	28 1,1-Dichloropropene	75	4.321	4.315	(0.841)	340189	49.7254	49.725
	29 2-Butanone	72	4.372	4.372	(0.932)	120999	210.490	210.49
	30 Benzene	78	4.547	4.547	(0.885)	943758	47.4750	47.475
*	31 Pentafluorobenzene	168	4.688	4.683	(1.000)	377833	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	323541	45.3066	45.307
	33 1,2-Dichloroethane	62	4.739	4.734	(0.923)	345495	45.0386	45.039
	34 Trichloroethene	95	5.084	5.084	(0.990)	251064	49.6360	49.636
*	35 1,4-Difluorobenzene	114	5.135	5.135	(1.000)	826188	50.0000	
	37 Dibromomethane	93	5.441	5.435	(1.059)	129943	45.8888	45.889
	38 1,2-Dichloropropane	63	5.531	5.531	(1.077)	250400	46.7158	46.716
	39 Bromodichloromethane	83	5.611	5.610	(1.093)	316231	47.1251	47.125
	40 2-Chloroethyl Vinyl Ether	63	6.142	6.142	(1.196)	147290	47.7097	47.710
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.199)	390883	48.5767	48.577
$	42 d8-Toluene	98	6.318	6.318	(1.230)	1108171	49.1321	49.132
	43 Toluene	92	6.357	6.357	(1.238)	612951	46.3312	46.331
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	264796	50.8867	50.887
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.308)	462817	223.427	223.43
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.310)	362178	47.9697	47.970
	47 1,1,2-Trichloroethane	97	6.855	6.849	(1.335)	186703	45.2882	45.288
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	222042	47.8925	47.893
	49 1,3-Dichloropropane	76	7.070	7.070	(0.927)	340666	46.1565	46.157
	50 1,2-Dibromoethane	107	7.166	7.166	(1.395)	183609	46.5867	46.587
	51 2-Hexanone	43	7.432	7.432	(0.975)	797604	221.697	221.70
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	976831	50.0000	
	53 Chlorobenzene	112	7.636	7.636	(1.001)	658255	47.3336	47.334
	54 Ethyl Benzene	91	7.687	7.687	(1.008)	1198351	48.6099	48.610
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	233250	47.9646	47.965
	56 m,p-xylene	106	7.822	7.822	(1.026)	893869	103.258	103.26
	57 o-Xylene	106	8.184	8.184	(1.073)	423536	49.0390	49.039
	58 Styrene	104	8.230	8.230	(1.079)	716597	48.9317	48.932
	59 Bromoform	173	8.224	8.224	(0.848)	147974	48.4553	48.455
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	1134351	51.4852	51.485
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.140)	551652	50.6141	50.614
	63 Bromobenzene	156	8.773	8.773	(0.904)	269686	47.5278	47.528
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	1378768	51.0746	51.075

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	65 1,1,2,2-Tetrachloroethane	83	8.897	8.897	(0.917)	222480	44.5937	44.594
	66 2-Chloro Toluene	91	8.948	8.948	(0.922)	821244	49.4245	49.424
	67 1,3,5-Trimethyl Benzene	105	9.033	9.027	(0.931)	956801	50.9859	50.986
	68 1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	72259	45.3100	45.310
	69 Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	93758	47.7349	47.735
	70 4-Chloro Toluene	91	9.101	9.101	(0.938)	858072	49.5853	49.585
	71 T-Butyl Benzene	119	9.305	9.304	(0.959)	836829	50.9783	50.978
	72 1,2,4-Trimethylbenzene	105	9.372	9.372	(0.966)	953517	50.9060	50.906
	73 S-Butyl Benzene	105	9.469	9.468	(0.976)	1243174	51.6113	51.611
	74 4-Isopropyl Toluene	119	9.616	9.616	(0.991)	1049919	53.2055	53.205
	75 1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	526304	48.6298	48.630
*	76 d4-1,4-Dichlorobenzene	152	9.700	9.700	(1.000)	548462	50.0000	
	77 1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	544789	48.0760	48.076
	78 N-Butyl Benzene	91	10.000	10.000	(1.031)	1006043	54.2402	54.240
$	79 d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.040)	515276	51.1794	51.179
	80 1,2-Dichlorobenzene	146	10.091	10.091	(1.040)	497666	46.9185	46.918
	81 1,2-Dibromo 3-Chloropropane	75	10.843	10.843	(1.118)	47084	47.8180	47.818
	82 Hexachloro 1,3-Butadiene	225	11.528	11.522	(1.188)	232851	52.8930	52.893
	83 1,2,4-Trichlorobenzene	180	11.516	11.511	(1.187)	383285	54.3762	54.376
	84 Naphthalene	128	11.827	11.822	(1.219)	763613	51.5406	51.541
	85 1,2,3-Trichlorobenzene	180	12.008	12.003	(1.238)	343102	51.9283	51.928

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: lcs0712.d
Lab Smp Id: LCS0712
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: LCS0712
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	377833	29.48
35 1,4-Difluorobenze	682850	341425	1365700	826188	20.99
52 d5-Chlorobenzene	802138	401069	1604276	976831	21.78
76 d4-1,4-Dichlorobe	452585	226292	905170	548462	21.18

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: LCS0712
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Client SDG: 12JUL12
Fraction: VOA
Client Smp ID: LCS0712
Operator: PB
SampleType: LCS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	39.476	78.95	53-148
2 Chloromethane	50.000	41.703	83.41	64-125
3 Vinyl Chloride	50.000	43.967	87.93	63-137
4 Bromomethane	50.000	42.133	84.27	57-136
5 Chloroethane	50.000	38.931	77.86	64-131
6 Trichlorofluoromet	50.000	38.282	76.56	69-132
12 Acrolein	250.00	224.04	89.62	54-137
9 112Trichloro122Tri	50.000	45.392	90.78	74-130
14 Acetone	250.00	177.32	70.93	60-131
7 1,1-Dichloroethene	50.000	42.491	84.98	75-126
11 Bromoethane	50.000	42.667	85.33	76-126
10 Iodomethane	50.000	54.554	109.11	65-139
13 Methylene Chloride	50.000	38.571	77.14	70-123
8 Carbon Disulfide	50.000	41.281	82.56	71-129
18 Acrylonitrile	50.000	39.363	78.73	67-125
15 Trans-1,2-Dichloro	50.000	43.290	86.58	80-120
19 Vinyl Acetate	50.000	39.255	78.51	60-136
17 1,1-Dichloroethane	50.000	42.378	84.76	80-120
29 2-Butanone	250.00	210.49	84.20	70-120
22 2,2-Dichloropropan	50.000	45.083	90.17	74-123
20 Cis-1,2-Dichloroet	50.000	42.613	85.23	80-120
24 Chloroform	50.000	43.514	87.03	80-120
23 Bromochloromethane	50.000	42.269	84.54	80-120
26 1,1,1-Trichloroeth	50.000	46.012	92.02	77-121
28 1,1-Dichloropropen	50.000	49.725	99.45	80-120
25 Carbon Tetrachlori	50.000	51.924	103.85	77-122
33 1,2-Dichloroethane	50.000	45.039	90.08	76-120
30 Benzene	50.000	47.475	94.95	80-120
34 Trichloroethene	50.000	49.636	99.27	80-120
38 1,2-Dichloropropan	50.000	46.716	93.43	80-120
39 Bromodichlorometha	50.000	47.125	94.25	77-121
37 Dibromomethane	50.000	45.889	91.78	80-120
40 2-Chloroethyl Viny	50.000	47.710	95.42	10-191

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
45 4-Methyl-2-Pentano	250.00	223.43	89.37	67-120
41 Cis 1,3-dichloropr	50.000	48.577	97.15	74-120
43 Toluene	50.000	46.331	92.66	80-120
46 Trans 1,3-Dichloro	50.000	47.970	95.94	65-120
51 2-Hexanone	250.00	221.70	88.68	65-130
47 1,1,2-Trichloroeth	50.000	45.288	90.58	80-120
49 1,3-Dichloropropan	50.000	46.157	92.31	80-120
44 Tetrachloroethene	50.000	50.887	101.77	80-121
48 Chlorodibromometha	50.000	47.893	95.79	64-120
50 1,2-Dibromoethane	50.000	46.587	93.17	75-120
53 Chlorobenzene	50.000	47.334	94.67	80-120
55 1,1,1,2-Tetrachlor	50.000	47.965	95.93	69-121
54 Ethyl Benzene	50.000	48.610	97.22	80-127
56 m,p-xylene	100.00	103.26	103.26	80-125
57 o-Xylene	50.000	49.039	98.08	78-120
58 Styrene	50.000	48.932	97.86	80-123
60 Isopropyl Benzene	50.000	51.485	102.97	80-127
59 Bromoform	50.000	48.455	96.91	60-120
65 1,1,2,2-Tetrachlor	50.000	44.594	89.19	74-120
68 1,2,3-Trichloropro	50.000	45.310	90.62	72-121
69 Trans-1,4-Dichloro	50.000	47.735	95.47	65-126
64 N-Propyl Benzene	50.000	51.075	102.15	80-132
63 Bromobenzene	50.000	47.528	95.06	80-120
67 1,3,5-Trimethyl Be	50.000	50.986	101.97	80-125
66 2-Chloro Toluene	50.000	49.424	98.85	80-125
70 4-Chloro Toluene	50.000	49.585	99.17	80-127
71 T-Butyl Benzene	50.000	50.978	101.96	87-122
72 1,2,4-Trimethylben	50.000	50.906	101.81	80-126
73 S-Butyl Benzene	50.000	51.611	103.22	80-134
74 4-Isopropyl Toluen	50.000	53.205	106.41	80-131
75 1,3-Dichlorobenzen	50.000	48.630	97.26	80-120
77 1,4-Dichlorobenzen	50.000	48.076	96.15	80-120
78 N-Butyl Benzene	50.000	54.240	108.48	80-138
80 1,2-Dichlorobenzen	50.000	46.918	93.84	80-120
81 1,2-Dibromo 3-Chlo	50.000	47.818	95.64	59-120
83 1,2,4-Trichloroben	50.000	54.376	108.75	78-130
82 Hexachloro 1,3-But	50.000	52.893	105.79	76-129
84 Naphthalene	50.000	51.541	103.08	66-120
85 1,2,3-Trichloroben	50.000	51.928	103.86	73-123

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	45.624	91.25	30-160

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 32 d4-1,2-Dichloroeth	50.000	45.307	90.61	75-152
$ 42 d8-Toluene	50.000	49.132	98.26	82-115
$ 62 4-Bromofluorobenze	50.000	50.614	101.23	64-120
$ 79 d4-1,2-Dichloroben	50.000	51.179	102.36	80-120

Data File: /chem1/nt5.i/12JUL12.b/lcs0712.d

Date : 12-JUL-2012 12:37

Client ID: LCS0712

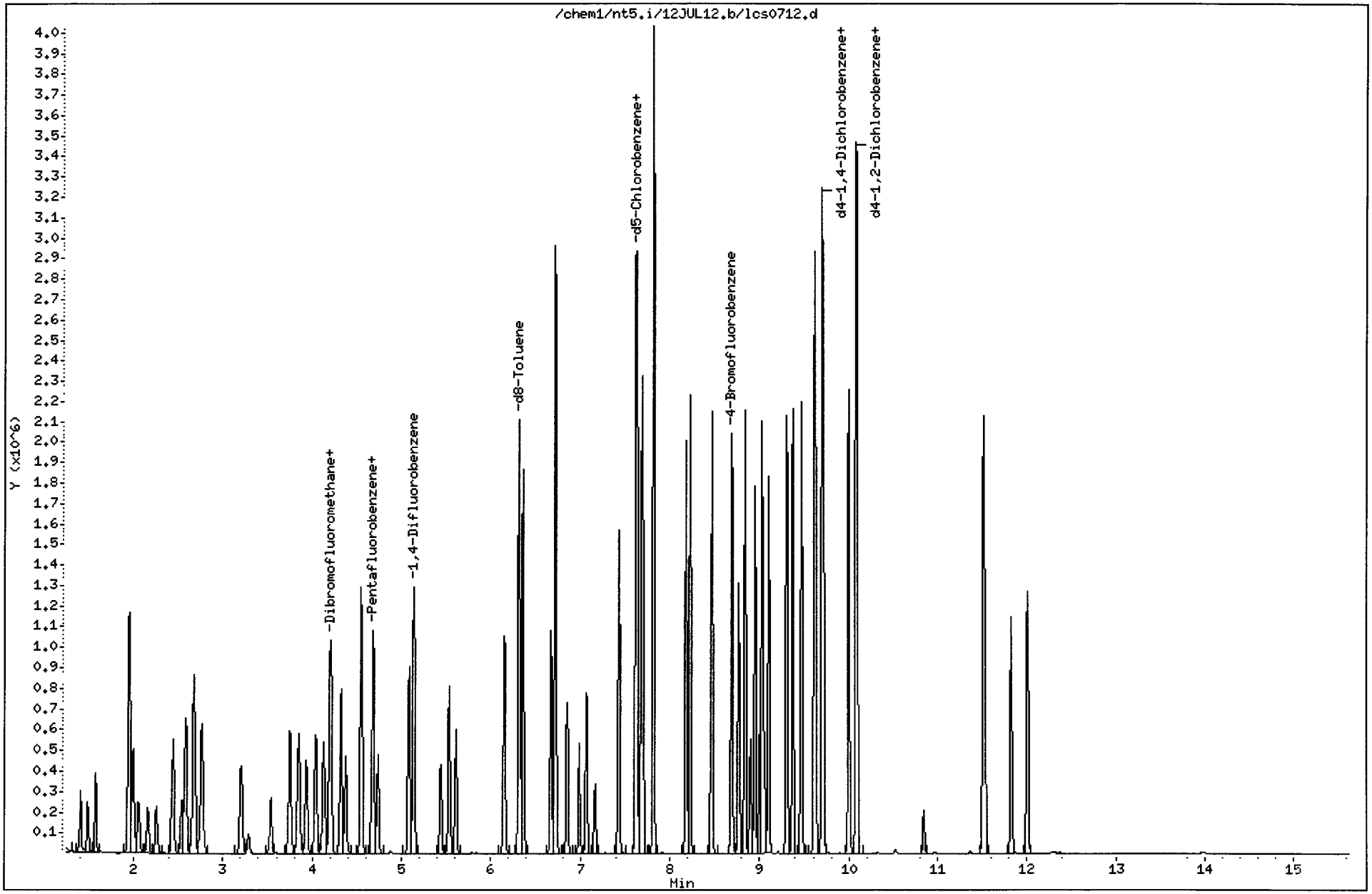
Sample Info: LCS0712,5,5,0

Column phase: RTXVMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18



CO-ELUTION SUMMARY FOR FILE - lcs0712.d

Lab ID: LCS0712, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

SW8260 FINN3 Full List Lab Control Dup-vo101ld Worklist: 8227
Data By: Pat Basilio Analyst: PAB
Created: 7/13/12 Comments:

2. VB54N LCSD Soil 12-12953

Level: LOW Sample Amt: 5.00 g
Instrument: NT5 Adj. Sample Amount: 5.00 g-dry-wt
Date/Time: 7/12/12 13:00 Purge Volume (mL): 5.0
Method: SW8260C
Batch: NT5-071212A

Surrogate	On Col (ug/L)	Spiked (ug/L)	LCL-UCL (%)	Rec (%)	Q
d4-1,2-Dichloroethane	45.12	50.0	79-121	90.2	
d8-Toluene	49.66	50.0	80-120	99.3	
Bromofluorobenzene	51.18	50.0	80-120	102.4	
d4-1,2-Dichlorobenzene	50.33	50.0	80-120	100.7	
Dibromofluoromethane	45.70	50.0	80-120	91.4	

Analyte	On Col (ug/L)	RL (ug/kg)	Final (ug/kg)	Q
Chloromethane	40.57	1.00	40.6	
Vinyl Chloride	44.34	1.00	44.3	
Bromomethane	42.81	1.00	42.8	
Chloroethane	39.95	1.00	40.0	
Trichlorofluoromethane	38.47	1.00	38.5	
Acrolein	234.9	50.0	235.	
Trichlorotrifluoroethane	45.40	2.00	45.4	
Acetone	184.3	5.00	184.	Q
1,1-Dichloroethene	42.67	1.00	42.7	
Bromoethane	42.71	2.00	42.7	
Methyl Iodide	54.86	1.00	54.9	
Methylene Chloride	39.59	2.00	39.6	
Acrylonitrile	42.22	5.00	42.2	
Carbon Disulfide	41.46	1.00	41.5	
trans-1,2-Dichloroethene	43.60	1.00	43.6	
Vinyl Acetate	41.65	5.00	41.6	
1,1-Dichloroethane	42.91	1.00	42.9	
2-Butanone	223.7	5.00	224.	
2,2-Dichloropropane	45.04	1.00	45.0	
cis-1,2-Dichloroethene	43.73	1.00	43.7	
Chloroform	44.41	1.00	44.4	
Bromochloromethane	42.97	1.00	43.0	
1,1,1-Trichloroethane	46.45	1.00	46.4	
1,1-Dichloropropene	50.74	1.00	50.7	
Carbon Tetrachloride	52.81	1.00	52.8	
1,2-Dichloroethane	47.35	1.00	47.4	
Benzene	48.90	1.00	48.9	
Trichloroethene	50.91	1.00	50.9	
1,2-Dichloropropane	48.36	1.00	48.4	
Bromodichloromethane	49.97	1.00	50.0	
Dibromomethane	48.23	1.00	48.2	
2-Chloroethylvinylether	50.46	5.00	50.5	
4-Methyl-2-Pentanone (MIBK)	245.5	5.00	246.	
cis-1,3-Dichloropropene	50.32	1.00	50.3	
Toluene	47.98	1.00	48.0	
trans-1,3-Dichloropropene	50.50	1.00	50.5	
2-Hexanone	240.0	5.00	240.	
1,1,2-Trichloroethane	47.61	1.00	47.6	
1,3-Dichloropropane	49.01	1.00	49.0	
Tetrachloroethene	51.36	1.00	51.4	
Dibromochloromethane	49.63	1.00	49.6	
Ethylene Dibromide	49.68	1.00	49.7	
Chlorobenzene	48.84	1.00	48.8	
Ethylbenzene	49.83	1.00	49.8	

SW8260 FINN3 Full List Lab Control Dup-vo101ld Worklist: 8227
Data By: Pat Basilio Analyst: PAB
Created: 7/13/12 Comments:

1,1,1,2-Tetrachloroethane	49.29	1.00	49.3
m,p-Xylene	106.4	1.00	106.
o-Xylene	50.83	1.00	50.8
Styrene	50.59	1.00	50.6
Bromoform	49.82	1.00	49.8
1,1,2,2-Tetrachloroethane	45.72	1.00	45.7
1,2,3-Trichloropropane	47.80	2.00	47.8
trans-1,4-Dichloro-2-butene	47.98	5.00	48.0
n-Propylbenzene	50.28	1.00	50.3
Bromobenzene	47.92	1.00	47.9
Isopropylbenzene	51.11	1.00	51.1
2-Chlorotoluene	49.47	1.00	49.5
4-Chlorotoluene	49.85	1.00	49.8
tert-Butylbenzene	50.55	1.00	50.6
1,3,5-Trimethylbenzene	50.45	1.00	50.4
1,2,4-Trimethylbenzene	50.79	1.00	50.8
sec-Butylbenzene	50.72	1.00	50.7
4-Isopropyltoluene	52.16	1.00	52.2
1,3-Dichlorobenzene	49.15	1.00	49.2
1,4-Dichlorobenzene	48.00	1.00	48.0
n-Butylbenzene	52.78	1.00	52.8
1,2-Dichlorobenzene	47.41	1.00	47.4
1,2-Dibromo-3-chloropropane	50.35	5.00	50.4
1,2,4-Trichlorobenzene	54.61	5.00	54.6
Hexachlorobutadiene	50.62	5.00	50.6
Naphthalene	54.29	5.00	54.3
1,2,3-Trichlorobenzene	52.86	5.00	52.9
Dichlorodifluoromethane	39.99	1.00	40.0
Methyl tert-Butyl Ether	45.18	1.00	45.2
Total Xylenes		2.00	157.

VB54N LCSD 12-12953

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/lcs0712a.d
Lab Smp Id: LCS0712 Client Smp ID: LCS0712
Inj Date : 12-JUL-2012 13:00
Operator : PB Inst ID: nt5.i
Smp Info : LCS0712,5,5,0
Misc Info : 12-12946
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	1.006	1.011	(0.215)	189170	39.9929	39.993
2 Chloromethane	50	1.130	1.130	(0.241)	267229	40.5744	40.574
3 Vinyl Chloride	62	1.181	1.181	(0.252)	289954	44.3422	44.342
4 Bromomethane	94	1.396	1.402	(0.298)	149507	42.8134	42.813
5 Chloroethane	64	1.481	1.481	(0.316)	162526	39.9534	39.953
6 Trichlorofluoromethane	101	1.566	1.571	(0.334)	219954	38.4666	38.467
7 1,1-Dichloroethene	96	1.939	1.945	(0.414)	189127	42.6673	42.667
8 Carbon Disulfide	76	1.939	1.945	(0.414)	663218	41.4646	41.465
9 112Trichloro122Trifluoroethane	101	1.984	1.990	(0.424)	198270	45.3989	45.399
10 Iodomethane	142	2.047	2.047	(0.437)	269340	54.8628	54.863
11 Bromoethane	108	2.148	2.154	(0.459)	142654	42.7135	42.714
12 Acrolein	56	2.250	2.250	(0.481)	199762	234.862	234.86
13 Methylene Chloride	84	2.431	2.437	(0.519)	226264	39.5853	39.585
14 Acetone	43	2.533	2.533	(0.541)	325946	184.251	184.25

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	2.578	2.578	(0.551)	224196	43.5984	43.598
	16 Methyl tert butyl ether	73	2.754	2.754	(0.588)	686225	45.1802	45.180
	17 1,1-Dichloroethane	63	3.201	3.201	(0.683)	445022	42.9055	42.905
	18 Acrylonitrile	53	3.286	3.285	(0.702)	80638	42.2218	42.222
	19 Vinyl Acetate	43	3.534	3.534	(0.755)	399395	41.6510	41.651
	20 Cis-1,2-Dichloroethene	96	3.749	3.749	(0.801)	238831	43.7315	43.731
	22 2,2-Dichloropropane	77	3.846	3.845	(0.821)	363513	45.0422	45.042
	23 Bromochloromethane	128	3.930	3.936	(0.839)	106102	42.9728	42.973
	24 Chloroform	83	4.038	4.038	(0.862)	405316	44.4074	44.407
	25 Carbon Tetrachloride	117	4.123	4.128	(0.803)	322457	52.8078	52.808
$	27 Dibromofluoromethane	111	4.202	4.202	(0.897)	262558	45.7035	45.703
	26 1,1,1-Trichloroethane	97	4.196	4.196	(0.896)	377070	46.4536	46.454
	28 1,1-Dichloropropene	75	4.315	4.315	(0.840)	332710	50.7438	50.744
	29 2-Butanone	72	4.372	4.372	(0.934)	123502	223.657	223.66
	30 Benzene	78	4.541	4.547	(0.884)	931666	48.9017	48.902
*	31 Pentafluorobenzene	168	4.683	4.683	(1.000)	362946	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.671	4.677	(0.998)	309481	45.1154	45.115
	33 1,2-Dichloroethane	62	4.734	4.734	(0.922)	348099	47.3484	47.348
	34 Trichloroethene	95	5.079	5.084	(0.989)	246774	50.9062	50.906
*	35 1,4-Difluorobenzene	114	5.135	5.135	(1.000)	791808	50.0000	
	37 Dibromomethane	93	5.435	5.435	(1.058)	130892	48.2309	48.231
	38 1,2-Dichloropropane	63	5.531	5.531	(1.077)	248418	48.3583	48.358
	39 Bromodichloromethane	83	5.611	5.610	(1.093)	321392	49.9737	49.974
	40 2-Chloroethyl Vinyl Ether	63	6.142	6.142	(1.196)	149289	50.4569	50.457
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.199)	388033	50.3163	50.316
$	42 d8-Toluene	98	6.318	6.318	(1.230)	1073411	49.6573	49.657
	43 Toluene	92	6.357	6.357	(1.238)	608325	47.9781	47.978
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	257241	51.3552	51.355
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.308)	487402	245.512	245.51
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.310)	365384	50.4956	50.496
	47 1,1,2-Trichloroethane	97	6.849	6.849	(1.334)	188101	47.6084	47.608
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	221510	49.6337	49.634
	49 1,3-Dichloropropane	76	7.070	7.070	(0.927)	348209	49.0112	49.011
	50 1,2-Dibromoethane	107	7.166	7.166	(1.395)	187659	49.6817	49.682
	51 2-Hexanone	43	7.432	7.432	(0.975)	831055	239.969	239.97
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	940304	50.0000	
	53 Chlorobenzene	112	7.636	7.636	(1.001)	653803	48.8398	48.840
	54 Ethyl Benzene	91	7.687	7.687	(1.008)	1182557	49.8326	49.833
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	230750	49.2938	49.294
	56 m,p-xylene	106	7.822	7.822	(1.026)	886618	106.399	106.40
	57 o-Xylene	106	8.184	8.184	(1.073)	422600	50.8314	50.831
	58 Styrene	104	8.230	8.230	(1.079)	713145	50.5876	50.588
	59 Bromoform	173	8.224	8.224	(0.848)	151252	49.8169	49.817
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	1119569	51.1100	51.110
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.140)	536924	51.1765	51.176
	63 Bromobenzene	156	8.767	8.773	(0.904)	270322	47.9171	47.917
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	1349425	50.2785	50.279

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	8.897	8.897	(0.917)	226790	45.7221	45.722
66	2-Chloro Toluene	91	8.948	8.948	(0.922)	817280	49.4721	49.472
67	1,3,5-Trimethyl Benzene	105	9.027	9.027	(0.931)	941232	50.4482	50.448
68	1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	75791	47.8012	47.801
69	Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	93698	47.9819	47.982
70	4-Chloro Toluene	91	9.101	9.101	(0.938)	857613	49.8471	49.847
71	T-Butyl Benzene	119	9.304	9.304	(0.959)	825003	50.5504	50.550
72	1,2,4-Trimethylbenzene	105	9.372	9.372	(0.966)	945767	50.7861	50.786
73	S-Butyl Benzene	105	9.469	9.468	(0.976)	1214736	50.7242	50.724
74	4-Isopropyl Toluene	119	9.610	9.616	(0.991)	1023327	52.1596	52.160
75	1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	528882	49.1524	49.152
* 76	d4-1,4-Dichlorobenzene	152	9.700	9.700	(1.000)	545289	50.0000	
77	1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	540793	48.0011	48.001
78	N-Butyl Benzene	91	9.995	10.000	(1.030)	973267	52.7784	52.778
$ 79	d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.040)	503814	50.3322	50.332
80	1,2-Dichlorobenzene	146	10.091	10.091	(1.040)	499925	47.4057	47.406
81	1,2-Dibromo 3-Chloropropane	75	10.843	10.843	(1.118)	49290	50.3496	50.350
82	Hexachloro 1,3-Butadiene	225	11.516	11.522	(1.187)	221565	50.6222	50.622
83	1,2,4-Trichlorobenzene	180	11.505	11.511	(1.186)	382718	54.6117	54.612
84	Naphthalene	128	11.816	11.822	(1.218)	799695	54.2901	54.290
85	1,2,3-Trichlorobenzene	180	12.003	12.003	(1.237)	347227	52.8584	52.858

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: lcs0712a.d
Lab Smp Id: LCS0712
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: LCS0712
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	362946	24.38
35 1,4-Difluorobenze	682850	341425	1365700	791808	15.96
52 d5-Chlorobenzene	802138	401069	1604276	940304	17.22
76 d4-1,4-Dichlorobe	452585	226292	905170	545289	20.48

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.68	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: LCS0712
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Client SDG: 12JUL12
Fraction: VOA
Client Smp ID: LCS0712
Operator: PB
SampleType: LCSD
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	39.993	79.99	53-148
2 Chloromethane	50.000	40.574	81.15	64-125
3 Vinyl Chloride	50.000	44.342	88.68	63-137
4 Bromomethane	50.000	42.813	85.63	57-136
5 Chloroethane	50.000	39.953	79.91	64-131
6 Trichlorofluoromet	50.000	38.467	76.93	69-132
12 Acrolein	250.00	234.86	93.94	54-137
9 112Trichloro122Tri	50.000	45.399	90.80	74-130
14 Acetone	250.00	184.25	73.70	60-131
7 1,1-Dichloroethene	50.000	42.667	85.33	75-126
11 Bromoethane	50.000	42.714	85.43	76-126
10 Iodomethane	50.000	54.863	109.73	65-139
13 Methylene Chloride	50.000	39.585	79.17	70-123
8 Carbon Disulfide	50.000	41.465	82.93	71-129
18 Acrylonitrile	50.000	42.222	84.44	67-125
15 Trans-1,2-Dichloro	50.000	43.598	87.20	80-120
19 Vinyl Acetate	50.000	41.651	83.30	60-136
17 1,1-Dichloroethane	50.000	42.905	85.81	80-120
29 2-Butanone	250.00	223.66	89.46	70-120
22 2,2-Dichloropropan	50.000	45.042	90.08	74-123
20 Cis-1,2-Dichloroet	50.000	43.731	87.46	80-120
24 Chloroform	50.000	44.407	88.81	80-120
23 Bromochloromethane	50.000	42.973	85.95	80-120
26 1,1,1-Trichloroeth	50.000	46.454	92.91	77-121
28 1,1-Dichloropropen	50.000	50.744	101.49	80-120
25 Carbon Tetrachlori	50.000	52.808	105.62	77-122
33 1,2-Dichloroethane	50.000	47.348	94.70	76-120
30 Benzene	50.000	48.902	97.80	80-120
34 Trichloroethene	50.000	50.906	101.81	80-120
38 1,2-Dichloropropan	50.000	48.358	96.72	80-120
39 Bromodichlorometha	50.000	49.974	99.95	77-121
37 Dibromomethane	50.000	48.231	96.46	80-120
40 2-Chloroethyl Viny	50.000	50.457	100.91	10-191

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
45 4-Methyl-2-Pentano	250.00	245.51	98.20	67-120
41 Cis 1,3-dichloropr	50.000	50.316	100.63	74-120
43 Toluene	50.000	47.978	95.96	80-120
46 Trans 1,3-Dichloro	50.000	50.496	100.99	65-120
51 2-Hexanone	250.00	239.97	95.99	65-130
47 1,1,2-Trichloroeth	50.000	47.608	95.22	80-120
49 1,3-Dichloropropan	50.000	49.011	98.02	80-120
44 Tetrachloroethene	50.000	51.355	102.71	80-121
48 Chlorodibromometha	50.000	49.634	99.27	64-120
50 1,2-Dibromoethane	50.000	49.682	99.36	75-120
53 Chlorobenzene	50.000	48.840	97.68	80-120
55 1,1,1,2-Tetrachlor	50.000	49.294	98.59	69-121
54 Ethyl Benzene	50.000	49.833	99.67	80-127
56 m,p-xylene	100.00	106.40	106.40	80-125
57 o-Xylene	50.000	50.831	101.66	78-120
58 Styrene	50.000	50.588	101.18	80-123
60 Isopropyl Benzene	50.000	51.110	102.22	80-127
59 Bromoform	50.000	49.817	99.63	60-120
65 1,1,2,2-Tetrachlor	50.000	45.722	91.44	74-120
68 1,2,3-Trichloropro	50.000	47.801	95.60	72-121
69 Trans-1,4-Dichloro	50.000	47.982	95.96	65-126
64 N-Propyl Benzene	50.000	50.279	100.56	80-132
63 Bromobenzene	50.000	47.917	95.83	80-120
67 1,3,5-Trimethyl Be	50.000	50.448	100.90	80-125
66 2-Chloro Toluene	50.000	49.472	98.94	80-125
70 4-Chloro Toluene	50.000	49.847	99.69	80-127
71 T-Butyl Benzene	50.000	50.550	101.10	87-122
72 1,2,4-Trimethylben	50.000	50.786	101.57	80-126
73 S-Butyl Benzene	50.000	50.724	101.45	80-134
74 4-Isopropyl Toluen	50.000	52.160	104.32	80-131
75 1,3-Dichlorobenzen	50.000	49.152	98.30	80-120
77 1,4-Dichlorobenzen	50.000	48.001	96.00	80-120
78 N-Butyl Benzene	50.000	52.778	105.56	80-138
80 1,2-Dichlorobenzen	50.000	47.406	94.81	80-120
81 1,2-Dibromo 3-Chlo	50.000	50.350	100.70	59-120
83 1,2,4-Trichloroben	50.000	54.612	109.22	78-130
82 Hexachloro 1,3-But	50.000	50.622	101.24	76-129
84 Naphthalene	50.000	54.290	108.58	66-120
85 1,2,3-Trichloroben	50.000	52.858	105.72	73-123

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	45.703	91.41	30-160

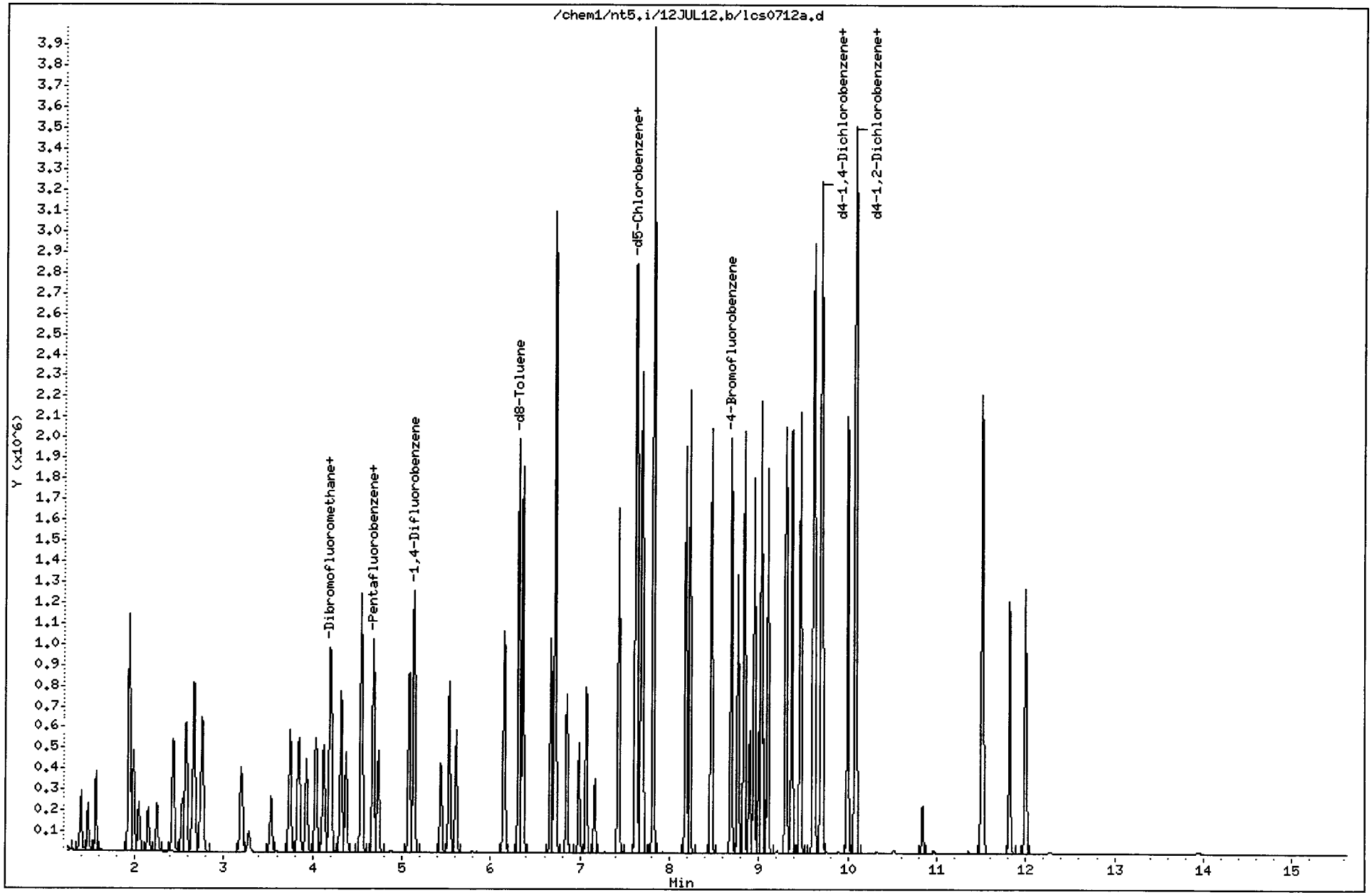
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 32 d4-1,2-Dichloroeth	50.000	45.115	90.23	75-152
$ 42 d8-Toluene	50.000	49.657	99.31	82-115
$ 62 4-Bromofluorobenze	50.000	51.176	102.35	64-120
$ 79 d4-1,2-Dichloroben	50.000	50.332	100.66	80-120

Data File: /chem1/nt5.i/12JUL12.b/lcs0712a.d
Date : 12-JUL-2012 13:00
Client ID: LCS0712
Sample Info: LCS0712,5,5,0

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - lcs0712a.d

Lab ID: LCS0712, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/mb0712.d
Lab Smp Id: MB0712 Client Smp ID: MB0712
Inj Date : 12-JUL-2012 13:23
Operator : PB Inst ID: nt5.i
Smp Info : MB0712,5,5,0
Misc Info : 12-12946
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.443	2.437	(0.521)	4368	0.76690	0.7669
14 Acetone	43	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.208	4.202	(0.897)	260928	45.5810	45.581
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	Compound Not Detected.					
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	4.689	4.683	(1.000)	361662	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	316344	46.2796	46.280
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.141	5.135	(1.000)	786283	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.318	6.318	(1.229)	1063713	49.5545	49.554
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.625	7.624	(1.000)	934814	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	Compound Not Detected.					
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.140)	533139	51.1141	51.114
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
66	2-Chloro Toluene	91	Compound Not Detected.					
67	1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
68	1,2,3-Trichloropropane	110	Compound Not Detected.					
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	Compound Not Detected.					
74	4-Isopropyl Toluene	119	Compound Not Detected.					
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	530388	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	Compound Not Detected.					
$ 79	d4-1,2-Dichlorobenzene	152	10.080	10.085	(1.040)	496851	51.0311	51.031
80	1,2-Dichlorobenzene	146	Compound Not Detected.					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83	1,2,4-Trichlorobenzene	180	11.505	11.511	(1.187)	3494	0.51258	0.5126
84	Naphthalene	128	11.816	11.822	(1.219)	9328	0.65106	0.6511
85	1,2,3-Trichlorobenzene	180	11.997	12.003	(1.237)	3588	0.56155	0.5615

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: mb0712.d
Lab Smp Id: MB0712
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: MB0712
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	361662	23.94
35 1,4-Difluorobenze	682850	341425	1365700	786283	15.15
52 d5-Chlorobenzene	802138	401069	1604276	934814	16.54
76 d4-1,4-Dichlorobe	452585	226292	905170	530388	17.19

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: MB0712
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Client SDG: 12JUL12
Fraction: VOA
Client Smp ID: MB0712
Operator: PB
SampleType: BLANK
Quant Type: ISTD

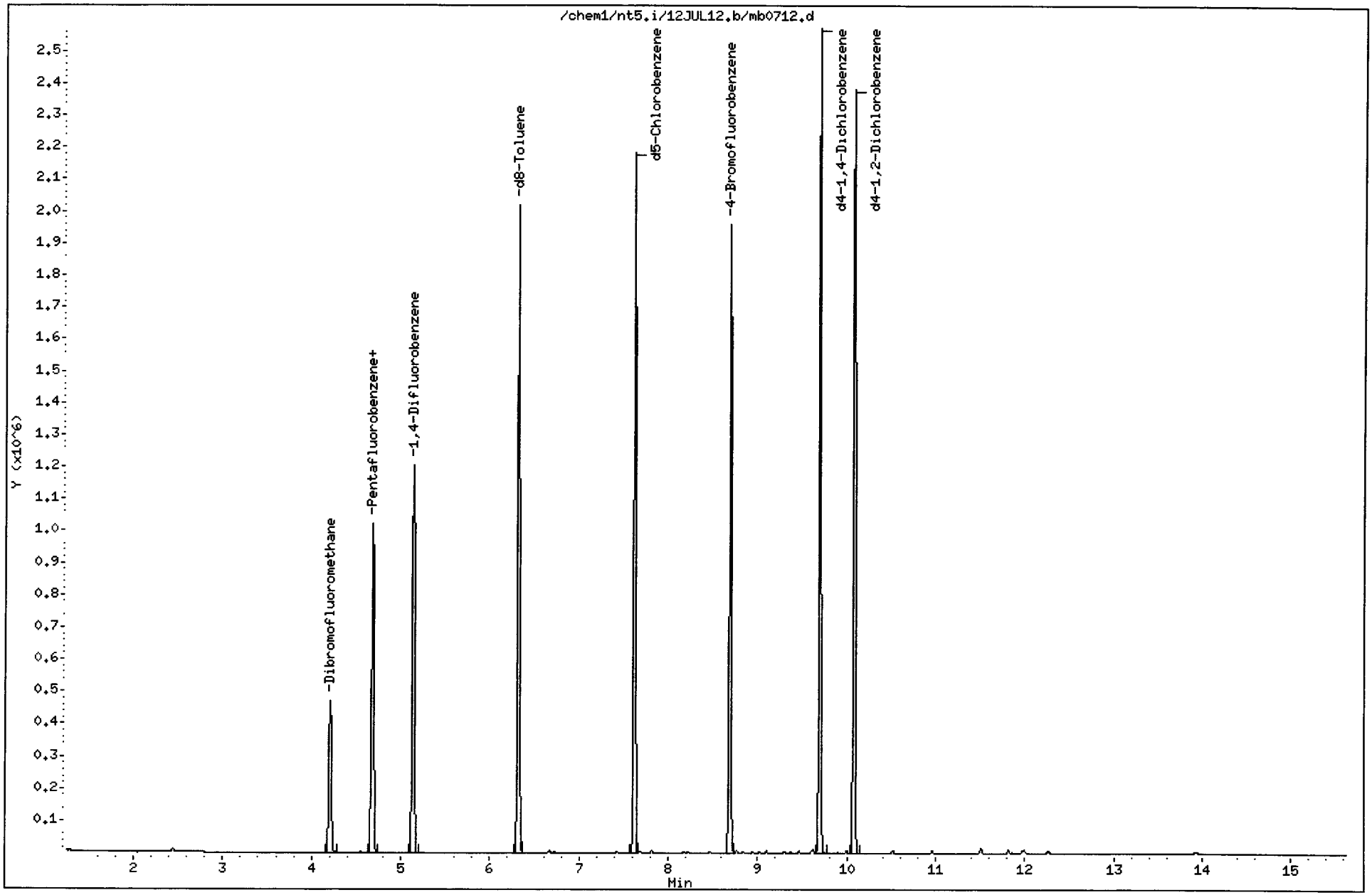
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	45.581	91.16	30-160
$ 32 d4-1,2-Dichloroeth	50.000	46.280	92.56	75-152
$ 42 d8-Toluene	50.000	49.554	99.11	82-115
$ 62 4-Bromofluorobenze	50.000	51.114	102.23	64-120
$ 79 d4-1,2-Dichloroben	50.000	51.031	102.06	80-120

Data File: /chem1/nt5.i/12JUL12.b/mb0712.d
Date : 12-JUL-2012 13:23
Client ID: MB0712
Sample Info: MB0712,5,5,0

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - mb0712.d

Lab ID: MB0712, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/vb54g.d
Lab Smp Id: VB54G Client Smp ID: CW-TP-02-8.2-9.2
Inj Date : 12-JUL-2012 14:58
Operator : PB Inst ID: nt5.i
Smp Info : VB54G,5,7.194,1,15UL
Misc Info : 12-12946
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

M	0.00000	% Moisture (not decanted)
Uf	1.00000	ng unit correction factor
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.443	2.437	(0.522)	5796	1.07777	0.2156
14 Acetone	43	2.533	2.533	(0.541)	5169	3.10563	0.6211
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					
16 Methyl tert butyl ether	73	Compound Not Detected.					
17 1,1-Dichloroethane	63	Compound Not Detected.					
18 Acrylonitrile	53	Compound Not Detected.					

			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	19	Vinyl Acetate	43	Compound Not Detected.					
	20	Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22	2,2-Dichloropropane	77	Compound Not Detected.					
	23	Bromochloromethane	128	Compound Not Detected.					
	24	Chloroform	83	Compound Not Detected.					
	25	Carbon Tetrachloride	117	Compound Not Detected.					
$	27	Dibromofluoromethane	111	4.202	4.202	(0.897)	244056	45.1536	9.031
	26	1,1,1-Trichloroethane	97	Compound Not Detected.					
	28	1,1-Dichloropropene	75	Compound Not Detected.					
	29	2-Butanone	72	Compound Not Detected.					
	30	Benzene	78	Compound Not Detected.					
*	31	Pentafluorobenzene	168	4.683	4.683	(1.000)	341478	50.0000	
$	32	d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	303138	46.9689	9.394
	33	1,2-Dichloroethane	62	Compound Not Detected.					
	34	Trichloroethene	95	Compound Not Detected.					
*	35	1,4-Difluorobenzene	114	5.135	5.135	(1.000)	760339	50.0000	
	37	Dibromomethane	93	Compound Not Detected.					
	38	1,2-Dichloropropane	63	Compound Not Detected.					
	39	Bromodichloromethane	83	Compound Not Detected.					
	40	2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41	Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42	d8-Toluene	98	6.318	6.318	(1.230)	1041276	50.1644	10.033
	43	Toluene	92	Compound Not Detected.					
	44	Tetrachloroethene	166	Compound Not Detected.					
	45	4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46	Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47	1,1,2-Trichloroethane	97	Compound Not Detected.					
	48	Chlorodibromomethane	129	Compound Not Detected.					
	49	1,3-Dichloropropane	76	Compound Not Detected.					
	50	1,2-Dibromoethane	107	Compound Not Detected.					
	51	2-Hexanone	43	Compound Not Detected.					
*	52	d5-Chlorobenzene	117	7.619	7.624	(1.000)	922328	50.0000	
	53	Chlorobenzene	112	Compound Not Detected.					
	54	Ethyl Benzene	91	Compound Not Detected.					
	55	1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56	m,p-xylene	106	Compound Not Detected.					
	57	o-Xylene	106	Compound Not Detected.					
	58	Styrene	104	Compound Not Detected.					
	59	Bromoform	173	Compound Not Detected.					
	60	Isopropyl Benzene	105	8.467	8.473	(0.873)	25180	1.17421	0.2348
$	62	4-Bromofluorobenzene	95	8.694	8.693	(1.141)	554729	53.9040	10.781
	63	Bromobenzene	156	Compound Not Detected.					
	64	N-Propyl Benzene	91	8.835	8.841	(0.911)	60678	2.30941	0.4619
	65	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
	66	2-Chloro Toluene	91	Compound Not Detected.					
	67	1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
	68	1,2,3-Trichloropropane	110	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	69 Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
	70 4-Chloro Toluene	91	Compound Not Detected.					
	71 T-Butyl Benzene	119	Compound Not Detected.					
	72 1,2,4-Trimethylbenzene	105	Compound Not Detected.					
	73 S-Butyl Benzene	105	9.463	9.468	(0.976)	51623	2.20197	0.4404(Q)
	74 4-Isopropyl Toluene	119	Compound Not Detected.					
	75 1,3-Dichlorobenzene	146	Compound Not Detected.					
*	76 d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	533815	50.0000	
	77 1,4-Dichlorobenzene	146	Compound Not Detected.					
	78 N-Butyl Benzene	91	9.995	10.000	(1.031)	59396	3.29017	0.6580
$	79 d4-1,2-Dichlorobenzene	152	10.079	10.085	(1.040)	499120	50.9350	10.187
	80 1,2-Dichlorobenzene	146	Compound Not Detected.					
	81 1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
	82 Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
	83 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
	84 Naphthalene	128	Compound Not Detected.					
	85 1,2,3-Trichlorobenzene	180	Compound Not Detected.					

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb54g.d
Lab Smp Id: VB54G
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: CW-TP-02-8.2-9.2
Level: MED
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	341478	17.02
35 1,4-Difluorobenze	682850	341425	1365700	760339	11.35
52 d5-Chlorobenzene	802138	401069	1604276	922328	14.98
76 d4-1,4-Dichlorobe	452585	226292	905170	533815	17.95

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.68	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	-0.07
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB54G
Level: MED
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Client SDG: VB54
Fraction: VOA
Client Smp ID: CW-TP-02-8.2-9.2
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

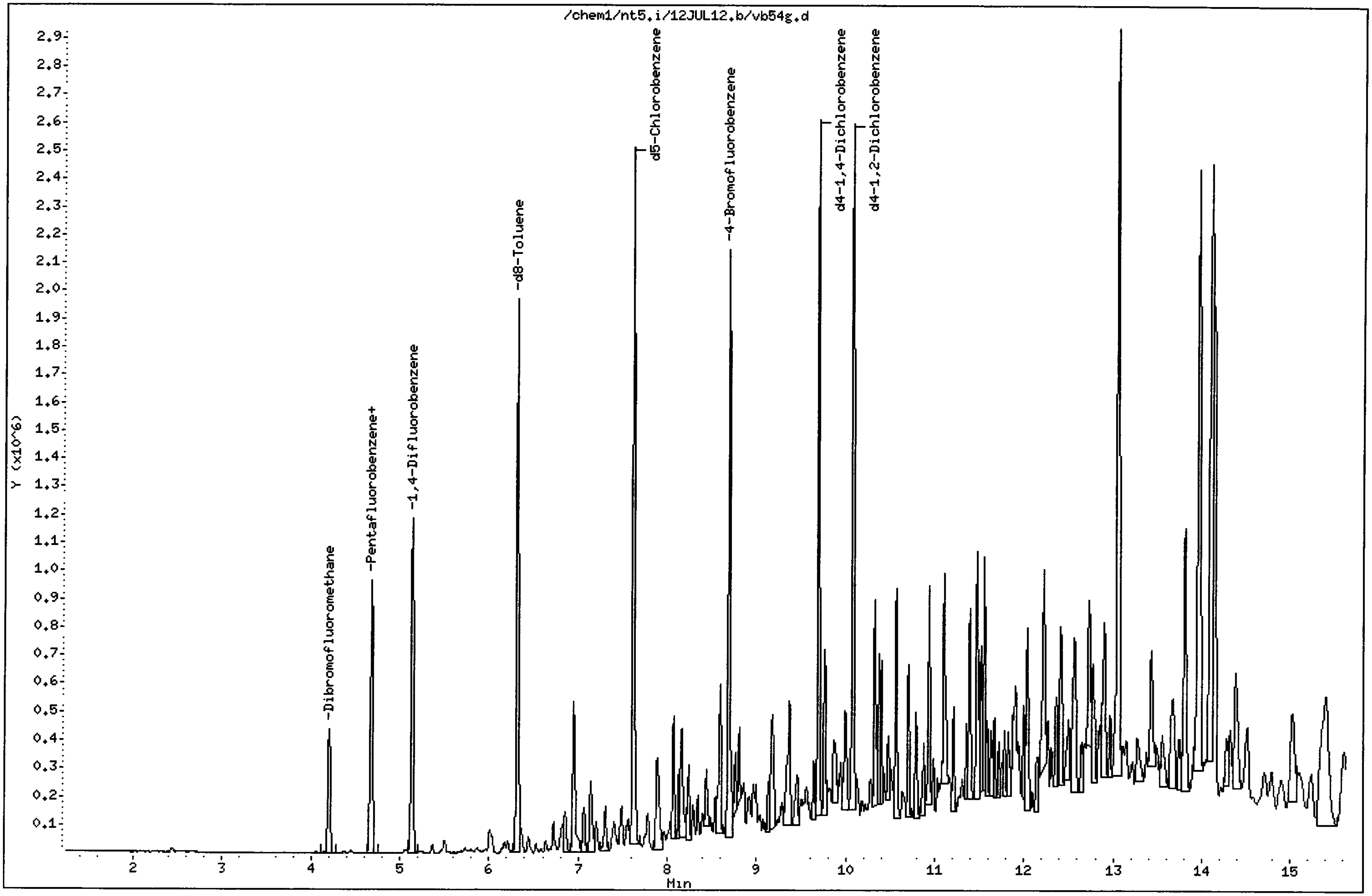
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	45.154	90.31	30-160
$ 32 d4-1,2-Dichloroeth	50.000	46.969	93.94	75-152
$ 42 d8-Toluene	50.000	50.164	100.33	82-115
$ 62 4-Bromofluorobenze	50.000	53.904	107.81	64-120
$ 79 d4-1,2-Dichloroben	50.000	50.935	101.87	80-120

Data File: /chem1/nt5.i/12JUL12.b/vb54g.d
Date : 12-JUL-2012 14:58
Client ID: CW-TP-02-8.2-9.2
Sample Info: VB54G,5,7,194,1,15UL

Column phase: RTXVMS

Instrument: nt5.i

Operator: PB
Column diameter: 0.18



Data File: /chem1/nt5.i/12JUL12.b/vb54g.d

Date : 12-JUL-2012 14:58

Client ID: CW-TP-02-8.2-9.2

Instrument: nt5.i

Sample Info: VB54G,5,7.194,1,15UL

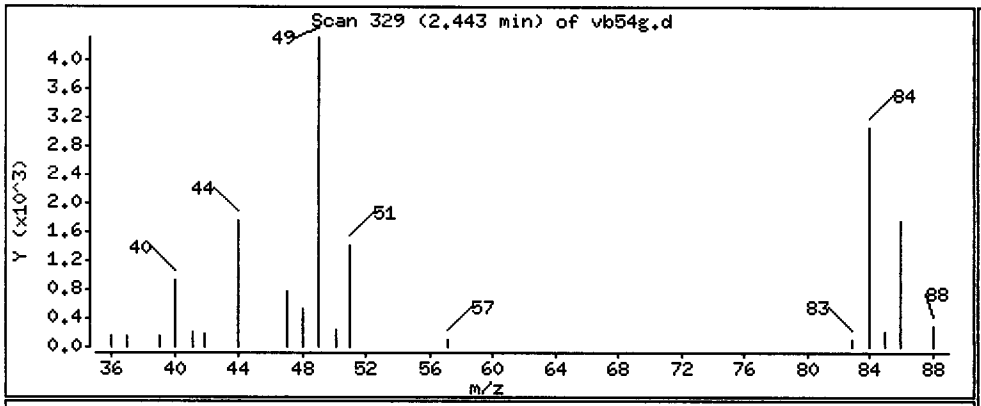
Operator: PB

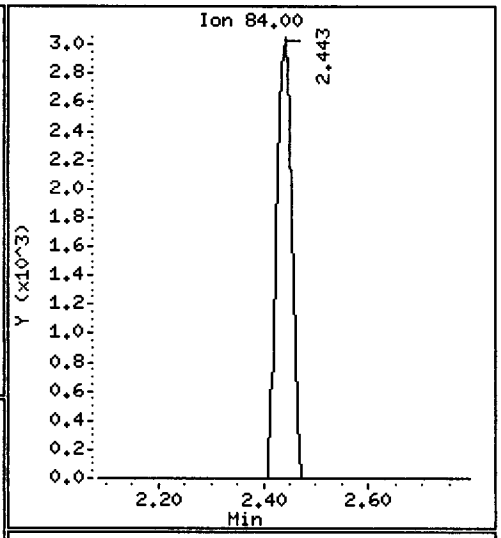
Column phase: RTXVMS

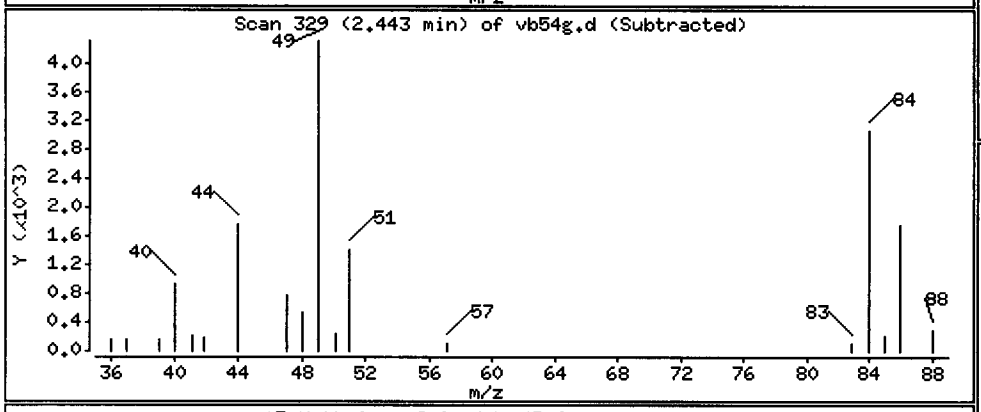
Column diameter: 0.18

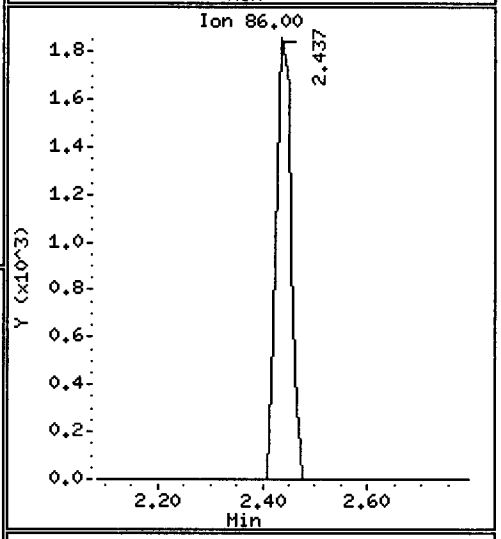
13 Methylene Chloride

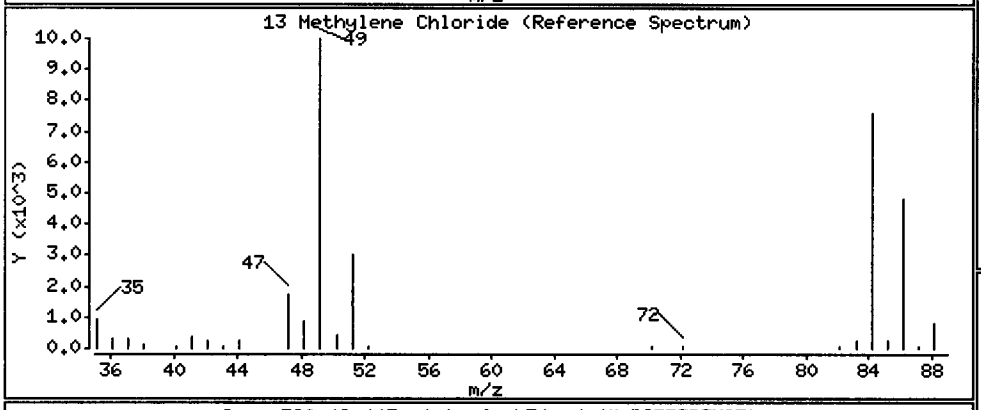
Concentration: 0.2156 ug/Kg

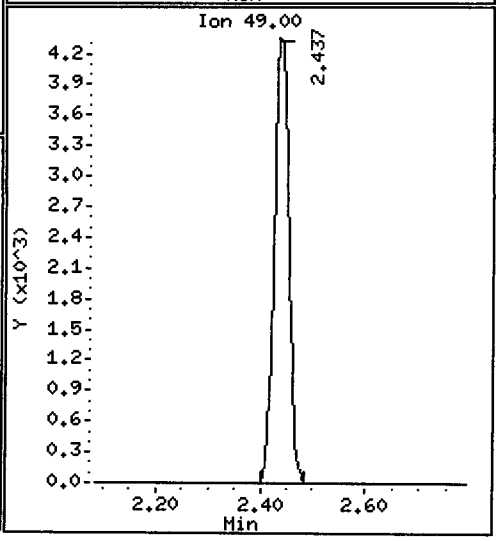


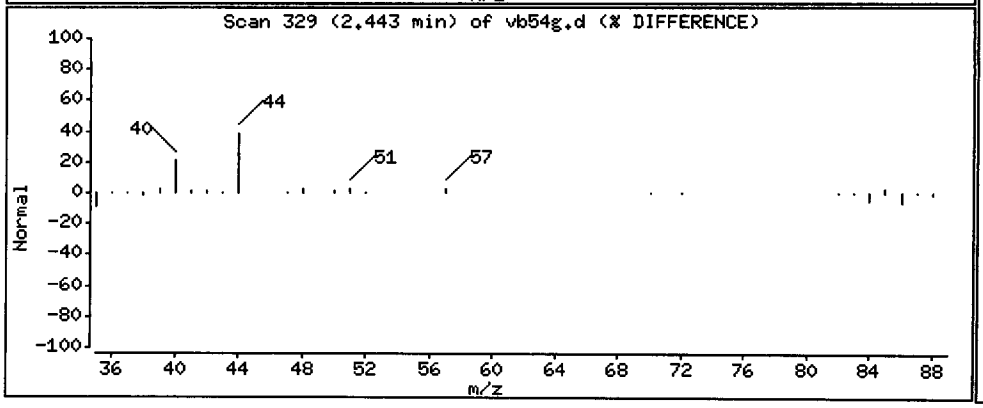












Data File: /chem1/nt5.i/12JUL12.b/vb54g.d

Date : 12-JUL-2012 14:58

Client ID: CW-TP-02-8.2-9.2

Instrument: nt5.i

Sample Info: VB54G,5,7.194,1,15UL

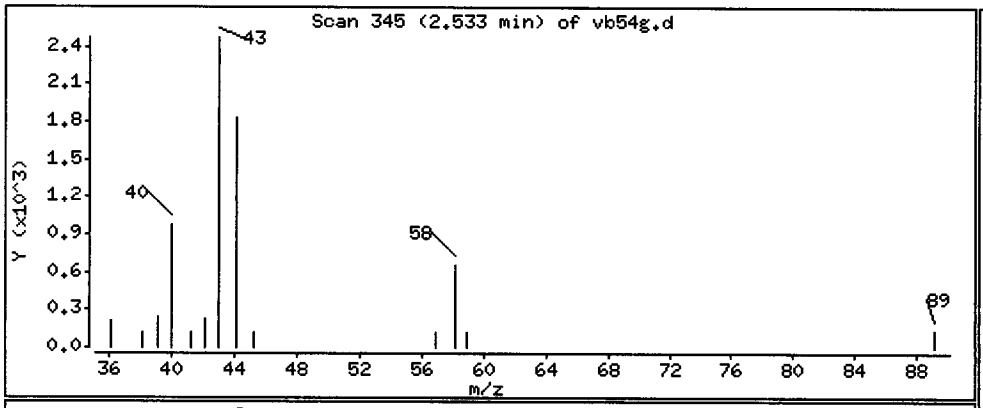
Operator: PB

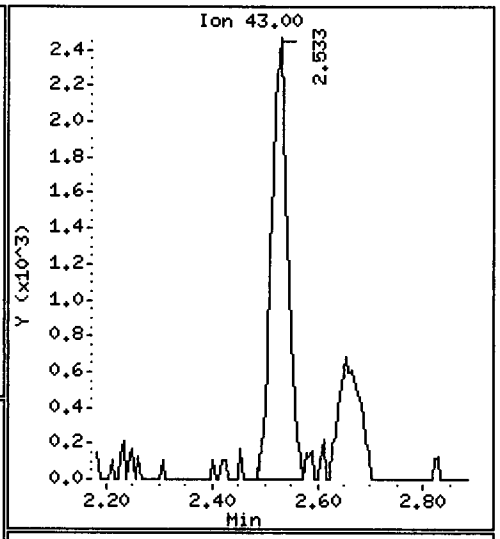
Column phase: RTXVMS

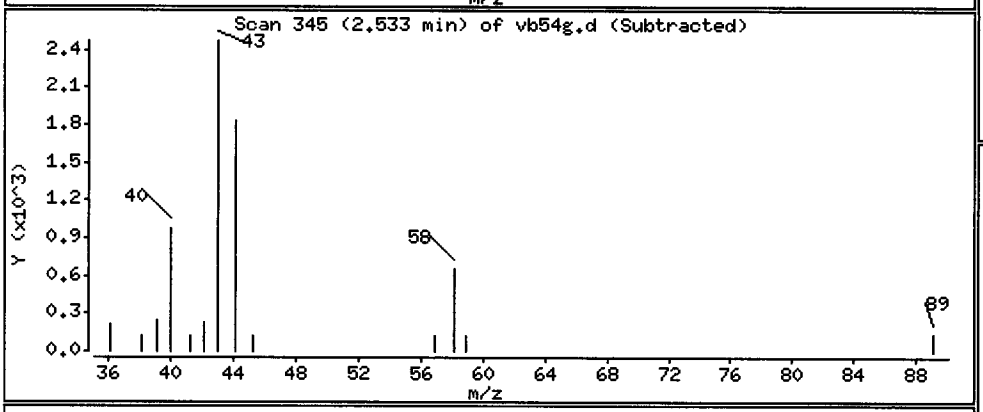
Column diameter: 0.18

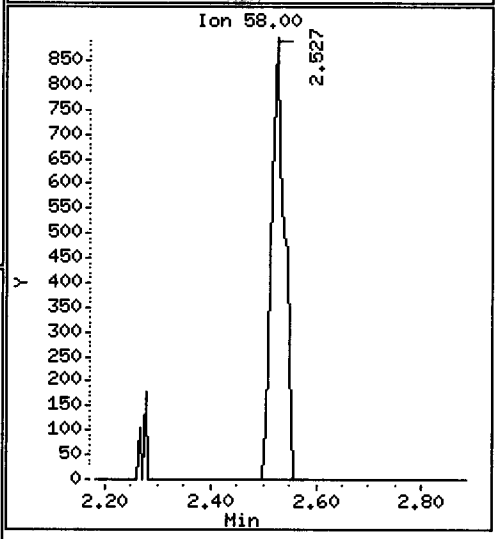
14 Acetone

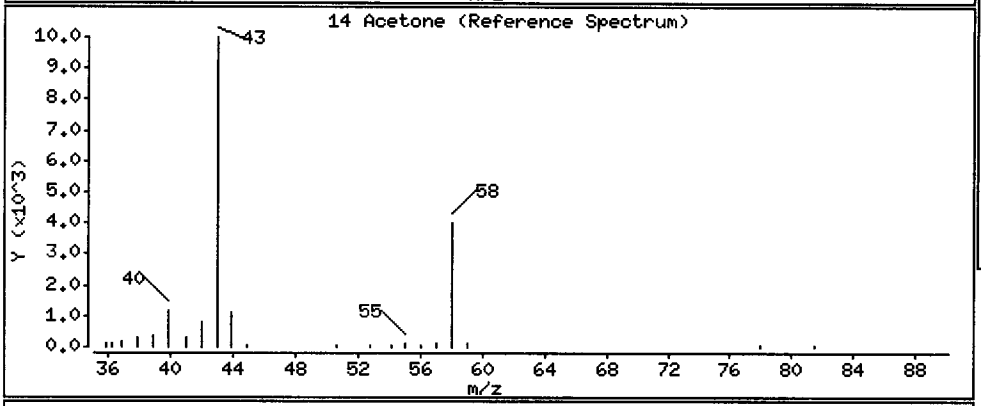
Concentration: 0.6211 ug/Kg

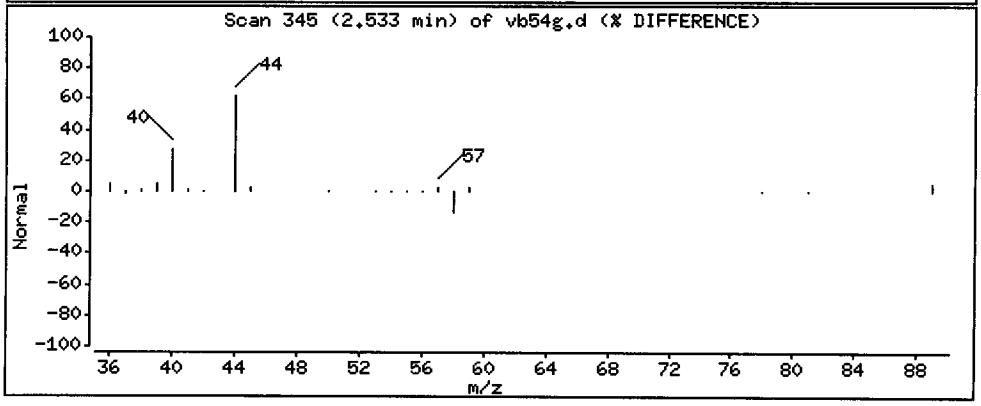












Data File: /chem1/nt5.i/12JUL12.b/vb54g.d

Date : 12-JUL-2012 14:58

Client ID: CW-TP-02-8.2-9.2

Instrument: nt5.i

Sample Info: VB54G,5,7.194,1,15UL

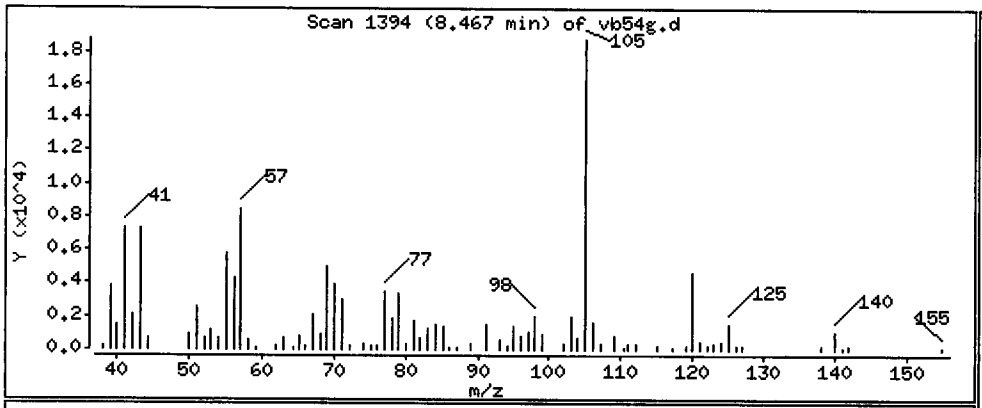
Operator: PB

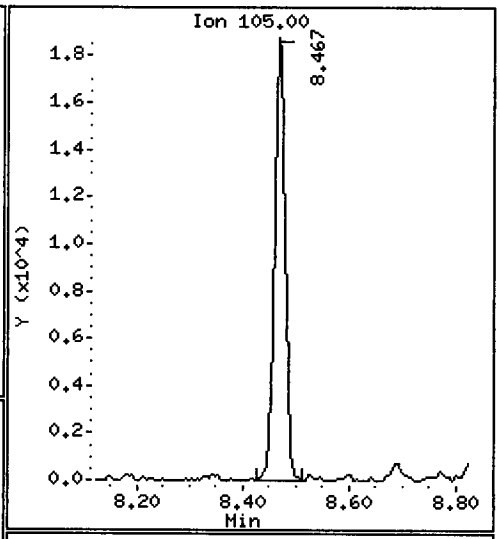
Column phase: RTXVMS

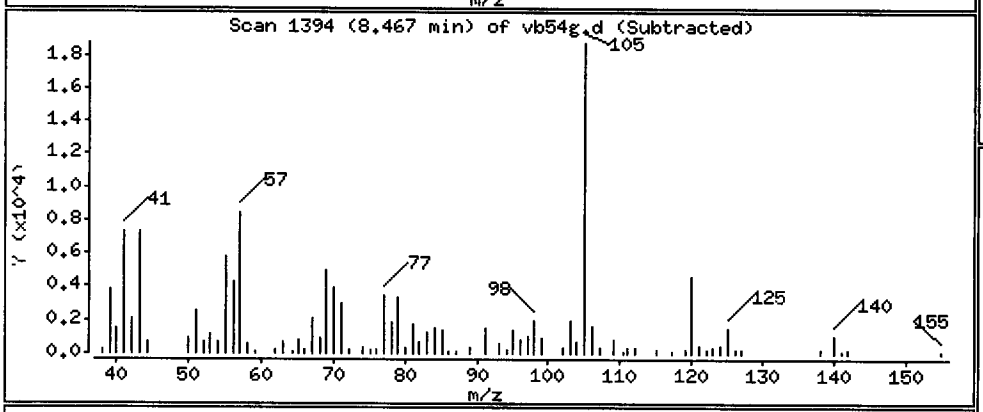
Column diameter: 0.18

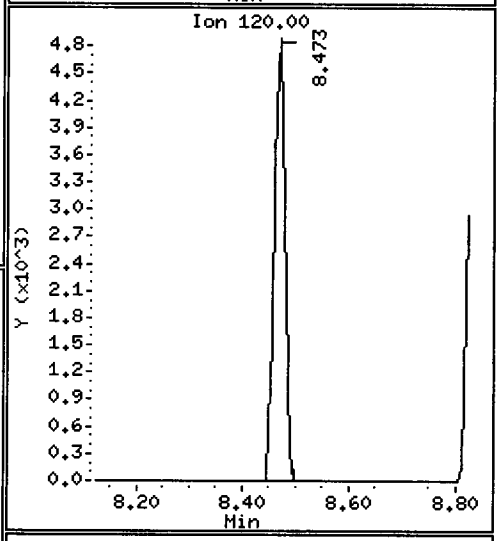
60 Isopropyl Benzene

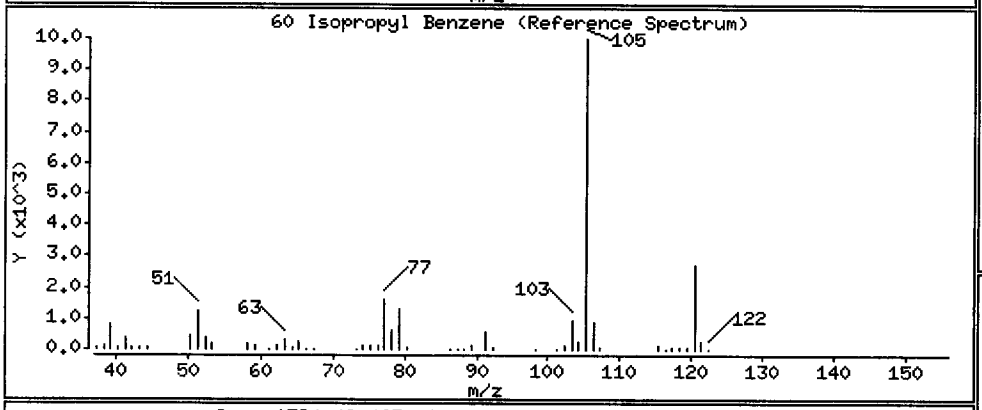
Concentration: 0.2348 ug/Kg

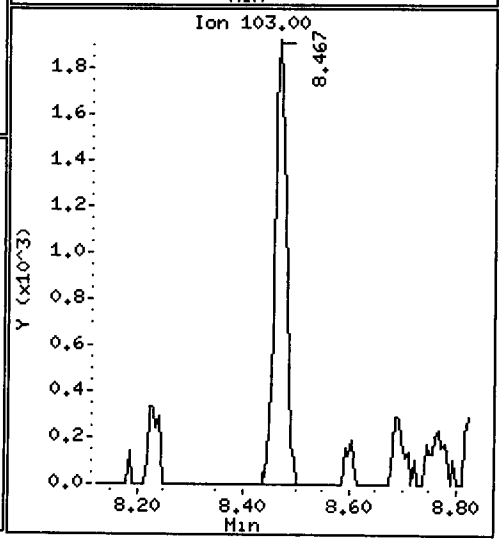


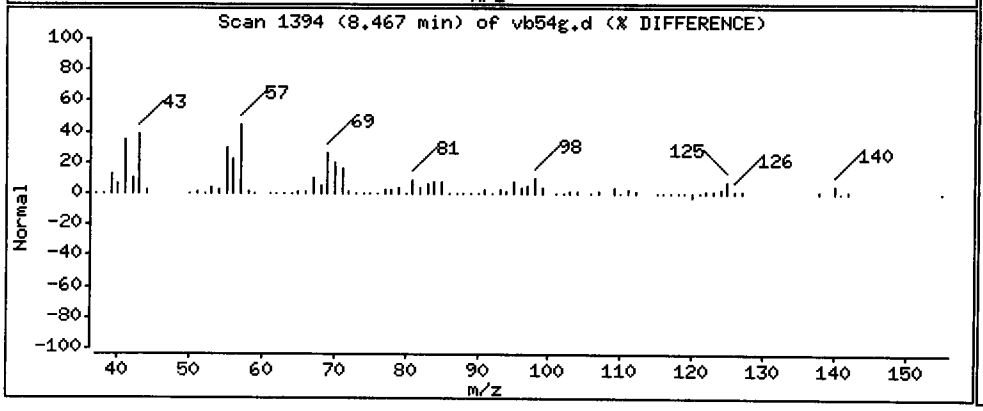












Data File: /chem1/nt5.i/12JUL12.b/vb54g.d

Date : 12-JUL-2012 14:58

Client ID: CW-TP-02-8.2-9.2

Instrument: nt5.i

Sample Info: VB54G,5,7.194,1,15UL

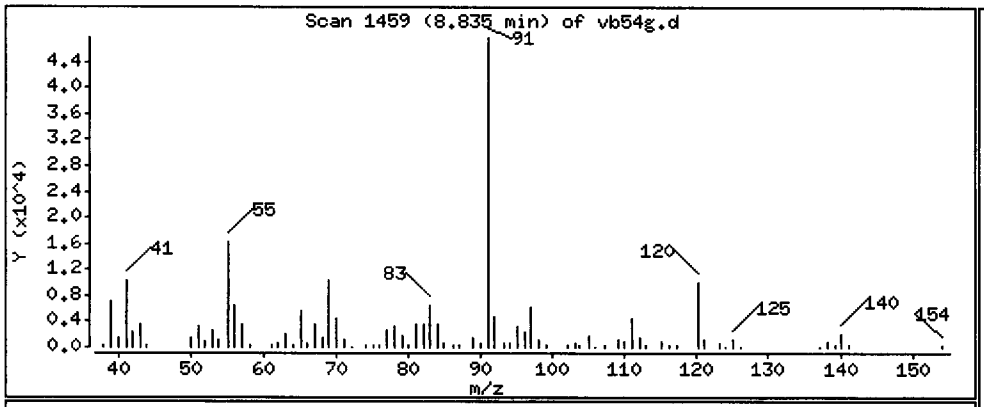
Operator: PB

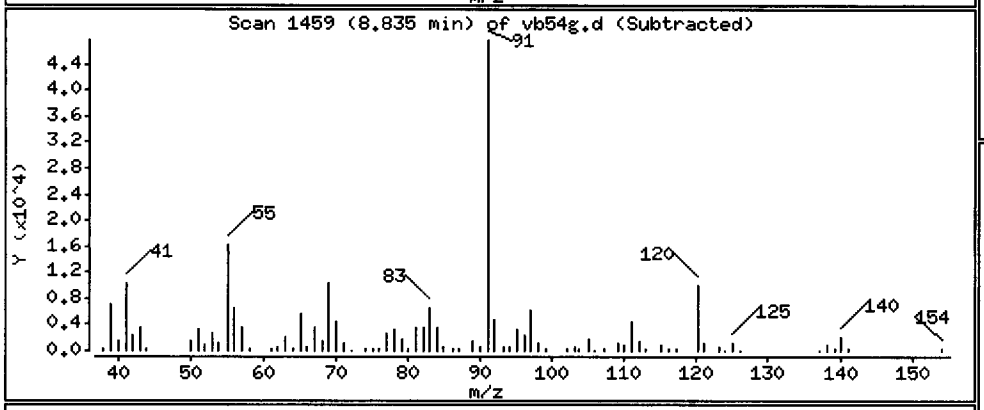
Column phase: RTXVMS

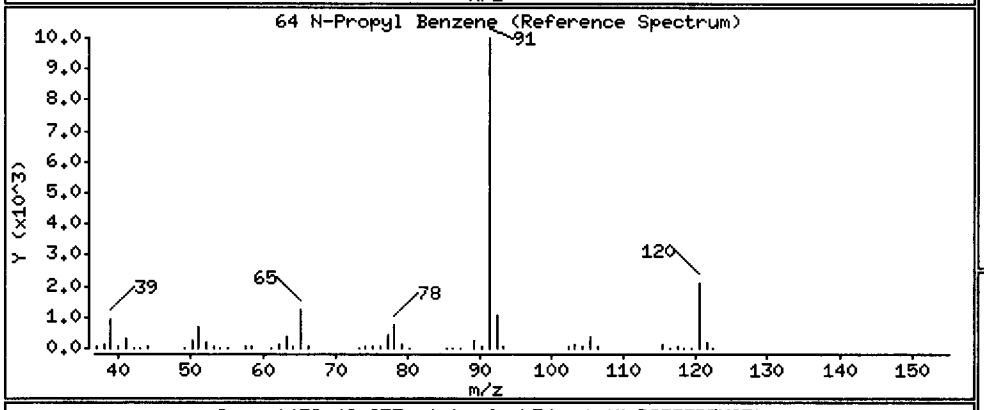
Column diameter: 0.18

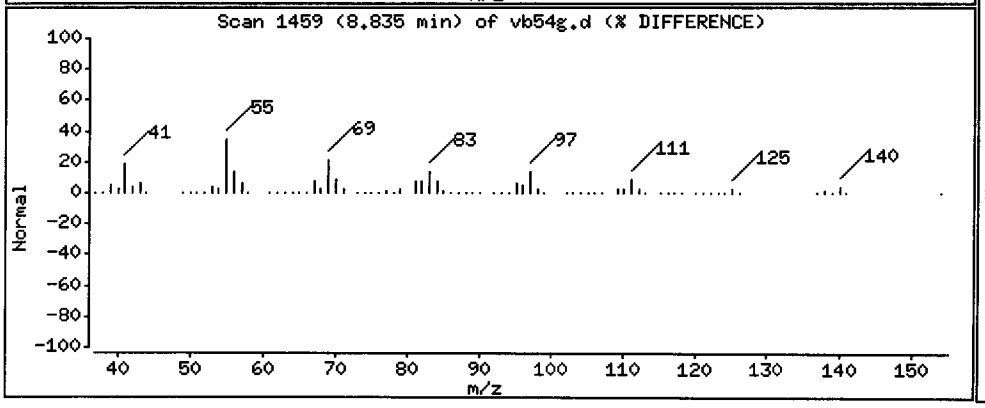
64 N-Propyl Benzene

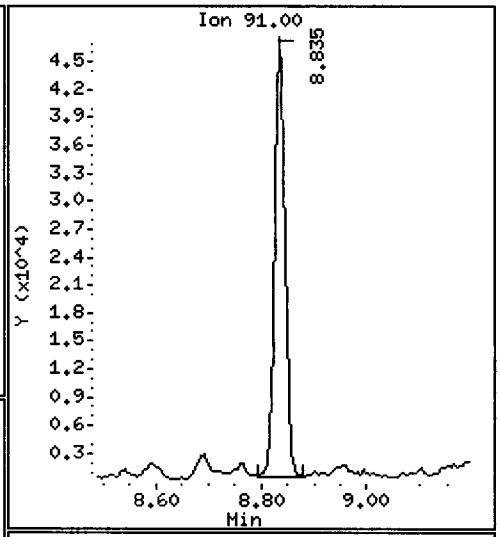
Concentration: 0.4619 ug/Kg

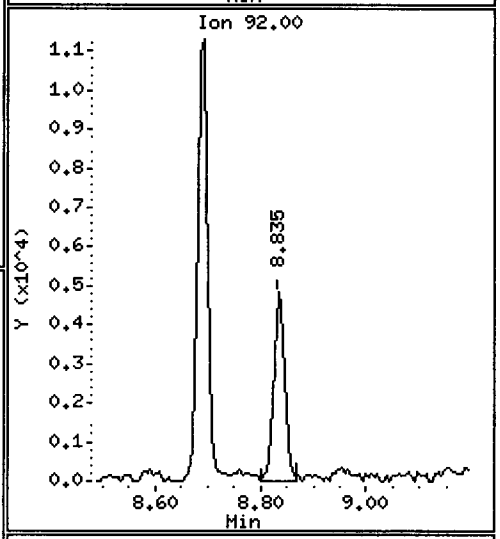


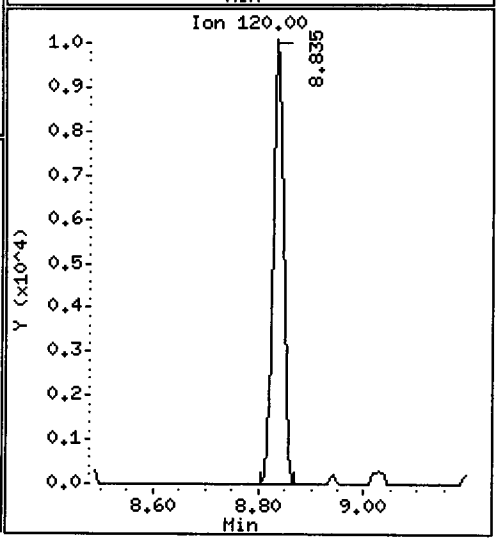












Data File: /chem1/nt5.i/12JUL12.b/vb54g.d

Date : 12-JUL-2012 14:58

Client ID: CW-TP-02-8.2-9.2

Instrument: nt5.i

Sample Info: VB54G,5,7.194,1,15UL

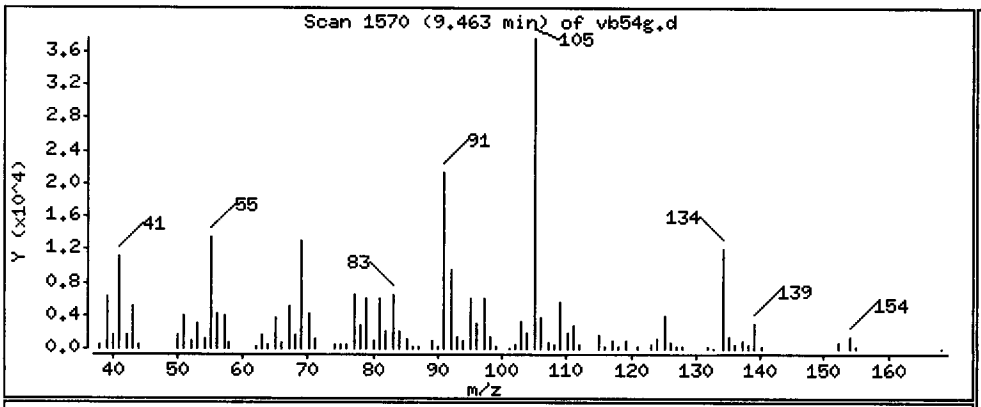
Operator: PB

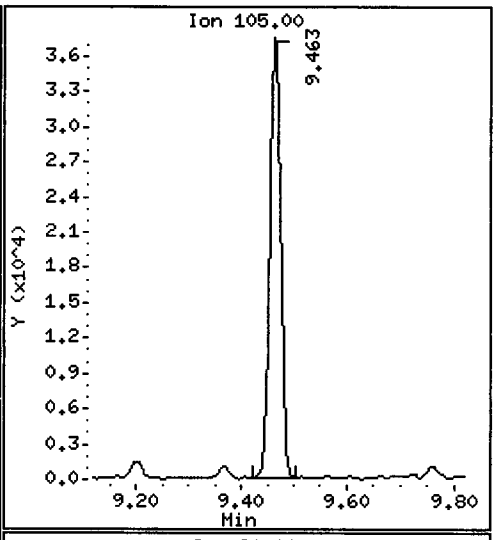
Column phase: RTXVMS

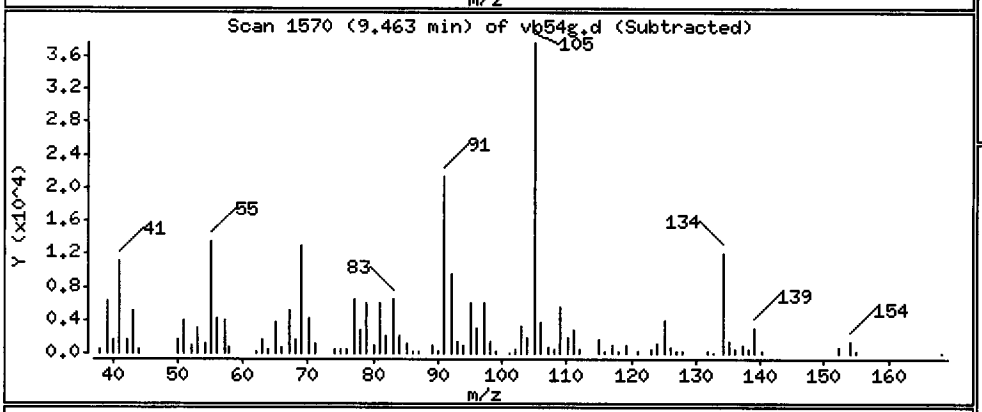
Column diameter: 0.18

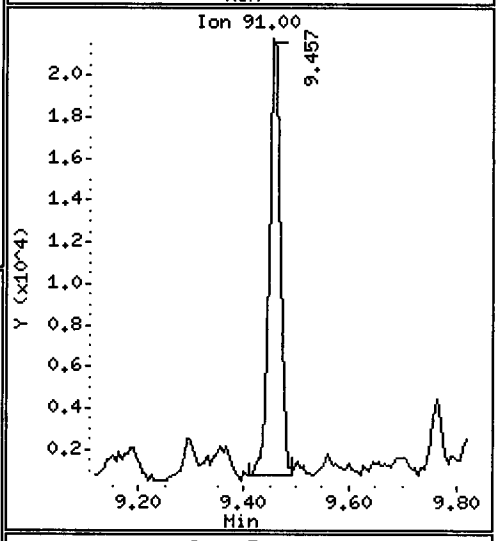
73 S-Butyl Benzene

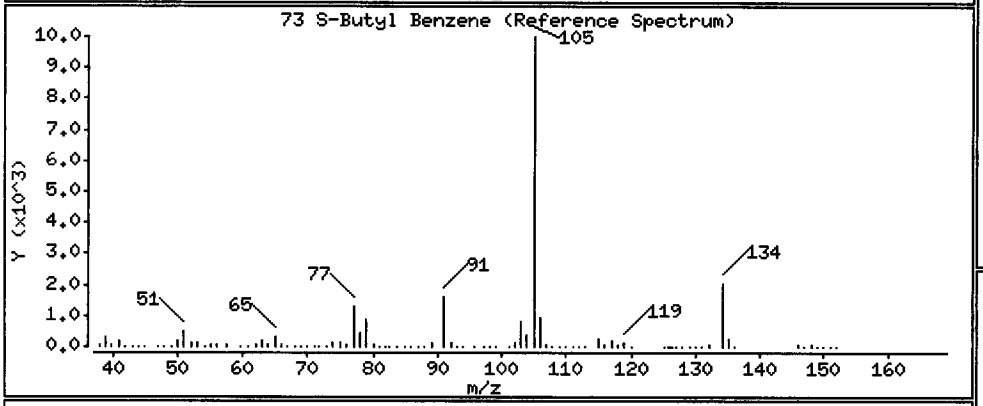
Concentration: 0.4404 ug/Kg

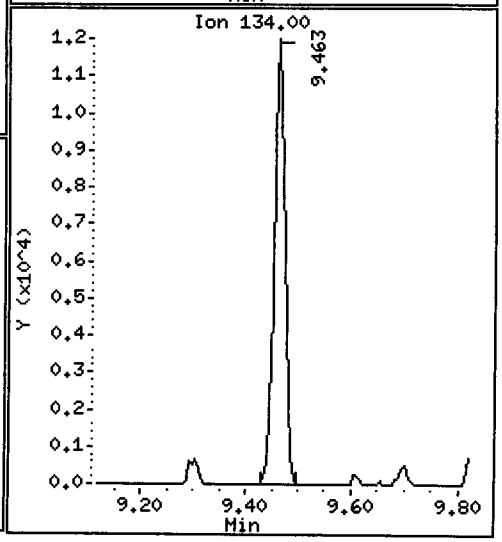


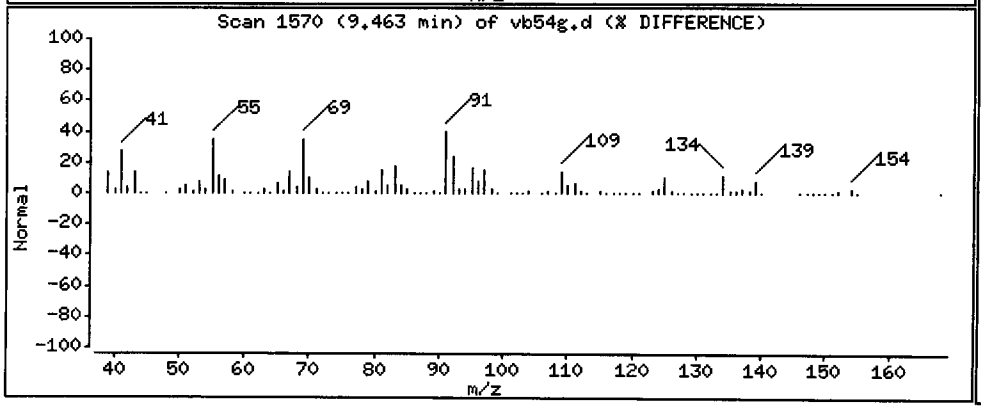












Data File: /chem1/nt5.i/12JUL12.b/vb54g.d

Date : 12-JUL-2012 14:58

Client ID: CW-TP-02-8.2-9.2

Instrument: nt5.i

Sample Info: VB54G,5,7.194,1,15UL

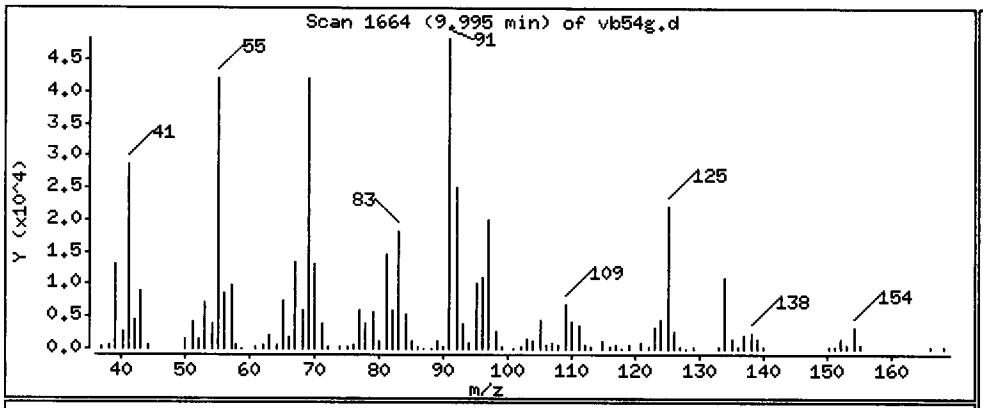
Operator: PB

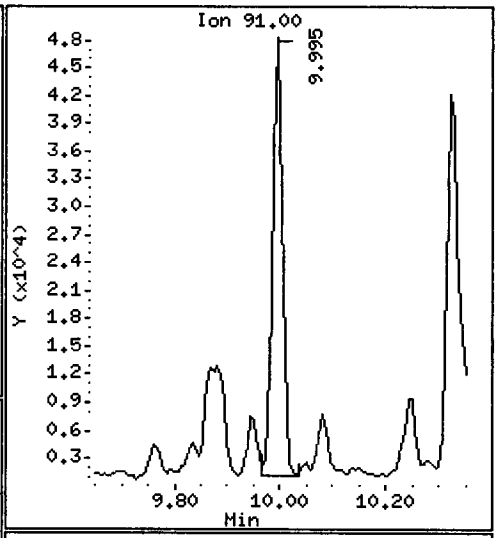
Column phase: RTXVMS

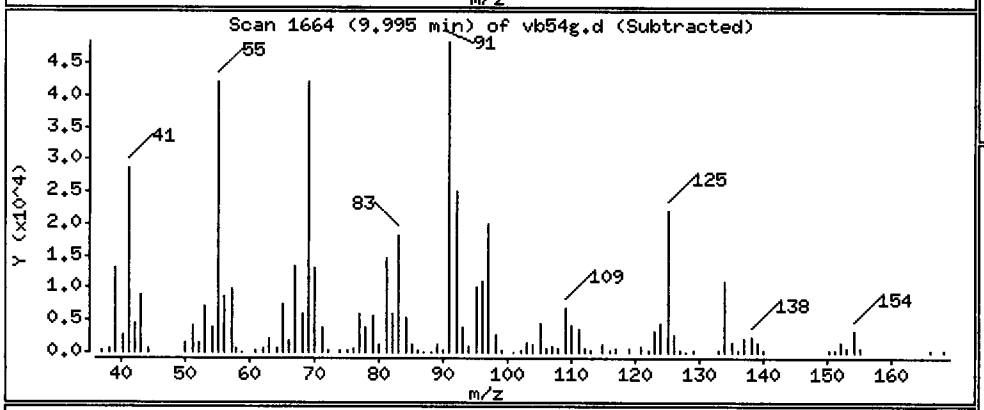
Column diameter: 0.18

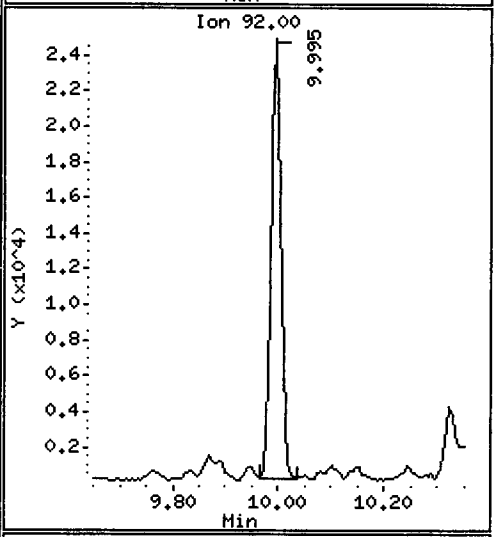
78 N-Butyl Benzene

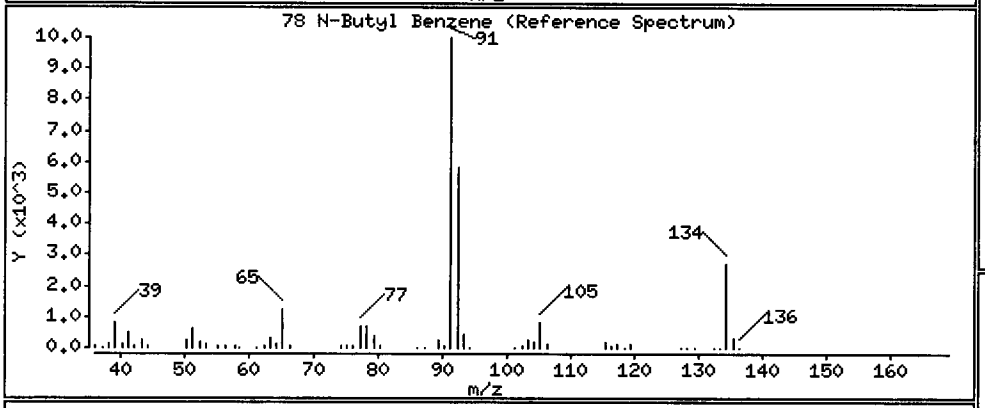
Concentration: 0.6580 ug/Kg

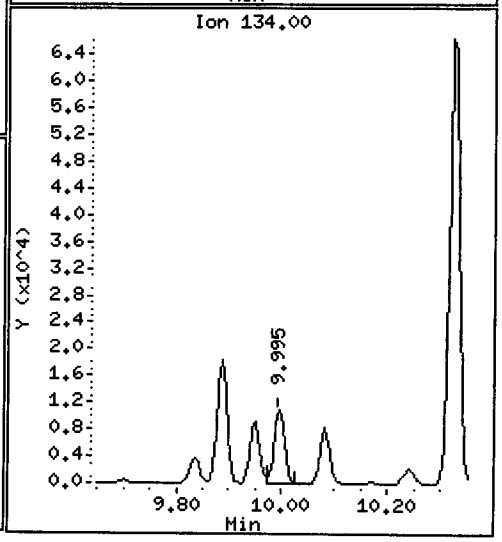


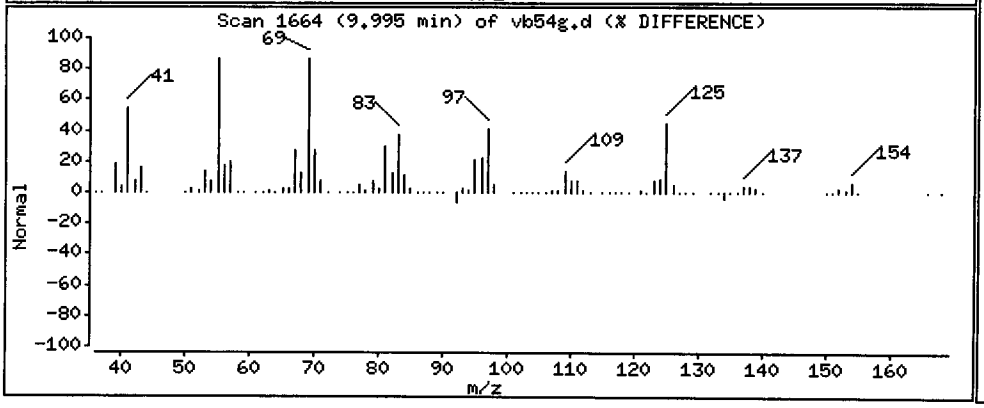












CO-ELUTION SUMMARY FOR FILE - vb54g.d

Lab ID: VB54G, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/vb54m.d
Lab Smp Id: VB54M Client Smp ID: CW-TB
Inj Date : 12-JUL-2012 15:44
Operator : PB Inst ID: nt5.i
Smp Info : VB54M,5,5,0
Misc Info : 12-12952
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	0.00000	Purge Volume (mL)
Sa	0.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/L)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.448	2.437	(0.522)	5425	0.98892	0.9889
14 Acetone	43	2.527	2.533	(0.539)	5693	3.35312	3.353
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/L)
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.208	4.202	(0.897)	246870	44.7750	44.775
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	Compound Not Detected.					
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	4.688	4.683	(1.000)	348336	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	303663	46.1239	46.124
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.141	5.135	(1.000)	764914	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.318	6.318	(1.229)	1037350	49.6764	49.676
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	904194	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	Compound Not Detected.					
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.140)	514789	51.0262	51.026
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	Compound Not Detected.					
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/L)
66	2-Chloro Toluene	91	Compound Not Detected.					
67	1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
68	1,2,3-Trichloropropane	110	Compound Not Detected.					
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	Compound Not Detected.					
74	4-Isopropyl Toluene	119	Compound Not Detected.					
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	509429	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	Compound Not Detected.					
$ 79	d4-1,2-Dichlorobenzene	152	10.079	10.085	(1.040)	481027	51.4385	51.438
80	1,2-Dichlorobenzene	146	Compound Not Detected.					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
84	Naphthalene	128	Compound Not Detected.					
85	1,2,3-Trichlorobenzene	180	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb54m.d
Lab Smp Id: VB54M
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12952

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: CW-TB
Level: LOW
Sample Type: Water

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	348336	19.37
35 1,4-Difluorobenze	682850	341425	1365700	764914	12.02
52 d5-Chlorobenzene	802138	401069	1604276	904194	12.72
76 d4-1,4-Dichlorobe	452585	226292	905170	509429	12.56

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: LIQUID
Lab Smp Id: VB54M
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12952

Client SDG: VB54
Fraction: VOA
Client Smp ID: CW-TB
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

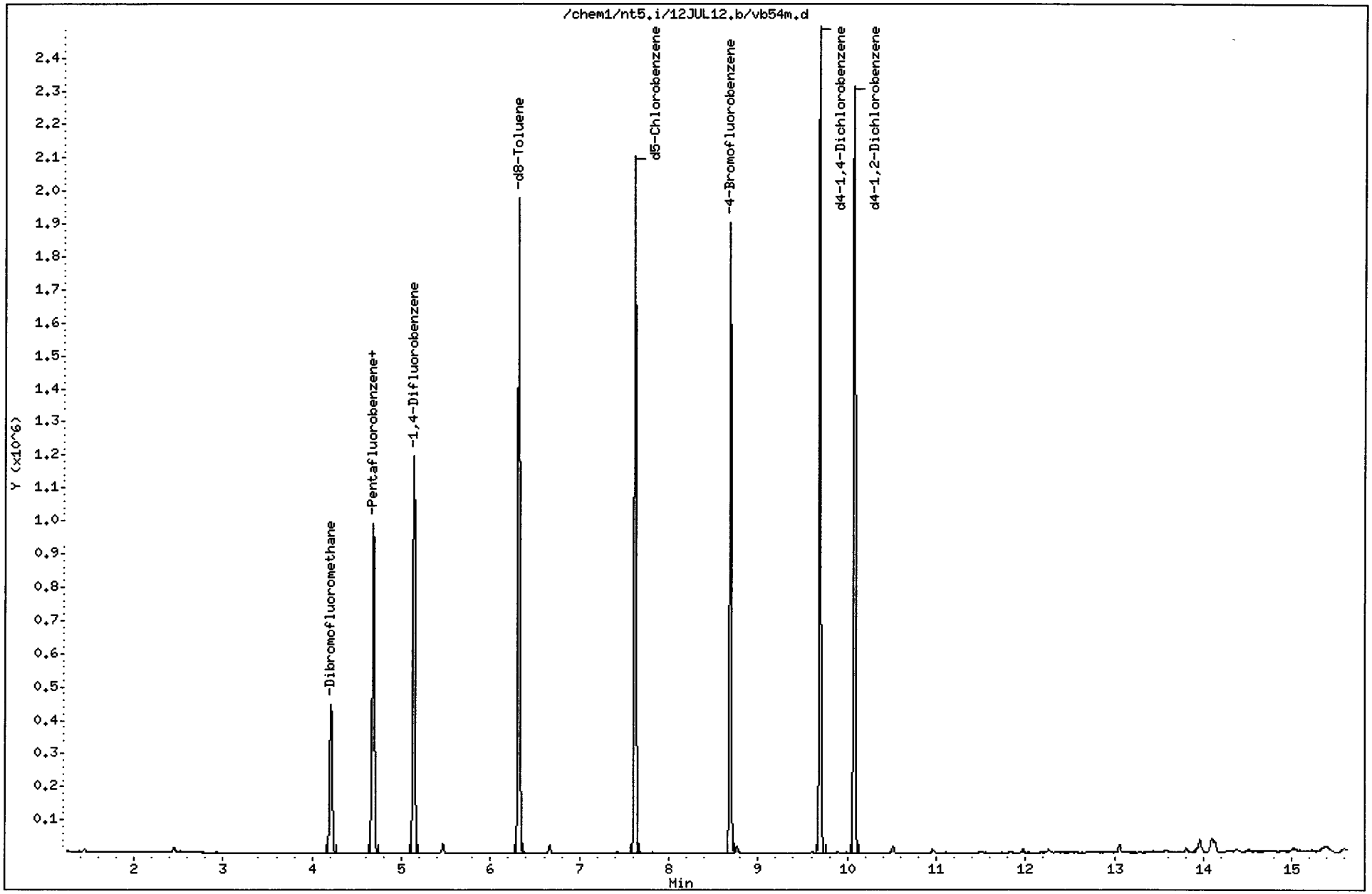
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	44.775	89.55	30-160
$ 32 d4-1,2-Dichloroeth	50.000	46.124	92.25	75-152
$ 42 d8-Toluene	50.000	49.676	99.35	82-115
$ 62 4-Bromofluorobenze	50.000	51.026	102.05	71-120
$ 79 d4-1,2-Dichloroben	50.000	51.438	102.88	80-121

Data File: /chem1/nt5.i/12JUL12.b/vb54m.d
Date : 12-JUL-2012 15:44
Client ID: CW-TB
Sample Info: VB54M,5,5,0

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



Data File: /chem1/nt5.i/12JUL12.b/vb54m.d

Date : 12-JUL-2012 15:44

Client ID: CW-TB

Instrument: nt5.i

Sample Info: VB54M,5,5,0

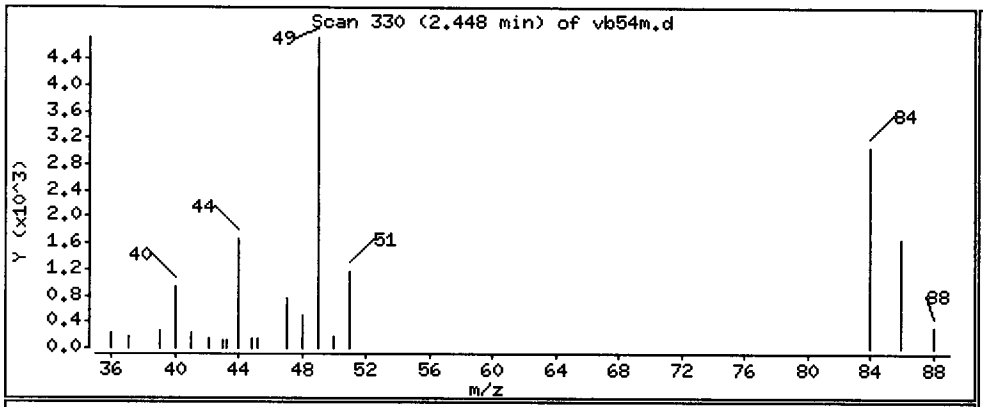
Operator: PB

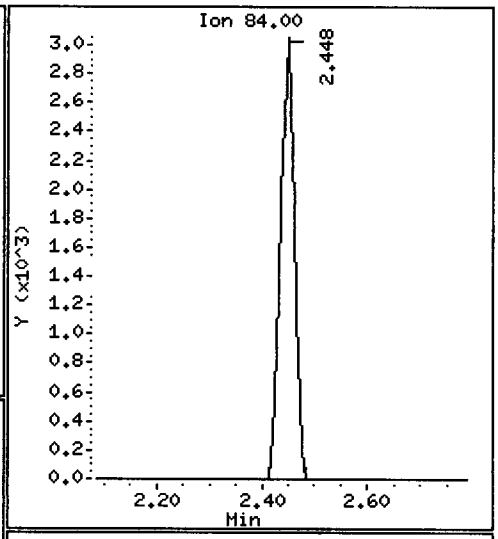
Column phase: RTXVMS

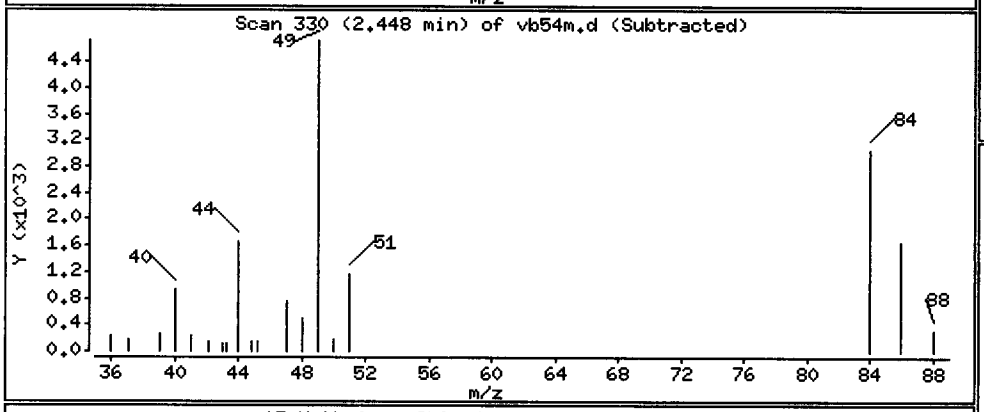
Column diameter: 0.18

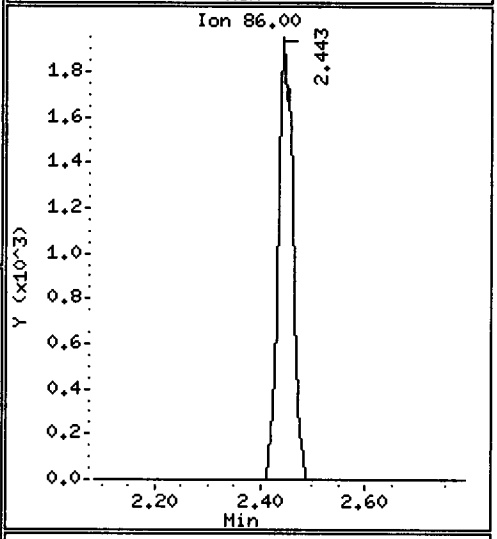
13 Methylene Chloride

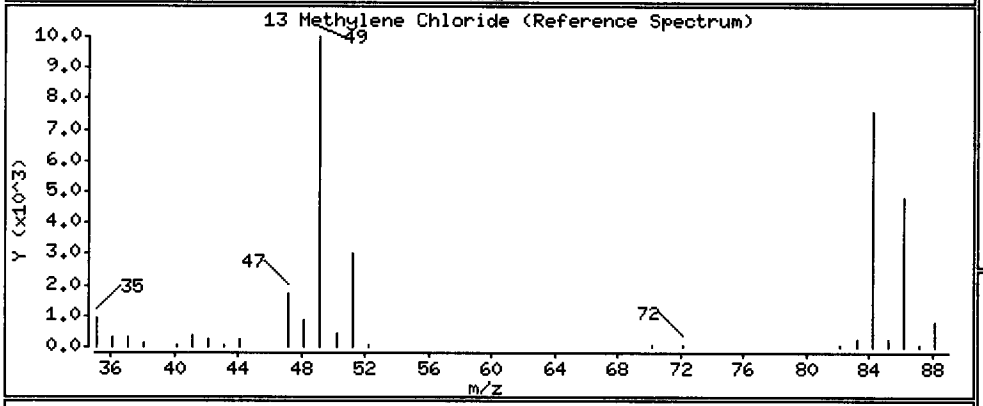
Concentration: 0.9889 ug/L

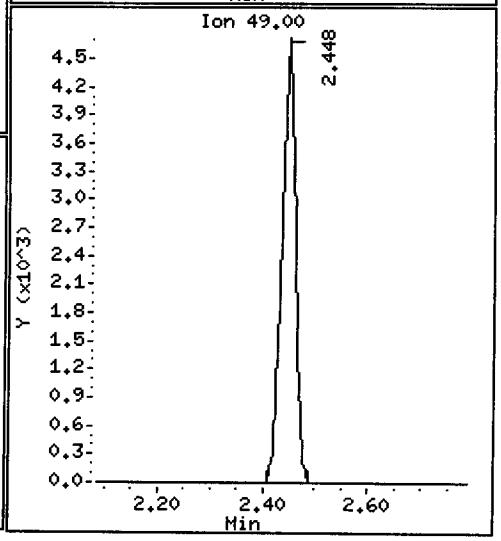


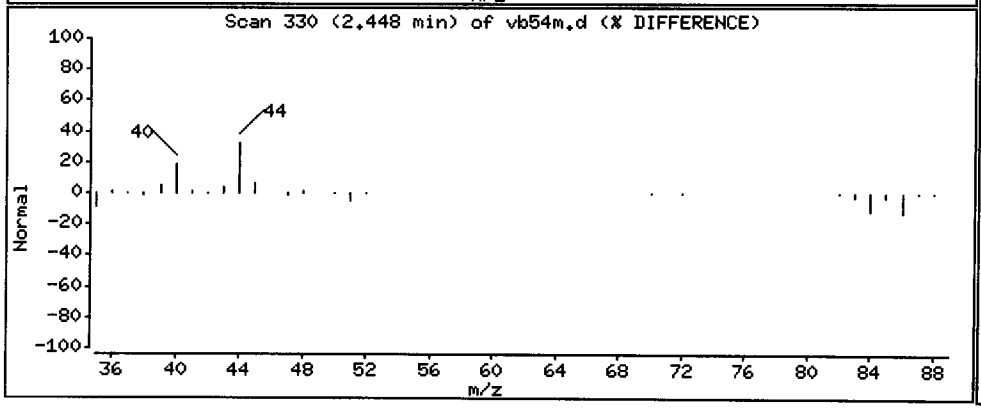












Data File: /chem1/nt5.i/12JUL12.b/vb54m.d

Date : 12-JUL-2012 15:44

Client ID: CW-TB

Instrument: nt5.i

Sample Info: VB54M,5,5,0

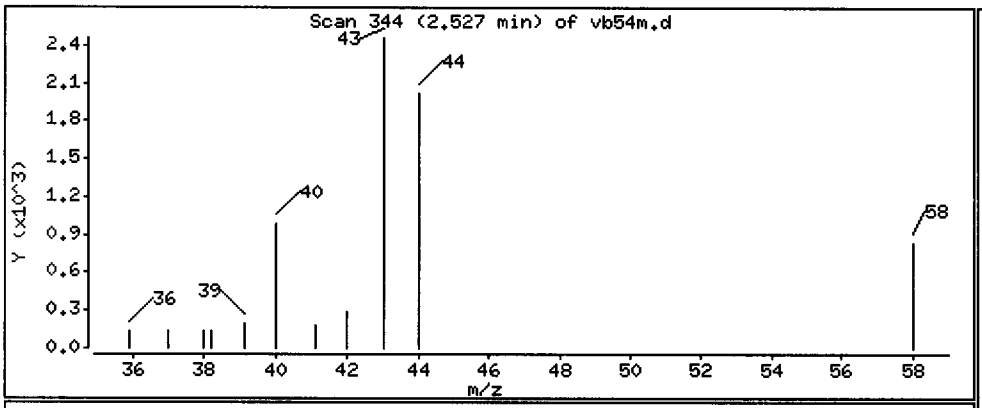
Operator: PB

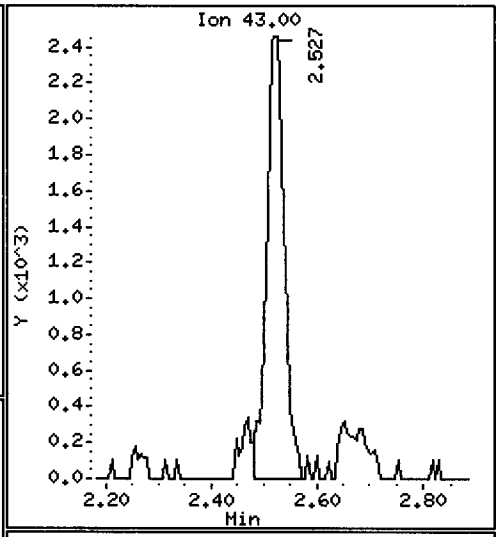
Column phase: RTXVMS

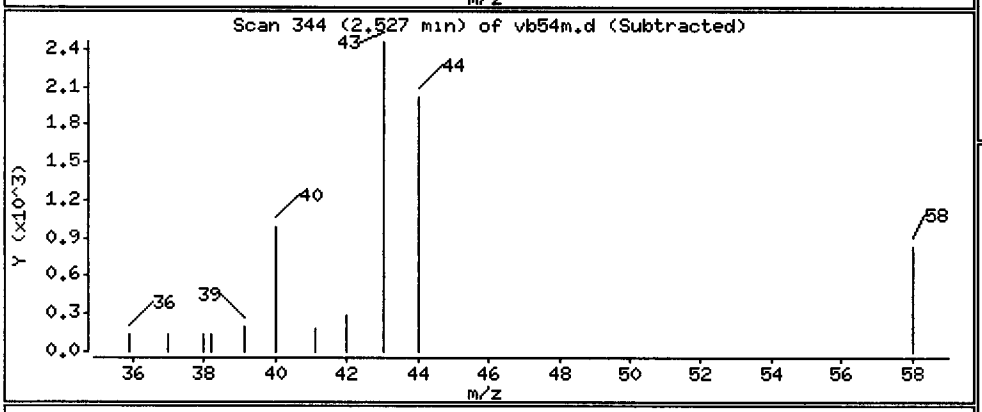
Column diameter: 0.18

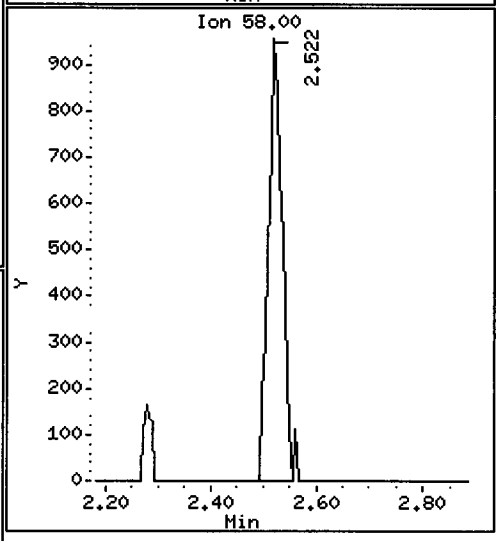
14 Acetone

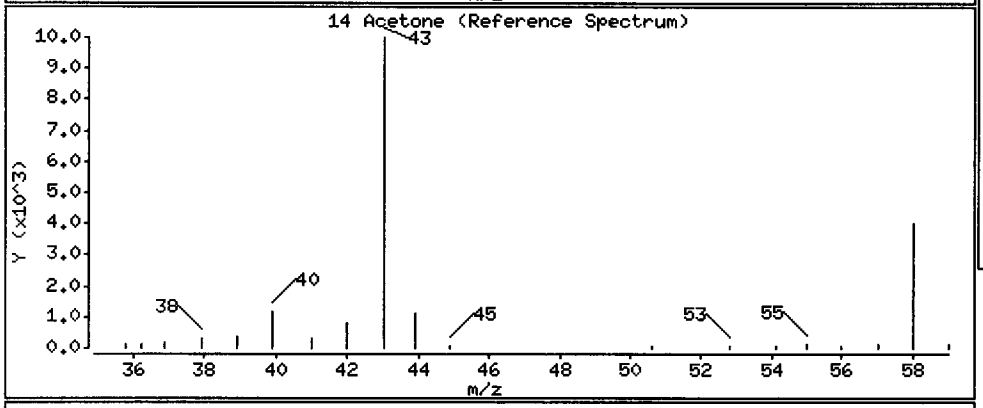
Concentration: 3.353 ug/L

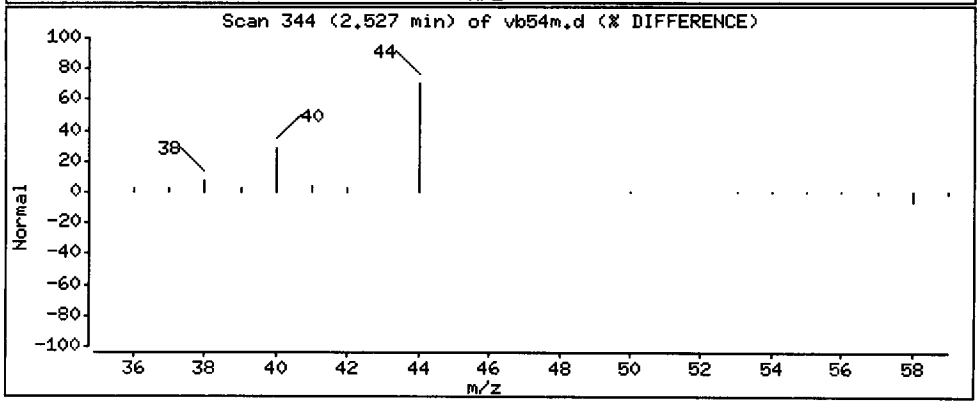












CO-ELUTION SUMMARY FOR FILE - vb54m.d

Lab ID: VB54M, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/vb54n.d
Lab Smp Id: VB54N Client Smp ID: CW-TP-08-7-8
Inj Date : 12-JUL-2012 16:06
Operator : PB Inst ID: nt5.i
Smp Info : VB54N,5,9.37,0
Misc Info : 12-12953
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	9.37000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	1.967	1.945	(0.420)	9978	0.61472	0.3280
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.448	2.437	(0.522)	6650	1.14645	0.6118
14 Acetone	43	2.527	2.533	(0.539)	37486	20.8809	11.142
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.208	4.202	(0.897)	265946	45.6177	24.342
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	4.366	4.372	(0.931)	1506	2.68750	1.434(Q)
	30 Benzene	78	4.553	4.547	(0.886)	33128	1.71029	0.9126
*	31 Pentafluorobenzene	168	4.688	4.683	(1.000)	368321	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.683	4.677	(0.999)	338938	48.6885	25.981
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.141	5.135	(1.000)	805022	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.318	6.318	(1.229)	1081476	49.2092	26.259
	43 Toluene	92	6.357	6.357	(1.237)	33257	2.57990	1.377
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	4686	0.96454	0.5147
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	912001	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	7.817	7.822	(1.025)	16972	2.09994	1.121
	57 o-Xylene	106	8.184	8.184	(1.073)	5923	0.73454	0.3920
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	Compound Not Detected.					
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.140)	486289	47.7887	25.501
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	Compound Not Detected.					
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	66 2-Chloro Toluene	91	Compound Not Detected.					
	67 1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
	68 1,2,3-Trichloropropane	110	Compound Not Detected.					
	69 Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
	70 4-Chloro Toluene	91	Compound Not Detected.					
	71 T-Butyl Benzene	119	Compound Not Detected.					
	72 1,2,4-Trimethylbenzene	105	9.367	9.372	(0.966)	11027	0.77231	0.4121
	73 S-Butyl Benzene	105	Compound Not Detected.					
	74 4-Isopropyl Toluene	119	Compound Not Detected.					
	75 1,3-Dichlorobenzene	146	Compound Not Detected.					
*	76 d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	418075	50.0000	
	77 1,4-Dichlorobenzene	146	Compound Not Detected.					
	78 N-Butyl Benzene	91	Compound Not Detected.					
$	79 d4-1,2-Dichlorobenzene	152	10.079	10.085	(1.040)	405943	52.8948	28.226
	80 1,2-Dichlorobenzene	146	Compound Not Detected.					
	81 1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
	82 Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
	83 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
	84 Naphthalene	128	11.816	11.822	(1.219)	20727	1.83529	0.9793
	85 1,2,3-Trichlorobenzene	180	Compound Not Detected.					

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb54n.d
Lab Smp Id: VB54N
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12953

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: CW-TP-08-7-8
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	368321	26.22
35 1,4-Difluorobenze	682850	341425	1365700	805022	17.89
52 d5-Chlorobenzene	802138	401069	1604276	912001	13.70
76 d4-1,4-Dichlorobe	452585	226292	905170	418075	-7.63

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB54N
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12953

Client SDG: VB54
Fraction: VOA
Client Smp ID: CW-TP-08-7-8
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

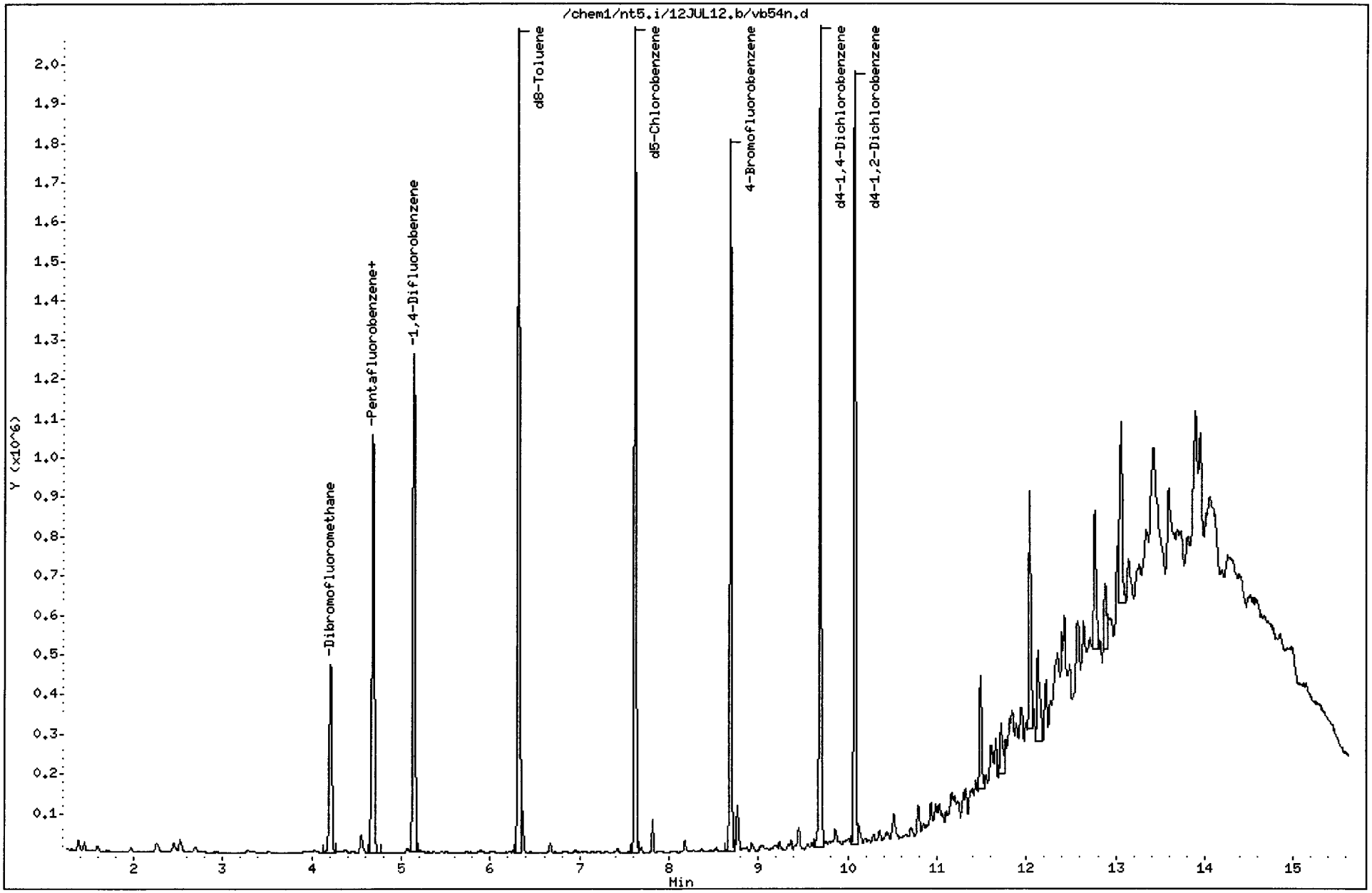
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	45.618	91.24	30-160
$ 32 d4-1,2-Dichloroeth	50.000	48.688	97.38	75-152
$ 42 d8-Toluene	50.000	49.209	98.42	82-115
$ 62 4-Bromofluorobenze	50.000	47.789	95.58	64-120
$ 79 d4-1,2-Dichloroben	50.000	52.895	105.79	80-120

Data File: /chem1/nt5.i/12JUL12.b/vb54n.d
Date : 12-JUL-2012 16:06
Client ID: CW-TP-08-7-8
Sample Info: VB54N,5,9.37,0

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



Data File: /chem1/nt5.i/12JUL12.b/vb54n.d

Date : 12-JUL-2012 16:06

Client ID: CW-TP-08-7-8

Instrument: nt5.i

Sample Info: VB54N,5,9.37,0

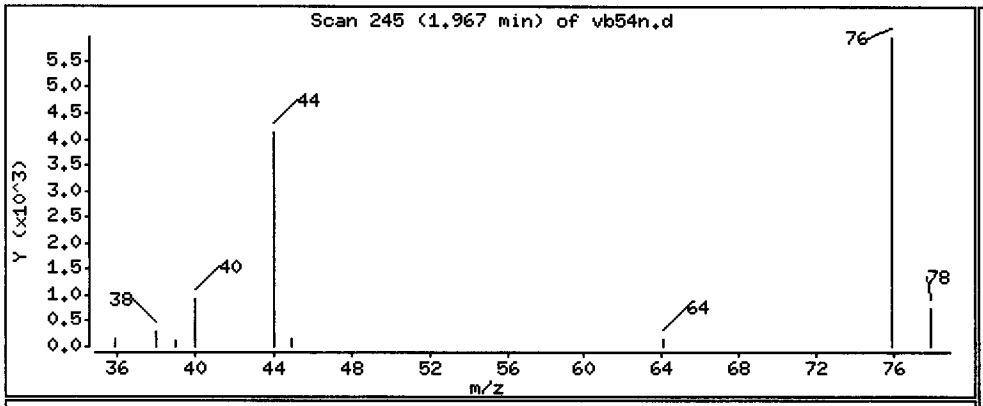
Operator: PB

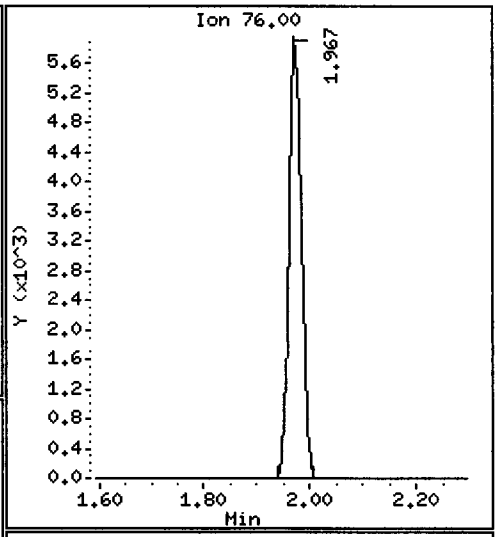
Column phase: RTXVMS

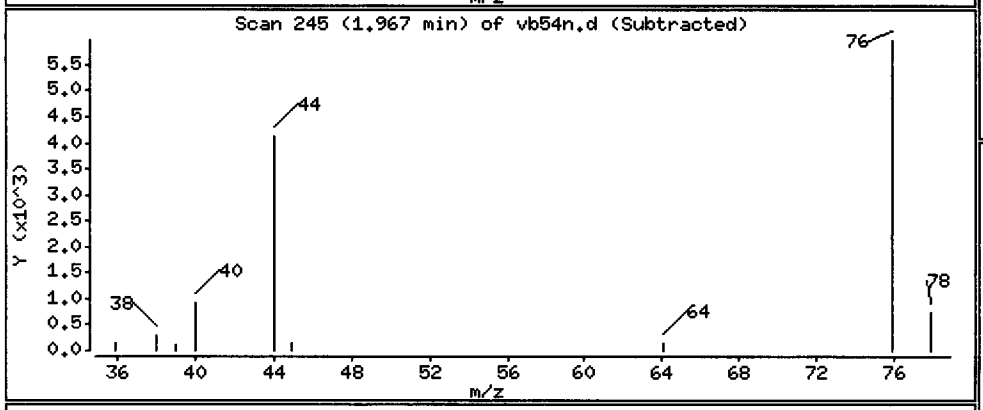
Column diameter: 0.18

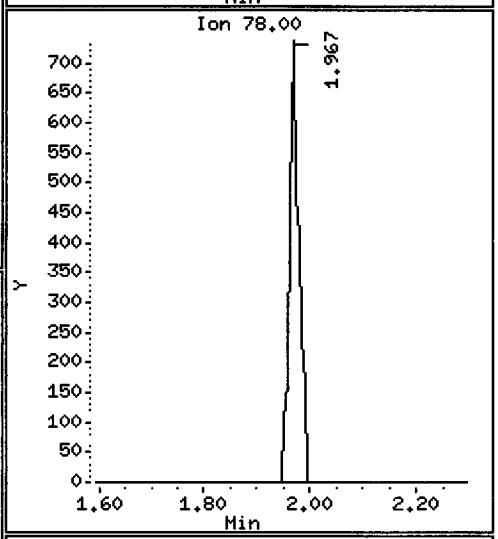
8 Carbon Disulfide

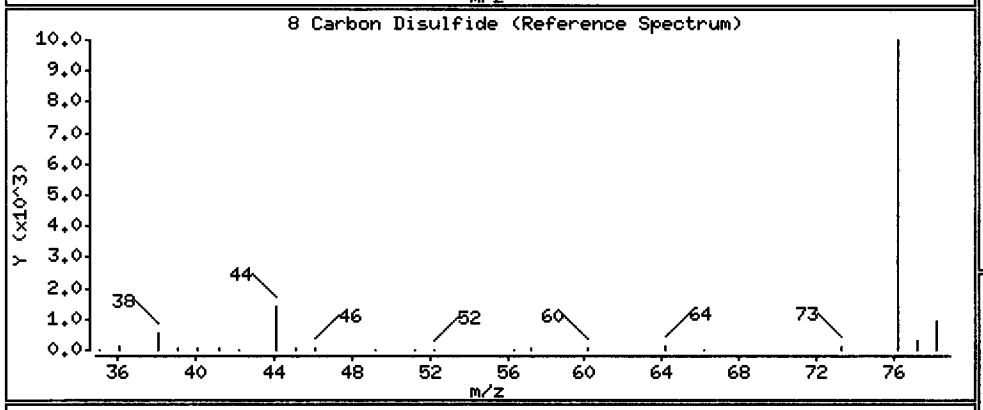
Concentration: 0.3280 ug/Kg

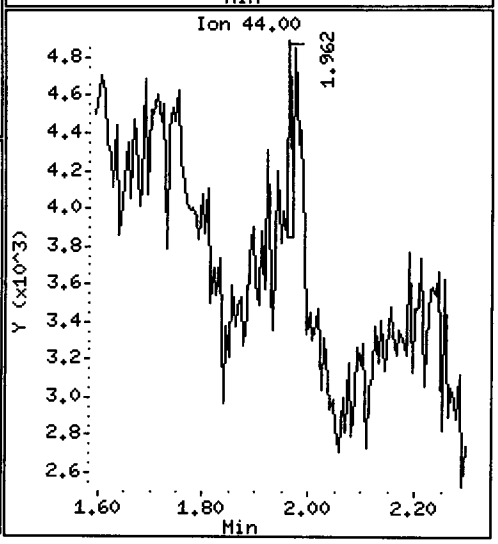


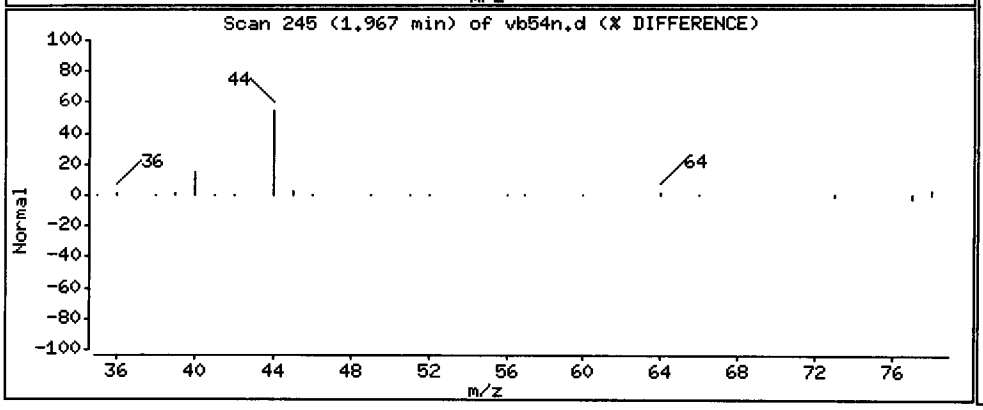












Data File: /chem1/nt5.i/12JUL12.b/vb54n.d

Date : 12-JUL-2012 16:06

Client ID: CW-TP-08-7-8

Instrument: nt5.i

Sample Info: VB54N,5,9.37,0

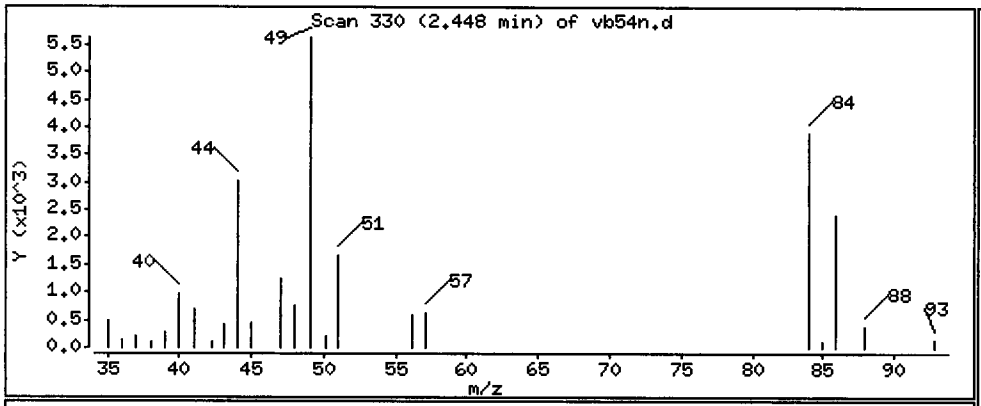
Operator: PB

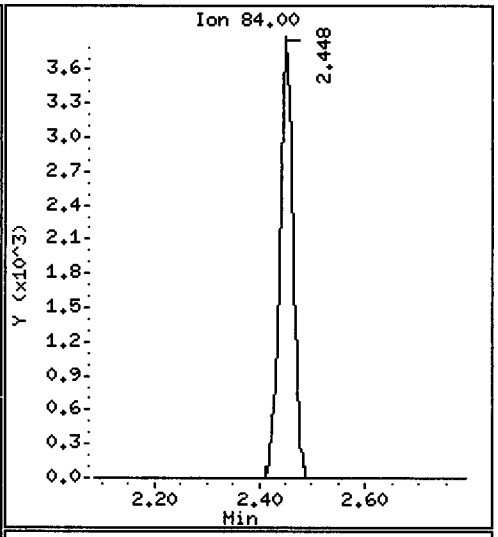
Column phase: RTXVMS

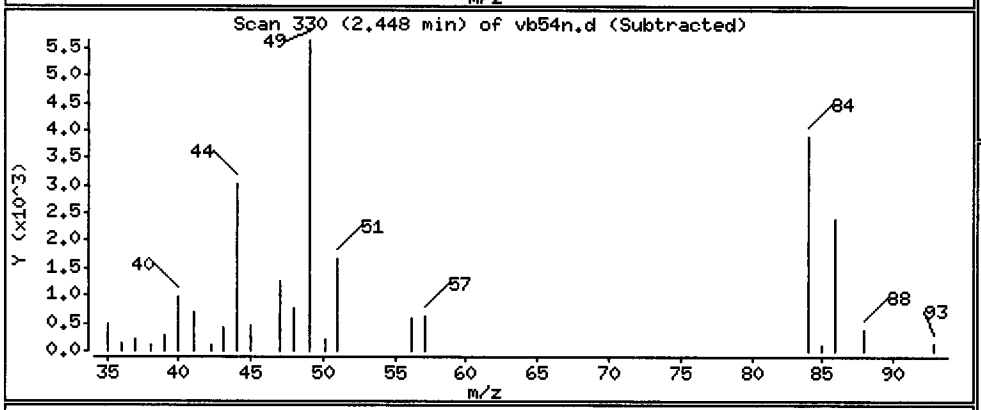
Column diameter: 0.18

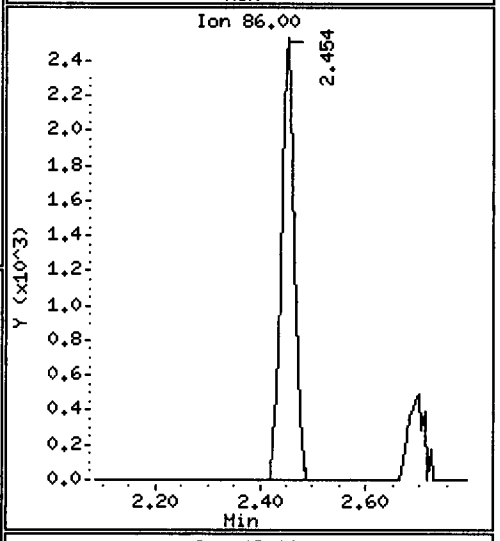
13 Methylene Chloride

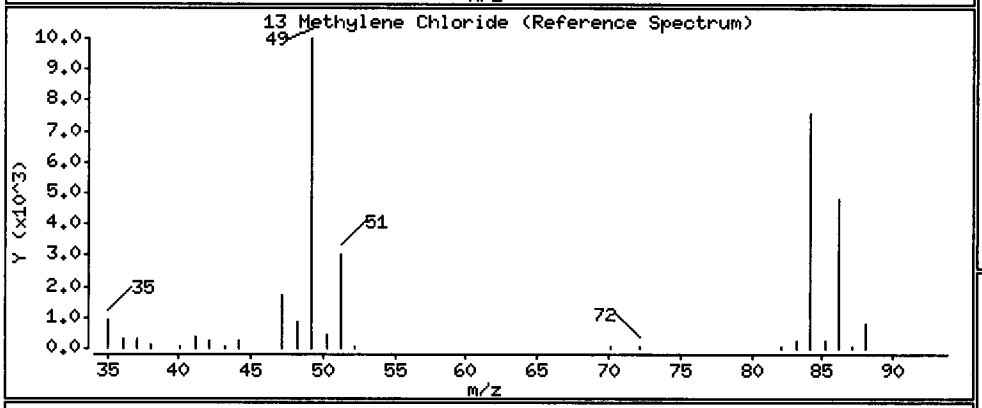
Concentration: 0.6118 ug/Kg

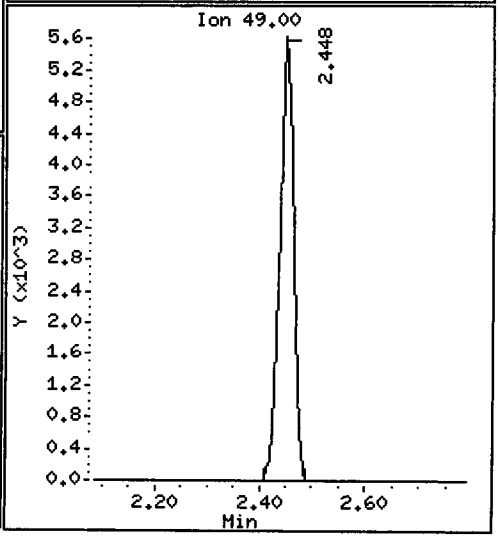


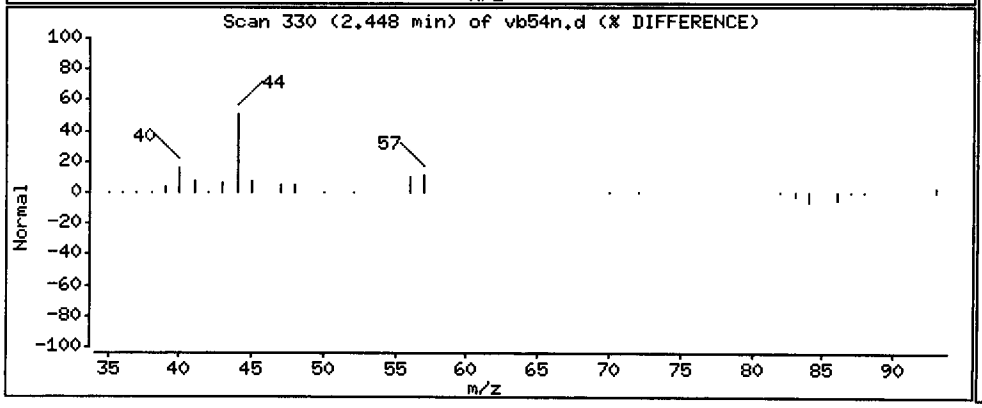












Data File: /chem1/nt5.i/12JUL12.b/vb54n.d

Date : 12-JUL-2012 16:06

Client ID: CW-TP-08-7-8

Instrument: nt5.i

Sample Info: VB54N,5,9.37,0

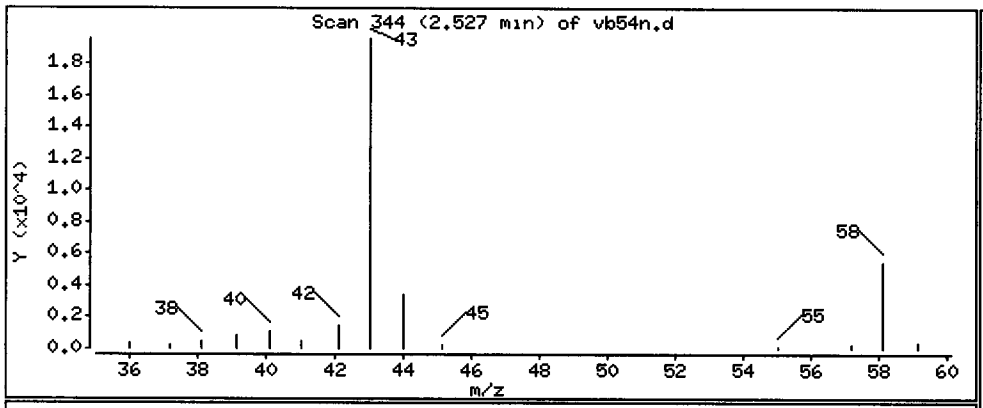
Operator: PB

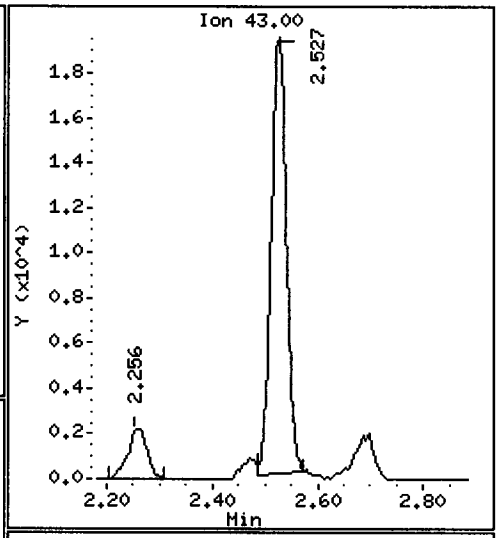
Column phase: RTXVMS

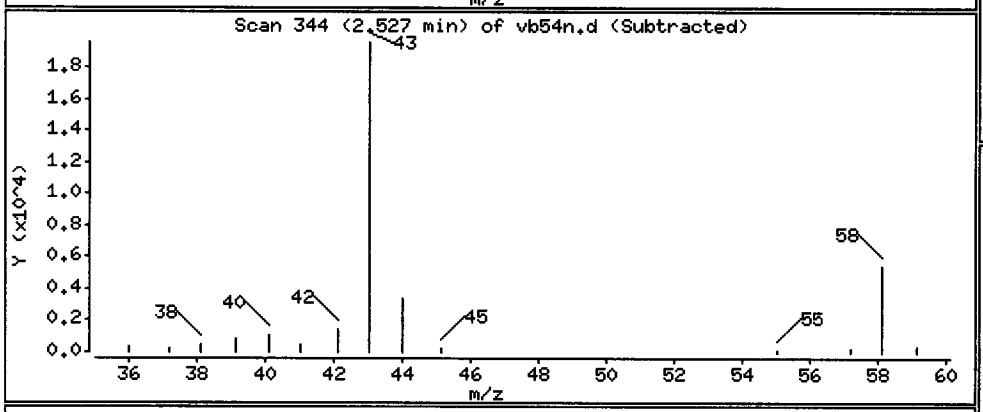
Column diameter: 0.18

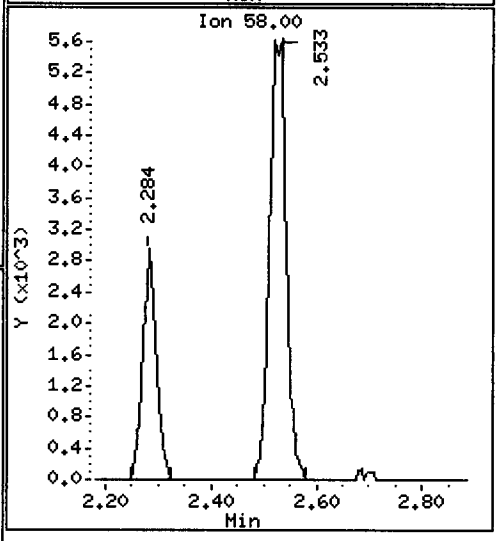
14 Acetone

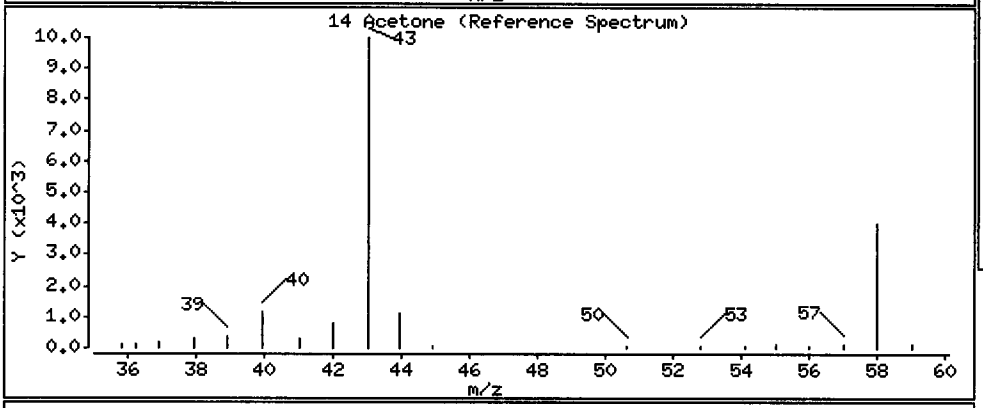
Concentration: 11.142 ug/Kg

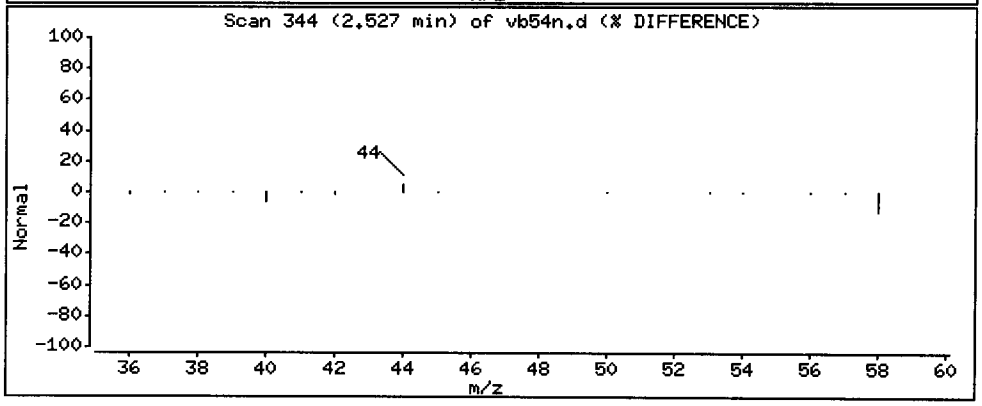












Data File: /chem1/nt5.i/12JUL12.b/vb54n.d

Date : 12-JUL-2012 16:06

Client ID: CW-TP-08-7-8

Instrument: nt5.i

Sample Info: VB54N,5,9.37,0

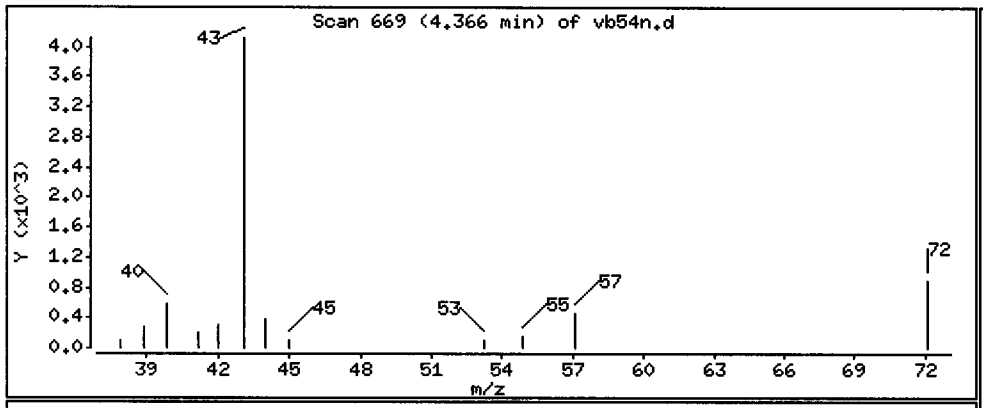
Operator: PB

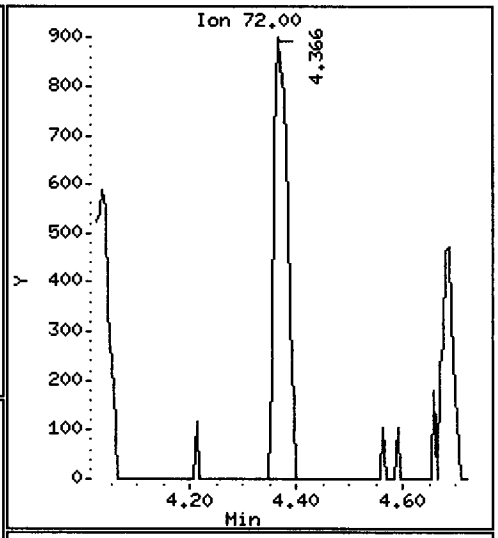
Column phase: RTXVMS

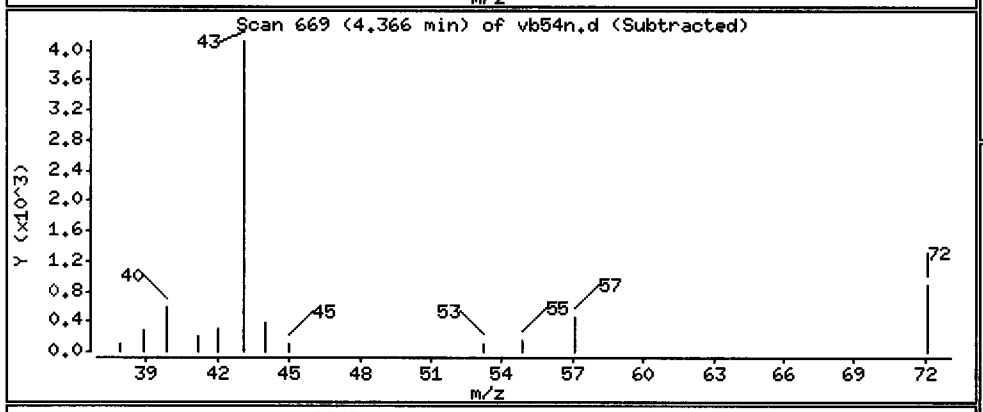
Column diameter: 0.18

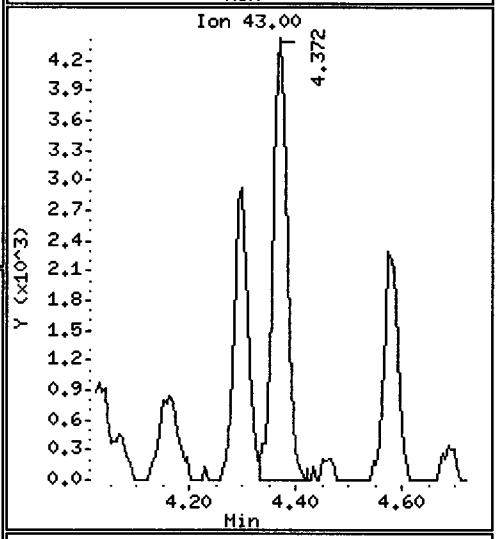
29 2-Butanone

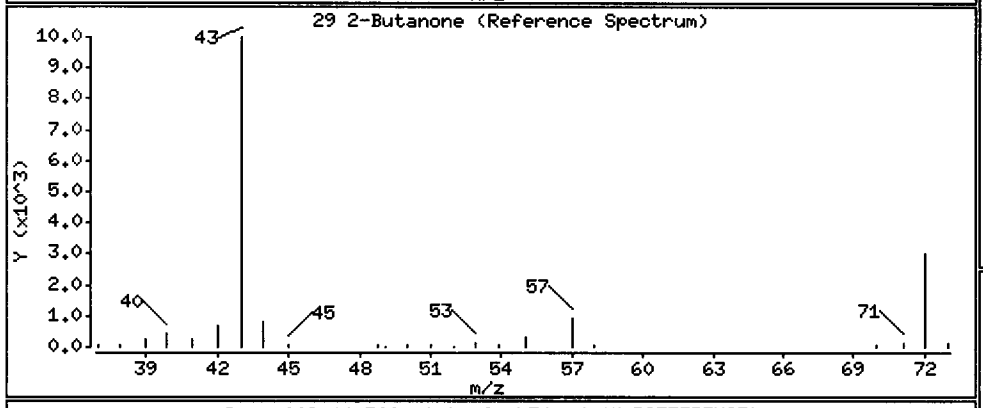
Concentration: 1.434 ug/Kg

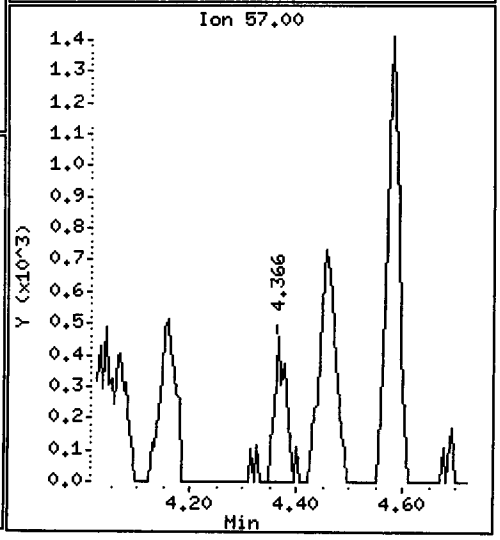


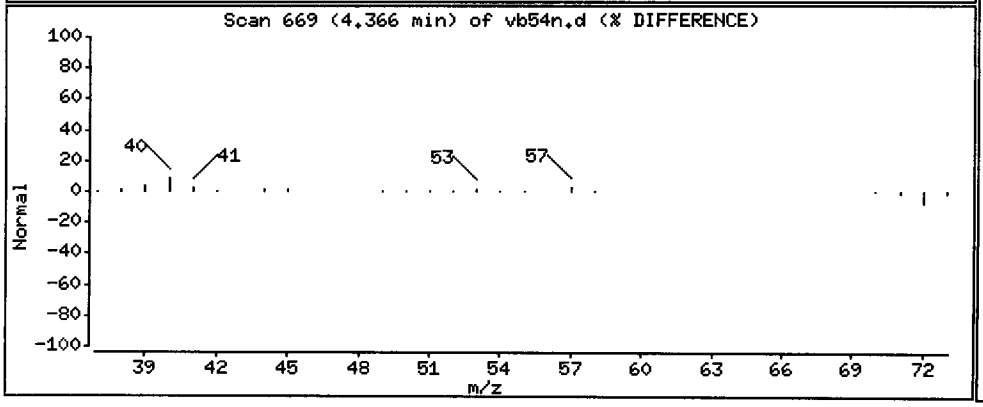












Data File: /chem1/nt5.i/12JUL12.b/vb54n.d

Date : 12-JUL-2012 16:06

Client ID: CW-TP-08-7-8

Instrument: nt5.i

Sample Info: VB54N,5,9.37,0

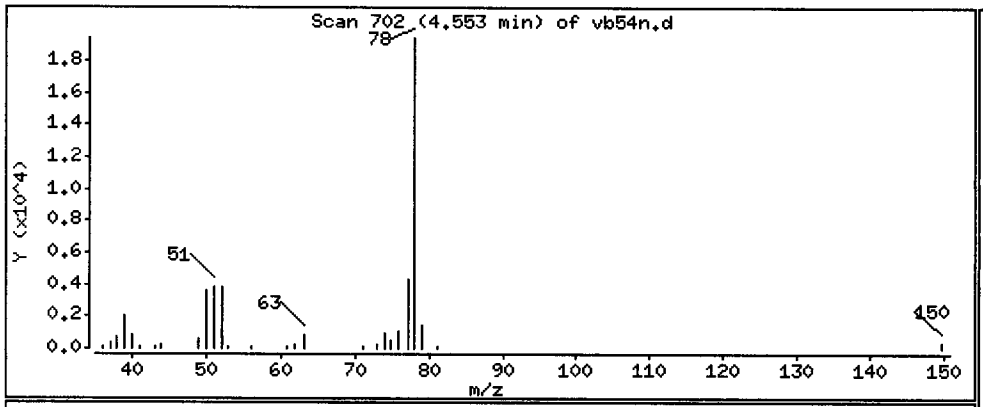
Operator: PB

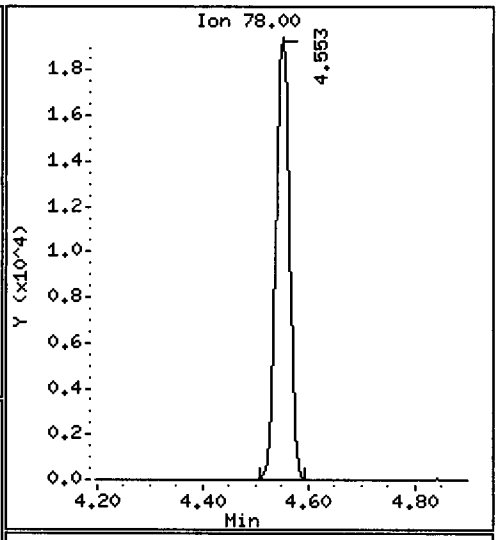
Column phase: RTXVMS

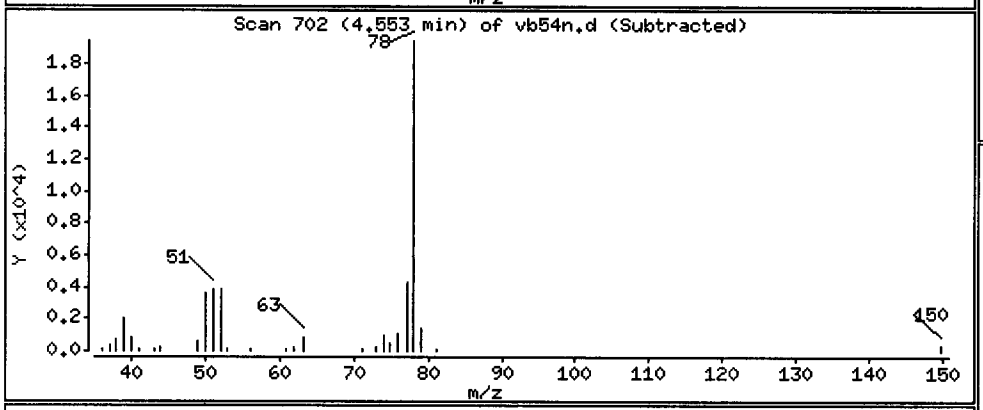
Column diameter: 0.18

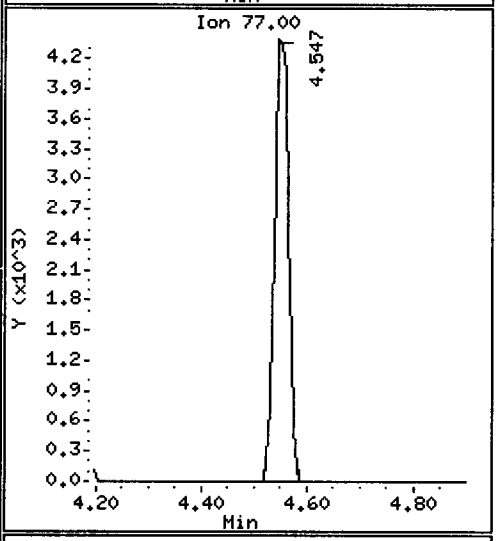
30 Benzene

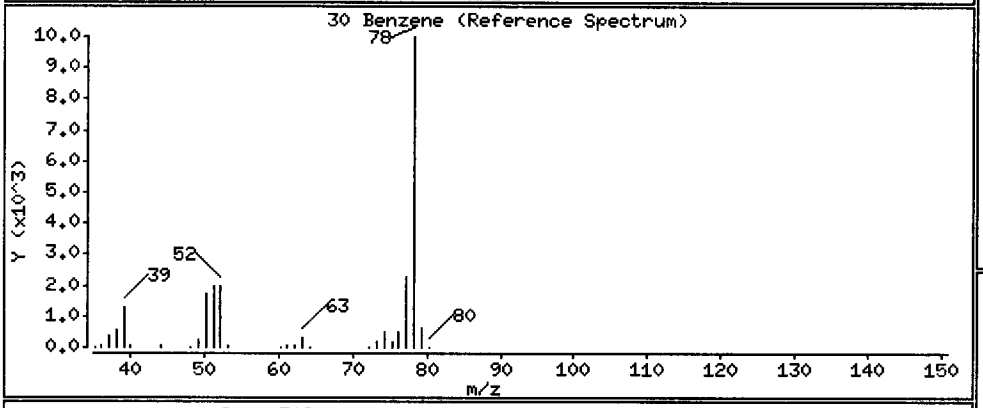
Concentration: 0.9126 ug/Kg

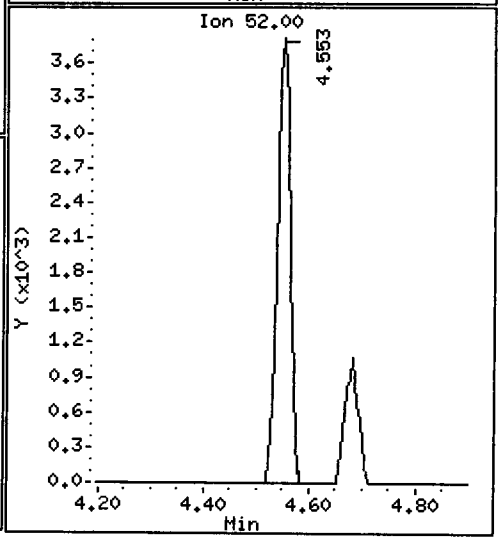


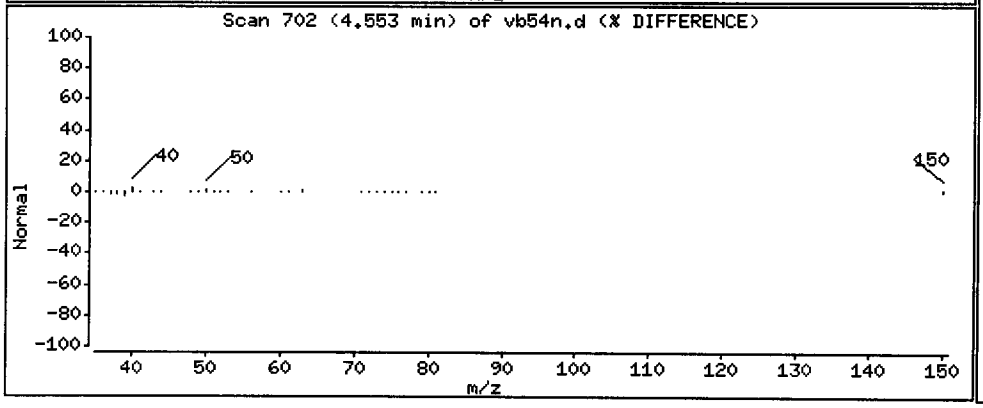












Data File: /chem1/nt5.i/12JUL12.b/vb54n.d

Date : 12-JUL-2012 16:06

Client ID: CW-TP-08-7-8

Instrument: nt5.i

Sample Info: VB54N,5,9.37,0

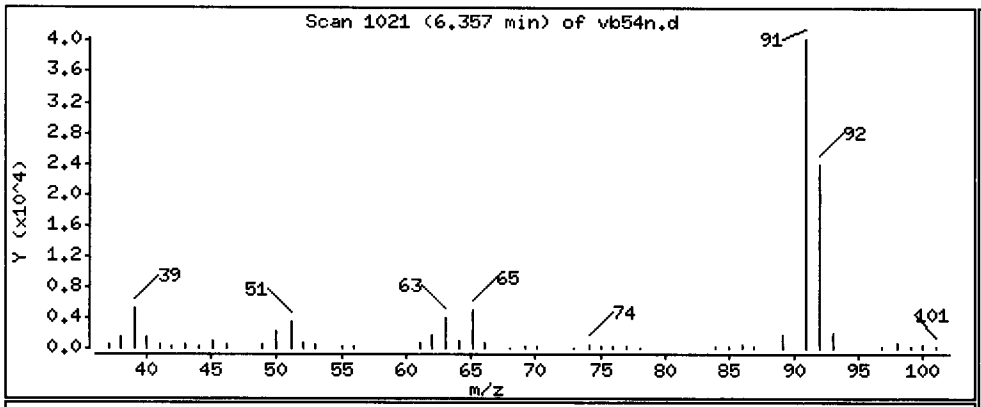
Operator: PB

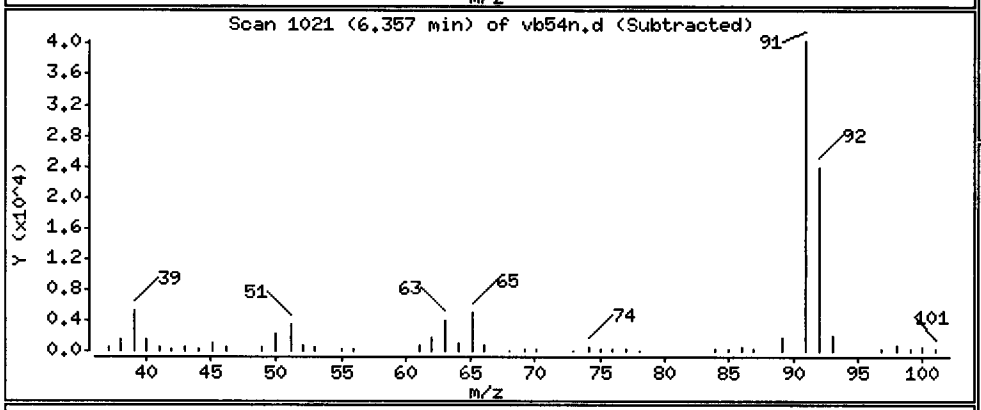
Column phase: RTXVMS

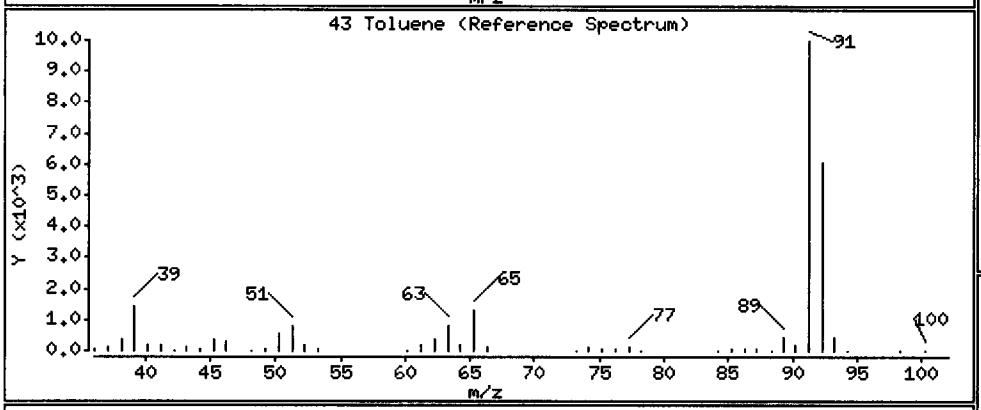
Column diameter: 0.18

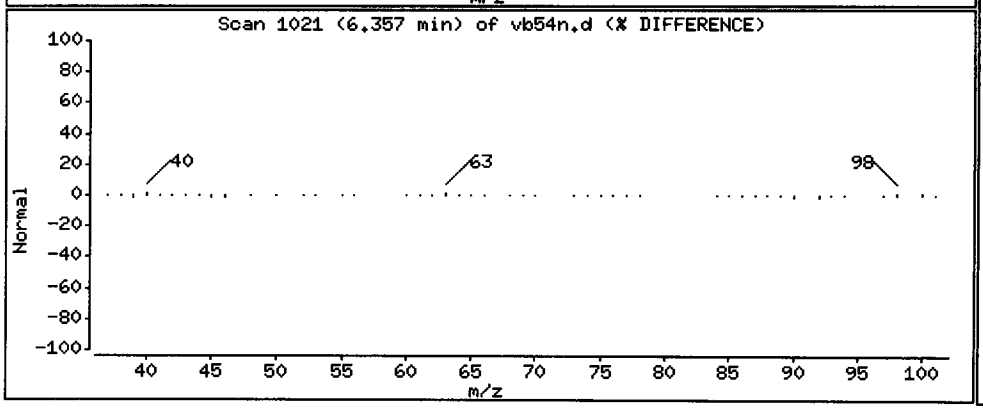
43 Toluene

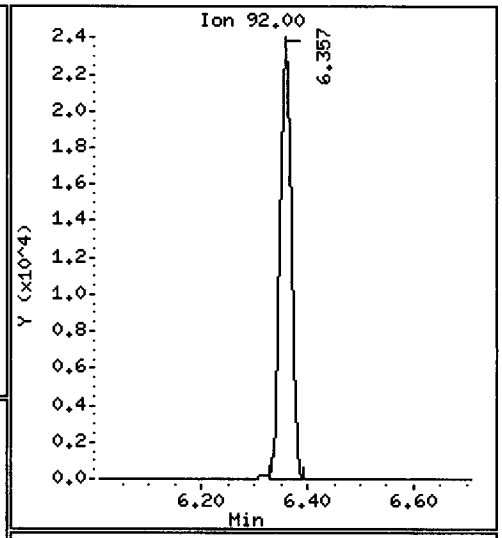
Concentration: 1.377 ug/Kg

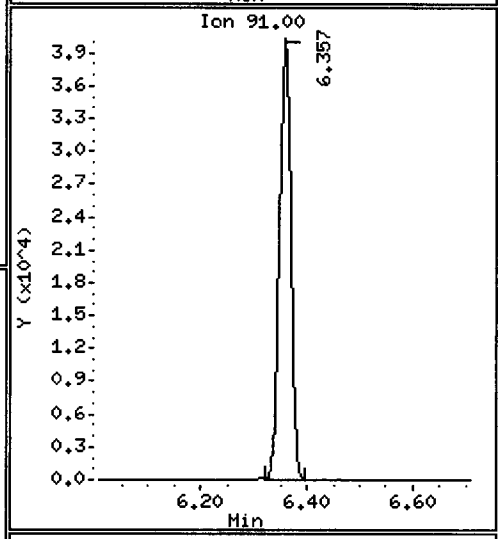


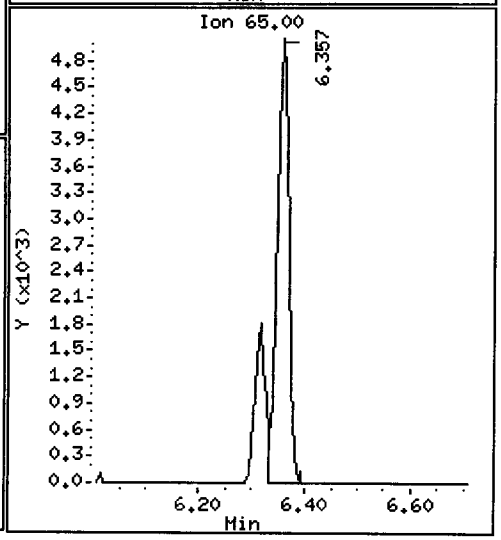












Data File: /chem1/nt5.i/12JUL12.b/vb54n.d

Date : 12-JUL-2012 16:06

Client ID: CW-TP-08-7-8

Instrument: nt5.i

Sample Info: VB54N,5,9.37,0

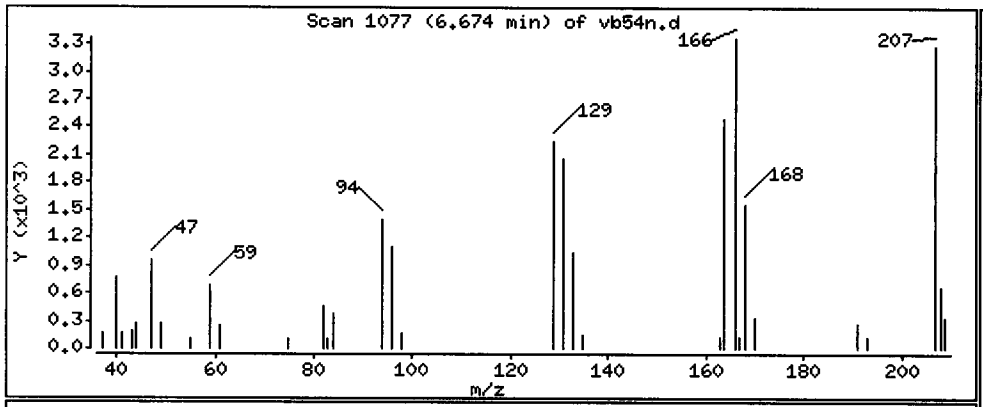
Operator: PB

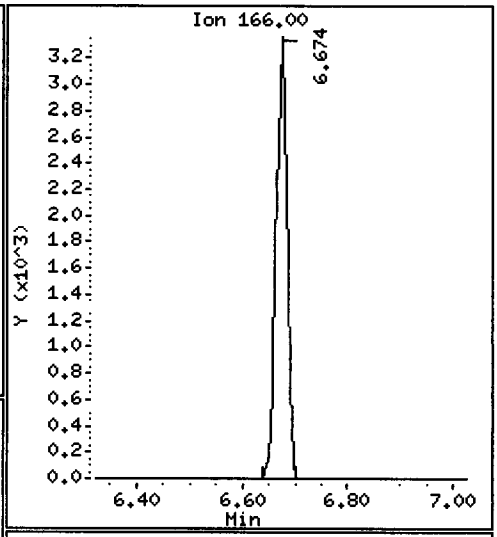
Column phase: RTXVMS

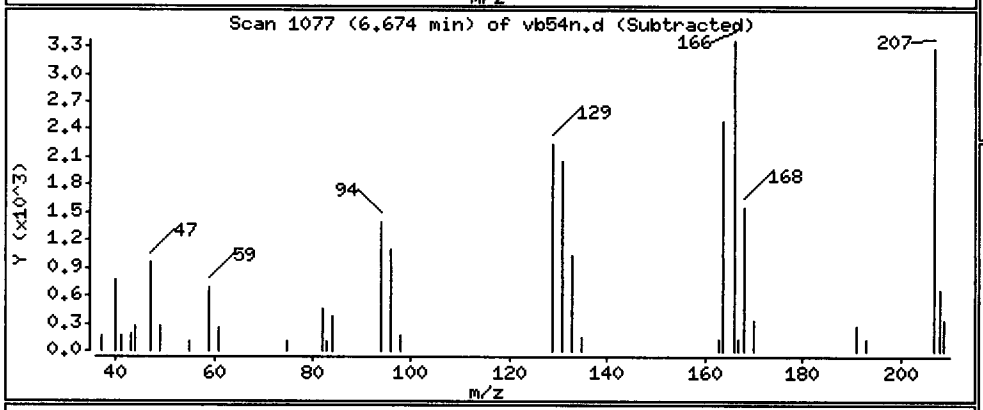
Column diameter: 0.18

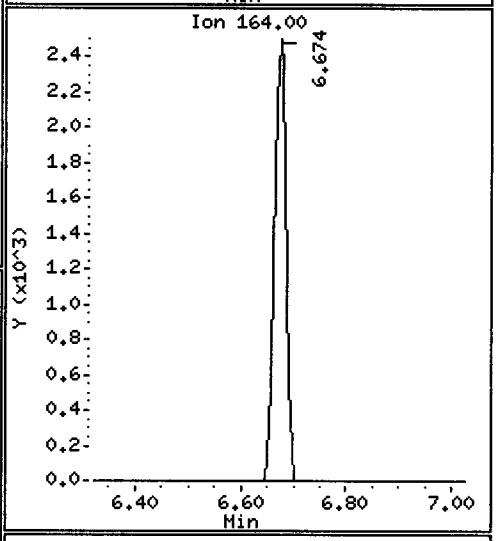
44 Tetrachloroethene

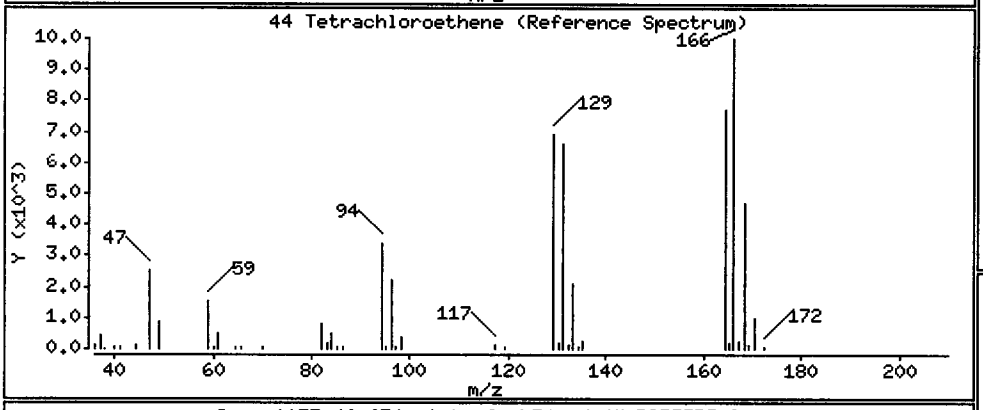
Concentration: 0.5147 ug/Kg

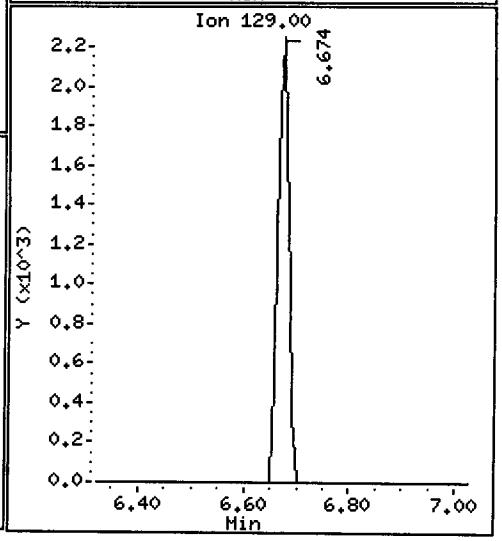


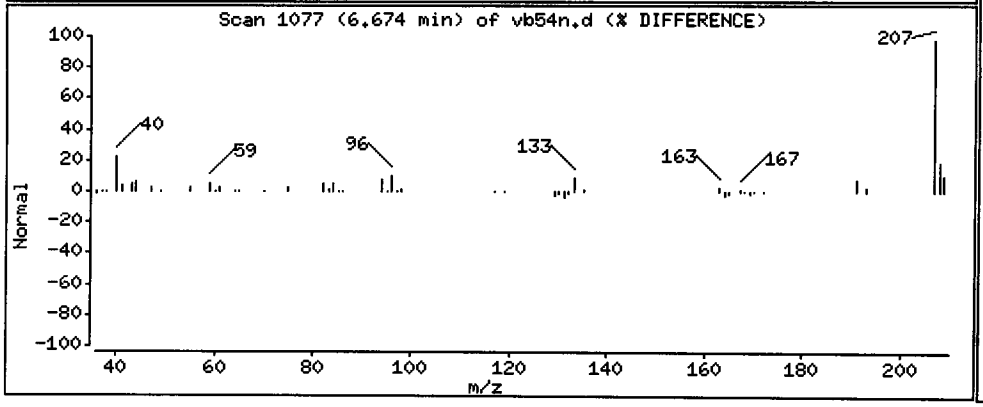












Data File: /chem1/nt5.i/12JUL12.b/vb54n.d

Date : 12-JUL-2012 16:06

Client ID: CW-TP-08-7-8

Instrument: nt5.i

Sample Info: VB54N,5,9.37,0

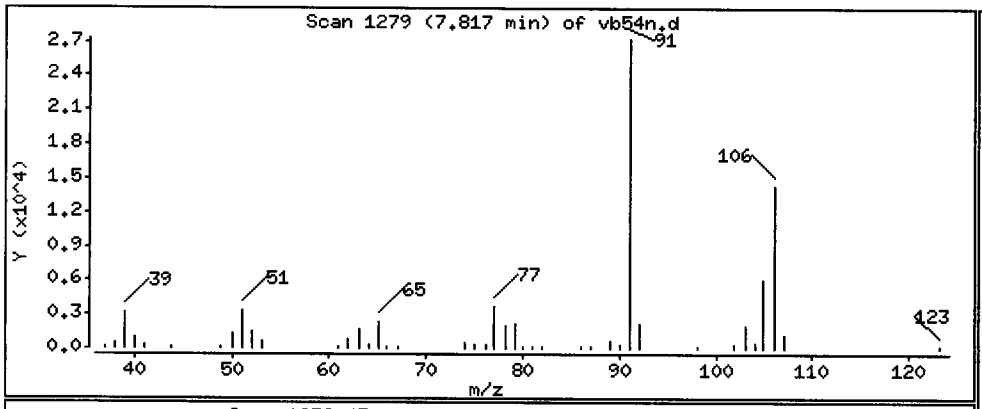
Operator: PB

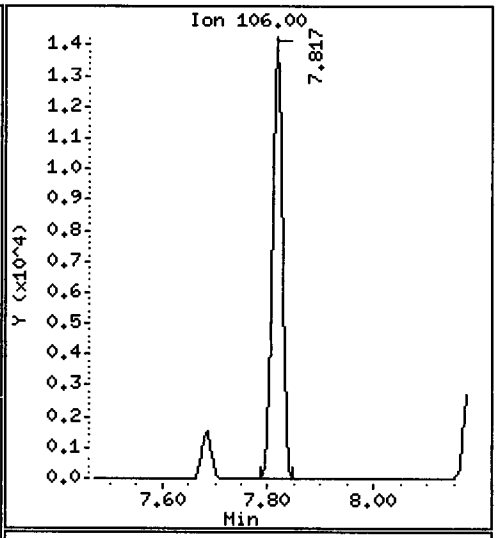
Column phase: RTXVMS

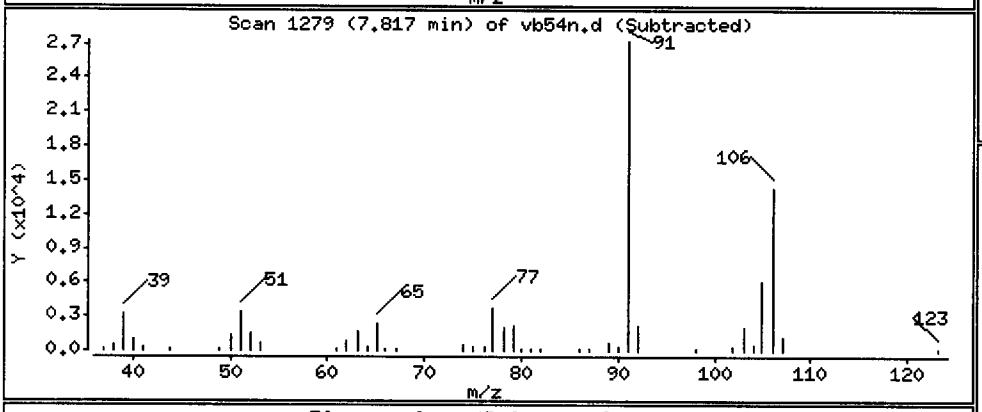
Column diameter: 0.18

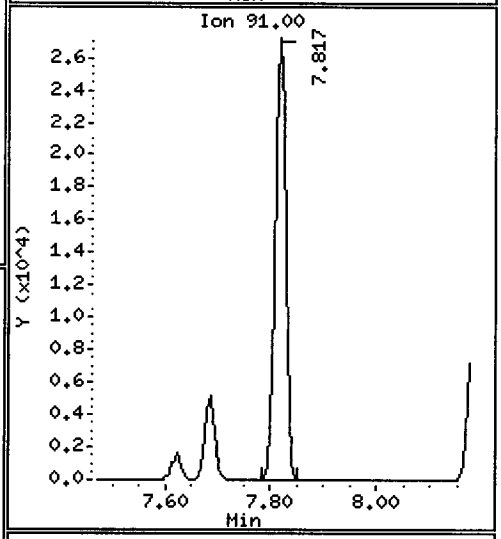
56 m,p-xylene

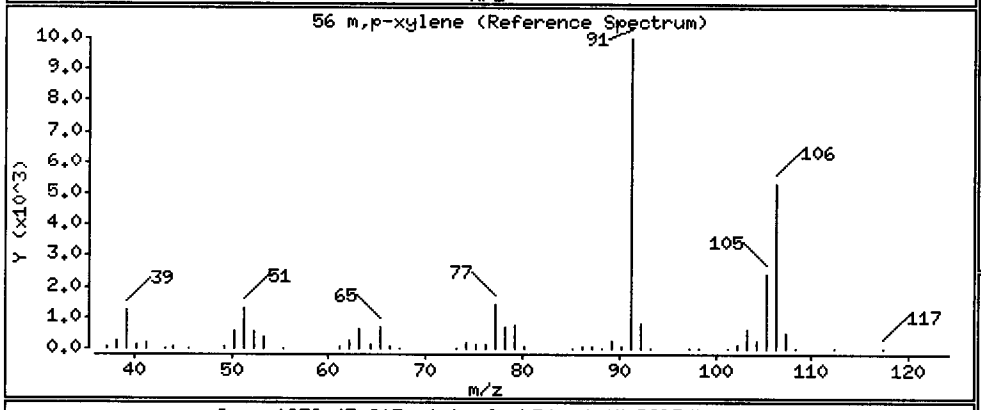
Concentration: 1.121 ug/Kg

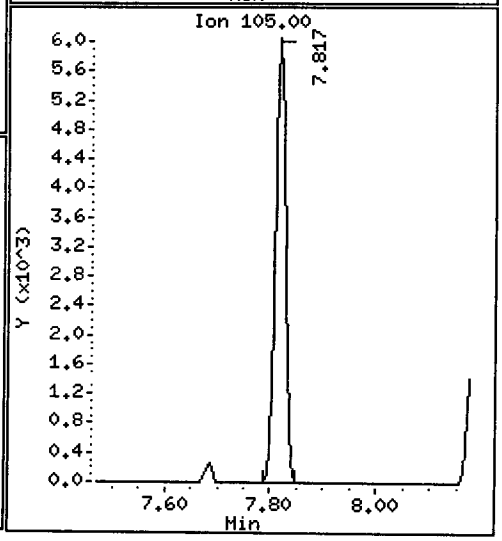


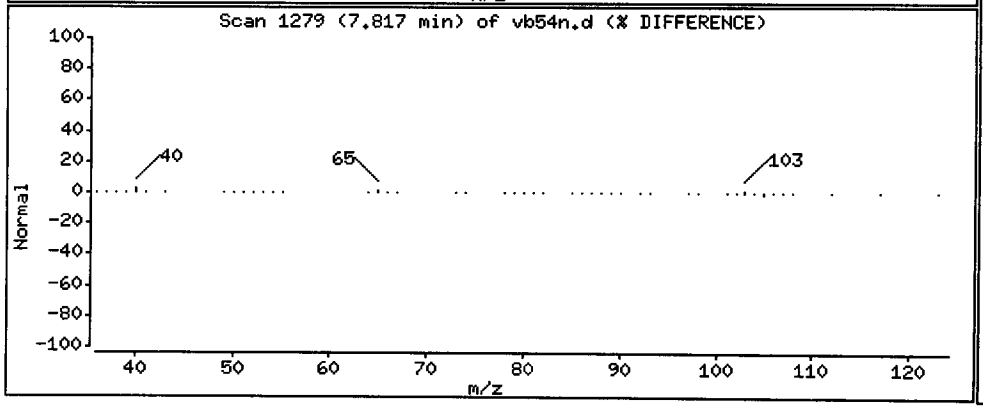












Data File: /chem1/nt5.i/12JUL12.b/vb54n.d

Date : 12-JUL-2012 16:06

Client ID: CW-TP-08-7-8

Instrument: nt5.i

Sample Info: VB54N,5,9.37,0

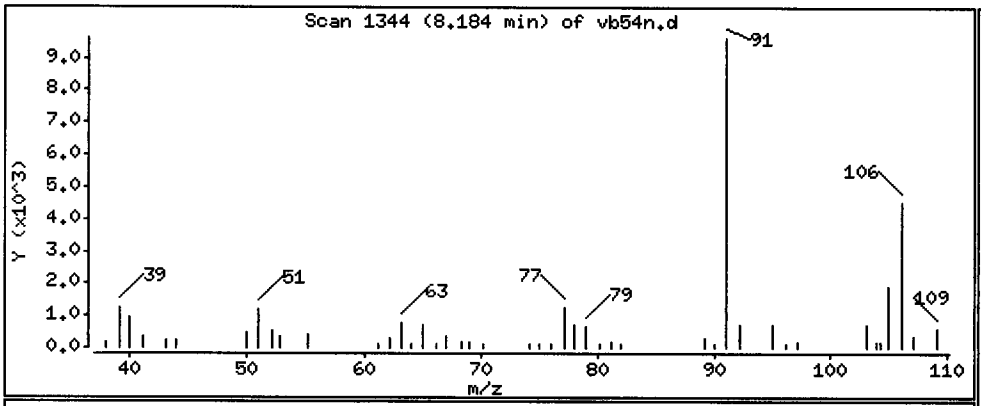
Operator: PB

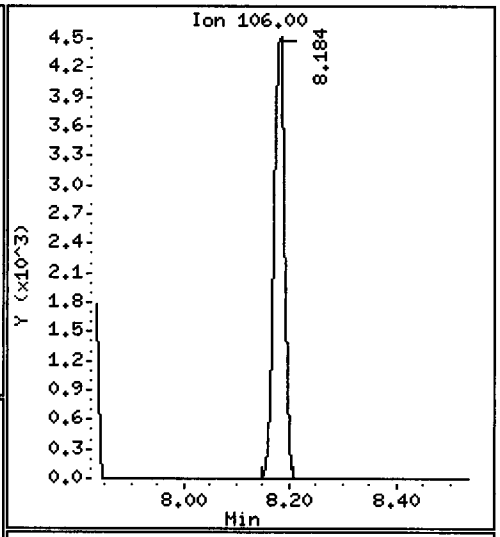
Column phase: RTXVMS

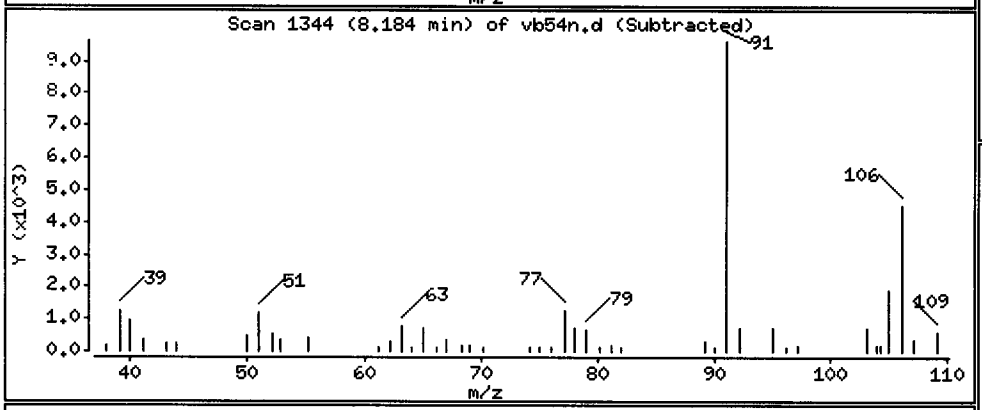
Column diameter: 0.18

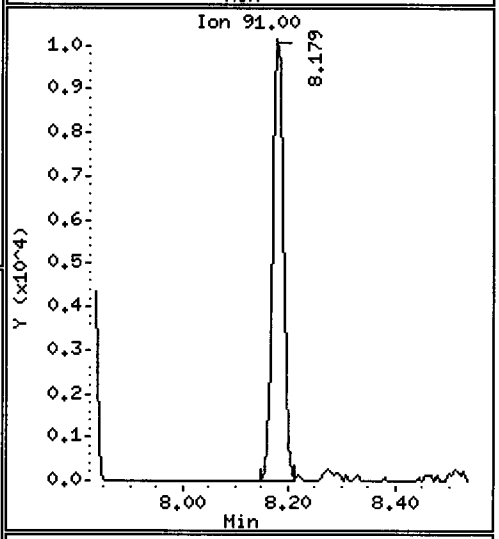
57 o-Xylene

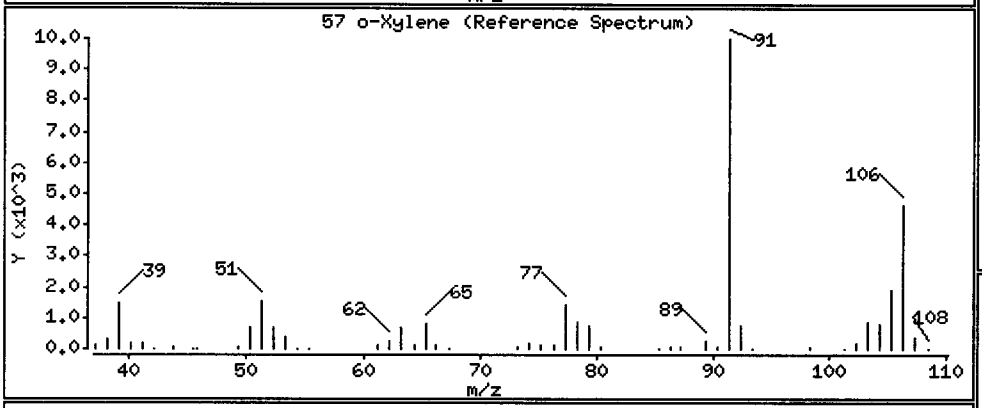
Concentration: 0.3920 ug/Kg

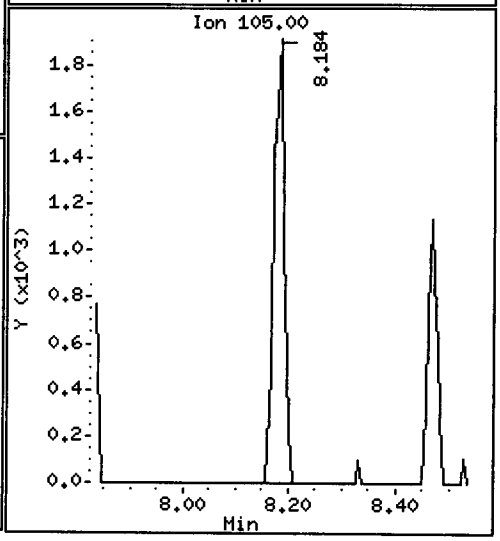


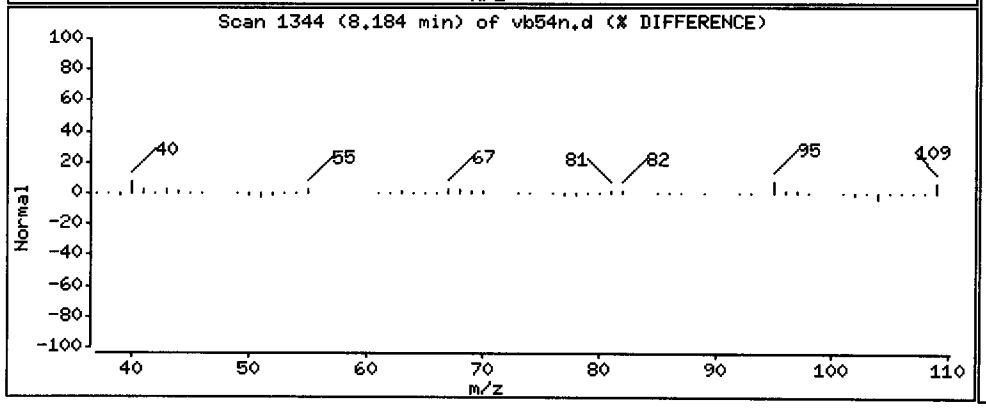












Data File: /chem1/nt5.i/12JUL12.b/vb54n.d

Date : 12-JUL-2012 16:06

Client ID: CW-TP-08-7-8

Instrument: nt5.i

Sample Info: VB54N,5,9.37,0

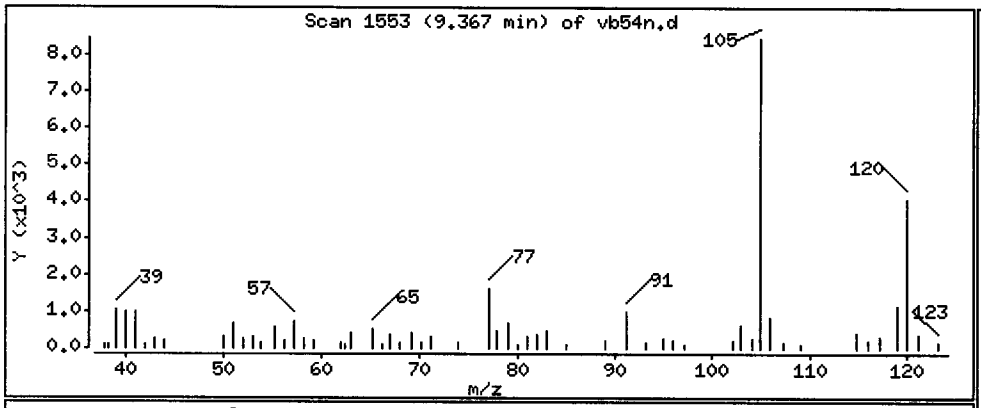
Operator: PB

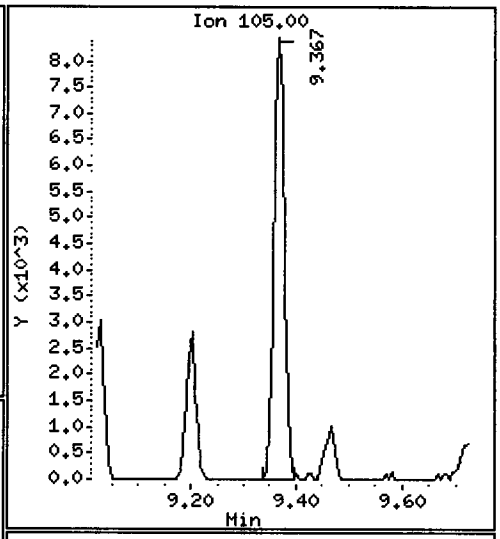
Column phase: RTXVMS

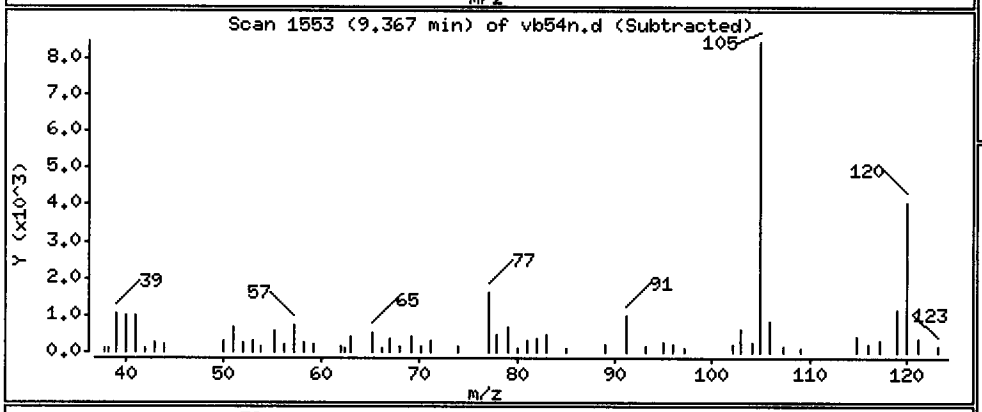
Column diameter: 0.18

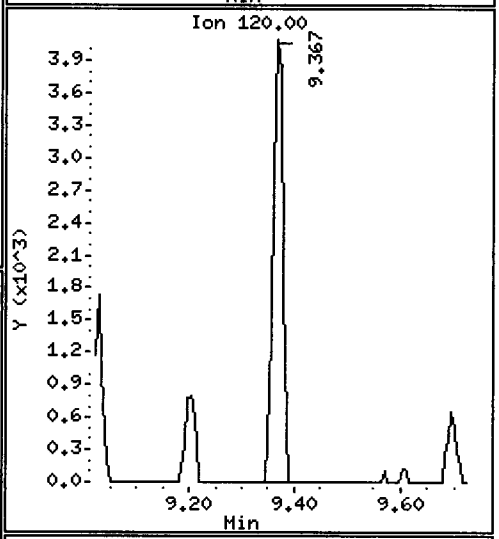
72 1,2,4-Trimethylbenzene

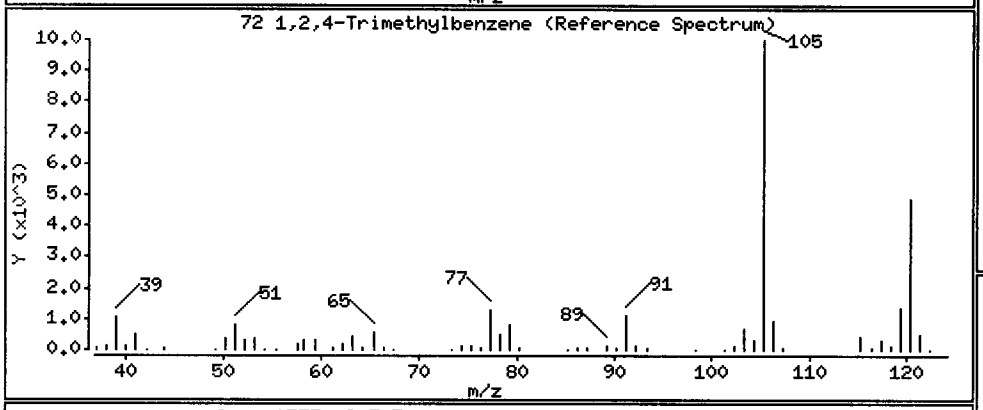
Concentration: 0.4121 ug/Kg

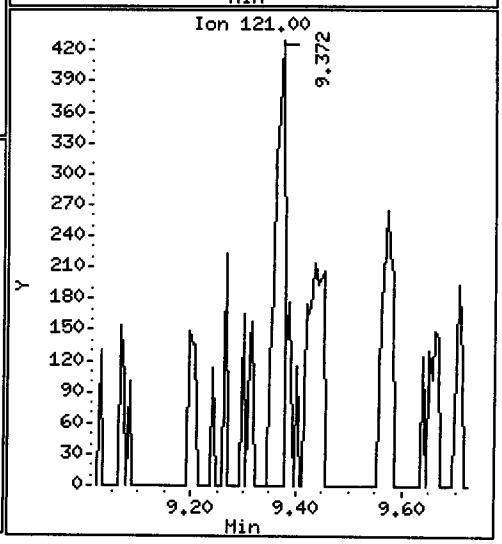


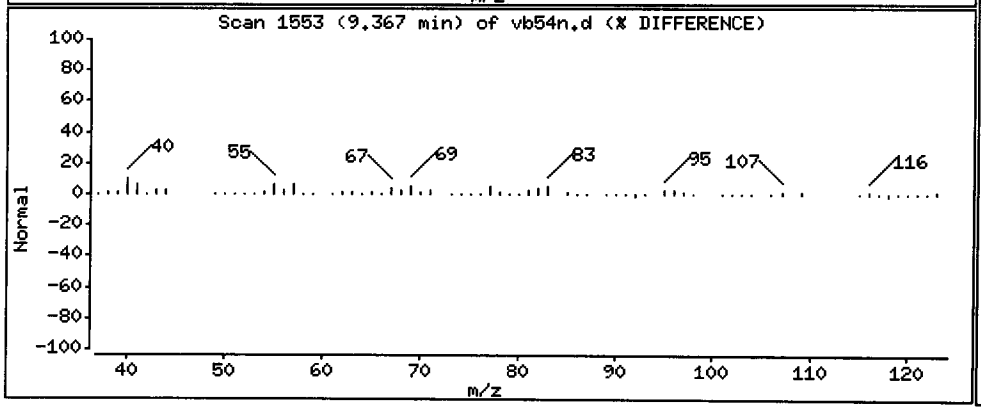












Data File: /chem1/nt5.i/12JUL12.b/vb54n.d

Date : 12-JUL-2012 16:06

Client ID: CW-TP-08-7-8

Instrument: nt5.i

Sample Info: VB54N,5,9.37,0

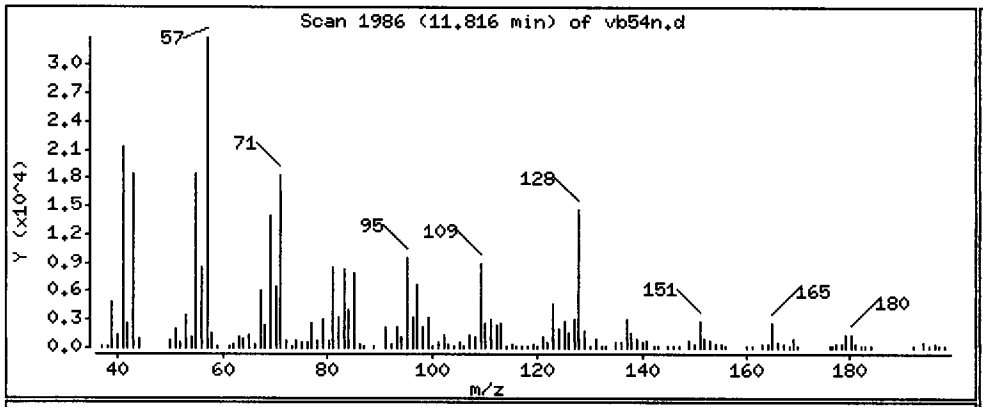
Operator: PB

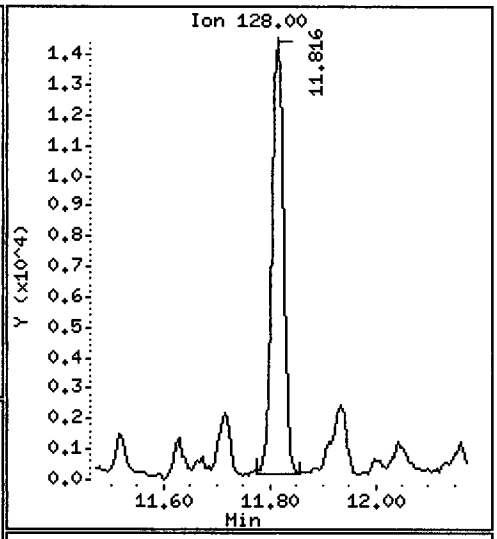
Column phase: RTXVMS

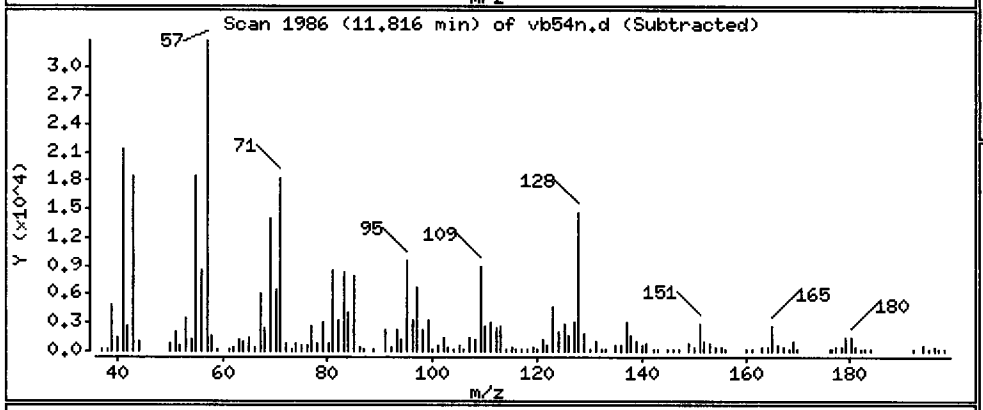
Column diameter: 0.18

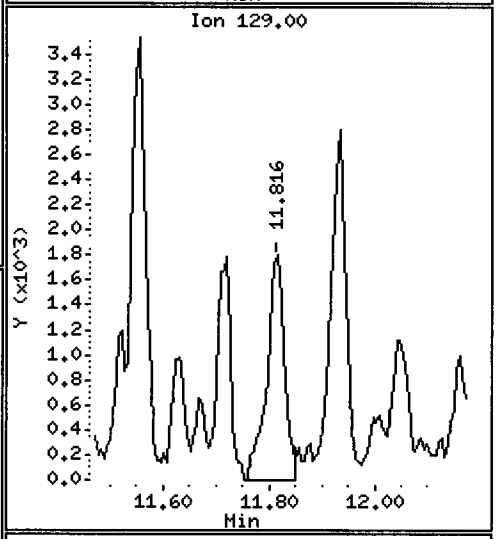
84 Naphthalene

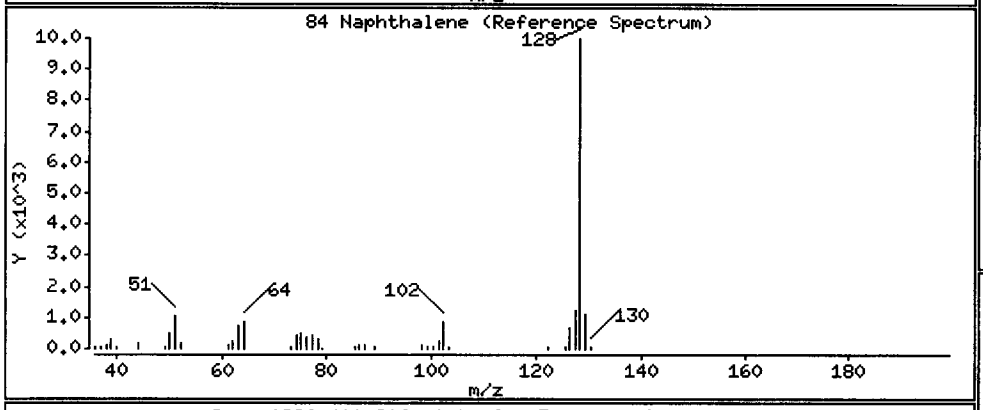
Concentration: 0.9793 ug/Kg

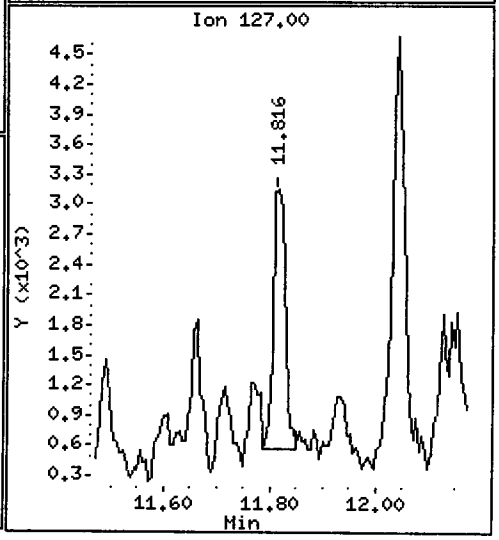


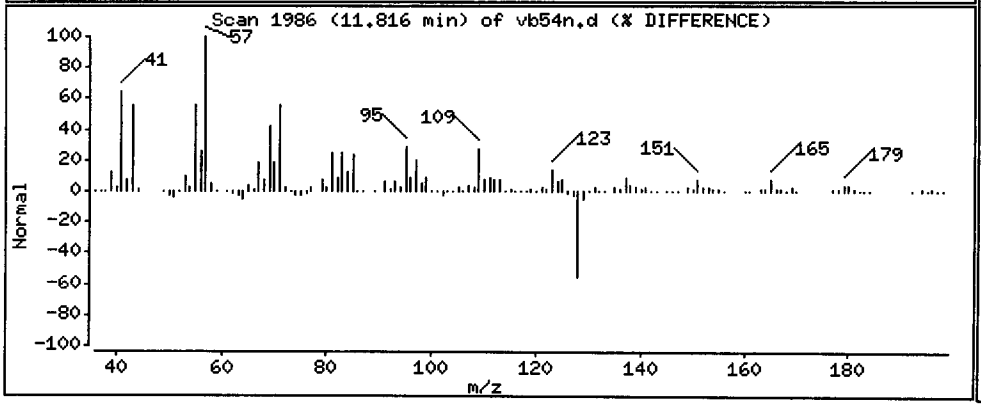












CO-ELUTION SUMMARY FOR FILE - vb54n.d

Lab ID: VB54N, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/vb54t.d
Lab Smp Id: VB54T Client Smp ID: CW-TP-54-8-9
Inj Date : 12-JUL-2012 16:52
Operator : PB Inst ID: nt5.i
Smp Info : VB54T,5,6.03,0
Misc Info : 12-12959
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	6.03000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	1.968	1.945	(0.420)	48457	2.89149	2.398
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.443	2.437	(0.521)	6832	1.14080	0.9459
14 Acetone	43	2.516	2.533	(0.537)	63919	34.4857	28.595
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.208	4.202	(0.897)	270372	44.9190	37.246
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	4.366	4.372	(0.931)	3389	5.85766	4.857(Q)
	30 Benzene	78	4.547	4.547	(0.885)	33953	1.71844	1.425
*	31 Pentafluorobenzene	168	4.689	4.683	(1.000)	380275	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	342310	47.6271	39.492
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.136	5.135	(1.000)	821158	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.318	6.318	(1.230)	1103051	49.2047	40.800
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	6.674	6.674	(0.876)	2829	0.55974	0.4641
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.619	7.624	(1.000)	948771	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	Compound Not Detected.					
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.141)	541378	51.1405	42.405
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	Compound Not Detected.					
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	66 2-Chloro Toluene	91	Compound Not Detected.					
	67 1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
	68 1,2,3-Trichloropropane	110	Compound Not Detected.					
	69 Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
	70 4-Chloro Toluene	91	Compound Not Detected.					
	71 T-Butyl Benzene	119	Compound Not Detected.					
	72 1,2,4-Trimethylbenzene	105	Compound Not Detected.					
	73 S-Butyl Benzene	105	Compound Not Detected.					
	74 4-Isopropyl Toluene	119	Compound Not Detected.					
	75 1,3-Dichlorobenzene	146	Compound Not Detected.					
*	76 d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	514845	50.0000	
	77 1,4-Dichlorobenzene	146	Compound Not Detected.					
	78 N-Butyl Benzene	91	Compound Not Detected.					
$	79 d4-1,2-Dichlorobenzene	152	10.080	10.085	(1.040)	491824	52.0398	43.151
	80 1,2-Dichlorobenzene	146	Compound Not Detected.					
	81 1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
	82 Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
	83 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
	84 Naphthalene	128	Compound Not Detected.					
	85 1,2,3-Trichlorobenzene	180	Compound Not Detected.					

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb54t.d
Lab Smp Id: VB54T
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12959

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: CW-TP-54-8-9
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	380275	30.32
35 1,4-Difluorobenze	682850	341425	1365700	821158	20.25
52 d5-Chlorobenzene	802138	401069	1604276	948771	18.28
76 d4-1,4-Dichlorobe	452585	226292	905170	514845	13.76

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.13
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	-0.07
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB54T
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12959

Client SDG: VB54
Fraction: VOA
Client Smp ID: CW-TP-54-8-9
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	44.919	89.84	30-160
$ 32 d4-1,2-Dichloroeth	50.000	47.627	95.25	75-152
$ 42 d8-Toluene	50.000	49.205	98.41	82-115
$ 62 4-Bromofluorobenze	50.000	51.141	102.28	64-120
$ 79 d4-1,2-Dichloroben	50.000	52.040	104.08	80-120

Data File: /chem1/nt5.i/12JUL12.b/vb54t.d

Date : 12-JUL-2012 16:52

Client ID: CW-TP-54-8-9

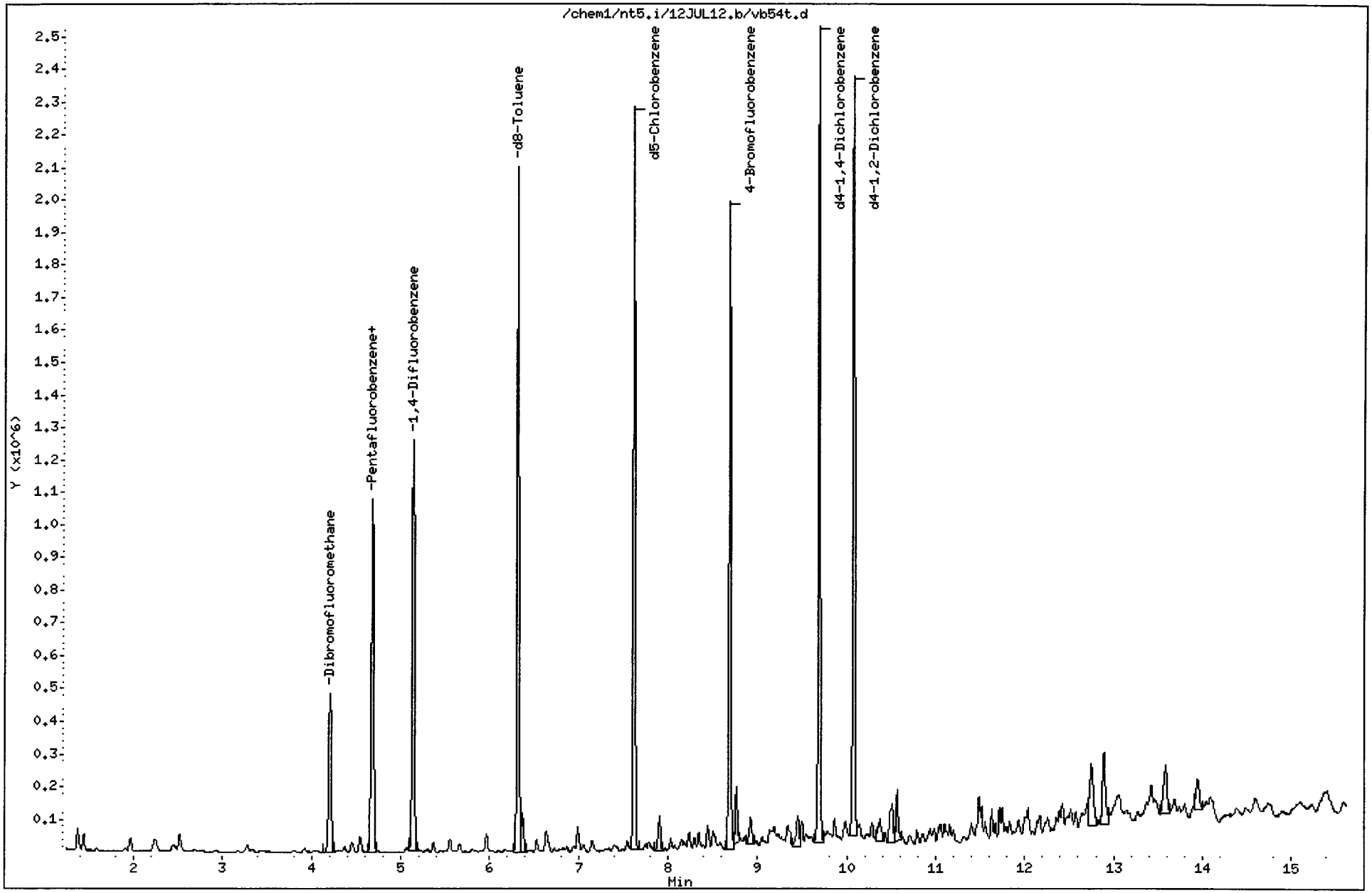
Sample Info: VB54T,5,6.03,0

Column phase: RTXVMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18



Data File: /chem1/nt5.i/12JUL12.b/vb54t.d

Date : 12-JUL-2012 16:52

Client ID: CW-TP-54-8-9

Instrument: nt5.i

Sample Info: VB54T,5,6.03,0

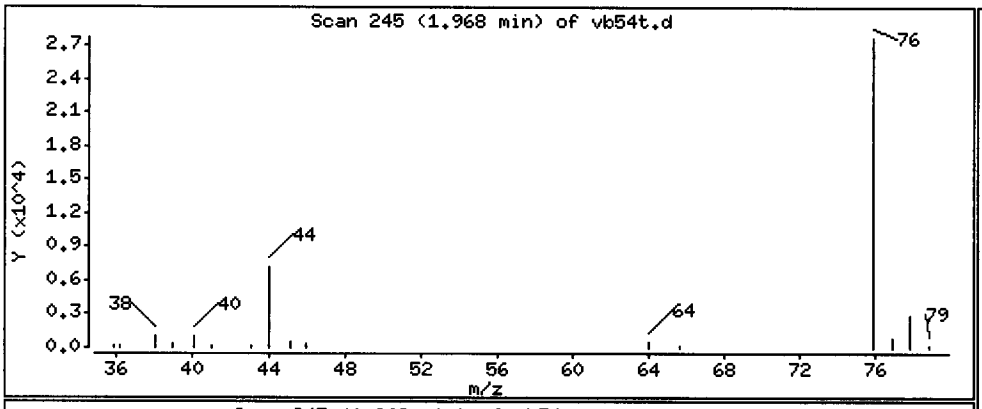
Operator: PB

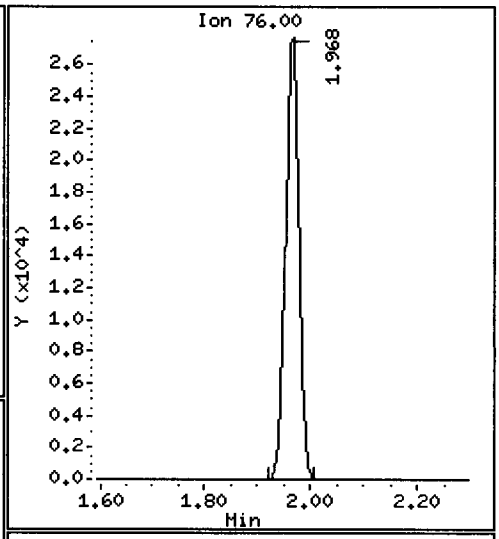
Column phase: RTXVMS

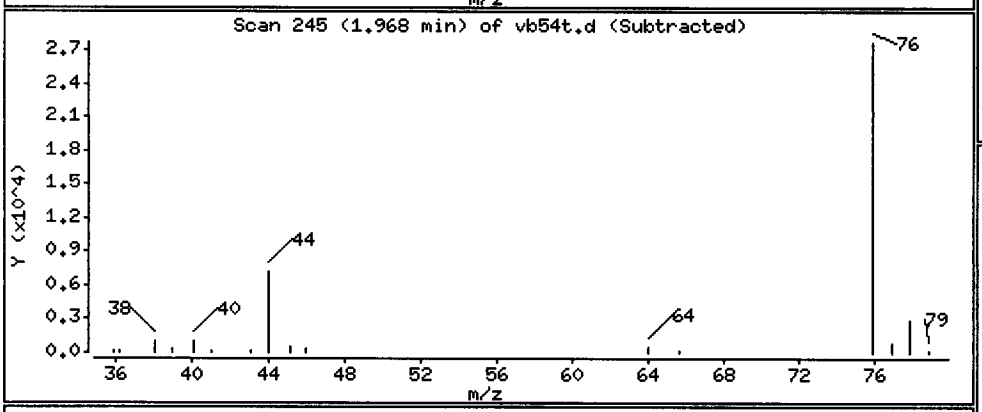
Column diameter: 0.18

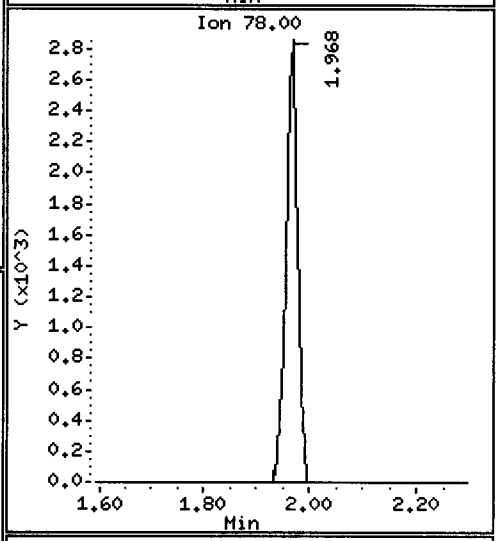
8 Carbon Disulfide

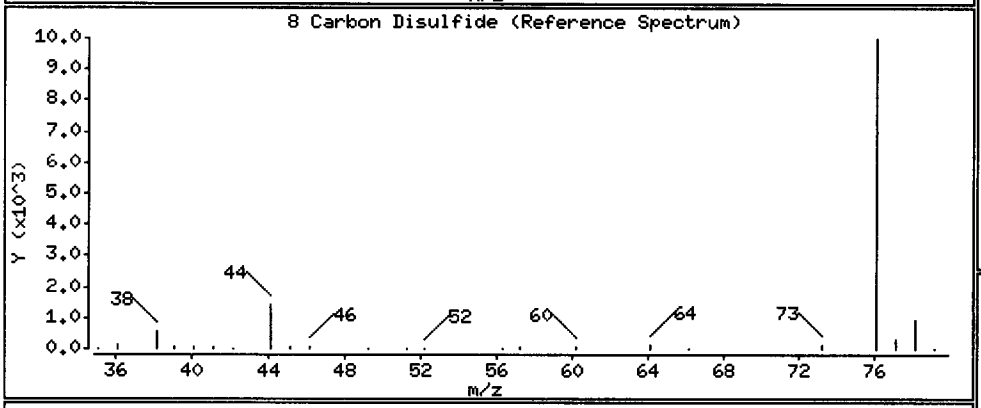
Concentration: 2.398 ug/Kg

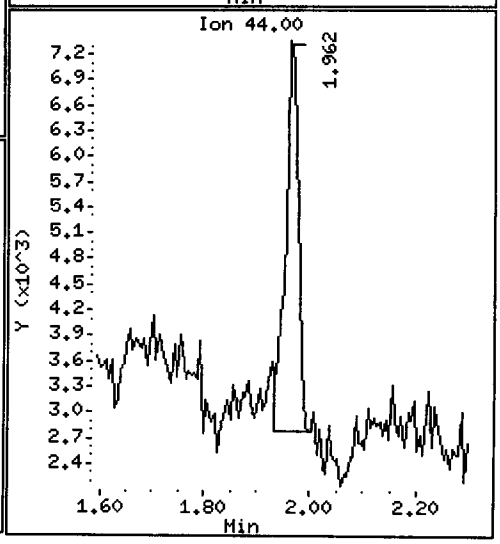


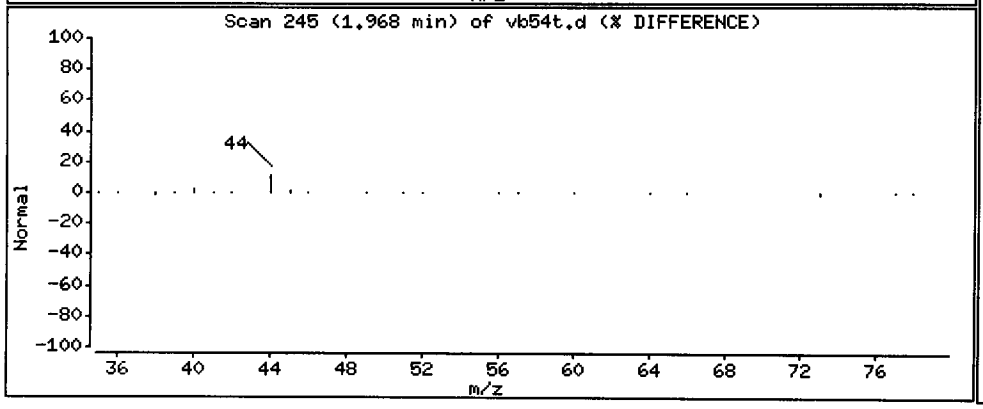












Data File: /chem1/nt5.i/12JUL12.b/vb54t.d

Date : 12-JUL-2012 16:52

Client ID: CW-TP-54-8-9

Instrument: nt5.i

Sample Info: VB54T,5,6.03,0

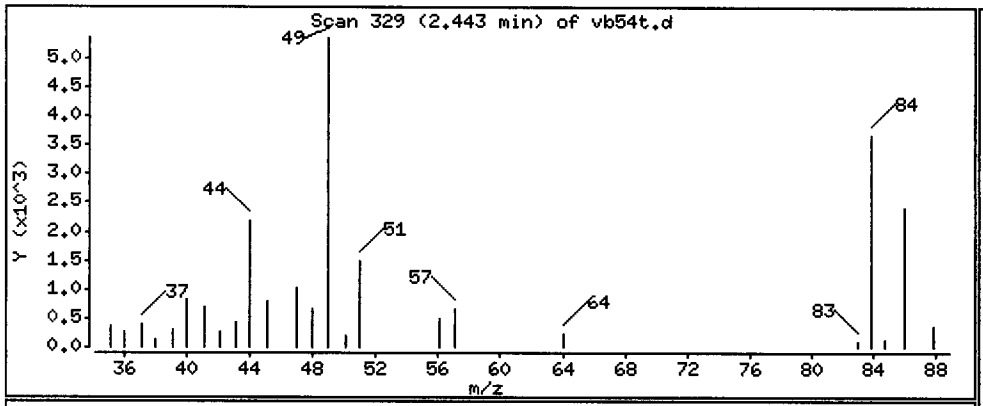
Operator: PB

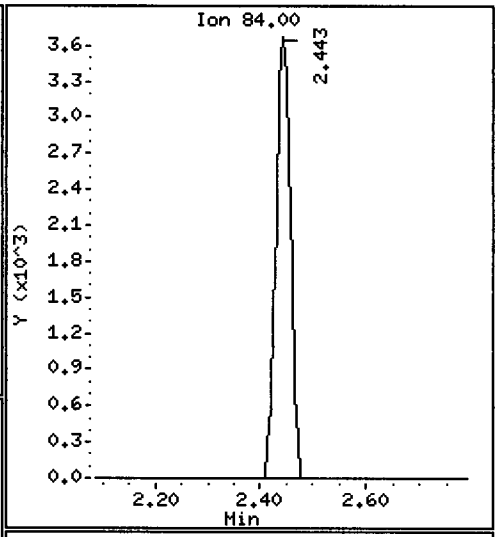
Column phase: RTXVMS

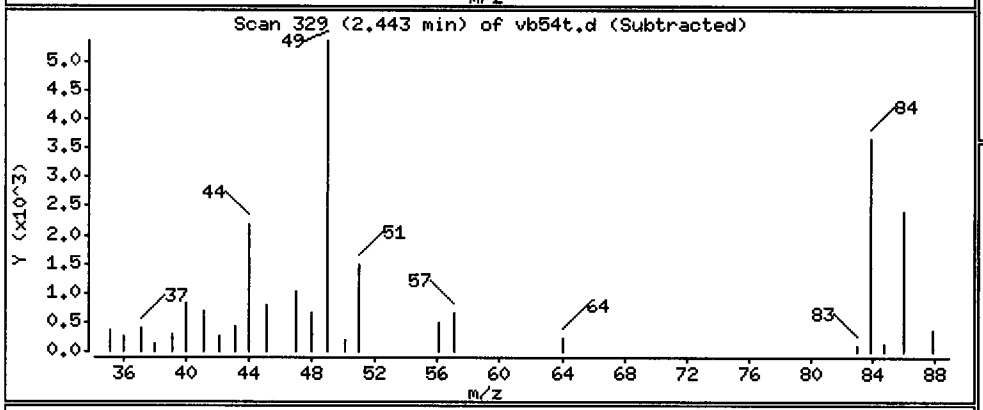
Column diameter: 0.18

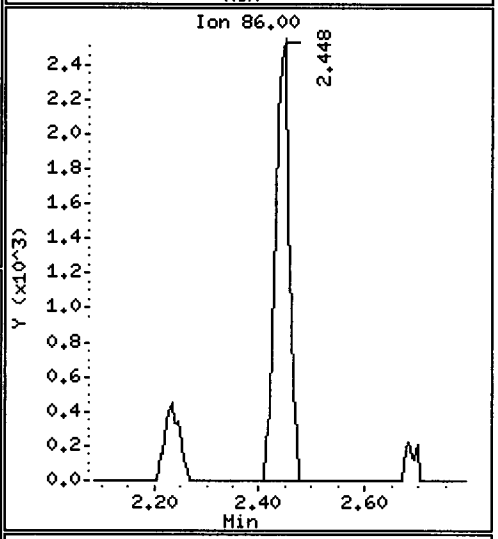
13 Methylene Chloride

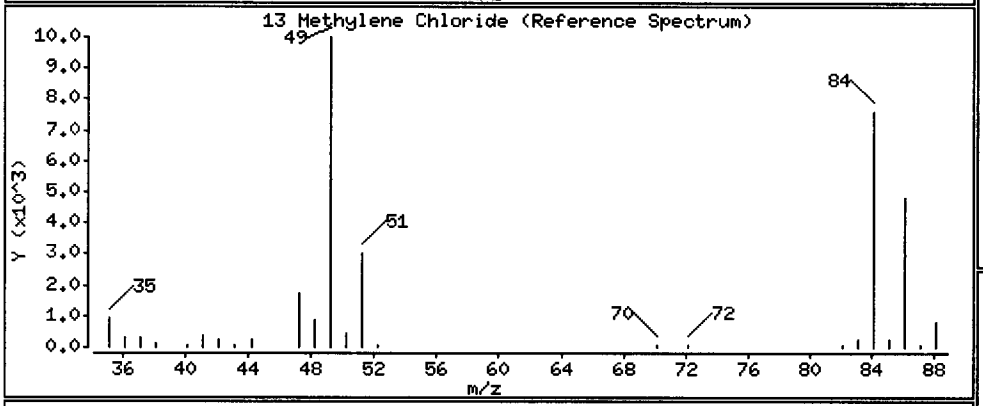
Concentration: 0.9459 ug/Kg

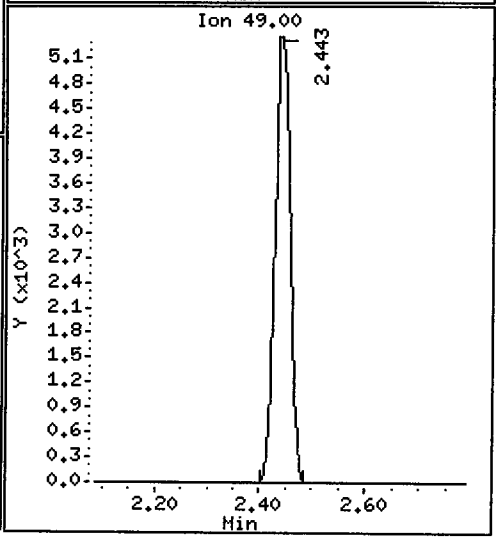


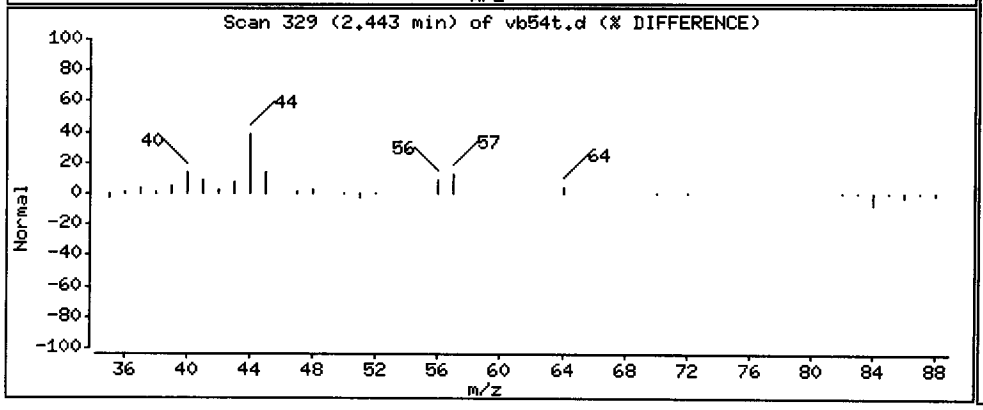












Data File: /chem1/nt5.i/12JUL12.b/vb54t.d

Date : 12-JUL-2012 16:52

Client ID: CW-TP-54-8-9

Instrument: nt5.i

Sample Info: VB54T,5,6.03,0

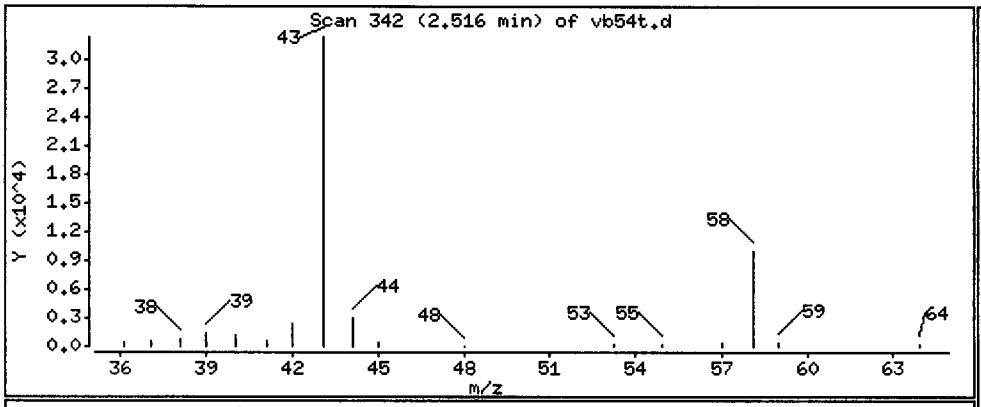
Operator: PB

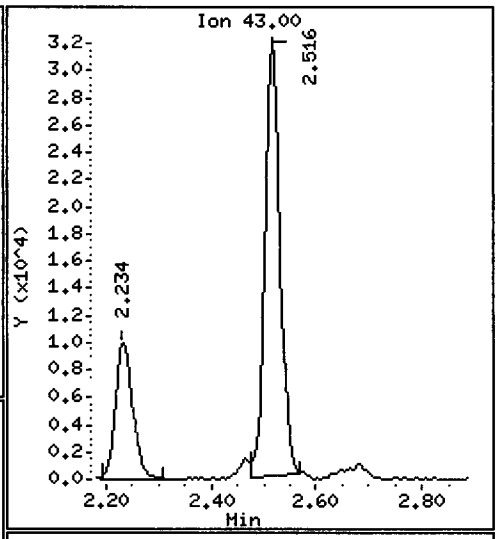
Column phase: RTXVMS

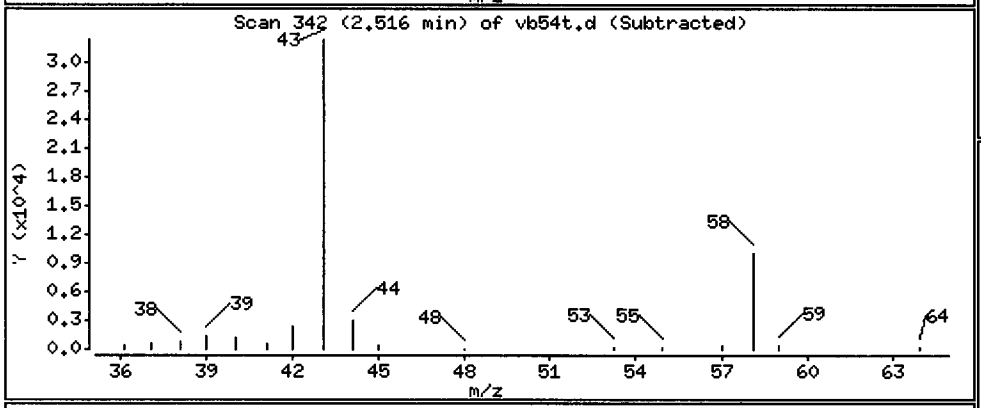
Column diameter: 0.18

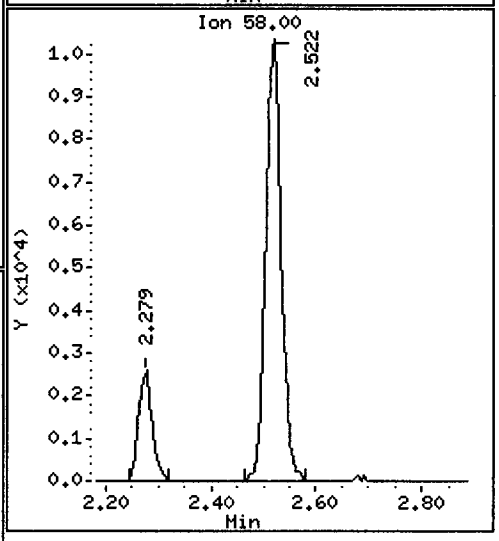
14 Acetone

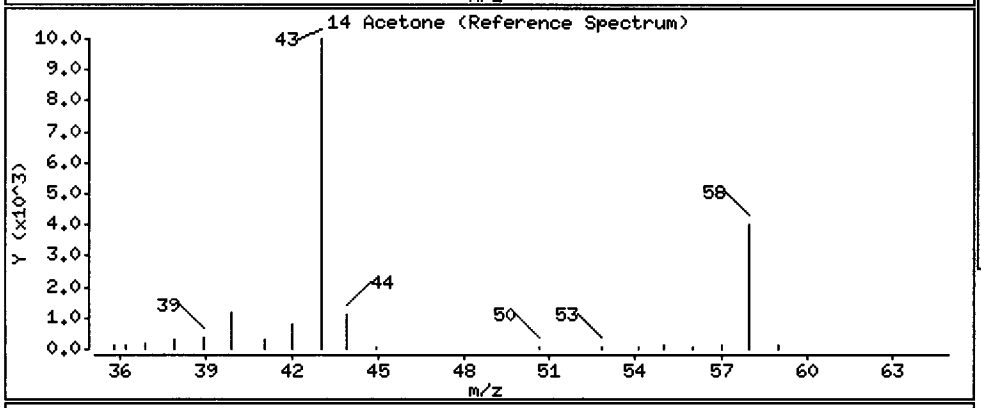
Concentration: 28.595 ug/Kg

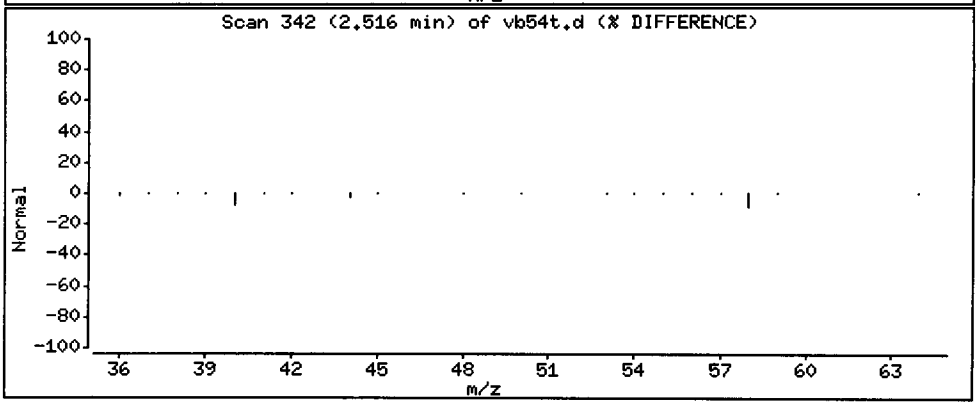












Data File: /chem1/nt5.i/12JUL12.b/vb54t.d

Date : 12-JUL-2012 16:52

Client ID: CW-TP-54-8-9

Instrument: nt5.i

Sample Info: VB54T,5,6.03,0

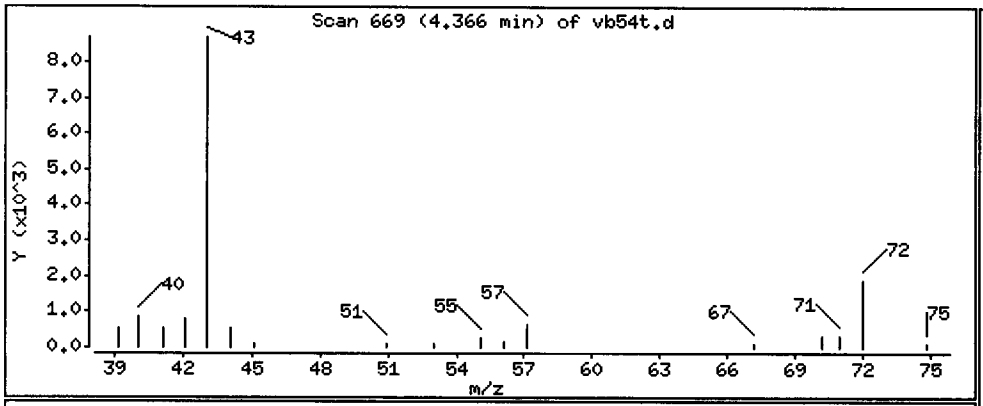
Operator: PB

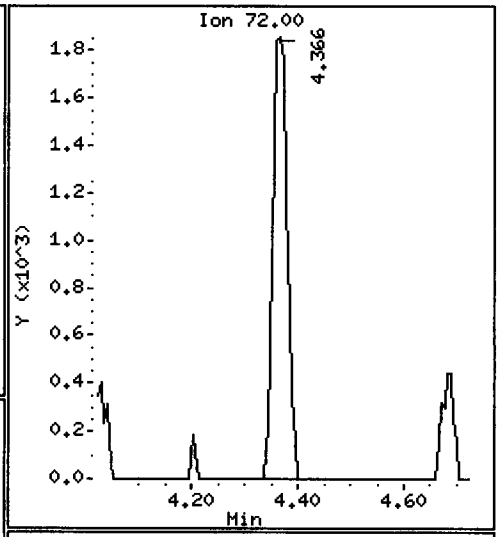
Column phase: RTXVMS

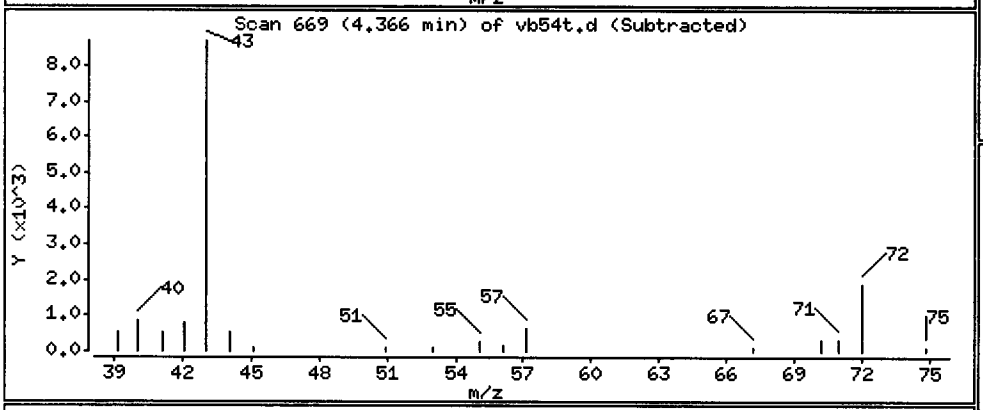
Column diameter: 0.18

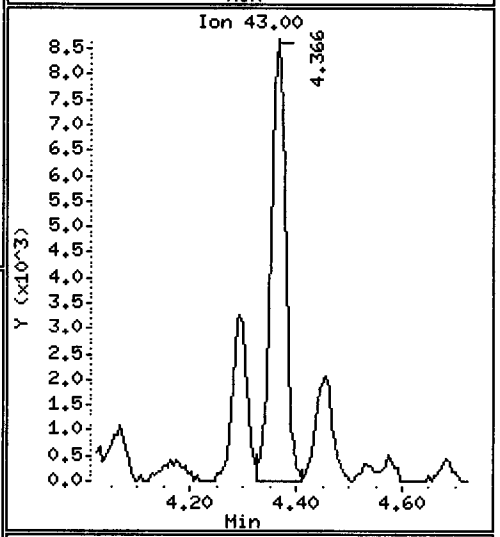
29 2-Butanone

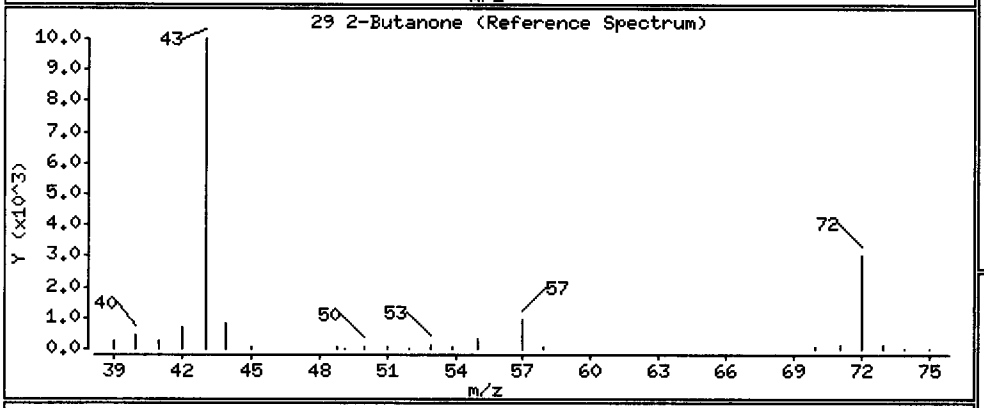
Concentration: 4.857 ug/Kg

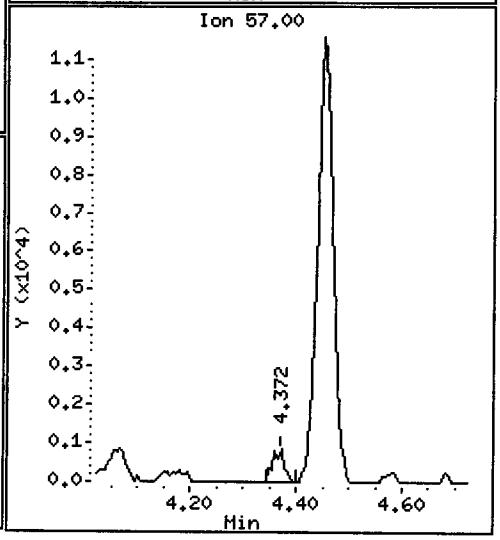


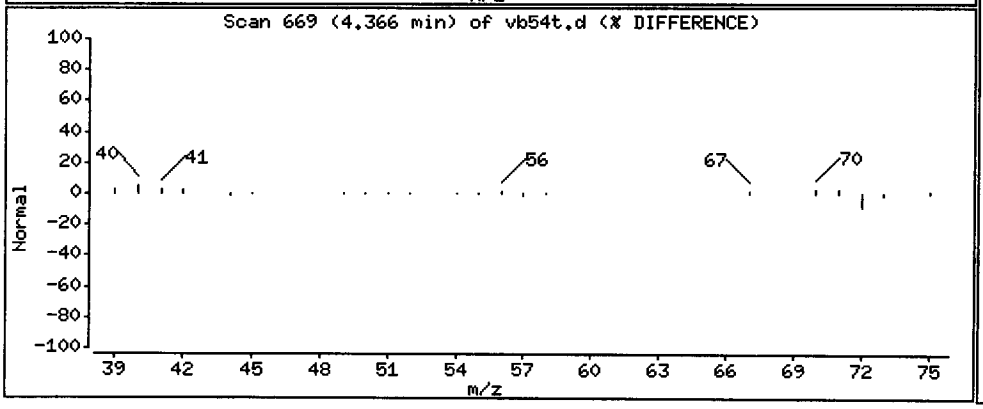












Data File: /chem1/nt5.i/12JUL12.b/vb54t.d

Date : 12-JUL-2012 16:52

Client ID: CW-TP-54-8-9

Instrument: nt5.i

Sample Info: VB54T,5,6.03,0

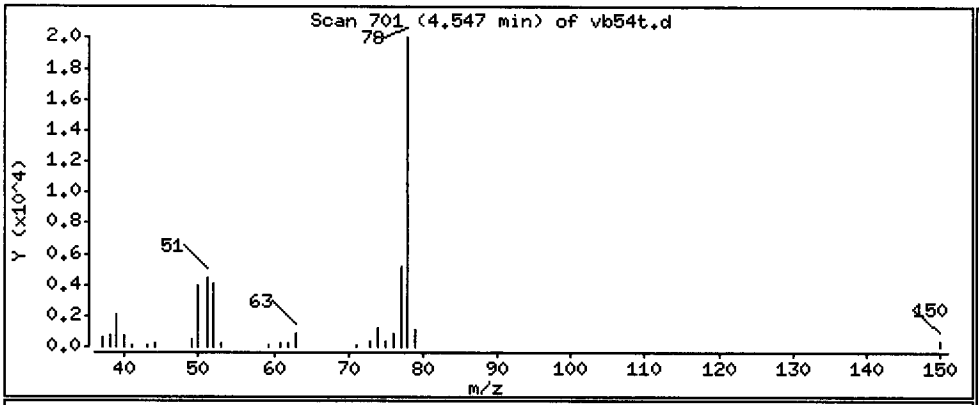
Operator: PB

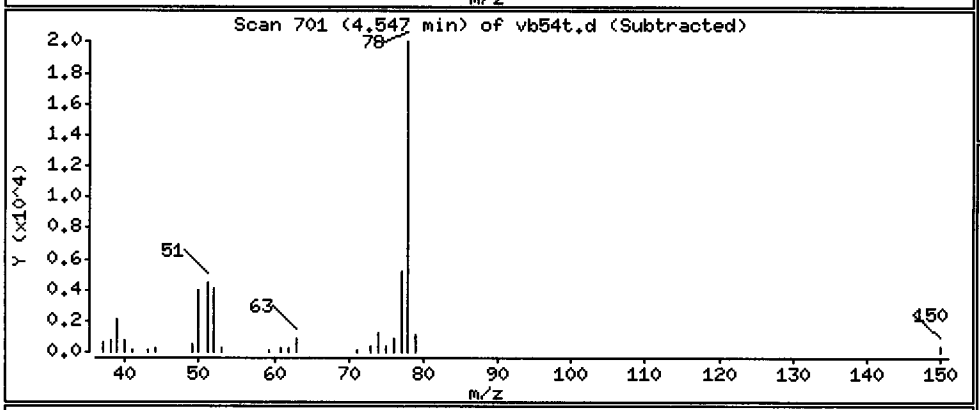
Column phase: RTXVMS

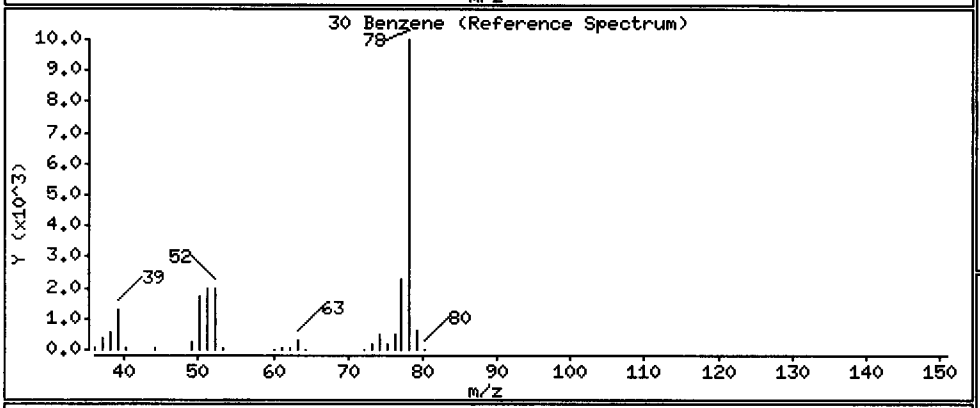
Column diameter: 0.18

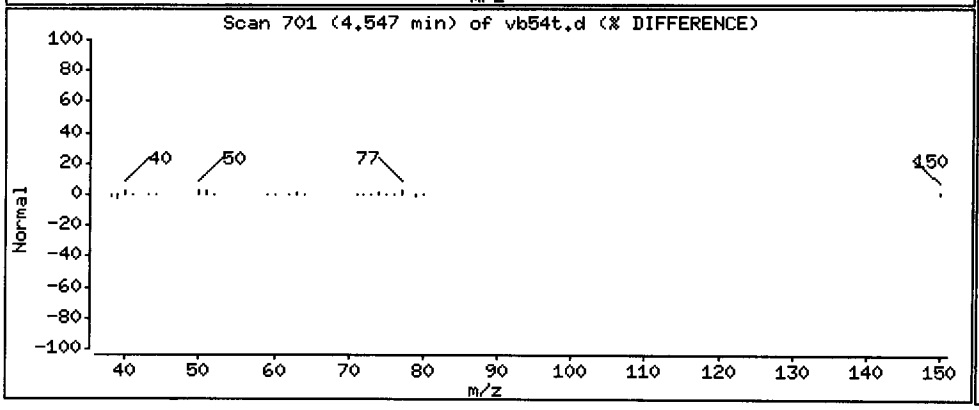
30 Benzene

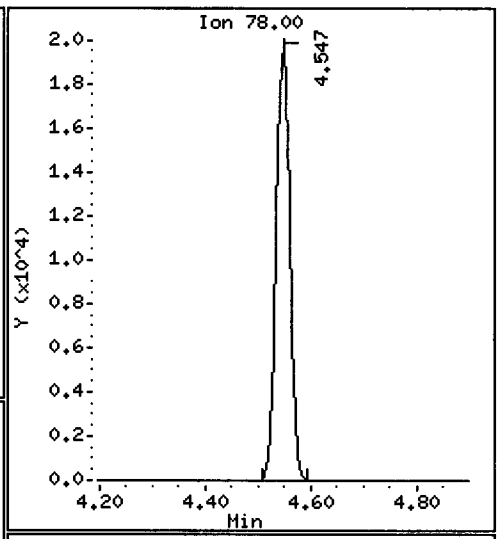
Concentration: 1.425 ug/Kg

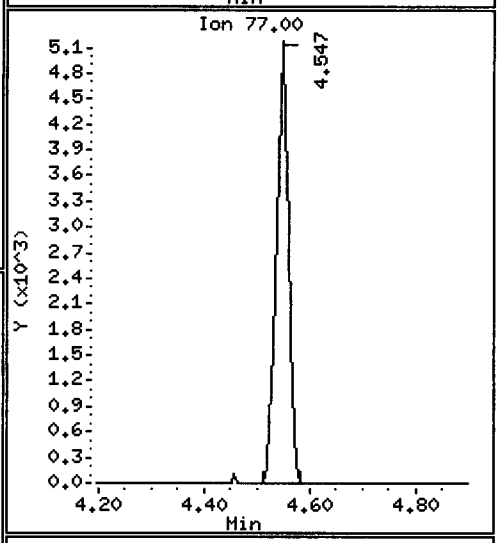


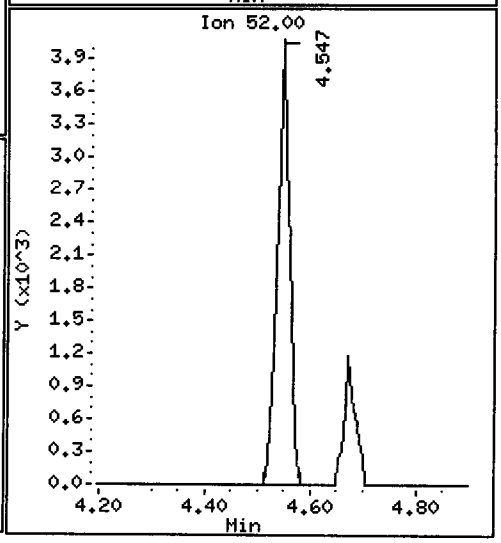












Data File: /chem1/nt5.i/12JUL12.b/vb54t.d

Date : 12-JUL-2012 16:52

Client ID: CW-TP-54-8-9

Instrument: nt5.i

Sample Info: VB54T,5,6.03,0

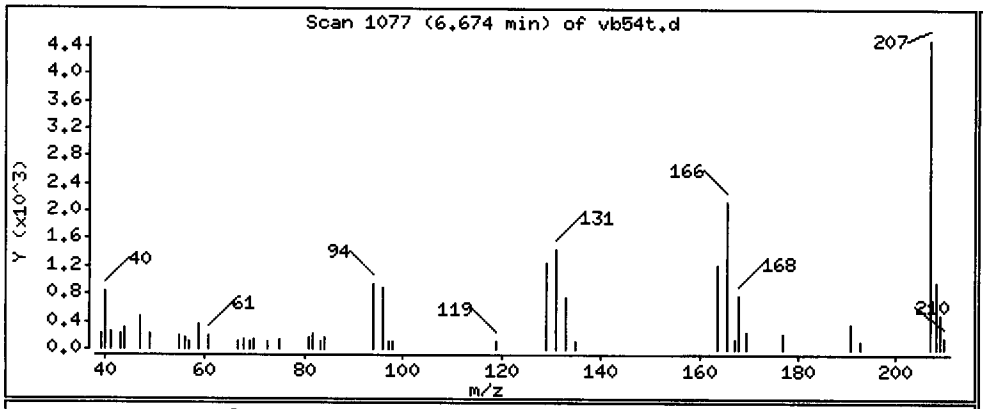
Operator: PB

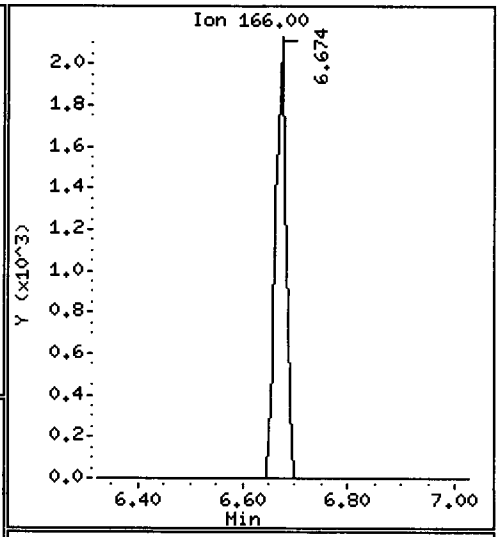
Column phase: RTXVMS

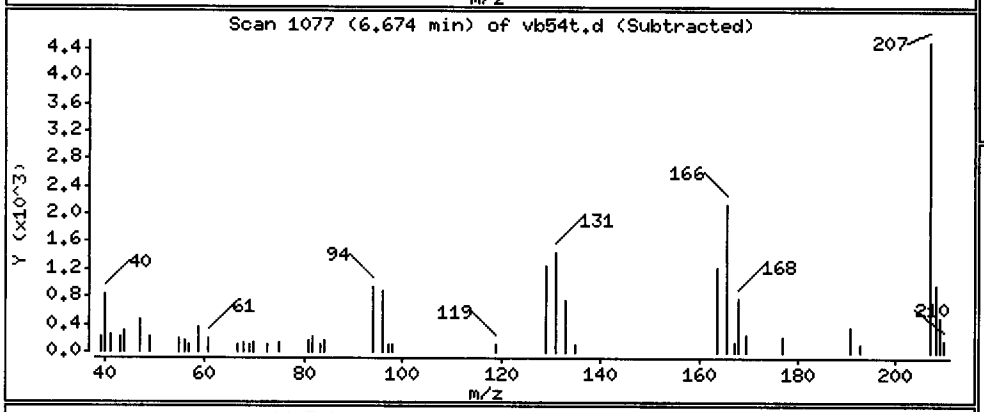
Column diameter: 0.18

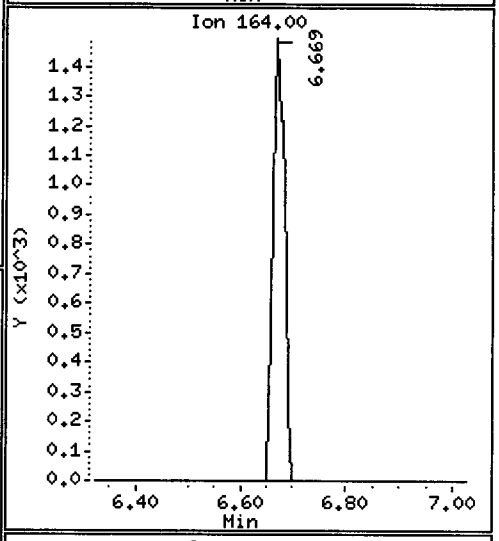
44 Tetrachloroethene

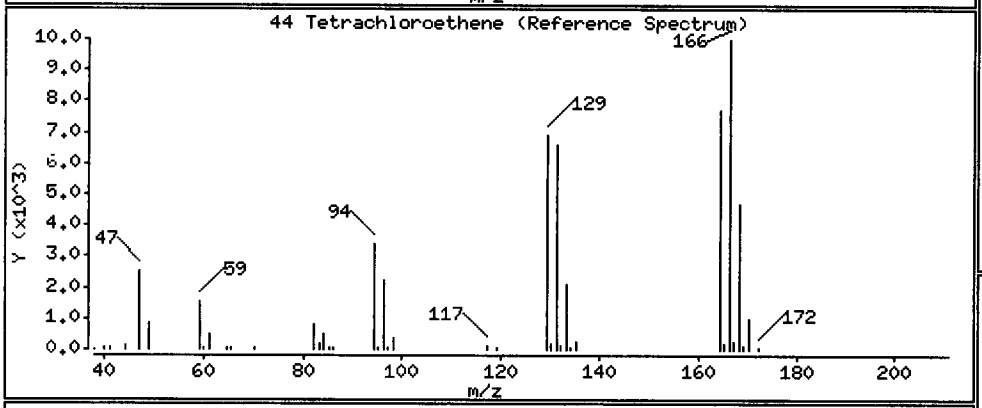
Concentration: 0.4641 ug/Kg

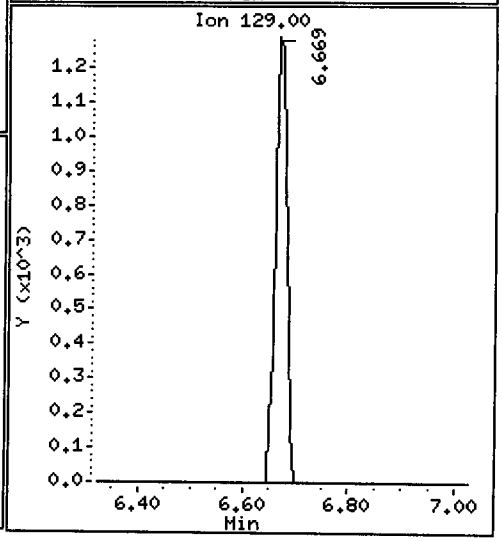


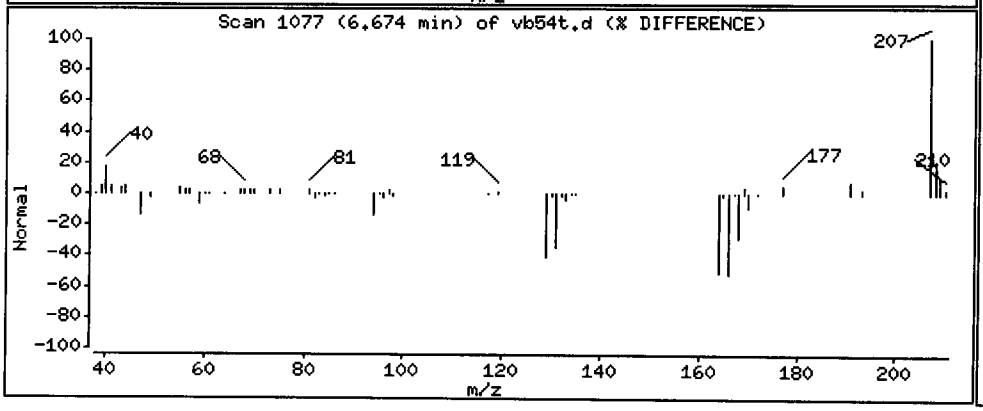












CO-ELUTION SUMMARY FOR FILE - vb54t.d

Lab ID: VB54T, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/vb54a2.d
Lab Smp Id: VB54A Client Smp ID: CW-TP-05-7-8
Inj Date : 12-JUL-2012 17:21
Operator : PB Inst ID: nt5.i
Smp Info : VB54A,5,8.206,1,15UL
Misc Info : 12-12940
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

M	0.00000	% Moisture (not decanted)
Uf	1.00000	ng unit correction factor
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.443	2.437	(0.521)	4806	0.86372	0.1727
14 Acetone	43	Compound Not Detected.					
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					
16 Methyl tert butyl ether	73	Compound Not Detected.					
17 1,1-Dichloroethane	63	Compound Not Detected.					
18 Acrylonitrile	53	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.208	4.202	(0.897)	244015	43.6324	8.726
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	Compound Not Detected.					
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	4.689	4.683	(1.000)	353324	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	293508	43.9521	8.790
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.135	5.135	(1.000)	762817	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.318	6.318	(1.230)	1046953	50.2741	10.055
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.619	7.624	(1.000)	902584	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	8.467	8.473	(0.873)	27990	1.36815	0.2736
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.141)	543125	53.9309	10.786
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	8.835	8.841	(0.911)	56226	2.24309	0.4486
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
	66 2-Chloro Toluene	91	Compound Not Detected.					
	67 1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
	68 1,2,3-Trichloropropane	110	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	69 Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
	70 4-Chloro Toluene	91	Compound Not Detected.					
	71 T-Butyl Benzene	119	Compound Not Detected.					
	72 1,2,4-Trimethylbenzene	105	Compound Not Detected.					
	73 S-Butyl Benzene	105	9.469	9.468	(0.976)	69223	3.09498	0.6190(Q)
	74 4-Isopropyl Toluene	119	Compound Not Detected.					
	75 1,3-Dichlorobenzene	146	Compound Not Detected.					
*	76 d4-1,4-Dichlorobenzene	152	9.701	9.700	(1.000)	509274	50.0000	
	77 1,4-Dichlorobenzene	146	Compound Not Detected.					
	78 N-Butyl Benzene	91	9.995	10.000	(1.030)	58850	3.41701	0.6834
$	79 d4-1,2-Dichlorobenzene	152	10.085	10.085	(1.040)	483453	51.7136	10.343
	80 1,2-Dichlorobenzene	146	Compound Not Detected.					
	81 1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
	82 Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
	83 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
	84 Naphthalene	128	Compound Not Detected.					
	85 1,2,3-Trichlorobenzene	180	Compound Not Detected.					

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb54a2.d
Lab Smp Id: VB54A
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12940

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: CW-TP-05-7-8
Level: MED
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	353324	21.08
35 1,4-Difluorobenze	682850	341425	1365700	762817	11.71
52 d5-Chlorobenzene	802138	401069	1604276	902584	12.52
76 d4-1,4-Dichlorobe	452585	226292	905170	509274	12.53

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.13
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	-0.07
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB54A
Level: MED
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12940

Client SDG: VB54
Fraction: VOA
Client Smp ID: CW-TP-05-7-8
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	43.632	87.26	30-160
$ 32 d4-1,2-Dichloroeth	50.000	43.952	87.90	75-152
$ 42 d8-Toluene	50.000	50.274	100.55	82-115
$ 62 4-Bromofluorobenze	50.000	53.931	107.86	64-120
$ 79 d4-1,2-Dichloroben	50.000	51.714	103.43	80-120

Data File: /chem1/nt5.i/12JUL12.b/vb54a2.d

Date : 12-JUL-2012 17:21

Client ID: CW-TP-05-7-8

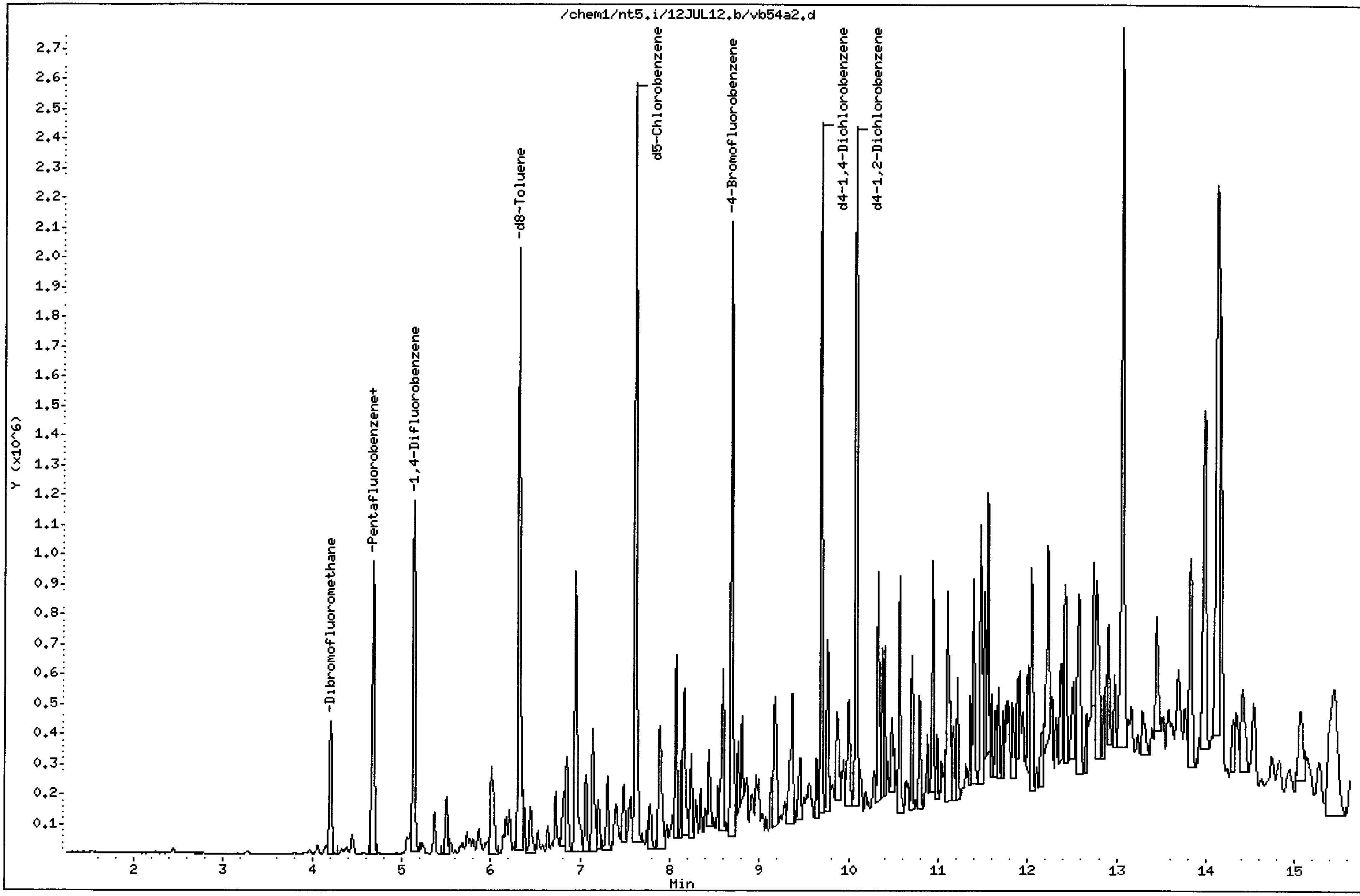
Sample Info: VB54A,5,8,206,1,15UL

Column phase: RTXVMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18



VB51 : 00438

Data File: /chem1/nt5.i/12JUL12.b/vb54a2.d

Date : 12-JUL-2012 17:21

Client ID: CW-TP-05-7-8

Instrument: nt5.i

Sample Info: VB54A,5,8.206,1,15UL

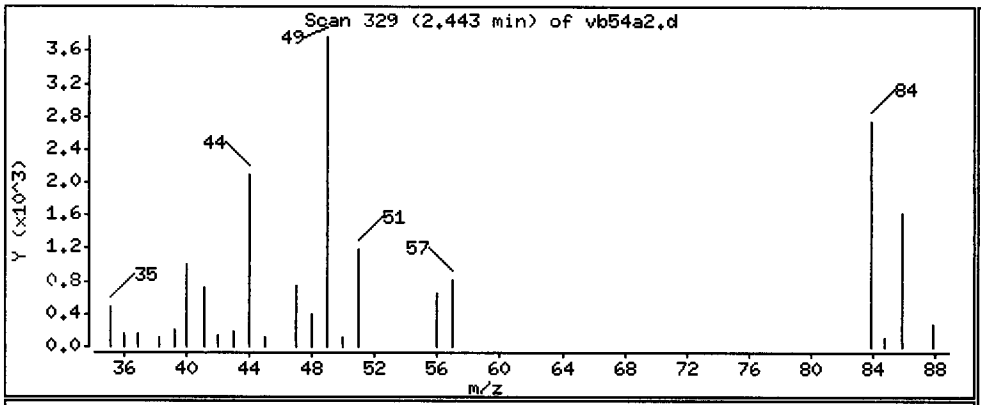
Operator: PB

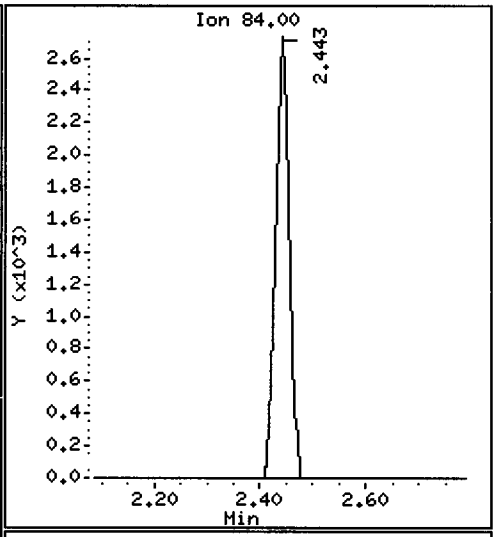
Column phase: RTXVMS

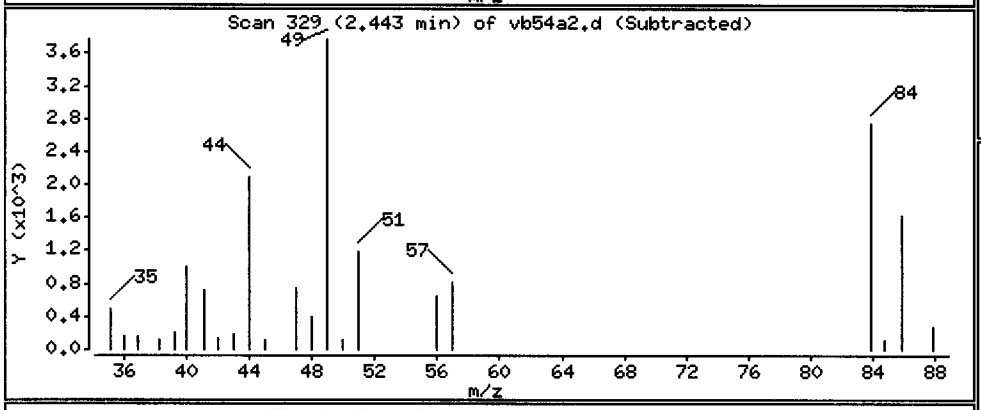
Column diameter: 0.18

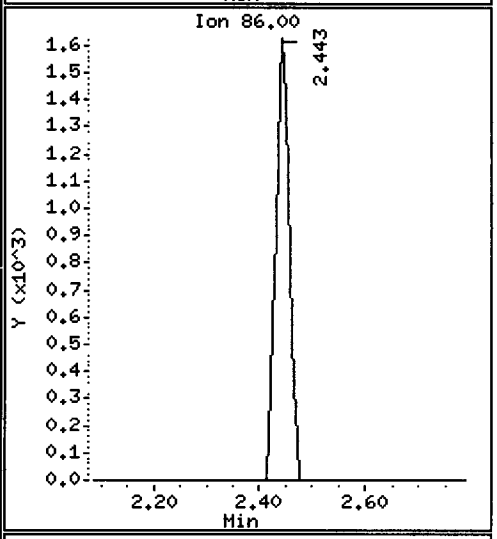
13 Methylene Chloride

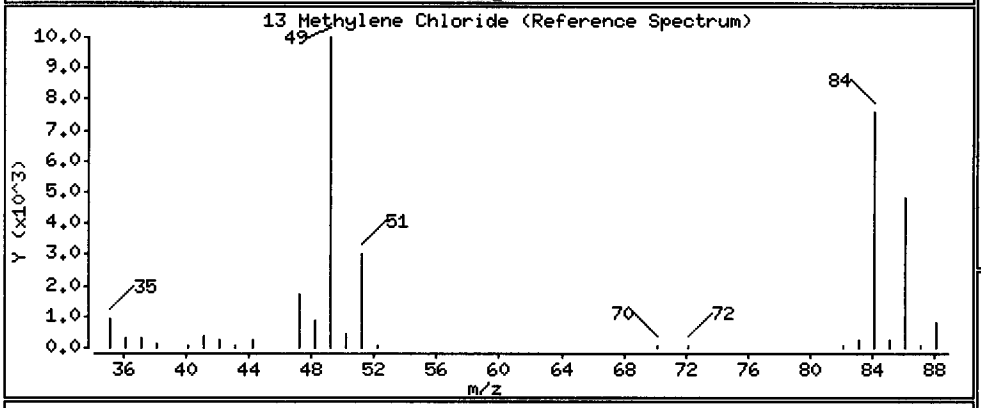
Concentration: 0.1727 ug/Kg

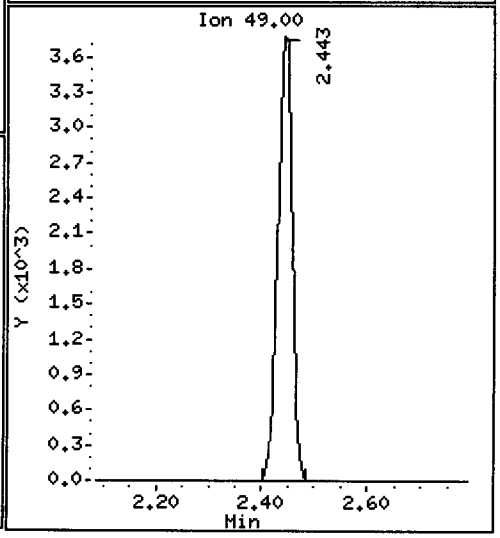


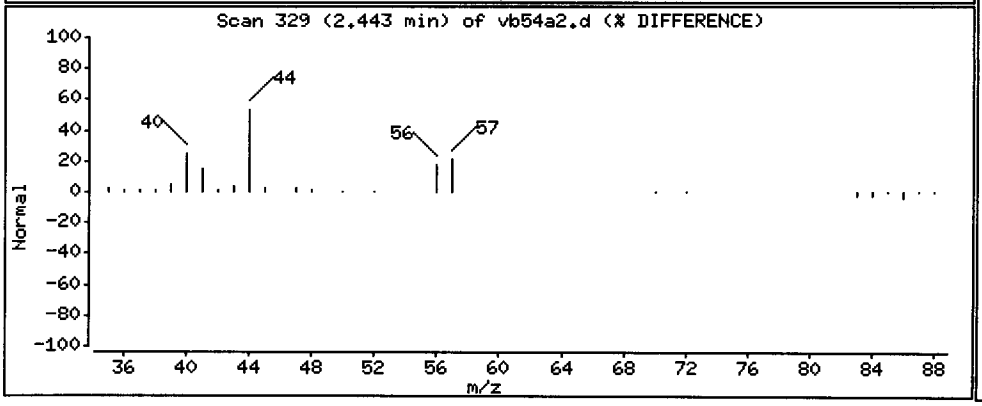












Data File: /chem1/nt5.i/12JUL12.b/vb54a2.d

Date : 12-JUL-2012 17:21

Client ID: CW-TP-05-7-8

Instrument: nt5.i

Sample Info: VB54A,5,8.206,1,15UL

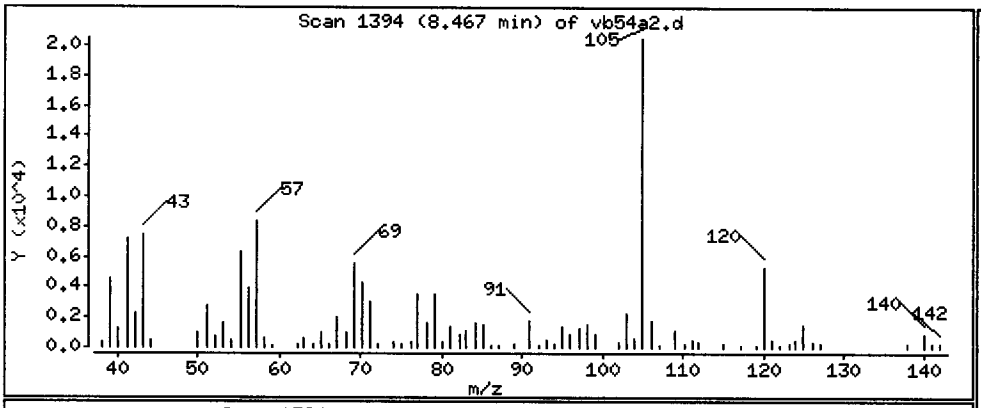
Operator: PB

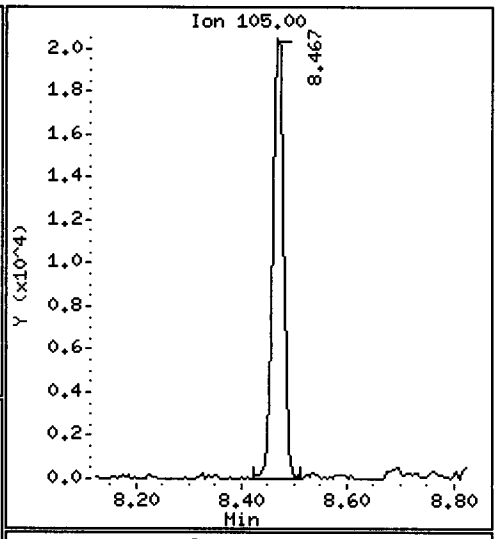
Column phase: RTXVMS

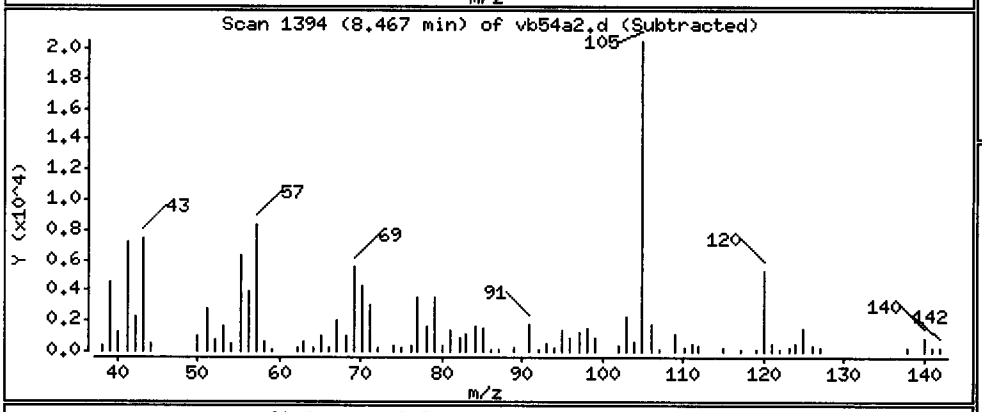
Column diameter: 0.18

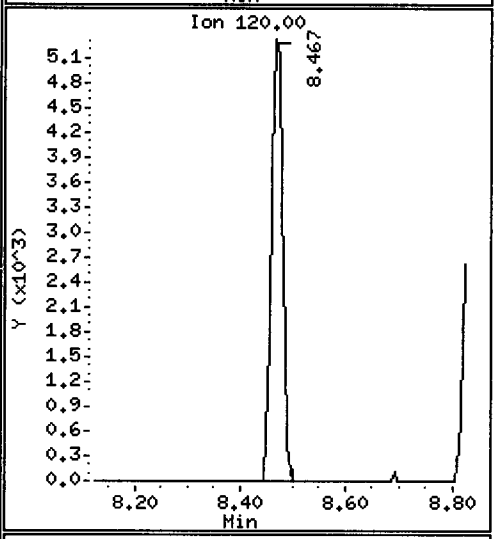
60 Isopropyl Benzene

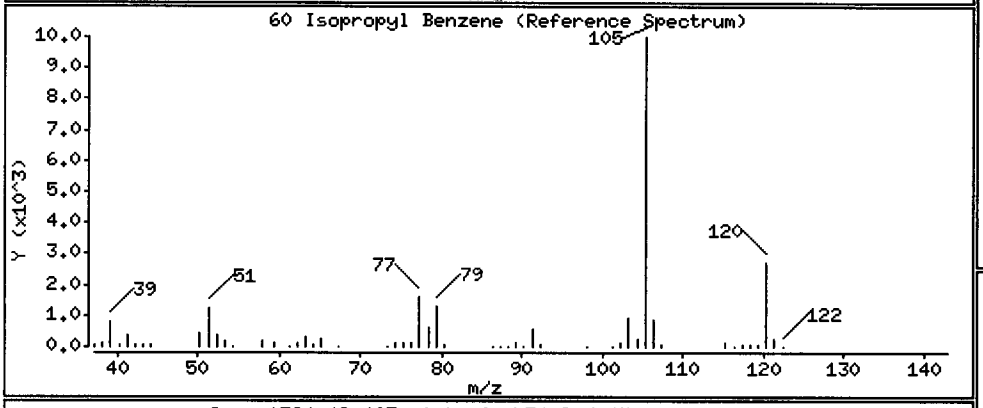
Concentration: 0.2736 ug/Kg

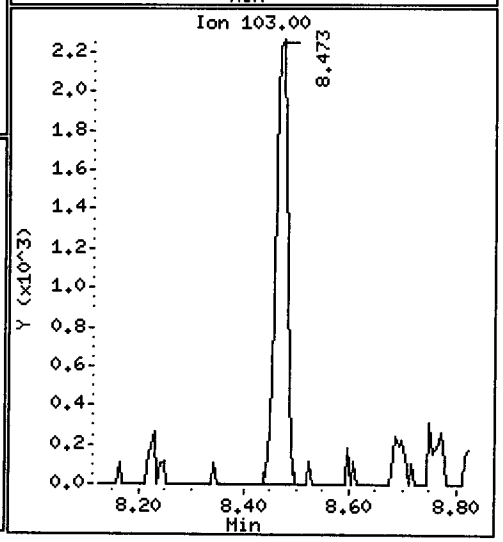


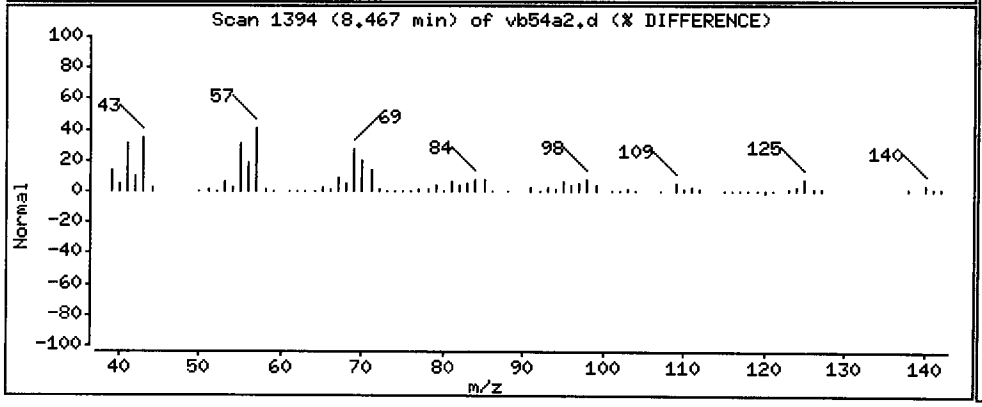












Data File: /chem1/nt5.i/12JUL12.b/vb54a2.d

Date : 12-JUL-2012 17:21

Client ID: CW-TP-05-7-8

Instrument: nt5.i

Sample Info: VB54A,5,8.206,1,15UL

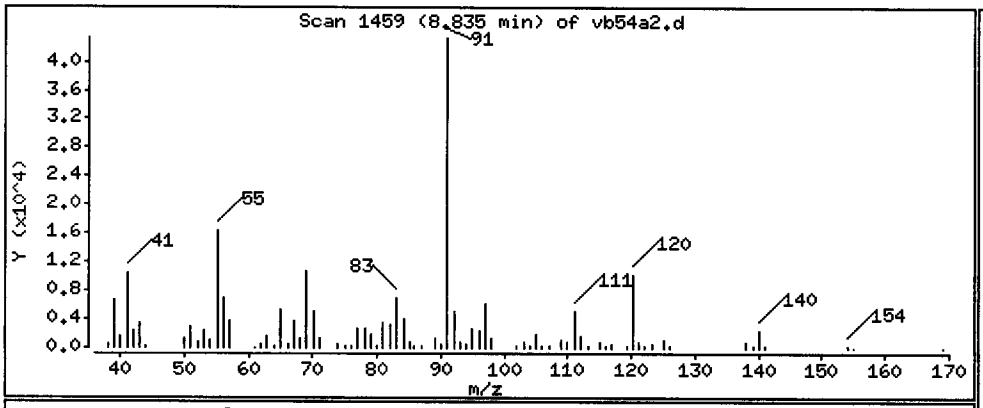
Operator: PB

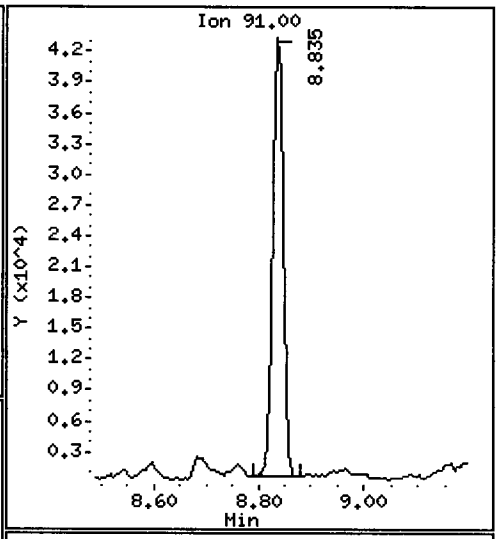
Column phase: RTXVMS

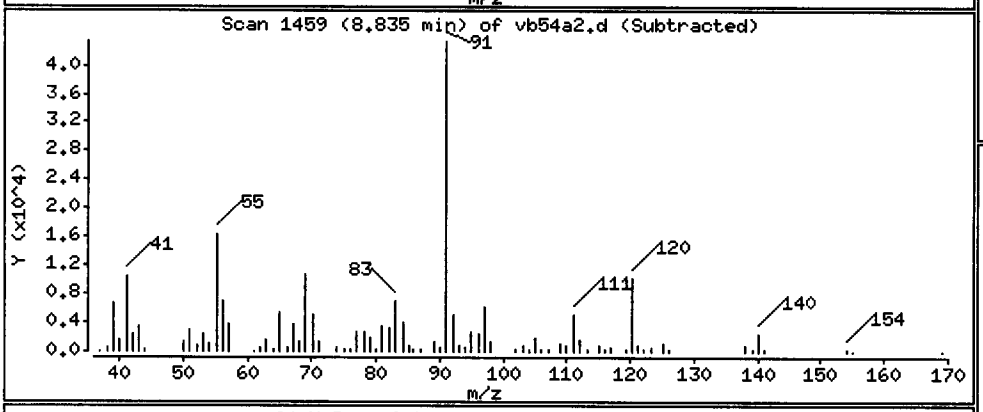
Column diameter: 0.18

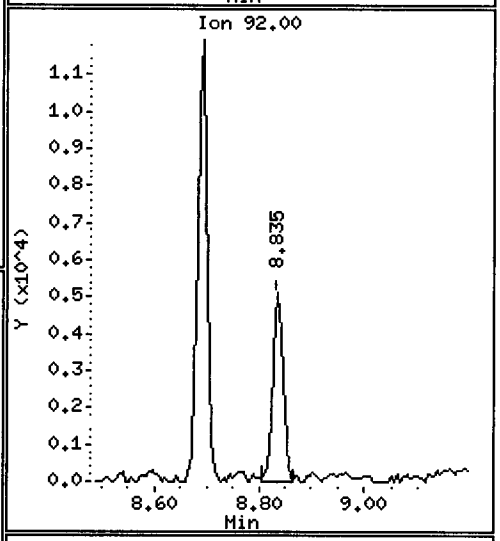
64 N-Propyl Benzene

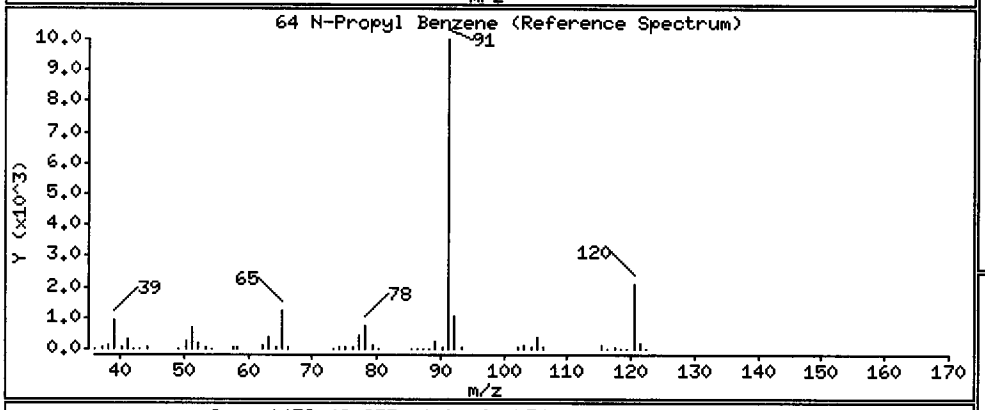
Concentration: 0.4486 ug/Kg

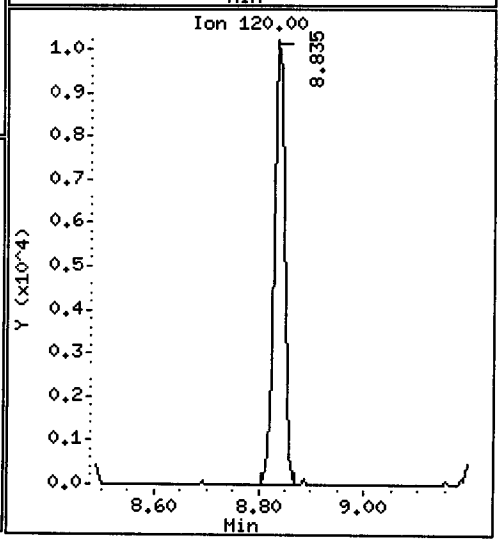


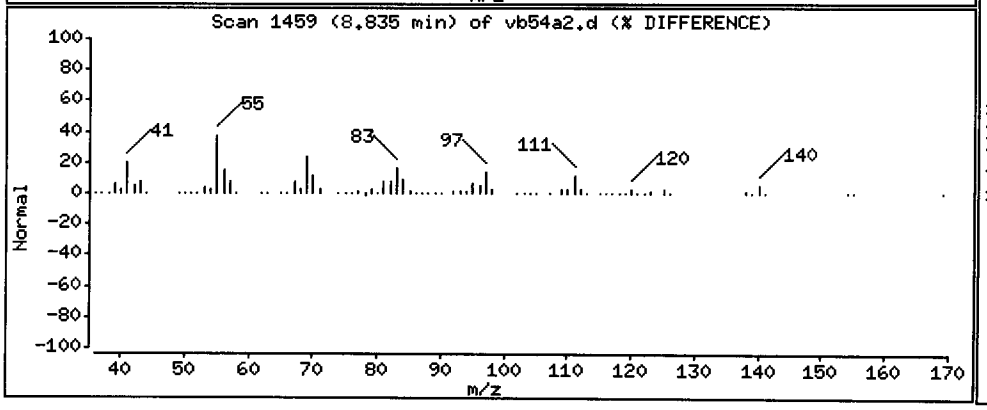












Data File: /chem1/nt5.i/12JUL12.b/vb54a2.d

Date : 12-JUL-2012 17:21

Client ID: CW-TP-05-7-8

Instrument: nt5.i

Sample Info: VB54A,5,8.206,1,15UL

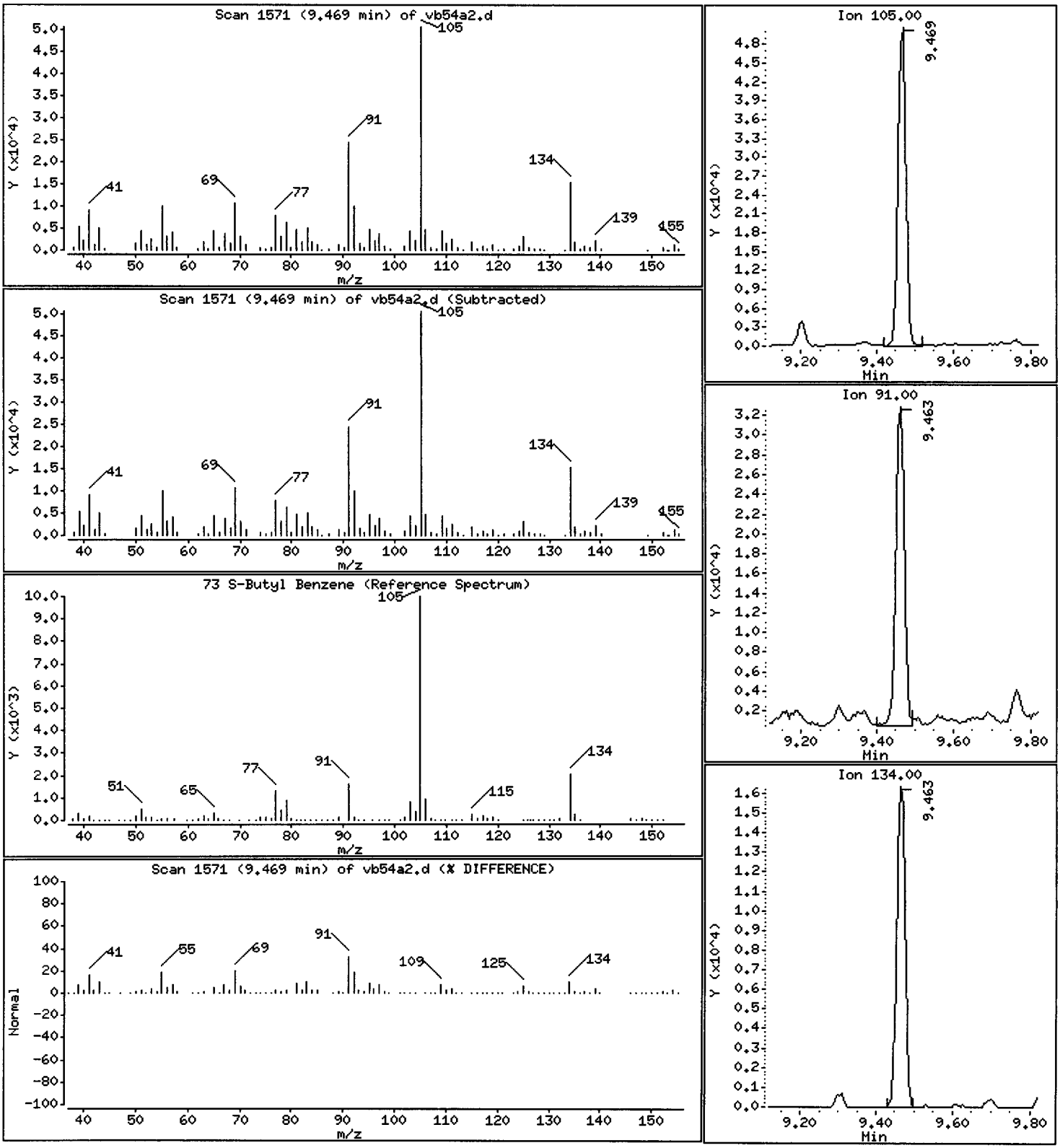
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 0.6190 ug/Kg



Data File: /chem1/nt5.i/12JUL12.b/vb54a2.d

Date : 12-JUL-2012 17:21

Client ID: CW-TP-05-7-8

Instrument: nt5.i

Sample Info: VB54A,5,8.206,1,15UL

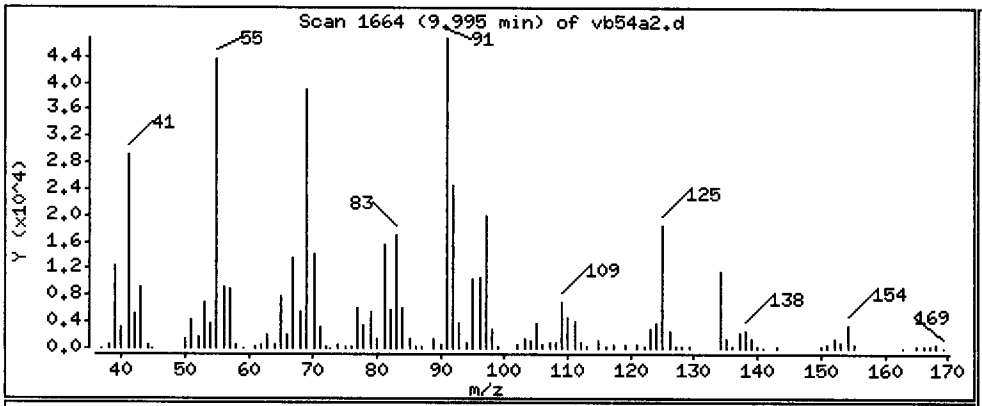
Operator: PB

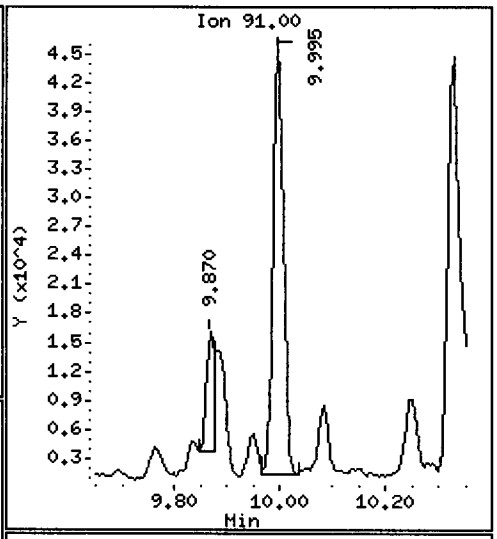
Column phase: RTXVMS

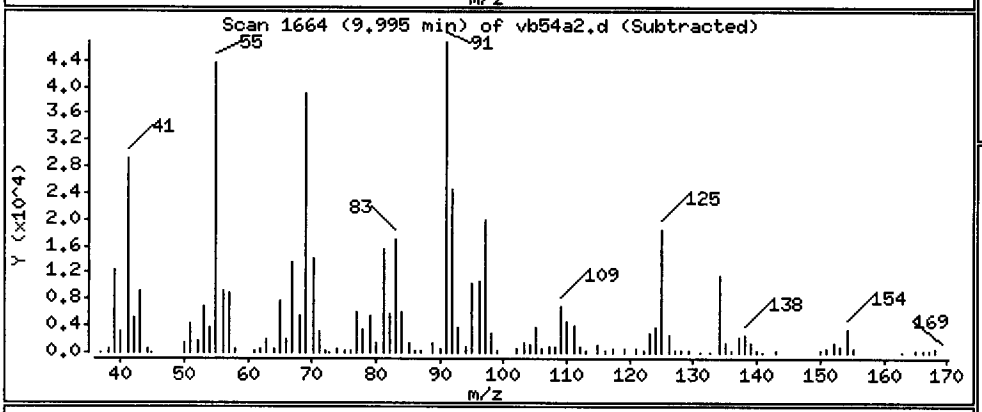
Column diameter: 0.18

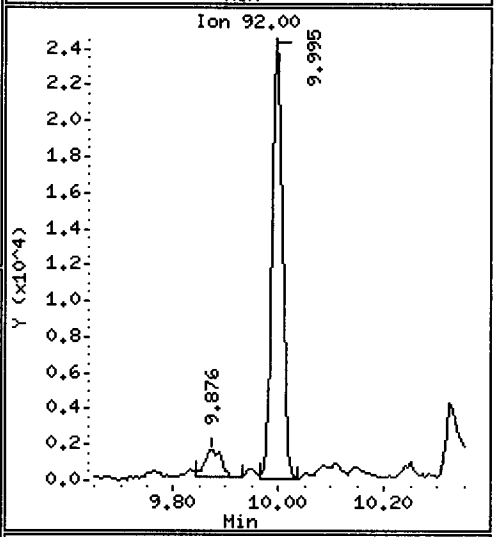
78 N-Butyl Benzene

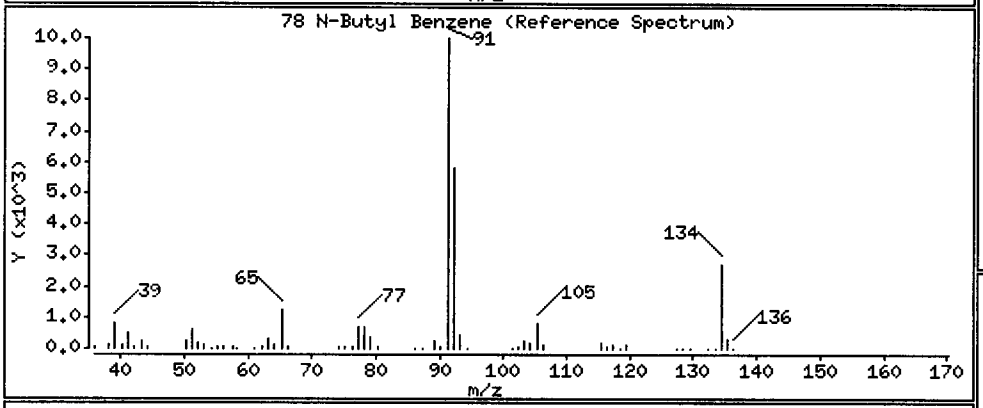
Concentration: 0.6834 ug/Kg

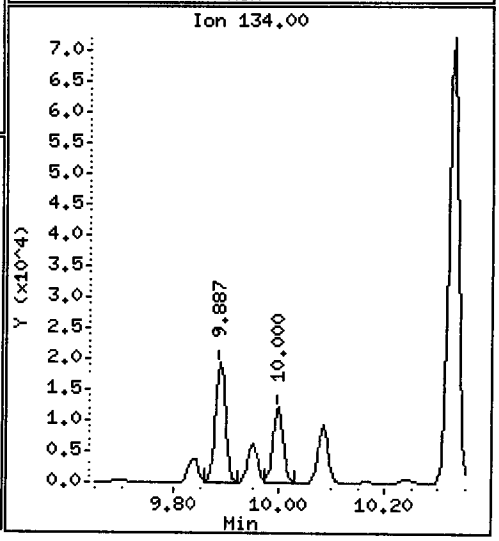


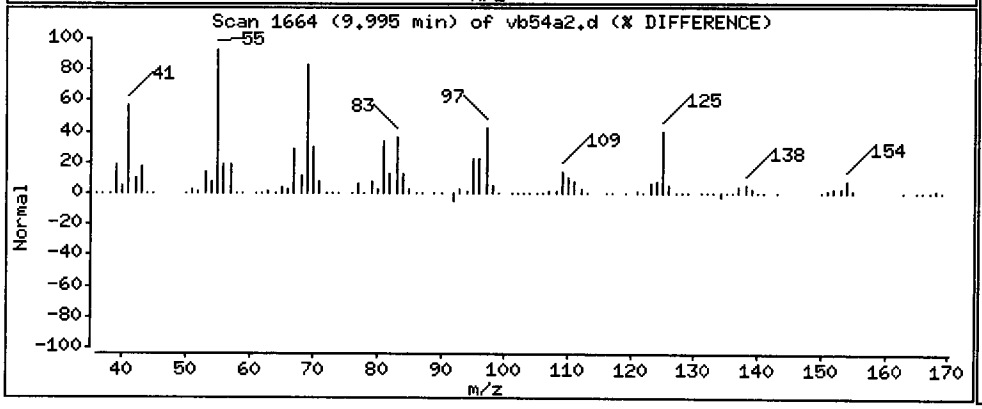












CO-ELUTION SUMMARY FOR FILE - vb54a2.d

Lab ID: VB54A, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/vb54d2.d
Lab Smp Id: VB54D Client Smp ID: CW-TP-03-7-8
Inj Date : 12-JUL-2012 17:44
Operator : PB Inst ID: nt5.i
Smp Info : VB54D,5,8.883,1,10UL
Misc Info : 12-12943
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

M	0.00000	% Moisture (not decanted)
Uf	1.00000	ng unit correction factor
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.448	2.437	(0.522)	4610	0.79480	0.1590
14 Acetone	43	Compound Not Detected.					
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					
16 Methyl tert butyl ether	73	Compound Not Detected.					
17 1,1-Dichloroethane	63	Compound Not Detected.					
18 Acrylonitrile	53	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.208	4.202	(0.897)	255535	43.8340	8.767
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	Compound Not Detected.					
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	4.688	4.683	(1.000)	368303	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	311611	44.7651	8.953
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.141	5.135	(1.000)	796940	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.318	6.318	(1.229)	1079703	49.6268	9.925
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	933542	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	Compound Not Detected.					
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.140)	534390	51.3039	10.261
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	Compound Not Detected.					
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
	66 2-Chloro Toluene	91	Compound Not Detected.					
	67 1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
	68 1,2,3-Trichloropropane	110	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	Compound Not Detected.					
74	4-Isopropyl Toluene	119	Compound Not Detected.					
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	523731	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	Compound Not Detected.					
$ 79	d4-1,2-Dichlorobenzene	152	10.079	10.085	(1.040)	491493	51.1224	10.224
80	1,2-Dichlorobenzene	146	Compound Not Detected.					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
84	Naphthalene	128	Compound Not Detected.					
85	1,2,3-Trichlorobenzene	180	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb54d2.d
Lab Smp Id: VB54D
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12943

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: CW-TP-03-7-8
Level: MED
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	368303	26.22
35 1,4-Difluorobenze	682850	341425	1365700	796940	16.71
52 d5-Chlorobenzene	802138	401069	1604276	933542	16.38
76 d4-1,4-Dichlorobe	452585	226292	905170	523731	15.72

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB54D
Level: MED
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12943

Client SDG: VB54
Fraction: VOA
Client Smp ID: CW-TP-03-7-8
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

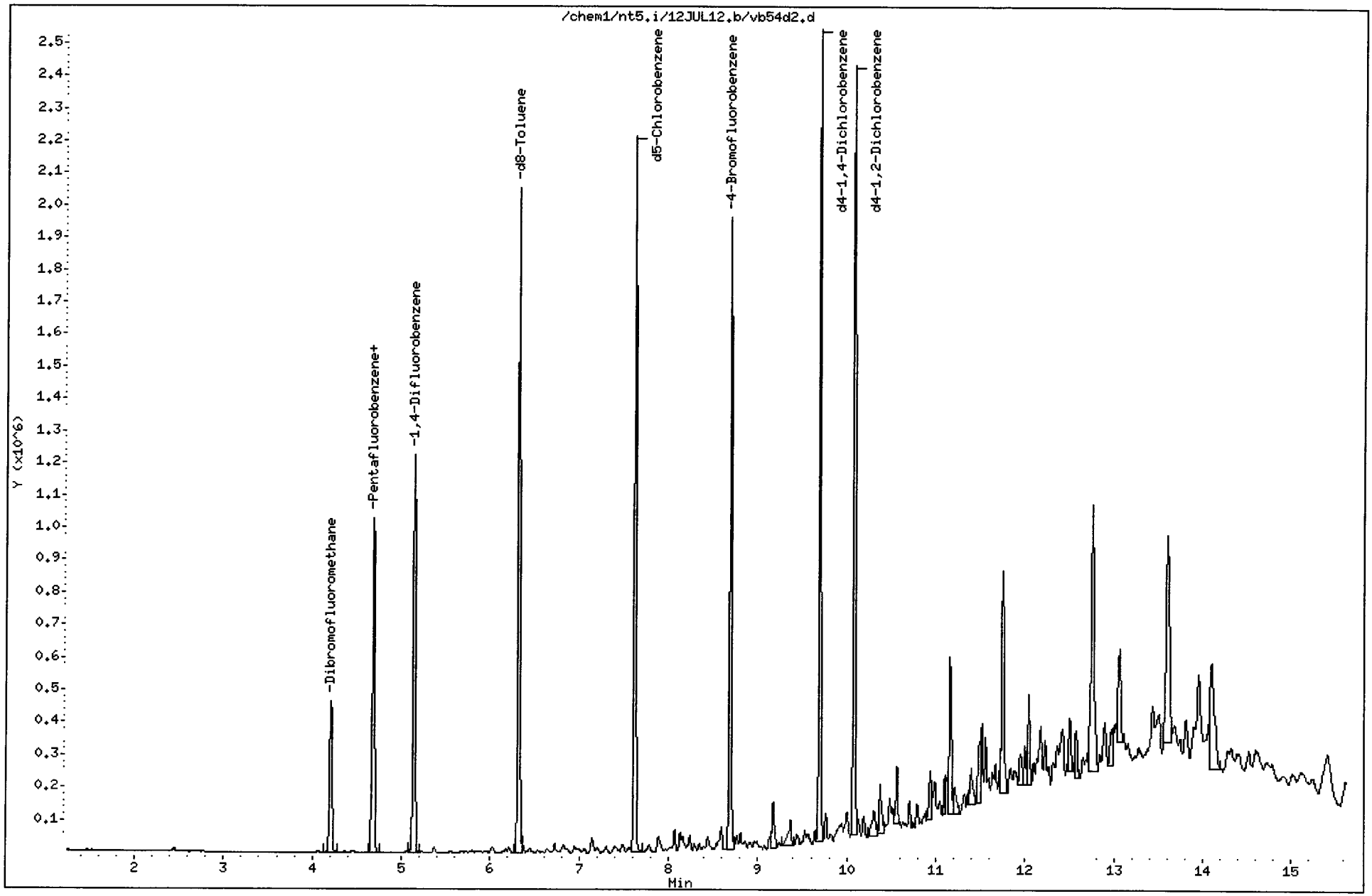
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	43.834	87.67	30-160
$ 32 d4-1,2-Dichloroeth	50.000	44.765	89.53	75-152
$ 42 d8-Toluene	50.000	49.627	99.25	82-115
$ 62 4-Bromofluorobenze	50.000	51.304	102.61	64-120
$ 79 d4-1,2-Dichloroben	50.000	51.122	102.24	80-120

Data File: /chem1/nt5.i/12JUL12.b/vb54d2.d
Date : 12-JUL-2012 17:44
Client ID: CW-TP-03-7-8
Sample Info: VB54D,5,8.883,1,10UL

Column phase: RTXVMS

Instrument: nt5.i

Operator: PB
Column diameter: 0.18



Data File: /chem1/nt5.i/12JUL12.b/vb54d2.d

Date : 12-JUL-2012 17:44

Client ID: CW-TP-03-7-8

Instrument: nt5.i

Sample Info: VB54D,5,8.883,1,10UL

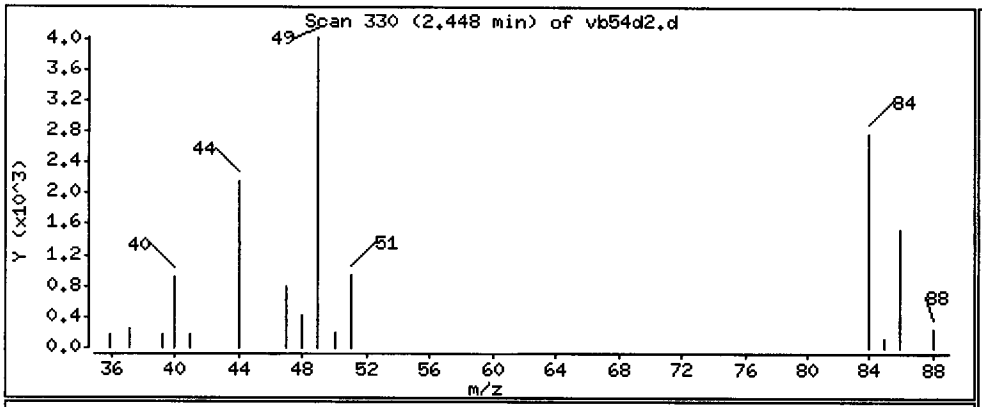
Operator: PB

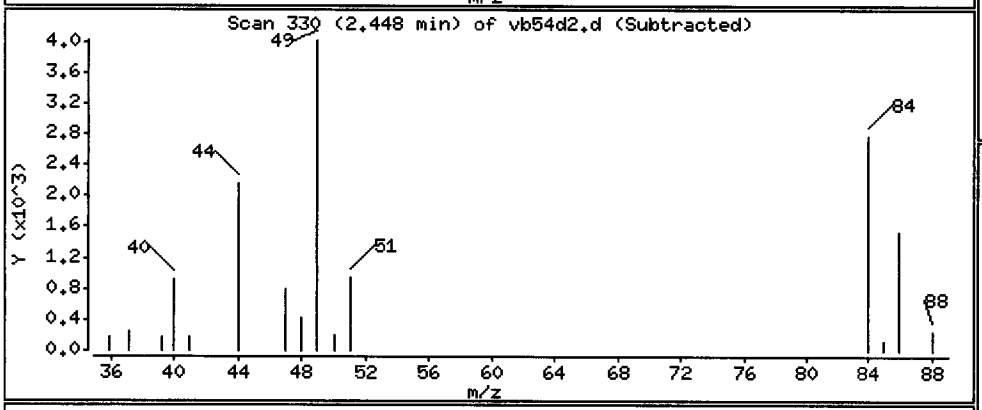
Column phase: RTXVMS

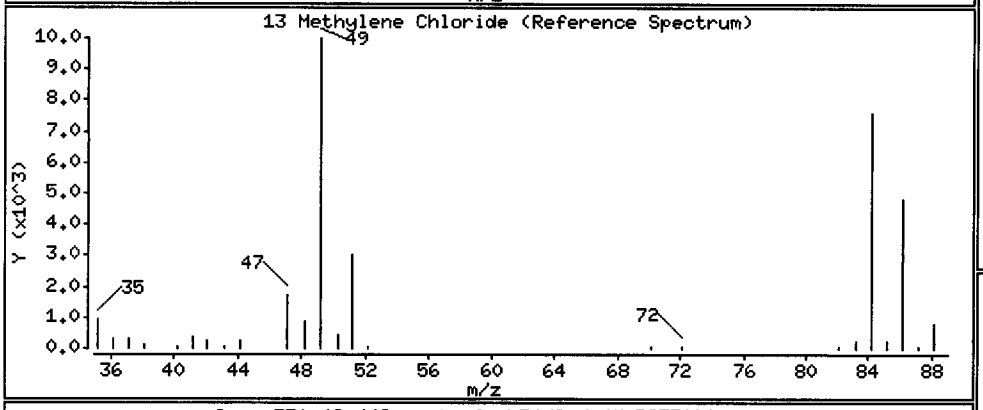
Column diameter: 0.18

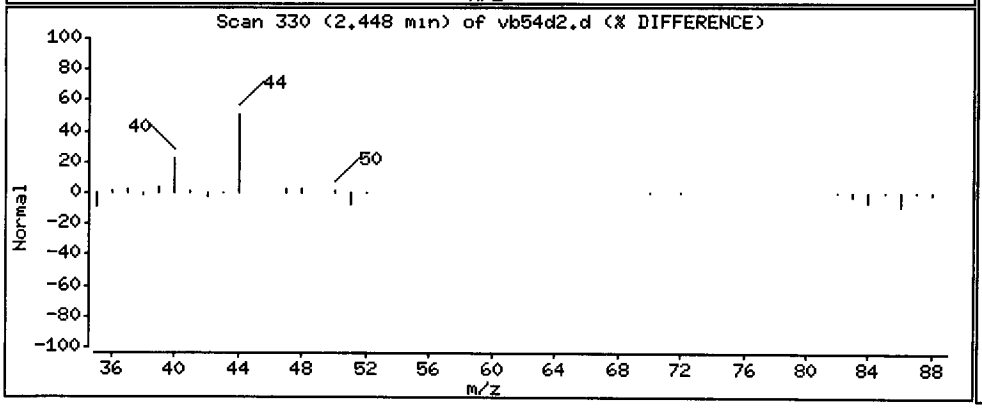
13 Methylene Chloride

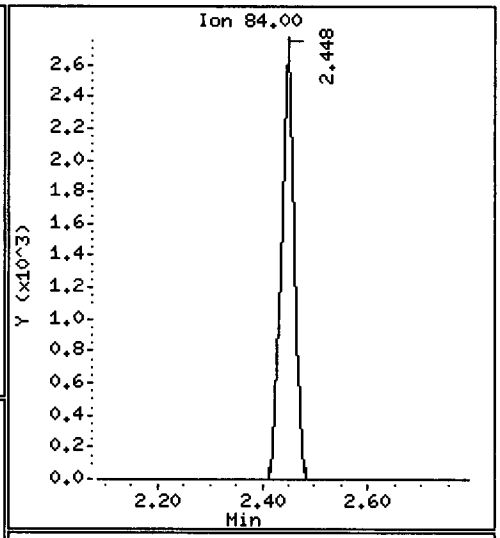
Concentration: 0.1590 ug/Kg

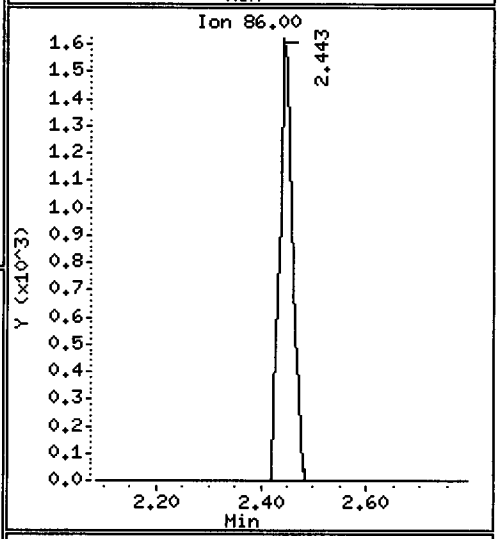


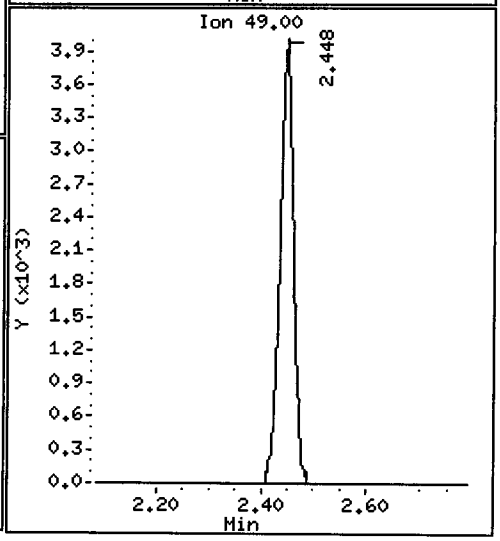












CO-ELUTION SUMMARY FOR FILE - vb54d2.d

Lab ID: VB54D, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/vb54j2.d
Lab Smp Id: VB54J Client Smp ID: CW-TP-01-8-9
Inj Date : 12-JUL-2012 18:06
Operator : PB Inst ID: nt5.i
Smp Info : VB54J,5,8.590,1,5UL
Misc Info : 12-12949
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

M	0.00000	% Moisture (not decanted)
Uf	1.00000	ng unit correction factor
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.448	2.437	(0.522)	4642	0.76045	0.1521
14 Acetone	43	Compound Not Detected.					
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					
16 Methyl tert butyl ether	73	Compound Not Detected.					
17 1,1-Dichloroethane	63	Compound Not Detected.					
18 Acrylonitrile	53	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.208	4.202	(0.897)	267895	43.6651	8.733
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	Compound Not Detected.					
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	4.688	4.683	(1.000)	387611	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.998)	323675	44.1820	8.836
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.141	5.135	(1.000)	855814	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.318	6.318	(1.229)	1157276	49.5330	9.907
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.619	7.624	(1.000)	1023686	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	8.467	8.473	(0.873)	14096	0.60372	0.1207
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.141)	591341	51.7723	10.354
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	8.835	8.841	(0.911)	30691	1.07284	0.2146
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
	66 2-Chloro Toluene	91	Compound Not Detected.					
	67 1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
	68 1,2,3-Trichloropropane	110	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	9.463	9.468	(0.976)	21546	0.84409	0.1688(Q)
74	4-Isopropyl Toluene	119	Compound Not Detected.					
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	581217	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	9.995	10.000	(1.031)	23172	1.17890	0.2358
$ 79	d4-1,2-Dichlorobenzene	152	10.079	10.085	(1.040)	536603	50.2941	10.059
80	1,2-Dichlorobenzene	146	Compound Not Detected.					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
84	Naphthalene	128	Compound Not Detected.					
85	1,2,3-Trichlorobenzene	180	Compound Not Detected.					

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb54j2.d
Lab Smp Id: VB54J
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12949

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: CW-TP-01-8-9
Level: MED
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	387611	32.83
35 1,4-Difluorobenze	682850	341425	1365700	855814	25.33
52 d5-Chlorobenzene	802138	401069	1604276	1023686	27.62
76 d4-1,4-Dichlorobe	452585	226292	905170	581217	28.42

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.69	0.12
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.11
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	-0.07
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

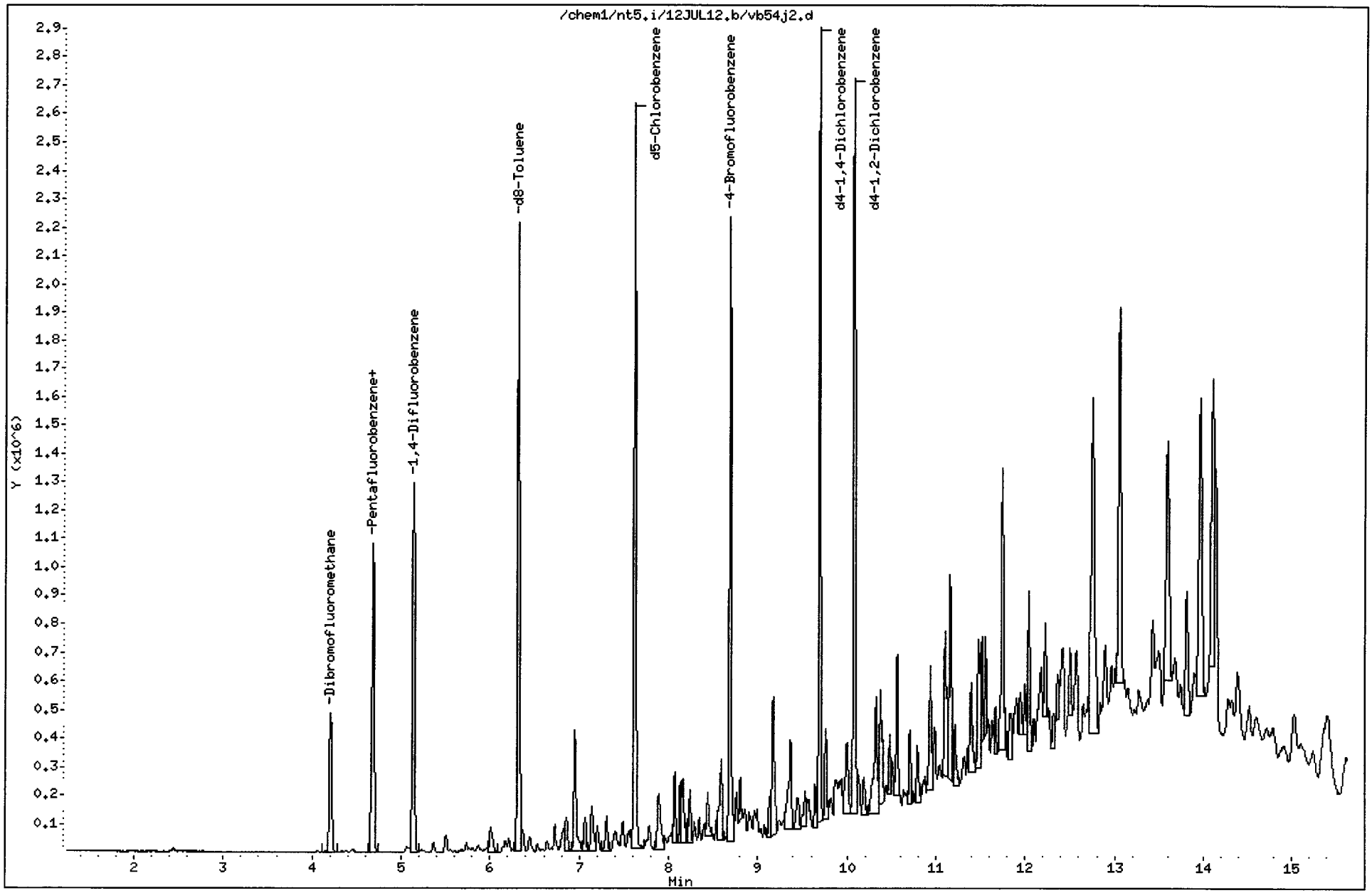
Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB54J
Level: MED
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12949

Client SDG: VB54
Fraction: VOA
Client Smp ID: CW-TP-01-8-9
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	43.665	87.33	30-160
$ 32 d4-1,2-Dichloroeth	50.000	44.182	88.36	75-152
$ 42 d8-Toluene	50.000	49.533	99.07	82-115
$ 62 4-Bromofluorobenze	50.000	51.772	103.54	64-120
$ 79 d4-1,2-Dichloroben	50.000	50.294	100.59	80-120

Data File: /chem1/nt5.i/12JUL12.b/vb54j2.d
Date : 12-JUL-2012 18:06
Client ID: CW-TP-01-8-9
Sample Info: VB54J,5,8.590,1,5UL

Instrument: nt5.i
Operator: PB
Column phase: RTXVMS
Column diameter: 0.18



VB51 00158

Data File: /chem1/nt5.i/12JUL12.b/vb54j2.d

Date : 12-JUL-2012 18:06

Client ID: CW-TP-01-8-9

Instrument: nt5.i

Sample Info: VB54J,5,8.590,1,5UL

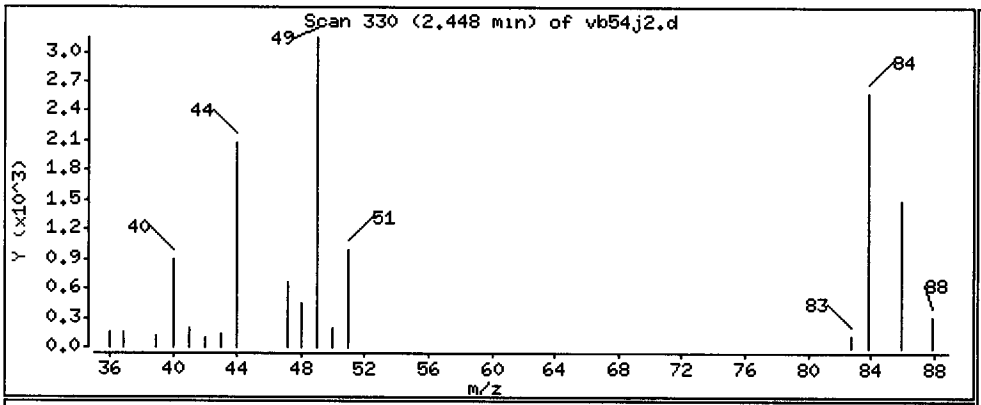
Operator: PB

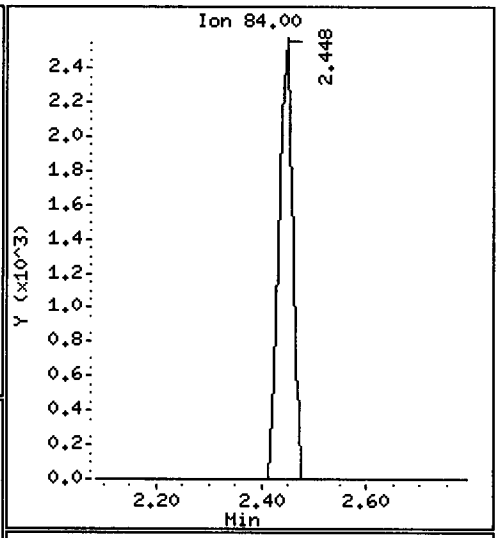
Column phase: RTXVMS

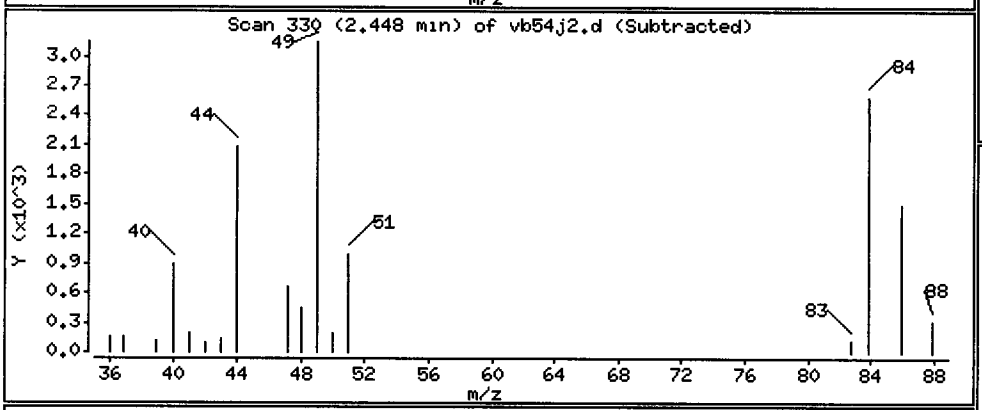
Column diameter: 0.18

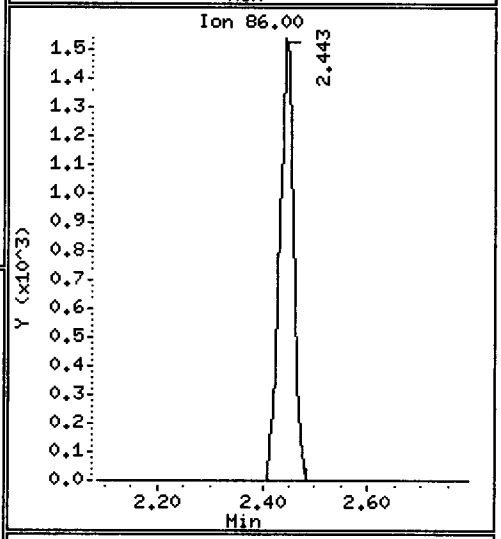
13 Methylene Chloride

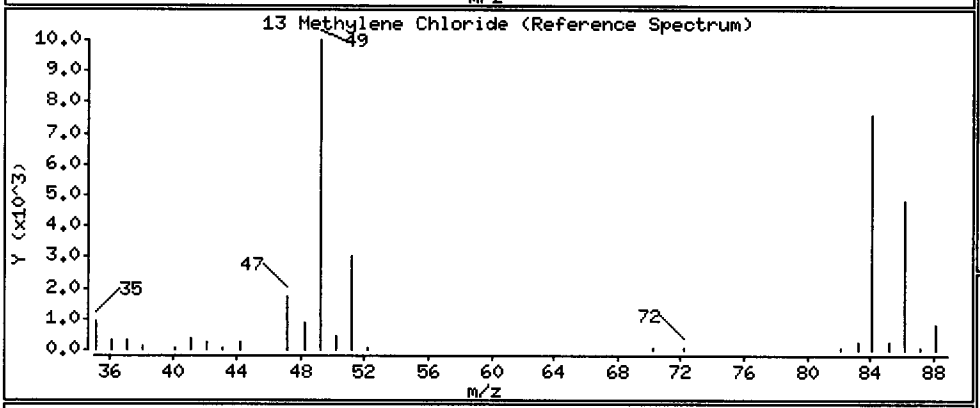
Concentration: 0.1521 ug/Kg

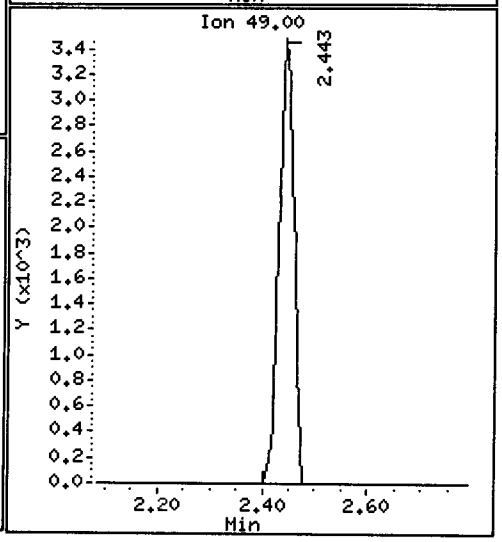


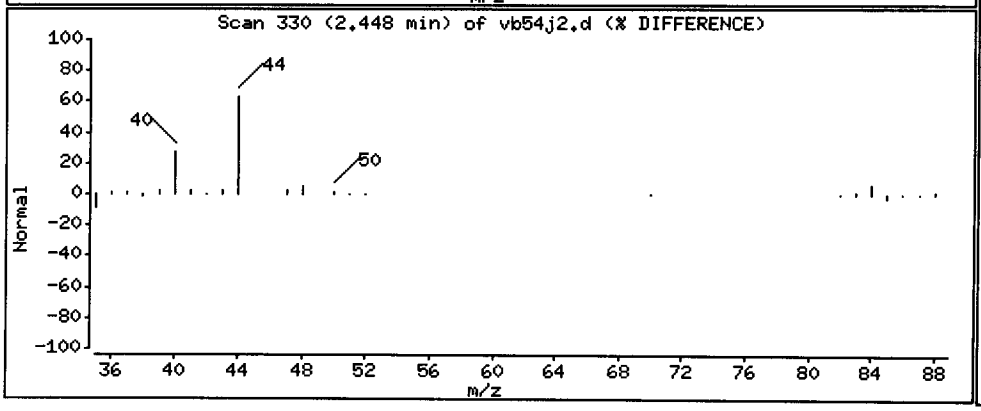












Data File: /chem1/nt5.i/12JUL12.b/vb54j2.d

Date : 12-JUL-2012 18:06

Client ID: CW-TP-01-8-9

Instrument: nt5.i

Sample Info: VB54J,5,8.590,1,5UL

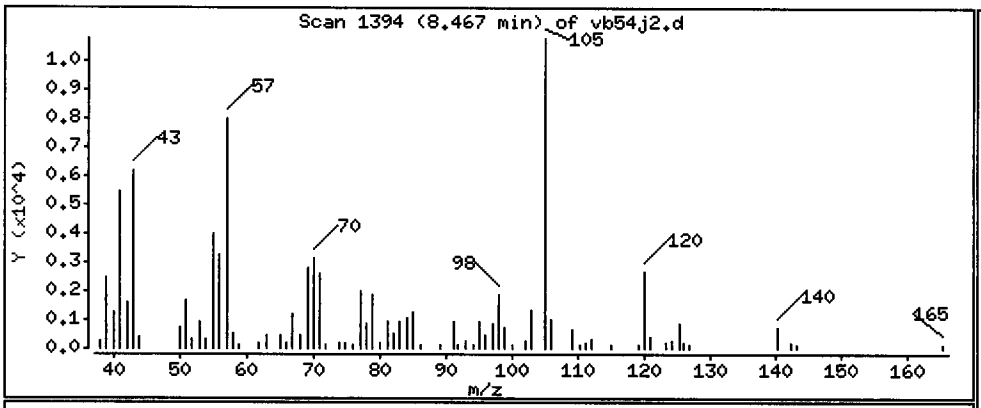
Operator: PB

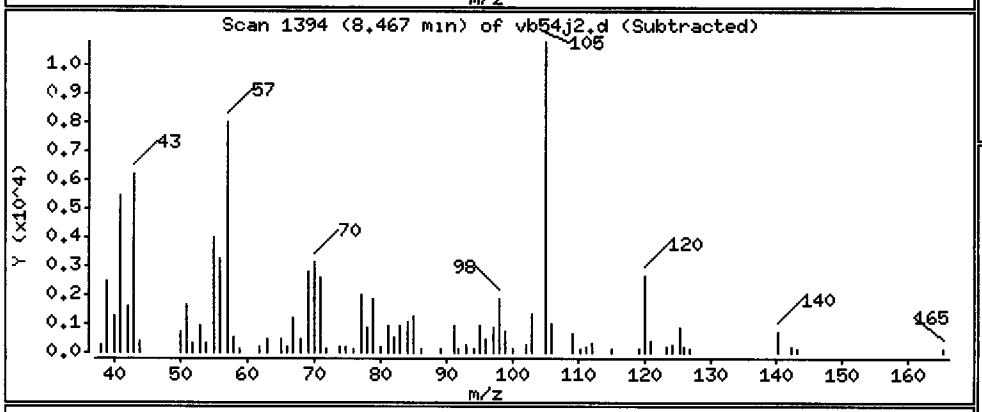
Column phase: RTXVMS

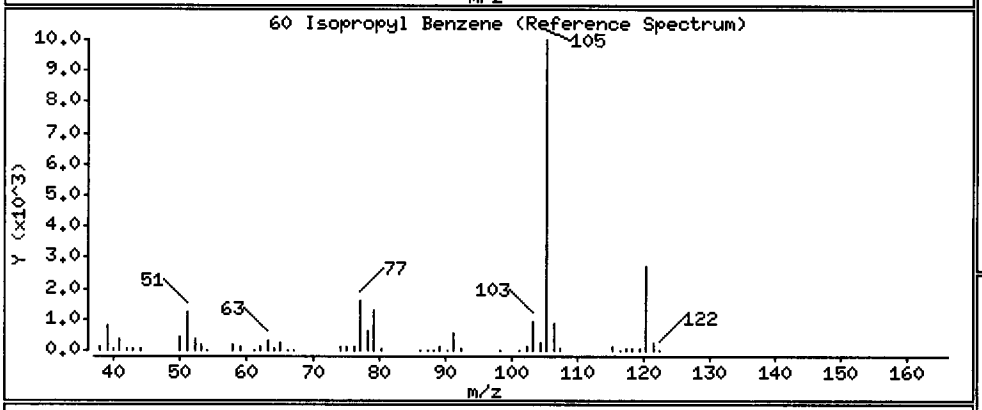
Column diameter: 0.18

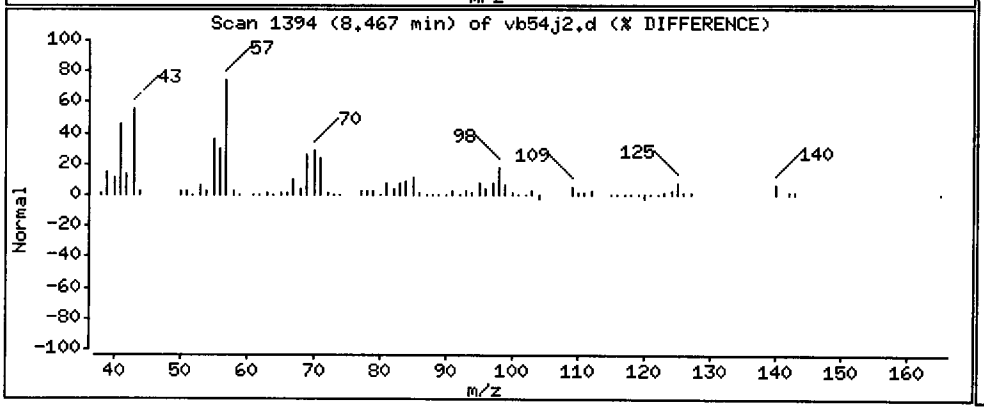
60 Isopropyl Benzene

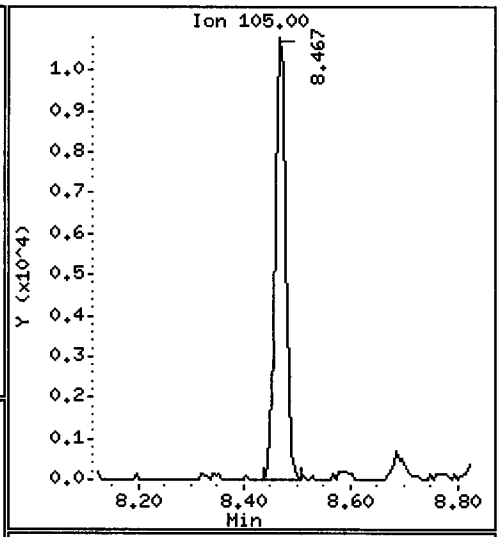
Concentration: 0.1207 ug/Kg

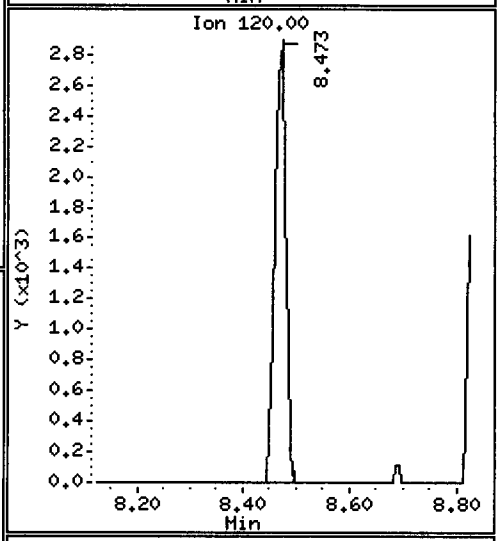


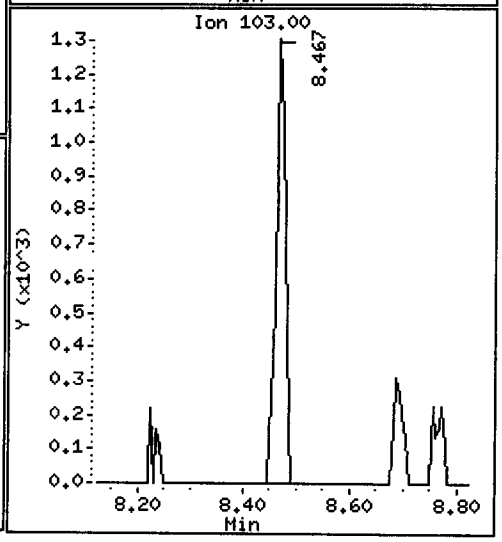












Data File: /chem1/nt5.i/12JUL12.b/vb54j2.d

Date : 12-JUL-2012 18:06

Client ID: CW-TP-01-8-9

Instrument: nt5.i

Sample Info: VB54J,5,8.590,1,5UL

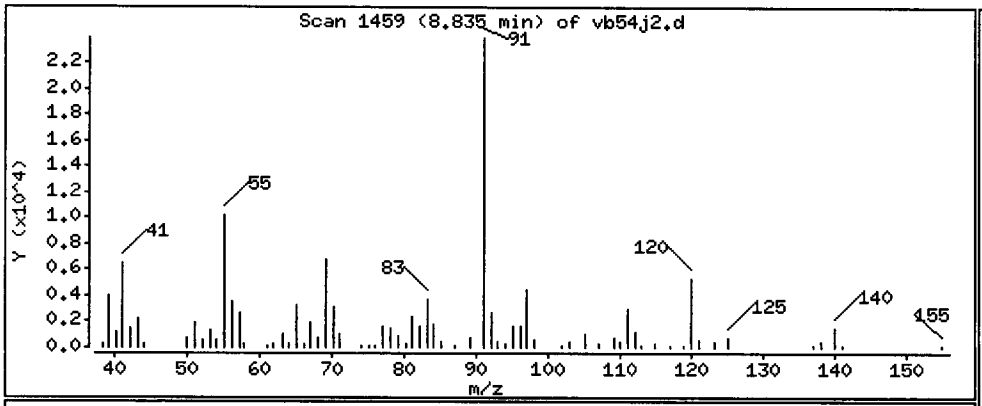
Operator: PB

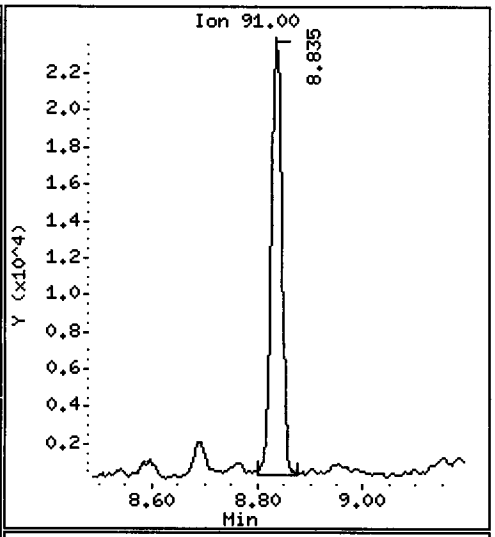
Column phase: RTXVMS

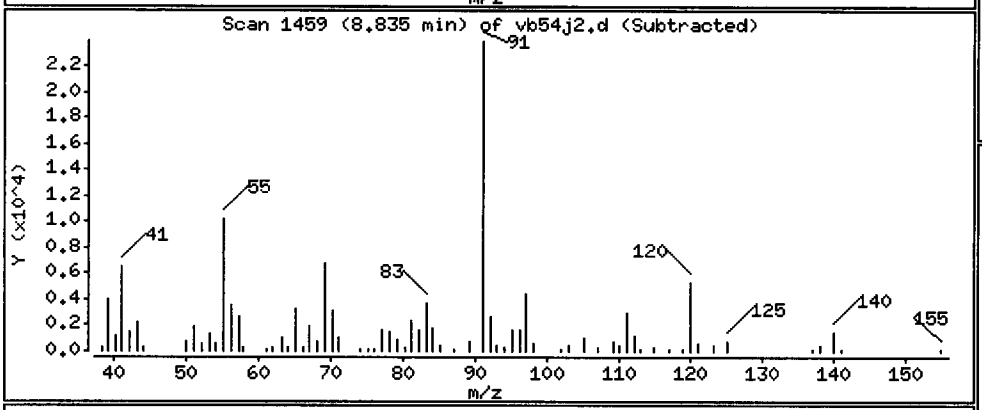
Column diameter: 0.18

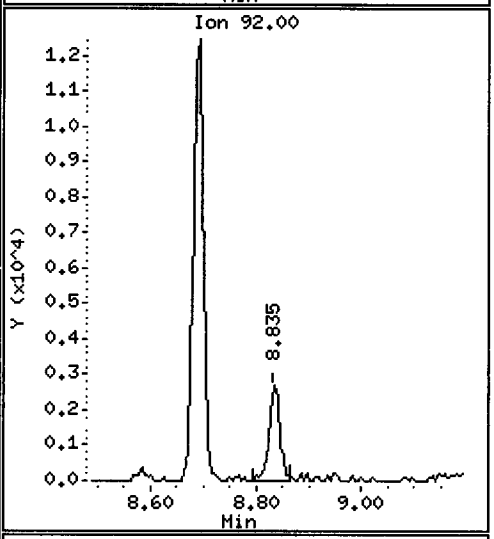
64 N-Propyl Benzene

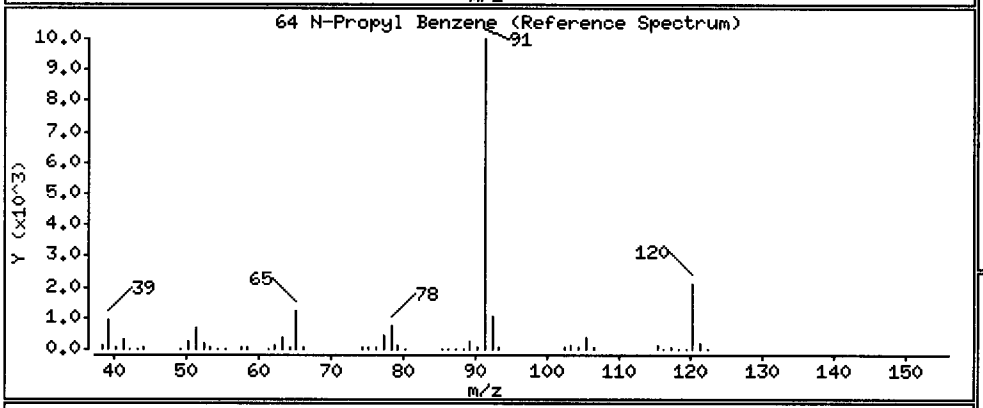
Concentration: 0.2146 ug/Kg

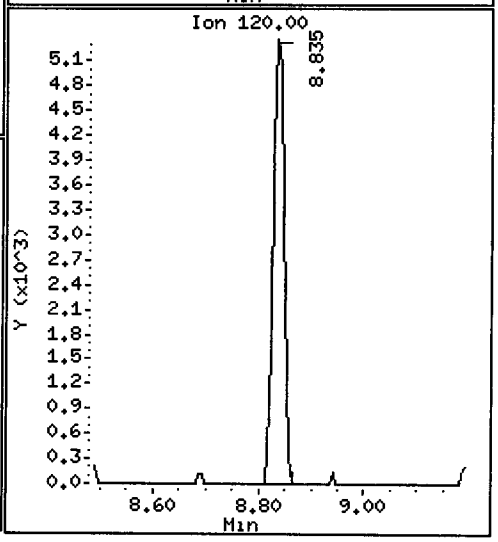


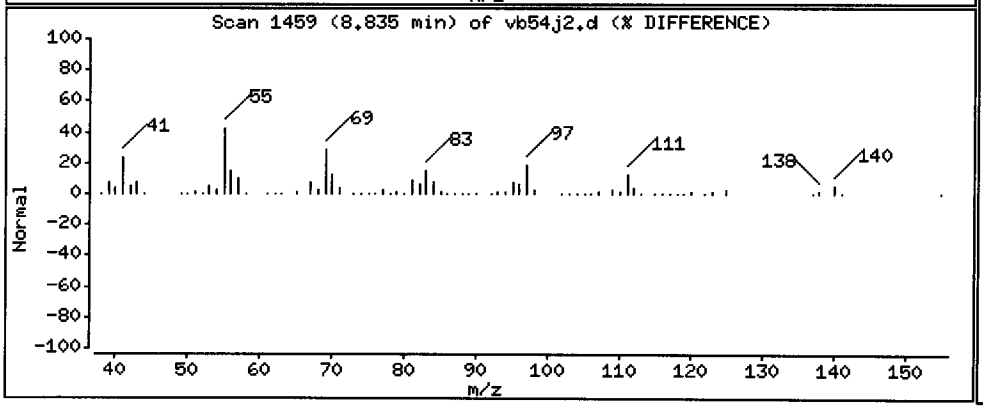












Data File: /chem1/nt5.i/12JUL12.b/vb54j2.d

Date : 12-JUL-2012 18:06

Client ID: CW-TP-01-8-9

Instrument: nt5.i

Sample Info: VB54J,5,8.590,1,5UL

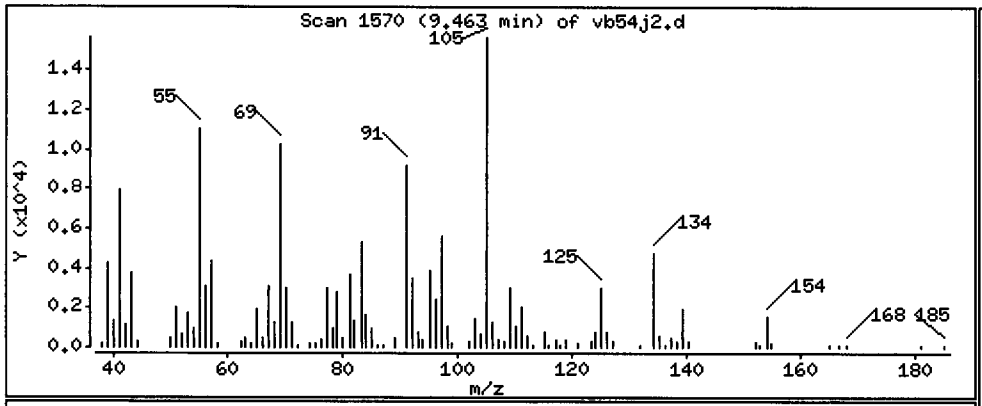
Operator: PB

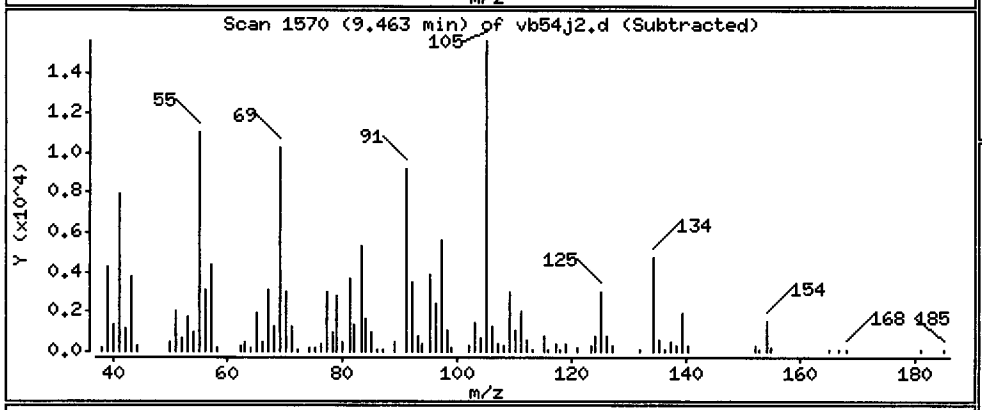
Column phase: RTXVMS

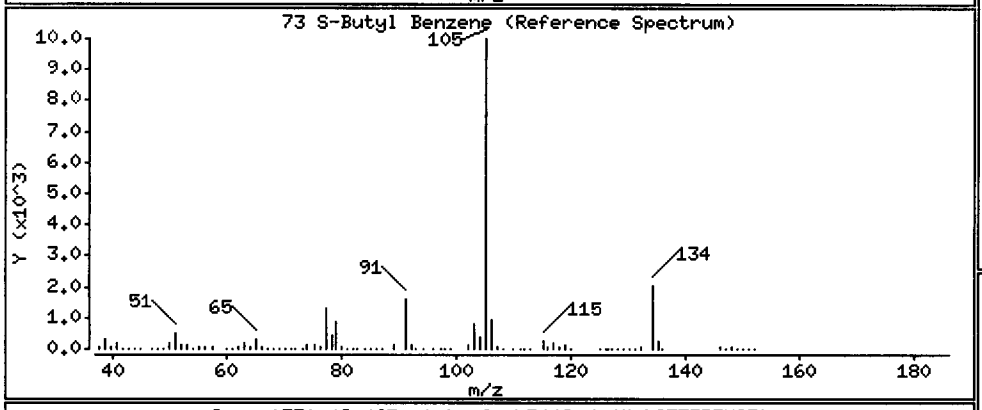
Column diameter: 0.18

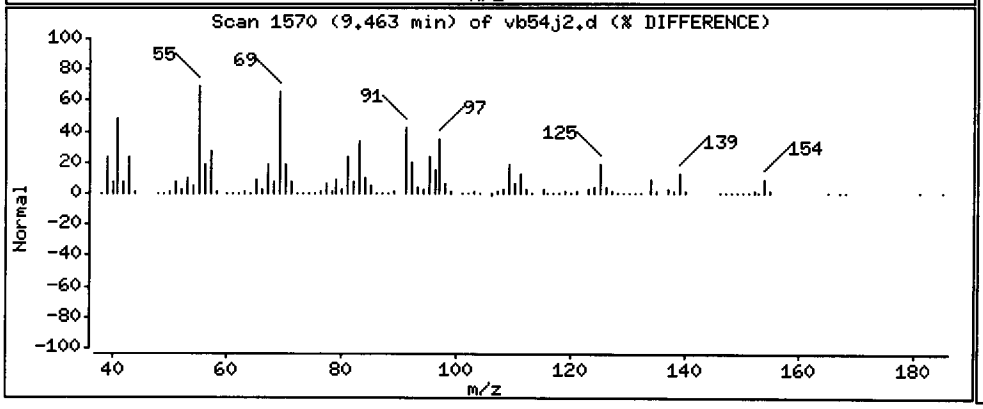
73 S-Butyl Benzene

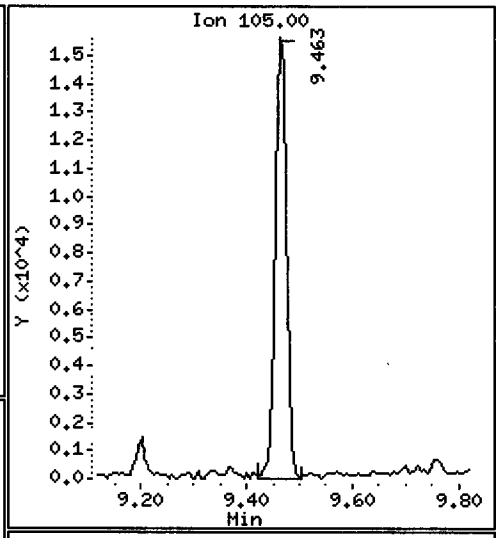
Concentration: 0.1688 ug/Kg

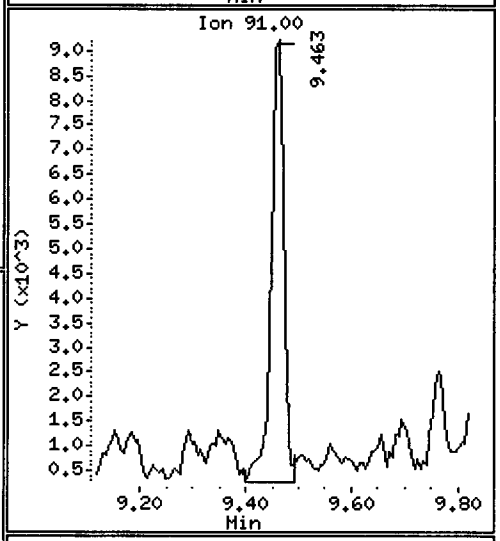


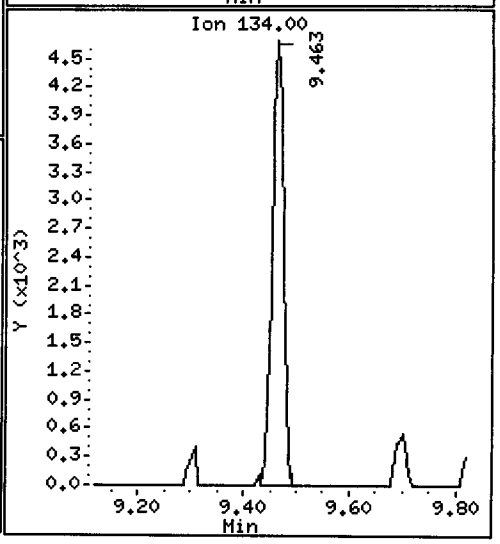












Data File: /chem1/nt5.i/12JUL12.b/vb54j2.d

Date : 12-JUL-2012 18:06

Client ID: CW-TP-01-8-9

Instrument: nt5.i

Sample Info: VB54J,5,8.590,1,5UL

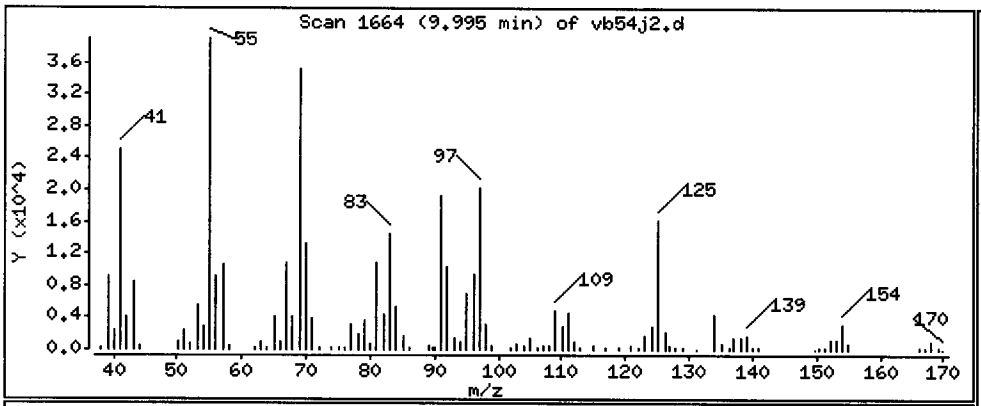
Operator: PB

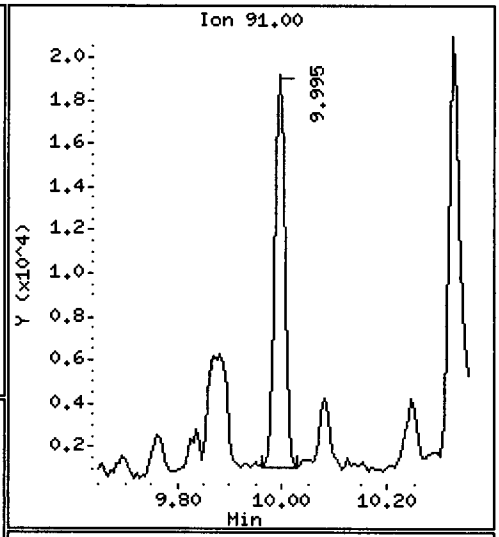
Column phase: RTXVMS

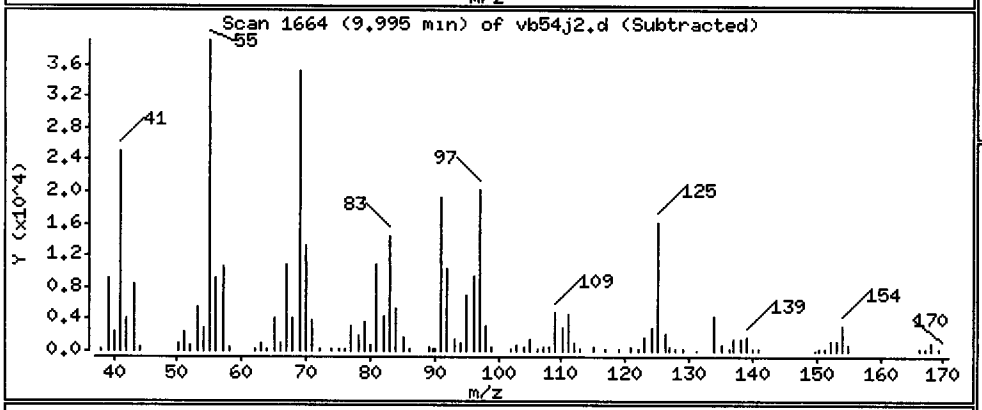
Column diameter: 0.18

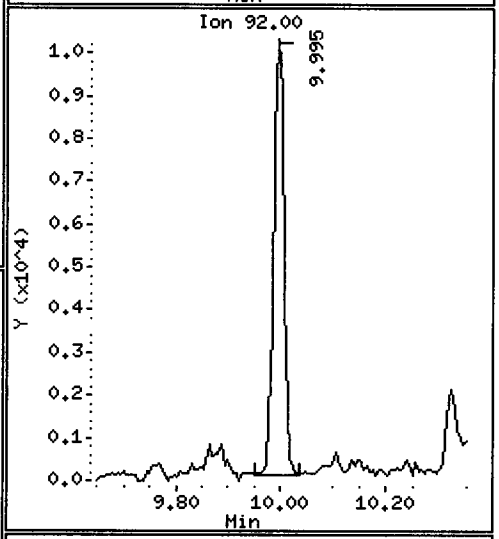
78 N-Butyl Benzene

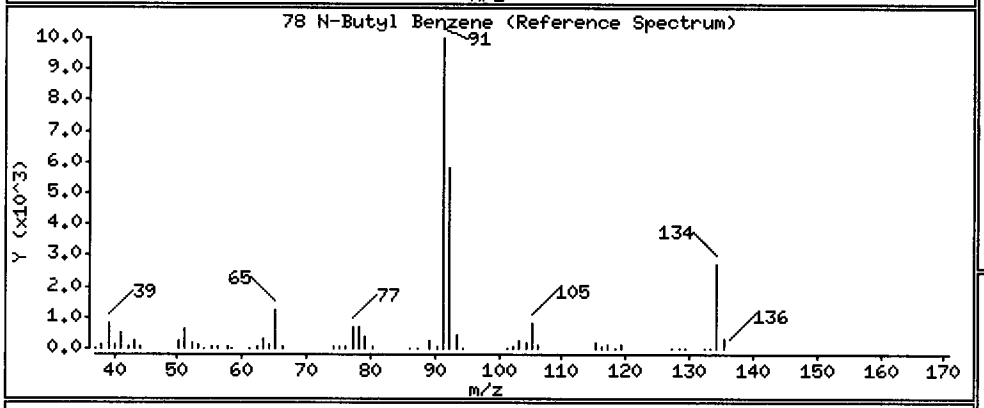
Concentration: 0.2358 ug/Kg

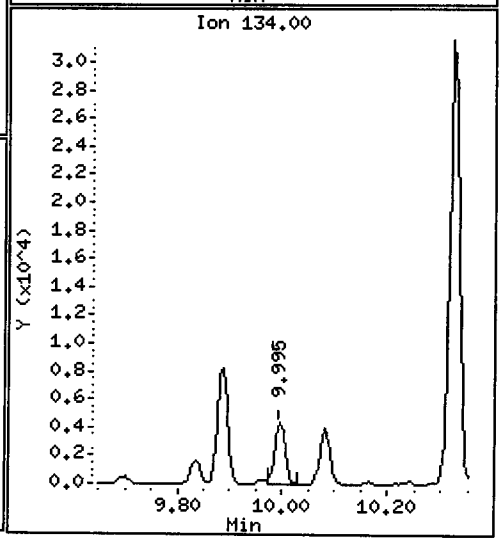


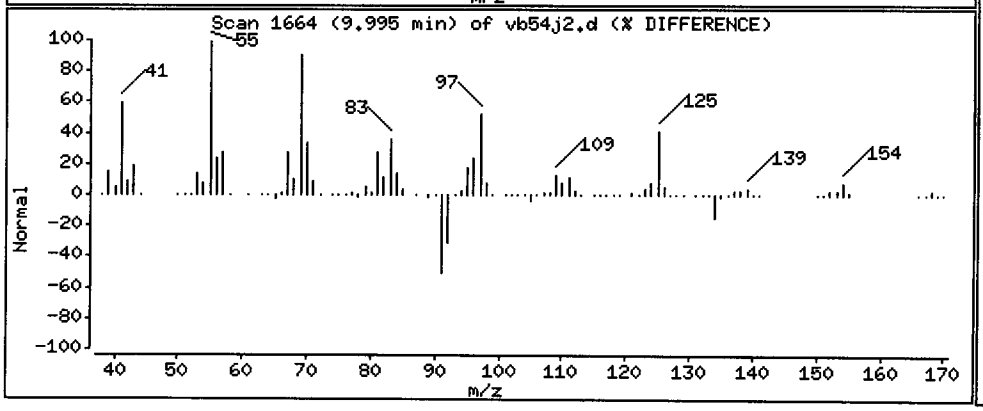












CO-ELUTION SUMMARY FOR FILE - vb54j2.d

Lab ID: VB54J, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/vb54q2.d
Lab Smp Id: VB54Q Client Smp ID: CW-TP-04-8-9
Inj Date : 12-JUL-2012 18:29
Operator : PB Inst ID: nt5.i
Smp Info : VB54Q,5,
Misc Info : 12-12956
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	2.426	2.437	(0.518)	6198	1.07013	1.070
14 Acetone	43	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	4.208	4.202	(0.899)	249904	42.9303	42.930
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	Compound Not Detected.					
	30 Benzene	78	4.542	4.547	(0.884)	155605	8.05256	8.053
*	31 Pentafluorobenzene	168	4.683	4.683	(1.000)	367769	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	300186	43.1865	43.186
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	5.135	5.135	(1.000)	803106	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	6.312	6.318	(1.229)	1087733	49.6120	49.612
	43 Toluene	92	6.357	6.357	(1.238)	8491	0.66026	0.6603
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	7.619	7.624	(1.000)	951194	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	Compound Not Detected.					
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.141)	545297	51.3795	51.380
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	8.835	8.841	(0.911)	23983	0.88504	0.8850
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
66	2-Chloro Toluene	91	Compound Not Detected.					
67	1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
68	1,2,3-Trichloropropane	110	Compound Not Detected.					
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	Compound Not Detected.					
74	4-Isopropyl Toluene	119	Compound Not Detected.					
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	9.695	9.700	(1.000)	550555	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	Compound Not Detected.					
$ 79	d4-1,2-Dichlorobenzene	152	10.080	10.085	(1.040)	505168	49.9847	49.985
80	1,2-Dichlorobenzene	146	Compound Not Detected.					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
84	Naphthalene	128	Compound Not Detected.					
85	1,2,3-Trichlorobenzene	180	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb54q2.d
Lab Smp Id: VB54Q
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12956

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: CW-TP-04-8-9
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	367769	26.03
35 1,4-Difluorobenze	682850	341425	1365700	803106	17.61
52 d5-Chlorobenzene	802138	401069	1604276	951194	18.58
76 d4-1,4-Dichlorobe	452585	226292	905170	550555	21.65

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.68	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	-0.07
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.69	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB54Q
Level: LOW
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12956

Client SDG: VB54
Fraction: VOA
Client Smp ID: CW-TP-04-8-9
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

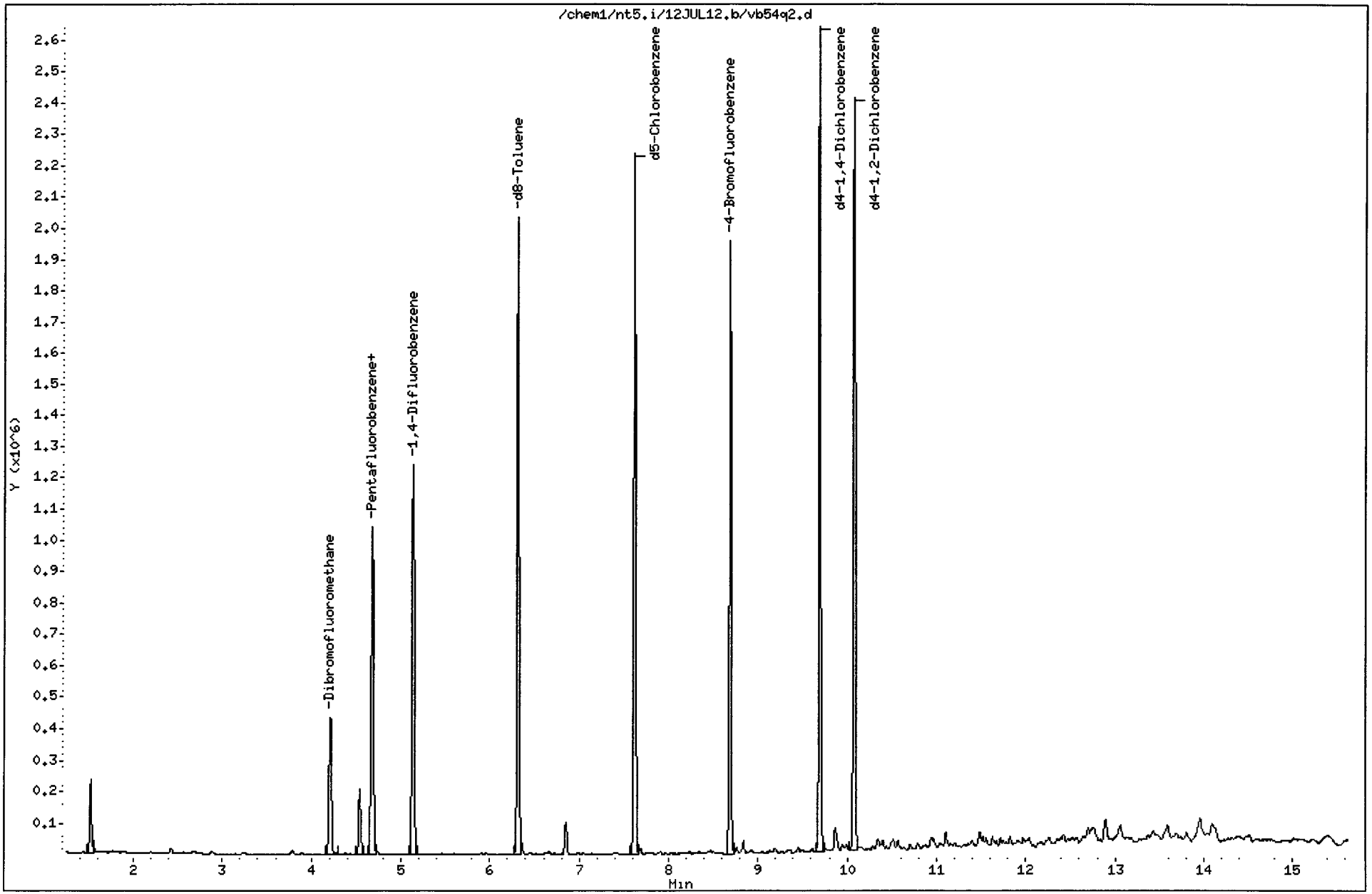
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	42.930	85.86	30-160
$ 32 d4-1,2-Dichloroeth	50.000	43.186	86.37	75-152
$ 42 d8-Toluene	50.000	49.612	99.22	82-115
$ 62 4-Bromofluorobenze	50.000	51.380	102.76	64-120
$ 79 d4-1,2-Dichloroben	50.000	49.985	99.97	80-120

Data File: /chem1/nt5.i/12JUL12.b/vb54q2.d
Date : 12-JUL-2012 18:29
Client ID: CW-TP-04-8-9
Sample Info: VB54Q,5,

Instrument: nt5.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



Data File: /chem1/nt5.i/12JUL12.b/vb54q2.d

Date : 12-JUL-2012 18:29

Client ID: CW-TP-04-8-9

Instrument: nt5.i

Sample Info: VB54Q,5,

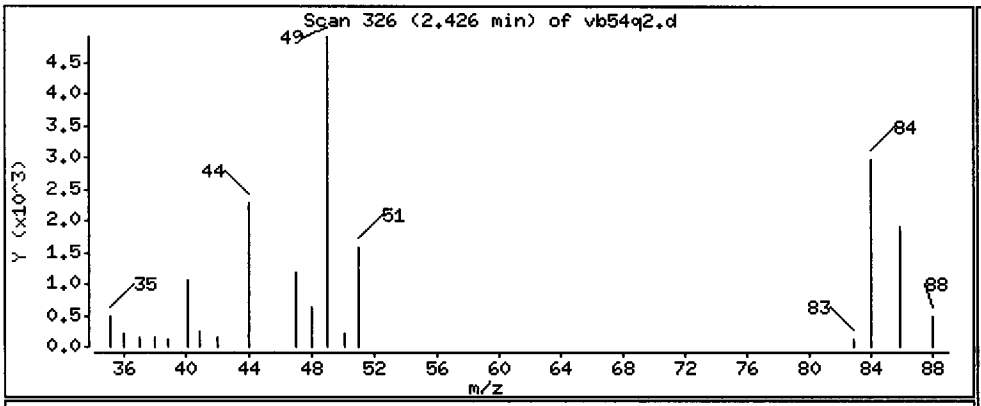
Operator: PB

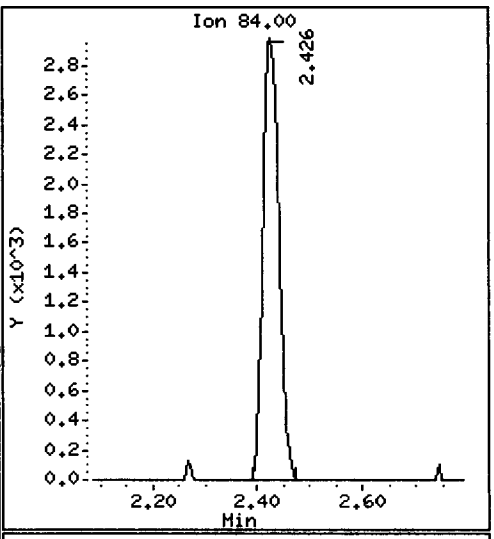
Column phase: RTXVMS

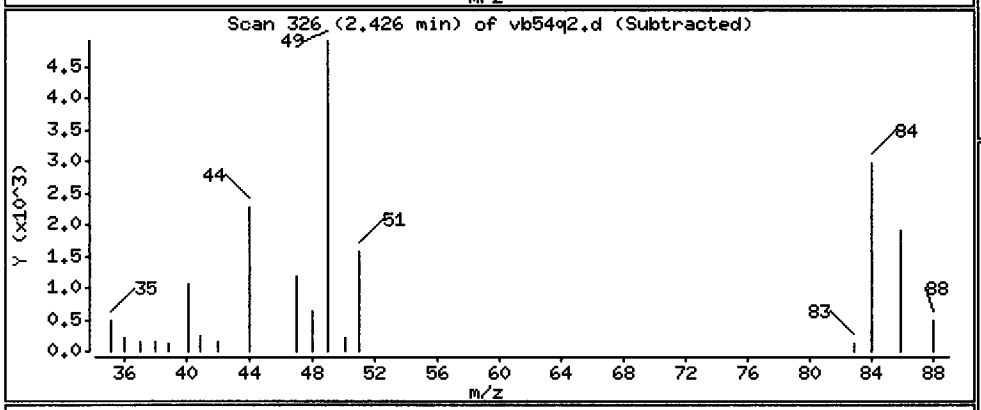
Column diameter: 0.18

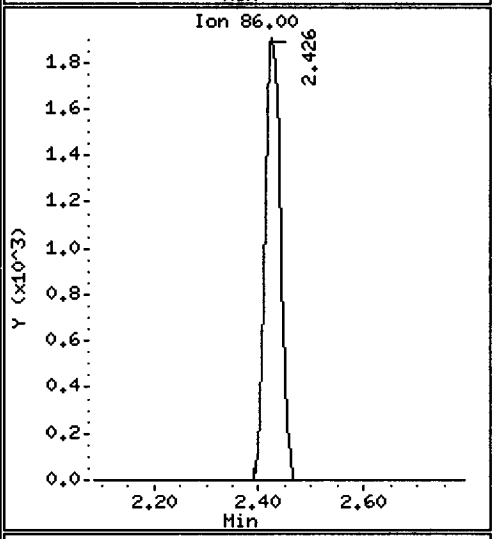
13 Methylene Chloride

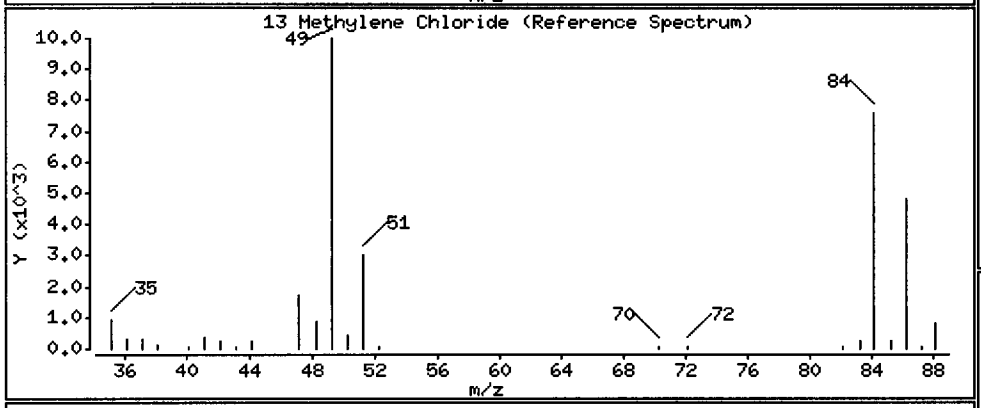
Concentration: 1.070 ug/Kg

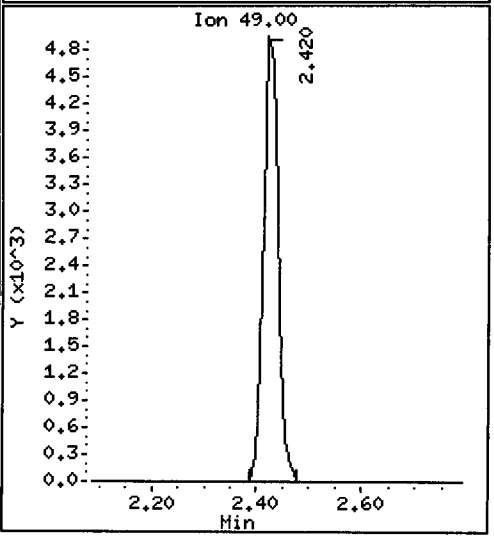


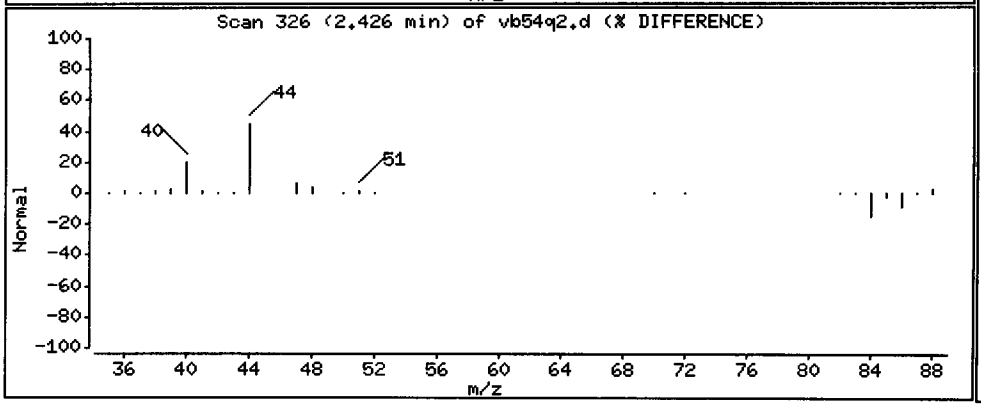












Data File: /chem1/nt5.i/12JUL12.b/vb54q2.d

Date : 12-JUL-2012 18:29

Client ID: CW-TP-04-8-9

Instrument: nt5.i

Sample Info: VB54Q,5,

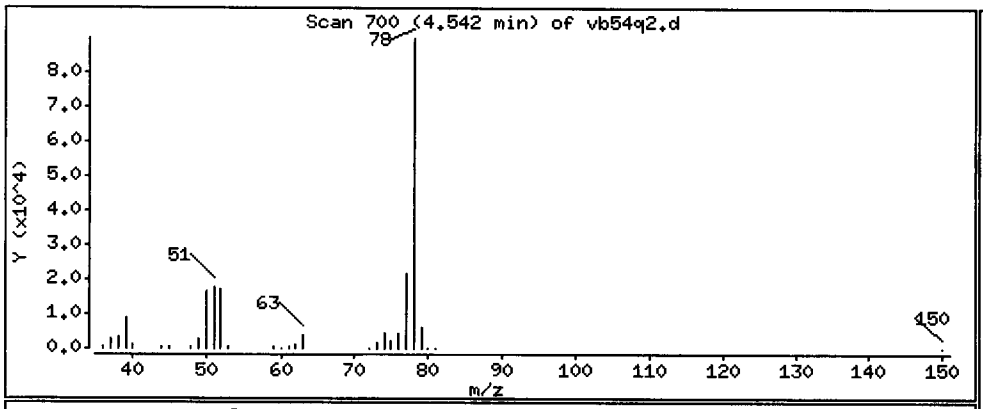
Operator: PB

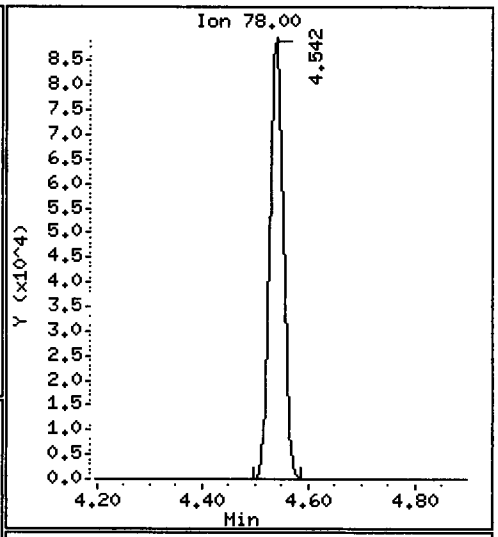
Column phase: RTXVMS

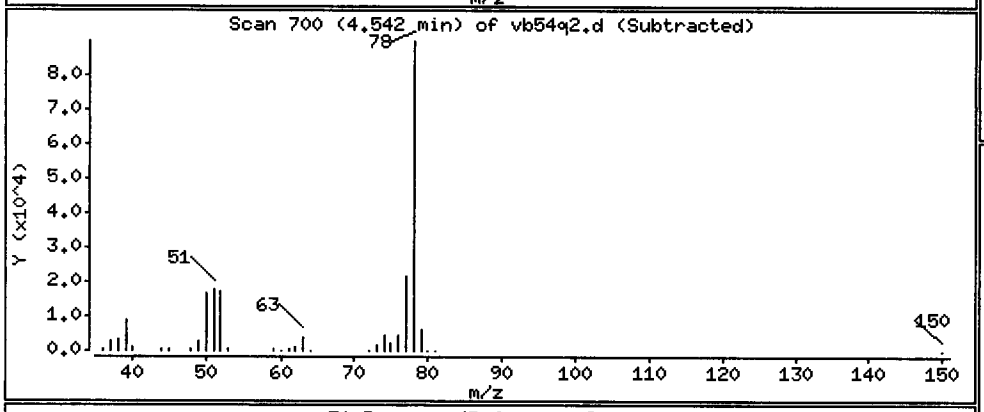
Column diameter: 0.18

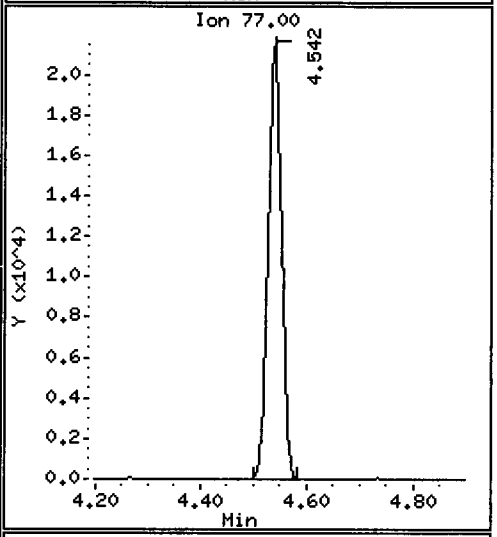
30 Benzene

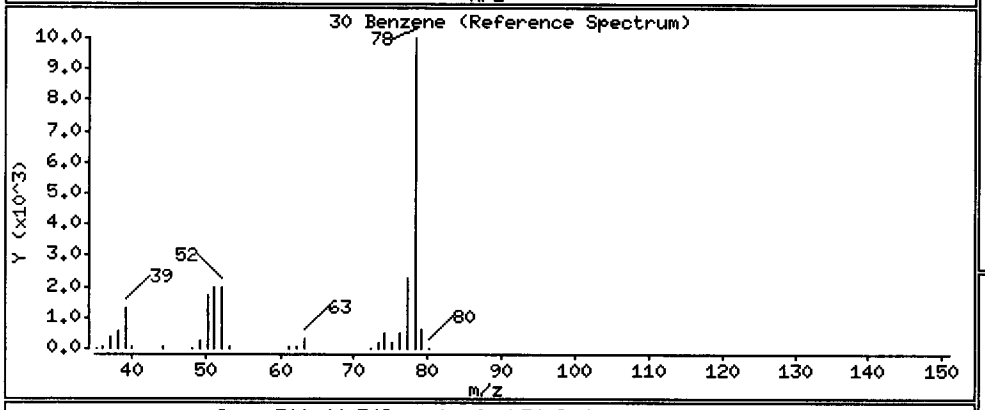
Concentration: 8.053 ug/Kg

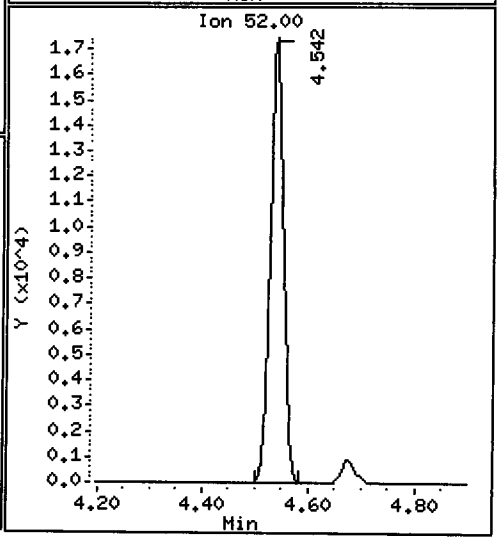


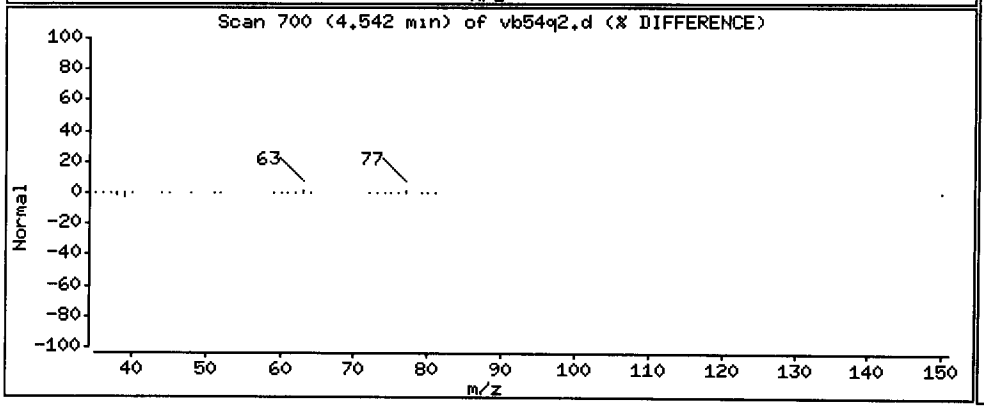












Data File: /chem1/nt5.i/12JUL12.b/vb54q2.d

Date : 12-JUL-2012 18:29

Client ID: CW-TP-04-8-9

Instrument: nt5.i

Sample Info: VB54Q,5,

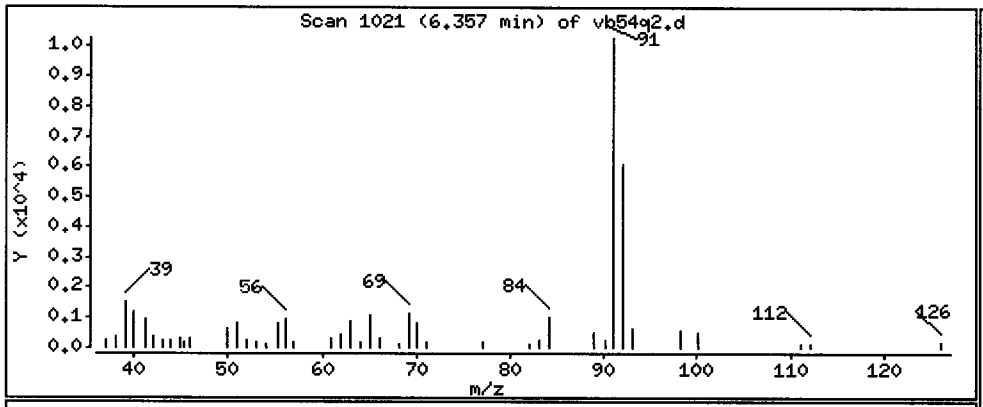
Operator: PB

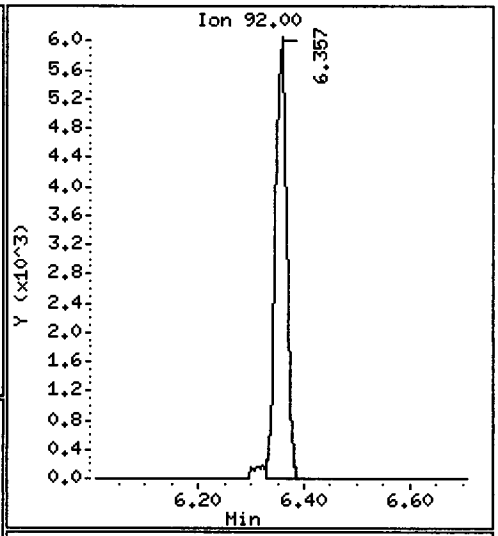
Column phase: RTXVMS

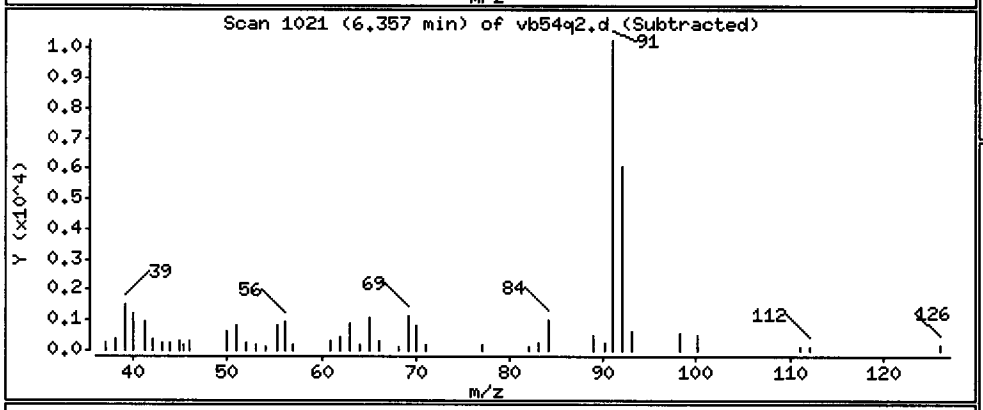
Column diameter: 0.18

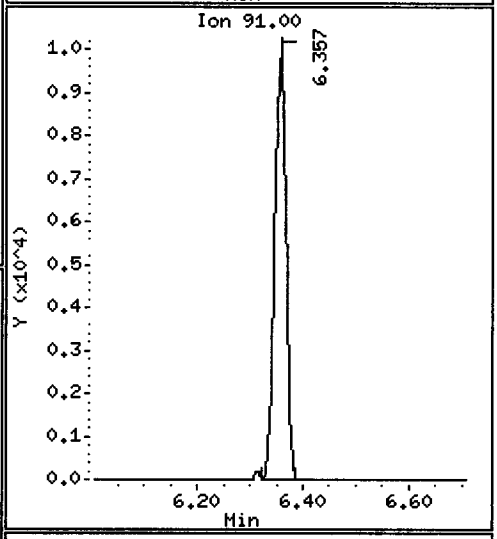
43 Toluene

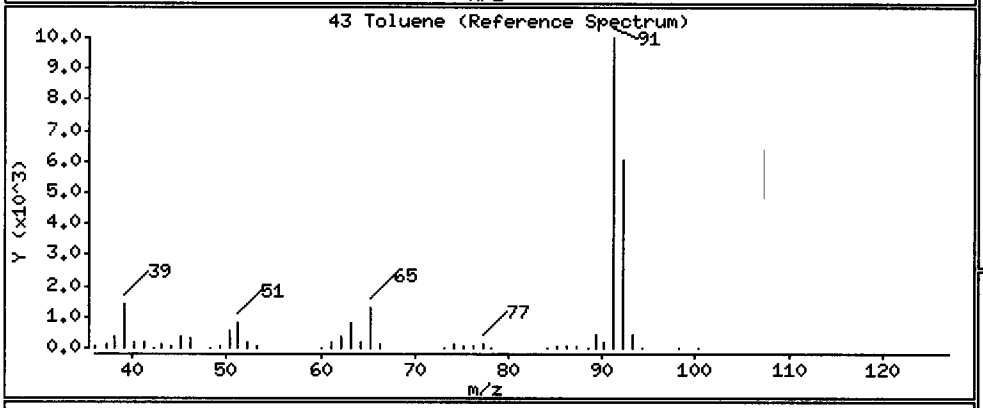
Concentration: 0.6603 ug/Kg

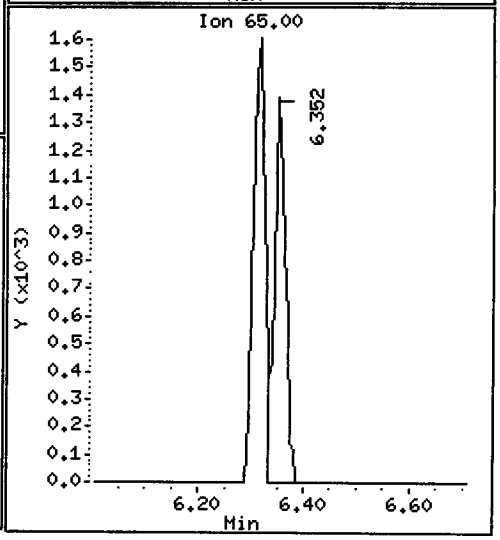


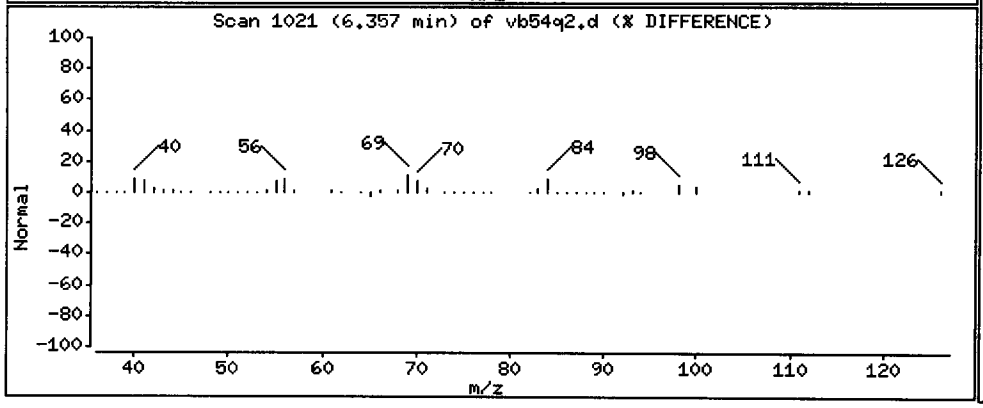












Data File: /chem1/nt5.i/12JUL12.b/vb54q2.d

Date : 12-JUL-2012 18:29

Client ID: CW-TP-04-8-9

Instrument: nt5.i

Sample Info: VB54Q,5,

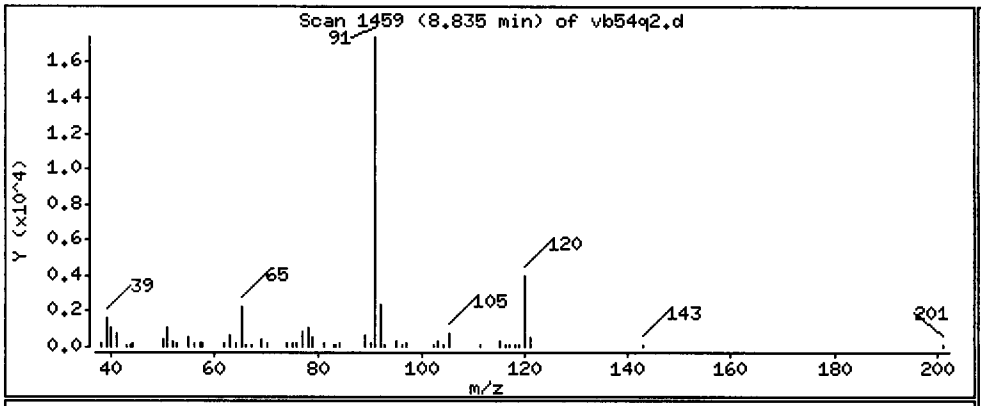
Operator: PB

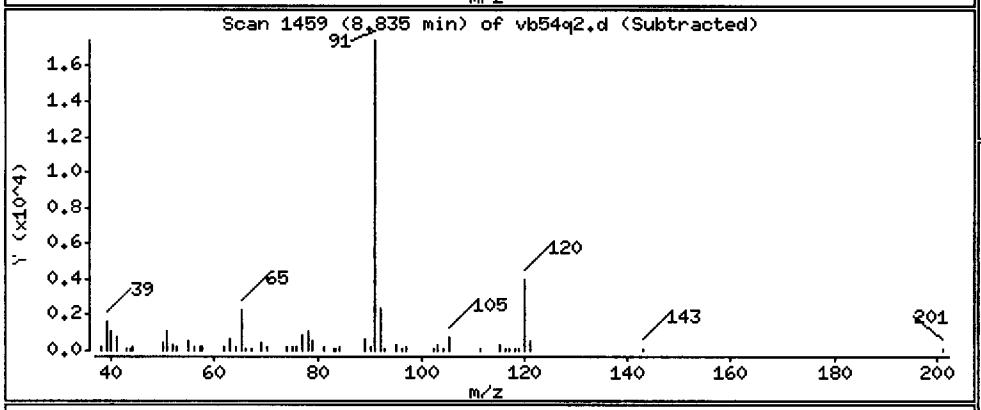
Column phase: RTXVMS

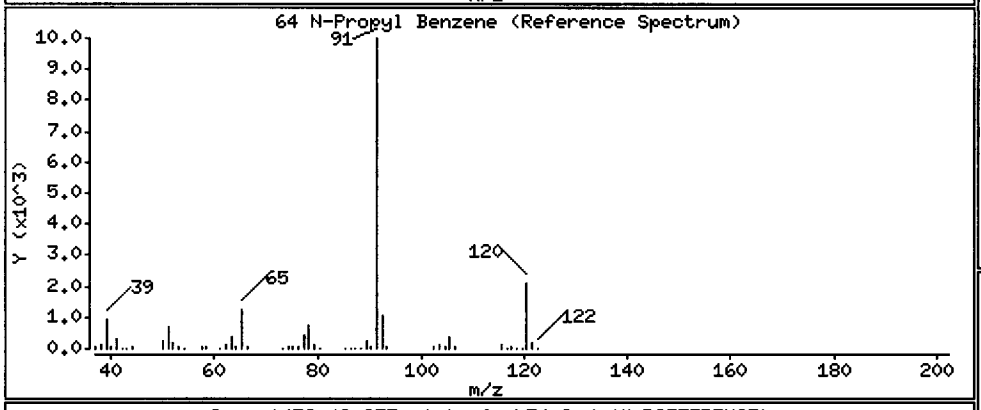
Column diameter: 0.18

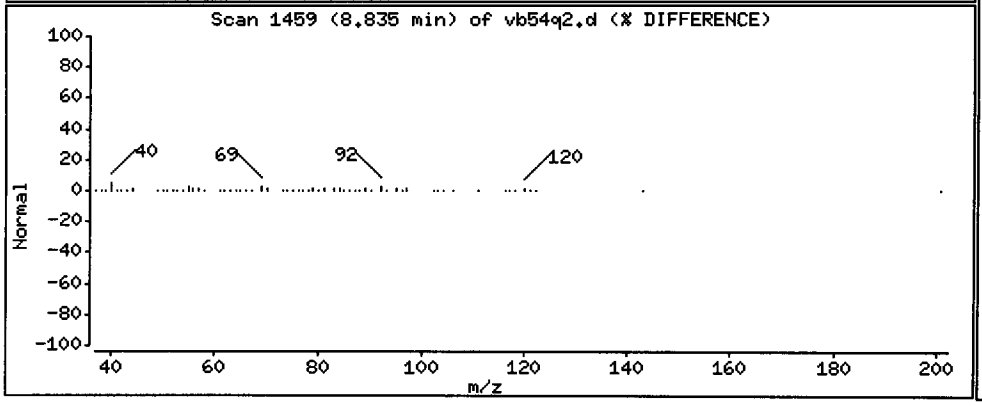
64 N-Propyl Benzene

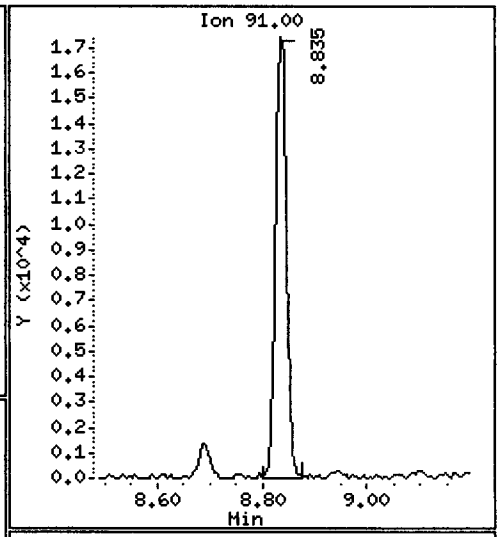
Concentration: 0.8850 ug/Kg

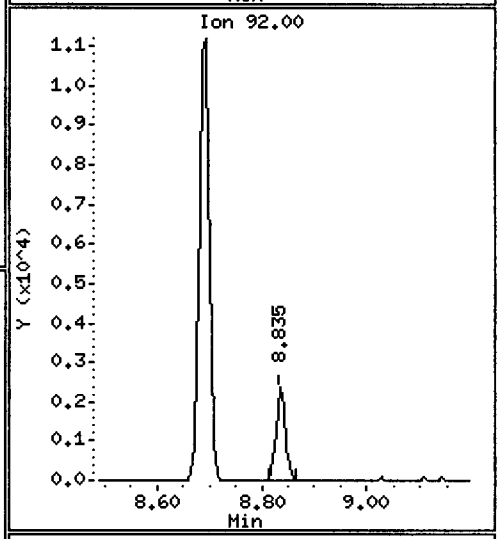


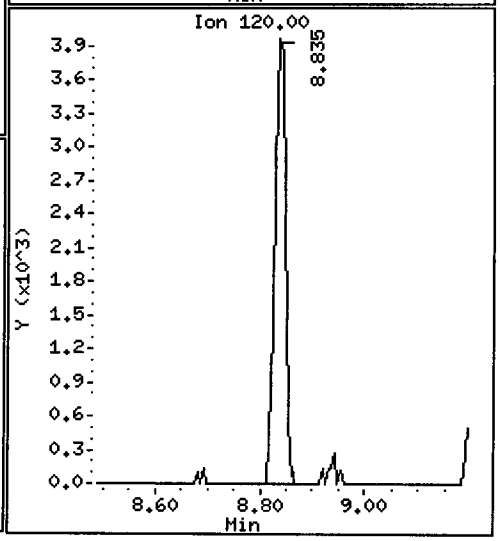












CO-ELUTION SUMMARY FOR FILE - vb54q2.d

Lab ID: VB54Q, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/vb54gms.d
Lab Smp Id: VB54GMS Client Smp ID: CW-TP-02-8.2-9.2MS
Inj Date : 12-JUL-2012 18:52
Operator : PB Inst ID: nt5.i
Smp Info : VB54GMS,5,7.194,1,15UL
Misc Info : 12-12946
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

M	0.00000	% Moisture (not decanted)
Uf	1.00000	ng unit correction factor
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	1.012	1.011	(0.216)	161521	33.5231	6.705
2 Chloromethane	50	1.136	1.130	(0.243)	259094	38.6198	7.724
3 Vinyl Chloride	62	1.187	1.181	(0.253)	260884	39.1669	7.833
4 Bromomethane	94	1.402	1.402	(0.299)	145841	40.9999	8.200
5 Chloroethane	64	1.481	1.481	(0.316)	138455	33.4137	6.683
6 Trichlorofluoromethane	101	1.572	1.571	(0.336)	180812	31.0430	6.209(R)
7 1,1-Dichloroethene	96	1.934	1.945	(0.413)	165627	36.6824	7.336(R)
8 Carbon Disulfide	76	1.934	1.945	(0.413)	579057	35.5408	7.108
9 112Trichloro122Trifluoroethane	101	1.979	1.990	(0.423)	165066	37.1048	7.421
10 Iodomethane	142	2.041	2.047	(0.436)	216313	43.2558	8.651
11 Bromoethane	108	2.149	2.154	(0.459)	130970	38.4979	7.700
12 Acrolein	56	2.262	2.250	(0.483)	197676	228.159	45.632
13 Methylene Chloride	84	2.437	2.437	(0.520)	213704	36.7041	7.341
14 Acetone	43	2.556	2.533	(0.546)	323604	179.582	35.916
15 Trans-1,2-Dichloroethene	96	2.578	2.578	(0.551)	201377	38.4447	7.689(R)
16 Methyl tert butyl ether	73	2.771	2.754	(0.592)	665868	43.0382	8.608
17 1,1-Dichloroethane	63	3.201	3.201	(0.684)	413461	39.1336	7.827(R)
18 Acrylonitrile	53	3.297	3.285	(0.704)	81044	41.6583	8.332

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	19 Vinyl Acetate	43	3.540	3.534	(0.756)	356611	36.5091	7.302
	20 Cis-1,2-Dichloroethene	96	3.749	3.749	(0.801)	221899	39.8881	7.978(R)
	22 2,2-Dichloropropane	77	3.846	3.845	(0.821)	311628	37.9071	7.581
	23 Bromochloromethane	128	3.936	3.936	(0.841)	101075	40.1881	8.038
	24 Chloroform	83	4.038	4.038	(0.862)	383484	41.2471	8.249
	25 Carbon Tetrachloride	117	4.123	4.128	(0.803)	263200	42.7349	8.547
$	27 Dibromofluoromethane	111	4.208	4.202	(0.899)	254875	43.5548	8.711
	26 1,1,1-Trichloroethane	97	4.196	4.196	(0.896)	333870	40.3793	8.076
	28 1,1-Dichloropropene	75	4.315	4.315	(0.840)	289969	43.8469	8.769
	29 2-Butanone	72	4.383	4.372	(0.936)	122833	218.377	43.675
	30 Benzene	78	4.547	4.547	(0.885)	863071	44.9139	8.983
*	31 Pentafluorobenzene	168	4.683	4.683	(1.000)	369707	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	302903	43.3489	8.670
	33 1,2-Dichloroethane	62	4.739	4.734	(0.923)	335391	45.2297	9.046
	34 Trichloroethene	95	5.085	5.084	(0.990)	219382	44.8686	8.974
*	35 1,4-Difluorobenzene	114	5.135	5.135	(1.000)	798637	50.0000	
	37 Dibromomethane	93	5.441	5.435	(1.059)	126794	46.3214	9.264
	38 1,2-Dichloropropane	63	5.531	5.531	(1.077)	239252	46.1758	9.235
	39 Bromodichloromethane	83	5.611	5.610	(1.093)	294613	45.4181	9.084
	40 2-Chloroethyl Vinyl Ether	63	6.142	6.142	(1.196)	151395	50.7311	10.146
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.199)	356848	45.8769	9.175
$	42 d8-Toluene	98	6.318	6.318	(1.230)	1080604	49.5626	9.913
	43 Toluene	92	6.357	6.357	(1.238)	555690	43.4520	8.690
	44 Tetrachloroethene	166	6.674	6.674	(0.875)	217703	43.1839	8.637
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.308)	490113	244.766	48.953
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.310)	337175	46.1987	9.240
	47 1,1,2-Trichloroethane	97	6.849	6.849	(1.334)	188357	47.2656	9.453
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	206465	45.9667	9.193
	49 1,3-Dichloropropane	76	7.070	7.070	(0.927)	340152	47.5710	9.514
	50 1,2-Dibromoethane	107	7.166	7.166	(1.395)	182658	47.9442	9.589
	51 2-Hexanone	43	7.432	7.432	(0.975)	832406	238.822	47.764
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	946356	50.0000	
	53 Chlorobenzene	112	7.636	7.636	(1.001)	602448	44.7157	8.943
	54 Ethyl Benzene	91	7.687	7.687	(1.008)	1055326	44.1867	8.837
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	212412	45.0862	9.017
	56 m,p-xylene	106	7.817	7.822	(1.025)	782549	93.3096	18.662
	57 o-Xylene	106	8.184	8.184	(1.073)	389071	46.4992	9.300
	58 Styrene	104	8.230	8.230	(1.079)	661493	46.6235	9.325
	59 Bromoform	173	8.224	8.224	(0.848)	137729	44.7897	8.958
	60 Isopropyl Benzene	105	8.473	8.473	(0.873)	1011380	45.5876	9.118
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.140)	556909	52.7419	10.548
	63 Bromobenzene	156	8.767	8.773	(0.904)	251422	44.0037	8.801
	64 N-Propyl Benzene	91	8.841	8.841	(0.911)	1221194	44.9258	8.985
	65 1,1,2,2-Tetrachloroethane	83	8.897	8.897	(0.917)	255860	50.9311	10.186
	66 2-Chloro Toluene	91	8.948	8.948	(0.922)	737521	44.0800	8.816
	67 1,3,5-Trimethyl Benzene	105	9.027	9.027	(0.931)	837768	44.3353	8.867
	68 1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	73751	45.9269	9.185

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	69 Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	89095	45.0483	9.010
	70 4-Chloro Toluene	91	9.101	9.101	(0.938)	750035	43.0435	8.609
	71 T-Butyl Benzene	119	9.305	9.304	(0.959)	741693	44.8715	8.974
	72 1,2,4-Trimethylbenzene	105	9.367	9.372	(0.966)	844381	44.7689	8.954
	73 S-Butyl Benzene	105	9.469	9.468	(0.976)	1116766	46.0440	9.209
	74 4-Isopropyl Toluene	119	9.610	9.616	(0.991)	890537	44.8177	8.964
	75 1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	461985	42.3927	8.479
*	76 d4-1,4-Dichlorobenzene	152	9.701	9.700	(1.000)	552267	50.0000	
	77 1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	468168	41.0298	8.206
	78 N-Butyl Benzene	91	9.995	10.000	(1.030)	864131	46.2681	9.254
$	79 d4-1,2-Dichlorobenzene	152	10.080	10.085	(1.039)	512274	50.5307	10.106
	80 1,2-Dichlorobenzene	146	10.091	10.091	(1.040)	462247	43.2790	8.656
	81 1,2-Dibromo 3-Chloropropane	75	10.843	10.843	(1.118)	46502	46.9015	9.380
	82 Hexachloro 1,3-Butadiene	225	11.516	11.522	(1.187)	198537	44.7877	8.958
	83 1,2,4-Trichlorobenzene	180	11.505	11.511	(1.186)	312958	44.0931	8.819
	84 Naphthalene	128	11.816	11.822	(1.218)	787619	52.7947	10.559
	85 1,2,3-Trichlorobenzene	180	11.997	12.003	(1.237)	298034	44.7965	8.959

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb54gms.d
Lab Smp Id: VB54GMS
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: CW-TP-02-8.2-9.2MS
Level: MED
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	369707	26.70
35 1,4-Difluorobenze	682850	341425	1365700	798637	16.96
52 d5-Chlorobenzene	802138	401069	1604276	946356	17.98
76 d4-1,4-Dichlorobe	452585	226292	905170	552267	22.03

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.68	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB54GMS
Level: MED
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Client SDG: VB54
Fraction: VOA
Client Smp ID: CW-TP-02-8.2-9.2MS
Operator: PB
SampleType: MS
Quant Type: ISTD

	SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
1	Dichlorodifluorome	10.000	6.705	67.05	53-148
2	Chloromethane	10.000	7.724	77.24	64-125
3	Vinyl Chloride	10.000	7.833	78.33	63-137
4	Bromomethane	10.000	8.200	82.00	57-136
5	Chloroethane	10.000	6.683	66.83	64-131
6	Trichlorofluoromet	10.000	6.209	62.09*	69-132
12	Acrolein	50.000	45.632	91.26	54-137
9	112Trichloro122Tri	10.000	7.421	74.21	74-130
14	Acetone	50.000	35.916	71.83	60-131
7	1,1-Dichloroethene	10.000	7.336	73.36*	75-126
11	Bromoethane	10.000	7.700	77.00	76-126
10	Iodomethane	10.000	8.651	86.51	65-139
13	Methylene Chloride	10.000	7.341	73.41	70-123
8	Carbon Disulfide	10.000	7.108	71.08	71-129
18	Acrylonitrile	10.000	8.332	83.32	67-125
15	Trans-1,2-Dichloro	10.000	7.689	76.89*	80-120
19	Vinyl Acetate	10.000	7.302	73.02	60-136
17	1,1-Dichloroethane	10.000	7.827	78.27*	80-120
29	2-Butanone	50.000	43.675	87.35	70-120
22	2,2-Dichloropropan	10.000	7.581	75.81	74-123
20	Cis-1,2-Dichloroet	10.000	7.978	79.78*	80-120
24	Chloroform	10.000	8.249	82.49	80-120
23	Bromochloromethane	10.000	8.038	80.38	80-120
26	1,1,1-Trichloroeth	10.000	8.076	80.76	77-121
28	1,1-Dichloropropen	10.000	8.769	87.69	80-120
25	Carbon Tetrachlori	10.000	8.547	85.47	77-122
33	1,2-Dichloroethane	10.000	9.046	90.46	76-120
30	Benzene	10.000	8.983	89.83	80-120
34	Trichloroethene	10.000	8.974	89.74	80-120
38	1,2-Dichloropropan	10.000	9.235	92.35	80-120
39	Bromodichlorometha	10.000	9.084	90.84	77-121
37	Dibromomethane	10.000	9.264	92.64	80-120
40	2-Chloroethyl Viny	10.000	10.146	101.46	10-191

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
45 4-Methyl-2-Pentano	50.000	48.953	97.91	67-120
41 Cis 1,3-dichloropr	10.000	9.175	91.75	74-120
43 Toluene	10.000	8.690	86.90	80-120
46 Trans 1,3-Dichloro	10.000	9.240	92.40	65-120
51 2-Hexanone	50.000	47.764	95.53	65-130
47 1,1,2-Trichloroeth	10.000	9.453	94.53	80-120
49 1,3-Dichloropropan	10.000	9.514	95.14	80-120
44 Tetrachloroethene	10.000	8.637	86.37	80-121
48 Chlorodibromometha	10.000	9.193	91.93	64-120
50 1,2-Dibromoethane	10.000	9.589	95.89	75-120
53 Chlorobenzene	10.000	8.943	89.43	80-120
55 1,1,1,2-Tetrachlor	10.000	9.017	90.17	69-121
54 Ethyl Benzene	10.000	8.837	88.37	80-127
56 m,p-xylene	20.000	18.662	93.31	80-125
57 o-Xylene	10.000	9.300	93.00	78-120
58 Styrene	10.000	9.325	93.25	80-123
60 Isopropyl Benzene	10.000	9.118	91.18	80-127
59 Bromoform	10.000	8.958	89.58	60-120
65 1,1,2,2-Tetrachlor	10.000	10.186	101.86	74-120
68 1,2,3-Trichloropro	10.000	9.185	91.85	72-121
69 Trans-1,4-Dichloro	10.000	9.010	90.10	65-126
64 N-Propyl Benzene	10.000	8.985	89.85	80-132
63 Bromobenzene	10.000	8.801	88.01	80-120
67 1,3,5-Trimethyl Be	10.000	8.867	88.67	80-125
66 2-Chloro Toluene	10.000	8.816	88.16	80-125
70 4-Chloro Toluene	10.000	8.609	86.09	80-127
71 T-Butyl Benzene	10.000	8.974	89.74	87-122
72 1,2,4-Trimethylben	10.000	8.954	89.54	80-126
73 S-Butyl Benzene	10.000	9.209	92.09	80-134
74 4-Isopropyl Toluen	10.000	8.964	89.64	80-131
75 1,3-Dichlorobenzen	10.000	8.479	84.79	80-120
77 1,4-Dichlorobenzen	10.000	8.206	82.06	80-120
78 N-Butyl Benzene	10.000	9.254	92.54	80-138
80 1,2-Dichlorobenzen	10.000	8.656	86.56	80-120
81 1,2-Dibromo 3-Chlo	10.000	9.380	93.80	59-120
83 1,2,4-Trichloroben	10.000	8.819	88.19	78-130
82 Hexachloro 1,3-But	10.000	8.958	89.58	76-129
84 Naphthalene	10.000	10.559	105.59	66-120
85 1,2,3-Trichloroben	10.000	8.959	89.59	73-123

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	43.555	87.11	30-160

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 32 d4-1,2-Dichloroeth	50.000	43.349	86.70	75-152
$ 42 d8-Toluene	50.000	49.563	99.13	82-115
$ 62 4-Bromofluorobenze	50.000	52.742	105.48	64-120
$ 79 d4-1,2-Dichloroben	50.000	50.531	101.06	80-120

Data File: /chem1/nt5.i/12JUL12.b/vb54gms.d

Date : 12-JUL-2012 18:52

Client ID: CW-TP-02-8.2-9.2MS

Sample Info: VB54GMS,5,7.194,1,15UL

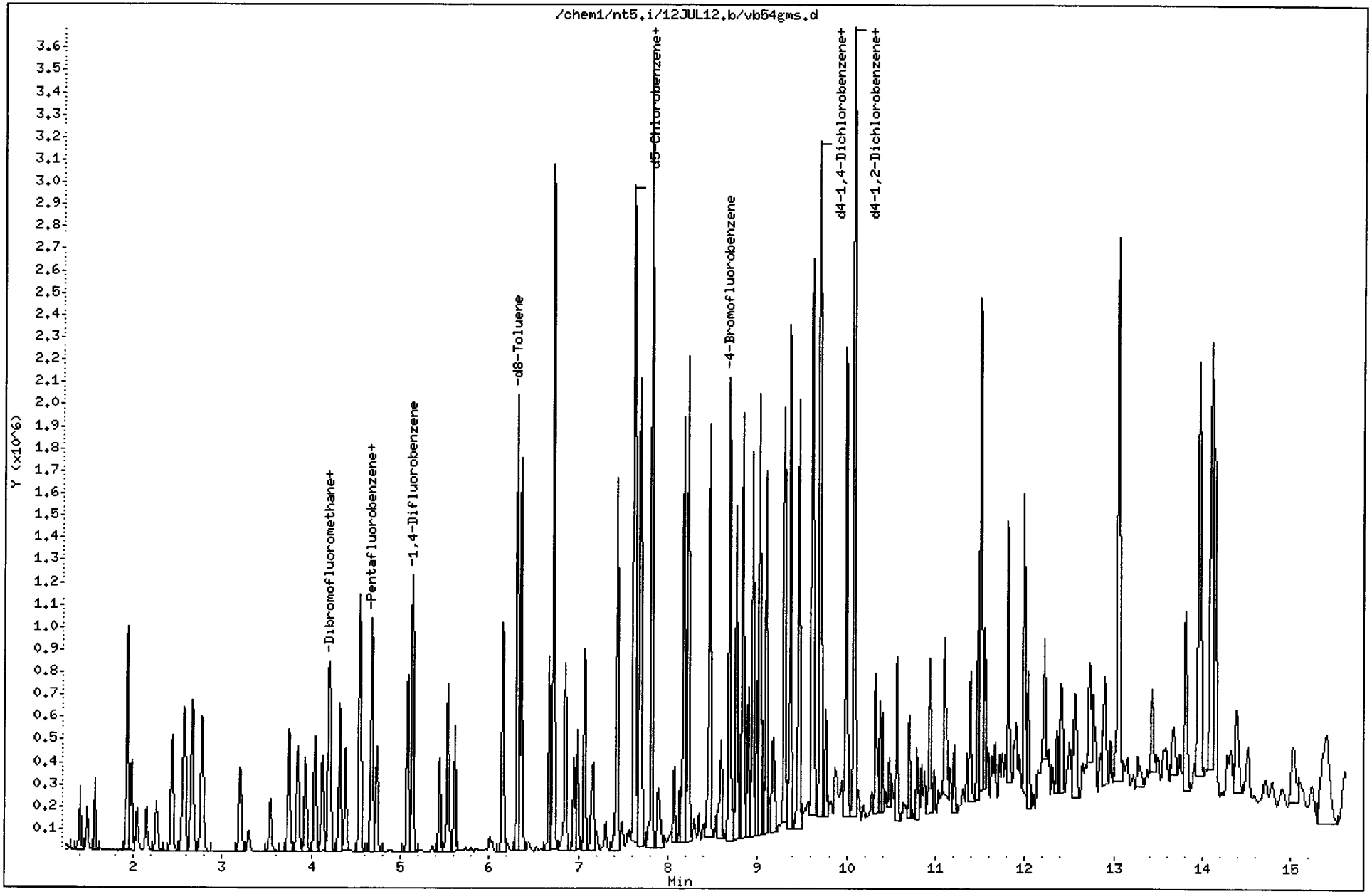
Column phase: RTXVMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18

VB51:00483



CO-ELUTION SUMMARY FOR FILE - vb54gms.d

Lab ID: VB54GMS, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

8260C

Data file : /chem1/nt5.i/12JUL12.b/vb54gmsd.d
Lab Smp Id: VB54GMSD Client Smp ID: CW-TP-02-8.2-9.2MSD
Inj Date : 12-JUL-2012 19:15
Operator : PB Inst ID: nt5.i
Smp Info : VB54GMSD,5,7.194,1,15UL
Misc Info : 12-12946
Comment :
Method : /chem1/nt5.i/12JUL12.b/VO010412S.m
Meth Date : 13-Jul-2012 10:56 patrickb Quant Type: ISTD
Cal Date : 29-JUN-2012 13:51 Cal File: 1500629.d
Als bottle: 1 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

M	0.00000	% Moisture (not decanted)
Uf	1.00000	ng unit correction factor
Ws	5.00000	Weight of sample extracted (g)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	1.012	1.011	(0.216)	164843	32.1637	6.433
2 Chloromethane	50	1.136	1.130	(0.243)	272906	38.2424	7.648
3 Vinyl Chloride	62	1.181	1.181	(0.252)	270480	38.1757	7.635
4 Bromomethane	94	1.396	1.402	(0.298)	144993	38.3204	7.664
5 Chloroethane	64	1.475	1.481	(0.315)	140789	31.9422	6.388(R)
6 Trichlorofluoromethane	101	1.566	1.571	(0.334)	180164	29.0793	5.816(R)
7 1,1-Dichloroethene	96	1.928	1.945	(0.412)	171676	35.7450	7.149(R)
8 Carbon Disulfide	76	1.922	1.945	(0.410)	600987	34.6778	6.936(R)
9 112Trichloro122Trifluoroethane	101	1.973	1.990	(0.421)	167552	35.4081	7.082(R)
10 Iodomethane	142	2.035	2.047	(0.435)	244188	45.9056	9.181
11 Bromoethane	108	2.143	2.154	(0.458)	135019	37.3113	7.462(R)
12 Acrolein	56	2.262	2.250	(0.483)	196509	213.229	42.646
13 Methylene Chloride	84	2.431	2.437	(0.519)	224317	36.2197	7.244
14 Acetone	43	2.556	2.533	(0.546)	317373	165.577	33.115
15 Trans-1,2-Dichloroethene	96	2.573	2.578	(0.549)	207931	37.3187	7.464(R)
16 Methyl tert butyl ether	73	2.771	2.754	(0.592)	684063	41.5664	8.313
17 1,1-Dichloroethane	63	3.201	3.201	(0.684)	426065	37.9116	7.582(R)
18 Acrylonitrile	53	3.297	3.285	(0.704)	79970	38.6445	7.729

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	19 Vinyl Acetate	43	3.540	3.534	(0.756)	359653	34.6155	6.923
	20 Cis-1,2-Dichloroethene	96	3.749	3.749	(0.801)	227821	38.5001	7.700(R)
	22 2,2-Dichloropropane	77	3.846	3.845	(0.821)	311992	35.6786	7.136(R)
	23 Bromochloromethane	128	3.930	3.936	(0.839)	103772	38.7895	7.758(R)
	24 Chloroform	83	4.038	4.038	(0.862)	395296	39.9713	7.994(R)
	25 Carbon Tetrachloride	117	4.123	4.128	(0.803)	269567	40.8556	8.171
$	27 Dibromofluoromethane	111	4.208	4.202	(0.899)	271192	43.5678	8.714
	26 1,1,1-Trichloroethane	97	4.191	4.196	(0.895)	339630	38.6161	7.723
	28 1,1-Dichloropropene	75	4.315	4.315	(0.840)	295555	41.7171	8.343
	29 2-Butanone	72	4.383	4.372	(0.936)	121655	203.331	40.666
	30 Benzene	78	4.541	4.547	(0.884)	896816	43.5638	8.713
*	31 Pentafluorobenzene	168	4.683	4.683	(1.000)	393258	50.0000	
$	32 d4-1,2-Dichloroethane	65	4.677	4.677	(0.999)	322201	43.3493	8.670
	33 1,2-Dichloroethane	62	4.734	4.734	(0.922)	343697	43.2650	8.653
	34 Trichloroethene	95	5.079	5.084	(0.989)	223121	42.5962	8.519
*	35 1,4-Difluorobenzene	114	5.135	5.135	(1.000)	855581	50.0000	
	37 Dibromomethane	93	5.435	5.435	(1.058)	128906	43.9587	8.792
	38 1,2-Dichloropropane	63	5.531	5.531	(1.077)	247233	44.5403	8.908
	39 Bromodichloromethane	83	5.611	5.610	(1.093)	304343	43.7954	8.759
	40 2-Chloroethyl Vinyl Ether	63	6.142	6.142	(1.196)	153539	48.0253	9.605
	41 Cis 1,3-dichloropropene	75	6.159	6.159	(1.199)	370217	44.4279	8.886
$	42 d8-Toluene	98	6.318	6.318	(1.230)	1164462	49.8542	9.971
	43 Toluene	92	6.357	6.357	(1.238)	573903	41.8894	8.378
	44 Tetrachloroethene	166	6.668	6.674	(0.875)	222314	40.7833	8.157
	45 4-Methyl-2-Pentanone	58	6.719	6.719	(1.308)	485710	226.423	45.285
	46 Trans 1,3-Dichloropropene	75	6.725	6.725	(1.310)	344602	44.0738	8.815
	47 1,1,2-Trichloroethane	97	6.849	6.849	(1.334)	190121	44.5330	8.907
	48 Chlorodibromomethane	129	6.991	6.991	(0.917)	211841	43.6179	8.724
	49 1,3-Dichloropropane	76	7.070	7.070	(0.927)	347374	44.9287	8.986
	50 1,2-Dibromoethane	107	7.166	7.166	(1.395)	186578	45.7137	9.143
	51 2-Hexanone	43	7.432	7.432	(0.975)	837915	222.329	44.466
*	52 d5-Chlorobenzene	117	7.624	7.624	(1.000)	1023286	50.0000	
	53 Chlorobenzene	112	7.636	7.636	(1.001)	620036	42.5613	8.512
	54 Ethyl Benzene	91	7.687	7.687	(1.008)	1083678	41.9627	8.393
	55 1,1,1,2-Tetrachloroethane	131	7.704	7.704	(1.010)	221544	43.4892	8.698
	56 m,p-xylene	106	7.817	7.822	(1.025)	802682	88.5148	17.703
	57 o-Xylene	106	8.184	8.184	(1.073)	397981	43.9882	8.798
	58 Styrene	104	8.230	8.230	(1.079)	677694	44.1744	8.835
	59 Bromoform	173	8.224	8.224	(0.848)	140188	41.6100	8.322
	60 Isopropyl Benzene	105	8.467	8.473	(0.873)	1040094	42.7896	8.558
$	62 4-Bromofluorobenzene	95	8.694	8.693	(1.140)	605965	53.0733	10.615
	63 Bromobenzene	156	8.767	8.773	(0.904)	259268	41.4161	8.283
	64 N-Propyl Benzene	91	8.835	8.841	(0.911)	1241467	41.6850	8.337
	65 1,1,2,2-Tetrachloroethane	83	8.897	8.897	(0.917)	256931	46.6799	9.336
	66 2-Chloro Toluene	91	8.948	8.948	(0.922)	755980	41.2393	8.248
	67 1,3,5-Trimethyl Benzene	105	9.027	9.027	(0.931)	856015	41.3467	8.269
	68 1,2,3-Trichloropropane	110	8.999	8.999	(0.928)	73295	41.6588	8.332

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	69 Trans-1,4-Dichloro 2-Butene	53	9.056	9.056	(0.934)	89739	41.4133	8.283
	70 4-Chloro Toluene	91	9.101	9.101	(0.938)	766225	40.1343	8.027
	71 T-Butyl Benzene	119	9.305	9.304	(0.959)	763477	42.1576	8.432(R)
	72 1,2,4-Trimethylbenzene	105	9.367	9.372	(0.966)	869813	42.0918	8.418
	73 S-Butyl Benzene	105	9.469	9.468	(0.976)	1138088	42.8272	8.565
	74 4-Isopropyl Toluene	119	9.610	9.616	(0.991)	910147	41.8064	8.361
	75 1,3-Dichlorobenzene	146	9.627	9.627	(0.992)	473289	39.6391	7.928(R)
*	76 d4-1,4-Dichlorobenzene	152	9.700	9.700	(1.000)	605084	50.0000	
	77 1,4-Dichlorobenzene	146	9.712	9.712	(1.001)	482947	38.6305	7.726(R)
	78 N-Butyl Benzene	91	9.995	10.000	(1.030)	875727	42.7961	8.559
$	79 d4-1,2-Dichlorobenzene	152	10.080	10.085	(1.039)	558288	50.2626	10.053
	80 1,2-Dichlorobenzene	146	10.091	10.091	(1.040)	472743	40.3982	8.080
	81 1,2-Dibromo 3-Chloropropane	75	10.838	10.843	(1.117)	46522	42.8259	8.565
	82 Hexachloro 1,3-Butadiene	225	11.516	11.522	(1.187)	202405	41.6747	8.335
	83 1,2,4-Trichlorobenzene	180	11.505	11.511	(1.186)	318637	40.9746	8.195
	84 Naphthalene	128	11.816	11.822	(1.218)	793583	48.5512	9.710
	85 1,2,3-Trichlorobenzene	180	11.997	12.003	(1.237)	303131	41.5855	8.317

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt5.i
Lab File ID: vb54gmsd.d
Lab Smp Id: VB54GMSD
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Calibration Date: 12-JUL-2012
Calibration Time: 12:01
Client Smp ID: CW-TP-02-8.2-9.2MSD
Level: MED
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	291805	145902	583610	393258	34.77
35 1,4-Difluorobenze	682850	341425	1365700	855581	25.30
52 d5-Chlorobenzene	802138	401069	1604276	1023286	27.57
76 d4-1,4-Dichlorobe	452585	226292	905170	605084	33.70

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	4.68	4.18	5.18	4.68	0.00
35 1,4-Difluorobenze	5.14	4.64	5.64	5.14	0.00
52 d5-Chlorobenzene	7.62	7.12	8.12	7.62	0.00
76 d4-1,4-Dichlorobe	9.70	9.20	10.20	9.70	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC
Sample Matrix: SOLID
Lab Smp Id: VB54GMSD
Level: MED
Data Type: MS DATA
SpikeList File: all.spk
Sublist File: voa.sub
Method File: /chem1/nt5.i/12JUL12.b/VO010412S.m
Misc Info: 12-12946

Client SDG: VB54
Fraction: VOA
Client Smp ID: CW-TP-02-8.2-9.2MSD
Operator: PB
SampleType: MSD
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	10.000	6.433	64.33	53-148
2 Chloromethane	10.000	7.648	76.48	64-125
3 Vinyl Chloride	10.000	7.635	76.35	63-137
4 Bromomethane	10.000	7.664	76.64	57-136
5 Chloroethane	10.000	6.388	63.88*	64-131
6 Trichlorofluoromet	10.000	5.816	58.16*	69-132
12 Acrolein	50.000	42.646	85.29	54-137
9 112Trichloro122Tri	10.000	7.082	70.82*	74-130
14 Acetone	50.000	33.115	66.23	60-131
7 1,1-Dichloroethene	10.000	7.149	71.49*	75-126
11 Bromoethane	10.000	7.462	74.62*	76-126
10 Iodomethane	10.000	9.181	91.81	65-139
13 Methylene Chloride	10.000	7.244	72.44	70-123
8 Carbon Disulfide	10.000	6.936	69.36*	71-129
18 Acrylonitrile	10.000	7.729	77.29	67-125
15 Trans-1,2-Dichloro	10.000	7.464	74.64*	80-120
19 Vinyl Acetate	10.000	6.923	69.23	60-136
17 1,1-Dichloroethane	10.000	7.582	75.82*	80-120
29 2-Butanone	50.000	40.666	81.33	70-120
22 2,2-Dichloropropan	10.000	7.136	71.36*	74-123
20 Cis-1,2-Dichloroet	10.000	7.700	77.00*	80-120
24 Chloroform	10.000	7.994	79.94*	80-120
23 Bromochloromethane	10.000	7.758	77.58*	80-120
26 1,1,1-Trichloroeth	10.000	7.723	77.23	77-121
28 1,1-Dichloropropen	10.000	8.343	83.43	80-120
25 Carbon Tetrachlori	10.000	8.171	81.71	77-122
33 1,2-Dichloroethane	10.000	8.653	86.53	76-120
30 Benzene	10.000	8.713	87.13	80-120
34 Trichloroethene	10.000	8.519	85.19	80-120
38 1,2-Dichloropropan	10.000	8.908	89.08	80-120
39 Bromodichlorometha	10.000	8.759	87.59	77-121
37 Dibromomethane	10.000	8.792	87.92	80-120
40 2-Chloroethyl Viny	10.000	9.605	96.05	10-191

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
45 4-Methyl-2-Pentano	50.000	45.285	90.57	67-120
41 Cis 1,3-dichloropr	10.000	8.886	88.86	74-120
43 Toluene	10.000	8.378	83.78	80-120
46 Trans 1,3-Dichloro	10.000	8.815	88.15	65-120
51 2-Hexanone	50.000	44.466	88.93	65-130
47 1,1,2-Trichloroeth	10.000	8.907	89.07	80-120
49 1,3-Dichloropropan	10.000	8.986	89.86	80-120
44 Tetrachloroethene	10.000	8.157	81.57	80-121
48 Chlorodibromometha	10.000	8.724	87.24	64-120
50 1,2-Dibromoethane	10.000	9.143	91.43	75-120
53 Chlorobenzene	10.000	8.512	85.12	80-120
55 1,1,1,2-Tetrachlor	10.000	8.698	86.98	69-121
54 Ethyl Benzene	10.000	8.393	83.93	80-127
56 m,p-xylene	20.000	17.703	88.51	80-125
57 o-Xylene	10.000	8.798	87.98	78-120
58 Styrene	10.000	8.835	88.35	80-123
60 Isopropyl Benzene	10.000	8.558	85.58	80-127
59 Bromoform	10.000	8.322	83.22	60-120
65 1,1,2,2-Tetrachlor	10.000	9.336	93.36	74-120
68 1,2,3-Trichloropro	10.000	8.332	83.32	72-121
69 Trans-1,4-Dichloro	10.000	8.283	82.83	65-126
64 N-Propyl Benzene	10.000	8.337	83.37	80-132
63 Bromobenzene	10.000	8.283	82.83	80-120
67 1,3,5-Trimethyl Be	10.000	8.269	82.69	80-125
66 2-Chloro Toluene	10.000	8.248	82.48	80-125
70 4-Chloro Toluene	10.000	8.027	80.27	80-127
71 T-Butyl Benzene	10.000	8.432	84.32*	87-122
72 1,2,4-Trimethylben	10.000	8.418	84.18	80-126
73 S-Butyl Benzene	10.000	8.565	85.65	80-134
74 4-Isopropyl Toluen	10.000	8.361	83.61	80-131
75 1,3-Dichlorobenzen	10.000	7.928	79.28*	80-120
77 1,4-Dichlorobenzen	10.000	7.726	77.26*	80-120
78 N-Butyl Benzene	10.000	8.559	85.59	80-138
80 1,2-Dichlorobenzen	10.000	8.080	80.80	80-120
81 1,2-Dibromo 3-Chlo	10.000	8.565	85.65	59-120
83 1,2,4-Trichloroben	10.000	8.195	81.95	78-130
82 Hexachloro 1,3-But	10.000	8.335	83.35	76-129
84 Naphthalene	10.000	9.710	97.10	66-120
85 1,2,3-Trichloroben	10.000	8.317	83.17	73-123

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	43.568	87.14	30-160

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 32 d4-1,2-Dichloroeth	50.000	43.349	86.70	75-152
$ 42 d8-Toluene	50.000	49.854	99.71	82-115
$ 62 4-Bromofluorobenze	50.000	53.073	106.15	64-120
$ 79 d4-1,2-Dichloroben	50.000	50.263	100.53	80-120

Data File: /chem1/nt5.i/12JUL12.b/vb54gmsd.d

Date : 12-JUL-2012 19:15

Client ID: CW-TP-02-8.2-9.2MSD

Sample Info: VB54GMSD,5,7.194,1,15UL

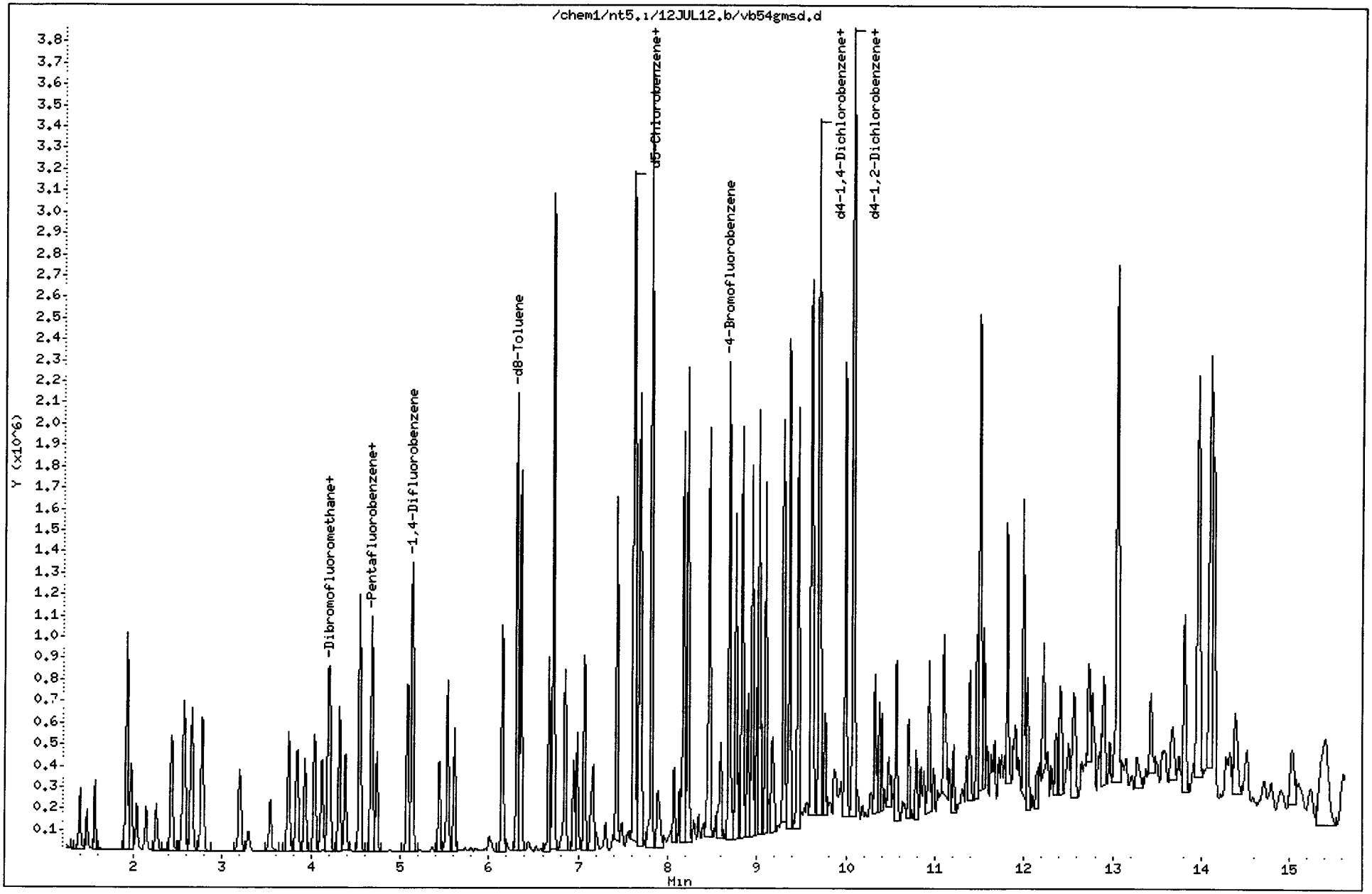
Column phase: RTXVMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18

VB51 : 6/15/12



CO-ELUTION SUMMARY FOR FILE - vb54gmsd.d

Lab ID: VB54GMSD, Method: VO010412S.m, Instrument: nt5.i, Date: 12-JUL-2012

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

SIM Volatile Raw Data
Preparation Log

ARI Job ID: VB51, VB54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Method 5035 Extraction Bench Sheet

(8260B, 8260B-SIM, 8021, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

Analyst: PC Date: 7/20/12

ARI Project No.: VB54 Client ID:

1st Extraction: 7/20/12 MeOH Lot No.: I7340 Analyst: PC

2nd Extraction:

	Lab ID	Vial No.	Vial Sent?	Preservative			Method 5035 Sample Weight					Comments
				$NaHSO_3$	CH_3OH	Lot #	Vial Weight (g)	Tare (from vial) (g)	Sample Weight (g)	Extract Volume (mL)	MeOH Spilt Volume (µL)	
1	VB54J	6			X	PD471	36.59	28.151	8.439	5	90	out of hold
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
					Balance ID:		4005001676					

VB54 : 8015

SIM Volatile Raw Data
Initial Calibration Notes and Raw Data

ARI Job ID: VB51, VB54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Initial Calibration Notes

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.3) **710S**(RSK-175)

Instrument: ~~NT-2~~ ~~NT-3~~ ~~NT-5~~ NT-7 ~~NT-9~~ ~~PID-1~~ ~~PID-2~~ ~~PID-3~~ ~~FID-6~~

Curve Date(s): 6/20/12 Internal Standard ID VW7521 Expiration 8/31/12

BFB Tune Meets Criteria?	YES / NO	ICV Exceeding ±20%?	YES / NO
ICal Meets %RSD & r^2 Criteria?	YES / NO	ICV Exceeding ±30%?	YES / NO
Q flag applied?	YES / NO	Linear Fits Used?	YES / NO
Manual Integrations for ICal?	YES / NO	Quadratic Fits Used?	YES / NO
Spectral Library Updated?	YES / NO	Calibration Points Dropped?	YES / NO
Minimum Response Factors Met	YES / NO	Purge Volume (mL)	10

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
Ultra	VW7522	12/10/12	accustd	VW7473	11/16/12

Detail problems, corrective actions and/or other pertinent information below:

5000 point removed due to saturation, calibrated 20-2000 ppt
Reevaluated SIM calibration for BTEX compounds, descriptor was already set up to allow BTEX

Analyst: PC **Date:** 7/19/12

Reviewer: VD **Date:** 7.19.12

Analytical Resources Inc.: Volatile Organics Instrument Log

NT-7 Serial No.:GC=US00024417, MS=US72821196

Date: 6/20/12 Analysis: SIM 10A Analyst: PC

GC Program: VOA1K Column No: 850322 Column Type: RTX-VMS

Instrument Tune (.U or .CT.): bfb.u EM Voltage: 2082

Calibration File: bfb0620 Curve Date: 6/20/12 Injection Vol.: 10

Solvent(s) used:

IS/SS	Ical/Ccal	LCS/ICV
VW752-1	VW752-2	VW747-3

Document All Maintenance Tasks In StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt7.i/20120620.b

	Time	Filename	LabID	ClientID	Vial#	pH	DF						
1	1016	bfb0620.d	BFB0620	BFB0620			1						
2	1059	50000620.d	IC5000	IC5000			1	8.21	349910	5.32	196364	5.75	387113
3	1126	20000620.d	IC2000	IC2000			1	8.21	310789	5.32	174650	5.75	346033
4	1153	10000620.d	IC1000	IC1000			1	8.22	299061	5.32	168211	5.76	328921
5	1219	05000620.d	IC0500	IC0500			1	8.22	284476	5.32	159352	5.76	314548
6	1246	01000620.d	IC0100	IC0100			1	8.22	304398	5.32	150336	5.76	300413
7	1313	00500620.d	IC0050	IC0050			1	8.22	297483	5.32	149803	5.76	295394
8	1340	00200620.d	IC0020	IC0020			1	8.22	291724	5.32	149273	5.75	291143
9	1407	icv0620.d	ICV1000	ICV1000			1	8.22	280830	5.32	154755	5.76	306996

MC 6/20/12

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 20-JUN-2012 10:59
End Cal Date : 20-JUN-2012 13:40
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem1/nt7.i/20120620.b/sim062012.m
Cal Date : 20-Jun-2012 15:02 paul
Curve Type : Average

Calibration File Names:
Level 1: /chem1/nt7.i/20120620.b/00200620.d
Level 2: /chem1/nt7.i/20120620.b/00500620.d
Level 3: /chem1/nt7.i/20120620.b/01000620.d
Level 4: /chem1/nt7.i/20120620.b/05000620.d
Level 5: /chem1/nt7.i/20120620.b/10000620.d
Level 6: /chem1/nt7.i/20120620.b/20000620.d
Level 7: /chem1/nt7.i/20120620.b/50000620.d

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	500.000 Level 4	1000.000 Level 5	2000.000 Level 6	5000.000 Level 7	RRF	% RSD	
1 Vinyl Chloride	1.08024	1.09263	1.18608	1.15081	1.23144	1.19526	1.01374	1.13574	6.752	
2 1,1-Dichloroethene	0.83739	0.76087	0.81644	0.78280	0.83381	0.81595	0.73656	0.79769	4.823	
3 Trans-1,2-Dichloroethene	0.90338	0.81774	0.88083	0.86291	0.92556	0.91888	0.82420	0.87622	4.957	
4 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
5 cis-1,2-dichloroethene	0.86151	0.84912	0.92287	0.88379	0.94726	0.92729	0.83786	0.88996	4.810	
6 Benzene	2.05638	1.78792	1.80531	1.74691	1.81395	1.61793	+++++	1.80474	7.911	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 20-JUN-2012 10:59
End Cal Date : 20-JUN-2012 13:40
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem1/nt7.i/20120620.b/sim062012.m
Cal Date : 20-Jun-2012 15:02 paul
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	500.000 Level 4	1000.000 Level 5	2000.000 Level 6	5000.000 Level 7	RRF	% RSD	
9 1,2-Dichloroethane	0.97606	0.93523	1.06435	0.94238	1.00719	1.01058	0.87951	0.97362	6.225	
10 Trichloroethene	0.48413	0.41721	0.41080	0.39397	0.42716	0.41921	0.37902	0.41879	7.921	
13 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
14 Tetrachloroethene	0.29470	0.30955	0.34166	0.34049	0.36704	0.36084	0.32628	0.33437	7.831	
16 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
17 m,p xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
18 o-xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
20 1,1,2,2-Tetrachloroethane	0.35359	0.30671	0.34935	0.39989	0.46226	0.47238	0.40607	0.39289	15.489	
$ 8 d4-1,2-Dichloroethane	0.70999	0.74912	0.75802	0.69495	0.67373	0.68845	0.67319	0.70678	4.876	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 20-JUN-2012 10:59
End Cal Date : 20-JUN-2012 13:40
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem1/nt7.i/20120620.b/sim062012.m
Cal Date : 20-Jun-2012 15:02 paul
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	500.000 Level 4	1000.000 Level 5	2000.000 Level 6	5000.000 Level 7	RRF	% RSD	
$ 12 d8-Toluene	1.20686	1.21527	1.19451	1.19467	1.17807	1.17458	1.14424	1.18689	1.997	
$ 19 4-Bromofluorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Batch File: /chem1/nt7.i/20120620.b/btexcal.b
Inst ID: nt7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08
FILENAME:	50000620	20000620	10000620	05000620	01000620	00500620	00200620	icv0620
INJ.DATE:	20-JUN-2012	20-JUN-2012	20-JUN-2012	20-JUN-2012	20-JUN-2012	20-JUN-2012	20-JUN-2012	20-JUN-2012
INJ.TIME:	10:59	11:26	11:53	12:19	12:46	13:13	13:40	14:07

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	1 Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.540	1.327-1.753	+++++	+++++
	2 1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	2.504	2.291-2.717	+++++	+++++
	3 Trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.286	3.073-3.499	+++++	+++++
	4 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.968	3.755-4.180	+++++	+++++
	5 cis-1,2-dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.440	4.227-4.653	+++++	+++++
	6 Benzene	5.210	5.211	5.212	5.212	5.218	5.213	5.218	5.211	5.212	4.981-5.442	5.213	0.003
*	7 Pentafluorobenzene	5.317	5.323	5.323	5.324	5.324	5.324	5.324	5.323	5.323	5.110-5.536	5.323	0.002
$	8 d4-1,2-Dichloroethane	5.327	5.331	5.332	5.332	5.333	5.332	5.333	5.332	5.332	5.119-5.545	5.332	0.002
	9 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.387	5.174-5.600	+++++	+++++
	10 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.719	5.489-5.950	+++++	+++++
*	11 1,4-Difluorobenzene	5.753	5.755	5.755	5.755	5.755	5.755	5.755	5.755	5.755	5.525-5.985	5.755	0.001
$	12 d8-Toluene	6.903	6.909	6.911	6.911	6.911	6.912	6.912	6.910	6.911	6.680-7.141	6.910	0.003
	13 Toluene	6.944	6.945	6.946	6.947	6.953	6.953	6.952	6.946	6.946	6.617-7.275	6.948	0.004
	14 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.272	7.041-7.502	+++++	+++++
*	15 d5 -Chlorobenzene	8.212	8.215	8.217	8.218	8.222	8.222	8.222	8.216	8.217	7.888-8.545	8.218	0.004
	16 Ethyl Benzene	8.252	8.255	8.257	8.261	8.273	8.280	8.292	8.257	8.257	7.929-8.586	8.266	0.014
	17 m,p xylene	8.384	8.386	8.388	8.391	8.405	8.418	8.439	8.388	8.388	8.060-8.717	8.400	0.019

Reviewer 1 PC Date: 7/19/12
Reviewer 2 VG Date: 7/19/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Batch File: /chem1/nt7.i/20120620.b/btexcal.b
Inst ID: nt7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 o-xylene	8.748	8.751	8.753	8.756	8.768	8.779	8.793	8.753	8.753	8.424-9.082	8.763	0.016
$ 19 4-Bromofluorobenzene	9.279	9.281	9.284	9.289	9.293	9.297	9.299	9.284	9.284	8.955-9.612	9.288	0.008
20 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.464	9.135-9.793	+++++	+++++

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt7.i/20120620.b/btexcal.b

ARI Job No.: IC00 Method: btexcal.b/sim062012.m Instrument: nt7.i Date: 20-JUN-2012

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1340	00200620.d	IC0020	IC0020	1	NO MANUAL INTEGRATION
1313	00500620.d	IC0050	IC0050	1	NO MANUAL INTEGRATION
1246	01000620.d	IC0100	IC0100	1	NO MANUAL INTEGRATION
1219	05000620.d	IC0500	IC0500	1	NO MANUAL INTEGRATION
1153	10000620.d	IC1000	IC1000	1	NO MANUAL INTEGRATION
1126	20000620.d	IC2000	IC2000	1	NO MANUAL INTEGRATION
1059	50000620.d	IC5000	IC5000	1	NO MANUAL INTEGRATION
1407	icv0620.d	ICV1000	ICV1000	1	NO MANUAL INTEGRATION

Data File: /chem1/nt7.1/20120620.b/bfb0620.d

Date : 20-JUN-2012 10:16

Client ID: BFB0620

Instrument: nt7.1

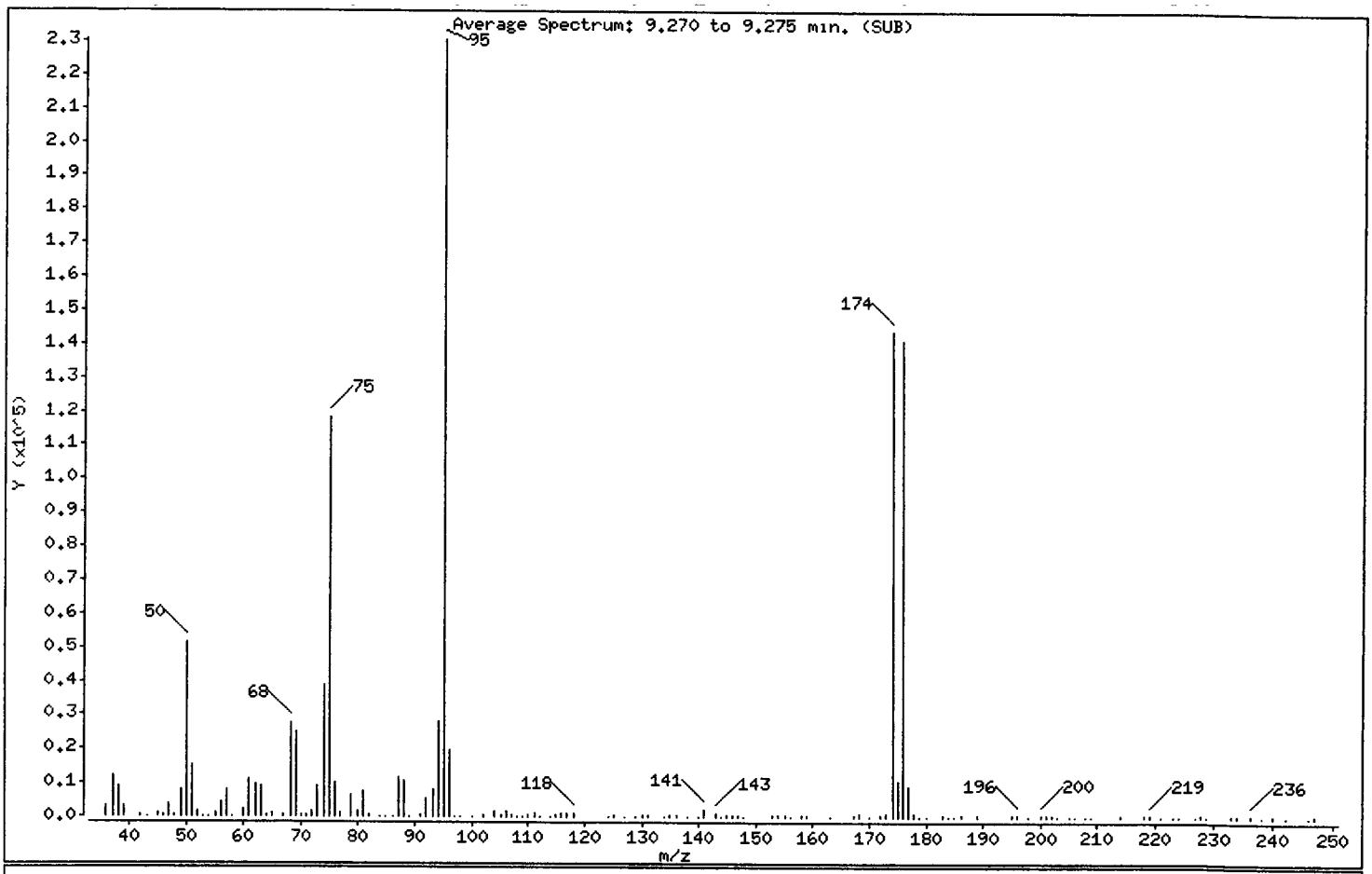
Sample Info: BFB0620,BFB0620,0,1,20JUN2012,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	22.26
75	30.00 - 66.00% of mass 95	51.29
96	5.00 - 9.00% of mass 95	8.58
173	Less than 2.00% of mass 174	0.37 (0.60)
174	50.00 - 101.00% of mass 95	62.30
175	4.00 - 9.00% of mass 174	4.51 (7.25)
176	95.00 - 101.00% of mass 174	61.22 (98.27)
177	5.00 - 9.00% of mass 176	3.97 (6.48)

Data File: /chem1/nt7.i/20120620.b/bfb0620.d

Date : 20-JUN-2012 10:16

Client ID: BFB0620 Instrument: nt7.i

Sample Info: BFB0620,BFB0620,0,1,20JUN2012,

Operator: PC

Column phase: RTXVMS Column diameter: 0.18

Data File: bfb0620.d

Spectrum: Average Spectrum: 9.270 to 9.275 min. (SUB)

Location of Maximum: 95.00

Number of points: 146

m/z	Y	m/z	Y	m/z	Y	m/z	Y
34.00	128	77.00	817	126.00	99	183.00	453
36.00	3431	79.00	6459	127.00	1	184.00	215
37.00	12269	80.00	1390	129.00	235	185.00	222
38.00	8979	81.00	7206	130.00	636	186.00	325
39.00	3107	82.00	488	131.00	662	189.00	442
42.00	365	84.00	187	134.00	75	195.00	326
43.00	250	85.00	259	135.00	534	196.00	762
45.00	1286	86.00	24	136.00	415	198.00	23
46.00	327	87.00	11623	138.00	97	200.00	370
47.00	3526	88.00	10646	140.00	106	201.00	328
48.00	442	89.00	255	141.00	1940	202.00	304
49.00	7832	91.00	668	143.00	815	203.00	228
50.00	51296	92.00	5143	144.00	97	205.00	232
51.00	15559	93.00	8157	145.00	277	206.00	171
52.00	1344	94.00	28136	146.00	441	208.00	221
53.00	179	95.00	230464	147.00	450	209.00	54
54.00	162	96.00	19776	148.00	36	213.00	65
55.00	819	97.00	131	151.00	176	214.00	309
56.00	4002	98.00	245	153.00	437	218.00	286
57.00	8054	100.00	218	154.00	641	219.00	675
58.00	5	102.00	330	155.00	292	221.00	118
60.00	2061	104.00	1532	156.00	70	223.00	192
61.00	11142	105.00	471	158.00	389	224.00	165
62.00	9578	106.00	1430	159.00	402	227.00	133
63.00	8759	107.00	520	163.00	166	228.00	411
64.00	693	108.00	170	167.00	281	229.00	156
65.00	973	109.00	228	168.00	860	233.00	274
67.00	415	110.00	418	170.00	172	234.00	440
68.00	27304	111.00	1028	172.00	344	236.00	589
69.00	25024	112.00	200	173.00	855	238.00	65
70.00	449	114.00	70	174.00	143552	240.00	417
71.00	418	115.00	485	175.00	10407	242.00	211
72.00	1574	116.00	857	176.00	141056	246.00	99
73.00	9065	117.00	864	177.00	9140	247.00	368
74.00	38424	118.00	1103	178.00	1007	250.00	51

Data File: /chem1/nt7.i/20120620.b/bfb0620.d

Date : 20-JUN-2012 10:16

Client ID: BFB0620

Instrument: nt7.i

Sample Info: BFB0620,BFB0620,0,1,20JUN2012,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0620.d

Spectrum: Average Spectrum: 9.270 to 9.275 min. (SUB)

Location of Maximum: 95.00

Number of points: 146

m/z	Y	m/z	Y	m/z	Y	m/z	Y
75.00	118224	124.00	40	179.00	178		
76.00	9910	125.00	298	180.00	41		

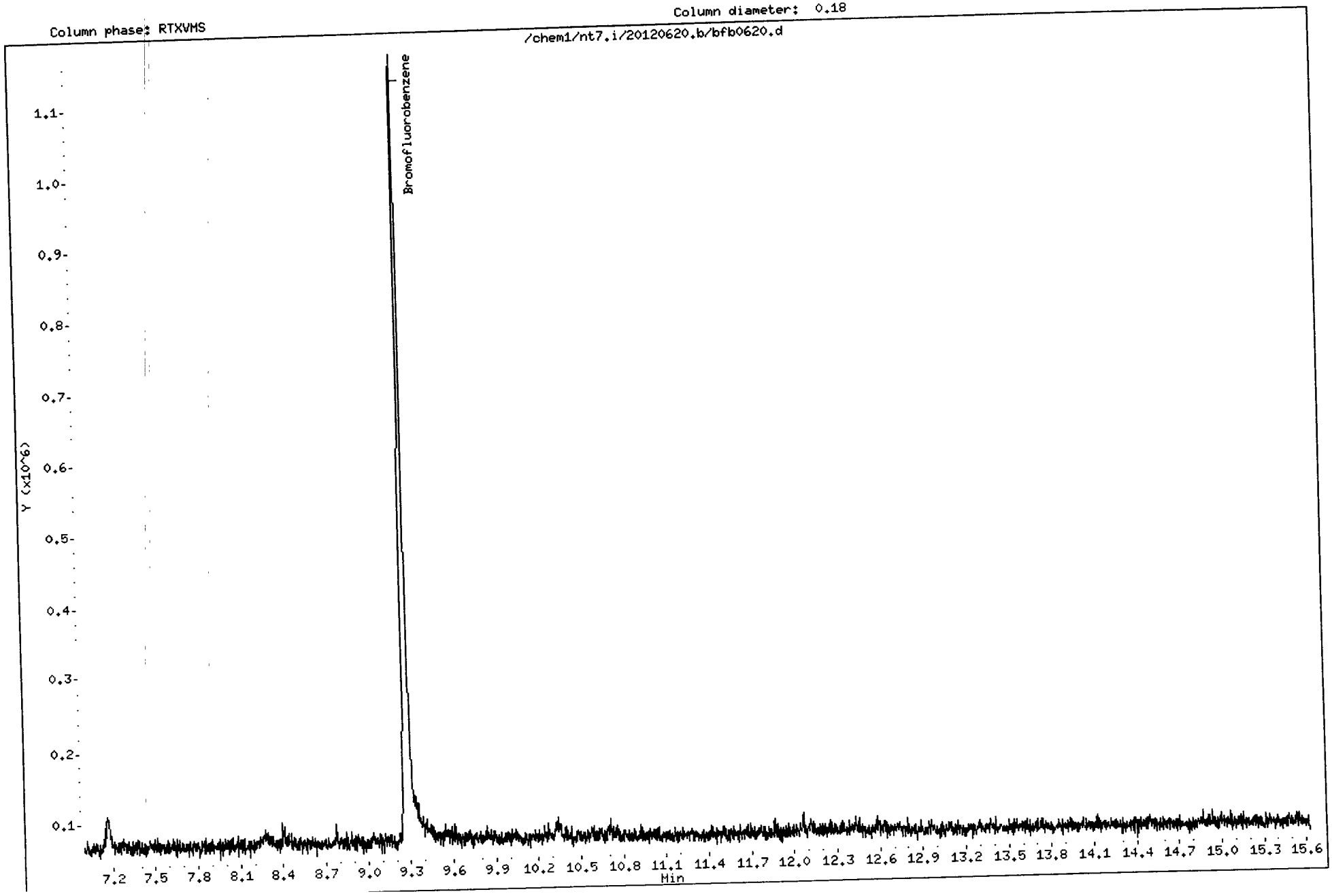
Data File: /chem1/nt7.i/20120620.b/bfb0620.d
Date : 20-JUN-2012 10:16
Client ID: BFB0620
Sample Info: BFB0620,BFB0620,0,1,20JUN2012,

Instrument: nt7.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS

/chem1/nt7.i/20120620.b/bfb0620.d



VB51 00568

PC 7/19/12

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120620.b/btexcal.b/00200620.d
Lab Smp Id: IC0020 Client Smp ID: IC0020
Inj Date : 20-JUN-2012 13:40
Operator : PC Inst ID: nt7.i
Smp Info : IC0020,10,10,0,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Meth Date : 19-Jul-2012 12:49 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 13:40 Cal File: 00200620.d
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/L)	ON-COL (ng/L)
	6 Benzene	78	5.218	5.212	(0.907)	11974	20.0000	22.789
*	7 Pentafluorobenzene	168	5.324	5.323	(1.000)	149273	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.333	5.332	(1.002)	105983	1000.00	1004.6
*	11 1,4-Difluorobenzene	114	5.755	5.755	(1.000)	291143	1000.00	
$	12 d8-Toluene	98	6.912	6.911	(1.201)	351369	1000.00	1016.8
	13 Toluene	91	6.952	6.946	(0.846)	12962	20.0000	22.448
*	15 d5 -Chlorobenzene	117	8.222	8.217	(1.000)	291724	1000.00	
	16 Ethyl Benzene	91	8.292	8.257	(1.008)	10600	20.0000	17.691
	17 m,p xylene	106	8.439	8.388	(1.026)	7519	40.0000	31.085
	18 o-xylene	91	8.793	8.753	(1.069)	8724	20.0000	16.014(T)
$	19 4-Bromofluorobenzene	174	9.299	9.284	(1.131)	84641	1000.00	894.43

QC Flag Legend

T - Target compound detected outside RT window.

Data File: /chem1/nt7.i/20120620.b/btexcal.b/00200620.d
Report Date: 19-Jul-2012 12:52

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: 00200620.d
Lab Smp Id: IC0020
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Misc Info: 12-

Calibration Date: 20-JUN-2012
Calibration Time: 11:53
Client Smp ID: IC0020
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	149273	-11.26
11 1,4-Difluorobenze	328921	164460	657842	291143	-11.49
15 d5 -Chlorobenzene	299061	149530	598122	291724	-2.45

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	0.02
11 1,4-Difluorobenze	5.76	5.26	6.26	5.75	-0.01
15 d5 -Chlorobenzene	8.22	7.72	8.72	8.22	0.07

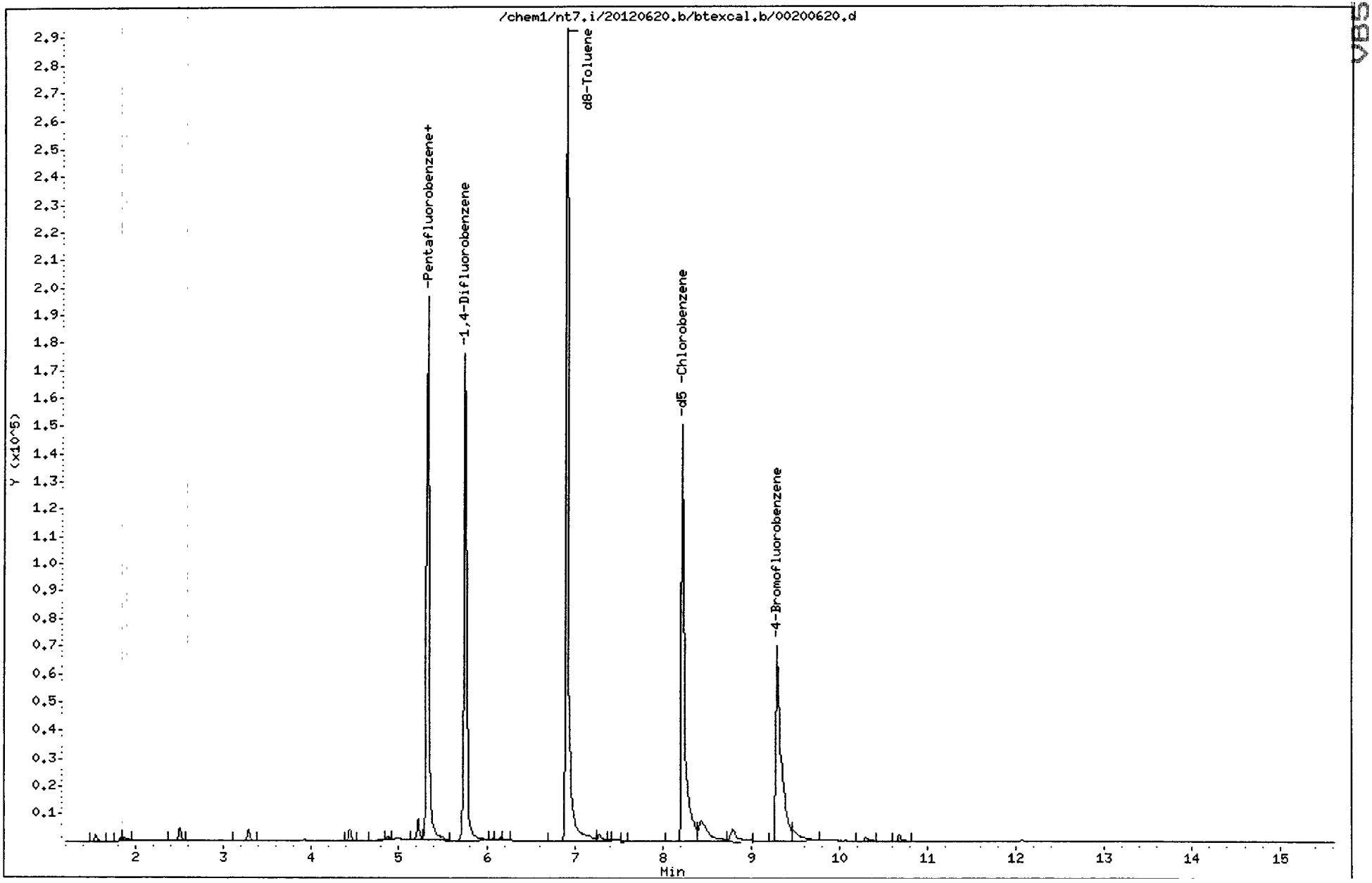
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt7.i/20120620.b/btexcal.b/00200620.d
Date : 20-JUN-2012 13:40
Client ID: IC0020
Sample Info: IC0020,10,10,0,,

Instrument: nt7.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - 00200620.d

Lab ID: IC0020, Method: btexcal.b/sim062012.m, Instrument: nt7.i, Date: 20-JUN-2

RT	CO-ELUTION COMPOUNDS

PC 7/19/12

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120620.b/btexcal.b/00500620.d
Lab Smp Id: IC0050 Client Smp ID: IC0050
Inj Date : 20-JUN-2012 13:13
Operator : PC Inst ID: nt7.i
Smp Info : IC0050,10,10,0,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Meth Date : 19-Jul-2012 12:49 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 13:13 Cal File: 00500620.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/L)	ON-COL (ng/L)
6 Benzene	78	5.213	5.212	(0.906)	26407	50.0000	49.534
* 7 Pentafluorobenzene	168	5.324	5.323	(1.000)	149803	1000.00	
§ 8 d4-1,2-Dichloroethane	65	5.332	5.332	(1.002)	112220	1000.00	1059.9
* 11 1,4-Difluorobenzene	114	5.755	5.755	(1.000)	295394	1000.00	
§ 12 d8-Toluene	98	6.912	6.911	(1.201)	358984	1000.00	1023.9
13 Toluene	91	6.953	6.946	(0.846)	26843	50.0000	45.589
* 15 d5 -Chlorobenzene	117	8.222	8.217	(1.000)	297483	1000.00	
16 Ethyl Benzene	91	8.280	8.257	(1.007)	26339	50.0000	43.109
17 m,p xylene	106	8.418	8.388	(1.024)	21717	100.000	88.045
18 o-xylene	91	8.779	8.753	(1.068)	30106	50.0000	54.192
§ 19 4-Bromofluorobenzene	174	9.297	9.284	(1.131)	85128	1000.00	882.16

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: 00500620.d
Lab Smp Id: IC0050
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Misc Info: 12-

Calibration Date: 20-JUN-2012
Calibration Time: 11:53
Client Smp ID: IC0050
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	149803	-10.94
11 1,4-Difluorobenze	328921	164460	657842	295394	-10.19
15 d5 -Chlorobenzene	299061	149530	598122	297483	-0.53

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	0.00
11 1,4-Difluorobenze	5.76	5.26	6.26	5.76	0.00
15 d5 -Chlorobenzene	8.22	7.72	8.72	8.22	0.06

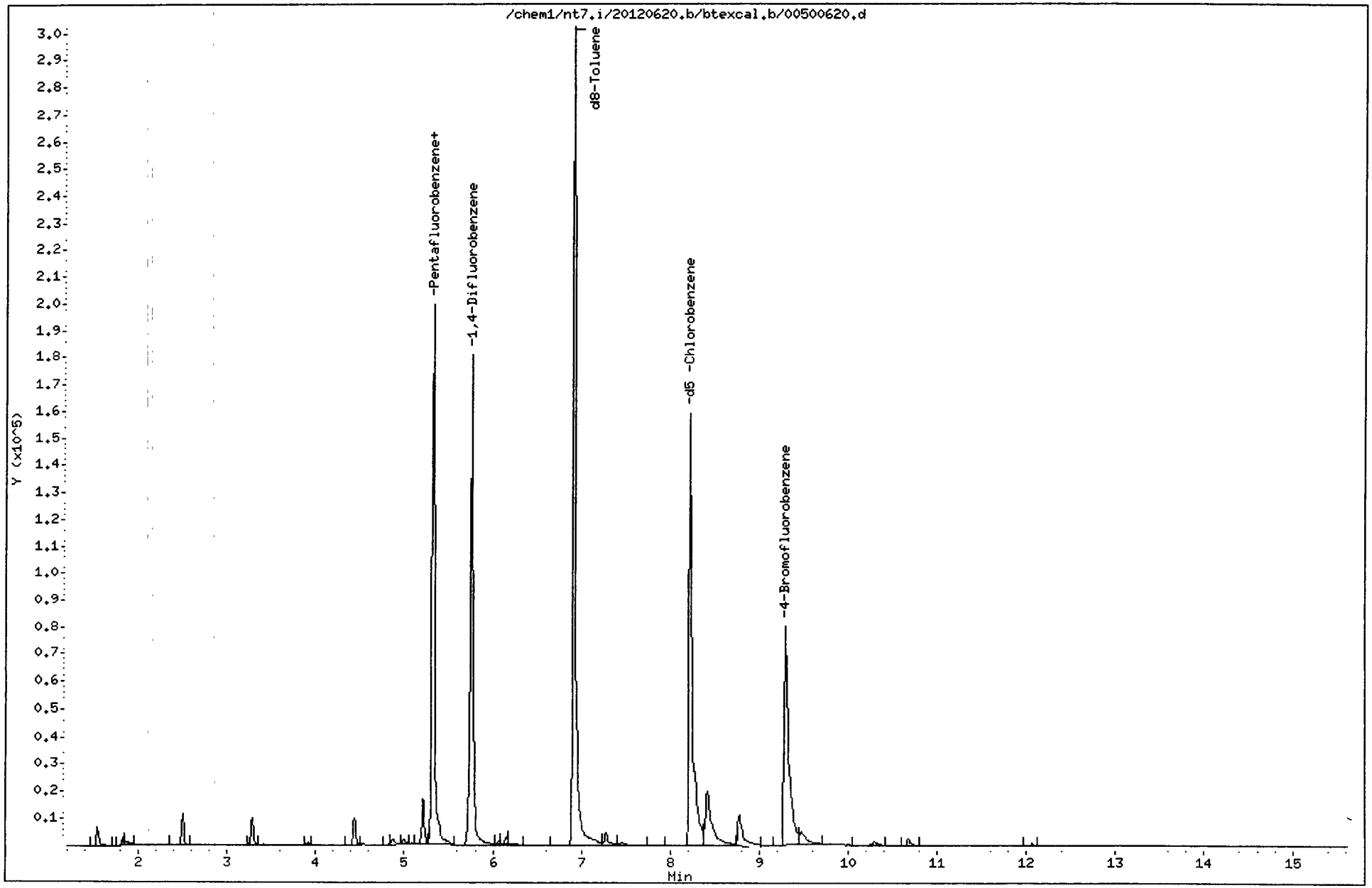
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt7.i/20120620.b/btexcal.b/00500620.d
Date : 20-JUN-2012 13:13
Client ID: IC0050
Sample Info: IC0050,10,10,0,,

Instrument: nt7.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



VB51 00515

CO-ELUTION SUMMARY FOR FILE - 00500620.d

Lab ID: IC0050, Method: btexcal.b/sim062012.m, Instrument: nt7.i, Date: 20-JUN-2

RT	CO-ELUTION COMPOUNDS

PC 7/14/12

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120620.b/btexcal.b/01000620.d
Lab Smp Id: IC0100 Client Smp ID: IC0100
Inj Date : 20-JUN-2012 12:46
Operator : PC Inst ID: nt7.i
Smp Info : IC0100,10,10,0,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Meth Date : 19-Jul-2012 12:49 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 12:46 Cal File: 01000620.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/L)	ON-COL (ng/L)
	6 Benzene	78	5.218	5.212	(0.907)	54234	100.000	100.03
*	7 Pentafluorobenzene	168	5.324	5.323	(1.000)	150336	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.333	5.332	(1.002)	113957	1000.00	1072.5
*	11 1,4-Difluorobenzene	114	5.755	5.755	(1.000)	300413	1000.00	
$	12 d8-Toluene	98	6.911	6.911	(1.201)	358846	1000.00	1006.4
	13 Toluene	91	6.953	6.946	(0.846)	56140	100.000	93.179
*	15 d5 -Chlorobenzene	117	8.222	8.217	(1.000)	304398	1000.00	
	16 Ethyl Benzene	91	8.273	8.257	(1.006)	60393	100.000	96.599
	17 m,p xylene	106	8.405	8.388	(1.022)	48550	200.000	192.36
	18 o-xylene	91	8.768	8.753	(1.066)	60323	100.000	106.12
$	19 4-Bromofluorobenzene	174	9.293	9.284	(1.130)	91699	1000.00	928.66

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: 01000620.d
Lab Smp Id: IC0100
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Calibration Date: 20-JUN-2012
Calibration Time: 11:53
Client Smp ID: IC0100
Level: LOW
Sample Type: WATER
Method File: /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Misc Info: 12-

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	150336	-10.63
11 1,4-Difluorobenze	328921	164460	657842	300413	-8.67
15 d5 -Chlorobenzene	299061	149530	598122	304398	1.78

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	0.01
11 1,4-Difluorobenze	5.76	5.26	6.26	5.76	0.00
15 d5 -Chlorobenzene	8.22	7.72	8.72	8.22	0.06

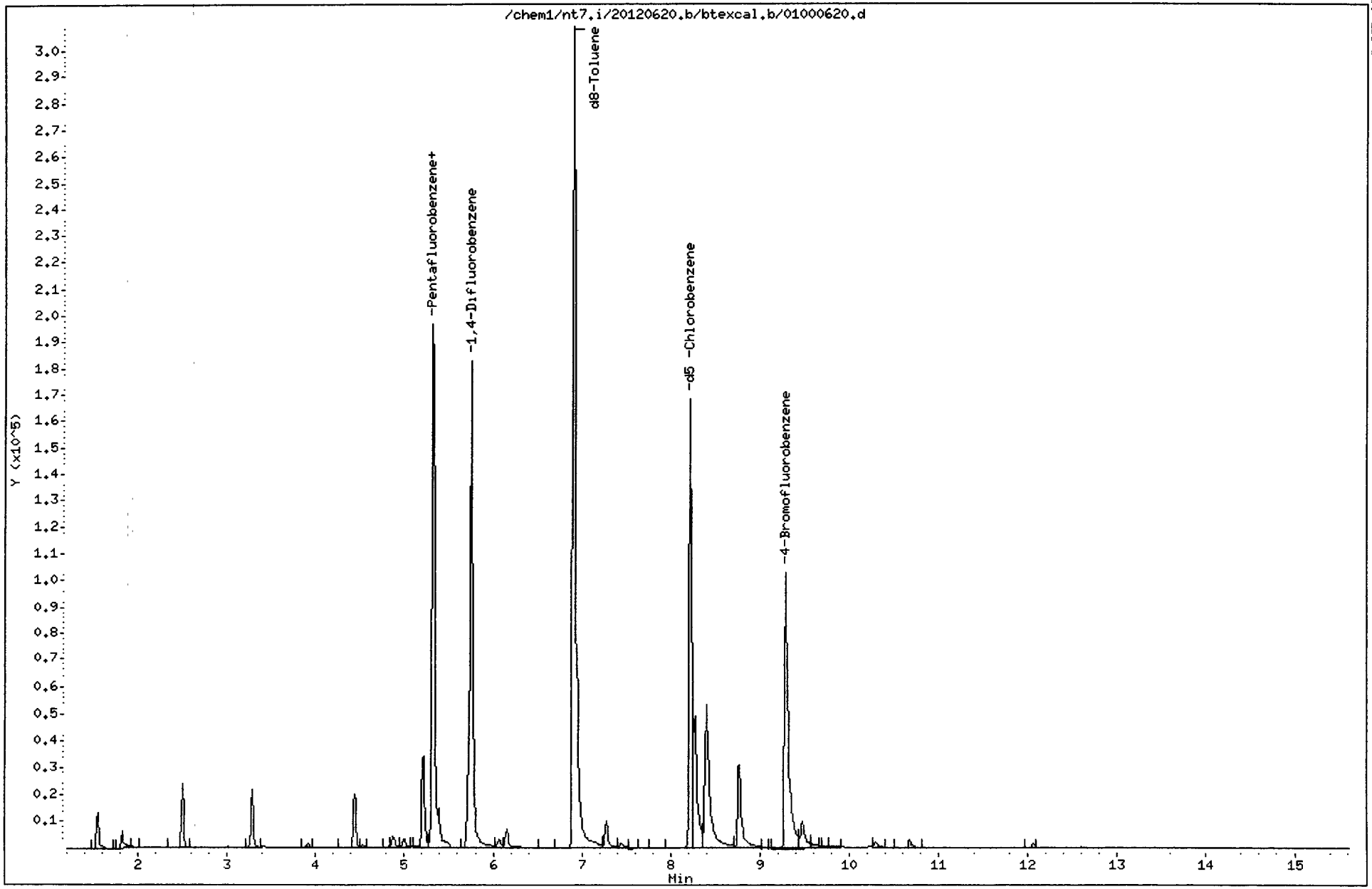
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt7.i/20120620.b/btexcal.b/01000620.d
Date : 20-JUN-2012 12:46
Client ID: IC0100
Sample Info: IC0100,10,10,0,,

Instrument: nt7.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



VB51.00519

CO-ELUTION SUMMARY FOR FILE - 01000620.d

Lab ID: IC0100, Method: btexcal.b/sim062012.m, Instrument: nt7.i, Date: 20-JUN-2

RT	CO-ELUTION COMPOUNDS

PC 7/19/12

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120620.b/btexcal.b/05000620.d
Lab Smp Id: IC0500 Client Smp ID: IC0500
Inj Date : 20-JUN-2012 12:19
Operator : PC Inst ID: nt7.i
Smp Info : IC0500,10,10,0,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Meth Date : 19-Jul-2012 12:49 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 12:19 Cal File: 05000620.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/L)	ON-COL (ng/L)
	6 Benzene	78	5.212	5.212	(0.906)	274744	500.000	483.98
*	7 Pentafluorobenzene	168	5.324	5.323	(1.000)	159352	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.332	5.332	(1.002)	110741	1000.00	983.26
*	11 1,4-Difluorobenzene	114	5.755	5.755	(1.000)	314548	1000.00	
$	12 d8-Toluene	98	6.911	6.911	(1.201)	375782	1000.00	1006.6
	13 Toluene	91	6.947	6.946	(0.845)	290275	500.000	515.53
*	15 d5 -Chlorobenzene	117	8.218	8.217	(1.000)	284476	1000.00	
	16 Ethyl Benzene	91	8.261	8.257	(1.005)	322166	500.000	551.39
	17 m,p xylene	106	8.391	8.388	(1.021)	261035	1000.00	1106.7
	18 o-xylene	91	8.756	8.753	(1.065)	278584	500.000	524.39
$	19 4-Bromofluorobenzene	174	9.289	9.284	(1.130)	100268	1000.00	1086.6

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: 05000620.d
Lab Smp Id: IC0500
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Calibration Date: 20-JUN-2012
Calibration Time: 11:53
Client Smp ID: IC0500
Level: LOW
Sample Type: WATER
Method File: /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Misc Info: 12-

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	159352	-5.27
11 1,4-Difluorobenze	328921	164460	657842	314548	-4.37
15 d5 -Chlorobenzene	299061	149530	598122	284476	-4.88

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	0.01
11 1,4-Difluorobenze	5.76	5.26	6.26	5.76	0.00
15 d5 -Chlorobenzene	8.22	7.72	8.72	8.22	0.02

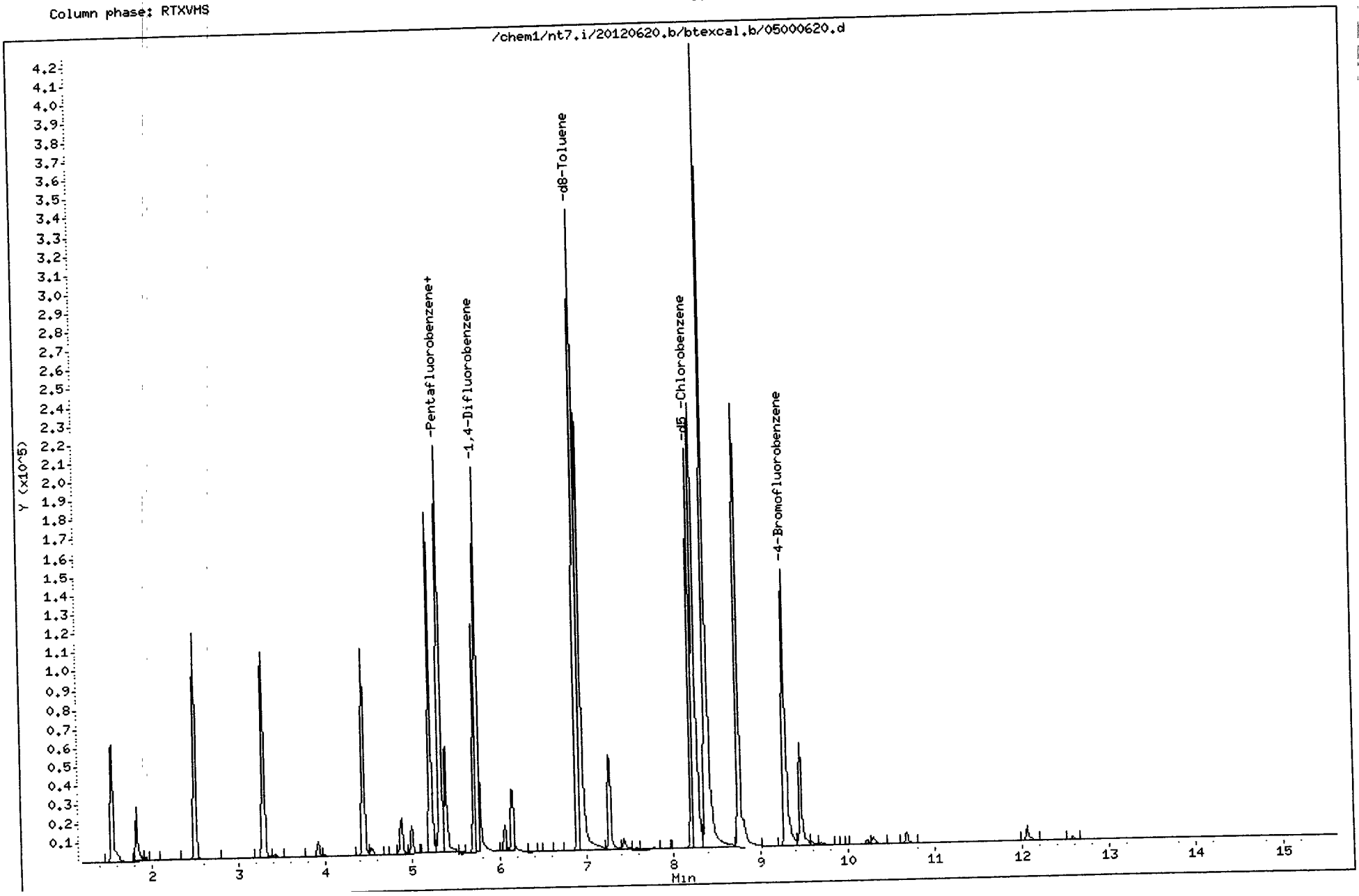
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt7.i/20120620.b/btexcal.b/05000620.d
Date : 20-JUN-2012 12:19
Client ID: IC0500
Sample Info: IC0500,10,10,0,,

Instrument: nt7.1

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



VB51 00523

CO-ELUTION SUMMARY FOR FILE - 05000620.d

Lab ID: IC0500, Method: btexcal.b/sim062012.m, Instrument: nt7.i, Date: 20-JUN-2

RT	CO-ELUTION COMPOUNDS

PC 7/19/12

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120620.b/btexcal.b/10000620.d
Lab Smp Id: IC1000 Client Smp ID: IC1000
Inj Date : 20-JUN-2012 11:53
Operator : PC Inst ID: nt7.i
Smp Info : IC1000,10,10,0,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Meth Date : 19-Jul-2012 12:49 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 11:53 Cal File: 10000620.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/L)	ON-COL (ng/L)
	6 Benzene	78	5.212	5.212	(0.906)	596645	1000.00	1005.1
*	7 Pentafluorobenzene	168	5.323	5.323	(1.000)	168211	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.332	5.332	(1.002)	113329	1000.00	953.24
*	11 1,4-Difluorobenzene	114	5.755	5.755	(1.000)	328921	1000.00	
$	12 d8-Toluene	98	6.911	6.911	(1.201)	387492	1000.00	992.57
	13 Toluene	91	6.946	6.946	(0.845)	623633	1000.00	1053.6
*	15 d5 -Chlorobenzene	117	8.217	8.217	(1.000)	299061	1000.00	
	16 Ethyl Benzene	91	8.257	8.257	(1.005)	709857	1000.00	1155.7
	17 m,p xylene	106	8.388	8.388	(1.021)	588407	2000.00	2372.9
	18 o-xylene	91	8.753	8.753	(1.065)	585170	1000.00	1047.8
$	19 4-Bromofluorobenzene	174	9.284	9.284	(1.130)	101929	1000.00	1050.7

Data File: /chem1/nt7.i/20120620.b/btexcal.b/10000620.d
Report Date: 19-Jul-2012 12:52

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: 10000620.d
Lab Smp Id: IC1000
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Misc Info: 12-

Calibration Date: 20-JUN-2012
Calibration Time: 11:53
Client Smp ID: IC1000
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	168211	0.00
11 1,4-Difluorobenze	328921	164460	657842	328921	0.00
15 d5 -Chlorobenzene	299061	149530	598122	299061	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	0.00
11 1,4-Difluorobenze	5.76	5.26	6.26	5.76	0.00
15 d5 -Chlorobenzene	8.22	7.72	8.72	8.22	0.00

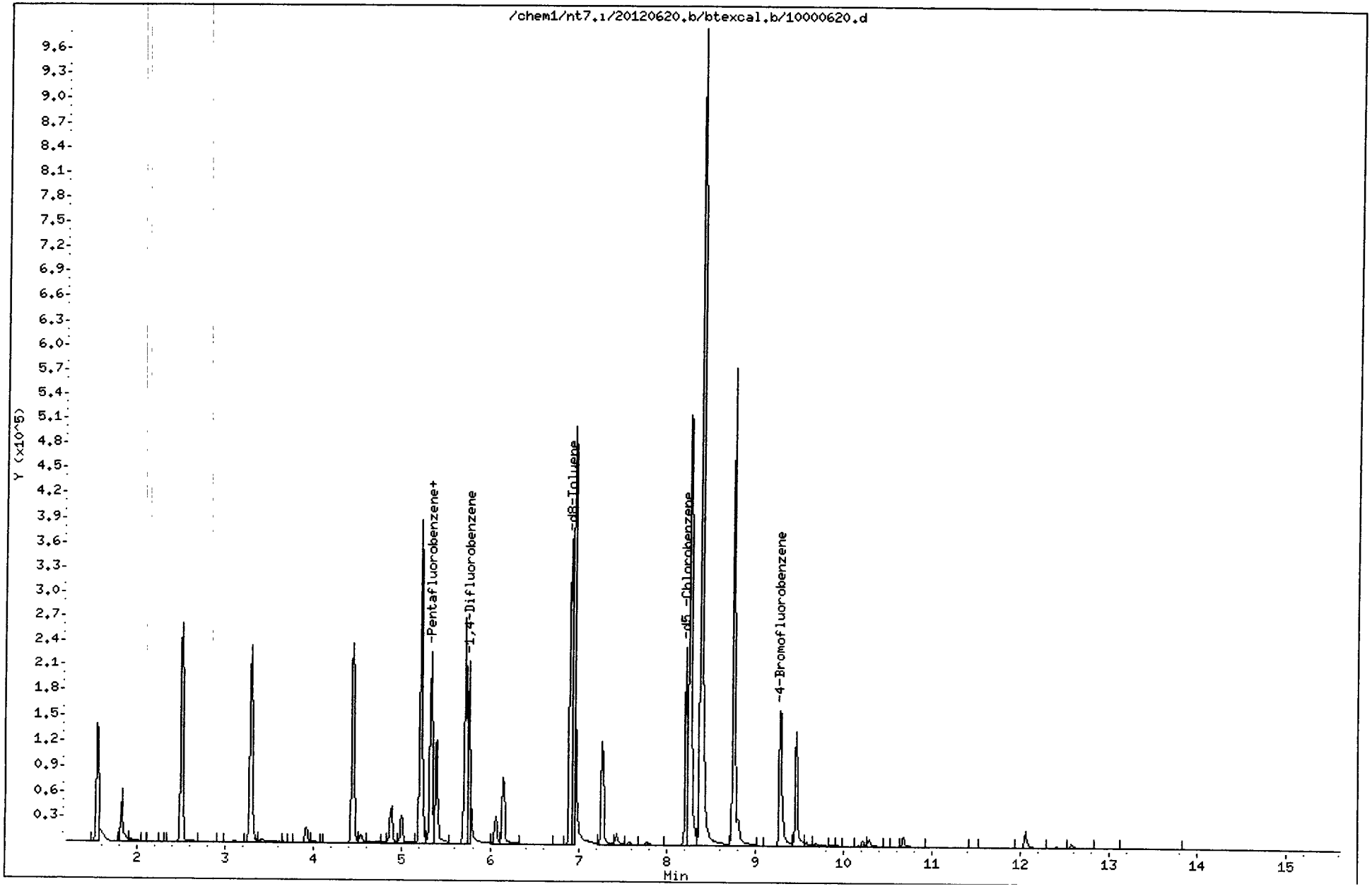
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt7.i/20120620.b/btexcal.b/10000620.d
Date : 20-JUN-2012 11:53
Client ID: IC1000
Sample Info: IC1000,10,10,0,,

Column phase: RTXVMS

Instrument: nt7.i

Operator: PC
Column diameter: 0.18



CO-ELUTION SUMMARY FOR FILE - 10000620.d

Lab ID: IC1000, Method: btexcal.b/sim062012.m, Instrument: nt7.i, Date: 20-JUN-2

RT	CO-ELUTION COMPOUNDS

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120620.b/btexcal.b/20000620.d
Lab Smp Id: IC2000 Client Smp ID: IC2000
Inj Date : 20-JUN-2012 11:26
Operator : PC Inst ID: nt7.i
Smp Info : IC2000,10,10,0,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Meth Date : 19-Jul-2012 12:49 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 11:26 Cal File: 20000620.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/L)	ON-COL (ng/L)
	6 Benzene	78	5.211	5.212	(0.906)	1119713	2000.00	1793.0
*	7 Pentafluorobenzene	168	5.323	5.323	(1.000)	174650	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.331	5.332	(1.001)	120238	1000.00	974.07
*	11 1,4-Difluorobenzene	114	5.755	5.755	(1.000)	346033	1000.00	
$	12 d8-Toluene	98	6.909	6.911	(1.201)	406443	1000.00	989.63
	13 Toluene	91	6.945	6.946	(0.845)	1168057	2000.00	1898.8
*	15 d5 -Chlorobenzene	117	8.215	8.217	(1.000)	310789	1000.00	
	16 Ethyl Benzene	91	8.255	8.257	(1.005)	1313419	2000.00	2057.6
	17 m,p xylene	106	8.386	8.388	(1.021)	1120919	4000.00	4349.9
	18 o-xylene	91	8.751	8.753	(1.065)	1111709	2000.00	1915.5
$	19 4-Bromofluorobenzene	174	9.281	9.284	(1.130)	107031	1000.00	1061.6

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: 20000620.d
Lab Smp Id: IC2000
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Calibration Date: 20-JUN-2012
Calibration Time: 11:53
Client Smp ID: IC2000
Level: LOW
Sample Type: WATER
Method File: /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Misc Info: 12-

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	174650	3.83
11 1,4-Difluorobenze	328921	164460	657842	346033	5.20
15 d5 -Chlorobenzene	299061	149530	598122	310789	3.92

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	-0.01
11 1,4-Difluorobenze	5.76	5.26	6.26	5.75	-0.01
15 d5 -Chlorobenzene	8.22	7.72	8.72	8.21	-0.03

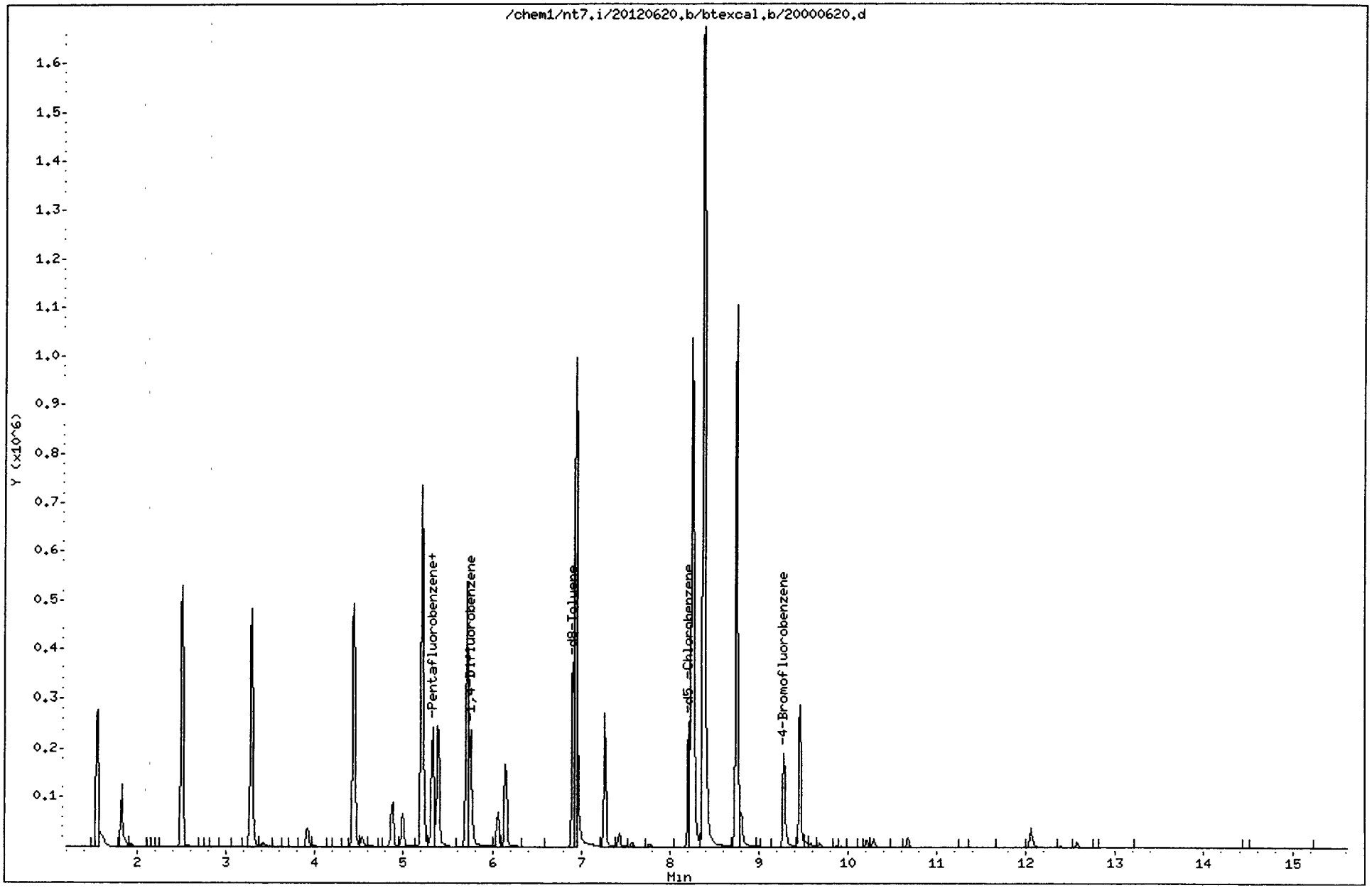
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt7.i/20120620.b/btexcal.b/20000620.d
Date : 20-JUN-2012 11:26
Client ID: IC2000
Sample Info: IC2000,10,10,0,,

Instrument: nt7.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - 20000620.d

Lab ID: IC2000, Method: btexcal.b/sim062012.m, Instrument: nt7.i, Date: 20-JUN-2

RT	CO-ELUTION COMPOUNDS

MC 7/19/12

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120620.b/btexcal.b/50000620.d
Lab Smp Id: IC5000 Client Smp ID: IC5000
Inj Date : 20-JUN-2012 10:59
Operator : PC Inst ID: nt7.i
Smp Info : IC5000,10,10,0,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Meth Date : 19-Jul-2012 12:49 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 10:59 Cal File: 50000620.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/L)	ON-COL (ng/L)
	6 Benzene	78	5.210	5.212	(0.906)	2141378	5000.00	3065.1
*	7 Pentafluorobenzene	168	5.317	5.323	(1.000)	196364	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.327	5.332	(1.002)	132190	1000.00	952.48
*	11 1,4-Difluorobenzene	114	5.753	5.755	(1.000)	387113	1000.00	
$	12 d8-Toluene	98	6.903	6.911	(1.200)	442951	1000.00	964.07
	13 Toluene	91	6.944	6.946	(0.846)	2143885	5000.00	3095.5
*	15 d5 -Chlorobenzene	117	8.212	8.217	(1.000)	349910	1000.00	
	16 Ethyl Benzene	91	8.252	8.257	(1.005)	2227117	5000.00	3098.9
	17 m,p xylene	106	8.384	8.388	(1.021)	2034245	10000.0	7011.6
	18 o-xylene	91	8.748	8.753	(1.065)	2002177	5000.00	3064.0
$	19 4-Bromofluorobenzene	174	9.279	9.284	(1.130)	124387	1000.00	1095.9

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: 50000620.d
Lab Smp Id: IC5000
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Misc Info: 12-

Calibration Date: 20-JUN-2012
Calibration Time: 11:53
Client Smp ID: IC5000
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	196364	16.74
11 1,4-Difluorobenze	328921	164460	657842	387113	17.69
15 d5 -Chlorobenzene	299061	149530	598122	349910	17.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	-0.13
11 1,4-Difluorobenze	5.76	5.26	6.26	5.75	-0.03
15 d5 -Chlorobenzene	8.22	7.72	8.72	8.21	-0.06

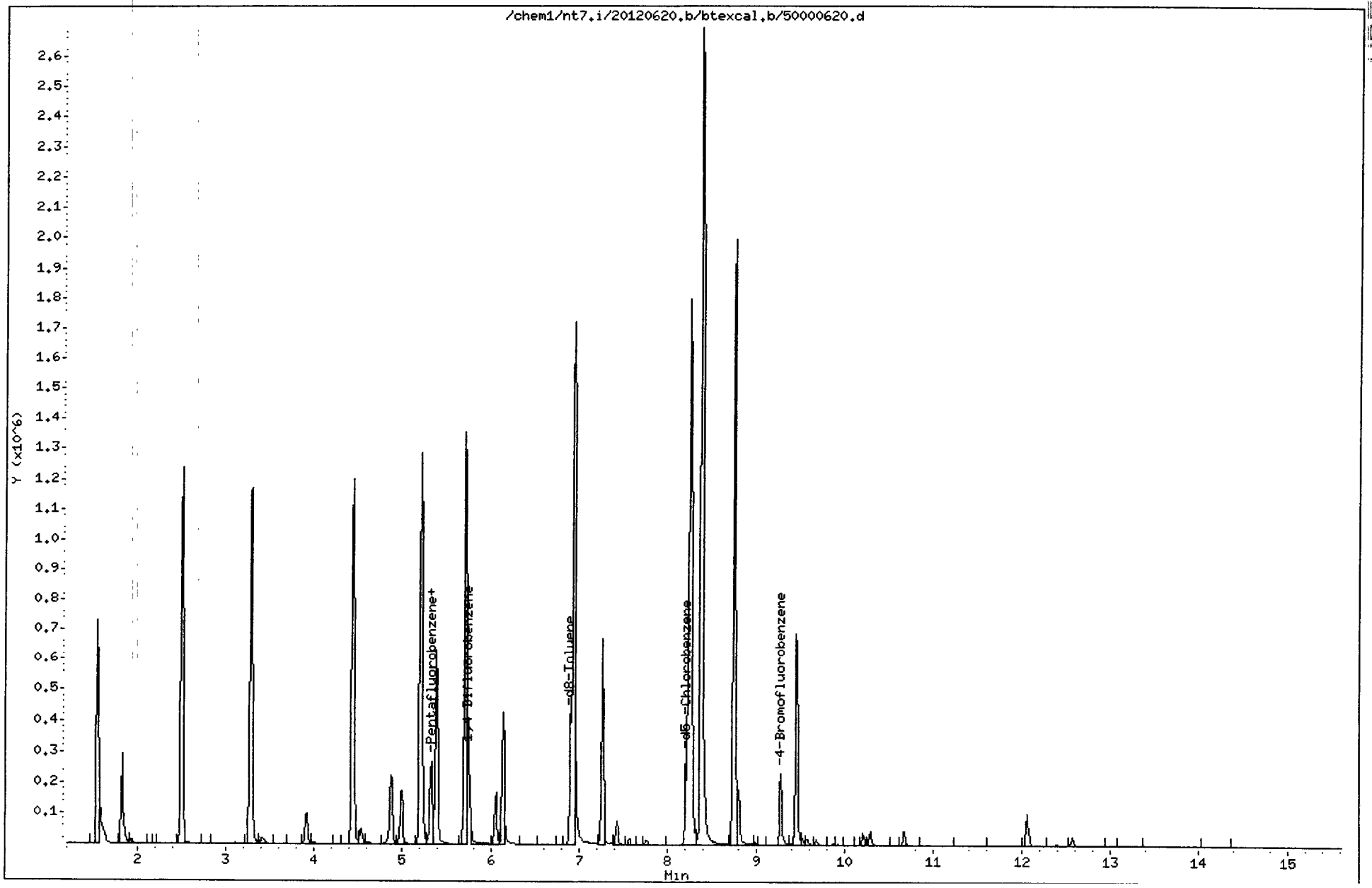
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt7.i/20120620.b/btexcal.b/50000620.d
Date : 20-JUN-2012 10:59
Client ID: IC5000
Sample Info: IC5000,10,10,0,,

Instrument: nt7.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - 50000620.d

Lab ID: IC5000, Method: btexcal.b/sim062012.m, Instrument: nt7.i, Date: 20-JUN-2

RT	CO-ELUTION COMPOUNDS

MC 7/19/12

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120620.b/btexcal.b/icv0620.d
Lab Smp Id: ICV1000 Client Smp ID: ICV1000
Inj Date : 20-JUN-2012 14:07
Operator : PC Inst ID: nt7.i
Smp Info : ICV1000,10,10,0,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Meth Date : 19-Jul-2012 12:49 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 10:59 Cal File: 50000620.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

		QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ng/L)	(ug/L)
	6 Benzene	78	5.211	5.212	(0.905)	556087	1003.68	1003.7
*	7 Pentafluorobenzene	168	5.323	5.323	(1.000)	154755	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.332	5.332	(1.002)	108706	993.860	993.86
*	11 1,4-Difluorobenzene	114	5.755	5.755	(1.000)	306996	1000.00	
$	12 d8-Toluene	98	6.910	6.911	(1.201)	363061	996.409	996.41
	13 Toluene	91	6.946	6.946	(0.845)	571816	1028.73	1028.7
*	15 d5 -Chlorobenzene	117	8.216	8.217	(1.000)	280830	1000.00	
	16 Ethyl Benzene	91	8.257	8.257	(1.005)	651288	1129.16	1129.2
	17 m,p xylene	106	8.388	8.388	(1.021)	519730	2232.04	2232.0(Q)
	18 o-xylene	91	8.753	8.753	(1.065)	548301	1045.50	1045.5
$	19 4-Bromofluorobenzene	174	9.284	9.284	(1.130)	97642	1071.84	1071.8(R)

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: icv0620.d
Lab Smp Id: ICV1000
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Misc Info: 12-

Calibration Date: 20-JUN-2012
Calibration Time: 11:53
Client Smp ID: ICV1000
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	154755	-8.00
11 1,4-Difluorobenze	328921	164460	657842	306996	-6.67
15 d5 -Chlorobenzene	299061	149530	598122	280830	-6.10

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	0.00
11 1,4-Difluorobenze	5.76	5.26	6.26	5.76	0.00
15 d5 -Chlorobenzene	8.22	7.72	8.72	8.22	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20120620
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: ICV1000 Client Smp ID: ICV1000
Level: LOW Operator: PC
Data Type: MS DATA SampleType: LCS
SpikeList File: btex.spk Quant Type: ISTD
Sublist File: btex.sub
Method File: /chem1/nt7.i/20120620.b/btexcal.b/sim062012.m
Misc Info: 12-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 Benzene	1000.0	1003.7	100.37	80-120
13 Toluene	1000.0	1028.7	102.87	70-130
16 Ethyl Benzene	1000.0	1129.2	112.92	70-130
17 m,p xylene	2000.0	2232.0	111.60	70-130
18 o-xylene	1000.0	1045.5	104.55	70-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 8 d4-1,2-Dichloroeth	1000.0	993.86	99.39	75-125
$ 12 d8-Toluene	1000.0	996.41	99.64	75-125
$ 19 4-Bromofluorobenze	10000	1071.8	10.72*	75-125

Data File: /chem1/nt7.i/20120620.b/btexcal.b/icv0620.d

Date : 20-JUN-2012 14:07

Client ID: ICV1000

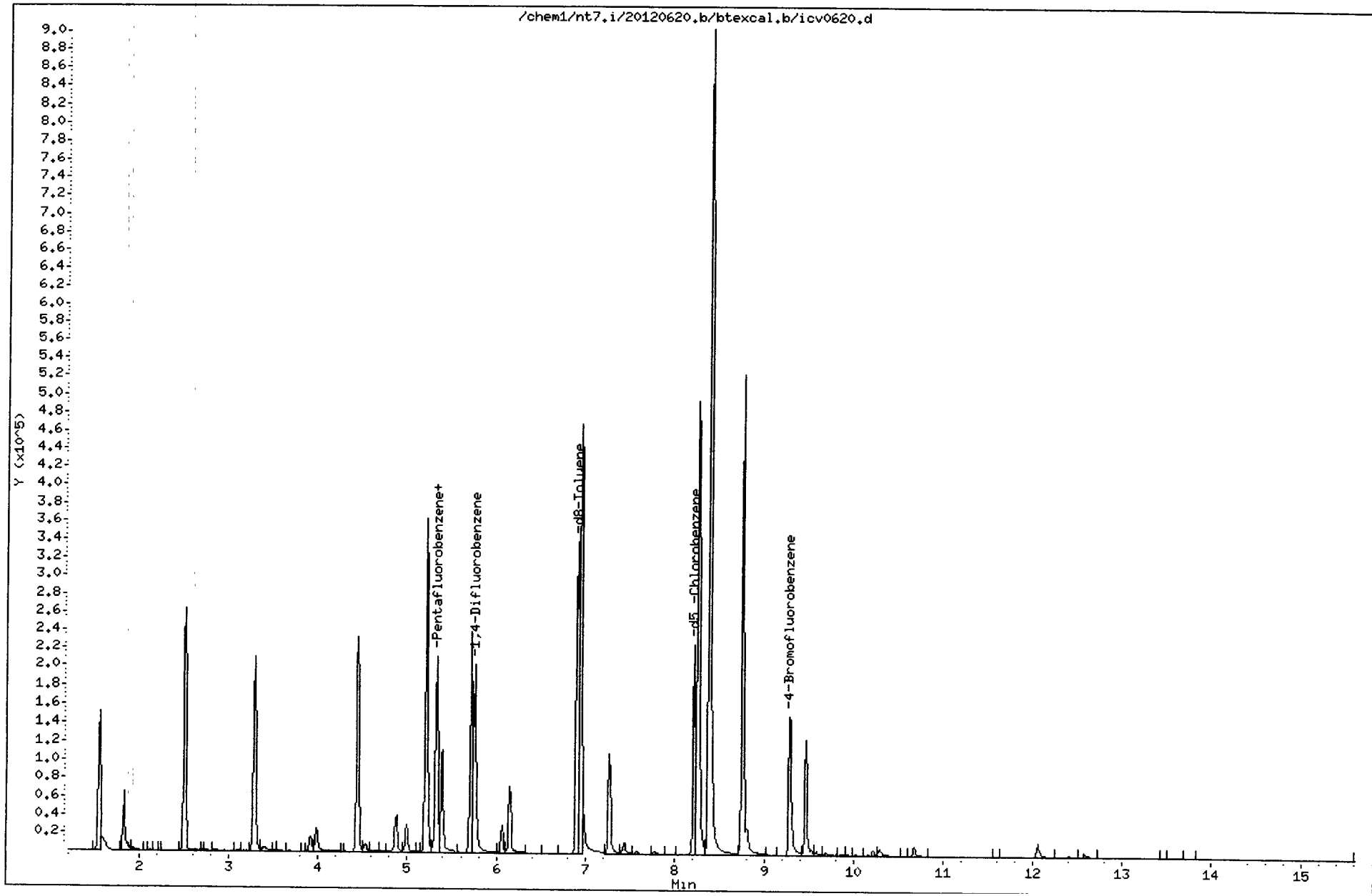
Sample Info: ICV1000,10,10,0,,

Column phase: RTXVMS

Instrument: nt7.i

Operator: PC

Column diameter: 0.18



CO-ELUTION SUMMARY FOR FILE - icv0620.d

Lab ID: ICV1000, Method: btexcal.b/sim062012.m, Instrument: nt7.i, Date: 20-JUN-

RT	CO-ELUTION COMPOUNDS

SIM Volatile Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: VB51, VB54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Analyst Notes / Corrective Action Log

ARI Project ID: VB54 Client ID: anchor

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.2) **710S**(RSK-175)

Parameter(s): SIM BTEX

Instrument: NT-2 NT-3 NT-5 (NT-7) NT-9 PID-1 PID-2 PID-3 FID-6 FINN-5

Purge Volume (mL) 10 Curve Date: ~~7/6/2012~~ PC 7/23/12 Analysis Start Date: 7/20/12

pH ≤ 2.0	YES / NO / (NA)	Method Blank In Control?	(YES) / NO
BFB Tune Meets Criteria?	(YES) / NO / NA	LCS / LCSD Recovery In Control?	(YES) / NO
Internal Standard Meets Criteria?	(YES) / NO / NA	Surrogate Recovery In Control?	(YES) / NO
ICal acceptable?	(YES) / NO	CCal acceptable?	(YES) / NO
Q flag applied?	YES / (NO) / NA	Q flag applied?	YES / (NO) / NA
Manual Integrations for ICal?	YES / (NO)	Manual Integrations for Samples?	(Yes) / NO
Special Analysis Criteria Met?	YES / NO / (NA)		

Bubbles/Headspace: None SM (≤ 2mm •) PB (2-4mm) LG (> 4mm ●) Head Space

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

Sample holding time 7/20/12 at 1050AM, analysis at 1643 on 7/20/12. SIM was requested in the morning of 7/20/12. Instrument was not passing tune until 1409.

Secondary ion quant for d8 toluene in VB54J, ion ratios were off, 98 ion appeared inflated.

Additional Details on Reverse: Yes / No

Analyst: PC **Date:** 7/23/12

Reviewer: [illegible] **Date:** 7/23/12

Analytical Resources Inc.: Volatile Organics Instrument Log

NT-7 Serial No.:GC=US00024417, MS=US72821196

Date: 7/20/12 Analysis: 5/MVOA (PTR) Analyst: PI

GC Program: VCB75 Column No: 850322 Column Type:

Instrument Tune (.U or .CT.): bfbPC.u EM Voltage: 2235

Calibration File: bfb0712d Curve Date: 6/20/12 Injection Vol.: 10

Solvent(s) used:

IS/SS	Ical/Ccal	LCS/ICV
VW752-1	VW752-2	VW752-2

Document All Maintenance Tasks In StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt7.i/20120720.b

	Time	Filename	LabID	ClientID	Vial#	pH	DF						
1	1409	bfb0720d.d	BFB0720	BFB0720			1						
2	1444	cc0720tst.d	CC0720	CC0720			1	5	32	130817	5	75	234943	8	21	223842
3	1523	lcs0720.d	LCS0720	LCS0720			1	5	32	135920	5	75	240206	8	21	229098
4	1550	lcs0720a.d	LCS0720	LCS0720			1	5	32	134695	5	75	236608	8	21	225359
5	1617	mb0720.d	MB0720	MB0720			1	5	32	124931	5	76	216638	8	22	219120
6	1643	vb54j.d	VB54J	CW-TP-01-8-9			1	5	32	126410	5	75	235012	8	22	260324
7	1710	rb0720.d	RINSE				1	5	32	130992	5	76	228485	8	22	231829

MC 7/23/12

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

PG 7/23/12

Data File: /chem1/nt7.i/20120720.b/bfb0720d.d

Date : 20-JUL-2012 14:09

Client ID: BFB0720

Instrument: nt7.i

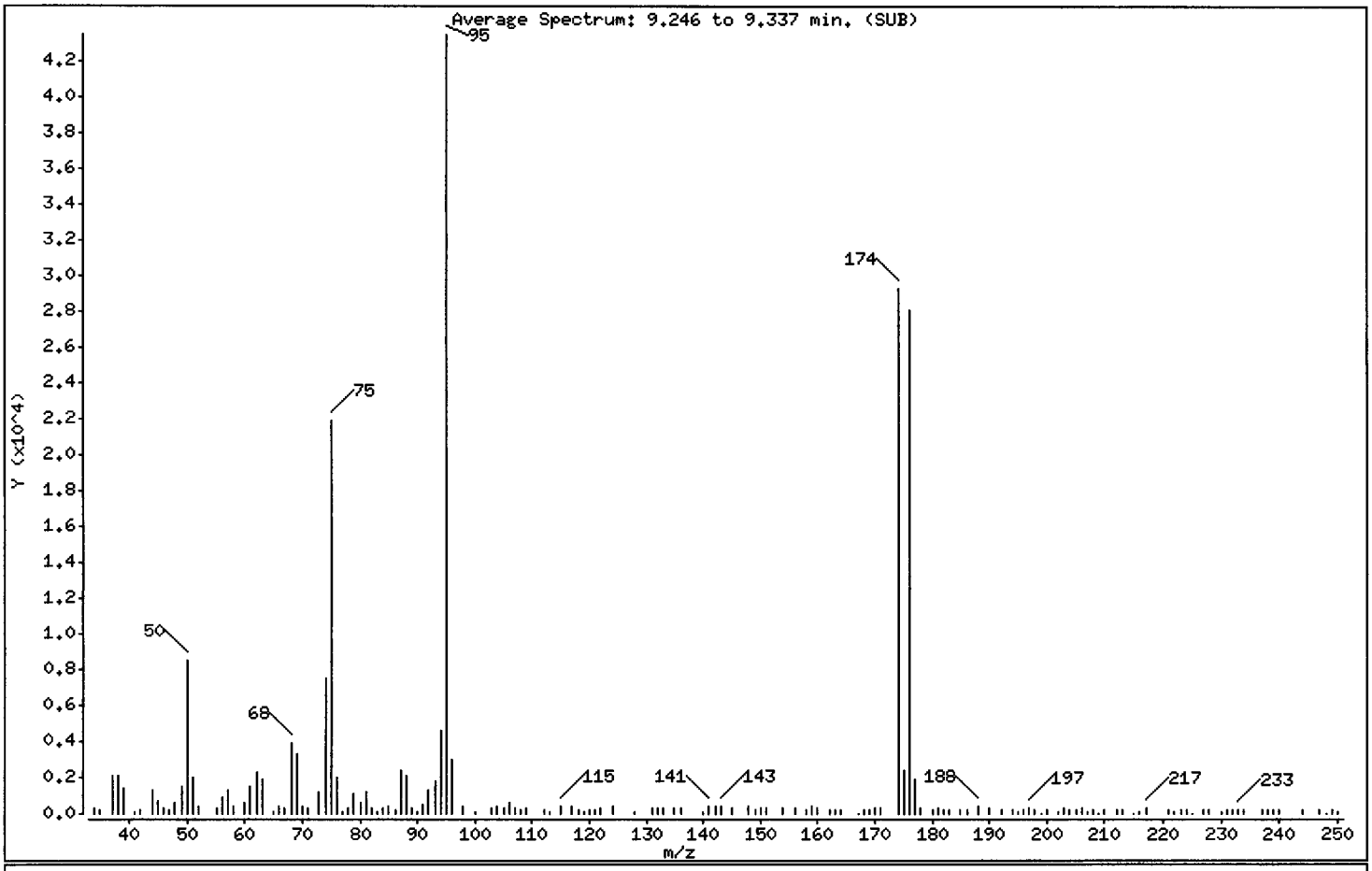
Sample Info: BFB0720,BFB0720,0,1,20JUL2012,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.65
75	30.00 - 66.00% of mass 95	50.45
96	5.00 - 9.00% of mass 95	6.79
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 101.00% of mass 95	67.39
175	4.00 - 9.00% of mass 174	5.47 (8.11)
176	95.00 - 101.00% of mass 174	64.53 (95.75)
177	5.00 - 9.00% of mass 176	4.34 (6.72)

Date : 20-JUL-2012 14:09

Client ID: BFB0720 Instrument: nt7.i

Sample Info: BFB0720,BFB0720,0,1,20JUL2012,

Operator: PC

Column phase: RTXVMS Column diameter: 0.18

Data File: bfb0720d.d
Spectrum: Average Spectrum: 9.246 to 9.337 min. (SUB)
Location of Maximum: 95.00
Number of points: 160

m/z	Y	m/z	Y	m/z	Y	m/z	Y
34.00	284	83.00	105	141.00	433	199.00	47
35.00	166	84.00	266	142.00	405	200.00	248
37.00	2106	85.00	352	143.00	419	202.00	93
38.00	2068	86.00	194	145.00	300	203.00	253
39.00	1367	87.00	2380	148.00	400	204.00	184
41.00	82	88.00	2066	149.00	231	205.00	228
42.00	204	89.00	340	150.00	274	206.00	279
44.00	1276	90.00	84	151.00	258	207.00	91
45.00	709	91.00	510	153.00	38	208.00	188
46.00	321	92.00	1329	154.00	307	209.00	1
47.00	220	93.00	1790	156.00	346	210.00	179
48.00	648	94.00	4637	158.00	230	212.00	214
49.00	1493	95.00	43480	159.00	375	213.00	227
50.00	8543	96.00	2954	160.00	283	215.00	6
51.00	2046	98.00	391	162.00	230	216.00	109
52.00	444	100.00	57	163.00	176	217.00	286
55.00	322	103.00	331	164.00	184	221.00	207
56.00	878	104.00	410	167.00	12	222.00	56
57.00	1321	105.00	264	168.00	175	223.00	211
58.00	378	106.00	568	169.00	229	224.00	150
60.00	566	107.00	327	170.00	315	225.00	33
61.00	1521	108.00	223	171.00	271	227.00	194
62.00	2318	109.00	268	174.00	29304	228.00	206
63.00	1881	112.00	213	175.00	2377	230.00	82
65.00	111	113.00	77	176.00	28056	231.00	191
66.00	422	115.00	398	177.00	1886	232.00	188
67.00	267	117.00	359	178.00	313	233.00	247
68.00	3908	118.00	227	180.00	228	234.00	212
69.00	3280	119.00	115	181.00	265	237.00	227
70.00	403	120.00	220	182.00	203	238.00	195
71.00	256	121.00	200	183.00	195	239.00	182
73.00	1179	122.00	253	185.00	189	240.00	200
74.00	7489	124.00	371	186.00	206	244.00	170
75.00	21936	127.00	2	188.00	356	247.00	192
76.00	1977	128.00	146	190.00	283	248.00	10

Data File: /chem1/nt7.i/20120720.b/bfb0720d.d

Date : 20-JUL-2012 14:09

Client ID: BFB0720

Instrument: nt7.1

Sample Info: BFB0720,BFB0720,0,1,20JUL2012,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0720d.d

Spectrum: Average Spectrum: 9.246 to 9.337 min. (SUB)

Location of Maximum: 95.00

Number of points: 160

m/z	Y	m/z	Y	m/z	Y	m/z	Y
77.00	54	131.00	330	192.00	234	249.00	156
78.00	294	132.00	344	194.00	208	250.00	92
79.00	1109	133.00	283	195.00	52		
80.00	575	135.00	254	196.00	186		
81.00	1235	136.00	300	197.00	299		
82.00	298	140.00	91	198.00	241		

Data File: /chem1/nt7.i/20120720.b/bfb0720d.d

Date : 20-JUL-2012 14:09

Client ID: BFB0720

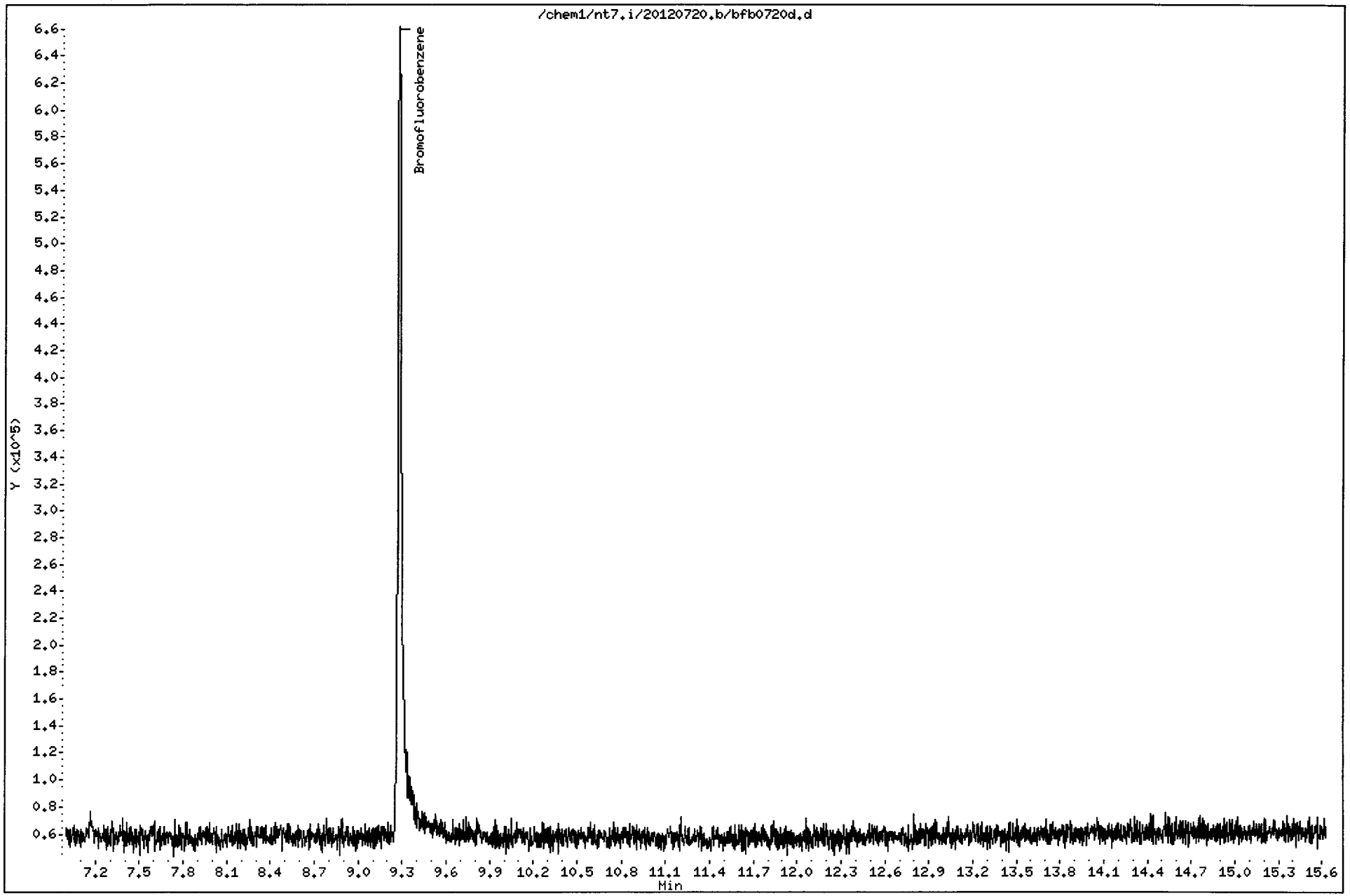
Sample Info: BFB0720,BFB0720,0,1,20JUL2012,

Column phase: RTXVMS

Instrument: nt7.i

Operator: PC

Column diameter: 0.18



Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120720.b/cc0720tst.d
Lab Smp Id: CC0720 Client Smp ID: CC0720
Inj Date : 20-JUL-2012 14:44
Operator : PC Inst ID: nt7.i
Smp Info : CC0720,10,10,0,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120720.b/sim062012.m
Meth Date : 20-Jul-2012 15:46 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 10:59 Cal File: 50000620.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/L)	AMOUNTS ON-COL (ng/L)
	6 Benzene	78	5.210	5.210	(0.905)	440787	1000.00	1039.6
*	7 Pentafluorobenzene	168	5.317	5.317	(1.000)	130817	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.327	5.327	(1.002)	78634	1000.00	850.48
*	11 1,4-Difluorobenzene	114	5.755	5.755	(1.000)	234943	1000.00	
$	12 d8-Toluene	98	6.909	6.909	(1.201)	273820	1000.00	981.96
	13 Toluene	91	6.945	6.945	(0.845)	445772	1000.00	1006.1
*	15 d5 -Chlorobenzene	117	8.214	8.214	(1.000)	223842	1000.00	
	16 Ethyl Benzene	91	8.255	8.255	(1.005)	528576	1000.00	1149.7
	17 m,p xylene	106	8.387	8.387	(1.021)	408525	2000.00	2201.1
	18 o-xylene	91	8.752	8.752	(1.065)	424602	1000.00	1015.8
$	19 4-Bromofluorobenzene	174	9.282	9.282	(1.130)	85877	1000.00	1182.7

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt7.i Injection Date: 20-JUL-2012 14:44
Lab File ID: cc0720tst.d Init. Cal. Date(s): 20-JUN-2012 20-JUN-2012
Analysis Type: WATER Init. Cal. Times: 10:59 13:40
Lab Sample ID: CC0720 Quant Type: ISTD
Method: /chem1/nt7.i/20120720.b/sim062012.m

COMPOUND	RRF / AMOUNT	RF1000	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
6 Benzene	1.80473	1.87614	0.040	3.95674	20.00000	Averaged
$ 8 d4-1,2-Dichloroethane	0.70678	0.60110	0.040	-14.95168	20.00000	Averaged
$ 12 d8-Toluene	1.18689	1.16547	0.040	-1.80441	20.00000	Averaged
13 Toluene	1.97931	1.99146	0.040	0.61392	20.00000	Averaged
16 Ethyl Benzene	2.05387	2.36138	0.040	14.97222	20.00000	Averaged
17 m,p xylene	0.82915	0.91253	0.040	10.05649	20.00000	Averaged
18 o-xylene	1.86747	1.89688	0.040	1.57525	20.00000	Averaged
$ 19 4-Bromofluorobenzene	0.32439	0.38365	0.040	18.26971	20.00000	Averaged

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: cc0720tst.d
Lab Smp Id: CC0720
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20120720.b/sim062012.m
Misc Info: 12-

Calibration Date: 20-JUL-2012
Calibration Time: 14:44
Client Smp ID: CC0720
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	130817	-22.23
11 1,4-Difluorobenze	328921	164460	657842	234943	-28.57
15 d5 -Chlorobenzene	299061	149530	598122	223842	-25.15

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	0.00
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.00
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt7.i/20120720.b/cc0720tst.d

Date : 20-JUL-2012 14:44

Client ID: CC0720

Sample Info: CC0720,10,10,0,,

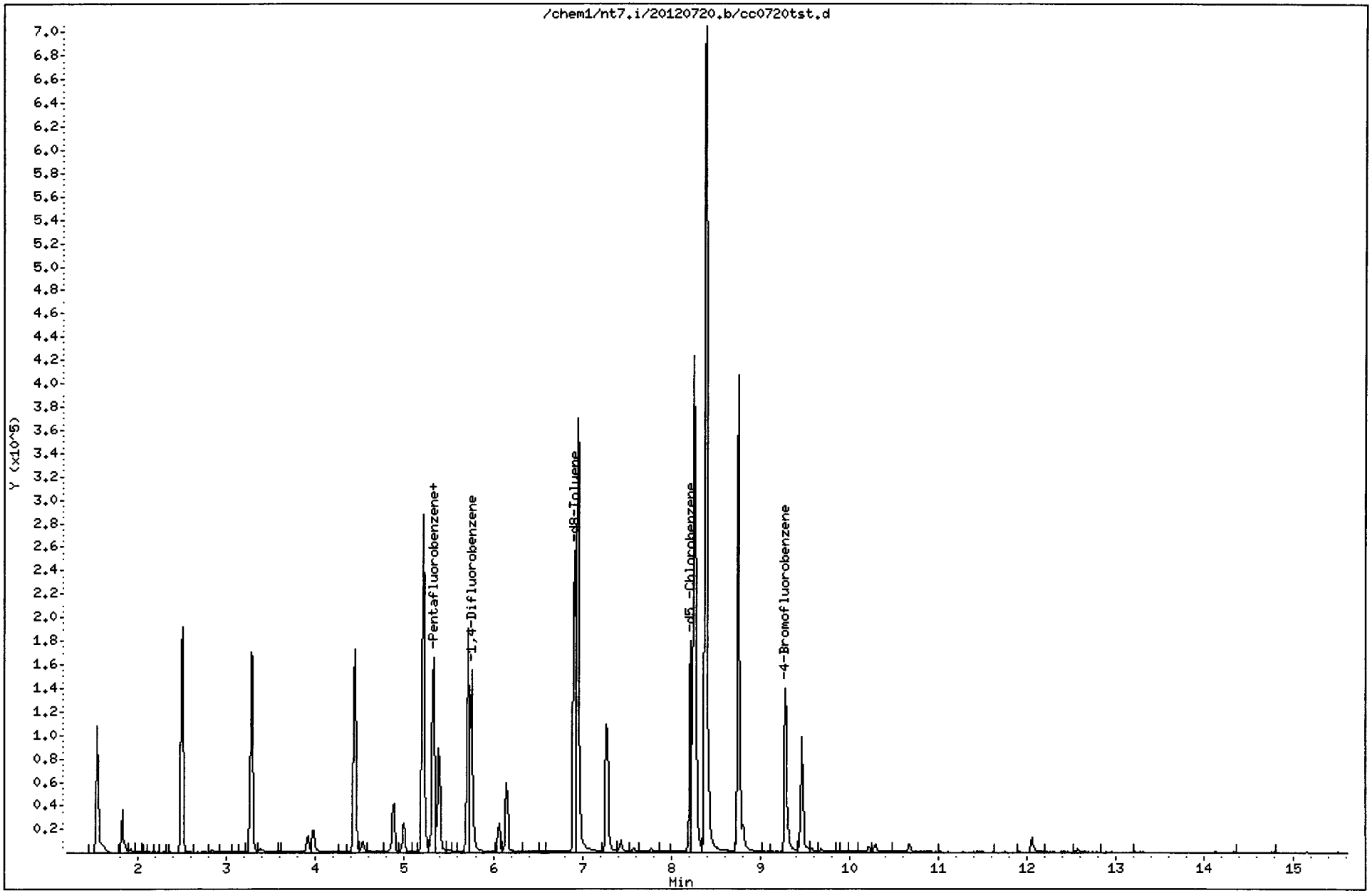
Column phase: RTXVMS

Instrument: nt7.i

Operator: PC

Column diameter: 0.18

VB51 : 00552



CO-ELUTION SUMMARY FOR FILE - cc0720tst.d

Lab ID: CC0720, Method: sim062012.m, Instrument: nt7.i, Date: 20-JUL-2012

RT	CO-ELUTION COMPOUNDS

PC 7/23/12

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120720.b/lcs0720.d
Lab Smp Id: LCS0720 Client Smp ID: LCS0720
Inj Date : 20-JUL-2012 15:23
Operator : PC Inst ID: nt7.i
Smp Info : LCS0720,10,10,1,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120720.b/sim062012.m
Meth Date : 20-Jul-2012 15:46 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 10:59 Cal File: 50000620.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/L)	FINAL (ug/L)
	6 Benzene	78	5.209	5.210	(0.905)	438581	1011.70	1011.7
*	7 Pentafluorobenzene	168	5.316	5.317	(1.000)	135920	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.326	5.327	(1.002)	79781	830.485	830.49
*	11 1,4-Difluorobenzene	114	5.754	5.755	(1.000)	240206	1000.00	
$	12 d8-Toluene	98	6.908	6.909	(1.200)	285887	1002.77	1002.8
	13 Toluene	91	6.944	6.945	(0.846)	439307	968.799	968.80
*	15 d5 -Chlorobenzene	117	8.213	8.214	(1.000)	229098	1000.00	
	16 Ethyl Benzene	91	8.254	8.255	(1.005)	515659	1095.89	1095.9
	17 m,p xylene	106	8.387	8.387	(1.021)	401172	2111.92	2111.9
	18 o-xylene	91	8.751	8.752	(1.065)	415612	971.434	971.43
$	19 4-Bromofluorobenzene	174	9.282	9.282	(1.130)	83101	1118.20	1118.2

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: lcs0720.d
Lab Smp Id: LCS0720
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20120720.b/sim062012.m
Misc Info: 12-

Calibration Date: 20-JUL-2012
Calibration Time: 14:44
Client Smp ID: LCS0720
Level: MED
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	135920	-19.20
11 1,4-Difluorobenze	328921	164460	657842	240206	-26.97
15 d5 -Chlorobenzene	299061	149530	598122	229098	-23.39

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	-0.02
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	-0.01
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20120720
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: LCS0720 Client Smp ID: LCS0720
Level: MED Operator: PC
Data Type: MS DATA SampleType: LCS
SpikeList File: btex.spk Quant Type: ISTD
Sublist File: btex.sub
Method File: /chem1/nt7.i/20120720.b/sim062012.m
Misc Info: 12-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 Benzene	1000.0	1011.7	101.17	80-120
13 Toluene	1000.0	968.80	96.88	70-130
16 Ethyl Benzene	1000.0	1095.9	109.59	70-130
17 m,p xylene	2000.0	2111.9	105.60	70-130
18 o-xylene	1000.0	971.43	97.14	70-130

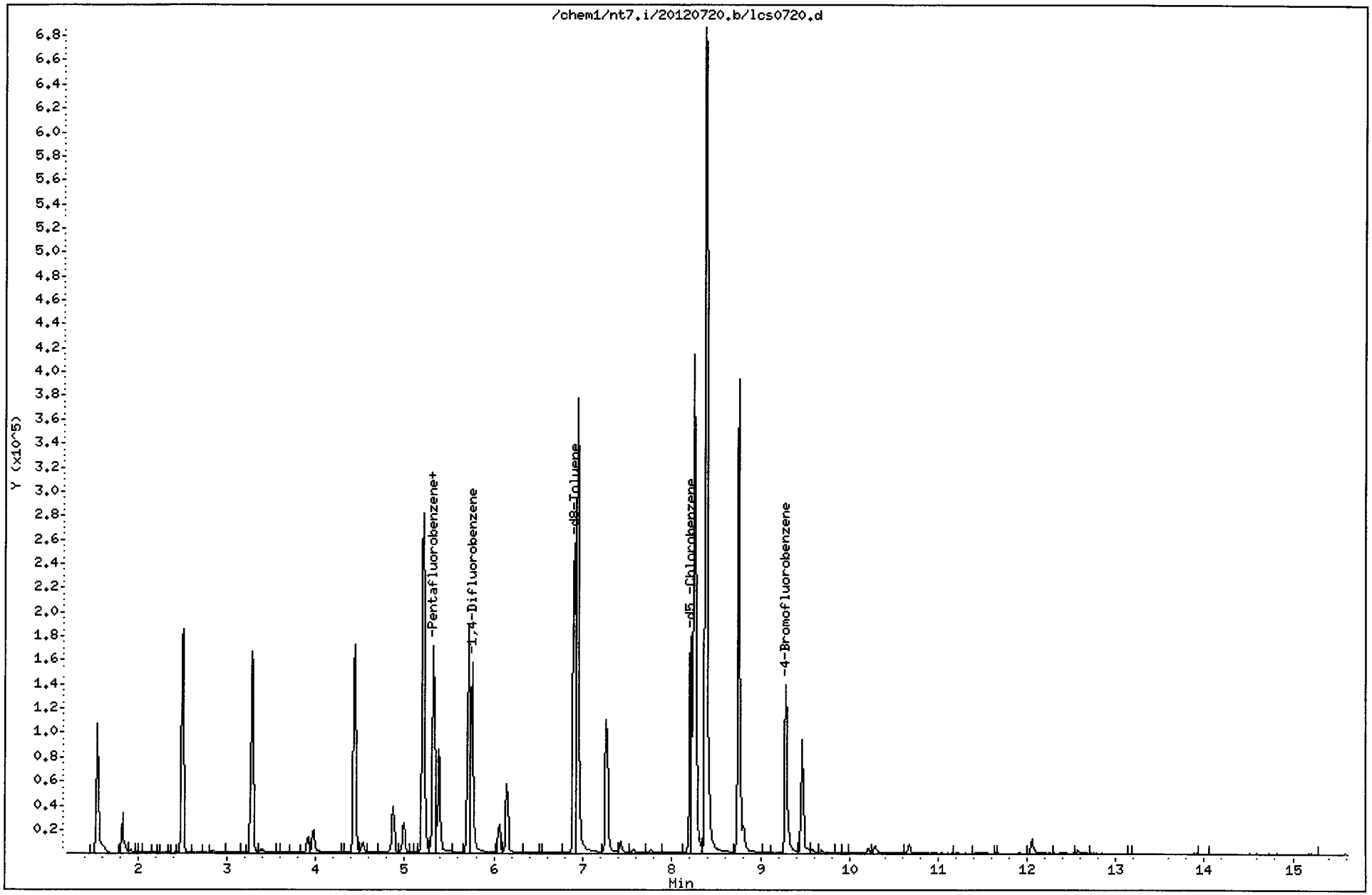
SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 8 d4-1,2-Dichloroeth	1000.0	830.49	83.05	75-125
$ 12 d8-Toluene	1000.0	1002.8	100.28	75-125
$ 19 4-Bromofluorobenze	1000.0	1118.2	111.82	75-125

Data File: /chem1/nt7.i/20120720.b/lcs0720.d
Date : 20-JUL-2012 15:23
Client ID: LCS0720
Sample Info: LCS0720,10,10,1,,

Instrument: nt7.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



VB51 00557

CO-ELUTION SUMMARY FOR FILE - lcs0720.d

Lab ID: LCS0720, Method: sim062012.m, Instrument: nt7.i, Date: 20-JUL-2012

RT	CO-ELUTION COMPOUNDS

PC 7/23/12

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120720.b/lcs0720a.d
Lab Smp Id: LCS0720 Client Smp ID: LCS0720
Inj Date : 20-JUL-2012 15:50
Operator : PC Inst ID: nt7.i
Smp Info : LCS0720,10,10,1,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120720.b/sim062012.m
Meth Date : 20-Jul-2012 15:46 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 10:59 Cal File: 50000620.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/L)	FINAL (ug/L)
	6 Benzene	78	5.211	5.210	(0.906)	429136	1004.97	1005.0
*	7 Pentafluorobenzene	168	5.316	5.317	(1.000)	134695	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.328	5.327	(1.002)	78958	829.399	829.40
*	11 1,4-Difluorobenzene	114	5.754	5.755	(1.000)	236608	1000.00	
$	12 d8-Toluene	98	6.904	6.909	(1.200)	282526	1006.05	1006.0
	13 Toluene	91	6.945	6.945	(0.846)	438815	983.768	983.77
*	15 d5 -Chlorobenzene	117	8.213	8.214	(1.000)	225359	1000.00	
	16 Ethyl Benzene	91	8.254	8.255	(1.005)	514566	1111.71	1111.7
	17 m,p xylene	106	8.386	8.387	(1.021)	382981	2049.60	2049.6
	18 o-xylene	91	8.751	8.752	(1.066)	414048	983.836	983.84
$	19 4-Bromofluorobenzene	174	9.282	9.282	(1.130)	81198	1110.73	1110.7

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: lcs0720a.d
Lab Smp Id: LCS0720
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20120720.b/sim062012.m
Misc Info: 12-

Calibration Date: 20-JUL-2012
Calibration Time: 14:44
Client Smp ID: LCS0720
Level: MED
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	134695	-19.92
11 1,4-Difluorobenze	328921	164460	657842	236608	-28.07
15 d5 -Chlorobenzene	299061	149530	598122	225359	-24.64

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	-0.02
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	-0.02
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: LCS0720
Level: MED
Data Type: MS DATA
SpikeList File: btex.spk
Sublist File: btex.sub
Method File: /chem1/nt7.i/20120720.b/sim062012.m
Misc Info: 12-

Client SDG: 20120720
Fraction: VOA
Client Smp ID: LCS0720
Operator: PC
SampleType: LCS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 Benzene	1000.0	1005.0	100.50	80-120
13 Toluene	1000.0	983.77	98.38	70-130
16 Ethyl Benzene	1000.0	1111.7	111.17	70-130
17 m,p xylene	2000.0	2049.6	102.48	70-130
18 o-xylene	1000.0	983.84	98.38	70-130

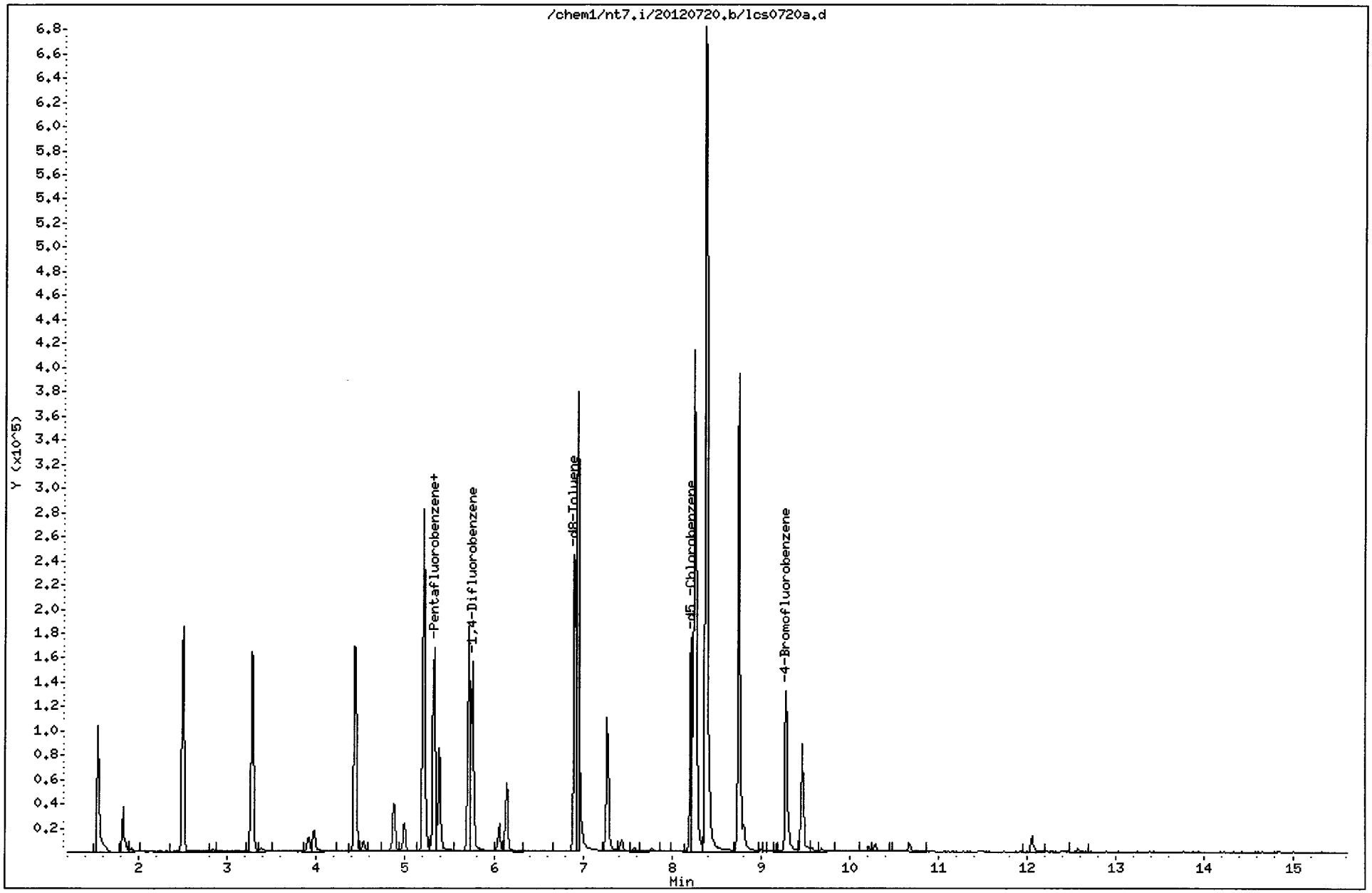
SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 8 d4-1,2-Dichloroeth	1000.0	829.40	82.94	75-125
$ 12 d8-Toluene	1000.0	1006.0	100.60	75-125
$ 19 4-Bromofluorobenze	1000.0	1110.7	111.07	75-125

Data File: /chem1/nt7.i/20120720.b/lcs0720a.d
Date : 20-JUL-2012 15:50
Client ID: LCS0720
Sample Info: LCS0720,10,10,1,,

Instrument: nt7.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - lcs0720a.d

Lab ID: LCS0720, Method: sim062012.m, Instrument: nt7.i, Date: 20-JUL-2012

RT	CO-ELUTION COMPOUNDS

PC 7/23/12

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120720.b/mb0720.d
Lab Smp Id: MB0720 Client Smp ID: MB0720
Inj Date : 20-JUL-2012 16:17
Operator : PC Inst ID: nt7.i
Smp Info : MB0720,10,10,1,,
Misc Info : 12-
Comment :
Method : /chem1/nt7.i/20120720.b/sim062012.m
Meth Date : 23-Jul-2012 09:35 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 10:59 Cal File: 50000620.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/L)	FINAL (ug/L)
	6 Benzene	78	Compound Not Detected.					
*	7 Pentafluorobenzene	168	5.322	5.317	(1.000)	124931	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.331	5.327	(1.002)	78614	890.327	890.33
*	11 1,4-Difluorobenzene	114	5.755	5.755	(1.000)	216638	1000.00	
$	12 d8-Toluene	98	6.911	6.909	(1.201)	263800	1025.96	1026.0
	13 Toluene	91	Compound Not Detected.					
*	15 d5 -Chlorobenzene	117	8.221	8.214	(1.000)	219120	1000.00	
	16 Ethyl Benzene	91	Compound Not Detected.					
	17 m,p xylene	106	Compound Not Detected.					
	18 o-xylene	91	Compound Not Detected.					
$	19 4-Bromofluorobenzene	174	9.300	9.282	(1.131)	66320	933.042	933.04

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: mb0720.d
Lab Smp Id: MB0720
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20120720.b/sim062012.m
Misc Info: 12-

Calibration Date: 20-JUL-2012
Calibration Time: 14:44
Client Smp ID: MB0720
Level: MED
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	124931	-25.73
11 1,4-Difluorobenze	328921	164460	657842	216638	-34.14
15 d5 -Chlorobenzene	299061	149530	598122	219120	-26.73

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	0.09
11 1,4-Difluorobenze	5.75	5.25	6.25	5.76	0.01
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.22	0.09

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20120720
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: MB0720 Client Smp ID: MB0720
Level: MED Operator: PC
Data Type: MS DATA SampleType: BLANK
SpikeList File: special.spk Quant Type: ISTD
Sublist File: btex.sub
Method File: /chem1/nt7.i/20120720.b/sim062012.m
Misc Info: 12-

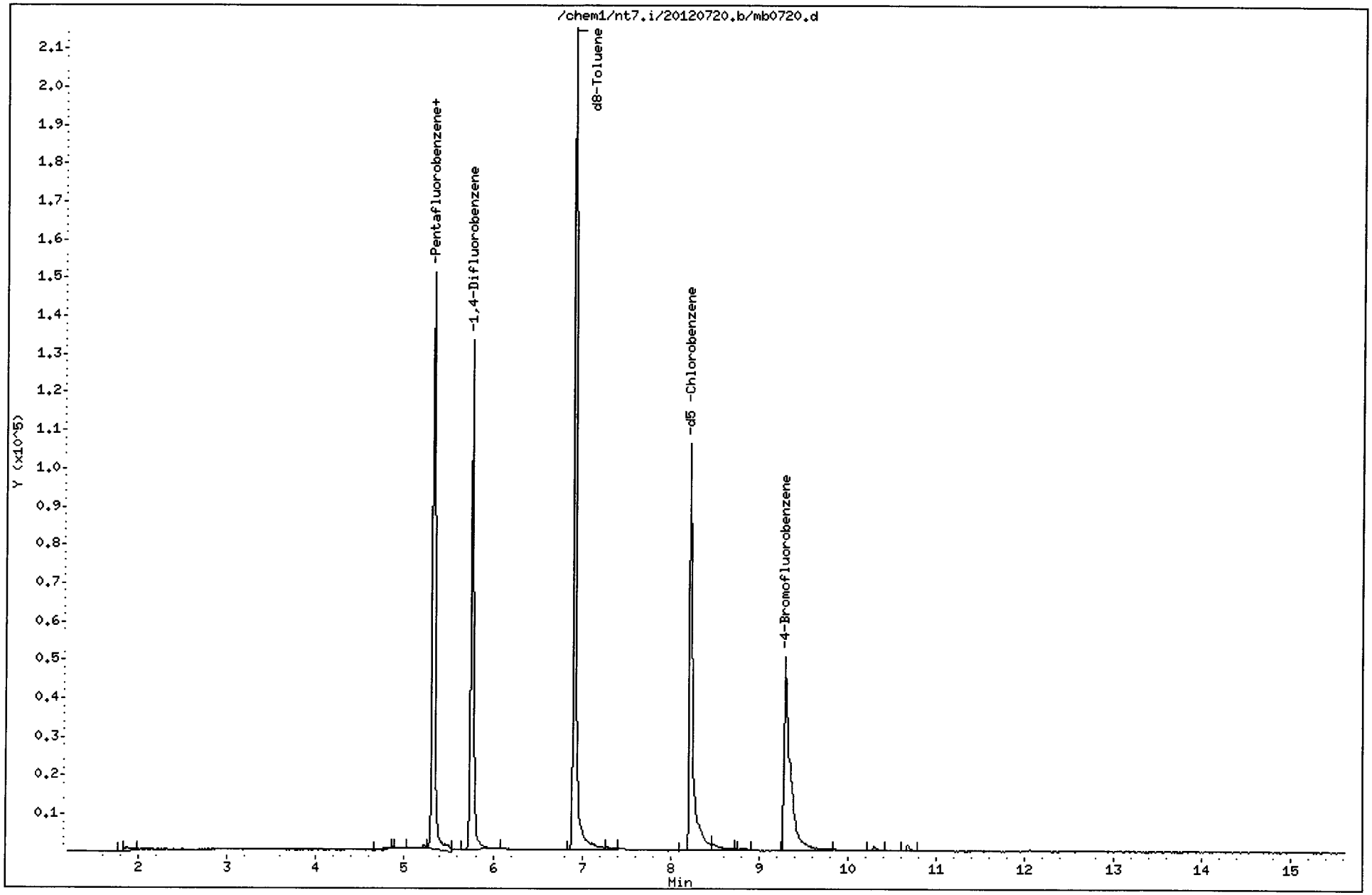
SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 8 d4-1,2-Dichloroeth	1000.0	890.33	89.03	75-125
$ 12 d8-Toluene	1000.0	1026.0	102.60	75-125
$ 19 4-Bromofluorobenze	1000.0	933.04	93.30	75-125

Data File: /chem1/nt7.i/20120720.b/mb0720.d
Date : 20-JUL-2012 16:17
Client ID: MB0720
Sample Info: MB0720,10,10,1,,

Instrument: nt7.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



VB51 : 00567

CO-ELUTION SUMMARY FOR FILE - mb0720.d

Lab ID: MB0720, Method: sim062012.m, Instrument: nt7.i, Date: 20-JUL-2012

RT	CO-ELUTION COMPOUNDS

PC 7/23/12

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20120720.b/vb54j.d
Lab Smp Id: VB54J Client Smp ID: CW-TP-01-8-9
Inj Date : 20-JUL-2012 16:43
Operator : PC Inst ID: nt7.i
Smp Info : VB54J,10,8.439,1,90UL,
Misc Info : 12-12949
Comment :
Method : /chem1/nt7.i/20120720.b/sim062012.m
Meth Date : 23-Jul-2012 09:35 paul Quant Type: ISTD
Cal Date : 20-JUN-2012 10:59 Cal File: 50000620.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:
Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	8.43900	Sample Amount (mg)
M	14.40000	Moisture (%)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/L)	CONCENTRATIONS FINAL (ug/Kg)
	6 Benzene	78	Compound Not Detected.					
*	7 Pentafluorobenzene	168	5.322	5.317	(1.000)	126410	1000.00	
$	8 d4-1,2-Dichloroethane	65	5.329	5.327	(1.001)	78845	882.490	1221.6
*	11 1,4-Difluorobenzene	114	5.753	5.755	(1.000)	235012	1000.00	859.78 (2nd Ion)
$	12 d8-Toluene	98	6.910	6.909	(1.201)	373570	~~1339.28~~	1854.0(R) PC 7/23/12
	13 Toluene	91	6.944	6.945	(0.845)	36312	70.4730	97.557(Q)
*	15 d5 -Chlorobenzene	117	8.215	8.214	(1.000)	260324	1000.00	
	16 Ethyl Benzene	91	8.261	8.255	(1.006)	13090	24.4823	33.891
	17 m,p xylene	106	8.395	8.387	(1.022)	14891	68.9886	95.502(Q)
	18 o-xylene	91	8.754	8.752	(1.066)	36685	75.4613	104.46(QM)
$	19 4-Bromofluorobenzene	174	9.281	9.282	(1.130)	97432	1153.78	1597.2(Q)

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: vb54j.d
Lab Smp Id: VB54J
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20120720.b/sim062012.m
Misc Info: 12-12949

Calibration Date: 20-JUL-2012
Calibration Time: 14:44
Client Smp ID: CW-TP-01-8-9
Level: MED
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	168211	84106	336422	126410	-24.85
11 1,4-Difluorobenze	328921	164460	657842	235012	-28.55
15 d5 -Chlorobenzene	299061	149530	598122	260324	-12.95

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
7 Pentafluorobenzen	5.32	4.82	5.82	5.32	0.08
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	-0.02
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.22	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

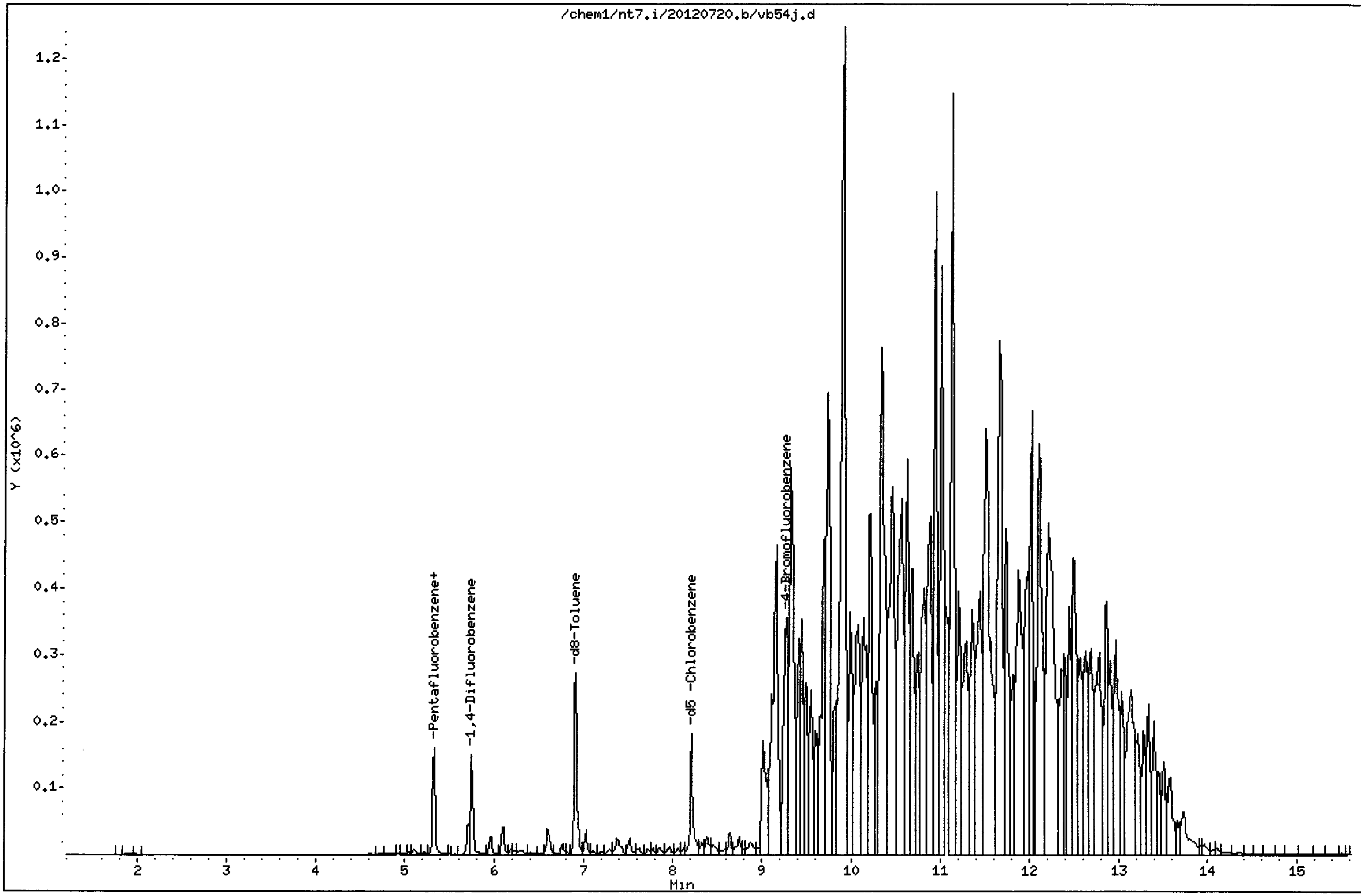
RECOVERY REPORT

Client Name: Anchor QEA, LLC
Client SDG: VB54
Sample Matrix: SOLID
Fraction: VOA
Lab Smp Id: VB54J
Client Smp ID: CW-TP-01-8-9
Level: MED
Operator: PC
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: special.spk
Quant Type: ISTD
Sublist File: btex.sub
Method File: /chem1/nt7.i/20120720.b/sim062012.m
Misc Info: 12-12949

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 8 d4-1,2-Dichloroeth	1384.3	1221.6	88.25	75-125
$ 12 d8-Toluene	1384.3	1854.0	133.93*	75-125
$ 19 4-Bromofluorobenze	1384.3	1597.2	115.38	75-125

Data File: /chem1/nt7.i/20120720.b/vb54j.d
Date : 20-JUL-2012 16:43
Client ID: CW-TP-01-8-9
Sample Info: VB54J,10,8.439,1,90UL,
Column phase: RTXVMS

Page 5
Instrument: nt7.i
Operator: PC
Column diameter: 0.18



Data File: /chem1/nt7.i/20120720.b/vb54j.d

Date : 20-JUL-2012 16:43

Client ID: CW-TP-01-8-9

Instrument: nt7.i

Sample Info: VB54J,10,8.439,1,90UL,

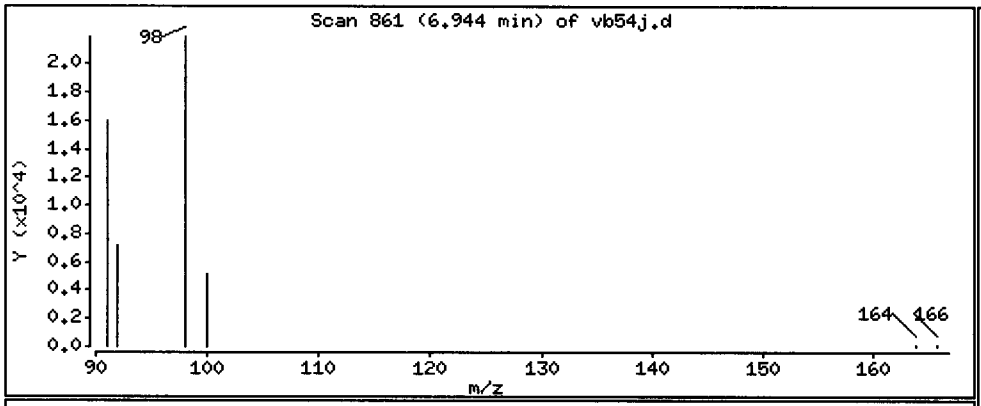
Operator: PC

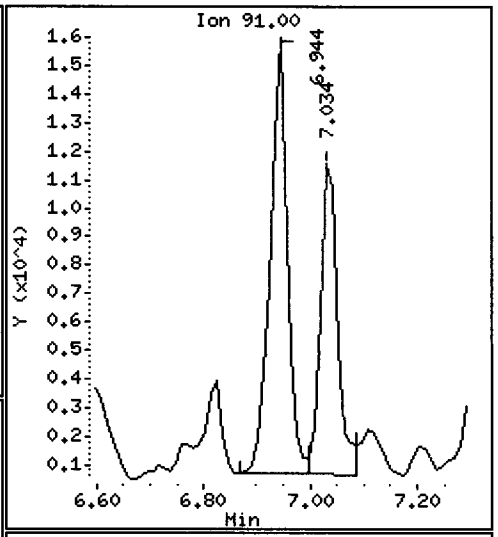
Column phase: RTXVMS

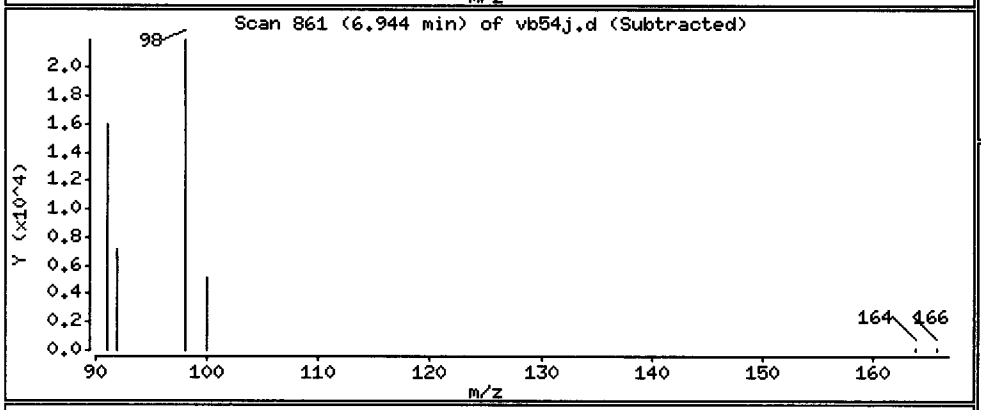
Column diameter: 0.18

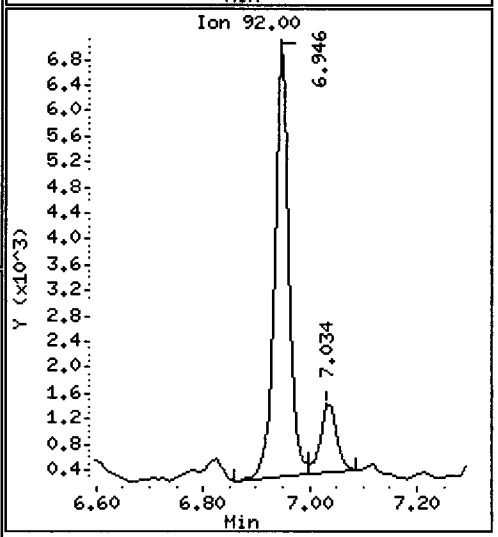
13 Toluene

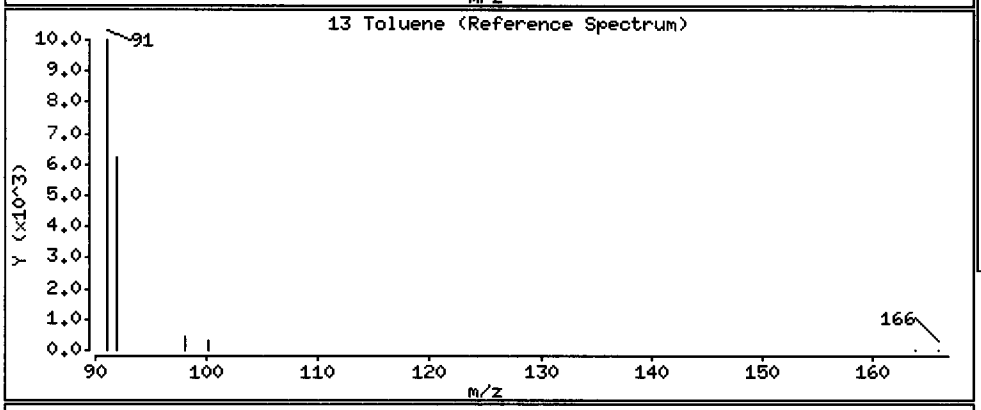
Concentration: 97.557 ug/Kg

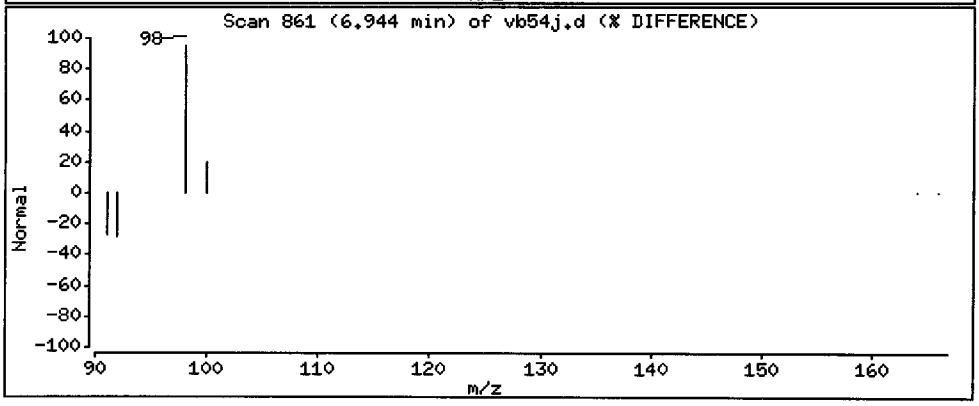












Data File: /chem1/nt7.i/20120720.b/vb54j.d

Date : 20-JUL-2012 16:43

Client ID: CW-TP-01-8-9

Instrument: nt7.i

Sample Info: VB54J,10,8.439,1,90UL,

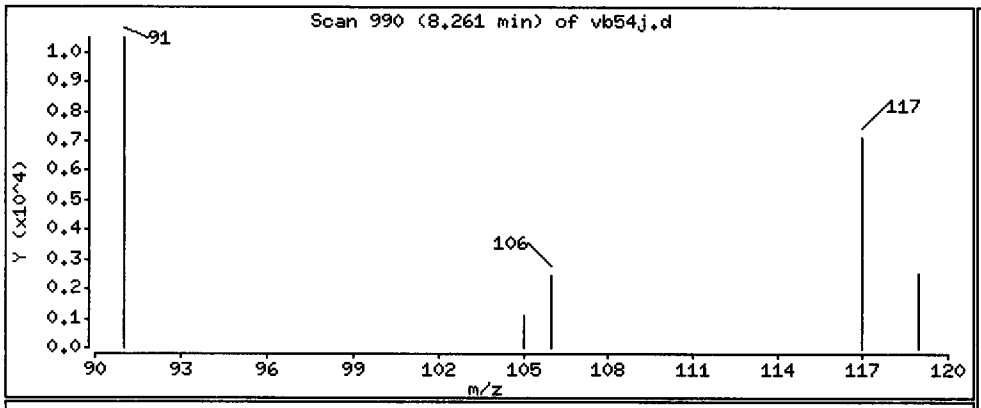
Operator: PC

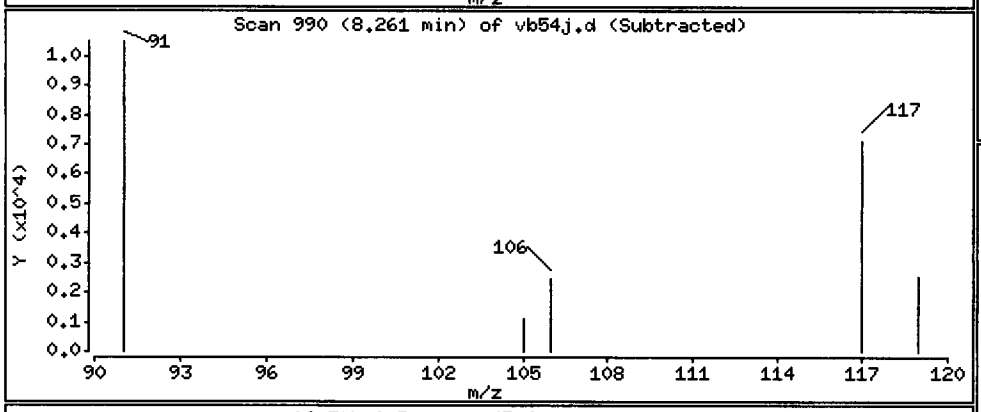
Column phase: RTXVMS

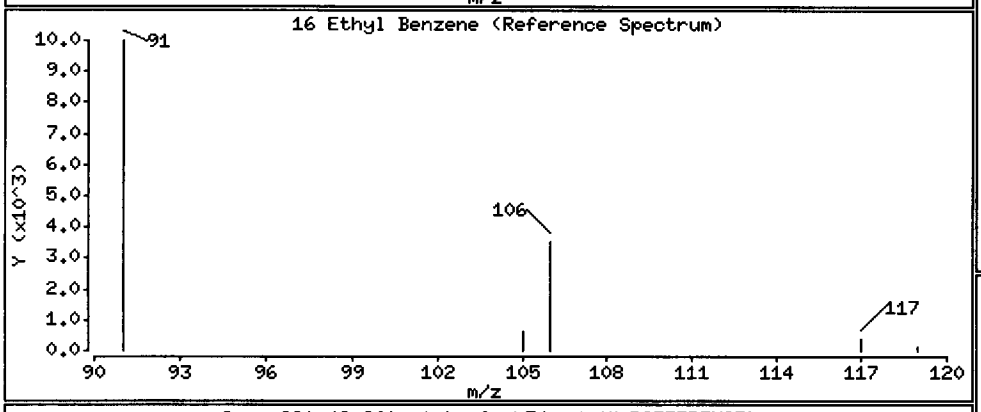
Column diameter: 0.18

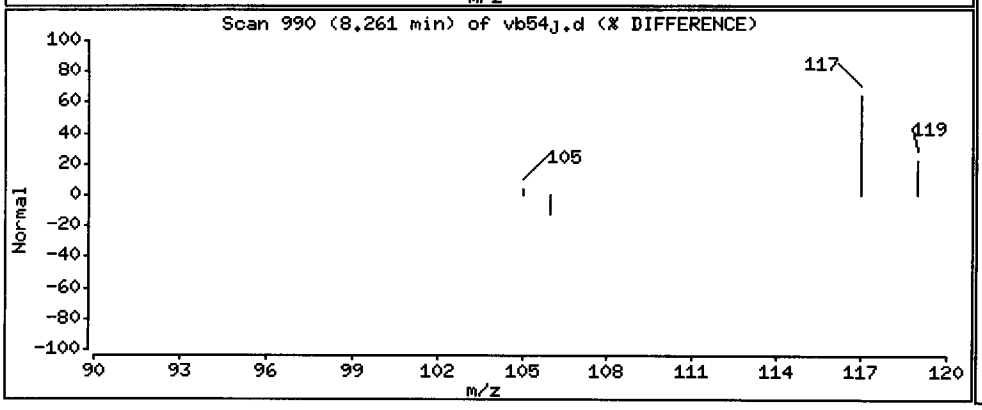
16 Ethyl Benzene

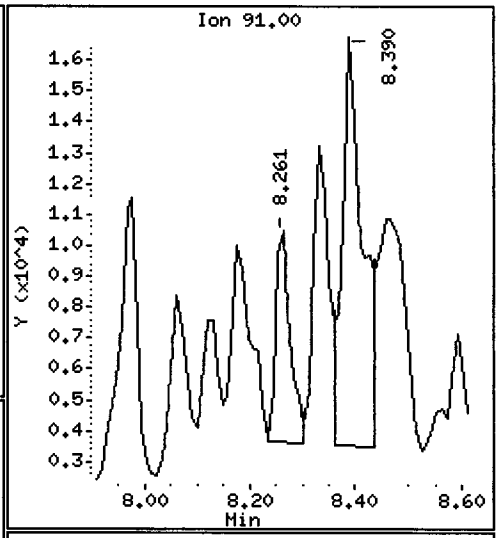
Concentration: 33.891 ug/Kg

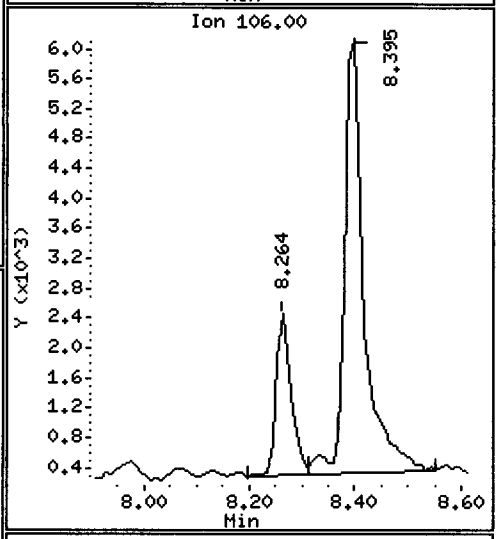


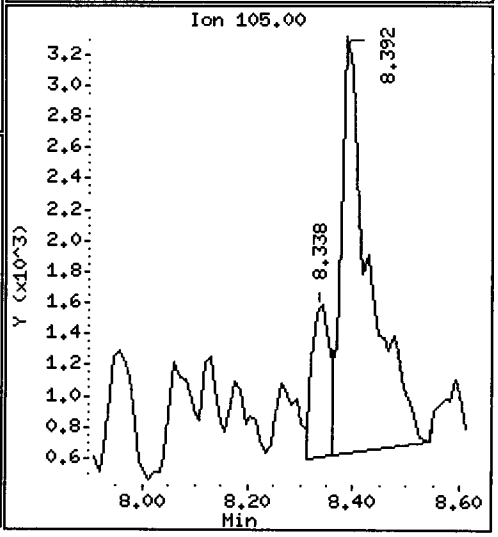












Data File: /chem1/nt7.i/20120720.b/vb54j.d

Date : 20-JUL-2012 16:43

Client ID: CW-TP-01-8-9

Instrument: nt7.i

Sample Info: VB54J,10,8.439,1,90UL,

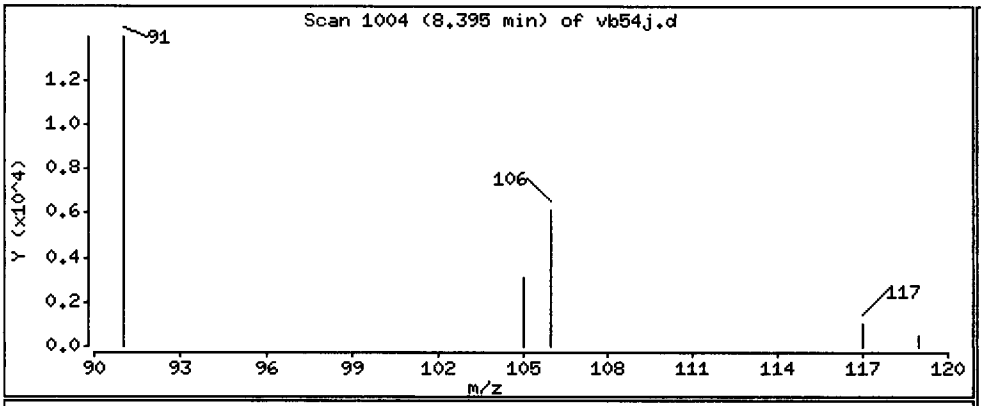
Operator: PC

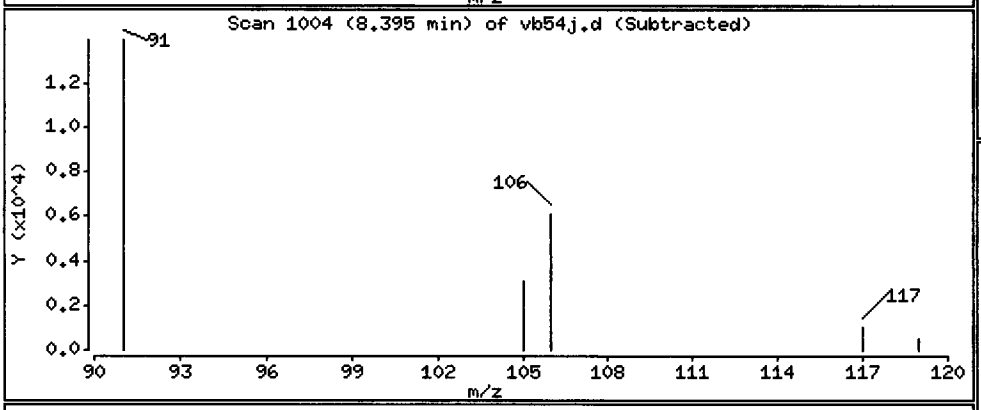
Column phase: RTXVMS

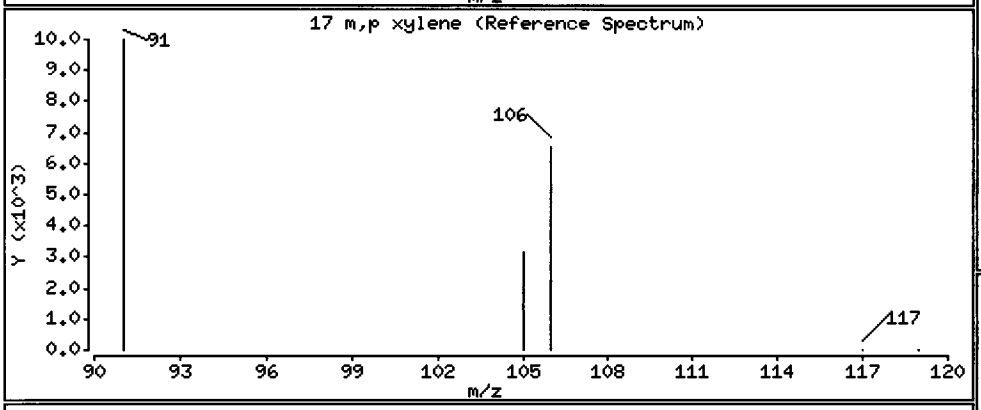
Column diameter: 0.18

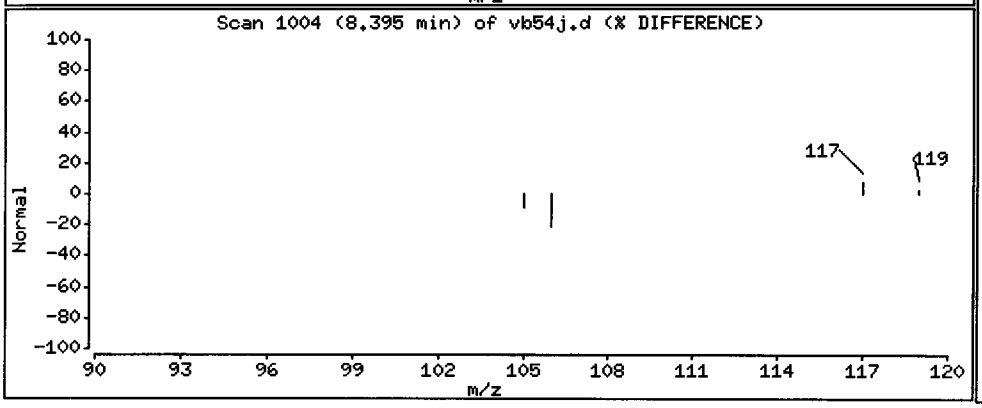
17 m,p xylene

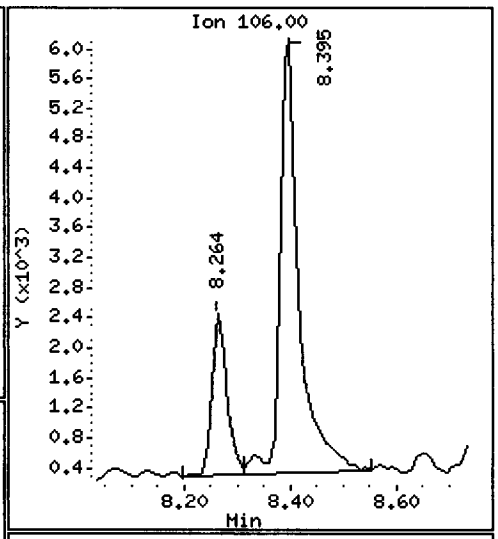
Concentration: 95.502 ug/Kg

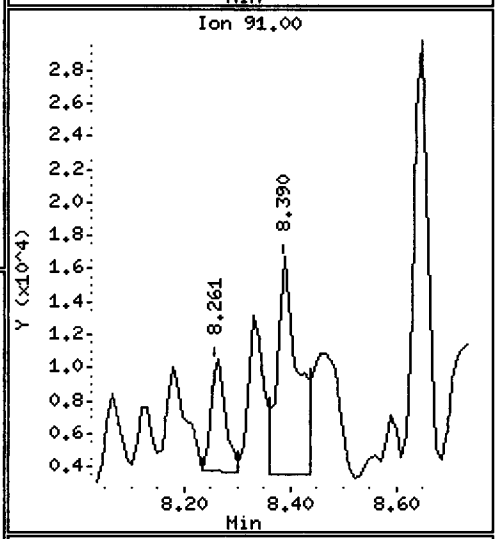


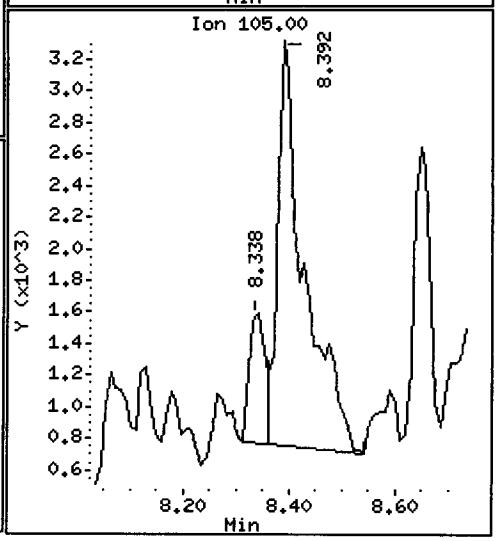












Data File: /chem1/nt7.i/20120720.b/vb54j.d

Date : 20-JUL-2012 16:43

Client ID: CW-TP-01-8-9

Instrument: nt7.i

Sample Info: VB54J,10,8.439,1,90UL,

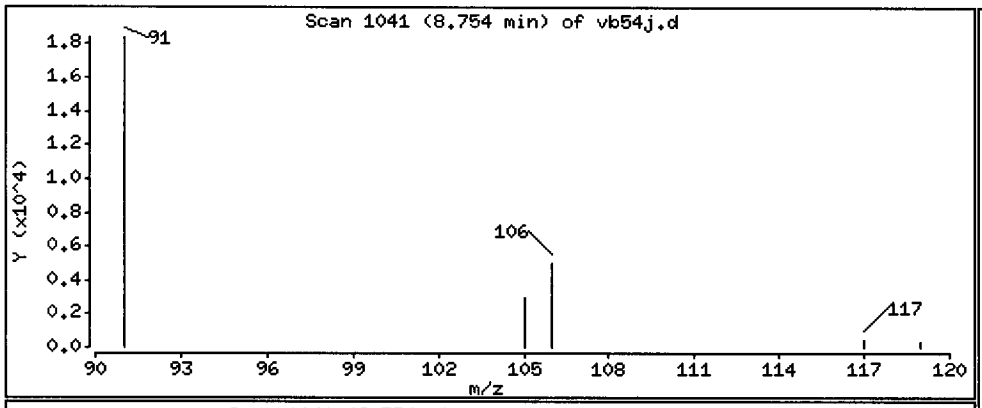
Operator: PC

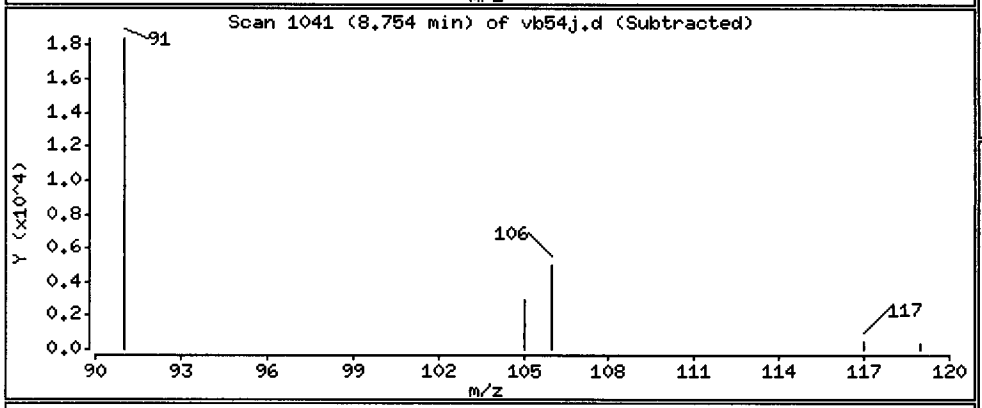
Column phase: RTXVMS

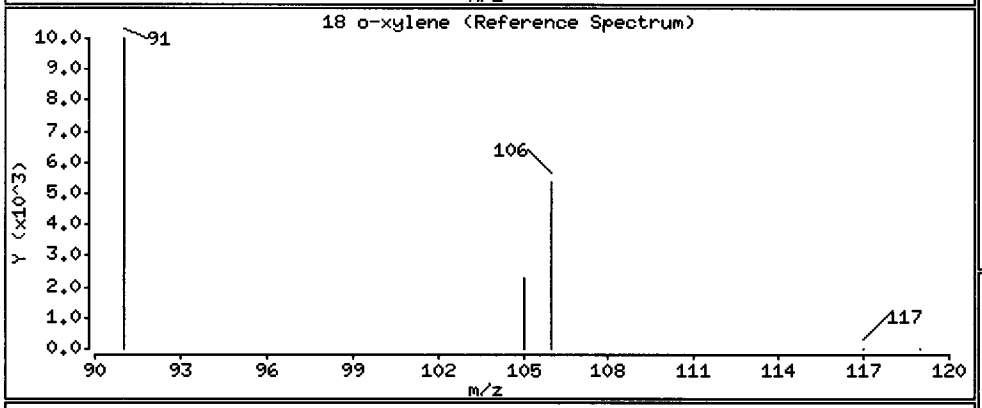
Column diameter: 0.18

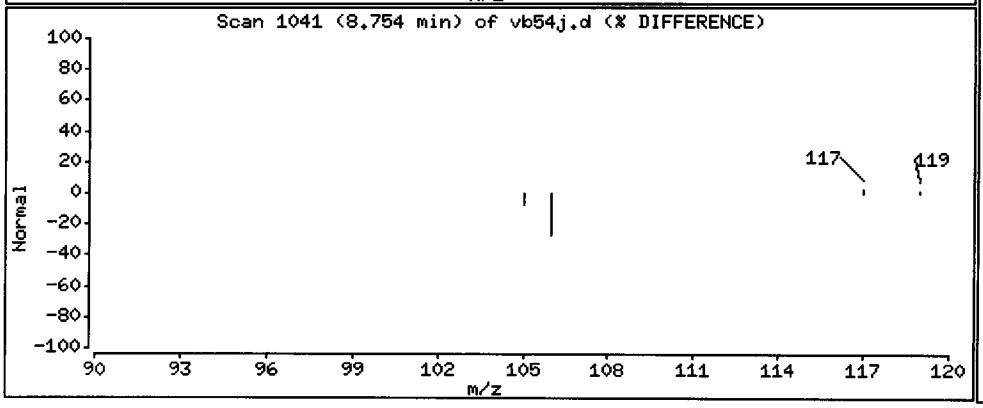
18 o-xylene

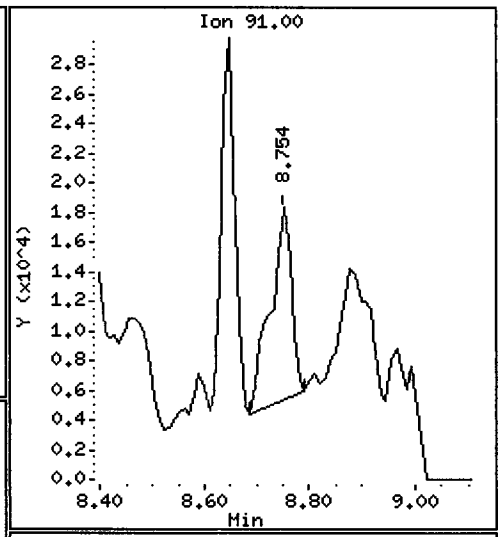
Concentration: 104.46 ug/Kg

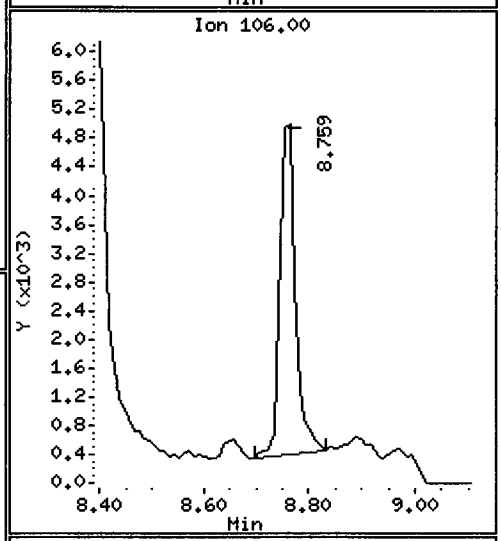


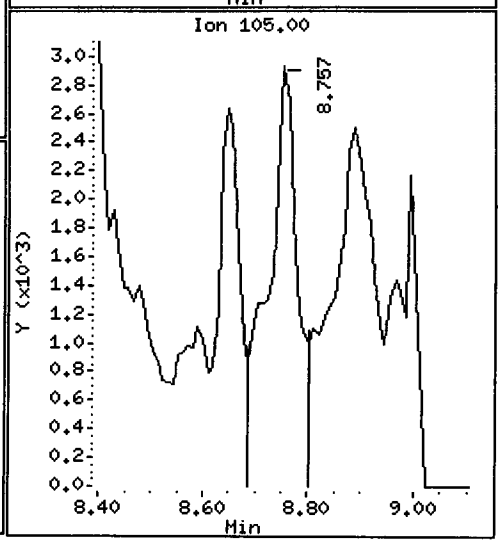








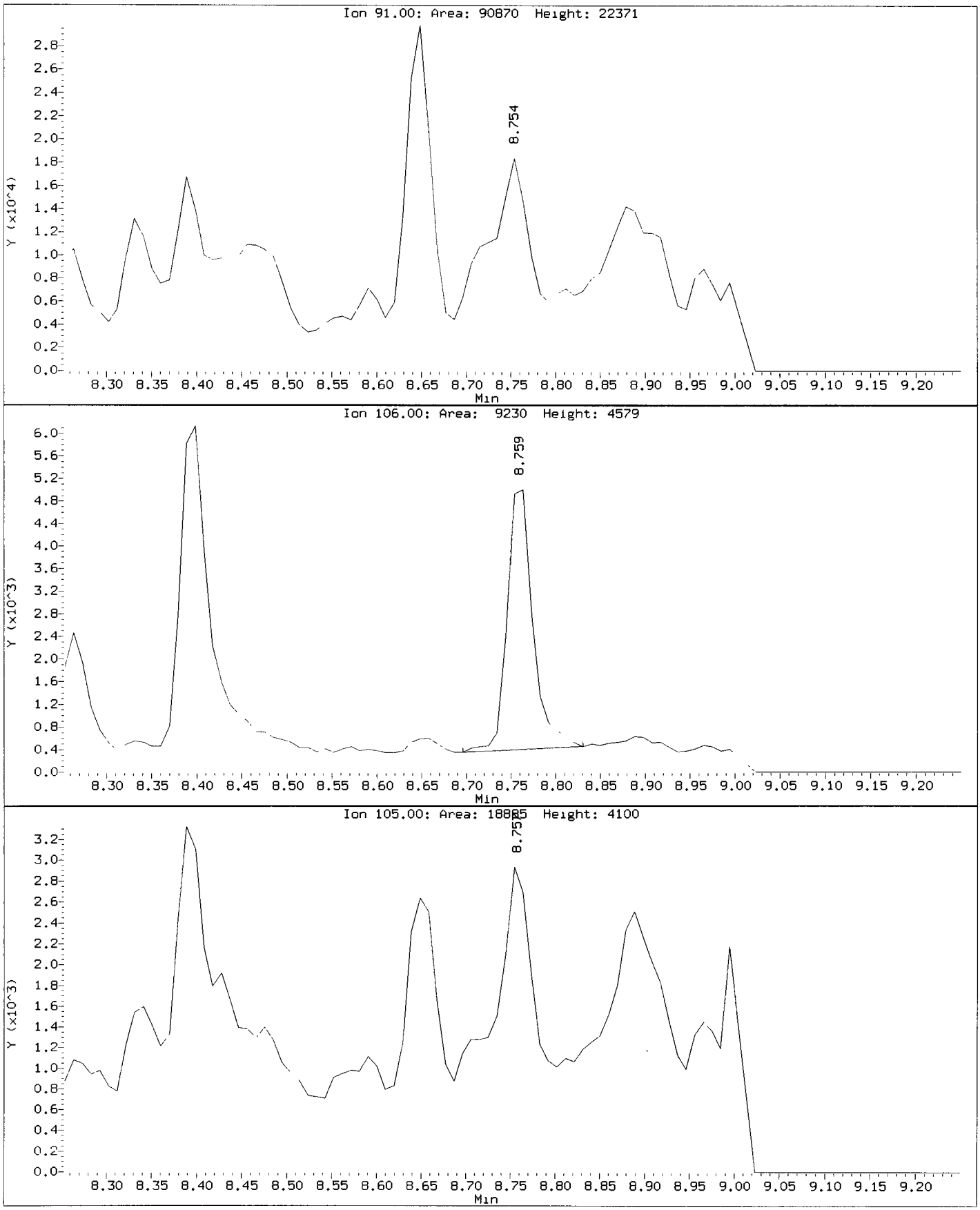




Data File: /chem1/nt7.i/20120720.b/vb54j.d
Injection Date: 20-JUL-2012 16:43
Instrument: nt7.i
Client Sample ID: CW-TP-01-8-9

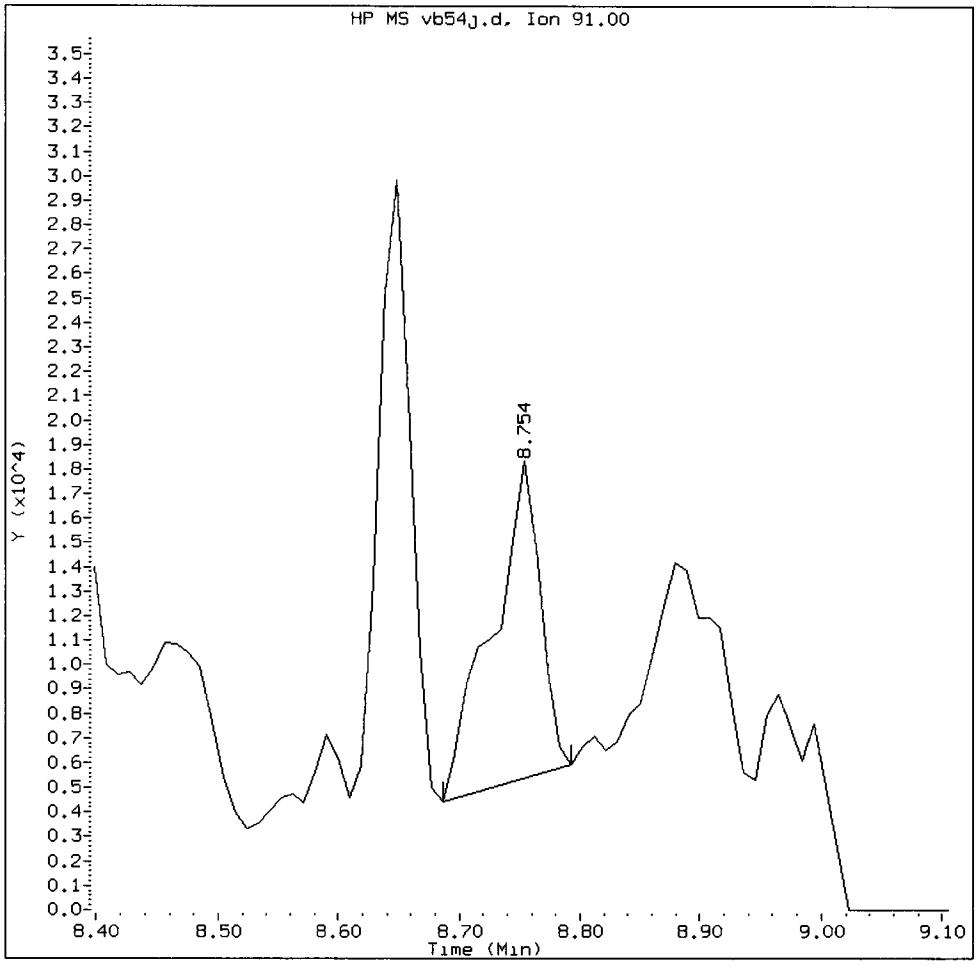
Compound: o-xylene
CAS Number:

PC
7/23/12



VB54J, /chem1/nt7.i/20120720.b/vb54j.d

o-xylene Amount: 75.46 Area: 36685



MANUAL INTEGRATION for o-xylene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: PL Date: 7/23/12

CO-ELUTION SUMMARY FOR FILE - vb54j.d

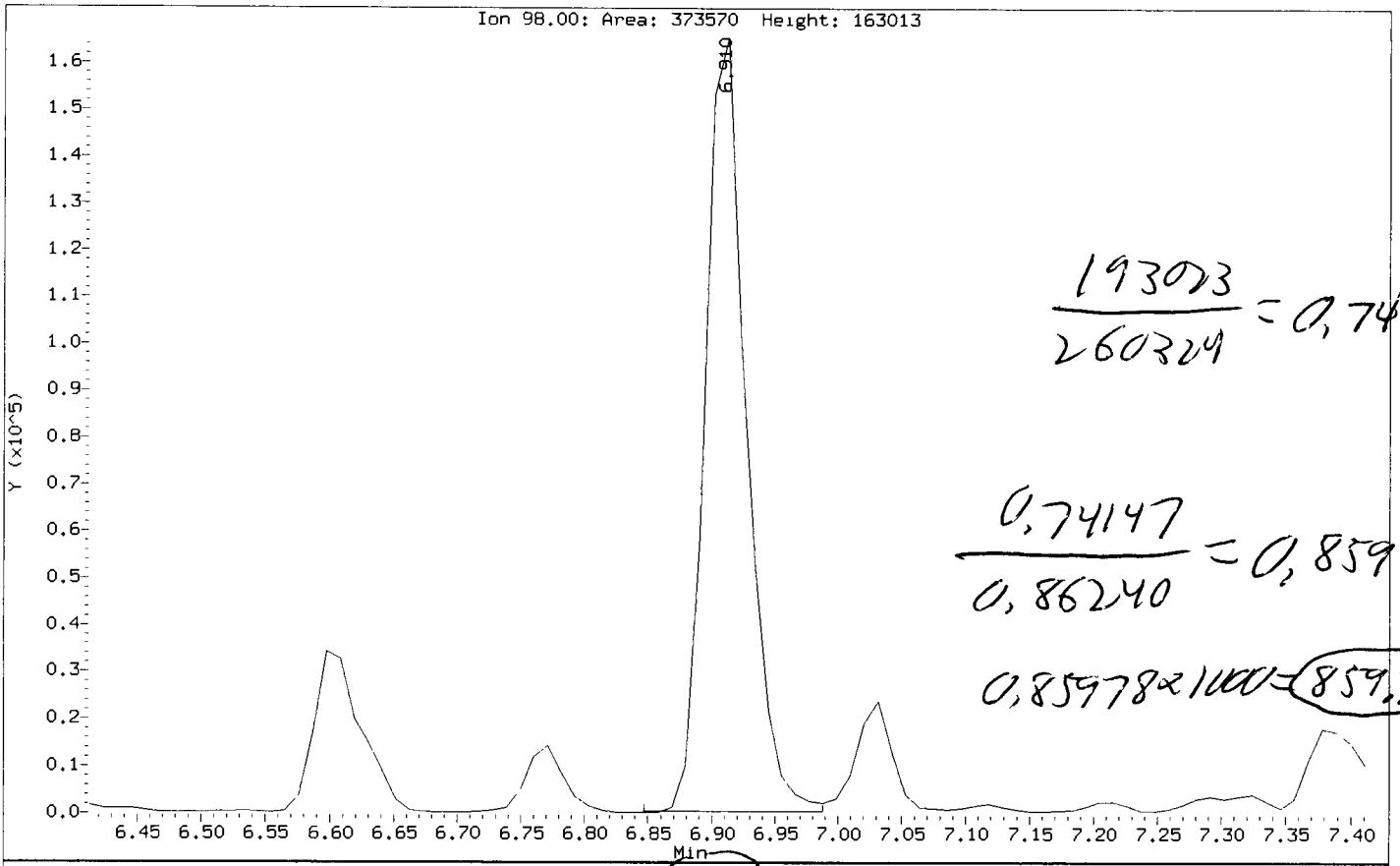
Lab ID: VB54J, Method: sim062012.m, Instrument: nt7.i, Date: 20-JUL-2012

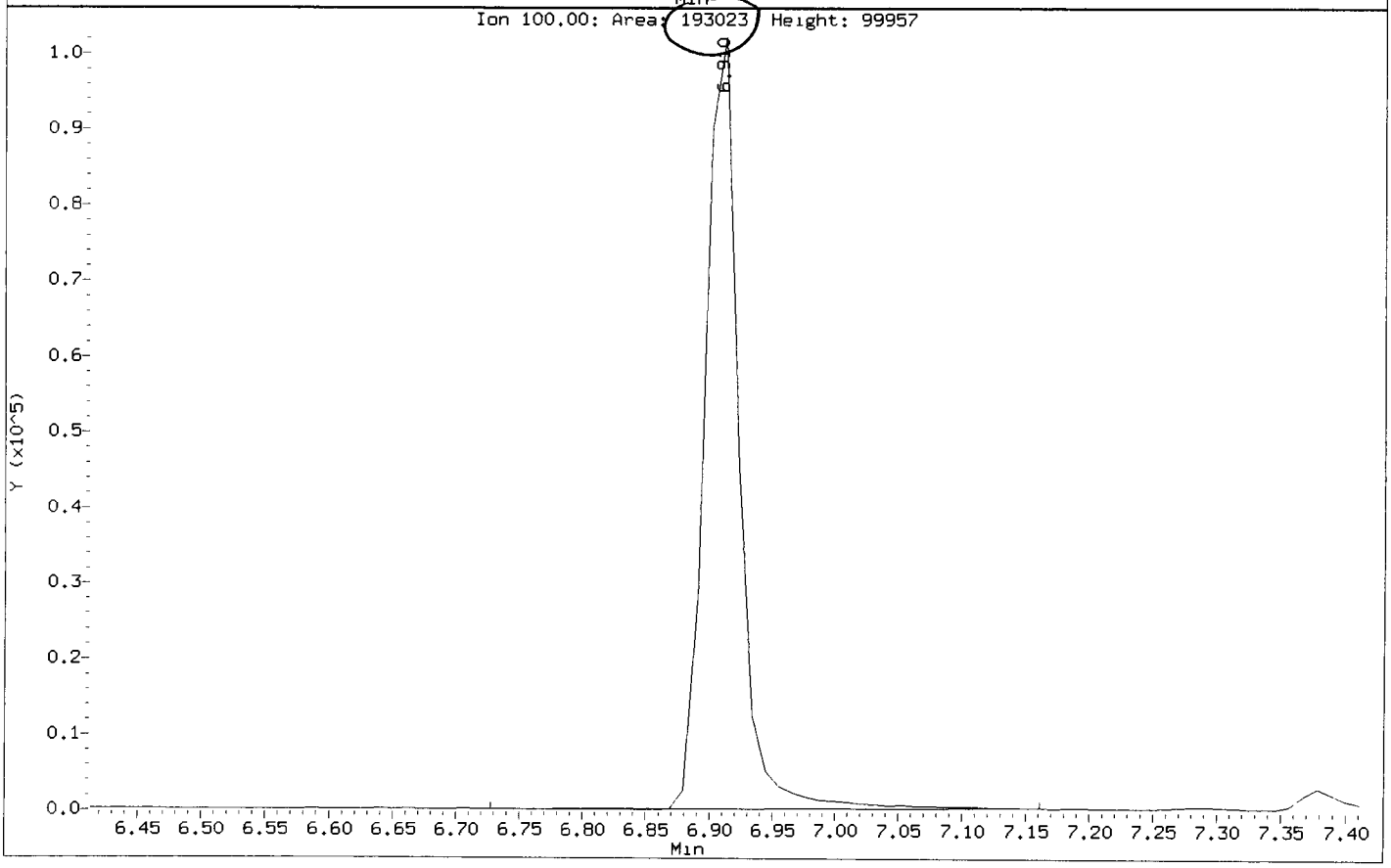
RT	CO-ELUTION COMPOUNDS

Data File: /chem1/nt7.1/20120720.b/vb54j.d
Injection Date: 20-JUL-2012 16:43
Instrument: nt7.1
Client Sample ID: CW-TP-01-8-9

Compound: d8-Toluene
CAS Number:

Sample





$\frac{193023}{260329} = 0,74147$

$\frac{0,74147}{0,86240} = 0,85978$

$0,85978 \times 1000 = 859,78$

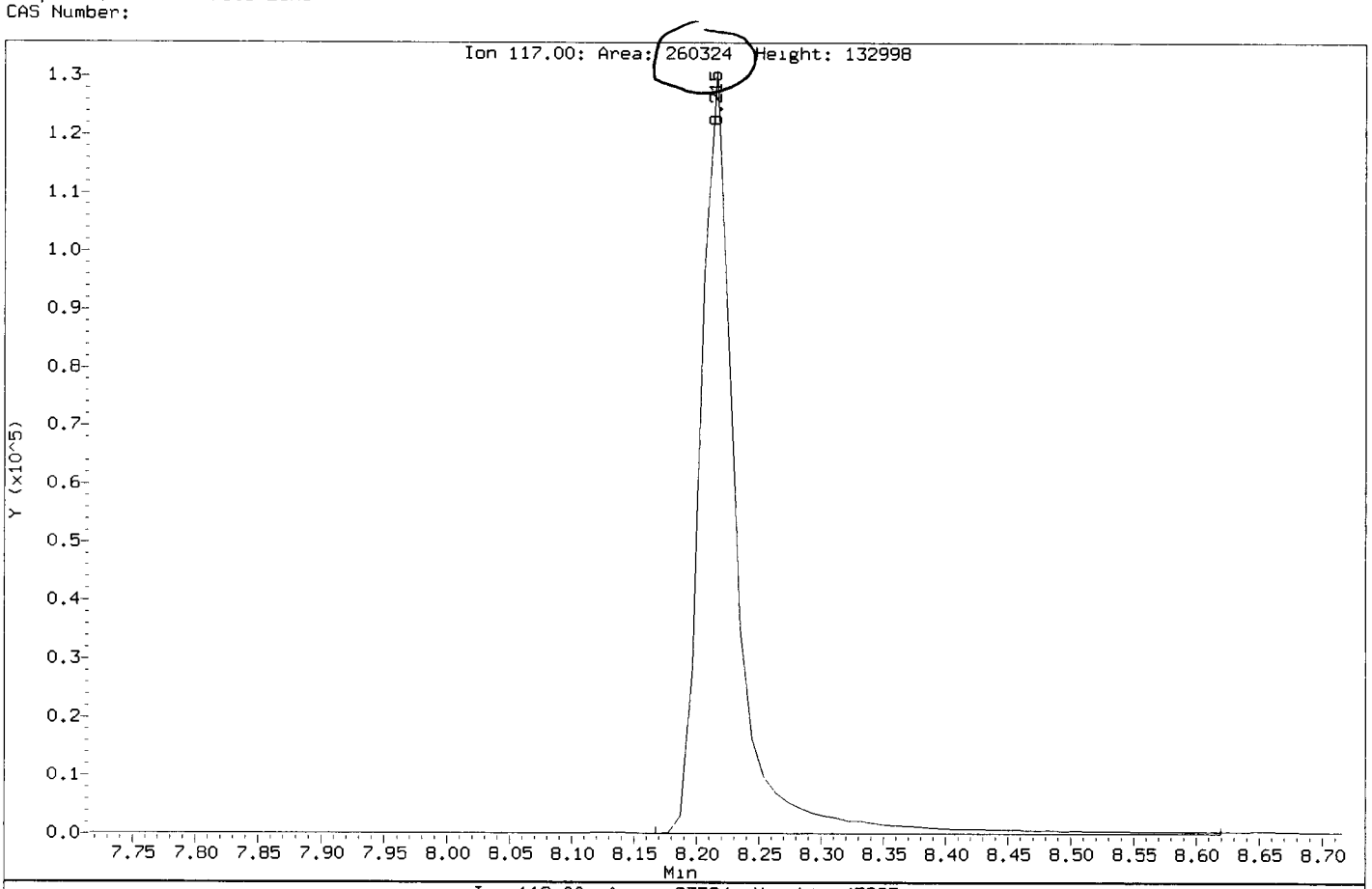
Pathfinder

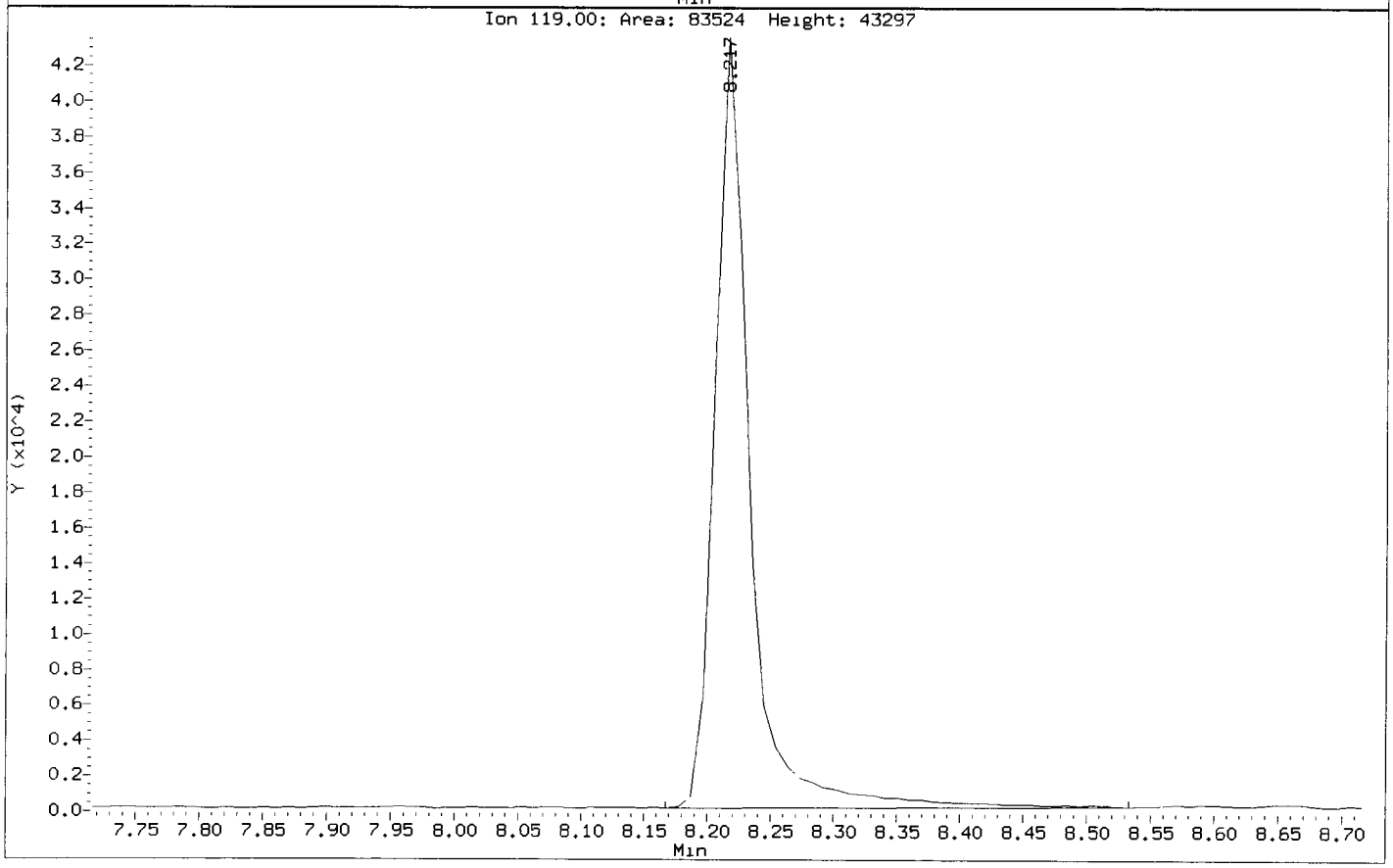
85,989

Data File: /chem1/nt7.1/20120720.b/vb54j.d
Injection Date: 20-JUL-2012 16:43
Instrument: nt7.1
Client Sample ID: CW-TP-01-8-9

Sample

Compound: d5 -Chlorobenzene
CAS Number:

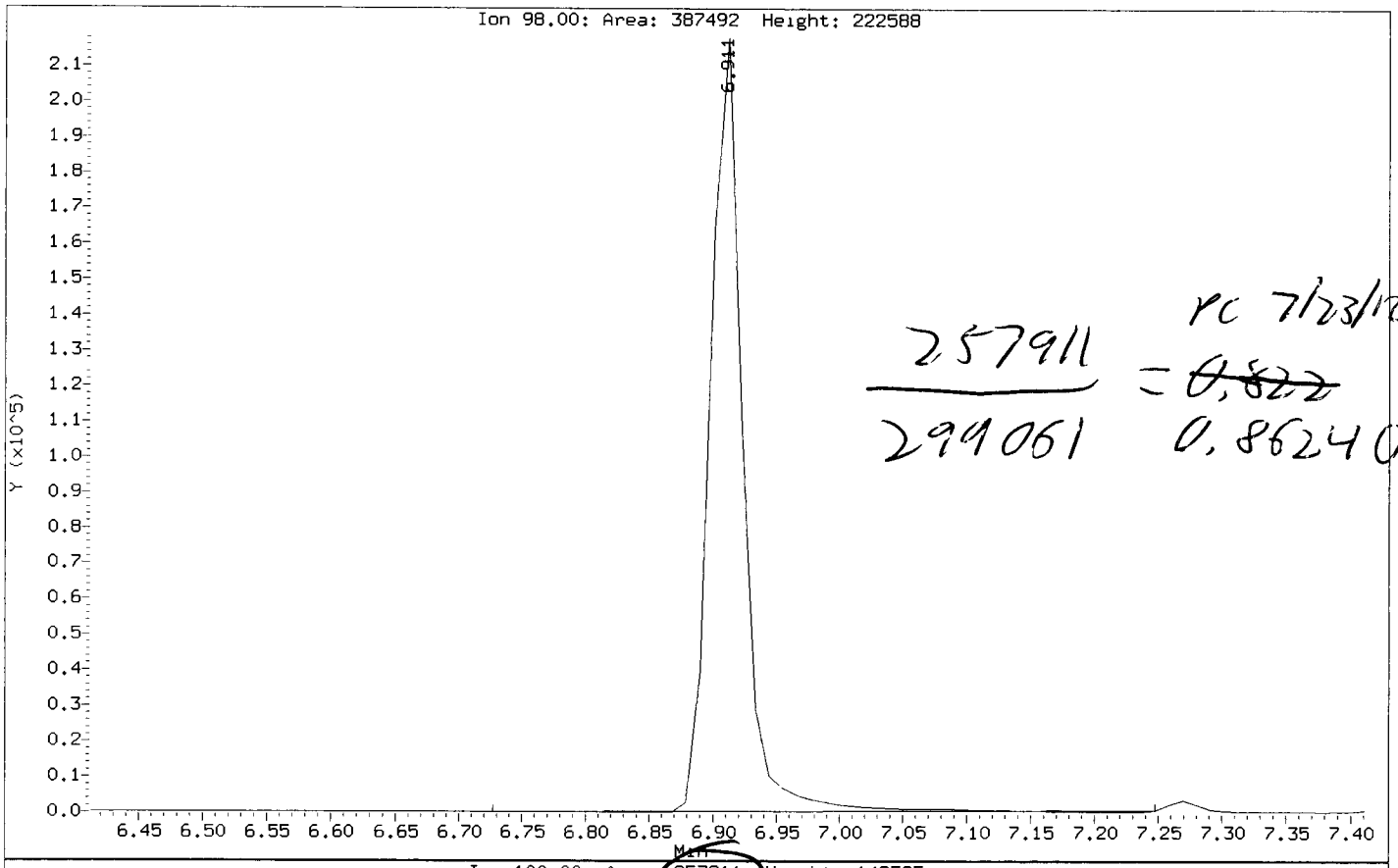




Data File: /chem1/nt7.1/20120620.b/btexcal.b/10000620.d
Injection Date: 20-JUN-2012 11:53
Instrument: nt7.1
Client Sample ID: IC1000

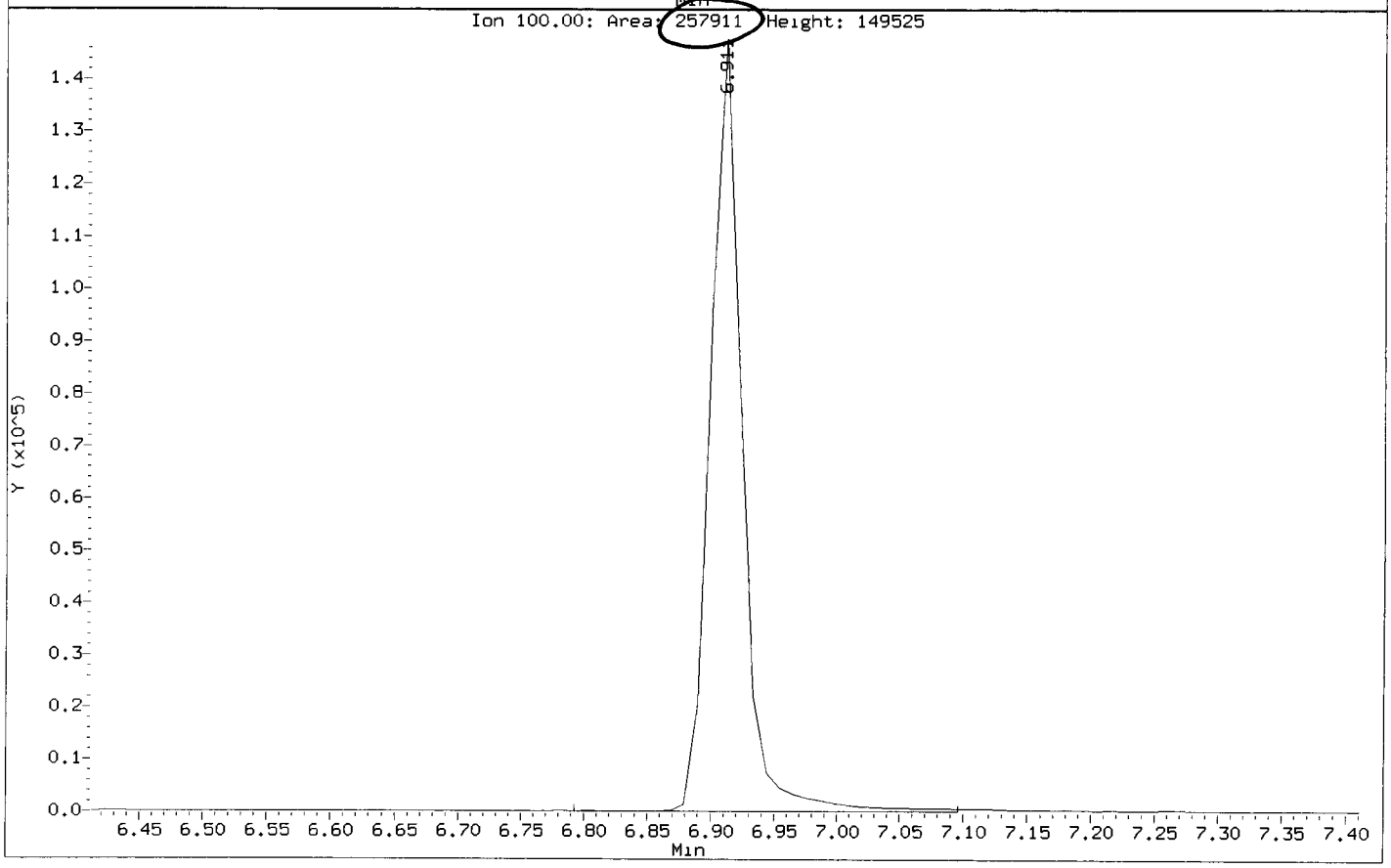
Compound: d8-Toluene
CAS Number:

curve midpoint



257911 / 299061 = ~~0.822~~ 0.86240

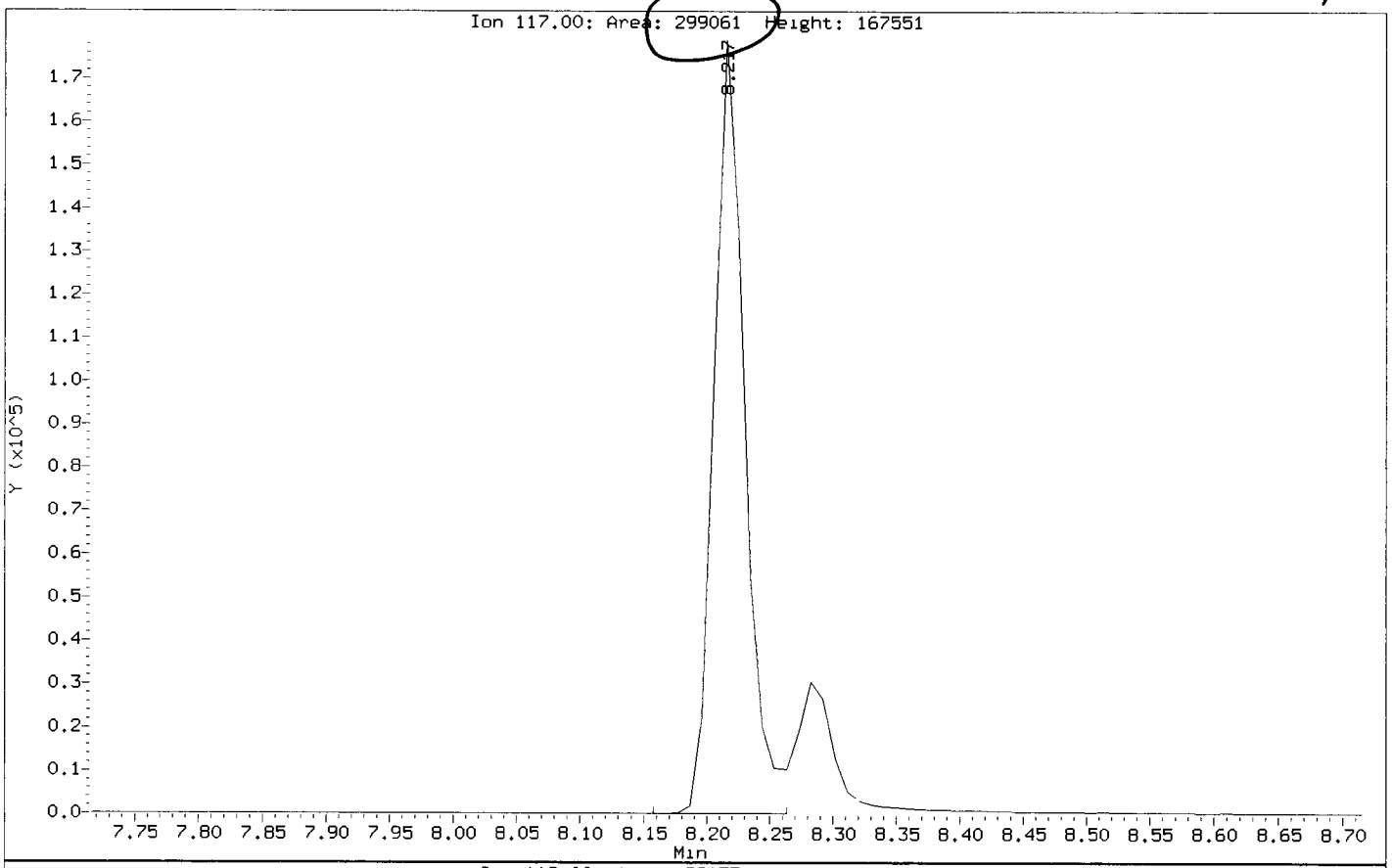
RC 7/23/12

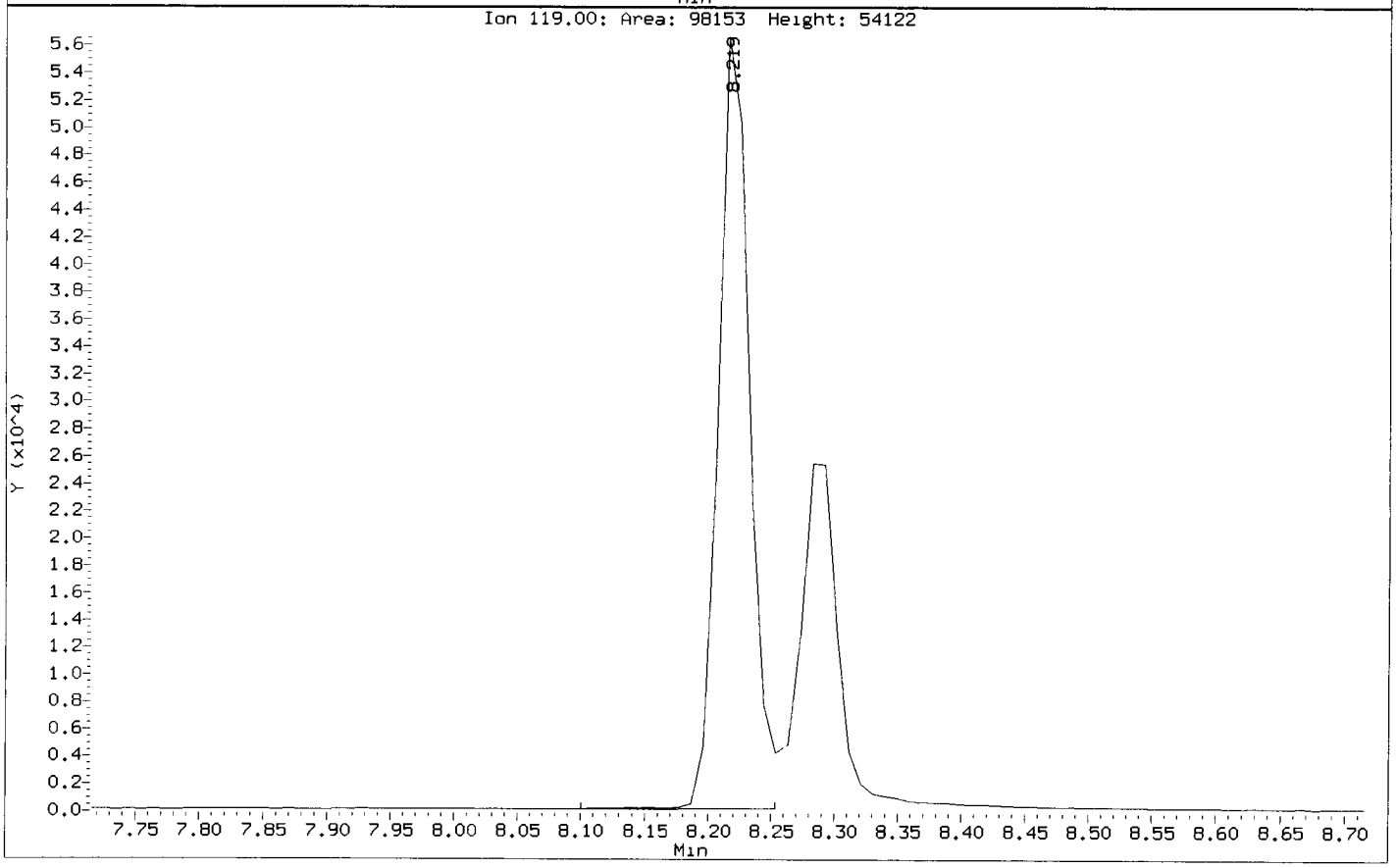


Data File: /chem1/nt7.1/20120620.b/btexcal.b/10000620.d
Injection Date: 20-JUN-2012 11:53
Instrument: nt7.1
Client Sample ID: IC1000

Compound: d5 -Chlorobenzene
CAS Number:

Curve midpoint





TPHD Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: VB51, VB54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

Miscellaneous
Water/(Soil)/Sed/Tissue/Other
Separatory Funnel (3510C)/Liq-Liq (3520C)
Sonication (3550C)/(Microwave (3546))
TissueMize (Modified 3550C)

Parameter TPHD w/Acid Si

Preparation Test Misc # 1
ARI Job No(s) VB51, VB54

Batch set up by: ~~SH~~

Bottle #	ARI Sample I.D. VB51	Verify Client ID	Weight Or Volume Extracted	~~Sonic Horn ID + Chk~~	~~KD~~	Turbo Vap (1) 2 3	Clean-Up Split only (Y)/N 1:2	Clean-Up Acid clean (Y)/N 1:1	Clean-Up Silica Gel (Y)/N 1:1	~~KD~~	Turbo Vap 1 2 (3)	Final Effective Volume	Volume to Lab	Comments
	MB	Date 07/11/12	20.00g				2 mL					2 mL	1 mL	10g Actual
	SB		20.00g											
	~~SB Dup.~~													
	~~QLS~~													
1	VB51C	Checked	20.13											
1	CMS		20.32											
1	CMSD		20.15											
1	H		20.06											
1	K		20.18											
1	N		20.63											
1	VB54C		20.15											
1	F		20.16											
1	I		20.55											
1	L		20.31											
1	P		20.20											
1	S		20.15											
1	V		20.60											
Analyst/Date:		AR 07/11/12				7/13/12	7/16/12	7/16/12	7/16/12		7/16/12	7/16/12	7/16/12	

Standard	Standard ID	Volume	Expiration Date	Analyst	Witness
TPHD Surrogate	OR (1947-2)	200 µL	9/28/12	AR	
Spike		µL			
TPHD Spike	11 (1965-2)	200 µL	4/09/13	AR	
Spike		µL			
~~QLS Spike~~		µL			
Extraction Time: ~~15:30~~	**Balance ID:**	**Liq/Liq Start:**		**Liq/Liq Stop:**	

SPECIAL INSTRUCTIONS:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: VB51 Client ID: Anchor QEA, LLC

Parameter: TPHD w/Acid Client Project: Central Waterfront RI

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= VB51 B	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☑ Oily, obvious fuel/sulfur odors= VB51, G, J, M	AR 07/11/12
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Other (Details)=	
☑ Other Notes/Comments= (Note problems, concerns, corrective actions). Extracted Project 2g to a 2mL Final Volume. Extracts were split during Vialing for cleanups vs No cleanups.	SA 7/11/12

3056F

Revision 008
11/02/11

VB51 : 00587

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: VB54 Client ID: Anchor QEA, LLC

Parameter: TPHD w/Ac/Si Client Project: Central Waterfront RI

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ (Oily) obvious (fuel) sulfur odors= VB54 E,F,H,E,K,L,O,P,R,S,U,V	AK 07/11/12
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Other (Details)=	
☑ Other Notes/Comments= (Note problems, concerns, corrective actions). Extracted project 2fg to a 2mL final volume. Extracts were split during vialing for cleanups vs No cleanups.	SK 7/11/12

3056F

Revision 008
11/02/11

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

Miscellaneous
Water/(Soil)/Sed/Tissue/Other
Separatory Funnel (3510C)/Liq-Liq (3520C)
Sonication (3550C)/(Microwave (3546))
TissueMize (Modified 3550C)

Parameter TPHD

Preparation Test Misc # 1
ARI Job No(s) VB51, VB54

Batch set up by: JH

Bottle #	ARI Sample I.D.	Verify Client ID	Weight Or ~~Volume~~ Extracted	~~Sonic Horn ID~~ + ~~Chk~~	~~KD~~	Turbo Vap (1) 2 3	Clean-Up ___ Y / (N)	Clean-Up ~~Split only~~ (Y) / N 1:2	Clean-Up ___ Y / (N)	~~KD~~	Turbo Vap (1) 2 3	Final Effective Volume	Volume to Lab	Comments
	VB51													
	MB	Date 7/11/12	20.02					2ML				2 ML	1ML	1kg Actual
	SB		20.04											↓
	~~SB Dup.~~													
	~~QLS~~													
1	VB51B	check	20.13											
1	BMS		20.32											
1	BMSD		20.15											
1	G		20.06											
1	J		20.18											
1	M		20.63											
1	VB54 B		20.15											
1	E		20.16											
1	H		20.55											
1	K		20.31											
1	Q		20.20											
1	R		20.15											
1	U		20.10											
Analyst/Date:		AR 07/11/12				WW 7/13/12		WW 7/16/12			WW 7/16/12	WW 7/16/12	WW 7/16/12	

Standard		Standard ID	Volume	Expiration Date	Analyst	Witness
TPHD	Surrogate	S2 (1947-2)	200 µL	9/28/12	AR	WW
	Spike		µL			
TPHD	Spike	11 (1965-2)	200 µL	4/09/13	AR	WW
	Spike		µL			
	~~QLS Spike~~		µL			
Extraction Time: 1513		**Balance ID:**	**Liq/Liq Start:**		**Liq/Liq Stop:**	

SPECIAL INSTRUCTIONS:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: VB51 Client ID: Anchor QEA, LLC

Parameter: TPHD Client Project: Central Waterfront RI

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= VB51/B,	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily/ obvious fuel/sulfur odors= VB51/G,J,M	RL 07/11/12
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Other (Details)=	
☒ Other Notes/Comments= (Note problems, concerns, corrective actions). Extracted Project 2dg to a 2mL final Volume. Extracts were split during Vialing for cleanups VS No cleanups.	SA 7/11/13

3056F

Revision 008
11/02/11

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: VB54 Client ID: Anchor QEA, LLC

Parameter: TPHD Client Project: Central Waterfront RI

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ (Oily), obvious (fuel)/sulfur odors= VB54 E,F,H,I,K,L,O,P,R,S,U,V AA	07/11/12
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Other (Details)=	
☒ Other Notes/Comments= (Note problems, concerns, corrective actions). Extracted Project 2#g to a 2mL final volume. Extracts were split during vialing for cleanups vs no cleanups.	JH 7/11/12

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Revision 008
11/02/11

TPHD Raw Data
Initial Calibration

ARI Job ID: VB51, VB54

Diesel / AK102

Analytical Resources, Incorporated
Analytical Chemists and Consultants

GC Initial Calibration Notes

ARI SOP: **403S**(PCB) **405S**(Herb) **407S**(TPH-D) **409S**(HCID) **412S**(PCP) **423S**(Pest)
427S(Dir Inj) **428S**(EPH) **Other**

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Curve Date(s): 7/10/12 Internal Standard ID N/A Expiration —

Endrin/DDT Breakdown <15%? YES / NO / NA ICV Exceeding ±20%? ~~YES~~ / NO (Diesel / AK102)

ICal Meets %RSD & r^2 Criteria YES / NO ICV Exceeding ±30%? YES / NO (Diesel / AK102)

Manual Integrations for ICal? YES / NO Linear Fits Used? YES / NO

Minimum Response S/N Met YES / NO Quadratic Fits Used? YES / NO

Calibration Points Dropped? (high surr) YES / NO

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
76	1972-1	9/28/12	Shell	1977-3	9/28/12

Detail problems, corrective actions and/or other pertinent information below:

Analyst: _____ Date: 7/12/12

Reviewer: _____ Date: 7/12/12

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2004 08:49
End Cal Date : 10-JUL-2012 11:31
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : Falcon
Method file : /chem3/fid4a.i/20120710.b/ftphfid4a.m
Cal Date : 10-Jul-2012 12:13 monicah
Curve Type : Average

Compound	0.000e+00 Level 1	0 000e+00 Level 2	0.000e+00 Level 3	0 000e+00 Level 4	0 000e+00 Level 5	0 000e+00 Level 6	RRF	% RSD	
	0.000e+00 Level 7	0 000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12			
20 C38	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
21 C40	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
$ 8 o-terph	+++++	21761	20224	20295	19224	20353			
	+++++	+++++	+++++	+++++	+++++	+++++	20371	4 442	

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120710.b/0710a003.d ARI ID: IB
Method: /chem3/fid4a.i/20120712.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 10-JUL-2012 07:56
Operator: MH
Report Date: 07/12/2012 Dilution Factor: 1
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.387	-0.031	13668	16541	GAS (Tol-C12)	101757	6.76
C8	1.691	-0.005	744	875	DIESEL (C12-C24)	57729	3.94
C10	3.239	0.012	771	1851	M.OIL (C24-C38)	152707	12.15
C12	4.112	0.003	291	301	AK-102 (C10-C25)	104526	6.04
C14	4.792	0.008	248	195	AK-103 (C25-C36)	96434	11.29
C16	5.373	0.003	536	774			
C18	5.932	-0.001	829	946			
C20	6.506	0.007	1278	1723	JET-A (C10-C18)	46227	3.11
C22	7.045	-0.006	1067	957	MIN.OIL (C24-C38)	152707	11.36
C24	7.579	0.003	419	539			
C25	7.836	0.007	1765	1929			
C26	8.070	-0.001	551	779			
C28	8.522	-0.004	1340	1626			
C32	9.351	0.004	1892	4435			
C34	9.731	0.002	959	1583			
Filter Peak	9.965	0.001	4796	7277	BUNKERC (C10-C38)	236282	26.38
C36	10.100	0.001	1343	3595			
C38	10.463	0.006	4311	8444			
C40	10.811	0.002	2576	12306			
o-terph	6.079	0.003	1169774	960809			
Triacon Surr	8.960	0.002	883168	919433			

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	960809	47.2	104.8
Triacontane	919433	48.2	107.1

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

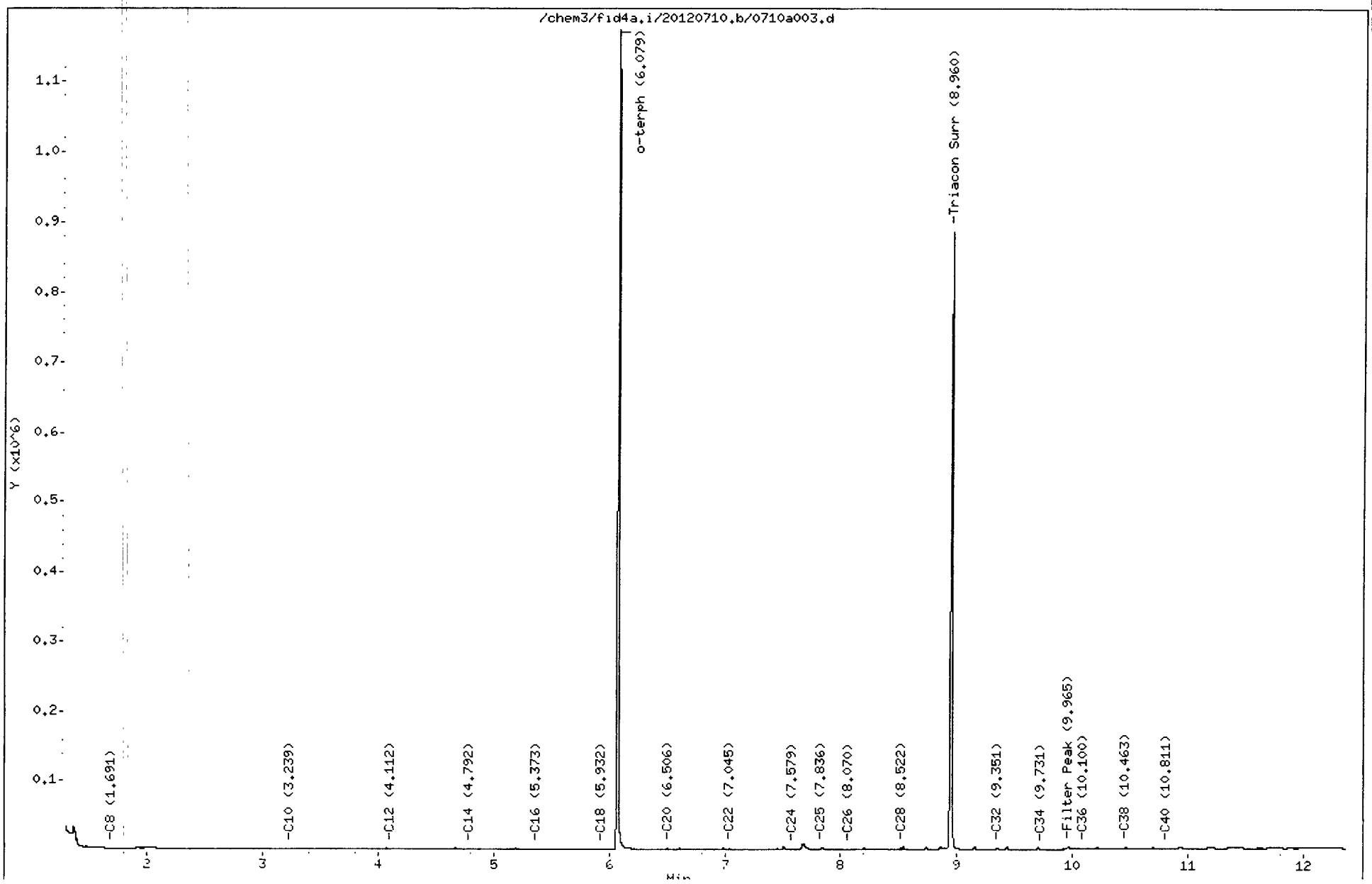
Data File: /chem3/fid4a.i/20120710.b/0710a003.d
Date : 10-JUL-2012 07:56
Client ID:
Sample Info: IB

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1

VB51 00596



MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120710.b/0710a007.d ARI ID: DIESEL 50
Method: /chem3/fid4a.i/20120712.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 10-JUL-2012 09:22
Operator: MH
Report Date: 07/12/2012 Dilution Factor: 1
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.385	-0.033	323	215	GAS (Tol-C12)	188318	12.52
C8	1.700	0.004	414	760	DIESEL (C12-C24)	788199	53.80
C10	3.225	-0.002	1014	636	M.OIL (C24-C38)	248674	19.78
C12	4.123	0.015	9006	8286	AK-102 (C10-C25)	935871	54.10
C14	4.776	-0.007	4721	4578	AK-103 (C25-C36)	176250	20.64
C16	5.374	0.005	23013	19549			
C18	5.937	0.004	19741	20686			
C20	6.505	0.006	12159	18720	JET-A (C10-C18)	678630	45.72
C22	7.048	-0.003	6744	10029	MIN.OIL (C24-C38)	248674	18.50
C24	7.586	0.010	1353	3567			
C25	7.841	0.013	7948	10522			
C26	8.078	0.008	529	694			
C28	8.524	-0.002	1019	1309			
C32	9.354	0.008	944	2411			
C34	9.735	0.006	2756	6423			
Filter Peak	9.958	-0.005	5032	10858	BUNKERC (C10-C38)	1167247	130.32
C36	10.103	0.005	2725	1498			
C38	10.450	-0.007	4473	7298			
C40	10.810	0.001	4694	7822			
o-terph	6.076	0.000	264330	195848			
Triacon Surr	8.957	-0.001	1073	2991			

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	195848	9.6	21.4
Triacontane	2991	0.2	0.3

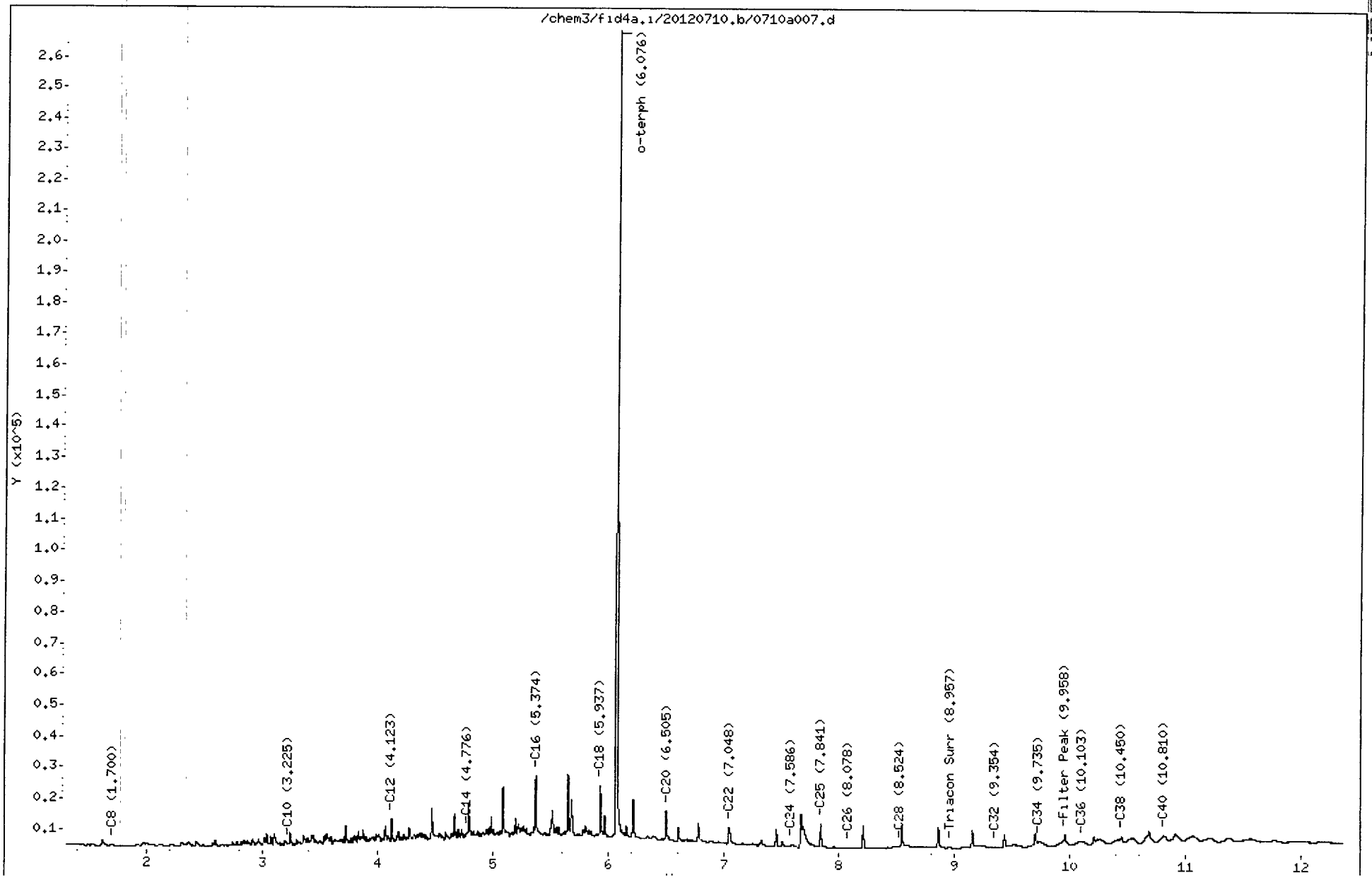
Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

Data File: /chem3/fid4a.i/20120710.b/0710a007.d
Date : 10-JUL-2012 09:22
Client ID:
Sample Info: DIESEL 50

Instrument: fid4a.i

Operator: MH
Column phase: RTX-1
Column diameter: 0.25

VBS1 : 00598



MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120710.b/0710a008.d ARI ID: DIESEL 100
Method: /chem3/fid4a.i/20120712.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 10-JUL-2012 09:44
Operator: MH
Report Date: 07/12/2012 Dilution Factor: 1
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.389	-0.028	360	813	GAS (Tol-C12)	362217	24.08
C8	1.701	0.005	769	1344	DIESEL (C12-C24)	1503417	102.62
C10	3.223	-0.004	1945	1297	M.OIL (C24-C38)	180086	14.33
C12	4.119	0.010	18739	16051	AK-102 (C10-C25)	1781060	102.96 M
C14	4.789	0.006	30034	30558	AK-103 (C25-C36)	117340	13.74
C16	5.374	0.005	49803	47384			
C18	5.937	0.004	42512	39630			
C20	6.505	0.006	26472	31300	JET-A (C10-C18)	1304571	87.90
C22	7.055	0.005	11355	16592	MIN.OIL (C24-C38)	180086	13.40
C24	7.583	0.007	2519	5802			
C25	7.842	0.013	6381	9116			
C26	8.080	0.009	676	1097			
C28	8.522	-0.004	417	435			
C32	9.341	-0.006	789	2174			
C34	9.741	0.012	613	519			
Filter Peak	9.983	0.020	721	496	BUNKERC (C10-C38)	1930902	215.59 M
C36	10.073	-0.026	925	966			
C38	10.440	-0.017	1342	559			
C40	10.820	0.012	2309	9737			
o-terph	6.078	0.002	560025	364023			
Triacon Surr	8.949	-0.009	870	2218			

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	364023	17.9	39.7
Triacontane	2218	0.1	0.3

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

Data File: /chem3/fid4a.i/20120710.b/0710a008.d

Date : 10-JUL-2012 09:44

Client ID:

Sample Info: DIESEL 100

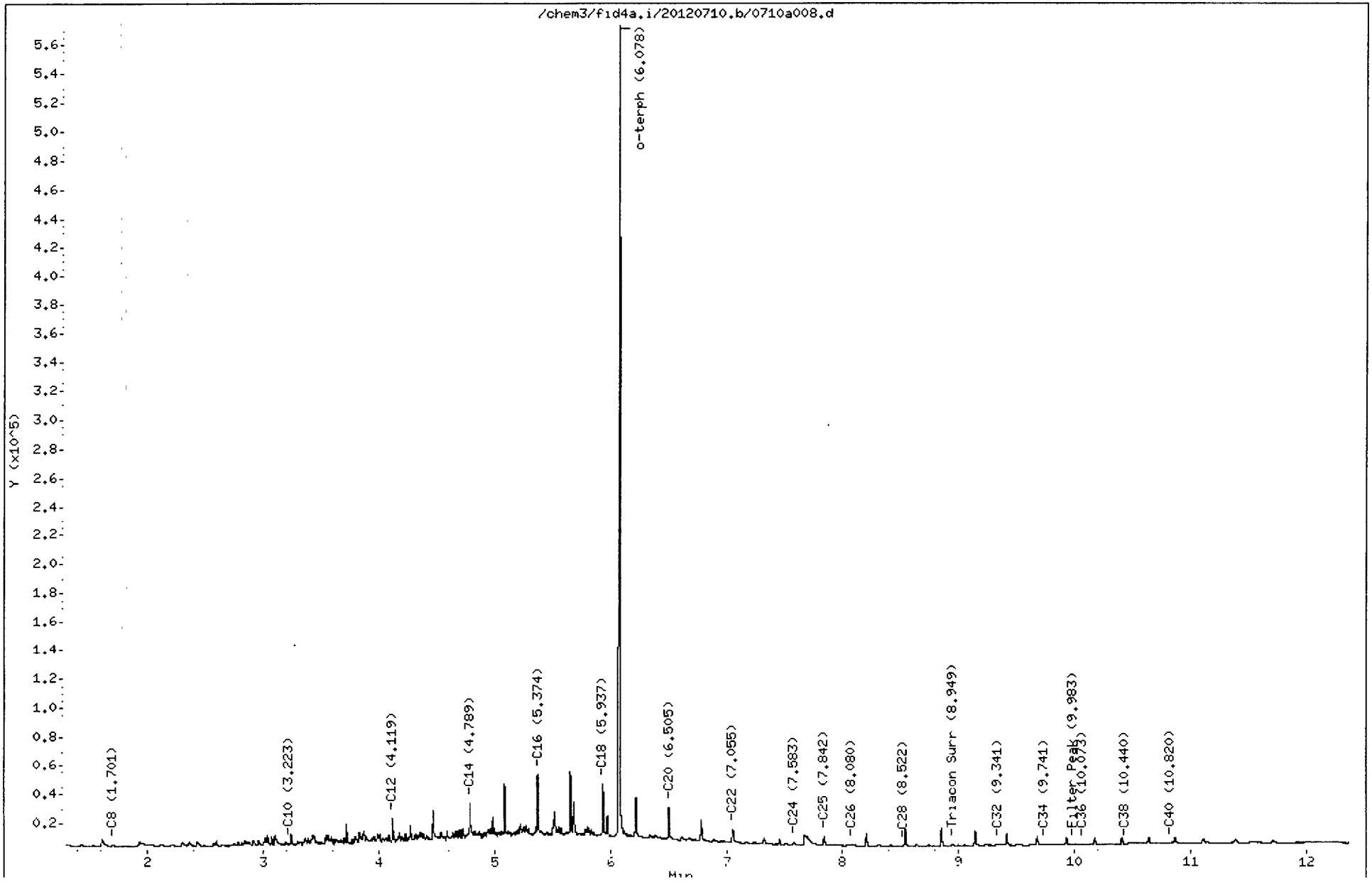
Column phase: RTX-1

Instrument: fid4a.i

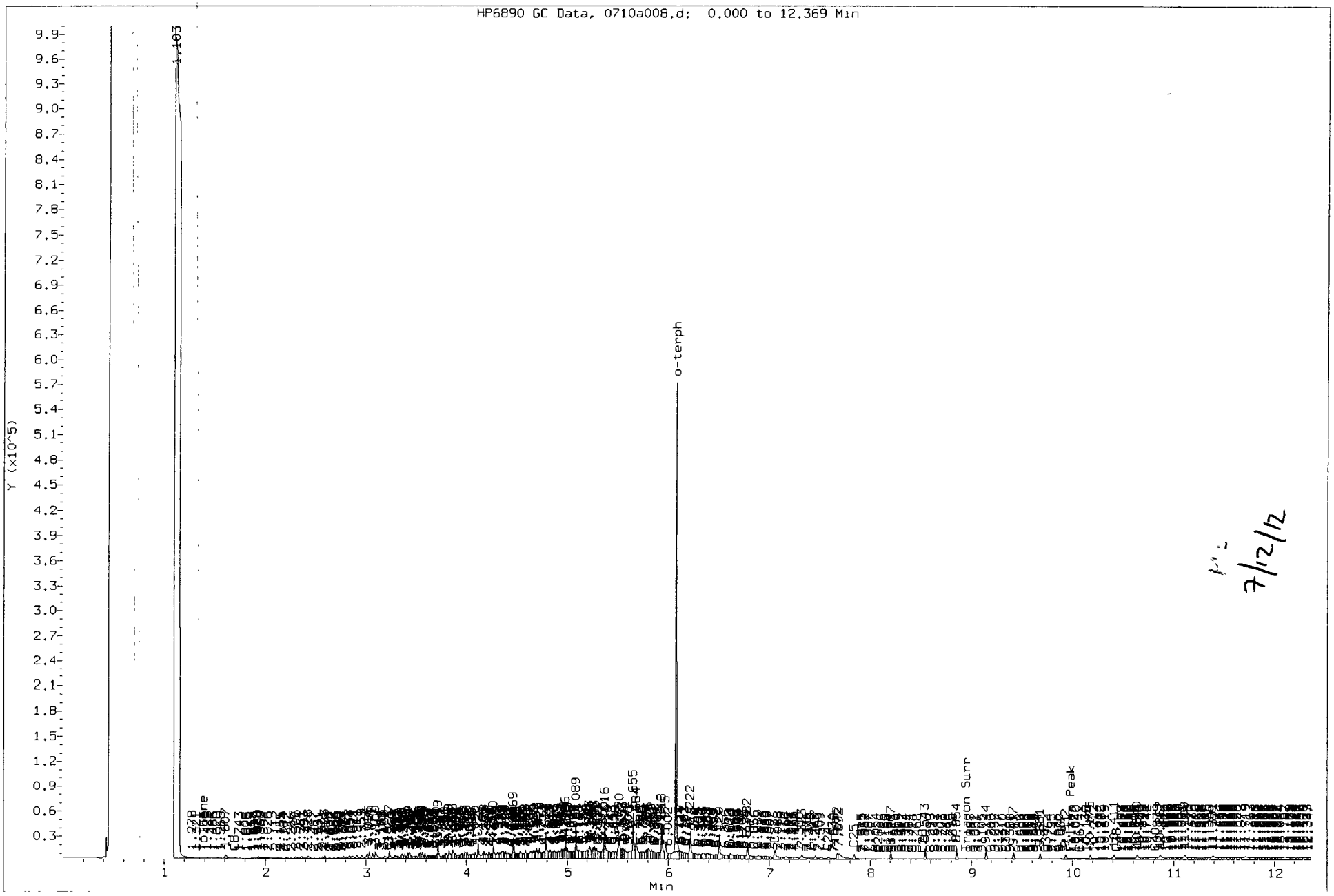
Operator: MH

Column diameter: 0.25

VB51 : 00600



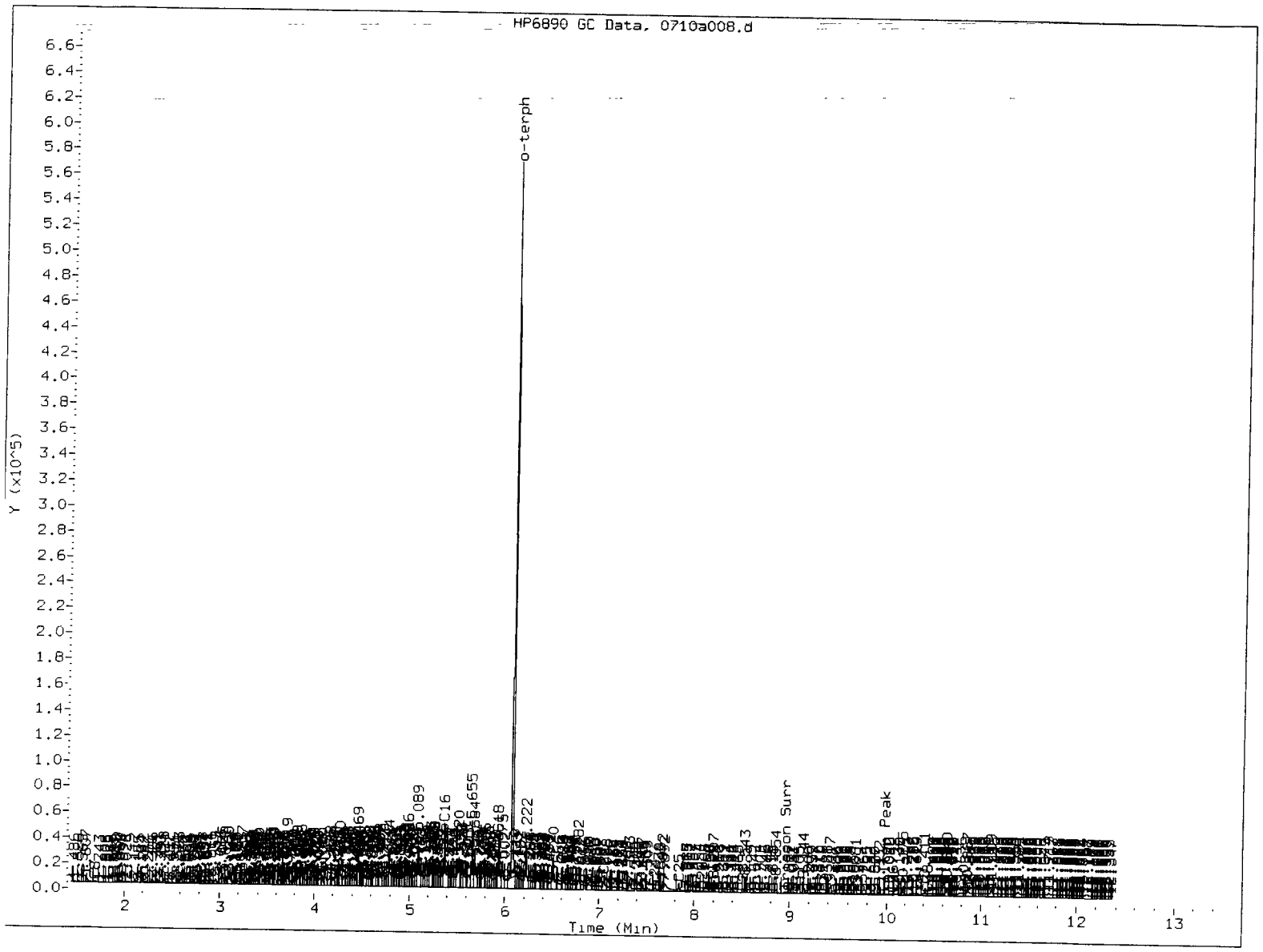
Data File: /chem3/fid4a.i/20120710.b/0710a008.d
Injection Date: 10-JUL-2012 09:44
Instrument: fid4a.i
Client Sample ID:



7/12/12

VB51 : 00601

FID:4A-2C/RTX-1 DIESEL 100 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/12/12

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120710.b/0710a010.d ARI ID: DIESEL 500
Method: /chem3/fid4a.i/20120712.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 10-JUL-2012 10:27
Operator: MH
Report Date: 07/12/2012 Dilution Factor: 1
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.387	-0.031	684	1146	GAS (Tol-C12)	1726902	114.79
C8	1.697	0.000	3456	3532	DIESEL (C12-C24)	6835739	466.60
C10	3.231	0.004	47731	35630	M.OIL (C24-C38)	219863	17.49
C12	4.111	0.002	106434	75809	AK-102 (C10-C25)	8066007	466.27 M
C14	4.785	0.002	161342	128079	AK-103 (C25-C36)	147903	17.32
C16	5.372	0.002	236817	183917			
C18	5.937	0.004	186130	186746			
C20	6.503	0.004	125624	144714	JET-A (C10-C18)	6045783	407.34
C22	7.053	0.002	61006	60469	MIN.OIL (C24-C38)	219863	16.36
C24	7.577	0.001	14722	18369			
C25	7.831	0.002	6131	15488			
C26	8.074	0.003	2352	4212			
C28	8.516	-0.011	593	643			
C32	9.361	0.014	764	1341			
C34	9.751	0.022	5558	8916			
Filter Peak	9.965	0.002	4205	4622	BUNKERC (C10-C38)	8244136	920.47 M
C36	10.075	-0.024	970	2715			
C38	10.458	0.001	4040	7084			
C40	10.798	-0.011	2710	2821			
o-terph	6.092	0.015	1716054	1730138			
Triacon Surr	8.955	-0.004	624	1090			

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1730138	84.9	188.7
Triacontane	1090	0.1	0.1

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

Data File: /chem3/fid4a.i/20120710.b/0710a010.d

Date : 10-JUL-2012 10:27

Client ID:

Sample Info: DIESEL 500

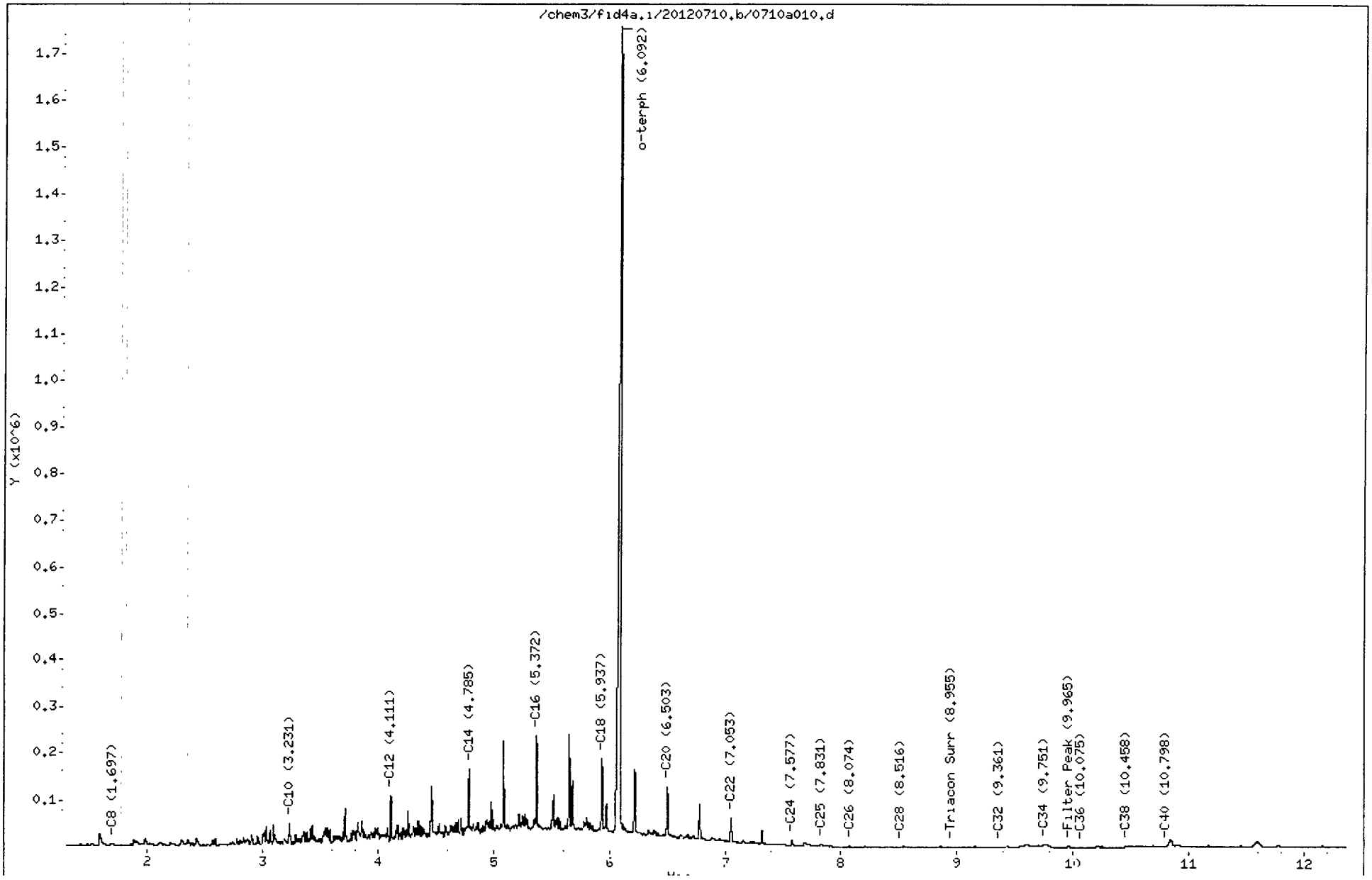
Column phase: RTX-1

Instrument: fid4a.i

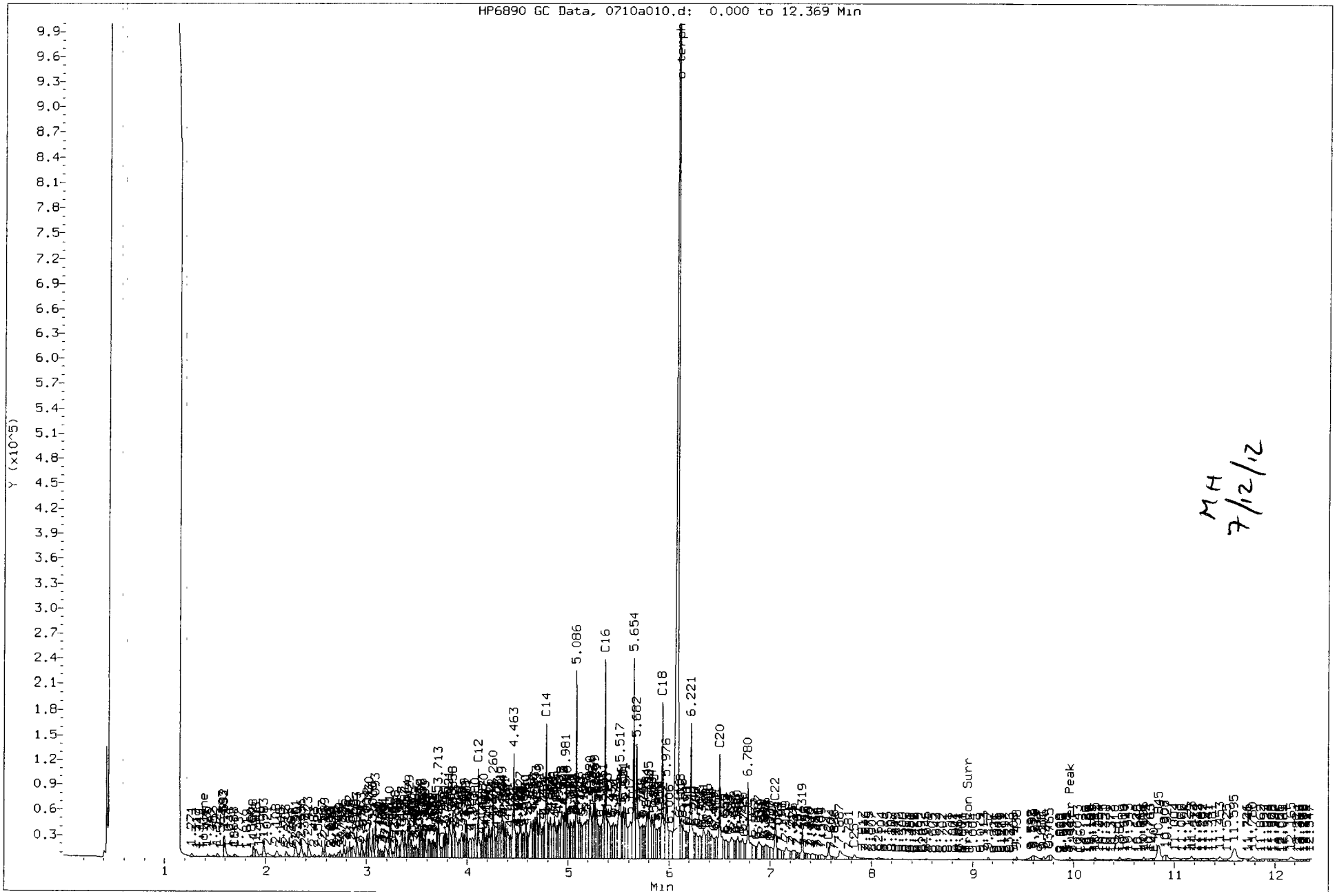
Operator: MH

Column diameter: 0.25

V851 : 00604



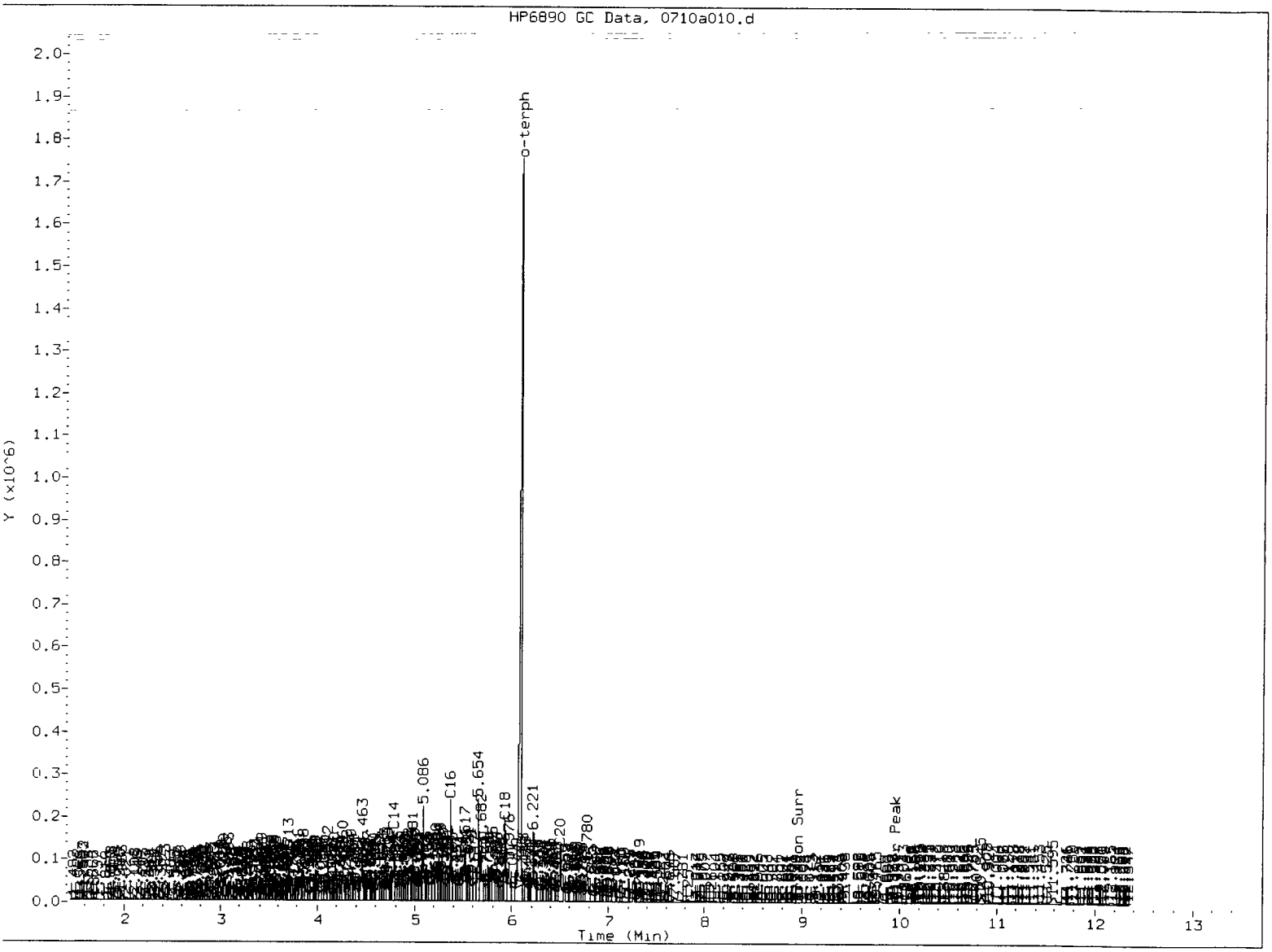
Data File: /chem3/fid4a.i/20120710.b/0710a010.d
Injection Date: 10-JUL-2012 10:27
Instrument: fid4a.i
Client Sample ID:



MH
7/12/12

VB51 : 00605

FID:4A-2C/RTX-1 DIESEL 500 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/12/12

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120710.b/0710a011.d ARI ID: DIESEL 250
Method: /chem3/fid4a.i/20120712.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 10-JUL-2012 10:48
Operator: MH
Report Date: 07/12/2012 Dilution Factor: 1
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.401	-0.016	449	901	GAS (Tol-C12)	903921	60.09
C8	1.703	0.007	1832	3176	DIESEL (C12-C24)	3638668	248.37
C10	3.233	0.006	24851	18911	M.OIL (C24-C38)	484276	38.53
C12	4.112	0.004	52828	39491	AK-102 (C10-C25)	4276826	247.23 M
C14	4.785	0.002	80369	61872	AK-103 (C25-C36)	377400	44.20
C16	5.371	0.002	129505	95236			
C18	5.936	0.003	101713	95703			
C20	6.503	0.004	67211	80036	JET-A (C10-C18)	3178993	214.19
C22	7.053	0.002	31734	43898	MIN.OIL (C24-C38)	484276	36.03
C24	7.579	0.003	7006	14330			
C25	7.834	0.006	14895	16796			
C26	8.073	0.002	1934	2478			
C28	8.537	0.011	28270	23930			
C32	9.346	-0.001	2674	5926			
C34	9.750	0.021	2068	3219			
Filter Peak	9.949	-0.014	32201	34670	BUNKERC (C10-C38)	4730253	528.14 M
C36	10.097	-0.002	1209	1145			
C38	10.445	-0.011	21682	25556			
C40	10.833	0.025	2395	7890			
o-terph	6.084	0.008	1136037	913270			
Triacon Surr	8.946	-0.013	2902	4350			

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	913270	44.8	99.6
Triacontane	4350	0.2	0.5

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

Data File: /chem3/fid4a.i/20120710.b/0710a011.d

Date : 10-JUL-2012 10:48

Client ID:

Sample Info: DIESEL 250

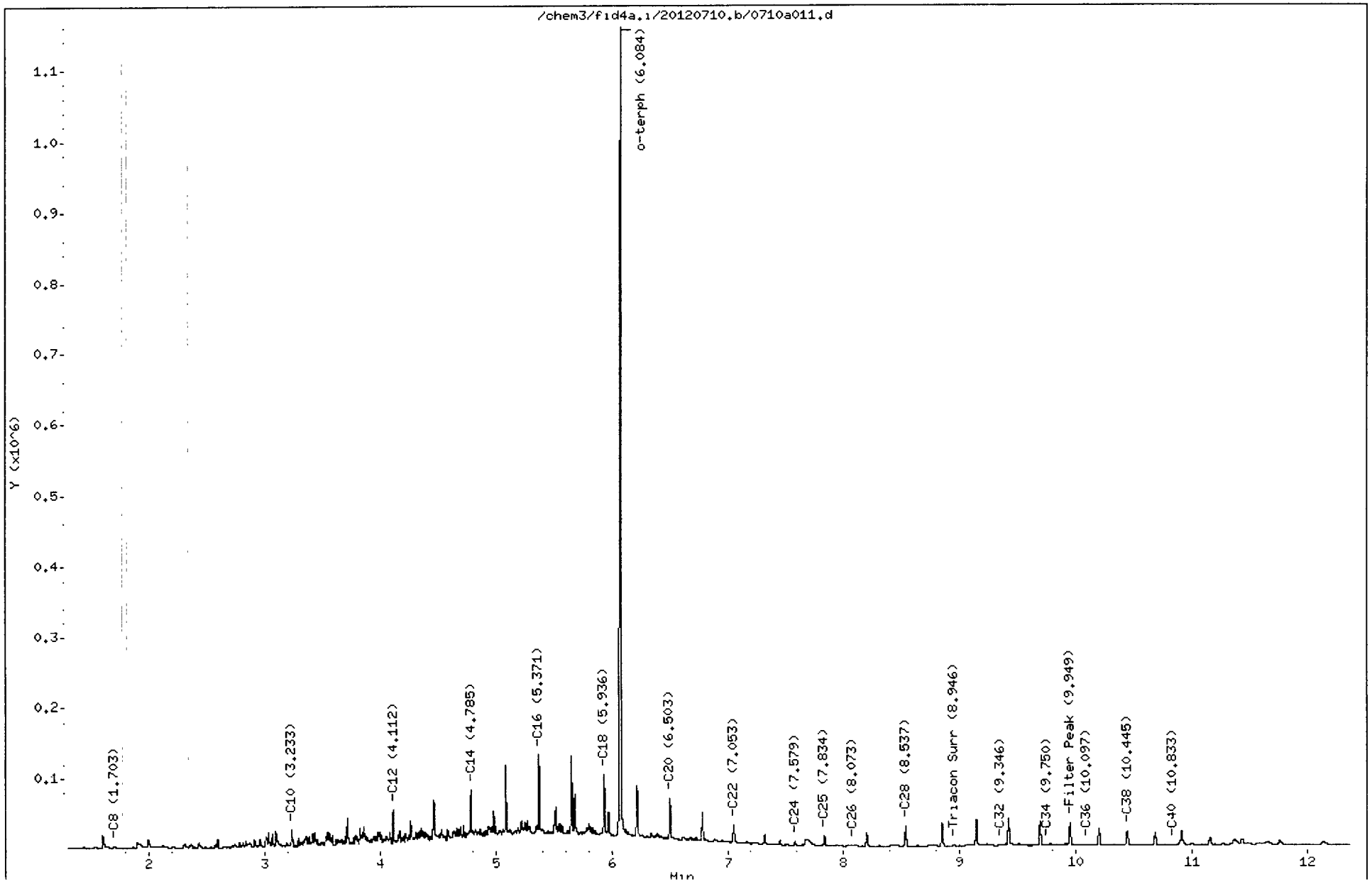
Column phase: RTX-1

Instrument: fid4a.i

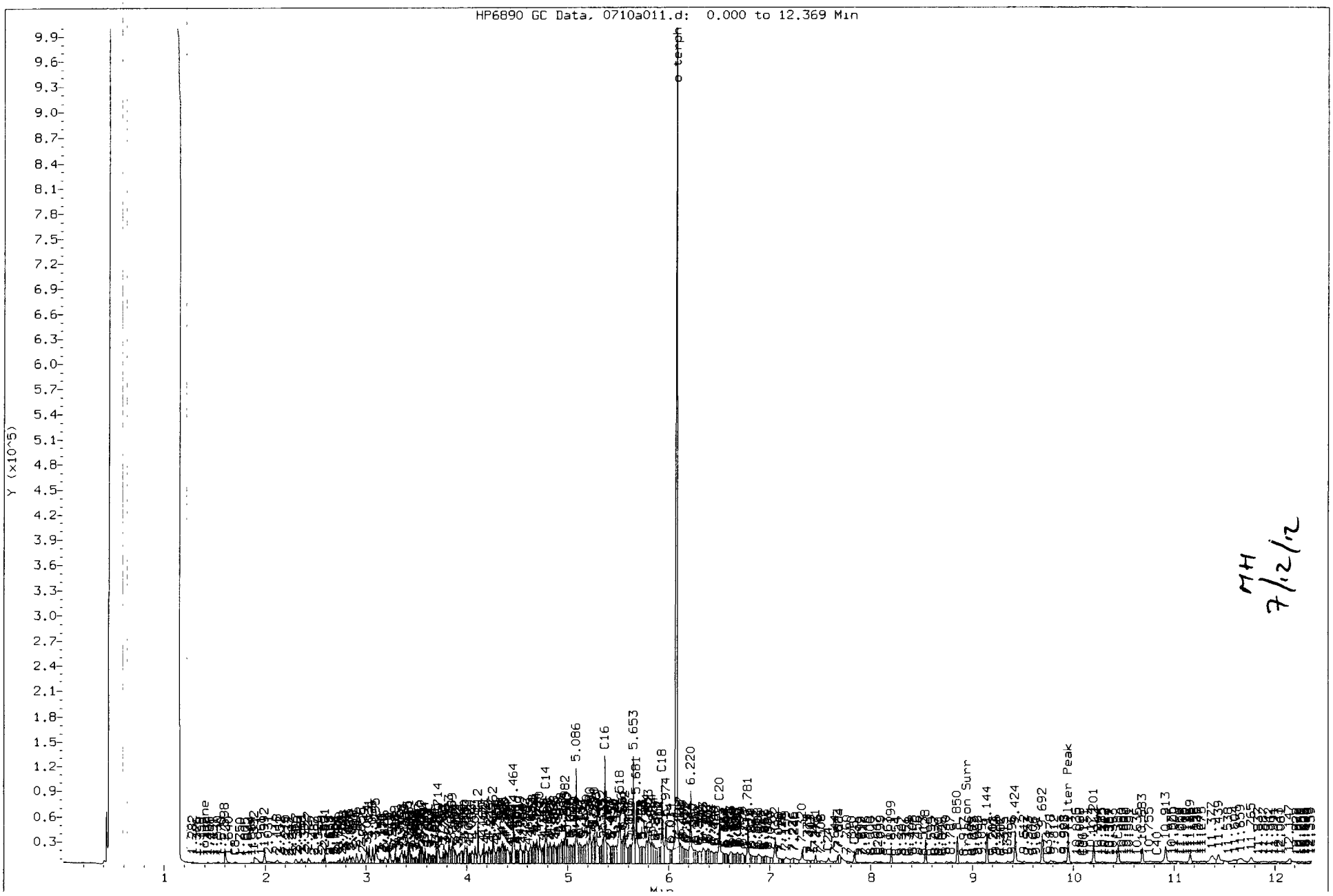
Operator: MH

Column diameter: 0.25

VB51 : 00668



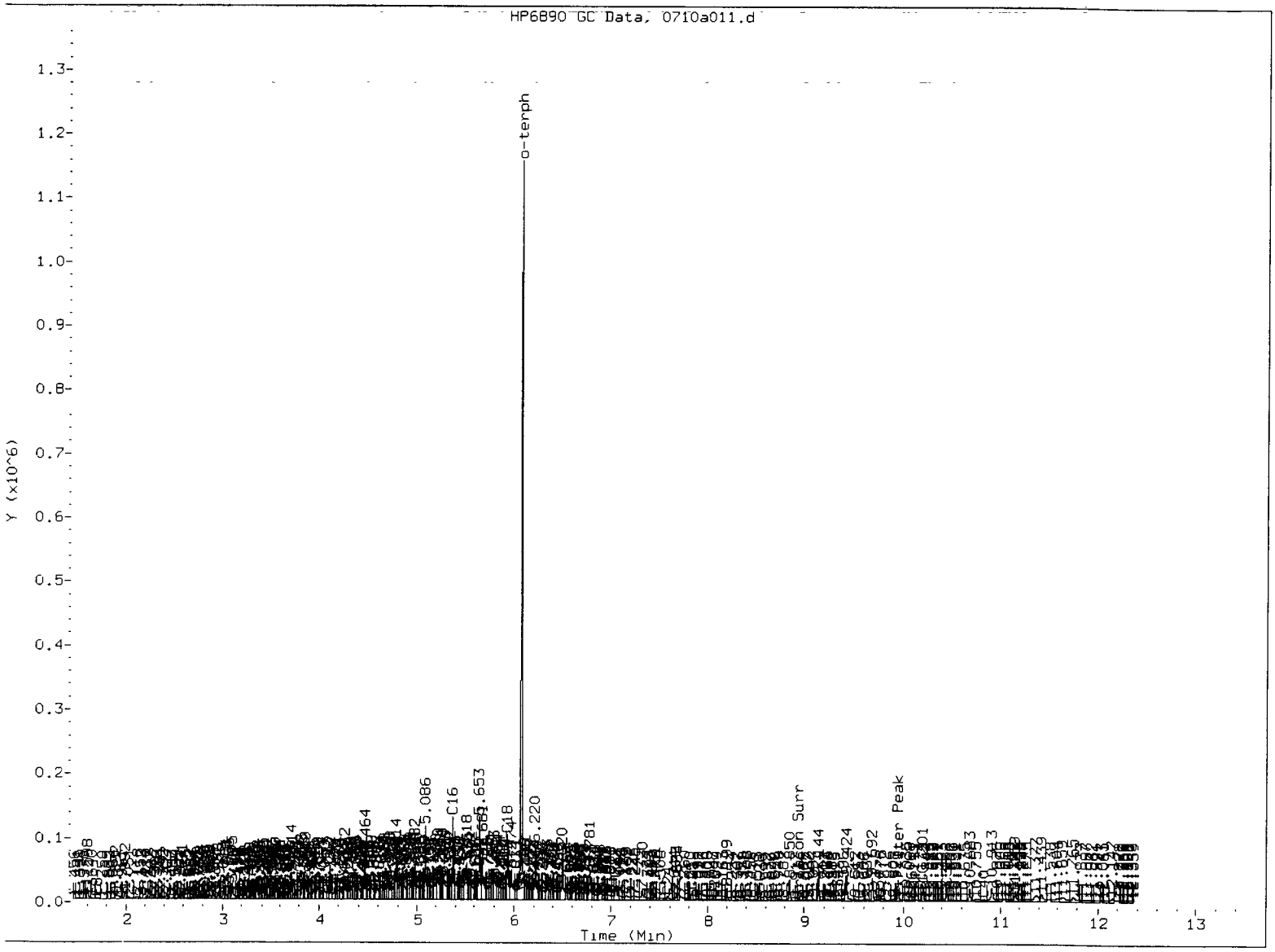
Data File: /chem3/fid4a.i/20120710.b/0710a011.d
Injection Date: 10-JUL-2012 10:48
Instrument: fid4a.i
Client Sample ID:



VBS1 : 00609

MH
7/12/12

FID:4A-2C/RTX-1 DIESEL 250 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/12/12

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120710.b/0710a012.d ARI ID: DIESEL 1000
Method: /chem3/fid4a.i/20120712.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 10-JUL-2012 11:10
Operator: MH
Report Date: 07/12/2012 Dilution Factor: 1
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.391	-0.026	943	1355	GAS (Tol-C12)	3601914	239.43
C8	1.694	-0.002	5626	5118	DIESEL (C12-C24)	14438681	985.58
C10	3.232	0.005	96480	76670	M.OIL (C24-C38)	293710	23.37
C12	4.111	0.002	217274	158605	AK-102 (C10-C25)	16971543	981.07 M
C14	4.786	0.002	328463	287609	AK-103 (C25-C36)	172805	20.24
C16	5.375	0.006	466257	398303			
C18	5.942	0.010	361891	446143			
C20	6.507	0.008	276316	267554	JET-A (C10-C18)	12700725	855.73
C22	7.054	0.003	133847	130784	MIN.OIL (C24-C38)	293710	21.85
C24	7.577	0.001	34102	44559			
C25	7.829	0.000	13766	29980			
C26	8.072	0.002	5156	8206			
C28	8.513	-0.013	639	609			
C32	9.345	-0.001	639	916			
C34	9.727	-0.002	1336	1383			
Filter Peak	9.967	0.004	883	1599	BUNKERC (C10-C38)	17190172	1919.30 M
C36	10.094	-0.005	666	1378			
C38	10.426	-0.031	12554	28019			
C40	10.798	-0.011	1914	4721			
o-terph	6.106	0.030	2652636	3663516			
Triacon Surr	8.949	-0.010	875	1141			

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	3663516	179.8	399.6
Triacontane	1141	0.1	0.1

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

Data File: /chem3/fid4a.i/20120710.b/0710a012.d

Date : 10-JUL-2012 11:10

Client ID:

Sample Info: DIESEL 1000

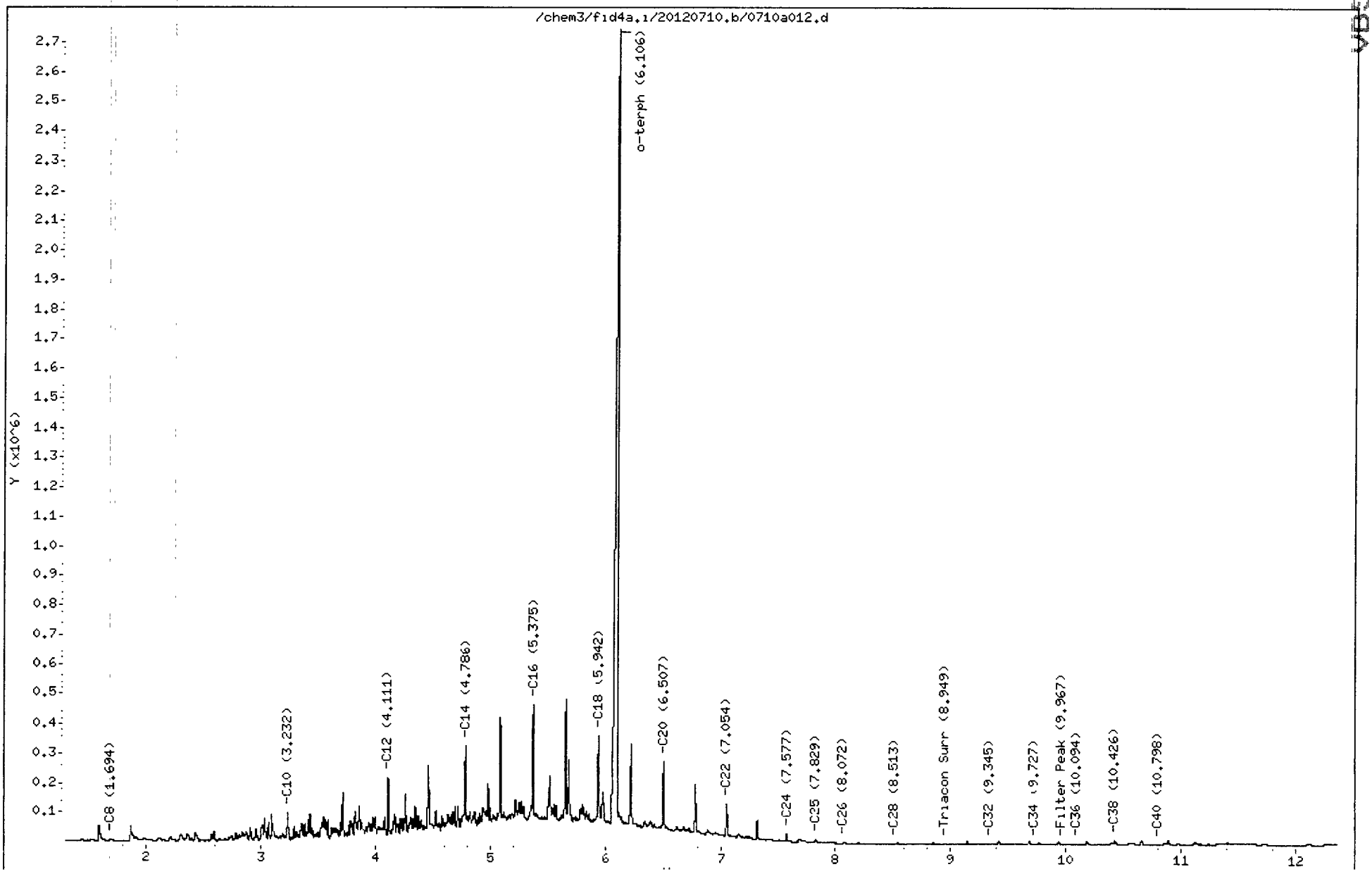
Instrument: fid4a.i

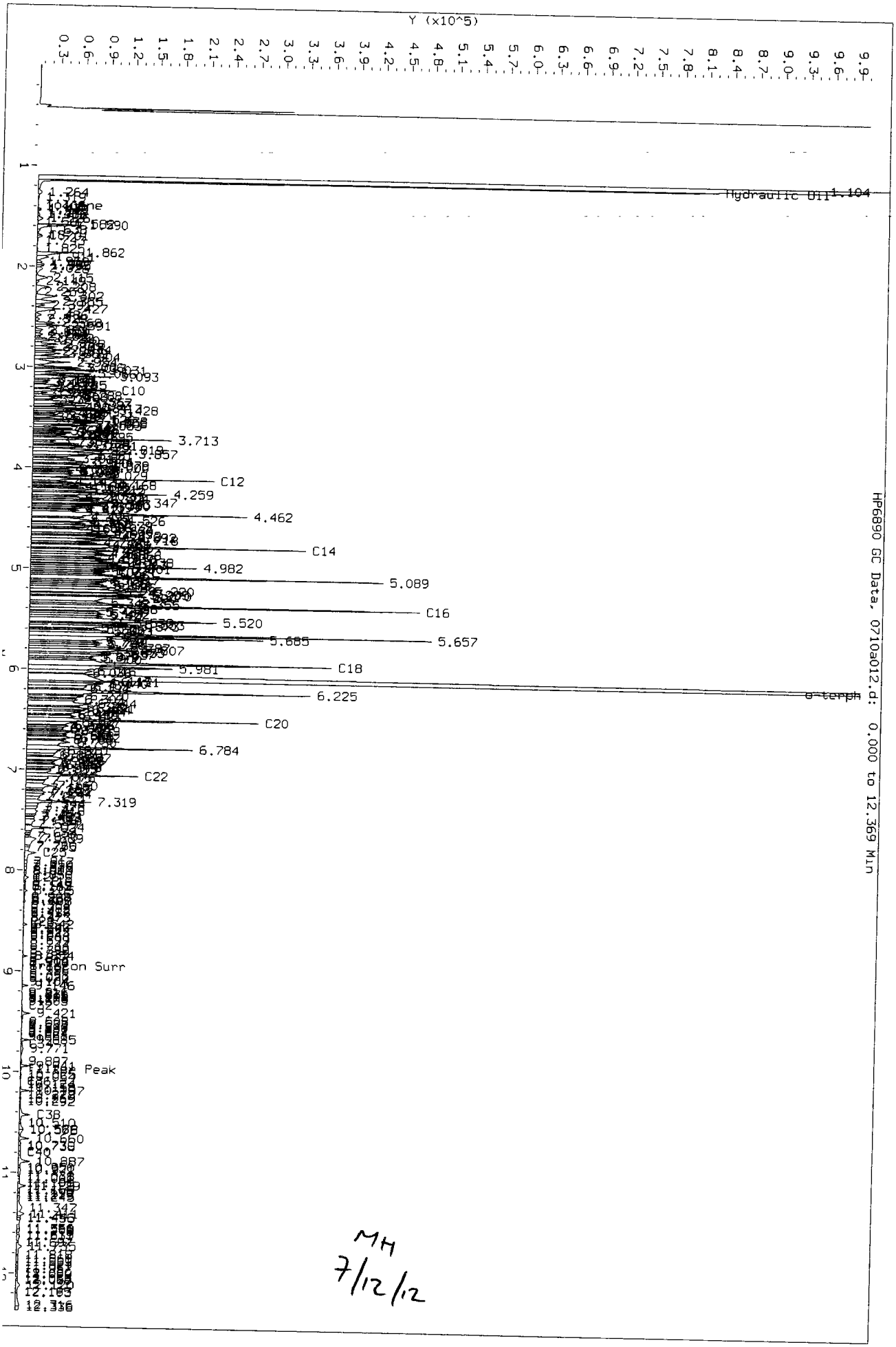
Operator: MH

Column phase: RTX-1

Column diameter: 0.25

VBS1 00612

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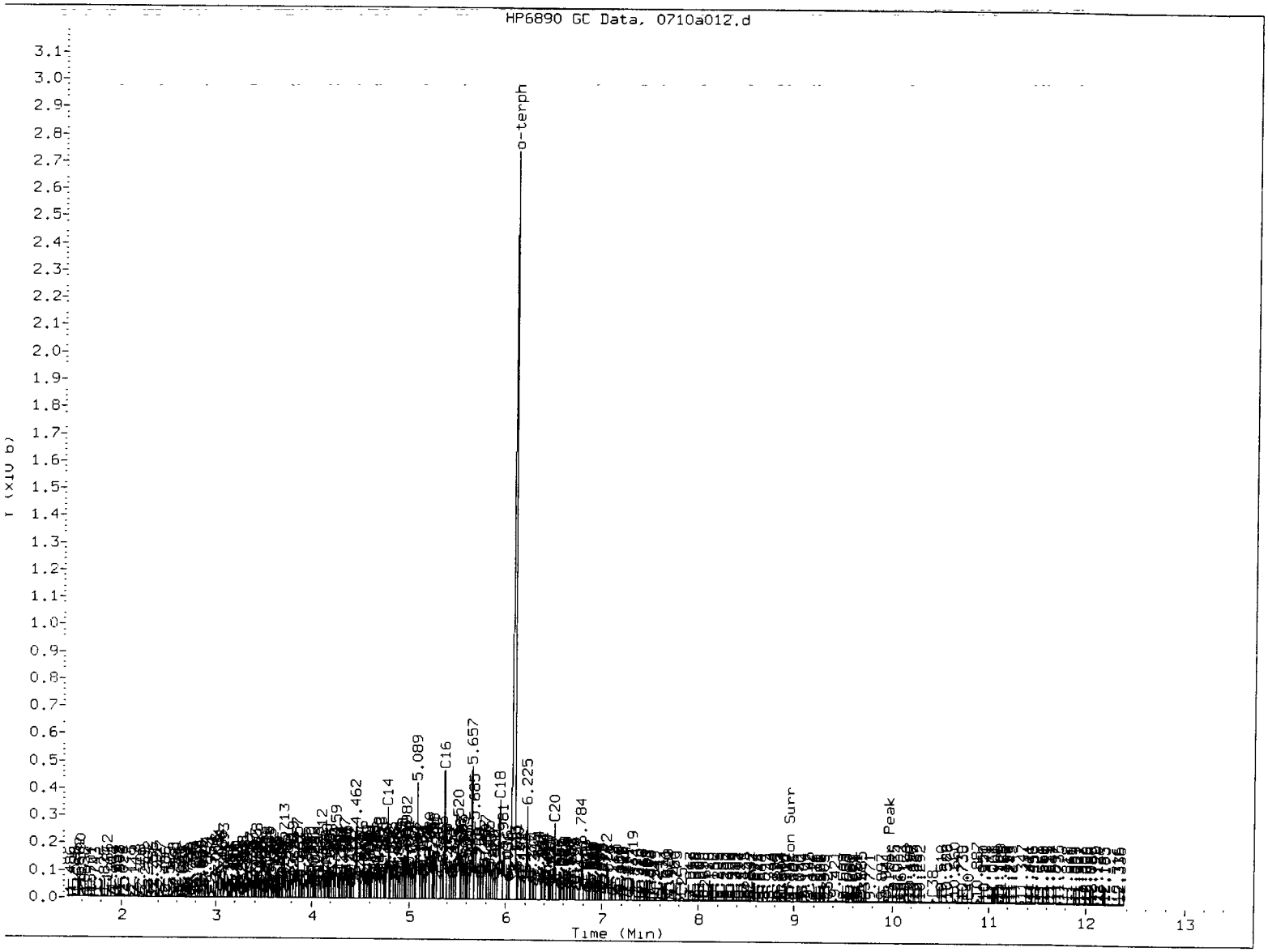
Injection Date: 10-JUL-2012 11:10
Instrument: fid4a.i
Client Sample ID:
Y (x10^5)
Hydraulic Oil
1.104
1.264
1.862
C10
3.713
C12
4.259
4.462
C14
4.982
5.089
C16
5.520
5.685
5.657
C18
5.981
6.225
C20
6.784
C22
7.319
HP6890 GC Data, 0710a012.d: 0.000 to 12.369 Min

MH
7/12/12

FID:4A-2C/RTX-1 DIESEL 1000 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MK Date 7/12/12

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120710.b/0710a013.d
Method: /chem3/fid4a.i/20120712.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 07/12/2012
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: DIESEL 2500
Client ID:
Injection: 10-JUL-2012 11:31

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.398	-0.020	1307	986	GAS (Tol-C12)	9098983	604.83
C8	1.679	-0.017	6629	8665	DIESEL (C12-C24)	36507681	2491.99
C10	3.227	0.000	46394	22067	M.OIL (C24-C38)	425427	33.85
C12	4.114	0.005	488914	401241	AK-102 (C10-C25)	42634412	2464.56 M
C14	4.790	0.007	695418	1005552	AK-103 (C25-C36)	244312	28.61
C16	5.382	0.013	971081	1525368			
C18	5.917	-0.015	190043	148265			
C20	6.516	0.017	621333	652418	JET-A (C10-C18)	31216956	2103.28
C22	7.060	0.010	339338	380663	MIN.OIL (C24-C38)	425427	31.65
C24	7.579	0.003	87959	92647			
C25	7.829	0.000	36095	55214			
C26	8.072	0.001	13654	23082			
C28	8.527	0.001	1973	2609			
C32	9.335	-0.012	442	686			
C34	9.733	0.004	1411	4319			
Filter Peak	9.973	0.010	371	278	BUNKERC (C10-C38)	42909615	4790.91 M
C36	10.094	-0.005	407	420			
C38	10.456	0.000	1215	1540			
C40	10.832	0.023	2680	5972			
o-terph	6.132	0.056	4440312	9217500			
Triacon Surr	8.943	-0.016	1321	1579			

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	9217500	452.5	1005.5
Triacontane	1579	0.1	0.2

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

Data File: /chem3/fid4a.i/20120710.b/0710a013.d

Date : 10-JUL-2012 11:31

Client ID:

Sample Info: DIESEL 2500

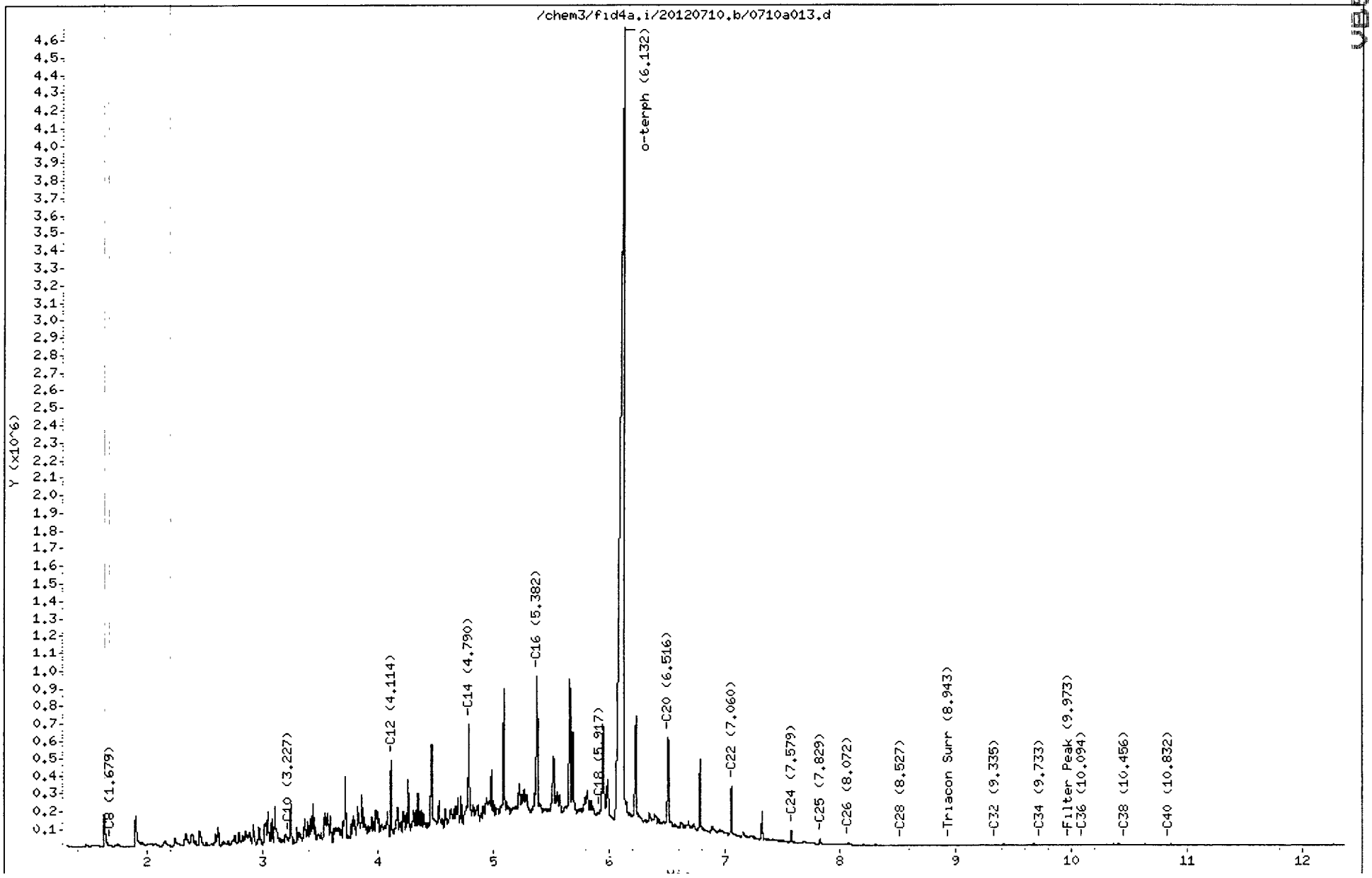
Column phase: RTX-1

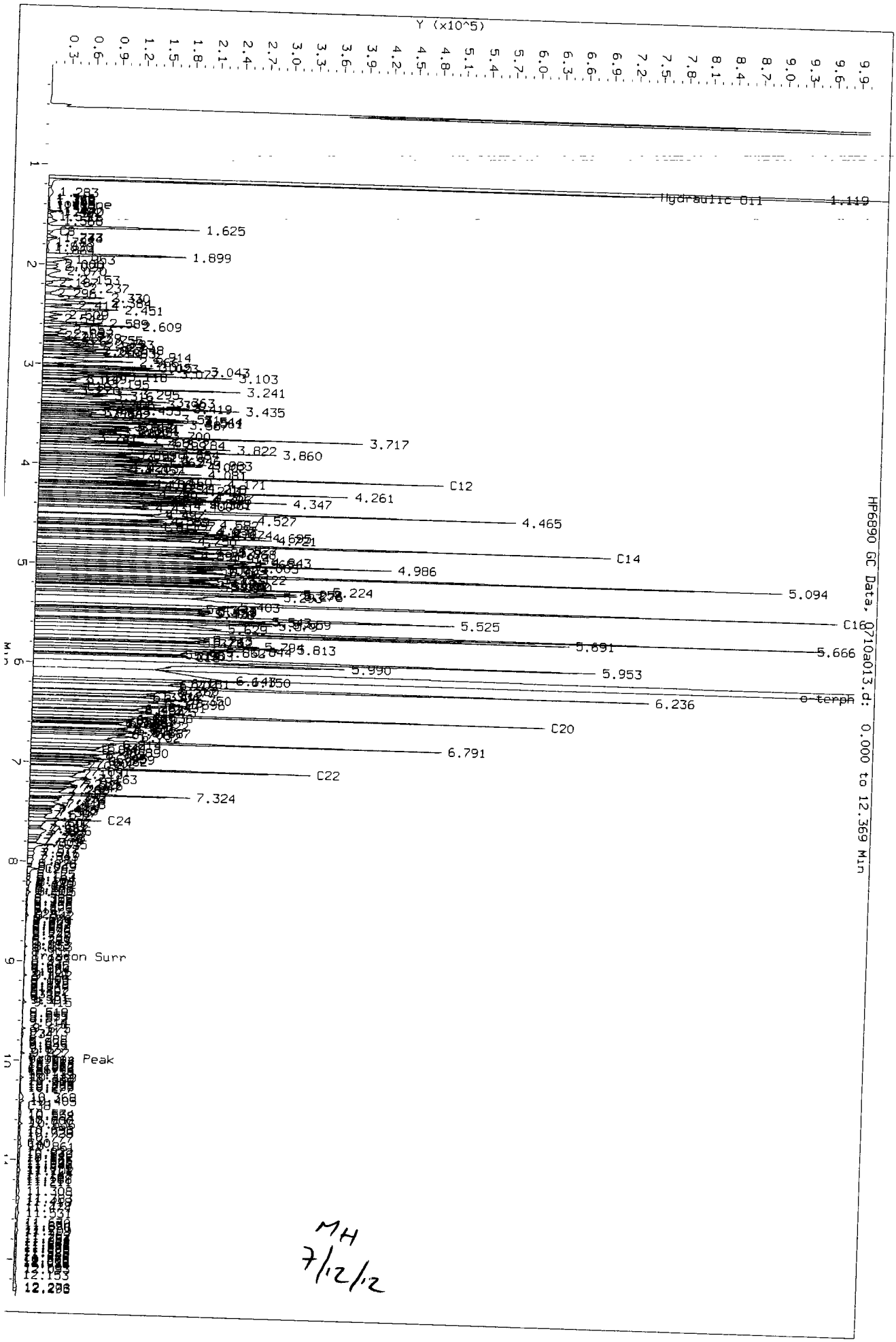
Instrument: fid4a.i

Operator: MH

Column diameter: 0.25

VB51 : 00616

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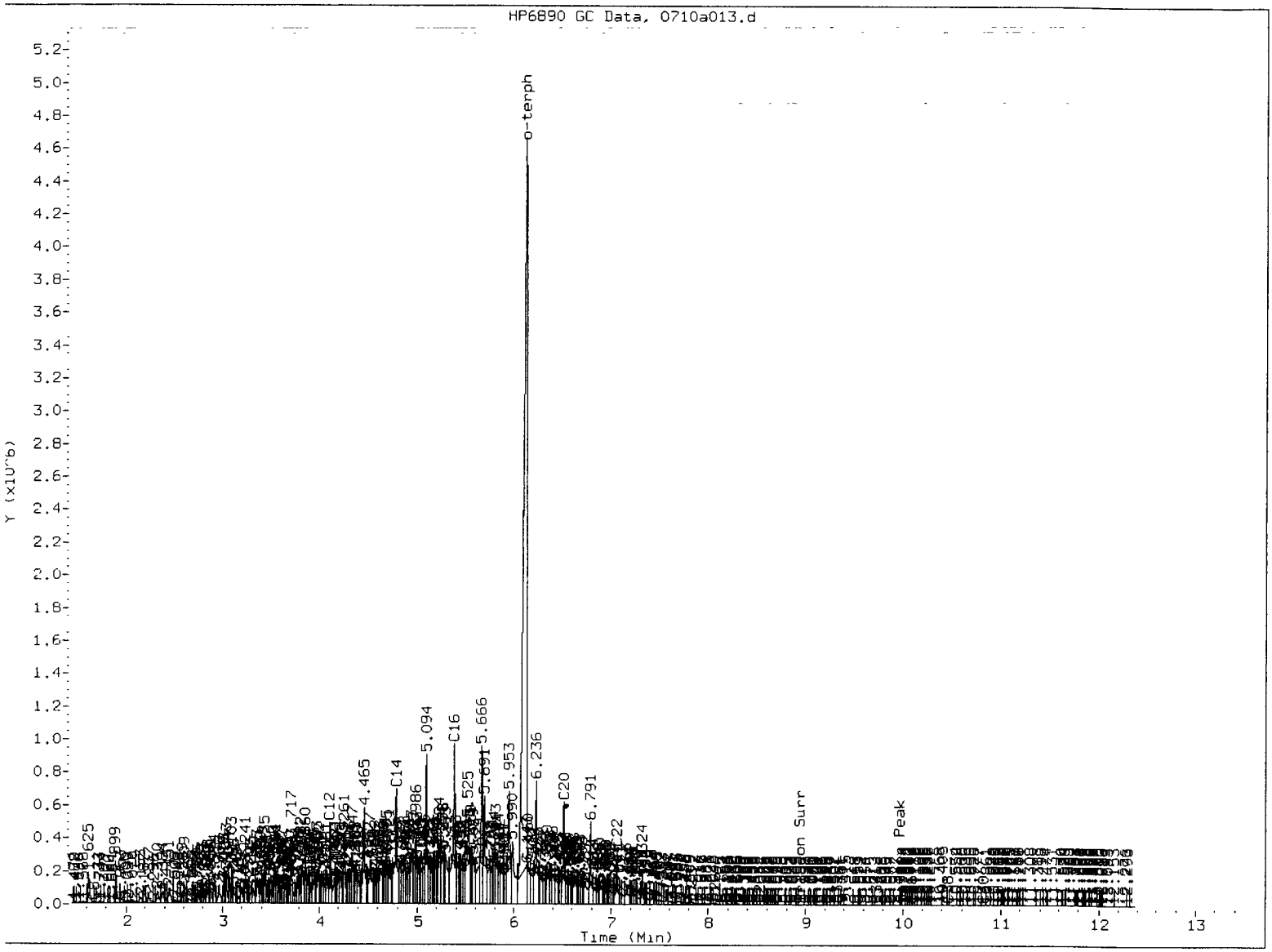
Data File: /chem3/fid4a.i/20120710.b/0710a013.d
Injection Date: 10-JUL-2012 11:31
Instrument: fid4a.i
Client Sample ID:
Hydraulic Oil
1.119
1.625
1.899
2.609
3.043
3.103
3.241
3.435
3.717
3.822
3.860
C12
4.261
4.347
4.465
4.527
C14
4.986
5.094
C16
5.525
5.691
5.666
5.813
5.990
5.953
o-terph
6.236
C20
6.791
C22
7.324
C24
Peak
HP6890 GC Data, 0710a013.d: 0.000 to 12.369 Min

MH
7/12/12

FID:4A-2C/RTX-1 DIESEL 2500 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/12/12

MH 7/12/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120710.b/0710a014.d ARI ID: DIESEL ICV
Method: /chem3/fid4a.i/20120712.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 10-JUL-2012 11:53
Operator: MH
Report Date: 07/12/2012 Dilution Factor: 1
Macro: 10-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.424	0.006	2298	2514	GAS (Tol-C12)	1027832	68.32	
C8	1.696	-0.001	2534	4184	DIESEL (C12-C24)	2937952	200.54	
C10	3.231	0.004	48596	37284	M.OIL (C24-C38)	153024	12.17	
C12	4.112	0.003	79369	51055	AK-102 (C10-C25)	3746029	216.55	M
C14	4.786	0.002	80115	66487	AK-103 (C25-C36)	91123	10.67	
C16	5.372	0.003	87164	78376				
C18	5.937	0.004	63892	58835				
C20	6.503	0.004	38751	46470	JET-A (C10-C18)	2918662	196.65	
C22	7.055	0.004	15678	26938	MIN.OIL (C24-C38)	153024	11.39	
C24	7.581	0.005	4692	9721				
C25	7.835	0.006	2885	6372				
C26	8.077	0.006	1222	2582				
C28	8.515	-0.012	509	746				
C32	9.345	-0.002	585	1619				
C34	9.726	-0.003	827	568				
Filter Peak	9.950	-0.013	2659	3304	BUNKERC (C10-C38)	3870733	432.17	M
C36	10.085	-0.014	849	269				
C38	10.445	-0.012	3395	6567				
C40	10.837	0.028	2523	10117				
o-terph	6.083	0.007	1033726	790493				
Triacon Surr	8.953	-0.005	1041	2374				

M Indicates manual integration within range.
Range Times: NW Diesel(4.109 - 7.576) AK102(3.23 - 7.83) Jet A(3.23 - 5.93)
NW M.Oil(7.58 - 10.46) AK103(7.83 - 10.10) OR Diesel(3.23 - 8.53)

Surrogate	Area	Amount	%Rec
o-Terphenyl	790493	38.8	86.2
Triacontane	2374	0.1	0.3

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	8956.5	22-JUN-2012

Data File: /chem3/fid4a.i/20120710.b/0710a014.d

Date : 10-JUL-2012 11:53

Client ID:

Sample Info: DIESEL ICV

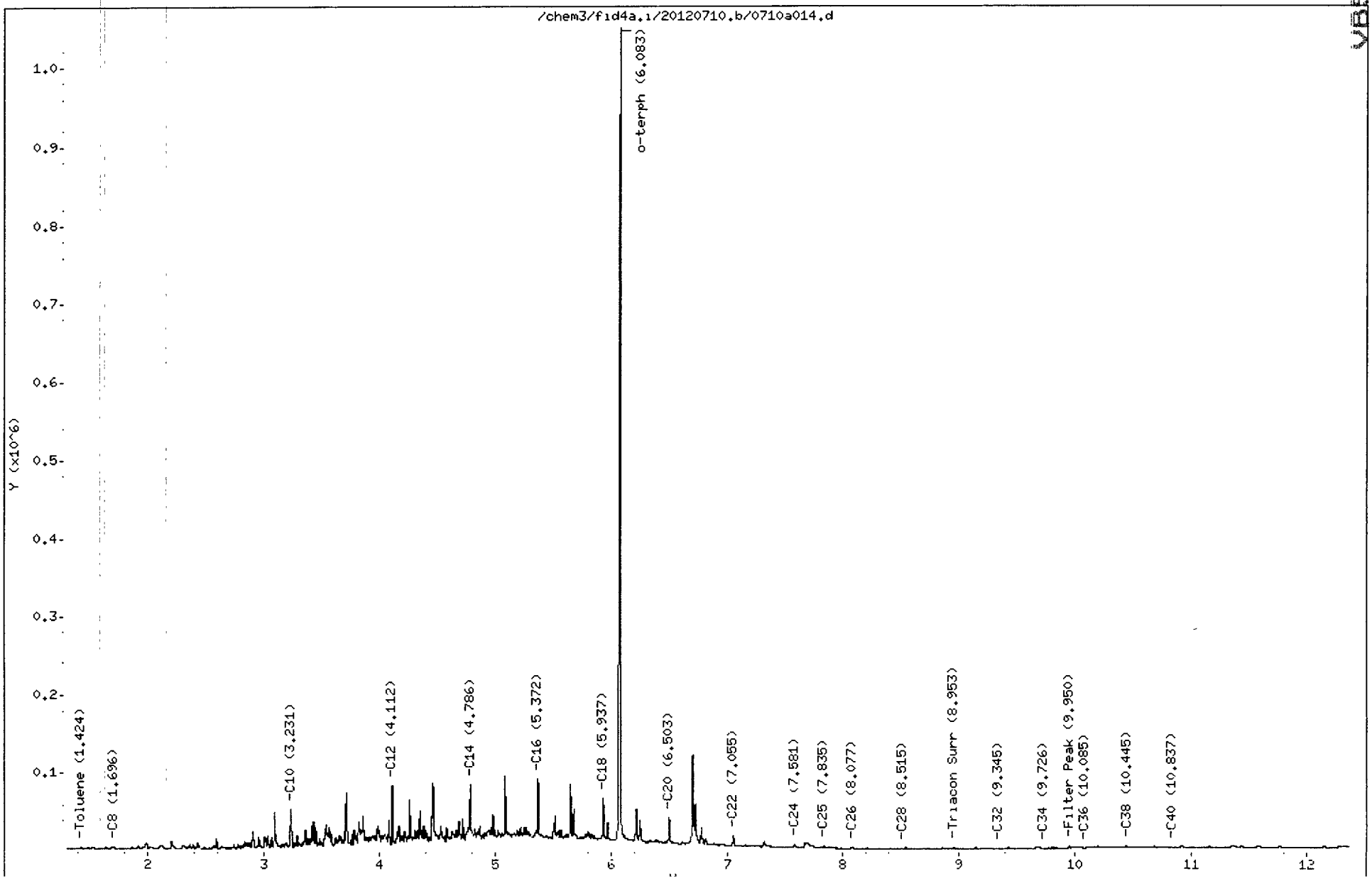
Column phase: RTX-1

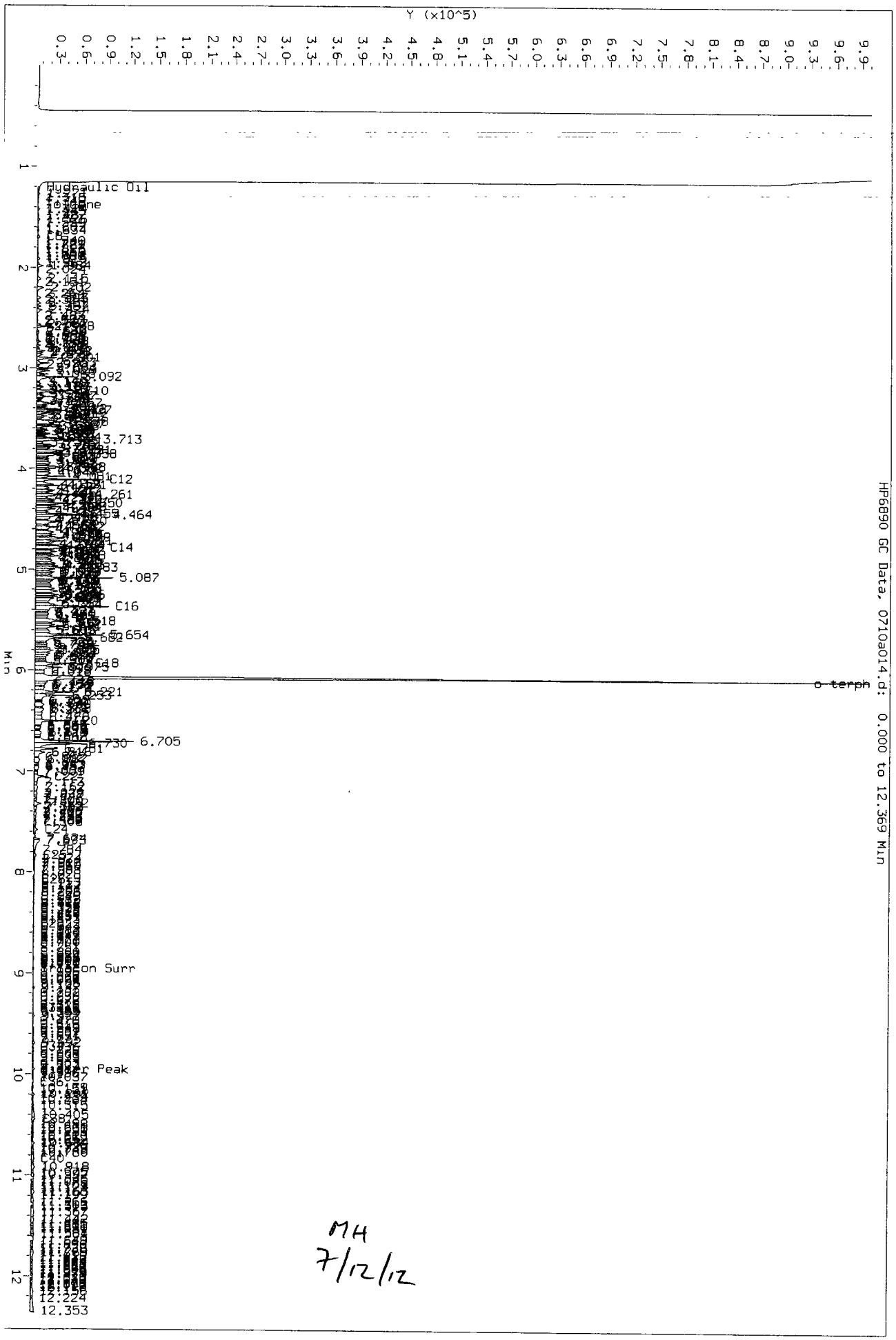
Instrument: fid4a.i

Operator: MH

Column diameter: 0.25

VB51:00620

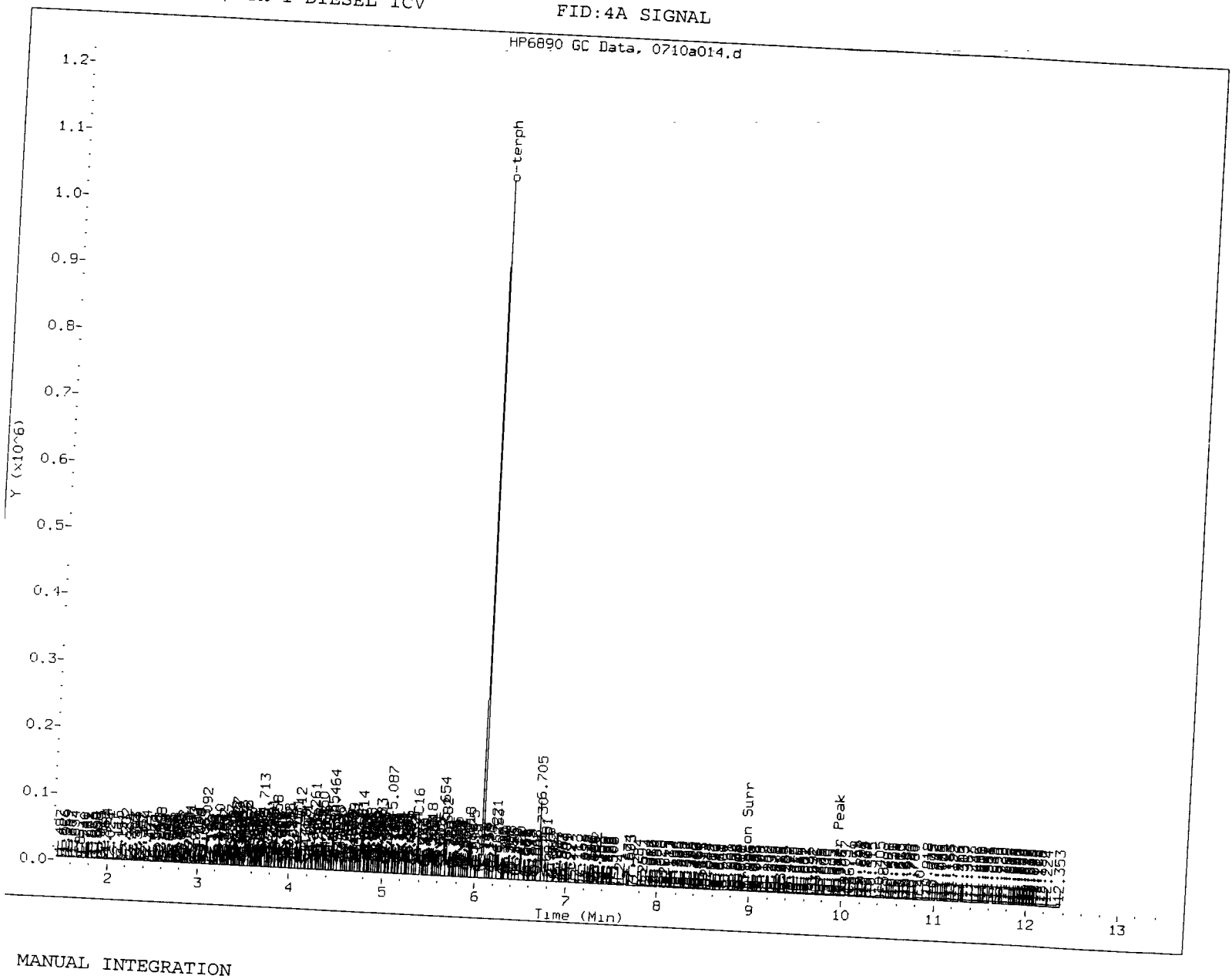



Data File: /chem3/fid4a.i/20120710.b/0710a014.d
Injection Date: 10-JUL-2012 11:53
Instrument: fid4a.i
Client Sample ID:
Y (x10^5)
Hydraulic Oil
C12
C14
C16
5.087
6.705
o terph
HP6890 GC Data, 0710a014.d: 0.000 to 12.369 Min
Min
12.224
12.353

MH
7/12/12

FID:4A-2C/RTX-1 DIESEL ICV

FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/12/12

Diesel/AK102
M. 0:1

Analytical Resources, Incorporated
Analytical Chemists and Consultants

GC Initial Calibration Notes

ARI SOP: **403S**(PCB) **405S**(Herb) **407S**(TPH-D) **409S**(HCID) **412S**(PCP) **423S**(Pest)
427S(Dir Inj) **428S**(EPH) **Other**

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Curve Date(s): 6/12/12 Internal Standard ID N/A Expiration —

Diesel Mo:1/AK10

Endrin/DDT Breakdown <15%? YES / NO / NA — ICV Exceeding ±20%? YES / NO

ICal Meets %RSD & r^2 Criteria YES / NO — ICV Exceeding ±30%? YES / NO

Manual Integrations for ICal? YES / NO — Linear Fits Used? YES / NO

Minimum Response S/N Met YES / NO — Quadratic Fits Used? YES / NO

high surr points
Calibration Points Dropped? YES / NO

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
76	1972-1	9/28/12	Shell	1977-3	9/28/12
Chevron	1971-3	11/23/12	Valvoline	1977-1	11/23/12

Detail problems, corrective actions and/or other pertinent information below:
high point of Surr RT shifted due to saturation. high points dropped out.

Analyst: [signature] **Date:** 6/13/12

Reviewer: [signature] **Date:** 6/13/12

VB51 : 00623

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: 20120612

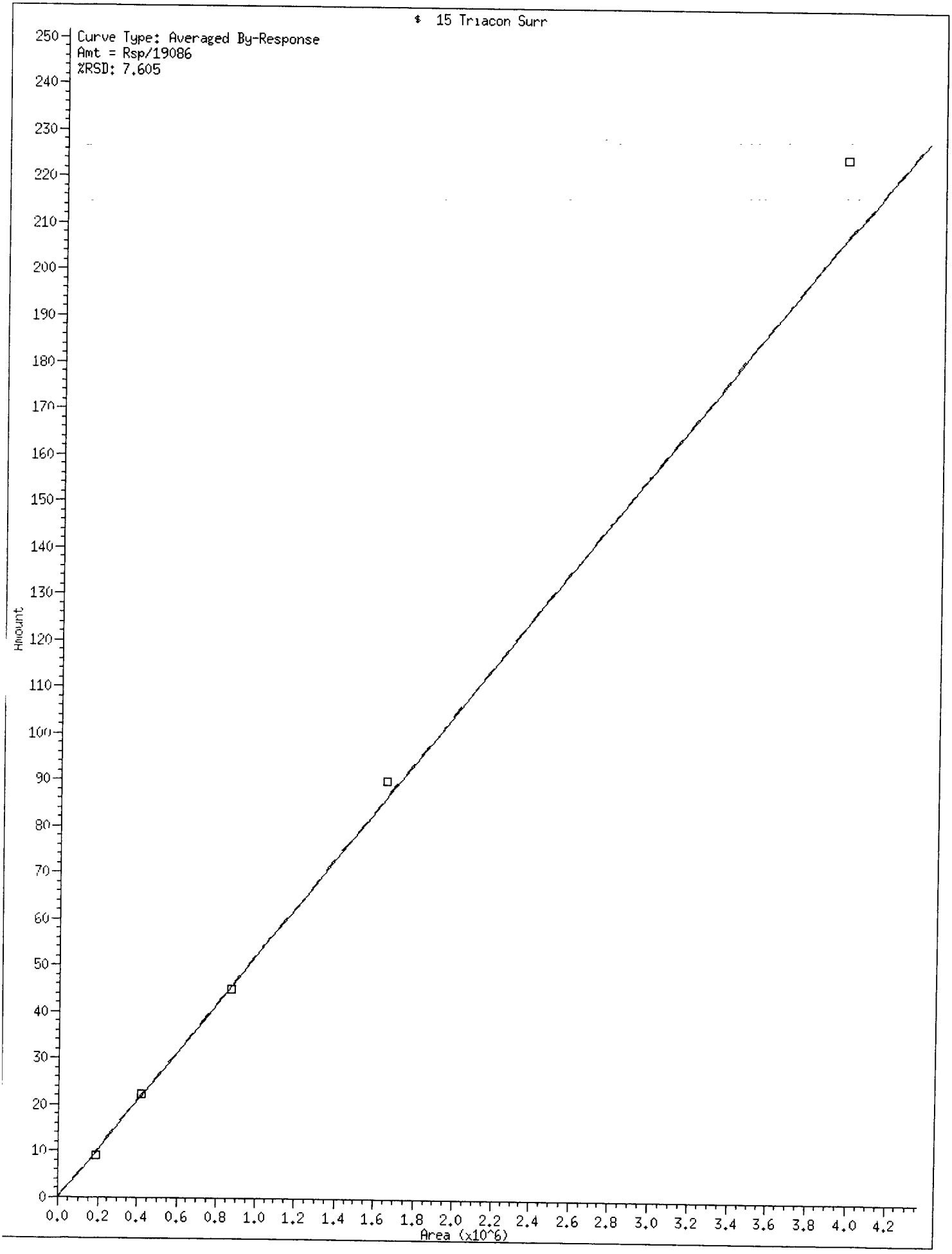
Instrument: FID4A.I Project:

Calibration Date: 12-JUN-2012 SDG No.: 20120612

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	11845	13246	13189	12254	12177	12701	12569	4.6
Triac Surr	21428	18681	19369	18317	17635	*****	19086	7.6

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
0612a020.d	12-JUN-2012 17:01
0612a021.d	12-JUN-2012 17:22
0612a022.d	12-JUN-2012 17:44
0612a023.d	12-JUN-2012 18:06
0612a024.d	12-JUN-2012 18:27
0612a025.d	12-JUN-2012 18:49


$ 15 Triacon Surr
Curve Type: Averaged By-Response
Amt = Rsp/19086
%RSD: 7.605
Amount
Area (x10^6)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
3.6
3.8
4.0
4.2

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2004 08:49
End Cal Date : 12-JUN-2012 18:49
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : Falcon
Method file : /chem3/fid4a.i/20120612.b/ftphfid4a.m
Cal Date : 13-Jun-2012 07:39 monicah
Curve Type : Average

Compound	0.000e+00 Level 1	0.000e+00 Level 2	0 000e+00 Level 3	0.000e+00 Level 4	0 000e+00 Level 5	0 000e+00 Level 6	0 000e+00 Level 7	0.000e+00 Level 8	0.000e+00 Level 9	0 000e+00 Level 10	0 000e+00 Level 11	0 000e+00 Level 12	___ RRF	% RSD
$ 15 Triacon Surr	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21428	18681	19369	18317	17635	19086	7.605

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a020.d ARI ID: MOIL 100
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 12-JUN-2012 17:01
Operator: MH
Report Date: 06/13/2012 Dilution Factor: 1
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.370	-0.050	10317	20950	GAS (Tol-C12)	25859	1.72
C8	1.686	-0.015	369	392	DIESEL (C12-C24)	110296	7.36
C10	3.254	0.007	239	490	M.OIL (C24-C38)	1184454	94.24
C12	4.138	0.008	197	167	AK-102 (C10-C25)	160912	9.11
C14	4.804	-0.002	179	111	AK-103 (C25-C36)	982219	115.04
C16	5.400	0.008	89	146			
C18	5.967	0.008	85	131			
C20	6.523	-0.005	210	183	JET-A (C10-C18)	23630	1.59
C22	7.081	0.003	972	643	MIN.OIL (C24-C38)	1184454	88.12
C24	7.599	-0.003	3765	1768			
C25	7.864	0.010	5475	9383			
C26	8.104	0.009	6212	10086			
C28	8.554	0.004	7436	11306			
C32	9.371	-0.002	8569	3530			
C34	9.749	-0.006	8755	7682			
Filter Peak	10.005	0.008	8562	5639	CREOSOT (C12-C22)	34310	9.34
C36	10.130	0.002	8271	4253			
C38	10.488	-0.002	7542	7888			
C40	10.850	0.004	6873	2841			
o-terph	6.103	0.000	277	335			
Triacon Surr	8.961	-0.022	224936	192856			

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	335	0.0	0.0
Triacontane	192856	10.1	22.5

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

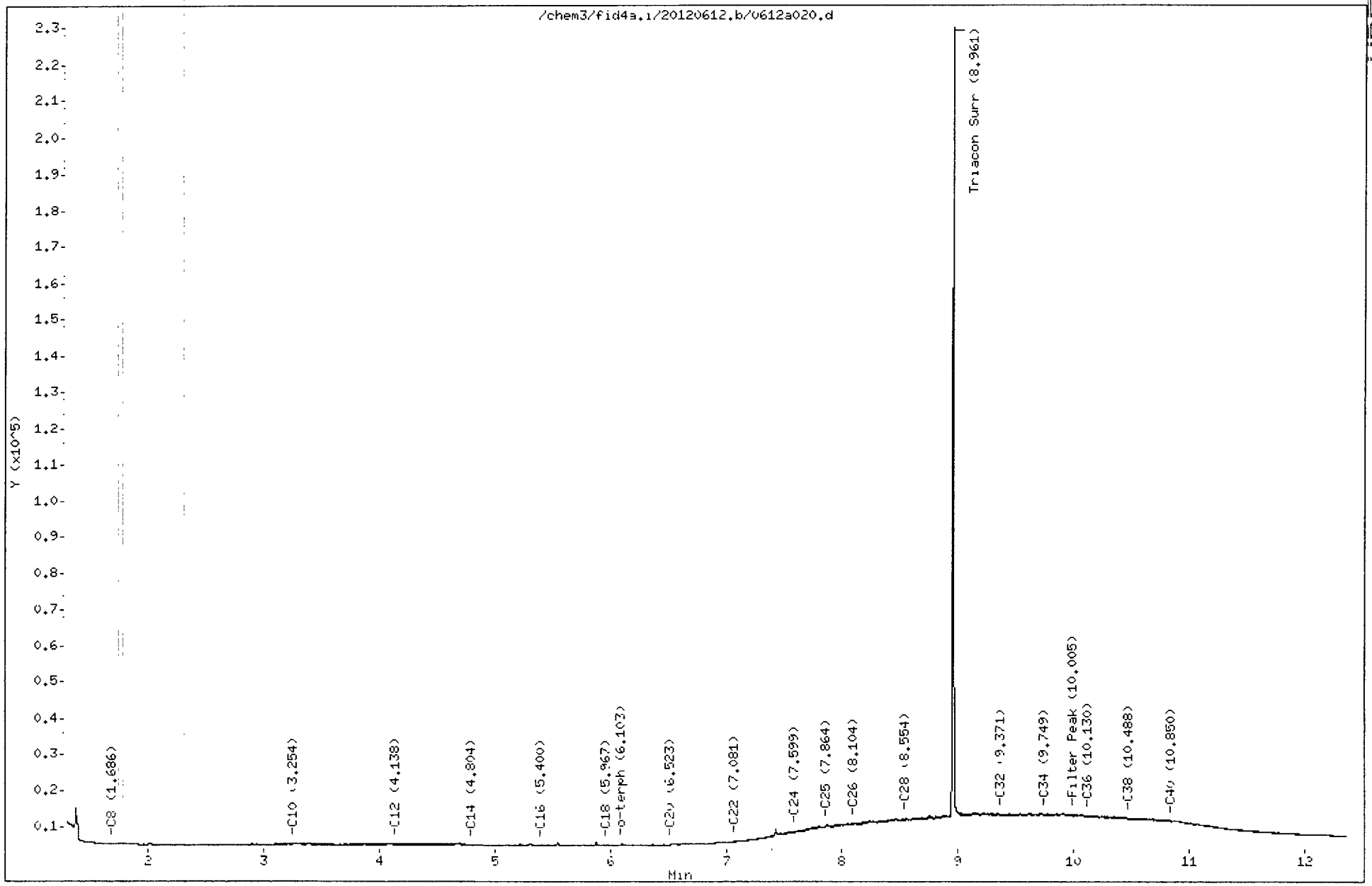
Data File: /chem3/fid4a.1/20120612.b/0612a020.d
Date : 12-JUN-2012 17:01
Client ID:
Sample Info: MOIL 100

Instrument: fid4a.1

Operator: MH
Column diameter: 0.25

Column phase: RTX-1

VB51 00628



MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a021.d ARI ID: MOIL 250
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 12-JUN-2012 17:22
Operator: MH
Report Date: 06/13/2012 Dilution Factor: 1
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.374	-0.046	22974	49617	GAS (Tol-C12)	79411	5.28
C8	1.724	0.023	458	921	DIESEL (C12-C24)	274748	18.34
C10	3.254	0.007	313	724	M.OIL (C24-C38)	3317765	263.96
C12	4.138	0.008	256	434	AK-102 (C10-C25)	410925	23.28
C14	4.796	-0.010	201	252	AK-103 (C25-C36)	2787082	326.43 M
C16	5.386	-0.006	115	149			
C18	5.958	0.000	170	149			
C20	6.524	-0.003	593	1041	JET-A (C10-C18)	27554	1.86
C22	7.076	-0.003	2536	940	MIN.OIL (C24-C38)	3317765	246.85 M
C24	7.599	-0.003	9963	6829			
C25	7.858	0.004	13664	9657			
C26	8.089	-0.006	15996	16938			
C28	8.551	0.001	19115	6394			
C32	9.376	0.003	22473	23859			
C34	9.760	0.004	23100	21478			
Filter Peak	9.994	-0.003	22383	22354	CREOSOT (C12-C22)	73545	20.02
C36	10.121	-0.007	21645	25330			
C38	10.488	-0.003	19082	22138			
C40	10.845	-0.001	16104	11663			
o-terph	6.100	-0.003	282	507			
Triacon Surr	8.971	-0.012	519766	420312			

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	507	0.0	0.1
Triacontane	420312	22.0	48.9

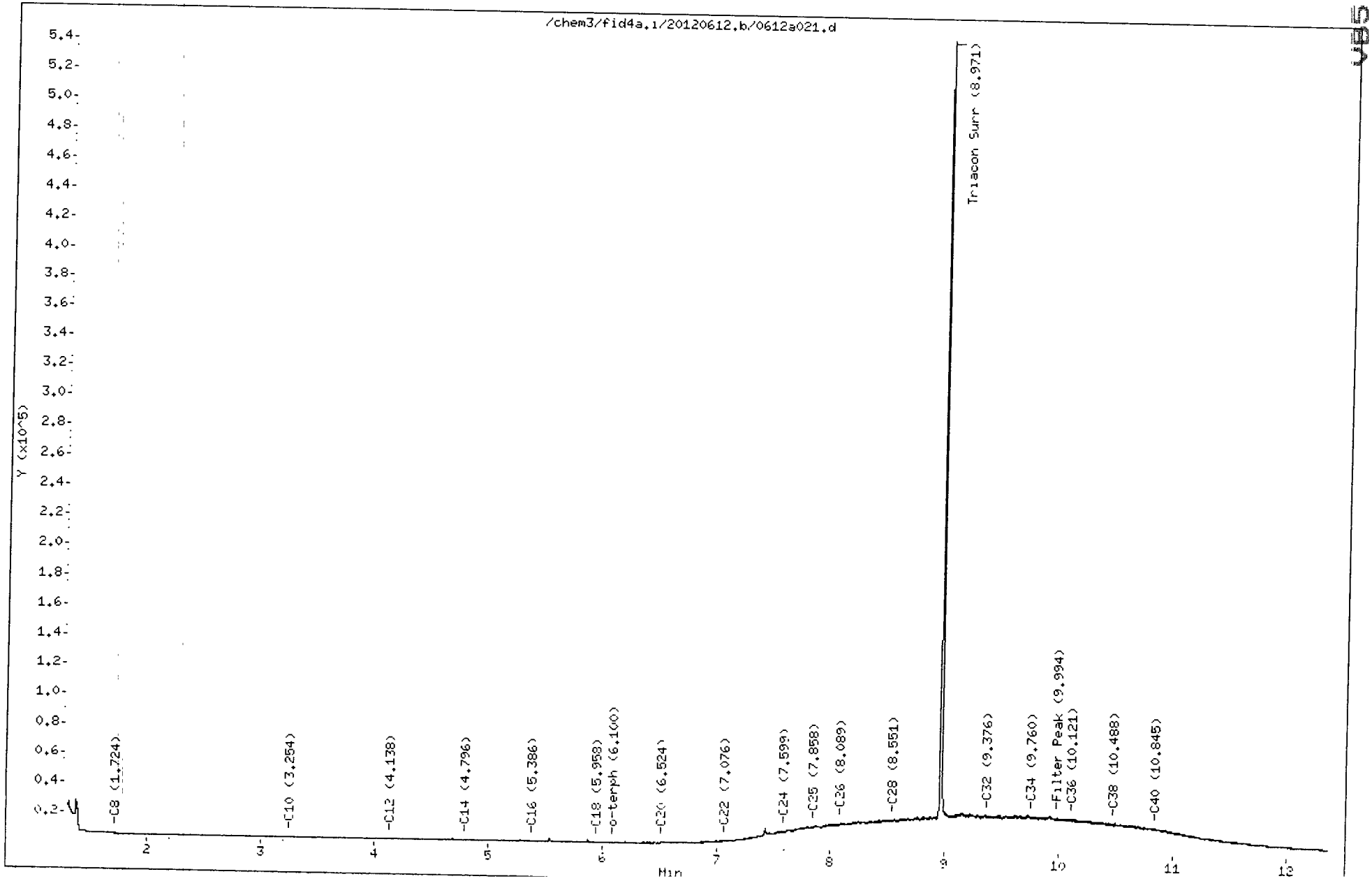
Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a021.d
Date : 12-JUN-2012 17:22
Client ID:
Sample Info: MOIL 250

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1



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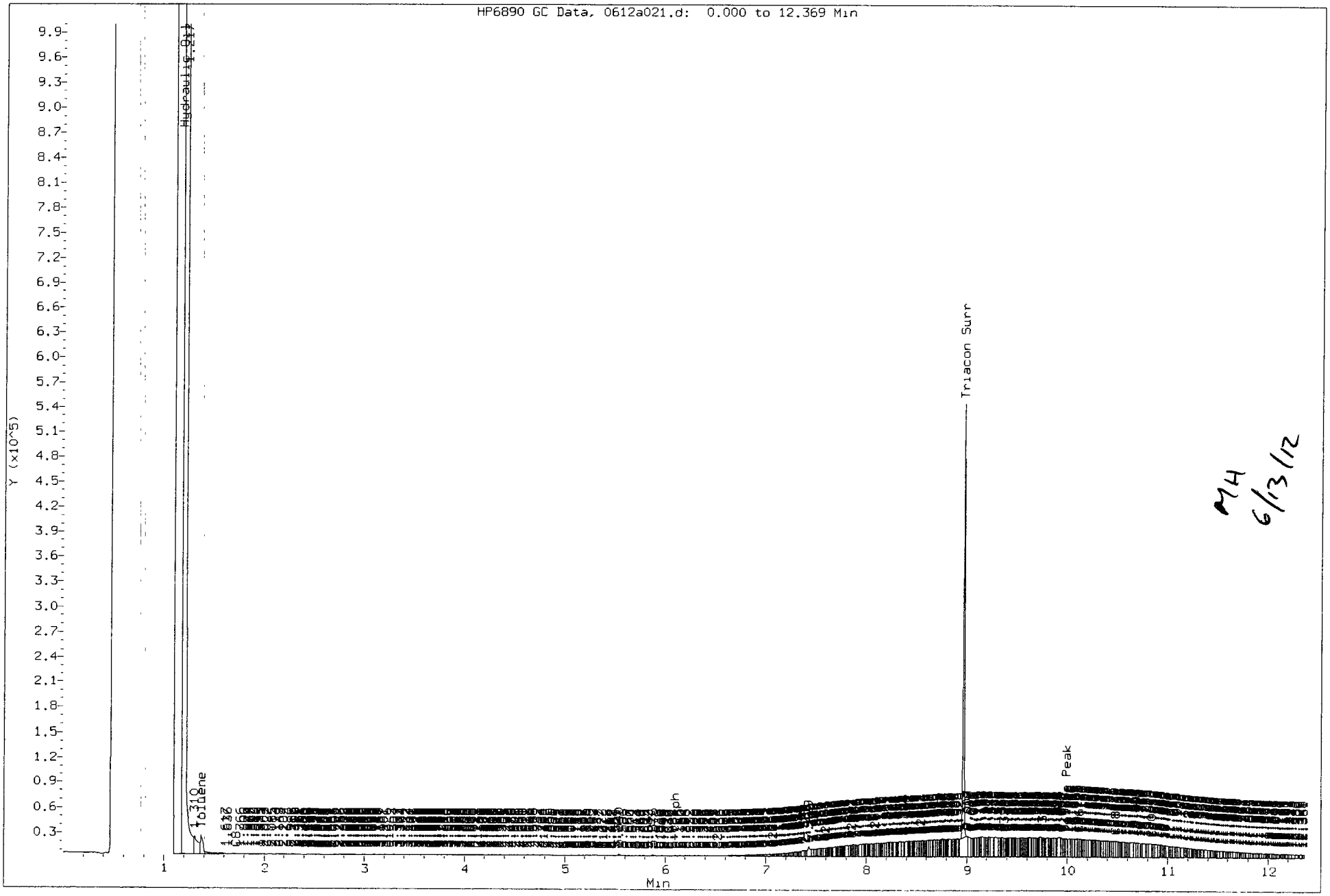
Injection Date: 12-JUN-2012 17:22
Instrument: fid4a.i
Client Sample ID:

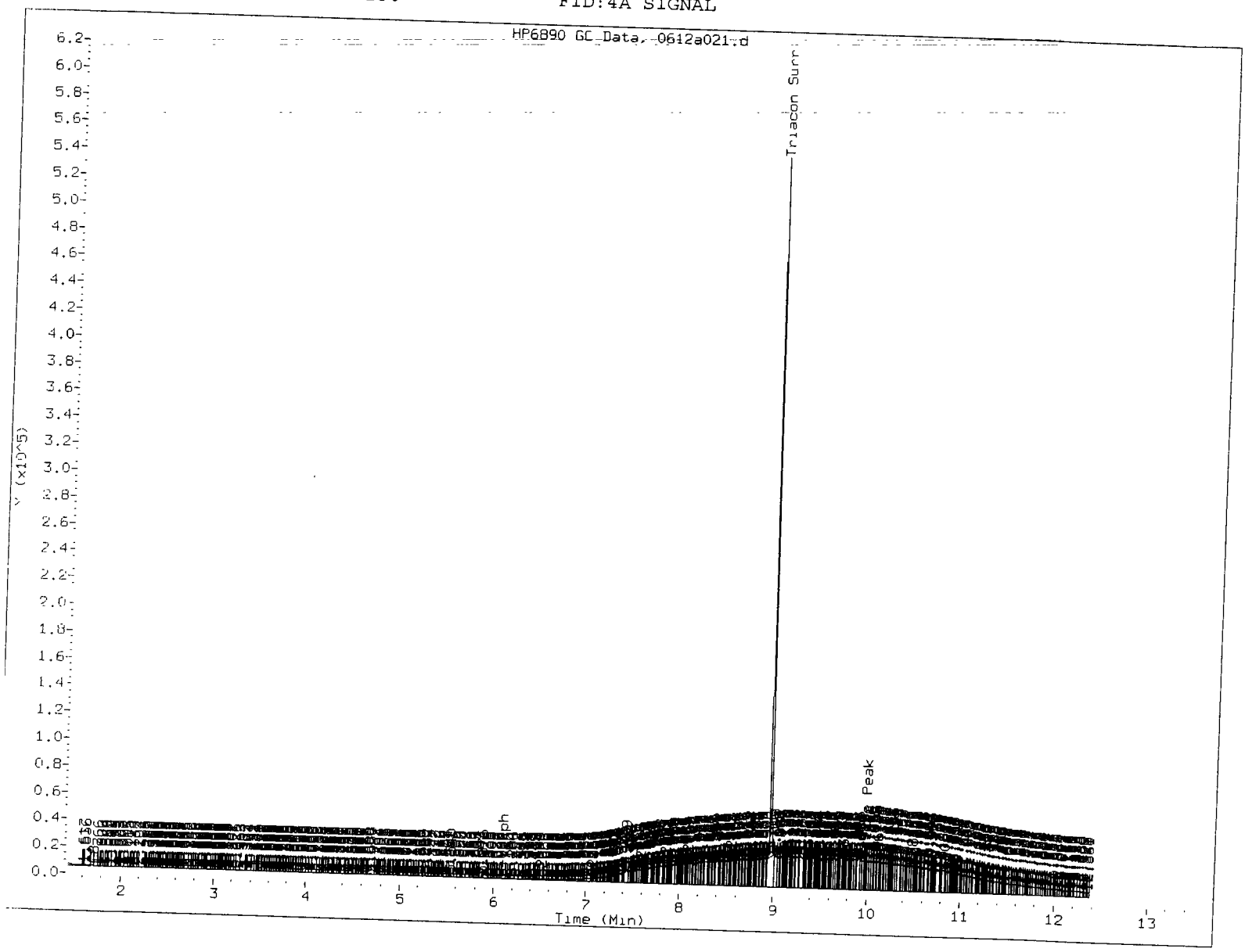


MH 6/13/12

VB51 : 00631

FID:4A-2C/RTX-1 MOIL 250

FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: _____

6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a022.d ARI ID: MOIL 500
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 12-JUN-2012 17:44
Operator: MH
Report Date: 06/13/2012 Dilution Factor: 1
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.382	-0.038	39432	59445	GAS (Tol-C12)	117067	7.78	
C8	1.708	0.007	572	1464	DIESEL (C12-C24)	575727	38.43	
C10	3.254	0.007	451	1080	M.OIL (C24-C38)	6604896	525.49	
C12	4.126	-0.005	267	185	AK-102 (C10-C25)	809175	45.83	
C14	4.793	-0.013	223	357	AK-103 (C25-C36)	5572034	652.62	M
C16	5.382	-0.011	156	198				
C18	5.956	-0.003	327	589				
C20	6.522	-0.005	1232	2936	JET-A (C10-C18)	32383	2.18	
C22	7.078	-0.001	5381	5260	MIN.OIL (C24-C38)	6604896	491.41	M
C24	7.596	-0.006	19978	16406				
C25	7.857	0.003	27678	9845				
C26	8.098	0.003	32776	17104				
C28	8.552	0.002	38618	22812				
C32	9.367	-0.006	48212	62292				
C34	9.745	-0.010	49160	40280				
Filter Peak	9.999	0.003	44584	65599	CREOSOT (C12-C22)	142397	38.76	
C36	10.124	-0.004	44339	53132				
C38	10.491	0.000	37077	42861				
C40	10.839	-0.007	31920	31322				
o-terph	6.099	-0.003	516	1114				
Triacon Surr	8.985	0.002	829441	871597				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1114	0.1	0.1
Triacontane	871597	45.7	101.5

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a022.d

Date : 12-JUN-2012 17:44

Client ID:

Sample Info: MOIL 500

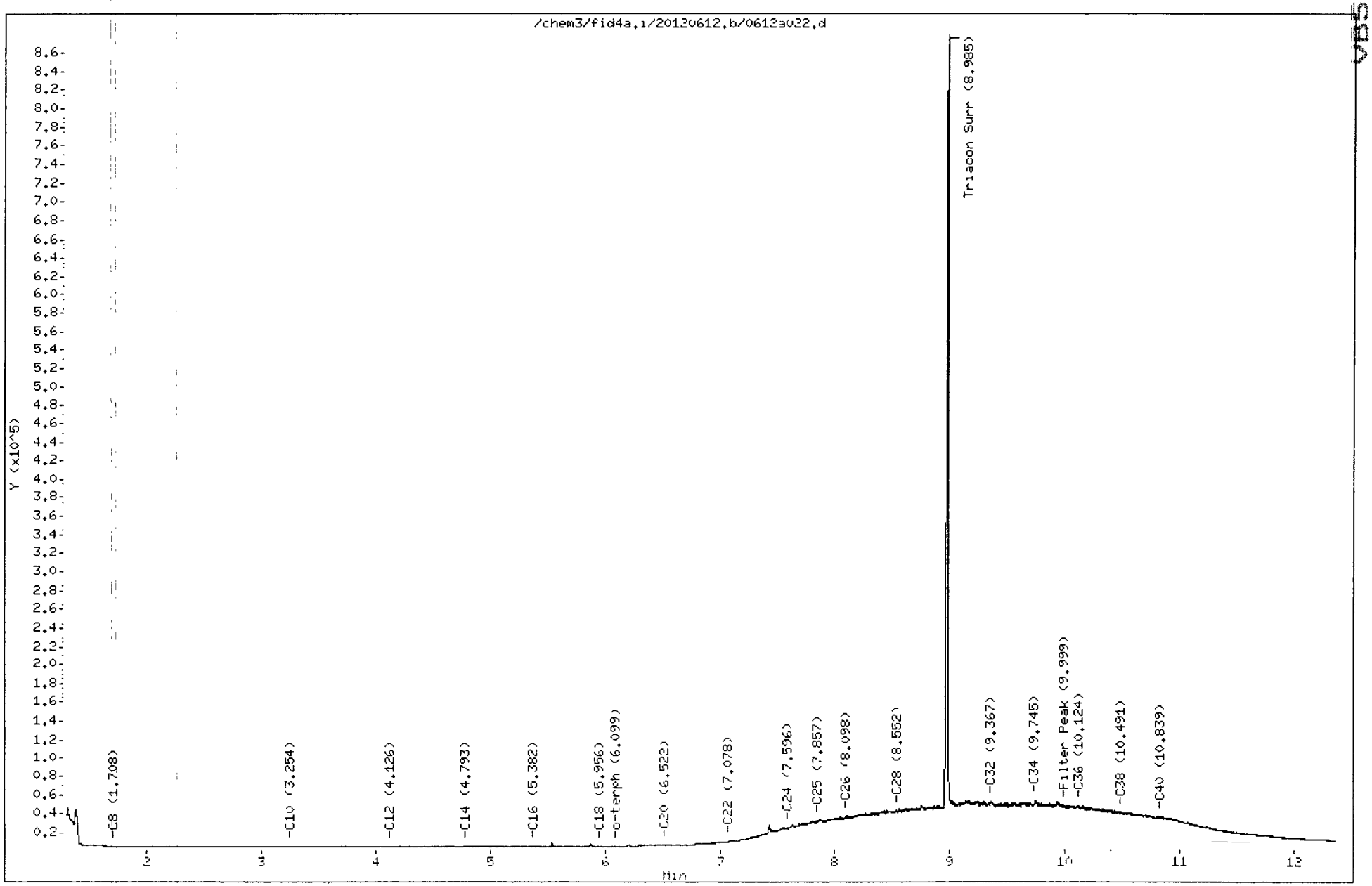
Column phase: RTX-1

Instrument: fid4a.i

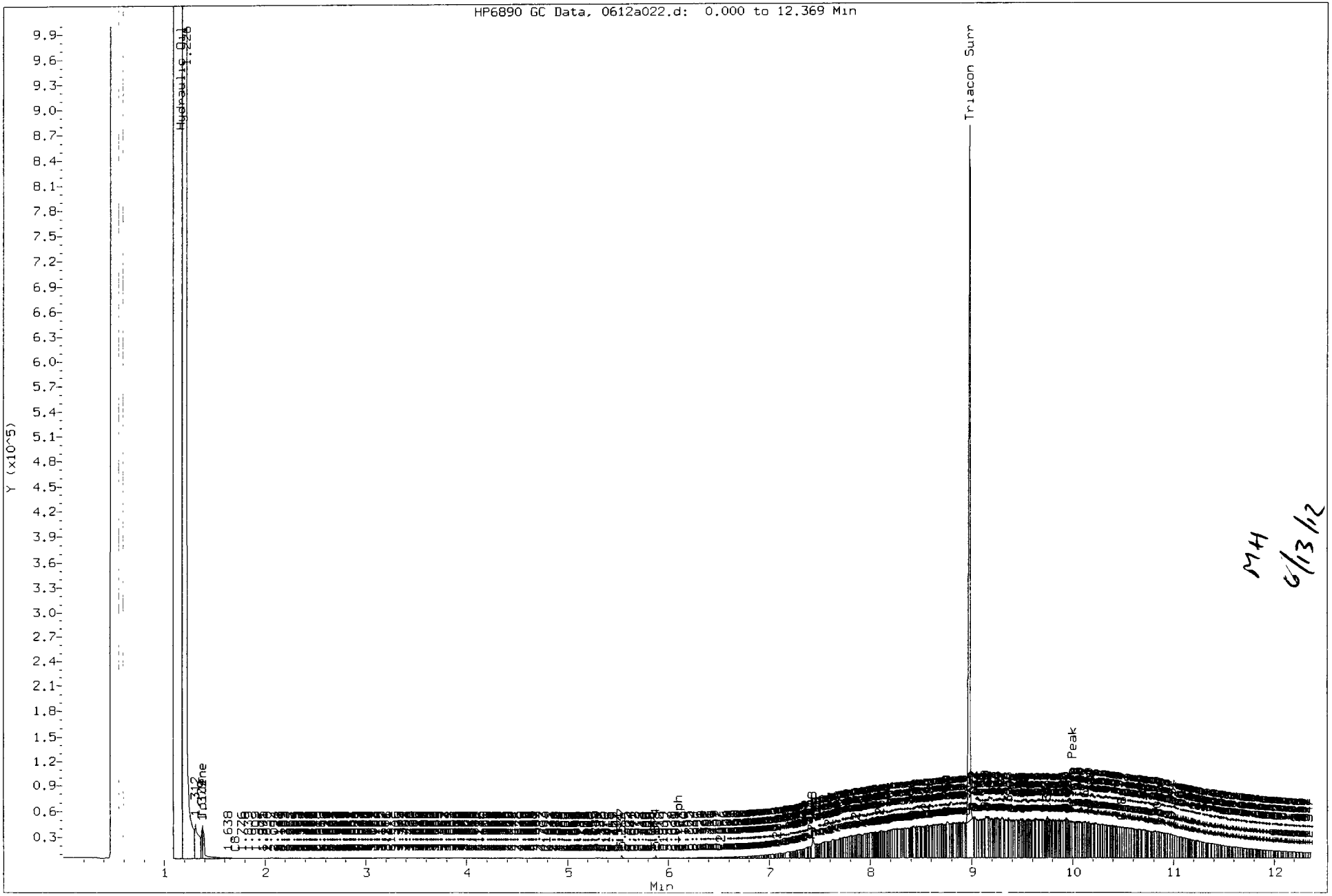
Operator: MH

Column diameter: 0.25

VB51 : 006341



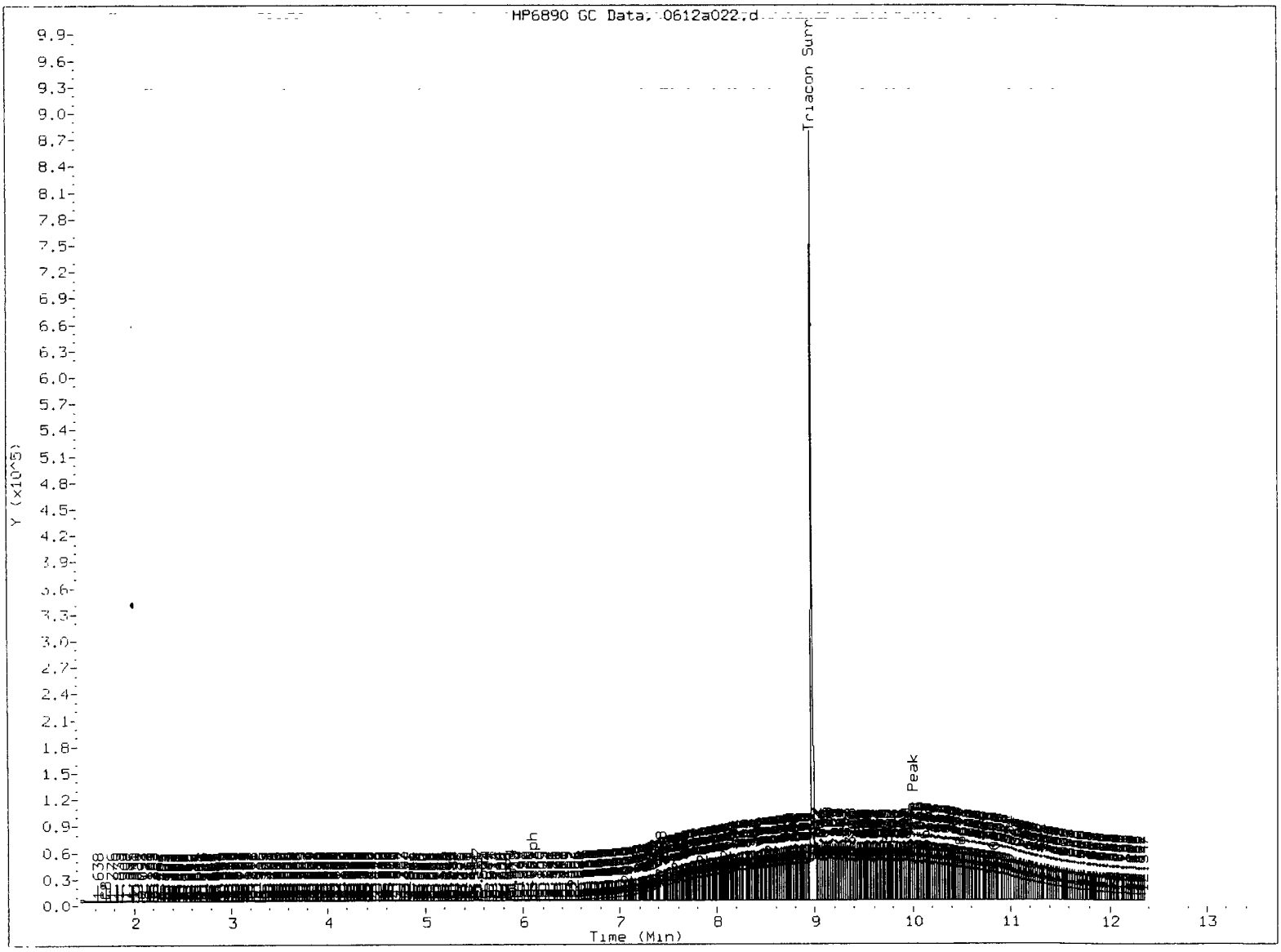
Data File: /chem3/fid4a.i/20120612.b/0612a022.d
Injection Date: 12-JUN-2012 17:44
Instrument: fid4a.i
Client Sample ID:



VBS1 00635

MH
6/13/12

FID:4A-2C/RTX-1 MOIL 500 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a023.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: MOIL 1000
Client ID:
Injection: 12-JUN-2012 18:06
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.368	-0.052	54327	108918	GAS (Tol-C12)	34811	2.31	
C8	1.701	0.000	487	474	DIESEL (C12-C24)	1058363	70.64	
C10	3.250	0.003	699	1224	M.OIL (C24-C38)	12253504	974.90	
C12	4.120	-0.010	385	719	AK-102 (C10-C25)	1466919	83.09	
C14	4.790	-0.016	266	449	AK-103 (C25-C36)	10357749	1213.14	M
C16	5.381	-0.012	182	238				
C18	5.958	-0.001	557	1292				
C20	6.524	-0.003	2320	2862	JET-A (C10-C18)	46387	3.13	
C22	7.070	-0.008	9626	5035	MIN.OIL (C24-C38)	12253504	911.67	M
C24	7.600	-0.002	38326	41266				
C25	7.854	-0.001	52793	61581				
C26	8.097	0.001	60211	31898				
C28	8.555	0.005	74237	28915				
C32	9.375	0.003	88518	27805				
C34	9.750	-0.006	93785	145643				
Filter Peak	9.993	-0.003	81647	66578	CREOSOT (C12-C22)	264607	72.02	
C36	10.126	-0.002	79749	25140				
C38	10.492	0.002	70441	101356				
C40	10.844	-0.002	57877	57445				
o-terph	6.098	-0.005	909	2520				
Triacon Surr	8.994	0.012	1330960	1648539				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2520	0.1	0.3
Triacontane	1648539	86.4	191.9

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

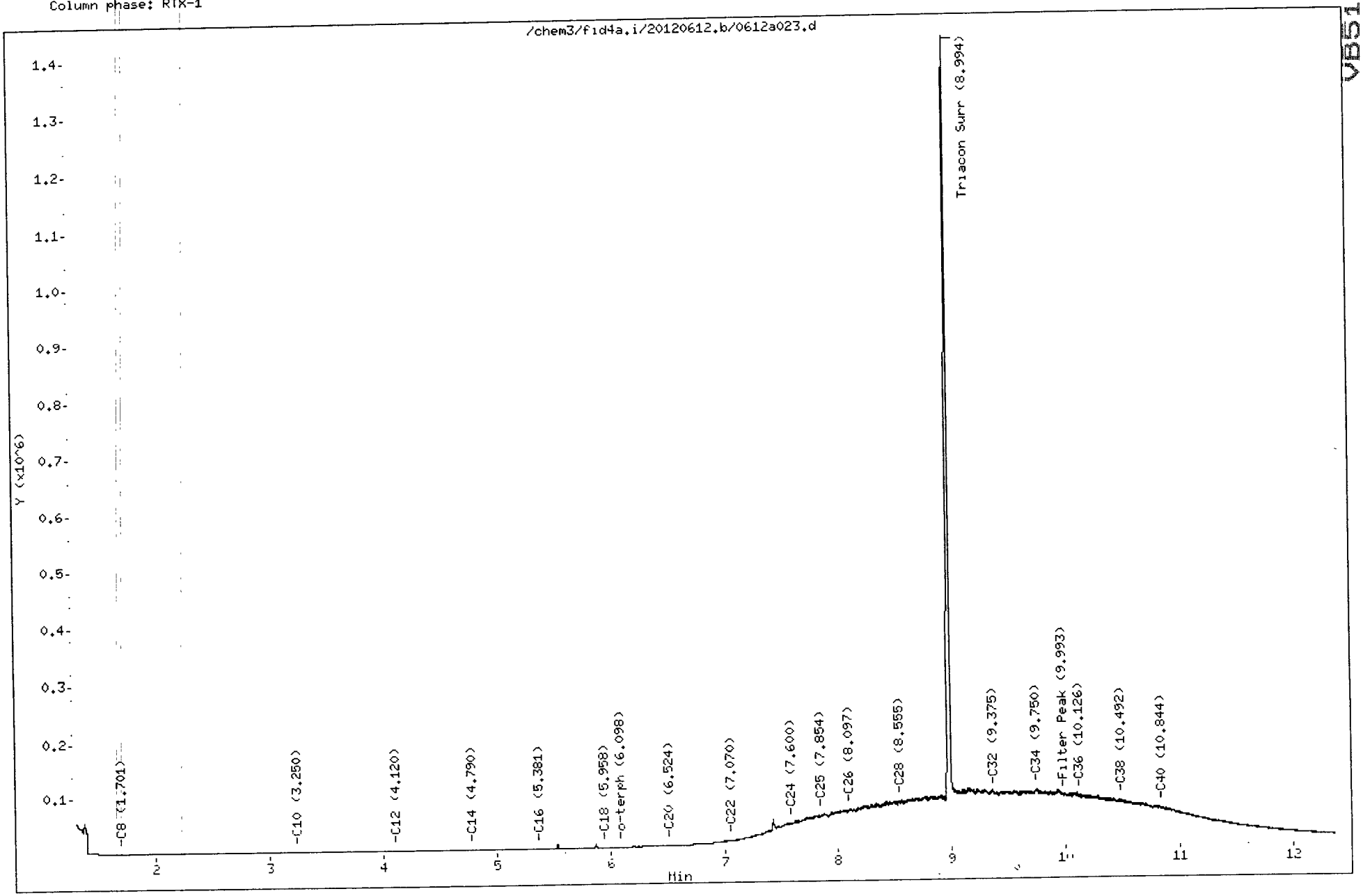
Data File: /chem3/fid4a.i/20120612.b/0612a023.d
Date : 12-JUN-2012 18:06
Client ID:
Sample Info: MOIL 1000

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1

VB51 : 00638



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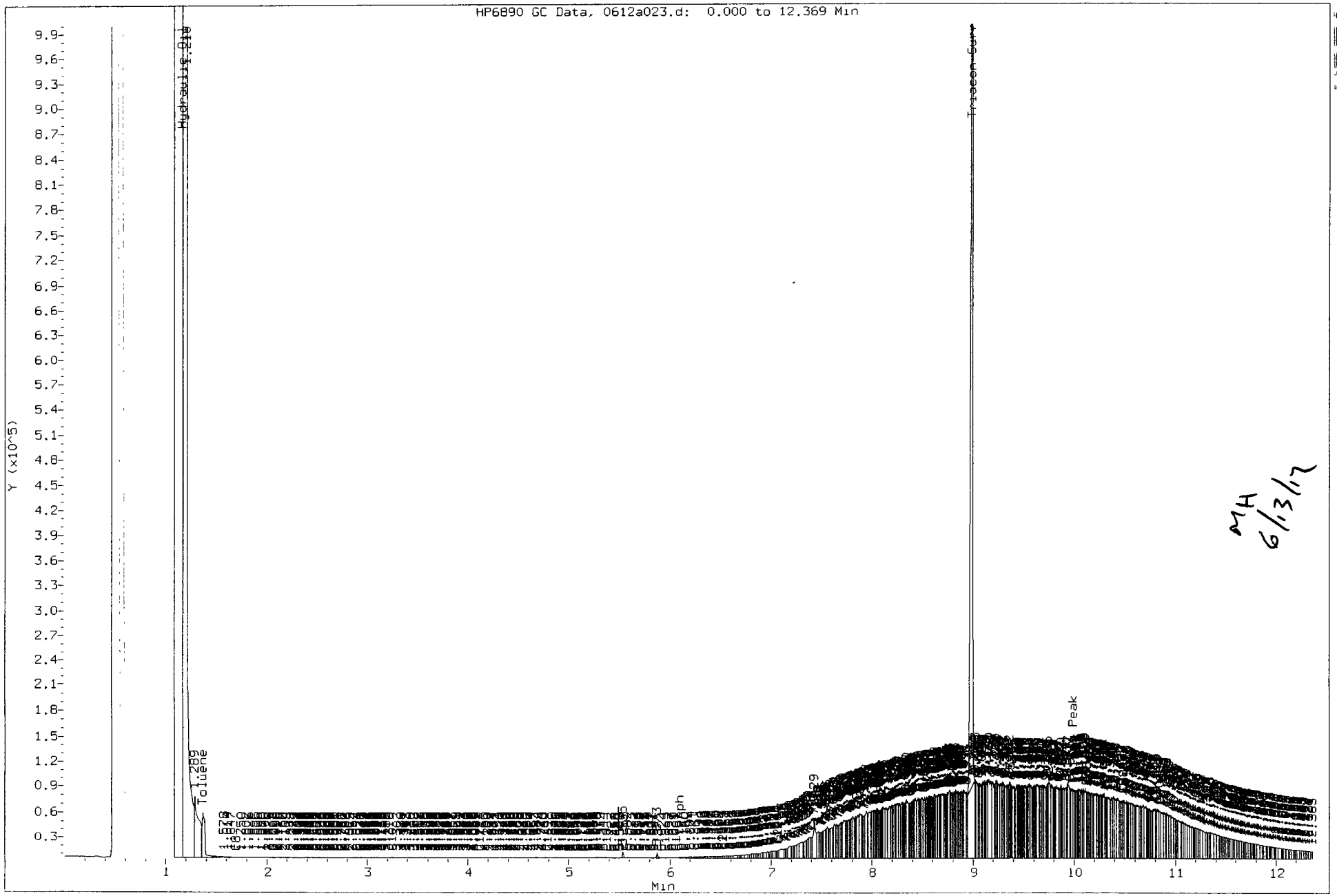
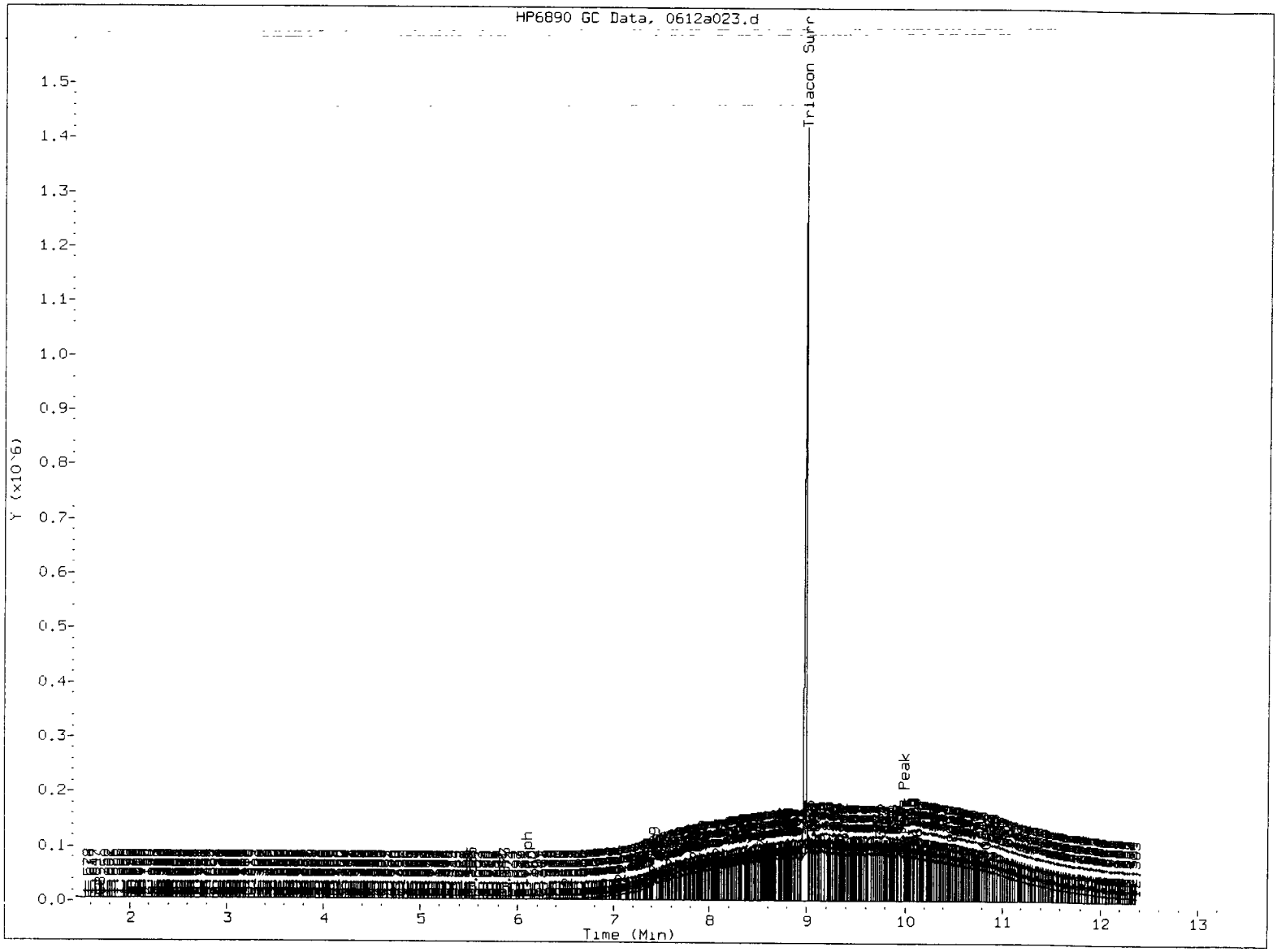
Injection Date: 12-JUN-2012 18:06
Instrument: fid4a.i
Client Sample ID:



VB51 00639

MH 6/13/17

FID:4A-2C/RTX-1 MOIL 1000 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a024.d
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Instrument: fid4a.i
Operator: MH
Report Date: 06/13/2012
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

ARI ID: MOIL 2500
Client ID:
Injection: 12-JUN-2012 18:27

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.377	-0.042	105913	136831	GAS (Tol-C12)	174104	11.57	
C8	1.694	-0.007	468	962	DIESEL (C12-C24)	2563578	171.10	
C10	3.245	-0.002	1905	1992	M.OIL (C24-C38)	30573725	2432.47	
C12	4.131	0.000	485	791	AK-102 (C10-C25)	3580281	202.79	
C14	4.804	-0.002	386	644	AK-103 (C25-C36)	25782422	3019.73	M
C16	5.388	-0.004	469	711				
C18	5.957	-0.002	1485	3553				
C20	6.524	-0.003	5926	10338	JET-A (C10-C18)	90616	6.11	
C22	7.078	-0.001	24289	16728	MIN.OIL (C24-C38)	30573725	2274.72	M
C24	7.603	0.001	94112	130795				
C25	7.860	0.005	126946	98844				
C26	8.094	-0.001	147509	112325				
C28	8.540	-0.010	181816	266077				
C32	9.383	0.010	217624	260132				
C34	9.745	-0.010	221867	335667				
Filter Peak	9.999	0.003	202825	143435	CREOSOT (C12-C22)	665870	181.23	
C36	10.131	0.003	195817	159467				
C38	10.491	0.000	165735	256208				
C40	10.849	0.004	121039	76137				
o-terph	6.098	-0.005	2353	7930				
Triacon Surr	9.013	0.031	2205982	3967902				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	7930	0.4	0.8
Triacontane	3967902	207.9	462.0

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

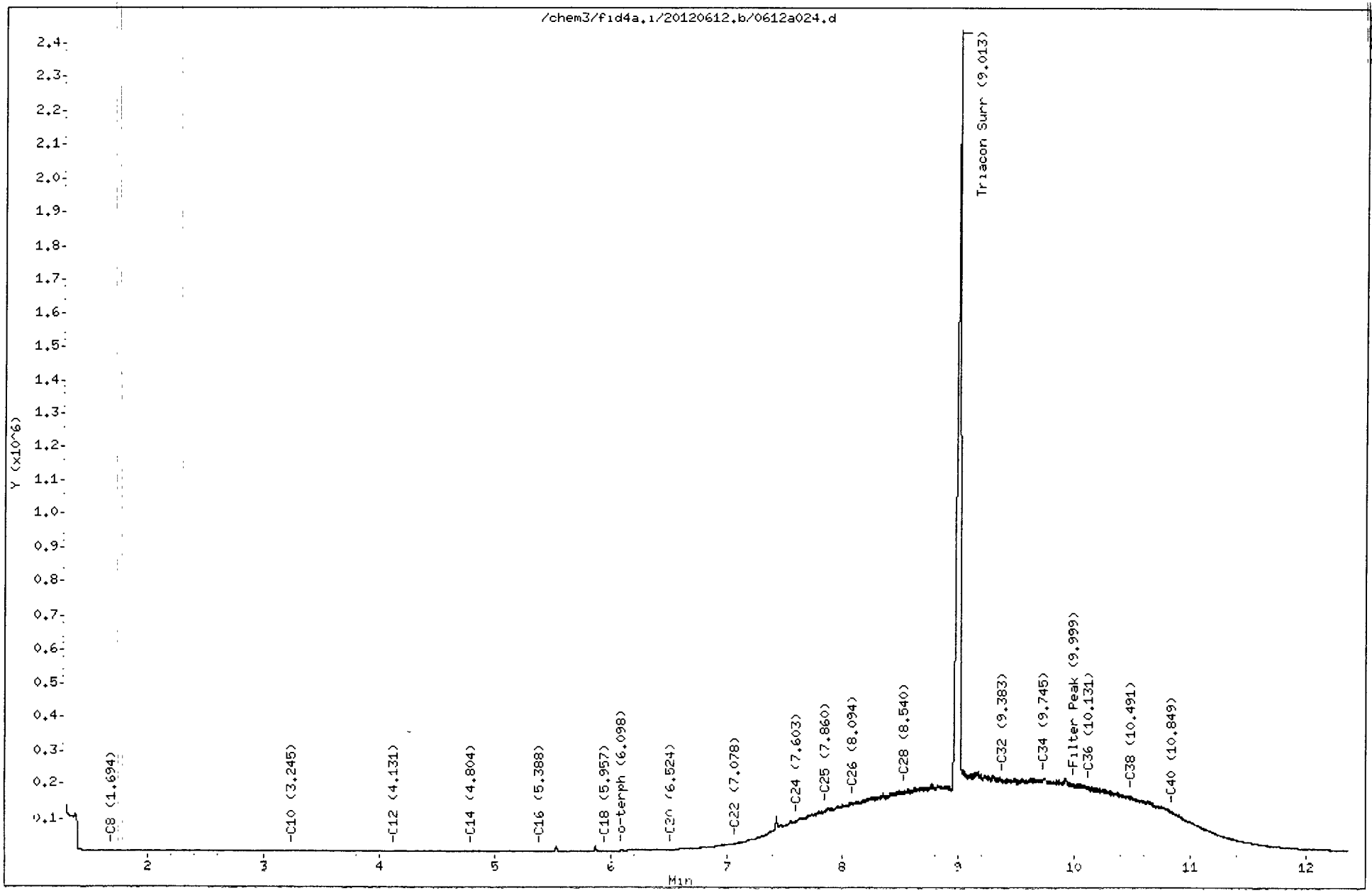
Data File: /chem3/fid4a.i/20120612.b/0612a024.d
Date : 12-JUN-2012 18:27
Client ID:
Sample Info: MOIL 2500

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1

VB51 : 06612



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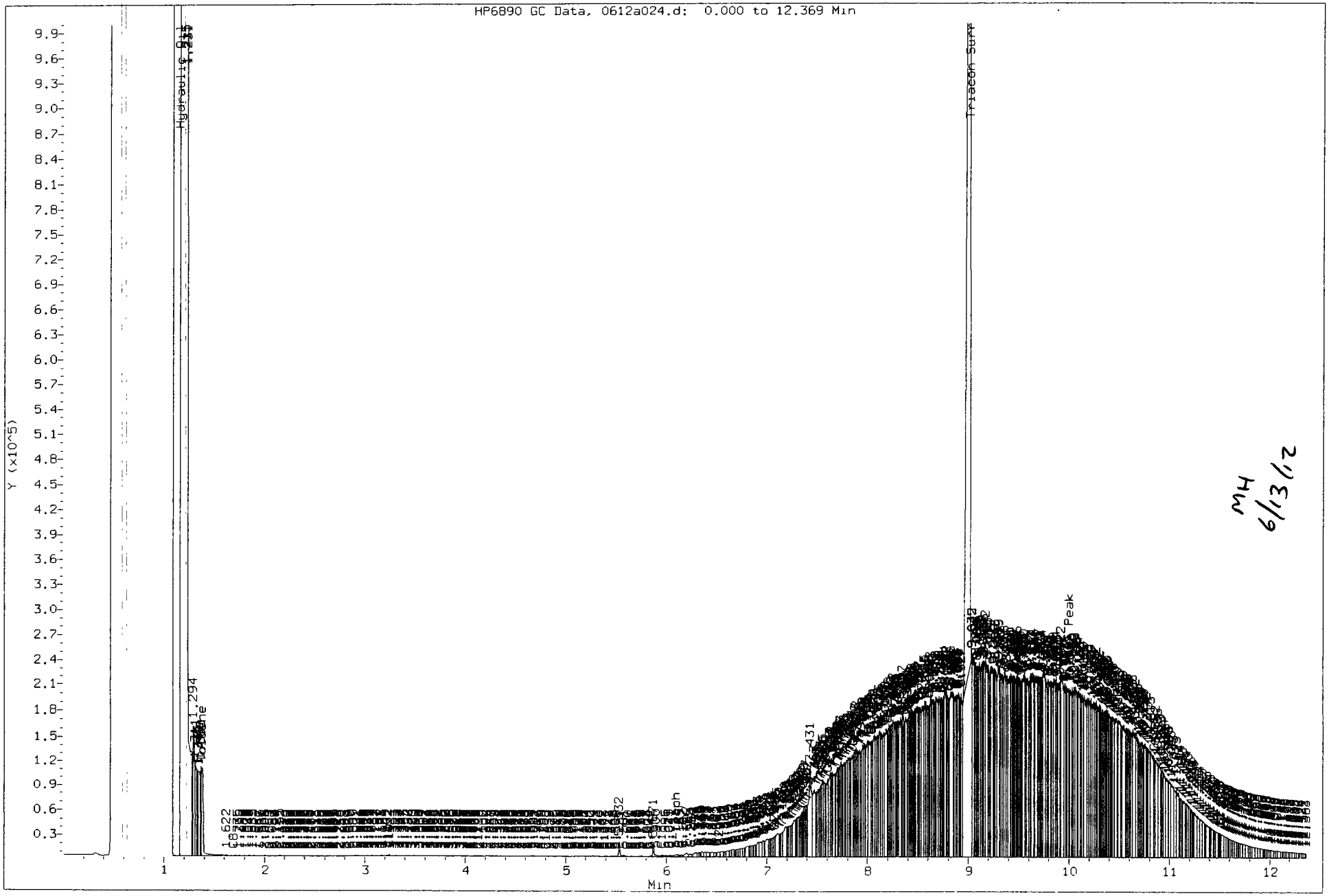
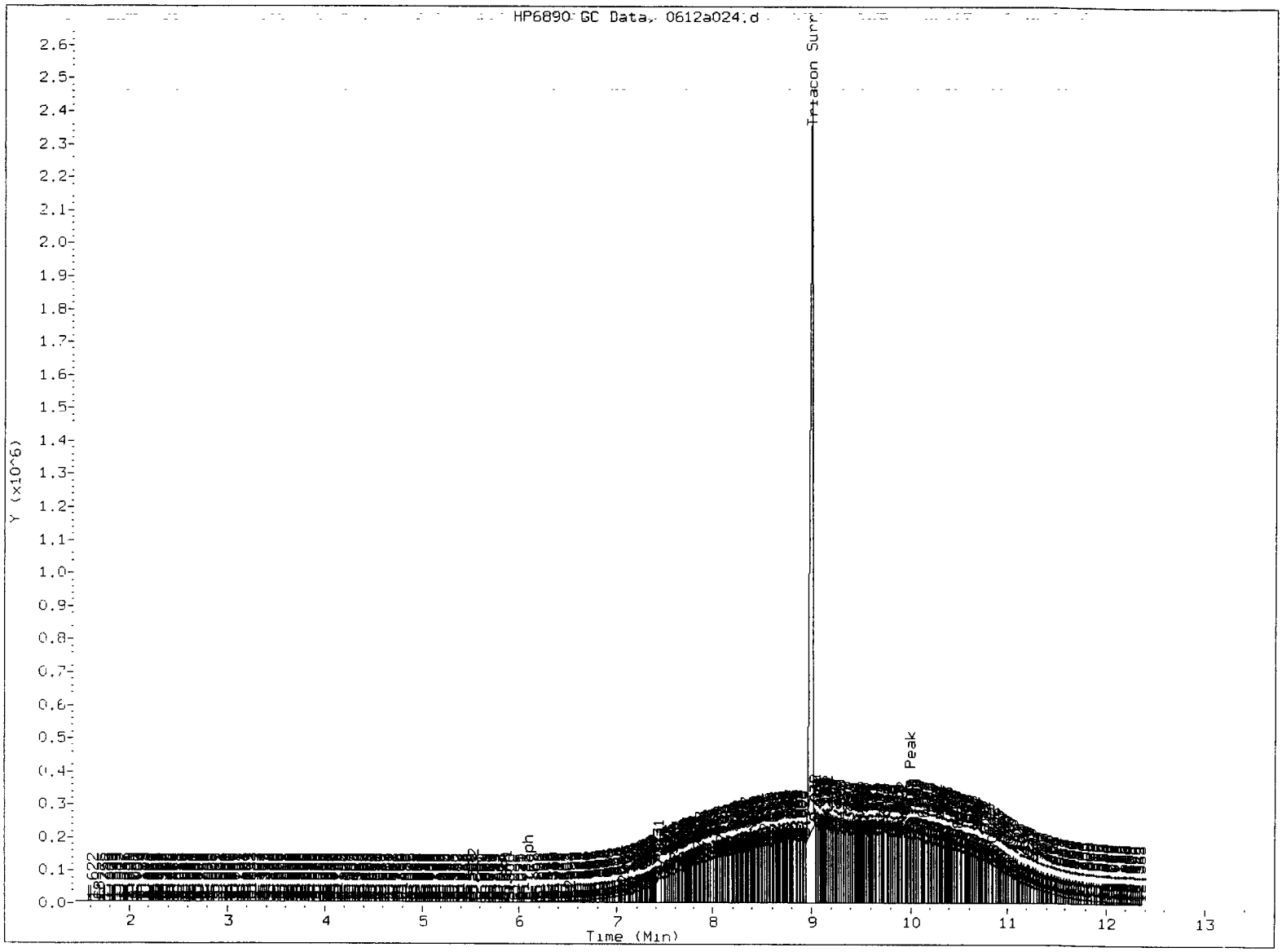
Injection Date: 12-JUN-2012 18:27
Instrument: fid4a.i
Client Sample ID:



VB51 : 00613

MH 6/13/12

FID:4A-2C/RTX-1 MOIL 2500 FID:4A SIGNAL



MANUAL INTEGRATION

- [x] Baseline correction
- [ ] 2. Poor chromatography
- [ ] 3. Peak not found
- [ ] 4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a025.d ARI ID: MOIL 5000
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 12-JUN-2012 18:49
Operator: MH
Report Date: 06/13/2012 Dilution Factor: 1
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.415	-0.004	2648	2026	GAS (Tol-C12)	420880	27.98	
C8	1.700	-0.001	390	902	DIESEL (C12-C24)	5414043	361.35	
C10	3.244	-0.003	3946	3864	M.OIL (C24-C38)	63875612	5082.00	
C12	4.130	0.000	628	1399	AK-102 (C10-C25)	7599472	430.44	
C14	4.816	0.010	587	885	AK-103 (C25-C36)	54672681	6403.45	M
C16	5.400	0.007	825	1689				
C18	5.958	0.000	3372	8468				
C20	6.525	-0.002	12670	20437	JET-A (C10-C18)	174133	11.73	
C22	7.069	-0.009	49787	26211	MIN.OIL (C24-C38)	63875612	4752.41	M
C24	7.608	0.006	198361	156870				
C25	7.853	-0.002	267798	134476				
C26	8.100	0.004	314147	105468				
C28	8.551	0.001	382854	427523				
C32	9.374	0.002	476383	184471				
C34	9.758	0.003	467971	290730				
Filter Peak	9.995	-0.001	423070	208420	CREOSOT (C12-C22)	1396766	380.16	
C36	10.122	-0.006	413640	365496				
C38	10.489	-0.001	286298	488144				
C40	10.855	0.009	108562	145333				
o-terph	6.095	-0.008	5475	17635				
Triacon Surr	9.051	0.069	3255229	8345674				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	17635	0.8	1.9
Triacontane	8345674	437.3	971.7

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

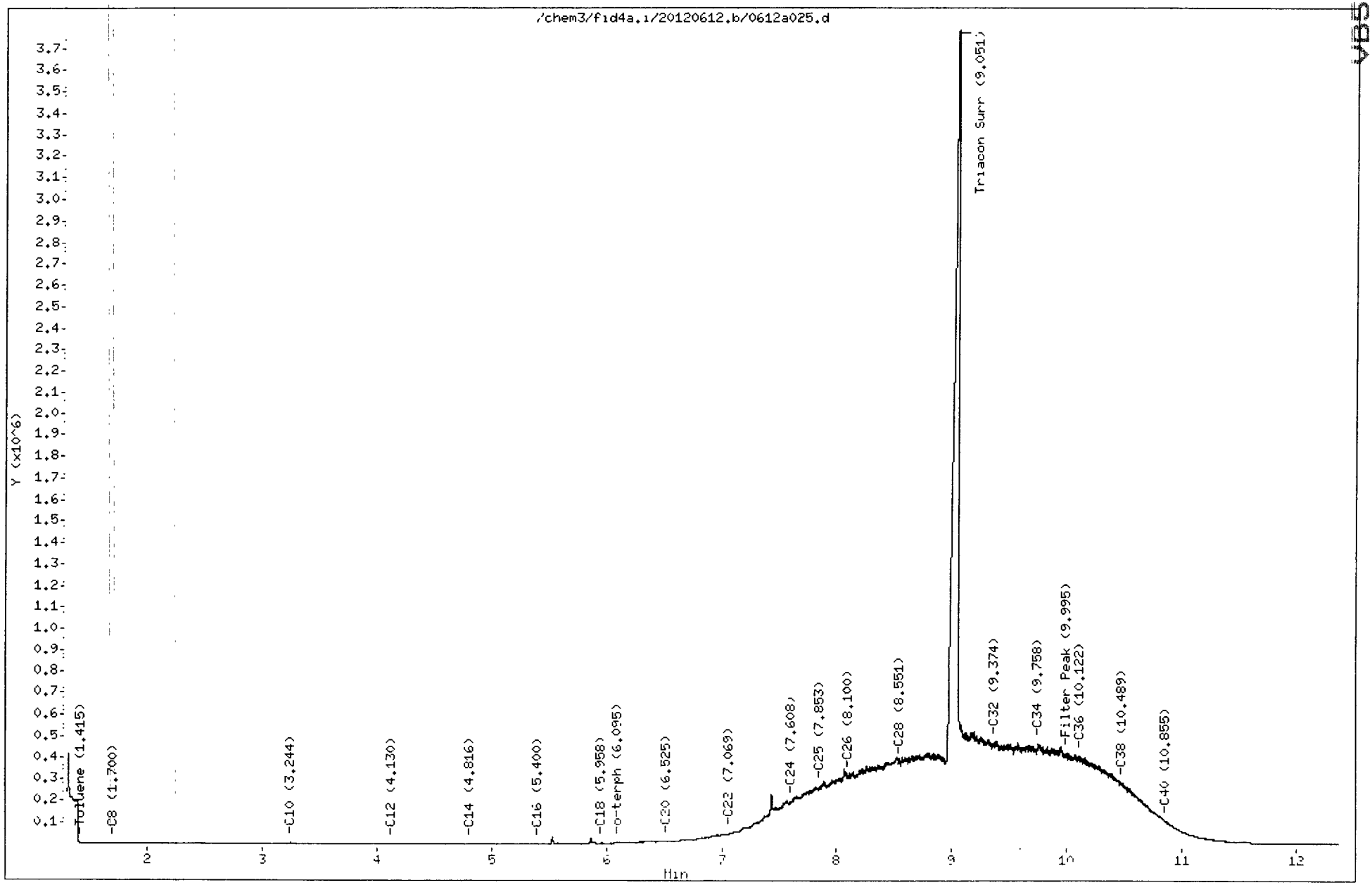
Data File: /chem3/fid4a.i/20120612.b/0612a025.d
Date : 12-JUN-2012 18:49
Client ID:
Sample Info: MOIL 5000

Instrument: fid4a.i

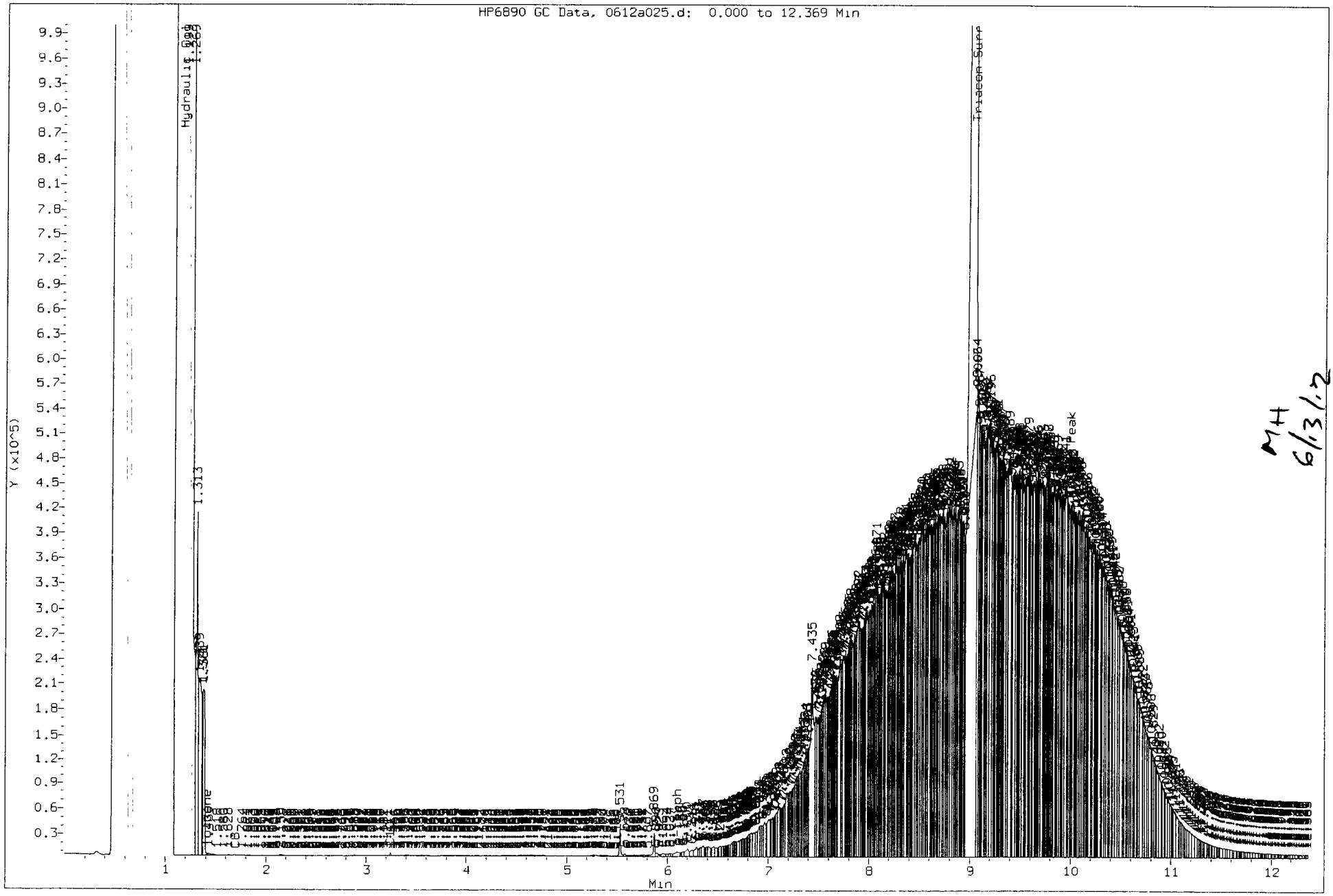
Operator: MH
Column diameter: 0.25

Column phase: RTX-1

VB51 : 060616



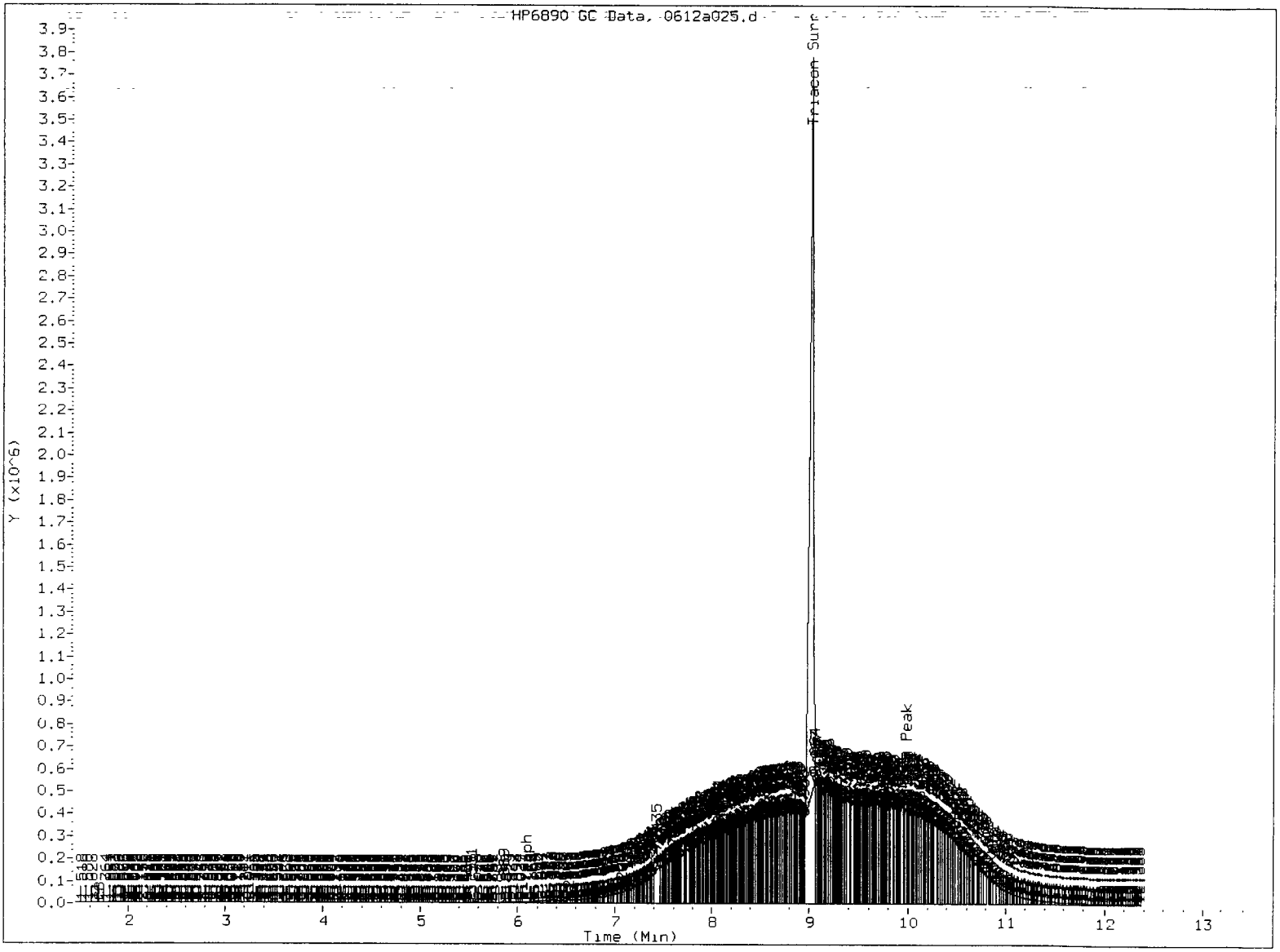
Data File: /chem3/fid4a.i/20120612.b/0612a025.d
Injection Date: 12-JUN-2012 18:49
Instrument: fid4a.i
Client Sample ID:



VB51 : 006417

MH 6/13/12

FID:4A-2C/RTX-1 MOIL 5000 FID:4A SIGNAL



MANUAL INTEGRATION

X Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

MH 6/13/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120612.b/0612a026.d ARI ID: MOIL ICV
Method: /chem3/fid4a.i/20120612.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 12-JUN-2012 19:10
Operator: MH
Report Date: 06/13/2012 Dilution Factor: 1
Macro: 12-JUN-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:12-JUN-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.435	0.015	1695	7253	GAS (Tol-C12)	87042	5.79	
C8	1.712	0.011	316	419	DIESEL (C12-C24)	651584	43.49	
C10	3.252	0.005	421	849	M.OIL (C24-C38)	6123590	487.20	
C12	4.130	0.000	264	414	AK-102 (C10-C25)	886976	50.24	
C14	4.795	-0.011	196	278	AK-103 (C25-C36)	5072025	594.05	M
C16	5.393	0.001	450	784				
C18	5.959	0.000	361	460				
C20	6.527	0.000	1314	1964	JET-A (C10-C18)	29675	2.00	
C22	7.086	0.008	7010	12092	MIN.OIL (C24-C38)	6123590	455.60	M
C24	7.600	-0.002	20121	19733				
C25	7.853	-0.002	25635	20690				
C26	8.093	-0.002	28903	19175				
C28	8.551	0.001	34278	15504				
C32	9.364	-0.009	42756	28475				
C34	9.752	-0.003	44010	21691				
Filter Peak	10.004	0.007	43656	30953	CREOSOT (C12-C22)	176797	48.12	
C36	10.122	-0.006	41987	11586				
C38	10.483	-0.008	38261	22625				
C40	10.837	-0.009	31170	53882				
o-terph	6.099	-0.003	442	878				
Triacon Surr	8.971	-0.011	743437	653756				

M Indicates manual integration within range.
Range Times: NW Diesel(4.131 - 7.602) AK102(3.25 - 7.85) Jet A(3.25 - 5.96)
NW M.Oil(7.60 - 10.49) AK103(7.85 - 10.13) OR Diesel(3.25 - 8.55)

Surrogate	Area	Amount	%Rec
o-Terphenyl	878	0.0	0.1
Triacontane	653756	34.3	76.1

Analyte	RF	Curve Date
o-Terph Surr	21021.3	12-JUN-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14983.0	12-JUN-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17655.0	12-JUN-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120612.b/0612a026.d

Date : 12-JUN-2012 19:10

Client ID:

Sample Info: MOIL ICV

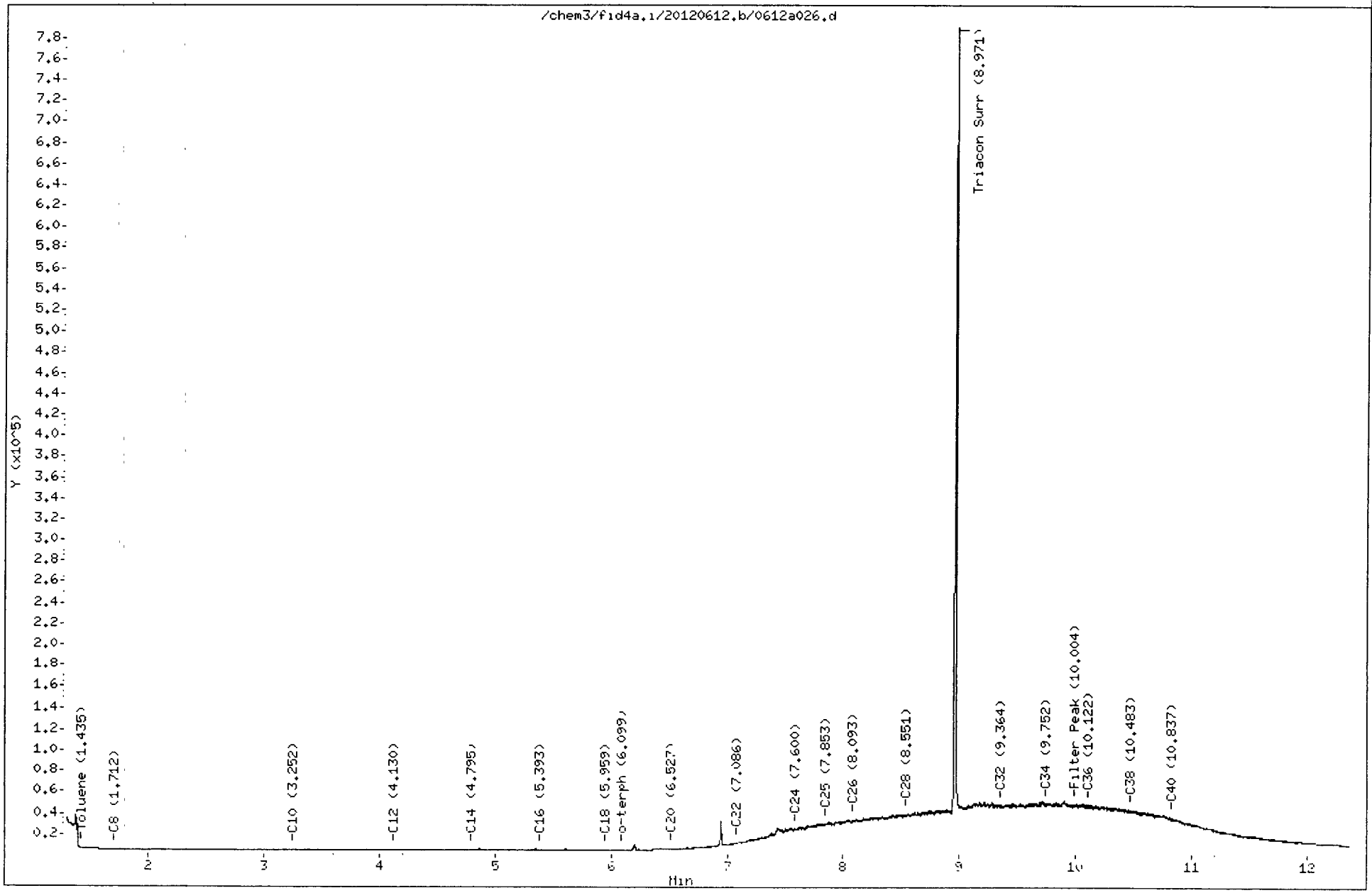
Instrument: fid4a.i

Operator: MH

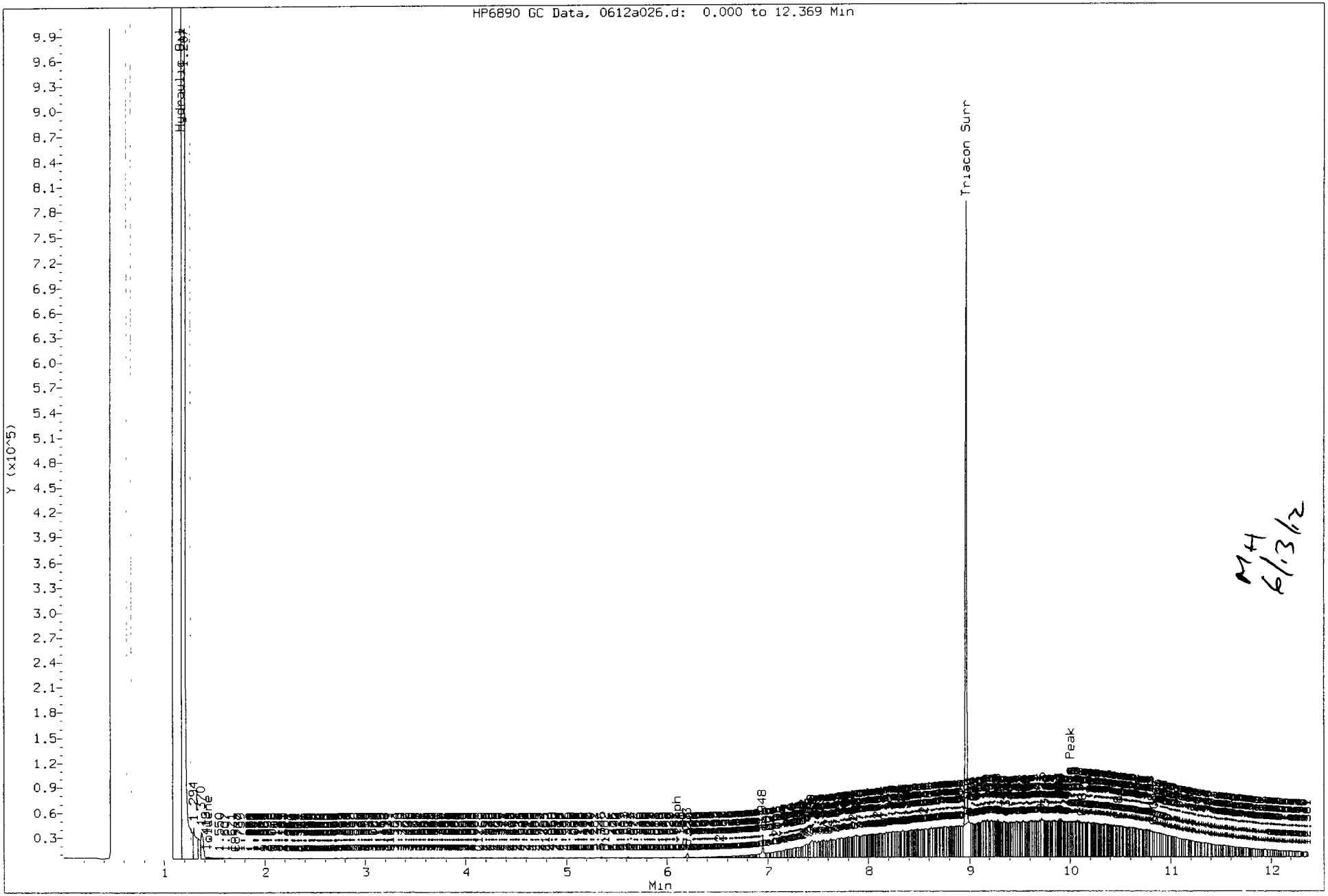
Column phase: RTX-1

Column diameter: 0.25

VB51:00650



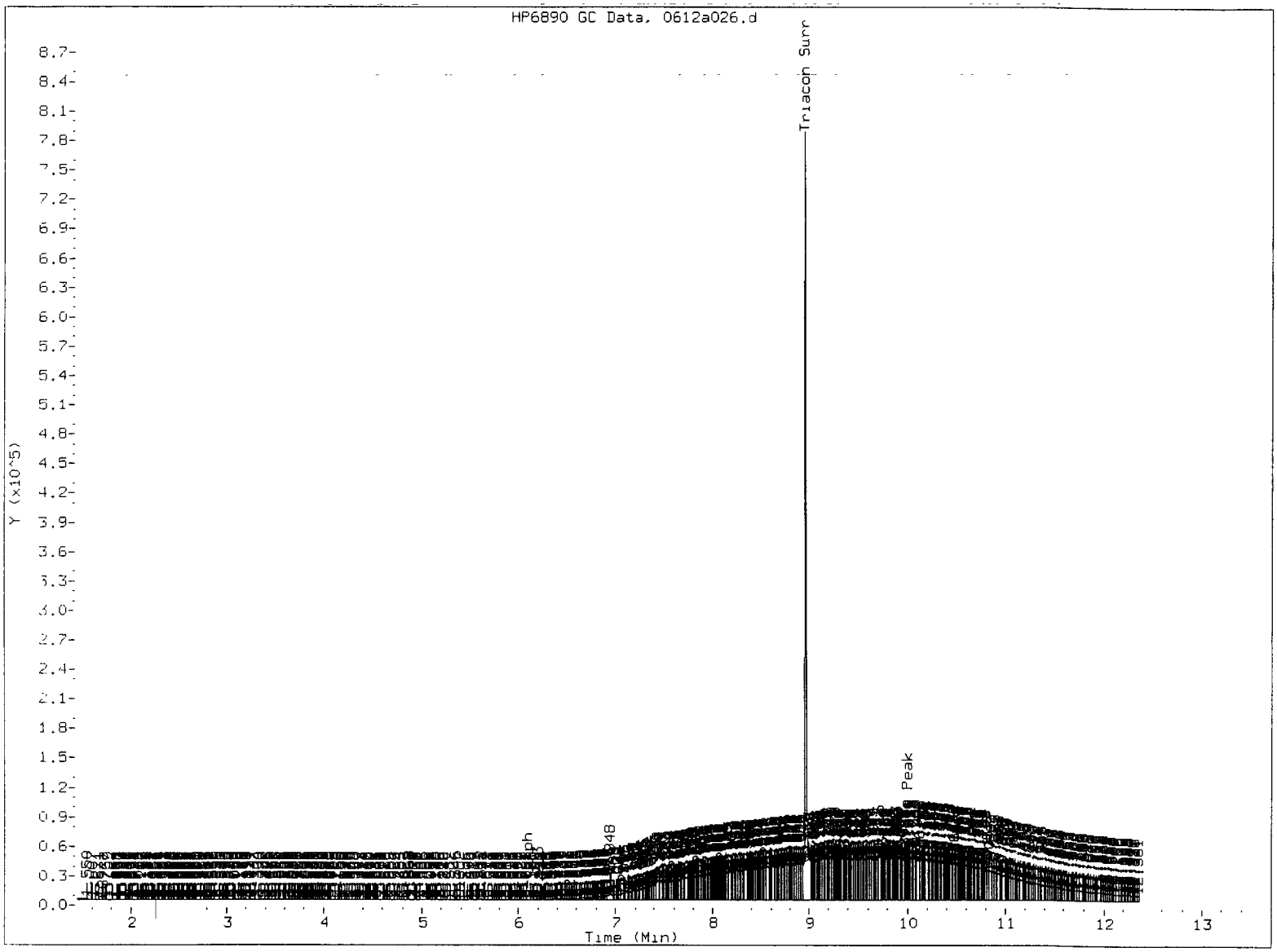
Data File: /chem3/fid4a.i/20120612.b/0612a026.d
Injection Date: 12-JUN-2012 19:10
Instrument: fid4a.i
Client Sample ID:



VB51 : 00651

MH 6/13/12

FID:4A-2C/RTX-1 MOIL ICV FID:4A SIGNAL



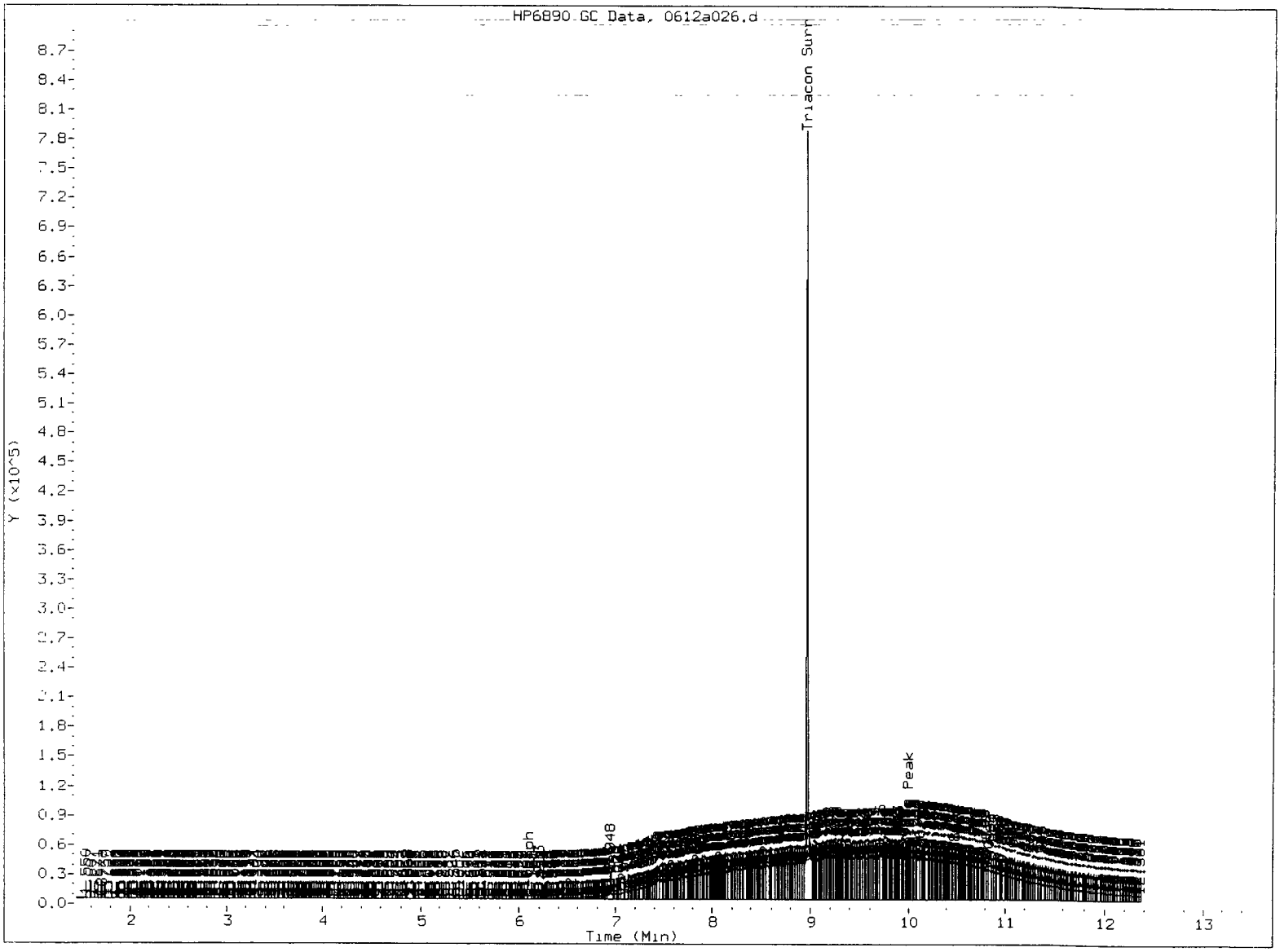
MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

FID:4A-2C/RTX-1 MOIL ICV FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 6/13/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20120612.b
Inst ID: fid4a.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME	0612a020	0612a021	0612a022	0612a023	0612a024	0612a025
INJ.DATE.	12-JUN-2012	12-JUN-2012	12-JUN-2012	12-JUN-2012	12-JUN-2012	12-JUN-2012
INJ.TIME	17.01	17:22	17·44	18.06	18.27	18 49

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1	Toluene	1.370	1.374	1 382	1.368	1 377	1.415	1.420	1.320-1.520	1 381	0.018
40	Mineral Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1 050	+++++	+++++
39	Creosote	+++++	+++++	+++++	+++++	+++++	+++++	0.546	0 496-0 596	+++++	+++++
36	JetA	+++++	+++++	+++++	+++++	+++++	+++++	0 787	0.737-0 837	+++++	+++++
37	Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	0.718	0.668-0.768	+++++	+++++
38	Hydraulic Oil	1 165	1.169	1 171	1 164	1 156	1 169	1 165	1.115-1.215	1 165	0.005
2	C8	1.686	1.724	1 708	1 701	1.694	1 700	1 701	1.601-1.801	1.702	0 013
3	C10	3.254	3 254	3.254	3 250	3.245	3 244	3.247	3 197-3 297	3.250	0.005
4	C12	4 138	4 138	4.126	4 120	4.131	4 130	4.131	4 081-4.181	4.131	0 007
5	C14	4 804	4.796	4.793	4 790	4.804	4 816	4.806	4.756-4 856	4 801	0 009
6	C16	5 400	5 386	5.382	5.381	5.388	5.400	5 392	5.342-5.442	5.389	0 009
7	C18	5 967	5.958	5 956	5.958	5 957	5.958	5 959	5.909-6.009	5.959	0 004
$ 8	o-terph	6 103	6.100	6 099	6.098	6.098	6 095	6.103	6.053-6.153	6 099	0 003
9	C20	6.523	6 524	6 522	6.524	6 524	6 525	6 528	6 478-6 578	6 524	0 001
10	C22	7 081	7.076	7.078	7 070	7.078	7 069	7.078	7.028-7.128	7 075	0 005
11	C24	7 599	7 599	7.596	7.600	7.603	7.608	7.602	7 552-7 652	7.601	0 004
12	C25	7 864	7.858	7 857	7.854	7.860	7.853	7.855	7 805-7.905	7.858	0.004

Reviewer 1 MH Date: 6/13/12
Reviewer 2 Date: 6/13/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20120612.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20120612.b
Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
13 C26	8 104	8.089	8 098	8 097	8 094	8.100	8 095	8.045-8.145	8.097	0.005
14 C28	8 554	8.551	8 552	8.555	8 540	8 551	8 550	8 500-8.600	8.551	0 005
$ 15 Triacon Surr	8.961	8.971	8.985	8 994	9 013	9 051	8 983	8 933-9 033	8.996	0.033
16 C32	9.371	9 376	9.367	9.375	9.383	9.374	9.373	9.323-9 423	9 374	0.005
17 C34	9 749	9.760	9.745	9 750	9 745	9 758	9.755	9.705-9.805	9.751	0 006
18 Filter Peak	10 005	9.994	9 999	9.993	9.999	9.995	9 996	9 896-10.096	9.998	0.004
19 C36	10.130	10 121	10 124	10.126	10.131	10.122	10 128	10.078-10.178	10 125	0.004
20 C38	10 488	10.488	10 491	10.492	10.491	10 489	10.491	10.441-10.541	10.490	0 002
21 C40	10 850	10.845	10.839	10.844	10 849	10.855	10 846	10.796-10.896	10.847	0.006
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1 000	0 950-1 050	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0 687	0 637-0 737	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.660	0.610-0.710	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	1 000	0.950-1 050	+++++	+++++
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	1 000	0 950-1 050	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	0.612	0 562-0.662	+++++	+++++

TPHD Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: VB51, VB54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

GC Analyst Notes / Corrective Action Log

ARI Project ID: VB51 - VB54 Client ID: Anchor QEA

ARI SOP: **403S**(PCB) **405S**(Herb) **407S**(TPH-D) **409S**(HCID) **412S**(PCP) **423S**(Pest)
427S(Dir Inj) **428S**(EPH) **432S**(EDB) **Other**

Parameter(s): A/S NWTPHD + MOI

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7

Dates: Curve: 6/12/12 MOI / 7/10/12 Diesel Analysis Start: 7/17/12

Endrin/DDT Breakdown <15%? YES / NO / NA	Method Blank In Control? YES / NO
ICal Meets RF & %RSD Criteria? YES / NO	LCS/LCSD Recovery In Control? YES / NO
CCal Meets RF & %RSD Criteria? YES / NO	Surrogate Recovery In Control? YES / NO
Manual Integrations for ICal? YES / NO	Manual Integrations for Samples? YES / NO
Internal Standard Meets Criteria? YES / NO / NA	Special Analysis Criteria Met? YES / NO / NA

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

Samples VB51K,N, VB54C,F,I,L had 50X, 100X & 200X required.

Additional Details on Reverse: Yes / No

Analyst: _____ **Date:** 7/19/12

Reviewer: _____ **Date:** 7/19

Analytical Chemists and Consultants

GC Analyst Notes / Corrective Action Log

ARI Project ID: VB51 & VB54 Client ID: Anchor QEA, LLC

ARI SOP: **403S**(PCB) **405S**(Herb) **407S**(TPH-D) **409S**(HCID) **412S**(PCP) **423S**(Pest)
427S(Dir Inj) **428S**(EPH) ~~**432S**(EDB)~~ **Other**

Parameter(s): 20g/2mL FV

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7

Dates: Curve: 6/12/2012 & 7/10/2012 Analysis Start: 7/18/2012

Endrin/DDT Breakdown <15%? YES / NO / NA
Method Blank In Control? YES / NO
ICal Meets RF & %RSD Criteria? YES / NO
LCS/LCSD Recovery In Control? YES / NO
CCal Meets RF & %RSD Criteria? YES / NO
Surrogate Recovery In Control? YES / NO
Manual Integrations for ICal? YES / NO
Manual Integrations for Samples? YES / NO
Internal Standard Meets Criteria? YES / NO / NA
Special Analysis Criteria Met? YES / NO / NA Lvl 4 VDP

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

Additional Details on Reverse: Yes / No

Analyst: _____ **Date:** 7/20/2012

Reviewer: VB **Date:** 7/20/12

Form 4060F Version 007 6/18/10

Analytical Resources Inc.: Organics Instrument Log

FID-4A Serial No.: US00003247

Date: 7/17/12 Analysis: NWTPHD Analyst: MH

Column 1 Serial No.: 977444 Column Type: RTX 1

Column 2 Serial No.: — Column Type: —

GC Method: TPH ICal Date: 7/10/12 Diesel 6/12/12 MOil Injection Volume: 1µl

IS

Ical/Ccal

1931-2
1960-1
1993-1
1971-3

ICV

Document All Maintenance Tasks In StarLIMS

	Inject Date/Time	Filename	DF	LabID
1	17-JUL-2012 06:36	0717a001.d	1	RINSE
2	17-JUL-2012 06:57	0717a002.d	1	RT
3	17-JUL-2012 07:18	0717a003.d	1	IB
4	17-JUL-2012 07:40	0717a004.d	1	DIESEL #1
5	17-JUL-2012 08:01	0717a005.d	1	MOIL #1
6	17-JUL-2012 08:23	0717a006.d	1	BUNKERC #1
7	17-JUL-2012 09:20	0717a007.d	1	VB75MBW1
8	17-JUL-2012 09:41	0717a008.d	1	VB75LCSW1
9	17-JUL-2012 10:03	0717a009.d	1	VB75LCSDW1
10	17-JUL-2012 10:24	0717a010.d	1	VB75QLS
11	17-JUL-2012 10:46	0717a011.d	1	VB75A
12	17-JUL-2012 11:08	0717a012.d	1	VB95MBW1
13	17-JUL-2012 11:29	0717a013.d	1	VB95LCSW1
14	17-JUL-2012 11:51	0717a014.d	1	VB95LCSDW1
15	17-JUL-2012 12:13	0717a015.d	1	VB95B
16	17-JUL-2012 12:34	0717a016.d	1	VB95F
17	17-JUL-2012 12:56	0717a017.d	1	VB95J
18	17-JUL-2012 13:18	0717a018.d	1	DIESEL #2
19	17-JUL-2012 13:39	0717a019.d	1	MOIL #2
20	17-JUL-2012 14:01	0717a020.d	1	BUNKERC #2
21	17-JUL-2012 14:23	0717a021.d	1	VB51MBS2
22	17-JUL-2012 14:44	0717a022.d	1	VB51LCSS2
23	17-JUL-2012 15:06	0717a023.d	1	VB51C
24	17-JUL-2012 15:27	0717a024.d	1	VB51CMS
25	17-JUL-2012 15:49	0717a025.d	1	VB51CMSD
26	17-JUL-2012 16:10	0717a026.d	1	VB51H
27	17-JUL-2012 16:32	0717a027.d	10	VB51K
28	17-JUL-2012 16:53	0717a028.d	10	VB51N
29	17-JUL-2012 17:15	0717a029.d	5	VB54C
30	17-JUL-2012 17:36	0717a030.d	5	VB54F
31	17-JUL-2012 17:57	0717a031.d	1	DIESEL #3
32	17-JUL-2012 18:19	0717a032.d	1	MOIL #3
33	17-JUL-2012 18:40	0717a033.d	5	VB54I
34	17-JUL-2012 19:02	0717a034.d	5	VB54L
35	17-JUL-2012 19:23	0717a035.d	1	VB54P
36	17-JUL-2012 19:45	0717a036.d	1	VB54S
37	17-JUL-2012 20:06	0717a037.d	1	VB54V
38	17-JUL-2012 20:27	0717a038.d	1	VB51MBS1
39	17-JUL-2012 20:49	0717a039.d	1	VB51LCSS1
40	17-JUL-2012 21:10	0717a040.d	1	VB51B
41	17-JUL-2012 21:32	0717a041.d	1	VB51BMS
42	17-JUL-2012 21:53	0717a042.d	1	VB51BMSD
43	17-JUL-2012 22:15	0717a043.d	1	DIESEL #4
44	17-JUL-2012 22:36	0717a044.d	1	MOIL #4
45	17-JUL-2012 22:57	0717a045.d	1	VB51G
46	17-JUL-2012 23:19	0717a046.d	50	VB51J
47	17-JUL-2012 23:40	0717a047.d	10	VB51M
48	18-JUL-2012 00:02	0717a048.d	5	VB54B
49	18-JUL-2012 00:23	0717a049.d	5	VB54E
50	18-JUL-2012 00:45	0717a050.d	5	VB54H
51	18-JUL-2012 01:06	0717a051.d	5	VB54K
52	18-JUL-2012 01:27	0717a052.d	5	VB54O
53	18-JUL-2012 01:49	0717a053.d	1	VB54R
54	18-JUL-2012 02:10	0717a054.d	1	VB54U
55	18-JUL-2012 02:32	0717a055.d	1	DIESEL #5
56	18-JUL-2012 02:53	0717a056.d	1	MOIL #5
57	18-JUL-2012 03:15	0717a057.d	10	VB51J
58	18-JUL-2012 03:36	0717a058.d	1	VC17MBS1
59	18-JUL-2012 03:58	0717a059.d	1	VC17LCS1
60	18-JUL-2012 04:19	0717a060.d	1	VC17LCSDS1
61	18-JUL-2012 04:41	0717a061.d	50	VC17A
62	18-JUL-2012 05:02	0717a062.d	50	VC17B
63	18-JUL-2012 05:23	0717a063.d	50	VC17C
64	18-JUL-2012 05:45	0717a064.d	1	DIESEL #6
65	18-JUL-2012 06:07	0717a065.d	1	MOIL #6
66	18-JUL-2012 06:28	0717a066.d	1	LOT CHK
67	18-JUL-2012 06:50	0717a067.d	1	VB19MBS1
68	18-JUL-2012 07:11	0717a068.d	1	VB19LCSS1
69	18-JUL-2012 07:33	0717a069.d	1	VB19LCSDS1
70	18-JUL-2012 07:55	0717a070.d	1	VB19QLS
71	18-JUL-2012 08:16	0717a071.d	5	VB19A
72	18-JUL-2012 08:38	0717a072.d	5	VB19B
73	18-JUL-2012 08:59	0717a073.d	1	DIESEL #7
74	18-JUL-2012 09:21	0717a074.d	1	MOIL #7

MH 7/19/12

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

Analytical Resources Inc.: Organics Instrument Log

FID-4A Serial No.: US00003247

Date: 7/18/12 Analysis: NWTPHD Analyst: MH

Column 1 Serial No.: 977444 Column Type: RTX-1

Column 2 Serial No.: ——— Column Type: ———

GC Method: TPH ICal Date: 7/10/12 DIESEL 6/12/12 MOIL Injection Volume: 1µl

IS

Ical/Ccal

1931-2
1960-1
1993-1
1971-3

ICV

Document All Mainten

	Inject Date/Time	Filename	DF	LabID
1	18-JUL-2012 09:43	0717a075.d	1	RT
2	18-JUL-2012 10:04	0717a076.d	1	IB
3	18-JUL-2012 10:26	0717a077.d	1	DIESEL #8
4	18-JUL-2012 10:47	0717a078.d	1	MOIL #8
5	18-JUL-2012 11:09	0717a079.d	1	VB36MBS1
6	18-JUL-2012 11:30	0717a080.d	1	VB36LCSS1
7	18-JUL-2012 11:52	0717a081.d	1	VB36LCSDS1
8	18-JUL-2012 12:14	0717a082.d	10	VC17A
9	18-JUL-2012 12:35	0717a083.d	250	VC17C
10	18-JUL-2012 12:57	0717a084.d	1	DIESEL #9
11	18-JUL-2012 13:19	0717a085.d	1	MOIL #9
12	18-JUL-2012 13:40	0717a086.d	5	VB36A
13	18-JUL-2012 14:02	0717a087.d	5	VB36B
14	18-JUL-2012 14:23	0717a088.d	5	VB45A
15	18-JUL-2012 14:45	0717a089.d	5	VB45B
16	18-JUL-2012 15:06	0717a090.d	5	VB45C
17	18-JUL-2012 15:28	0717a091.d	10	VB51H
18	18-JUL-2012 15:49	0717a092.d	200	VB51K
19	18-JUL-2012 16:10	0717a093.d	100	VB51N
20	18-JUL-2012 16:32	0717a094.d	50	VB54C 2nd
21	18-JUL-2012 16:53	0717a095.d	50	VB54F 2nd
22	18-JUL-2012 17:14	0717a096.d	1	DIESEL #10
23	18-JUL-2012 17:36	0717a097.d	1	MOIL #10
24	18-JUL-2012 17:57	0717a098.d	50	VB54I
25	18-JUL-2012 18:18	0717a099.d	50	VB54L
26	18-JUL-2012 18:39	0717a100.d	5	VB54S
27	18-JUL-2012 19:01	0717a101.d	5	VB54V
28	18-JUL-2012 19:22	0717a102.d	10	VB51G
29	18-JUL-2012 19:44	0717a103.d	250	VB51J
30	18-JUL-2012 20:05	0717a104.d	100	VB51M
31	18-JUL-2012 20:27	0717a105.d	50	VB54B
32	18-JUL-2012 20:48	0717a106.d	50	VB54E
33	18-JUL-2012 21:10	0717a107.d	50	VB54H
34	18-JUL-2012 21:31	0717a108.d	1	DIESEL #11
35	18-JUL-2012 21:53	0717a109.d	1	MOIL #11
36	18-JUL-2012 22:15	0717a110.d	1	BUNKERC #3
37	18-JUL-2012 22:36	0717a111.d	100	VB54K
38	18-JUL-2012 22:57	0717a112.d	5	VB54R
39	18-JUL-2012 23:19	0717a113.d	5	VB54U
40	18-JUL-2012 23:40	0717a114.d	1	VB95MBS1
41	19-JUL-2012 00:02	0717a115.d	1	VB95LCSS1
42	19-JUL-2012 00:23	0717a116.d	1	VB95LCSDS1
43	19-JUL-2012 00:45	0717a117.d	1	VB95C
44	19-JUL-2012 01:06	0717a118.d	1	VB95G
45	19-JUL-2012 01:28	0717a119.d	1	VB95K
46	19-JUL-2012 01:49	0717a120.d	1	DIESEL #12
47	19-JUL-2012 02:11	0717a121.d	1	MOIL #12
48	19-JUL-2012 02:33	0717a122.d	1	BUNKERC #4
49	19-JUL-2012 02:54	0717a123.d	1	VC16MBW1
50	19-JUL-2012 03:16	0717a124.d	1	VC16LCSW1
51	19-JUL-2012 03:37	0717a125.d	1	VC16QLS
52	19-JUL-2012 03:58	0717a126.d	1	VC16A
53	19-JUL-2012 04:20	0717a127.d	1	VB37MBS1
54	19-JUL-2012 04:41	0717a128.d	1	VB37LCSS1
55	19-JUL-2012 05:03	0717a129.d	5	VB37A
56	19-JUL-2012 05:24	0717a130.d	5	VB37B
57	19-JUL-2012 05:46	0717a131.d	5	VB37C
58	19-JUL-2012 06:07	0717a132.d	1	DIESEL #13
59	19-JUL-2012 06:28	0717a133.d	1	MOIL #13
60	19-JUL-2012 06:50	0717a134.d	1	VC07MBS1
61	19-JUL-2012 07:11	0717a135.d	1	VC07LCSS1
62	19-JUL-2012 07:33	0717a136.d	1	VC07LCSDS1
63	19-JUL-2012 07:54	0717a137.d	1	DIESEL #14
64	19-JUL-2012 08:15	0717a138.d	1	MOIL #14

MH 7/19/12

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a002.d ARI ID: RT
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 17-JUL-2012 06:57
Operator: MH
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.390	0.000	405423	357573	GAS (Tol-C12)	1273046	84.62
C8	1.668	0.000	202878	238265	DIESEL (C12-C24)	1570942	107.23
C10	3.228	0.000	320185	205595	M.OIL (C24-C38)	2122890	168.90
C12	4.118	0.000	298891	235073	AK-102 (C10-C25)	2085010	120.53
C14	4.795	0.000	315228	246466	AK-103 (C25-C36)	1805535	211.47
C16	5.381	0.000	345715	251166			
C18	5.946	0.000	349495	256658			
C20	6.515	0.000	303529	258790	JET-A (C10-C18)	1279921	86.24
C22	7.067	0.000	301551	259018	MIN.OIL (C24-C38)	2122890	157.95
C24	7.592	0.000	317007	263514			
C25	7.844	0.000	409094	354415			
C26	8.085	0.000	301296	266807			
C28	8.539	0.000	305061	267409			
C32	9.347	0.000	299564	273735			
C34	9.721	0.000	287237	284335			
Filter Peak	9.921	0.000	3061	7377	BUNKERC (C10-C38)	4202249	550.47
C36	10.083	0.000	279676	293613			
C38	10.435	0.000	250860	283169			
C40	10.782	0.000	230912	274936			
o-terph	6.091	0.000	972763	888380			
Triacon Surr	8.965	0.000	829536	836357			

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	888380	43.6	96.9
Triacontane	836357	43.8	97.4

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a002.d

Date : 17-JUL-2012 06:57

Client ID:

Sample Info: RT

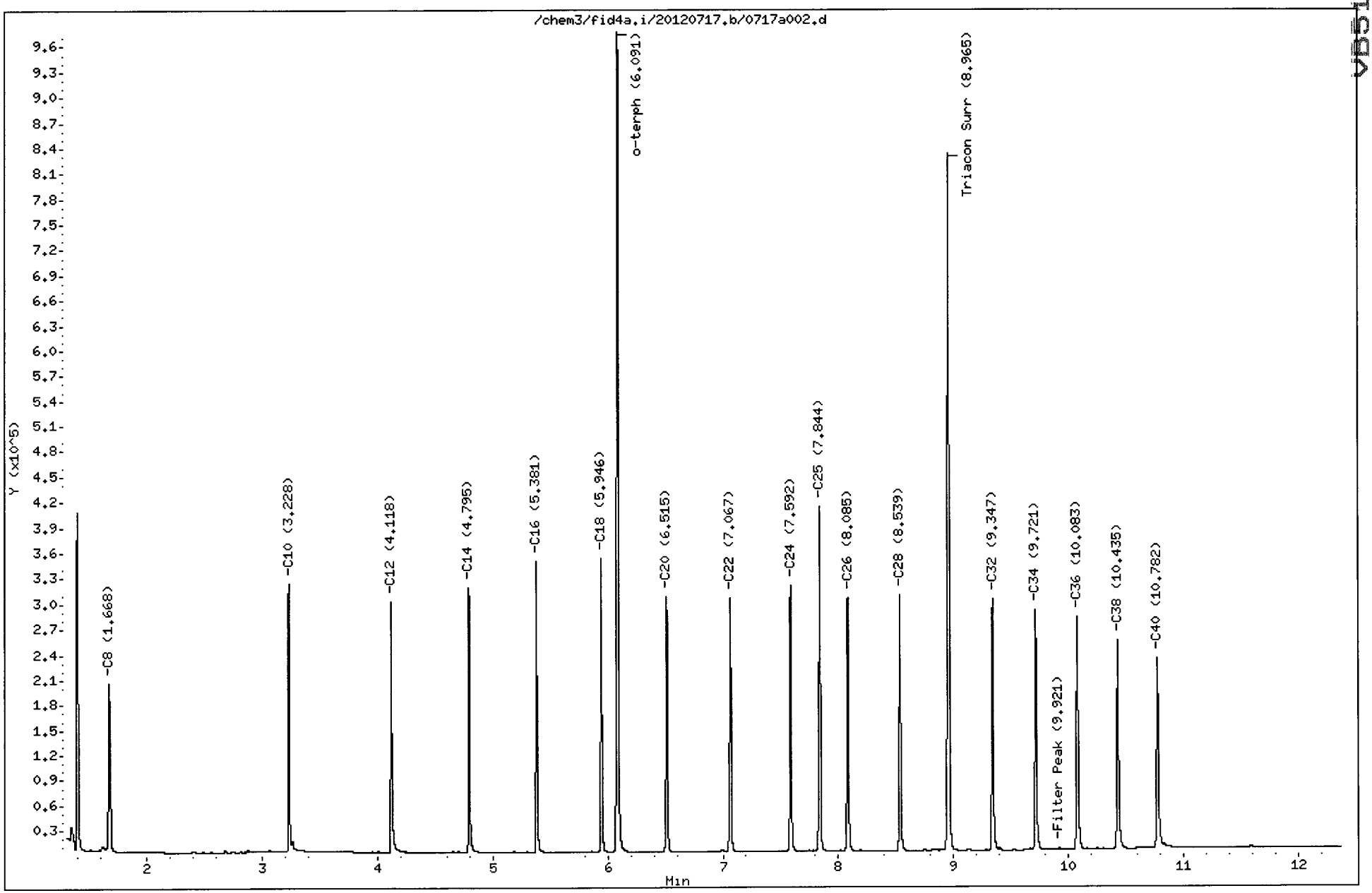
Column phase: RTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25

VB51 : 00662



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a003.d ARI ID: IB
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 17-JUL-2012 07:18
Operator: MH
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.365	-0.026	49589	57387	GAS (Tol-C12)	341375	22.69
C8	1.679	0.011	2326	6195	DIESEL (C12-C24)	32344	2.21
C10	3.236	0.007	3174	9668	M.OIL (C24-C38)	82018	6.53
C12	4.132	0.014	309	400	AK-102 (C10-C25)	127808	7.39
C14	4.787	-0.008	155	134	AK-103 (C25-C36)	53322	6.25
C16	5.389	0.009	279	555			
C18	5.944	-0.002	278	393			
C20	6.509	-0.006	287	403	JET-A (C10-C18)	112737	7.60
C22	7.060	-0.007	119	122	MIN.OIL (C24-C38)	82018	6.10
C24	7.604	0.012	62	63			
C25	7.850	0.006	101	59			
C26	8.086	0.001	82	92			
C28	8.530	-0.009	705	832			
C32	9.344	-0.003	752	1295			
C34	9.708	-0.013	701	1062			
Filter Peak	9.934	0.013	1579	3646	BUNKERC (C10-C38)	209570	27.45
C36	10.090	0.007	825	1497			
C38	10.427	-0.008	2218	4249			
C40	10.753	-0.028	2364	1971			
o-terph	6.091	0.000	983917	907231			
Triacon Surr	8.968	0.003	838341	890671			

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	907231	44.5	99.0
Triacontane	890671	46.7	103.7

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

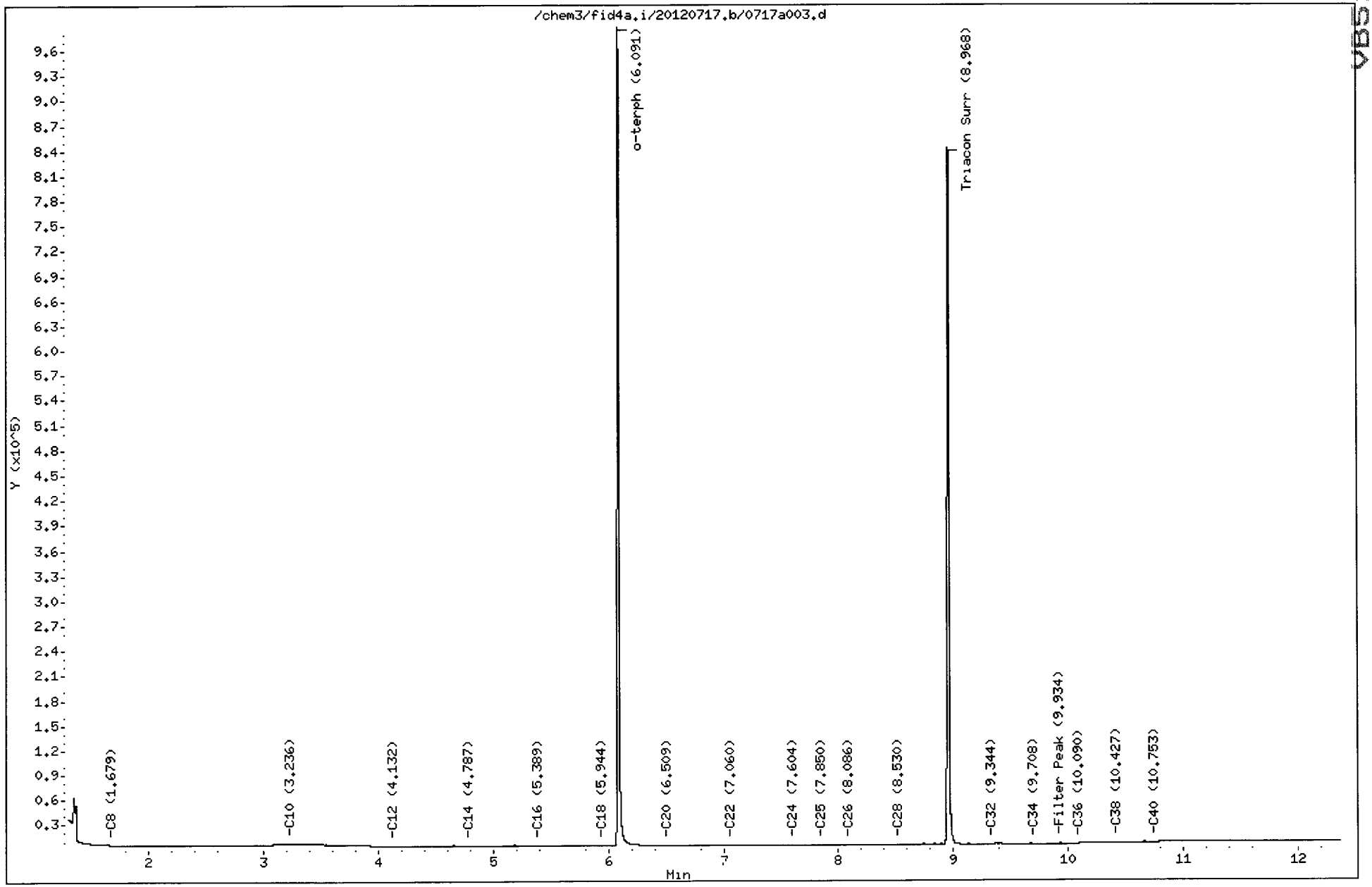
Data File: /chem3/fid4a.i/20120717.b/0717a003.d
Date : 17-JUL-2012 07:18
Client ID:
Sample Info: IB

Instrument: fid4a.i

Operator: MH
Column diameter: 0.25

Column phase: RTX-1

VBS1 : 00664



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a018.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: DIESEL #2
Client ID:
Injection: 17-JUL-2012 13:18
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.426	0.035	3097	7040	GAS (Tol-C12)	858141	57.04
C8	1.695	0.027	2206	4678	DIESEL (C12-C24)	3435959	234.54
C10	3.234	0.006	20531	17104	M.OIL (C24-C38)	80350	6.39
C12	4.119	0.001	45265	37014	AK-102 (C10-C25)	4030682	233.00 M
C14	4.792	-0.003	70494	72786	AK-103 (C25-C36)	39028	4.57
C16	5.378	-0.002	107082	96828			
C18	5.944	-0.002	89295	94398			
C20	6.511	-0.004	55914	80127	JET-A (C10-C18)	3032000	204.29
C22	7.065	-0.003	25557	34062	MIN.OIL (C24-C38)	80350	5.98
C24	7.597	0.006	5164	13821			
C25	7.852	0.008	2158	6436			
C26	8.079	-0.006	440	321			
C28	8.531	-0.008	369	338			
C32	9.347	0.000	145	84			
C34	9.730	0.009	388	523			
Filter Peak	9.924	0.002	453	186	BUNKERC (C10-C38)	4099499	537.01 M
C36	10.094	0.011	639	1195			
C38	10.461	0.027	1465	3002			
C40	10.782	0.001	1497	1030			
o-terph	6.093	0.002	1049987	889166			
Triacon Surr	8.963	-0.002	51	29			

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	889166	43.6	97.0
Triacontane	29	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a018.d

Date : 17-JUL-2012 13:18

Client ID:

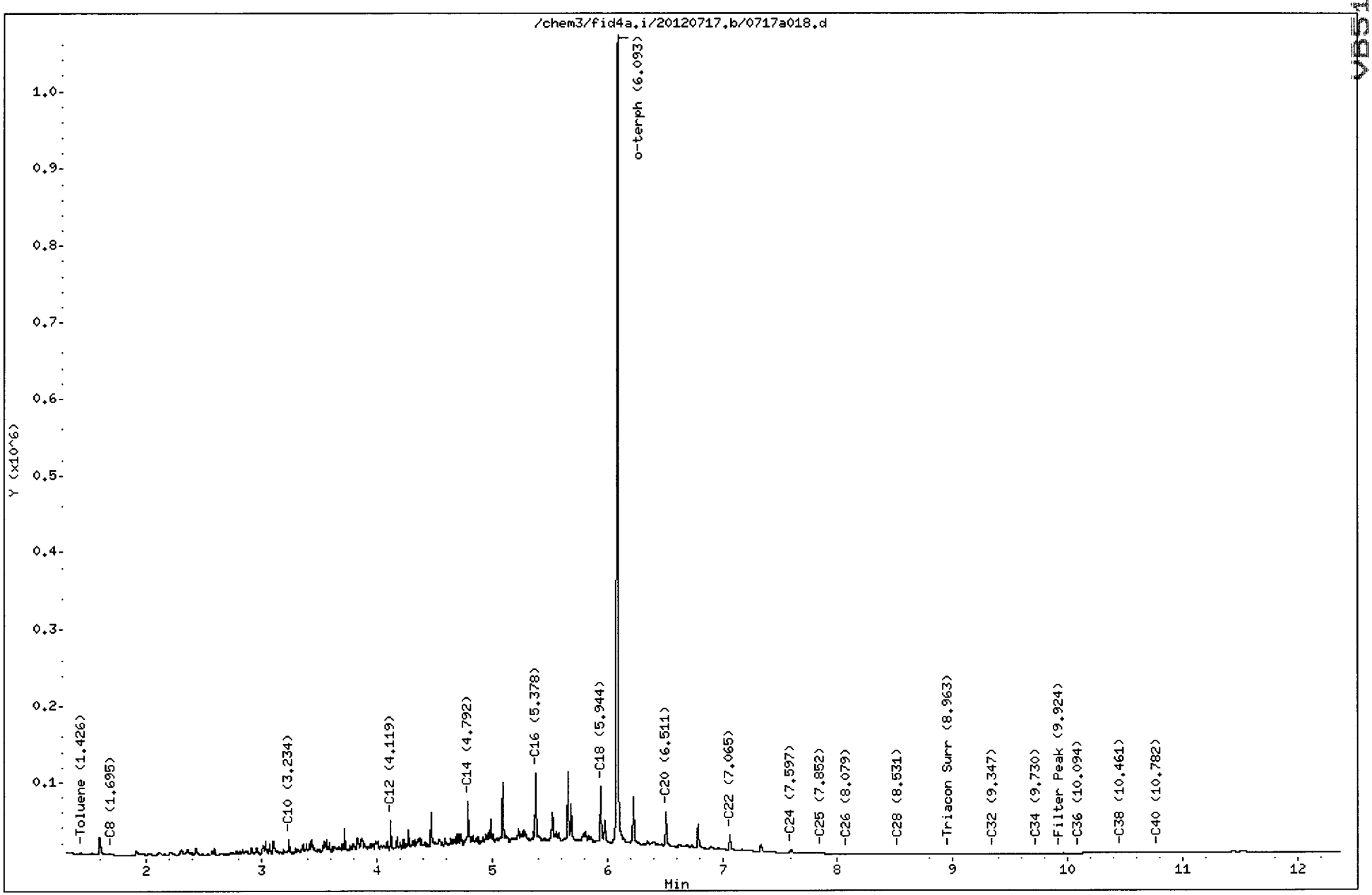
Sample Info: DIESEL #2

Column phase: RTX-1

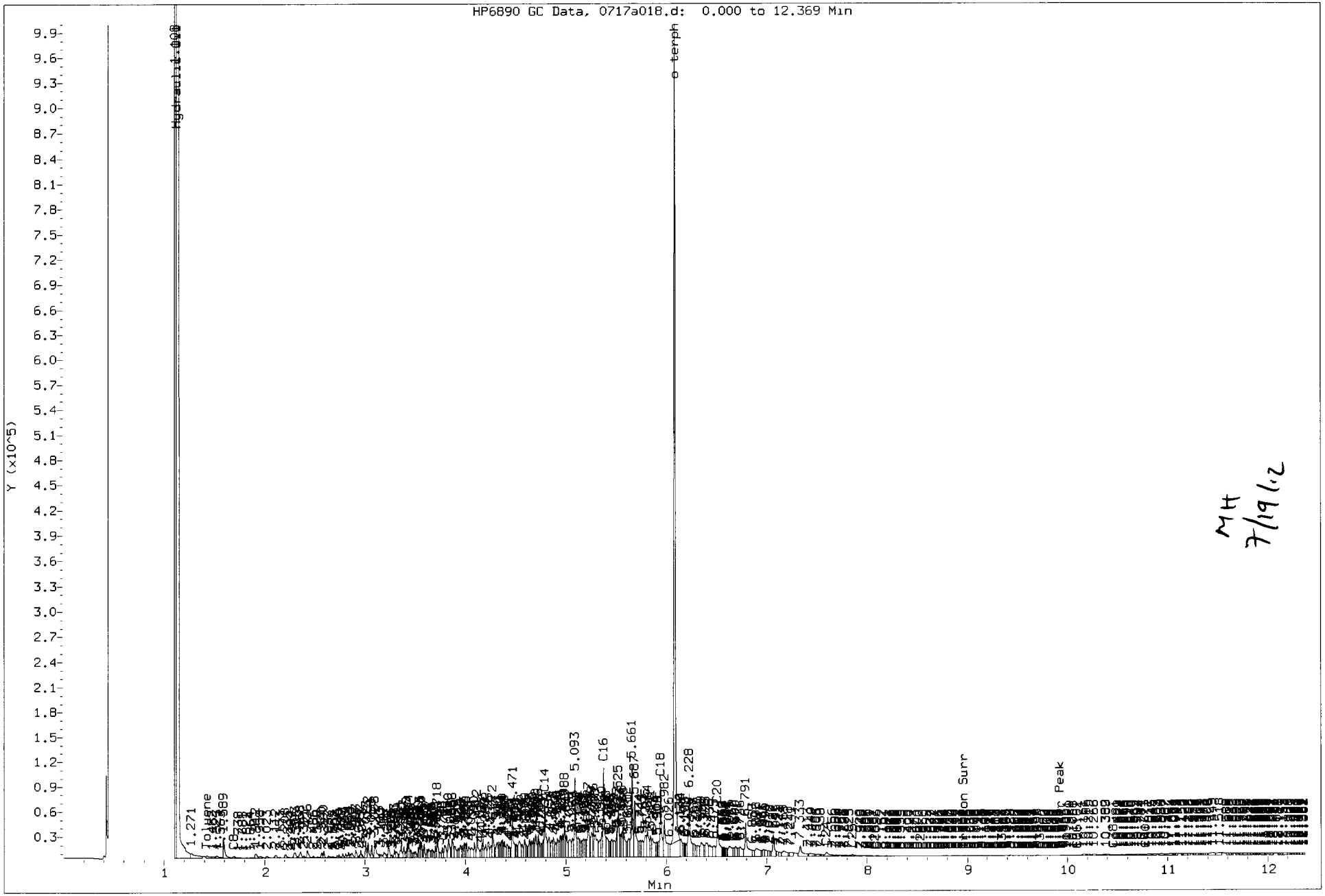
Instrument: fid4a.i

Operator: AR

Column diameter: 0.25



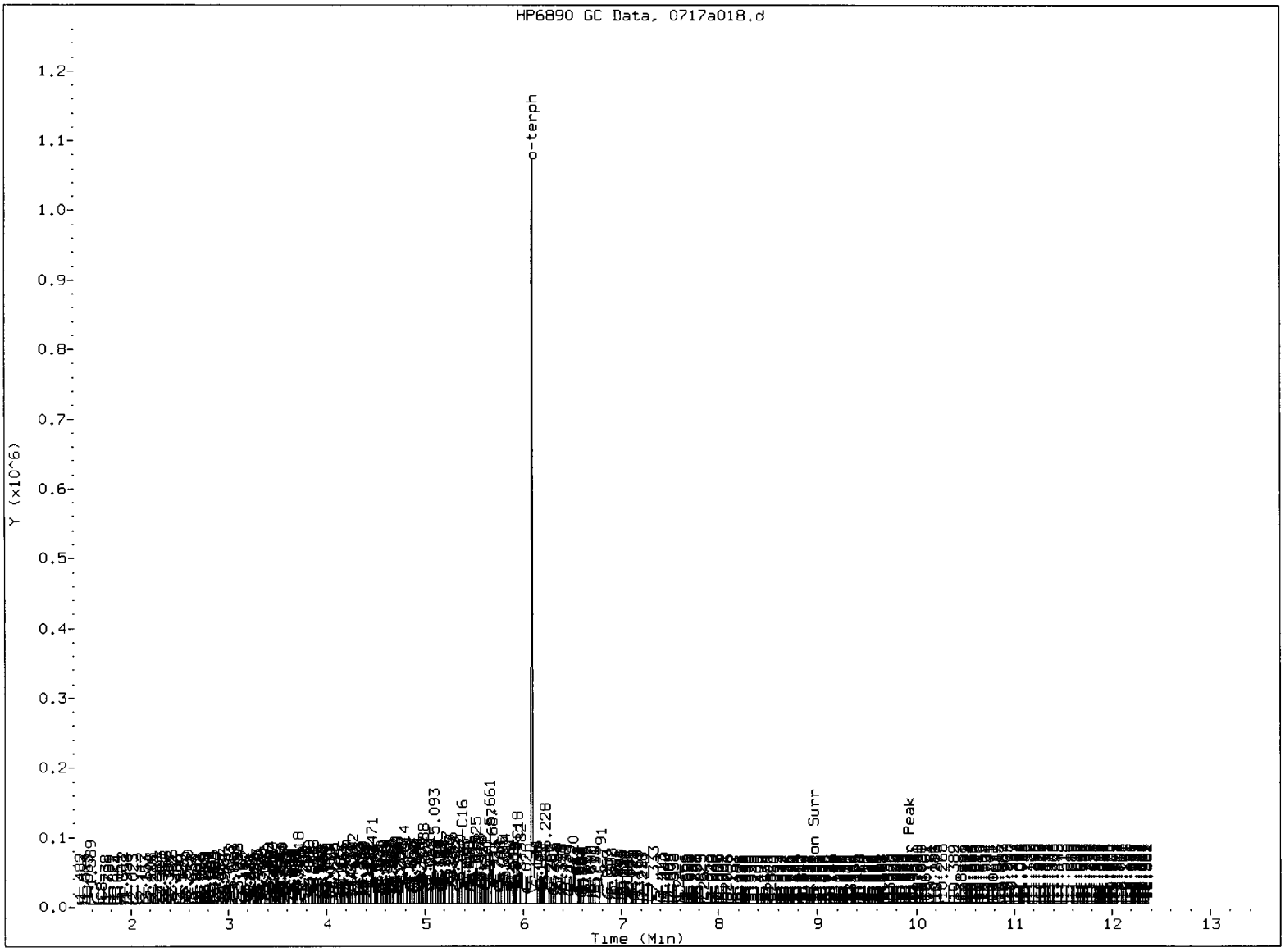
Data File: /chem3/fid4a.i/20120717.b/0717a018.d
Injection Date: 17-JUL-2012 13:18
Instrument: fid4a.i
Client Sample ID:



MH
7/19/12

VB51 : 006657

FID:4A-2C/RTX-1 DIESEL #2 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a019.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: MOIL #2
Client ID:
Injection: 17-JUL-2012 13:39
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.347	-0.043	50771	125179	GAS (Tol-C12)	268759	17.86	
C8	----				DIESEL (C12-C24)	548728	37.46	
C10	3.237	0.009	2523	4984	M.OIL (C24-C38)	6231565	495.79	
C12	4.116	-0.002	381	553	AK-102 (C10-C25)	810521	46.85	
C14	4.801	0.006	145	144	AK-103 (C25-C36)	5269872	617.23	M
C16	5.380	0.000	79	92				
C18	5.944	-0.001	233	179				
C20	6.513	-0.003	1119	2045	JET-A (C10-C18)	75896	5.11	
C22	7.068	0.001	4968	2733	MIN.OIL (C24-C38)	6231565	463.63	M
C24	7.588	-0.004	19248	12030				
C25	7.837	-0.007	26000	14751				
C26	8.082	-0.003	30870	14508				
C28	8.544	0.005	37288	19131				
C32	9.348	0.001	44508	17291				
C34	9.727	0.006	43270	28739				
Filter Peak	9.917	-0.004	41980	26358	BUNKERC (C10-C38)	6834624	895.29	M
C36	10.079	-0.004	41436	29139				
C38	10.438	0.003	35734	17607				
C40	10.778	-0.003	30224	17737				
o-terph	6.094	0.003	436	1365				
Triacon Surr	8.978	0.013	783993	849488				

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1365	0.1	0.1
Triacontane	849488	44.5	98.9

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

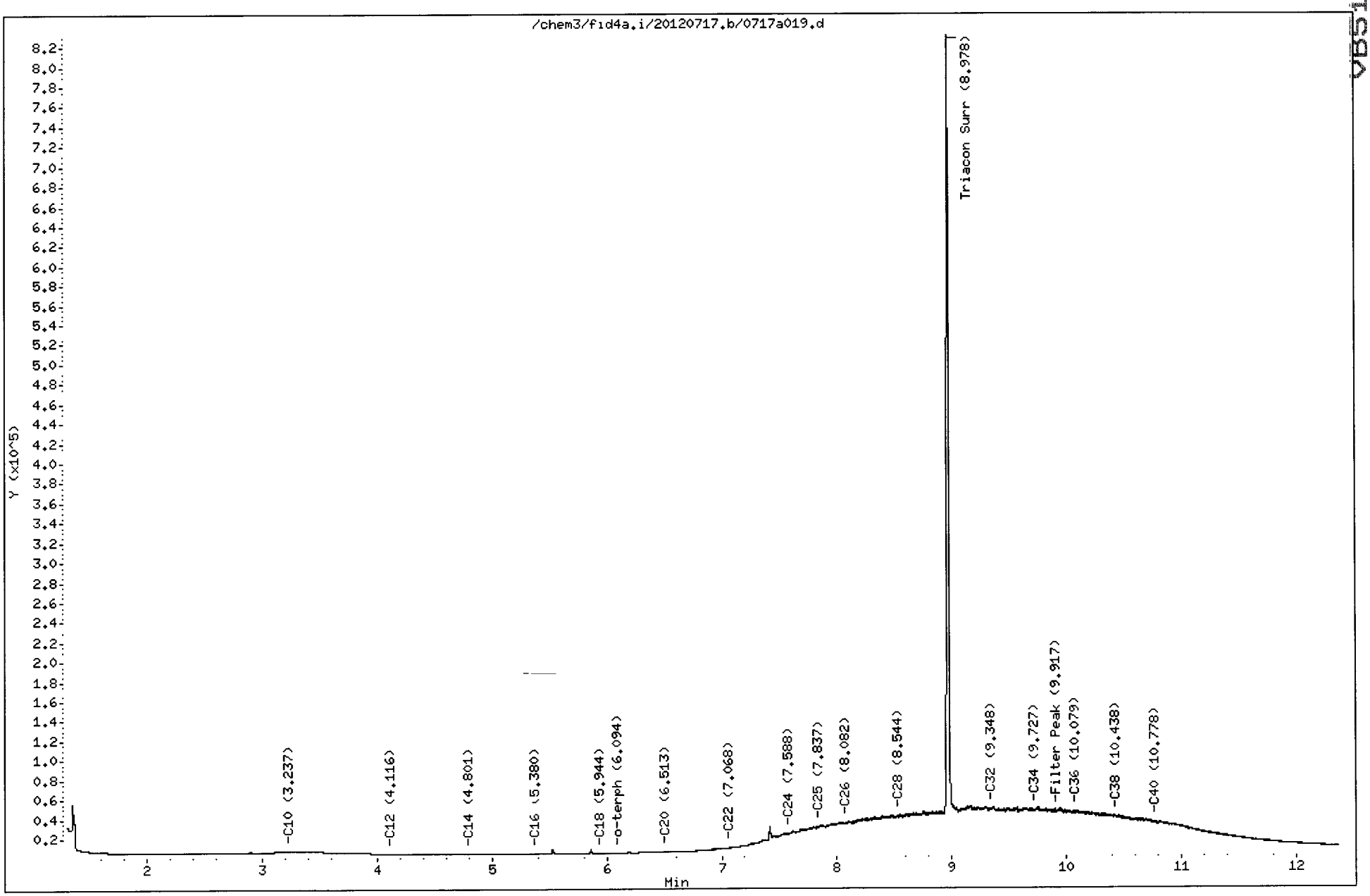
Data File: /chem3/fid4a.i/20120717.b/0717a019.d
Date : 17-JUL-2012 13:39
Client ID:
Sample Info: MOIL #2

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25

Column phase: RTX-1

VBSL : 006670



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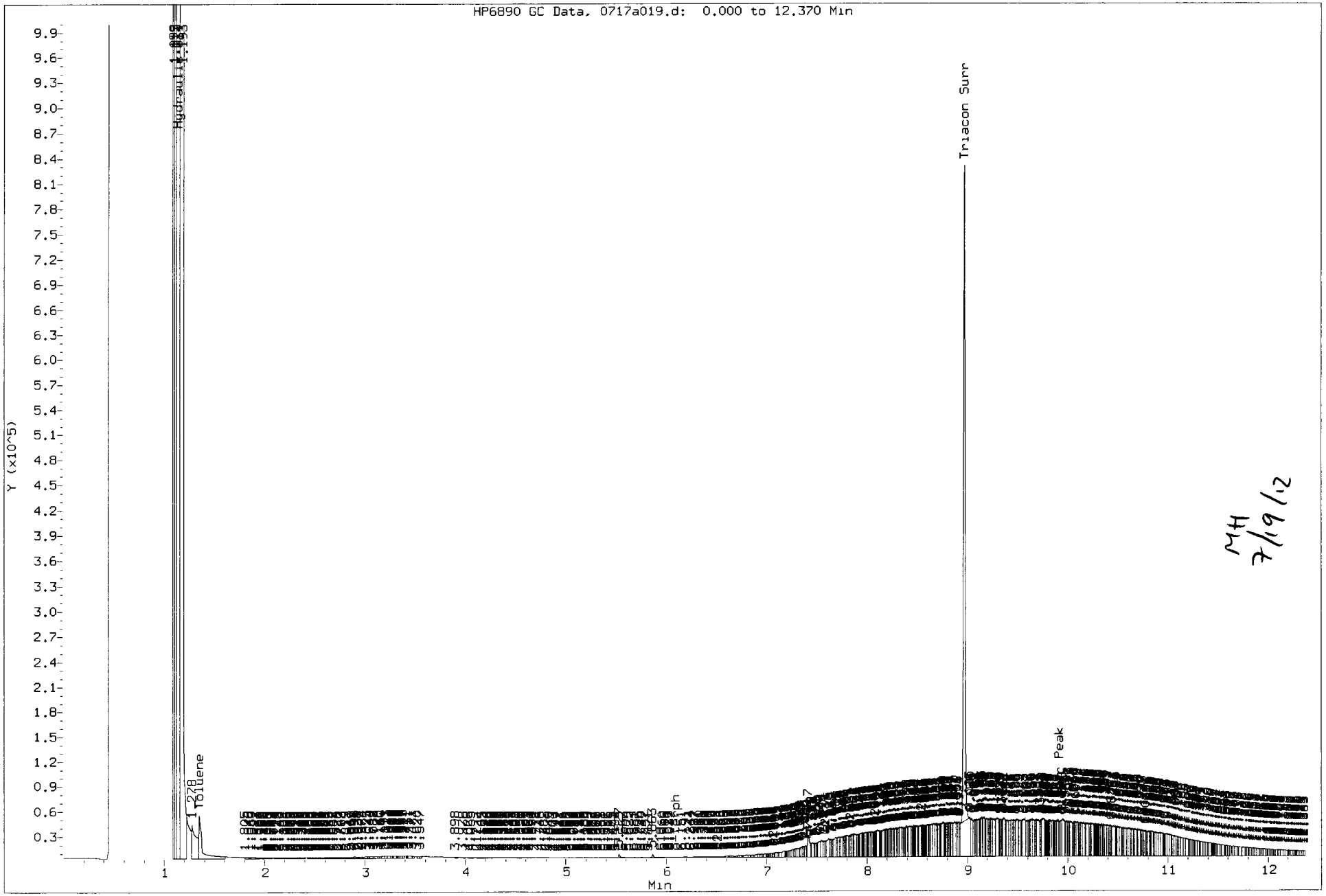
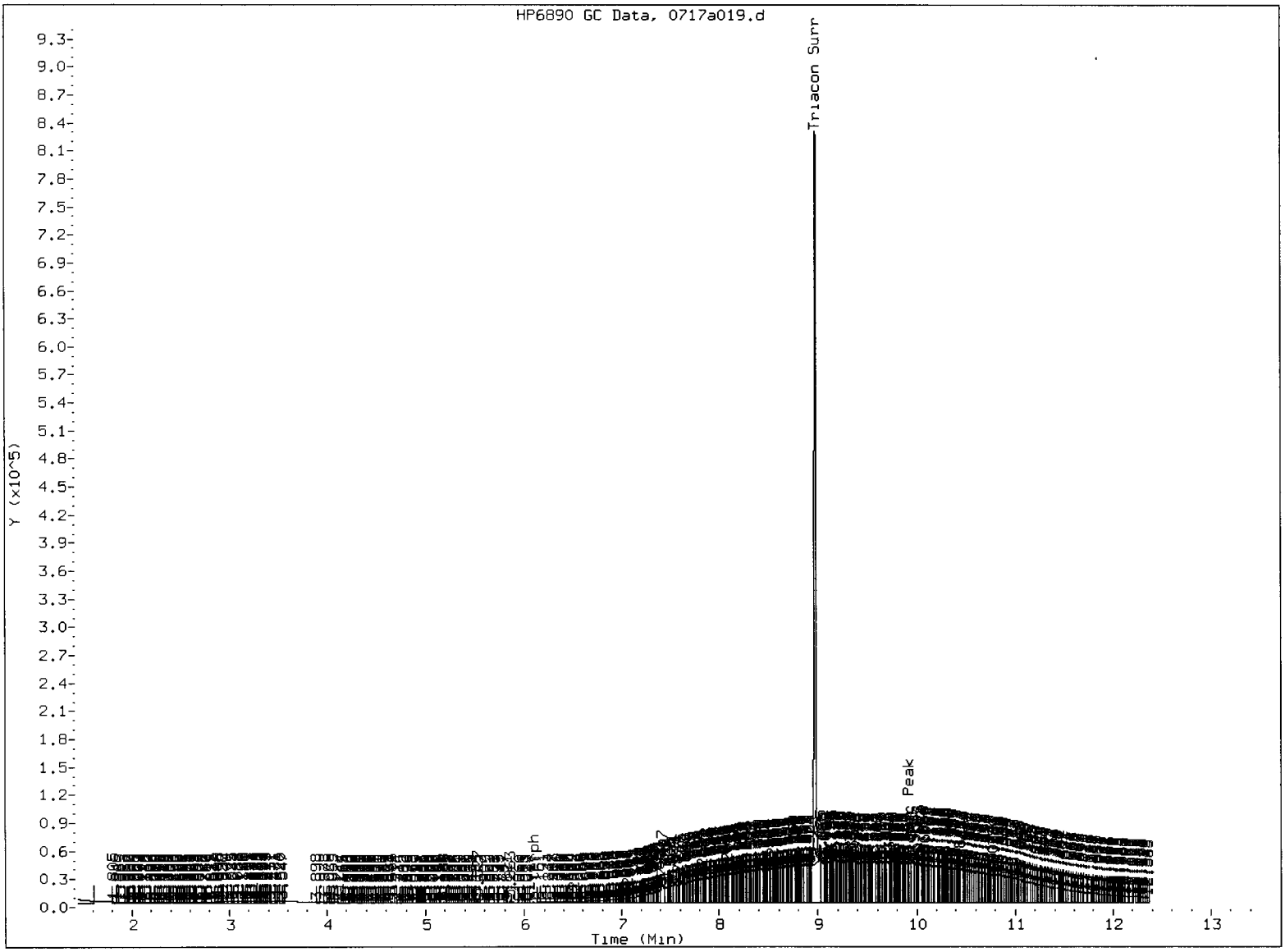
Injection Date: 17-JUL-2012 13:39
Instrument: fid4a.i
Client Sample ID:



MH 7/19/12

VB51 : 00671

FID:4A-2C/RTX-1 MOIL #2 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a021.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51MBS2
Client ID:
Injection: 17-JUL-2012 14:23
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.402	0.011	17031	22708	GAS (Tol-C12)	642337	42.70
C8	1.680	0.012	9206	29279	DIESEL (C12-C24)	154865	10.57
C10	3.230	0.002	882	934	M.OIL (C24-C38)	99978	7.95
C12	4.116	-0.002	257	218	AK-102 (C10-C25)	204467	11.82
C14	4.789	-0.006	640	586	AK-103 (C25-C36)	73908	8.66
C16	5.384	0.003	1704	1841			
C18	5.944	-0.002	1767	1248			
C20	6.517	0.002	1054	1968	JET-A (C10-C18)	164029	11.05
C22	7.073	0.006	832	931	MIN.OIL (C24-C38)	99978	7.44
C24	7.591	-0.001	621	903			
C25	7.845	0.001	358	306			
C26	8.085	0.000	478	569			
C28	8.538	-0.002	1391	3580			
C32	9.337	-0.010	470	137			
C34	9.732	0.010	700	619			
Filter Peak	9.906	-0.015	793	767	BUNKERC (C10-C38)	302873	39.67
C36	10.075	-0.008	1815	4629			
C38	10.442	0.007	1319	1092			
C40	10.786	0.005	1707	1192			
o-terph	6.090	-0.001	901294	791285			
Triacon Surr	8.975	0.010	757366	781690			

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	791285	38.8	86.3
Triacontane	781690	41.0	91.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a021.d

Date : 17-JUL-2012 14:23

Client ID:

Sample Info: VB51MBS2

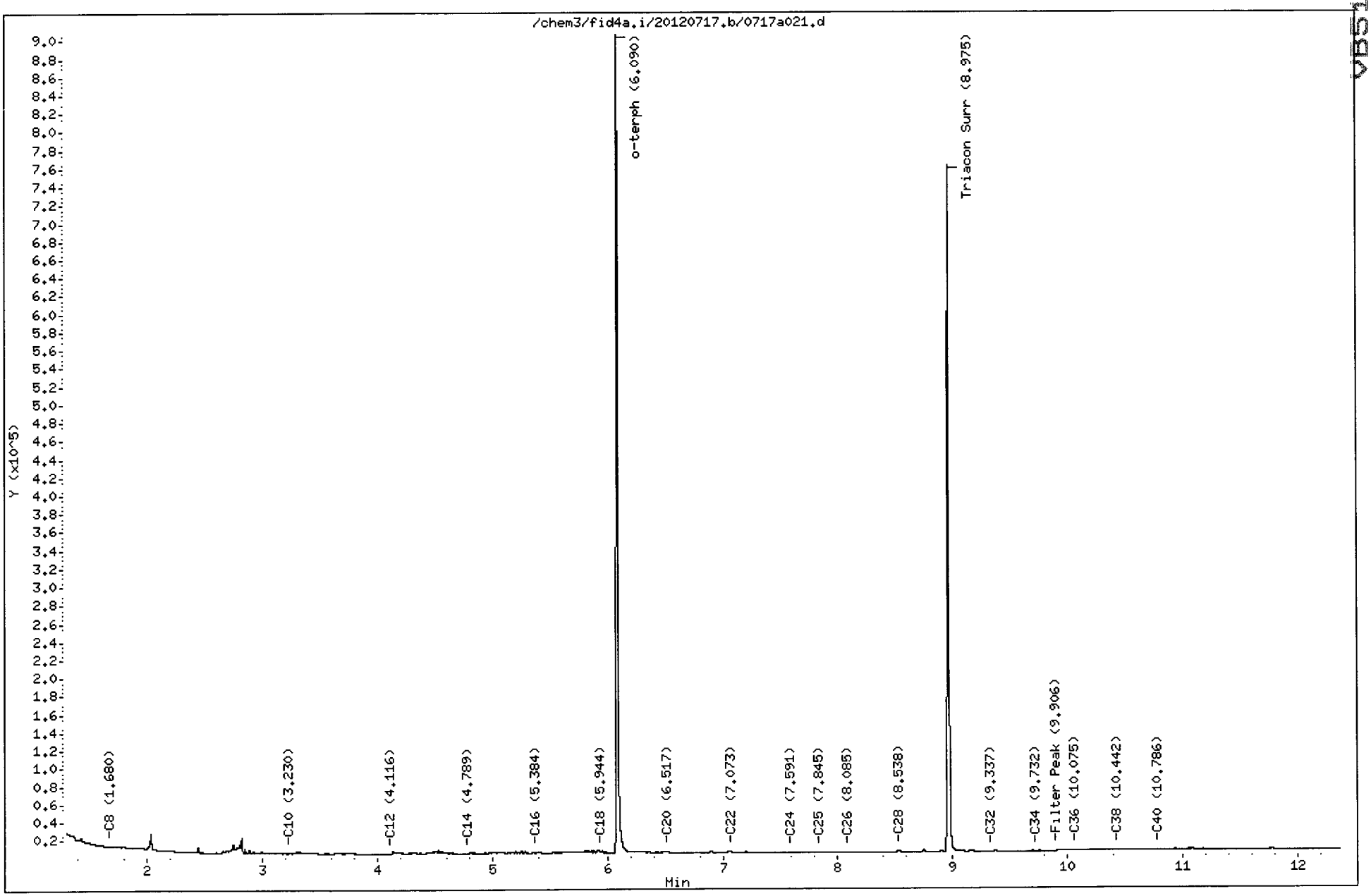
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 006714



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a022.d ARI ID: VB51LCSS2
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 17-JUL-2012 14:44
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.391	0.000	3749	5846	GAS (Tol-C12)	3874972	257.58	
C8	1.697	0.029	5206	10243	DIESEL (C12-C24)	17958942	1225.87	
C10	3.234	0.005	108380	85167	M.OIL (C24-C38)	208678	16.60	
C12	4.117	-0.001	256157	201957	AK-102 (C10-C25)	20842219	1204.82	M
C14	4.793	-0.002	351888	360645	AK-103 (C25-C36)	137978	16.16	
C16	5.383	0.002	556592	619440				
C18	5.951	0.005	442263	558087				
C20	6.516	0.001	331480	465093	JET-A (C10-C18)	15434041	1039.89	
C22	7.066	-0.002	162295	202496	MIN.OIL (C24-C38)	208678	15.53	
C24	7.589	-0.002	42626	59803				
C25	7.839	-0.005	16793	35741				
C26	8.083	-0.002	7016	12288				
C28	8.536	-0.003	2156	3262				
C32	9.363	0.016	1110	1479				
C34	9.736	0.015	121	188				
Filter Peak	9.920	-0.001	212	115	BUNKERC (C10-C38)	20989599	2749.49	M
C36	10.066	-0.017	1189	2197				
C38	10.423	-0.012	548	192				
C40	10.789	0.007	838	666				
o-terph	6.096	0.005	1002940	877148				
Triacon Surr	8.971	0.006	802245	790507				

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	877148	43.1	95.7
Triacontane	790507	41.4	92.0

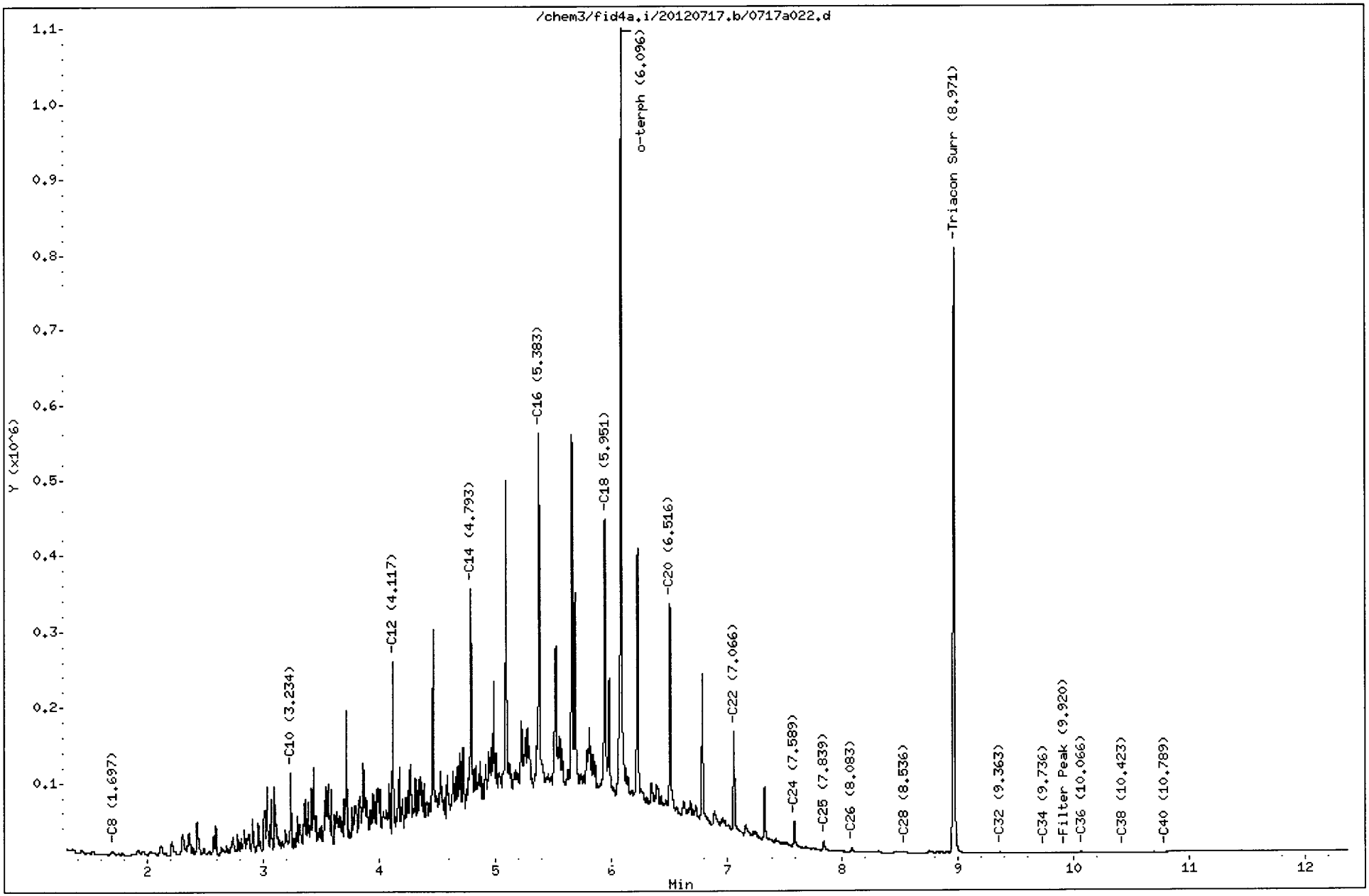
Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

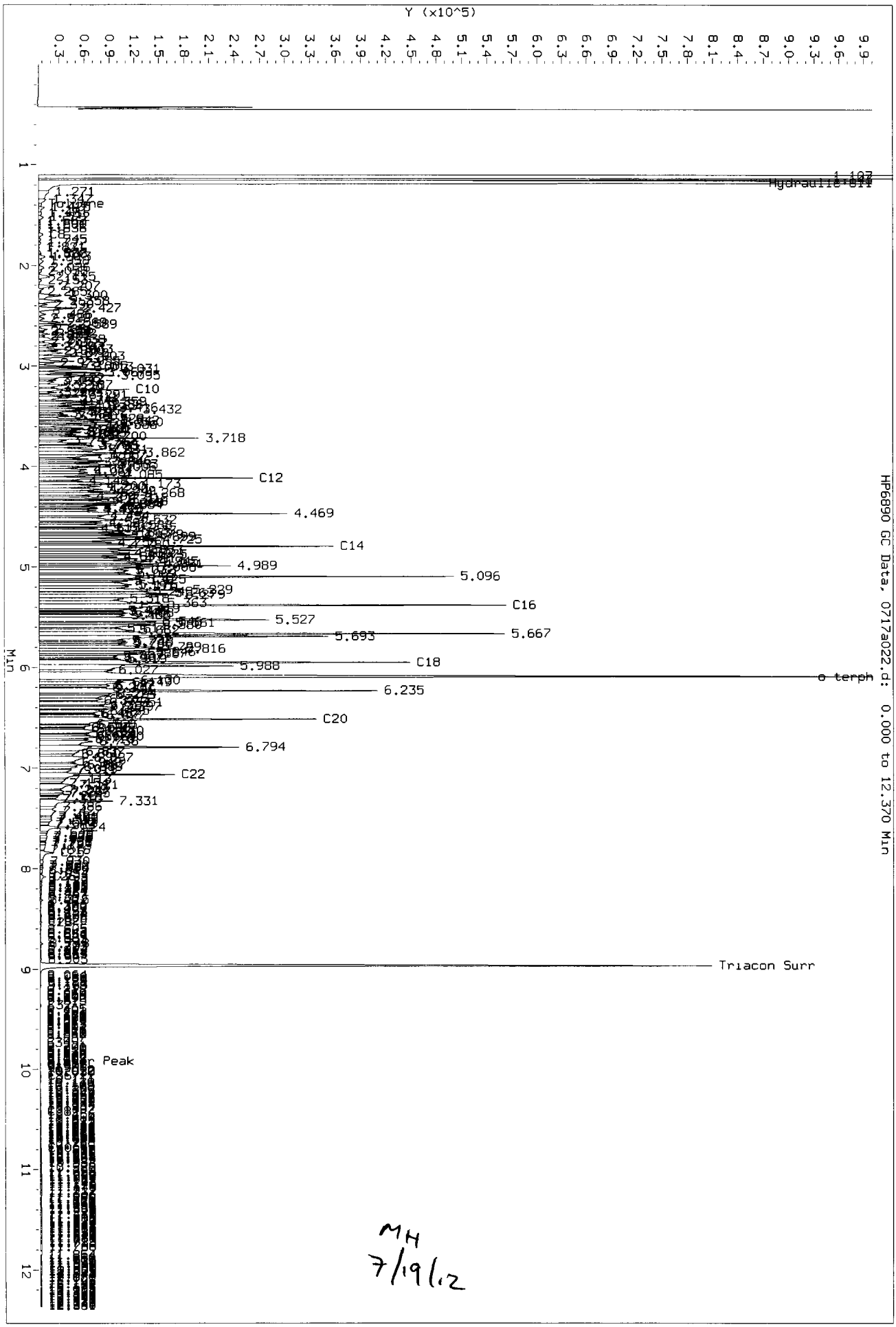
Data File: /chem3/fid4a.i/20120717.b/0717a022.d
Date : 17-JUL-2012 14:44
Client ID:
Sample Info: VB51LCSS2

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25

Column phase: RTX-1

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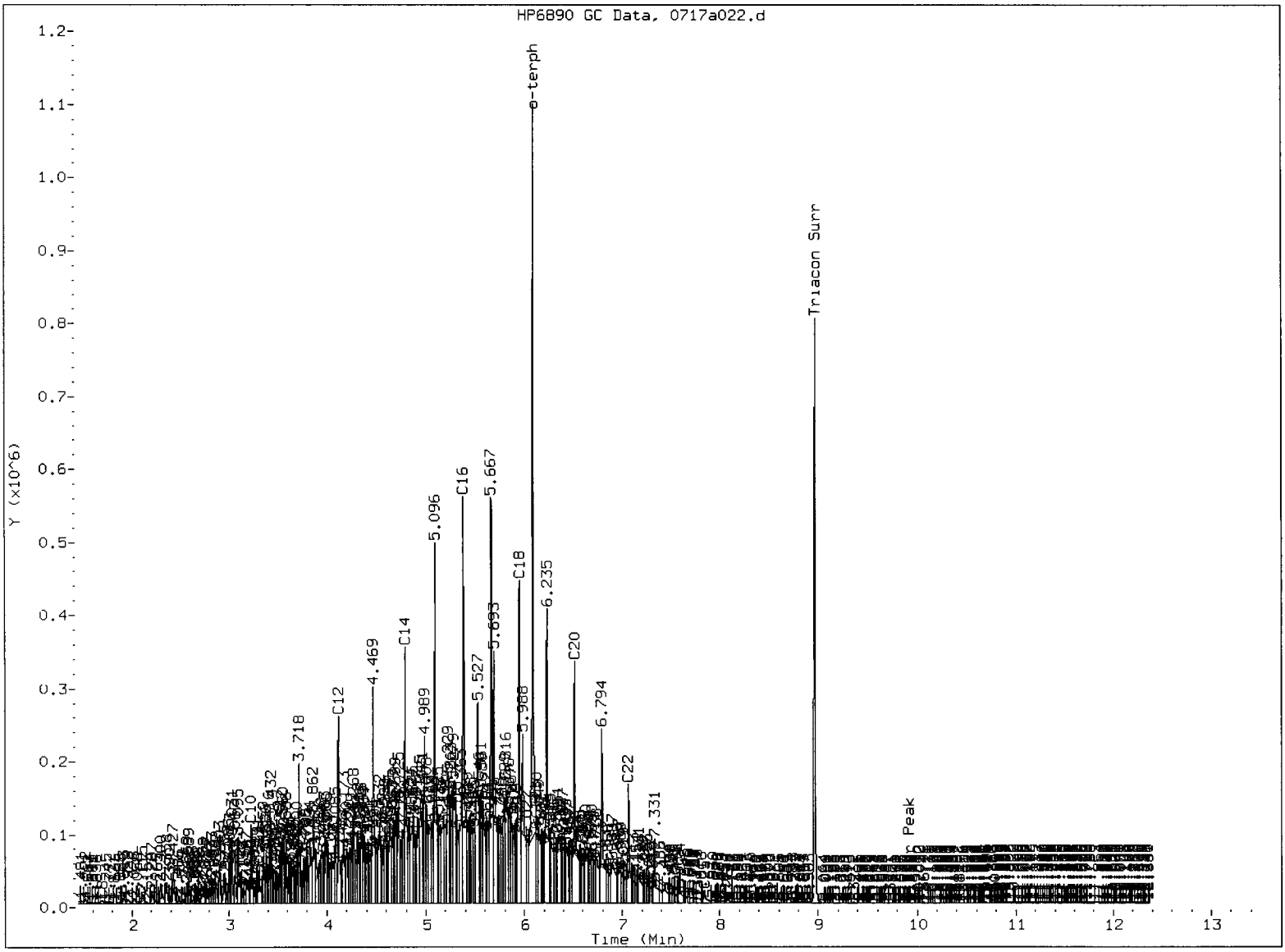
Data File: /chem3/fid4a.i/20120717.b/0717a022.d
Injection Date: 17-JUL-2012 14:44
Instrument: fid4a.i
Client Sample ID:
HP6890 GC Data, 0717a022.d: 0.000 to 12.370 Min
Min
Hydraulic Oil
Toluene
C10
3.718
C12
4.469
C14
4.989
5.096
C16
5.527
5.667
5.693
C18
5.988
o terph
6.235
C20
6.794
C22
7.331
Triacon Surr
Peak

MH
7/19/12

FID:4A-2C/RTX-1 VB51LCSS2 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a023.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51C
Client ID: CW-TP-06-5.5-6.5
Injection: 17-JUL-2012 15:06
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.421	0.030	9467	7360	GAS (Tol-C12)	396136	26.33
C8	1.679	0.011	4583	8925	DIESEL (C12-C24)	389279	26.57
C10	3.227	-0.002	740	613	M.OIL (C24-C38)	622298	49.51
C12	4.136	0.018	2604	5418	AK-102 (C10-C25)	462954	26.76
C14	4.785	-0.009	871	472	AK-103 (C25-C36)	530345	62.12
C16	5.383	0.002	2325	3882			
C18	5.943	-0.003	2957	2287			
C20	6.516	0.001	2783	3377	JET-A (C10-C18)	227572	15.33
C22	7.076	0.009	2933	1861	MIN.OIL (C24-C38)	622298	46.30
C24	7.589	-0.003	3187	4535			
C25	7.844	0.000	2981	3007			
C26	8.082	-0.003	3365	7352			
C28	8.537	-0.002	5915	12655			
C32	9.341	-0.006	3842	2335			
C34	9.706	-0.016	3485	5067			
Filter Peak	9.924	0.003	3441	2466	BUNKERC (C10-C38)	1065847	139.62
C36	10.092	0.009	3660	2956			
C38	10.426	-0.009	4005	4660			
C40	10.779	-0.003	3621	1987			
o-terph	6.090	-0.001	889320	779047			
Triacon Surr	8.974	0.009	771903	779190			

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	779047	38.2	85.0
Triacontane	779190	40.8	90.7

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a023.d

Date : 17-JUL-2012 15:06

Client ID: CW-TP-06-5.5-6.5

Sample Info: VB51C

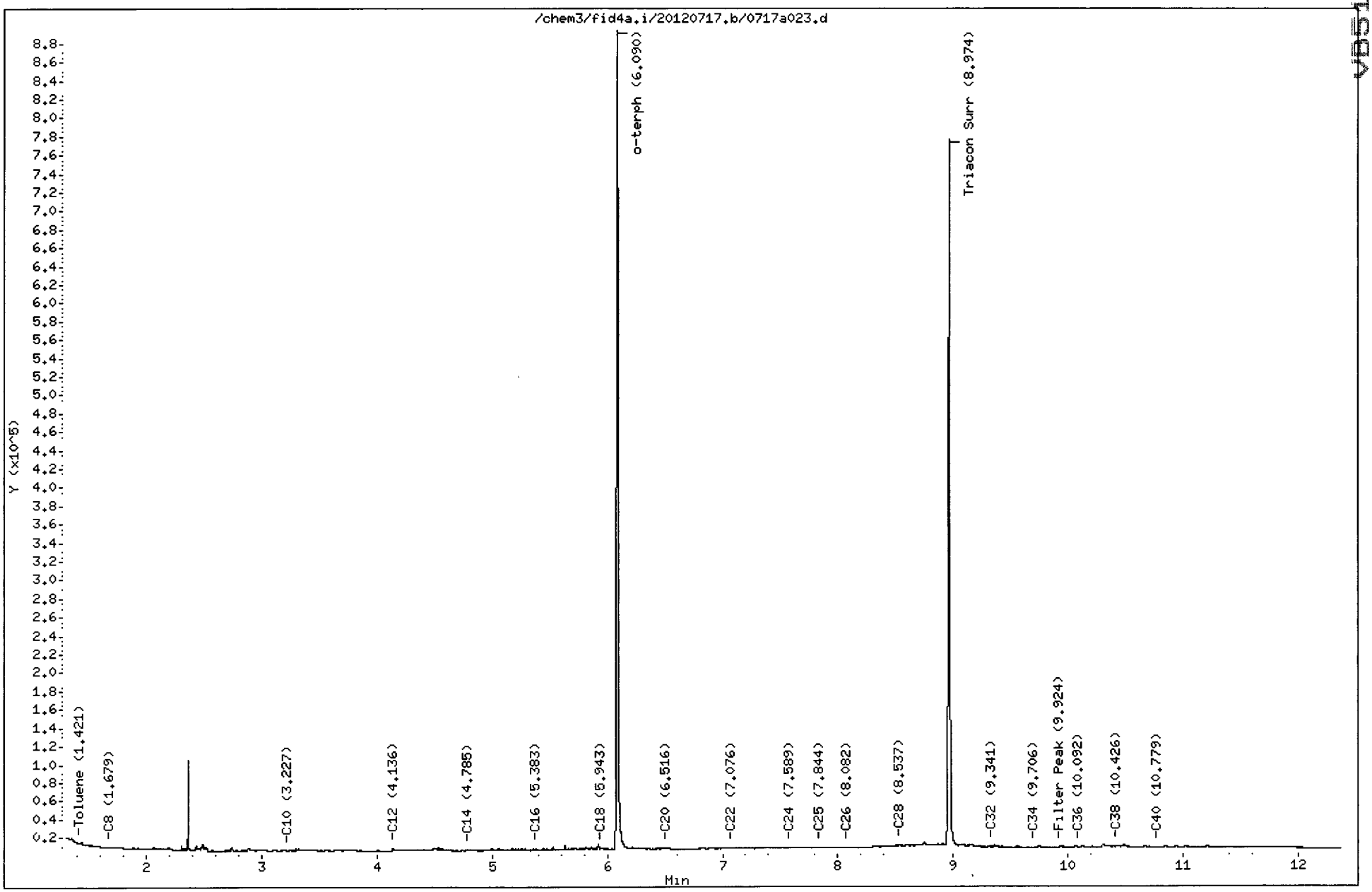
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 : 00680



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a024.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51CMS
Client ID: CW-TP-06-5.5-6. MS
Injection: 17-JUL-2012 15:27
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.383	-0.007	4201	6324	GAS (Tol-C12)	3497825	232.51	
C8	1.683	0.015	4495	4524	DIESEL (C12-C24)	16802209	1146.91	
C10	3.232	0.004	99921	77665	M.OIL (C24-C38)	818362	65.11	
C12	4.116	-0.002	238916	186448	AK-102 (C10-C25)	19446617	1124.15	M
C14	4.792	-0.003	331971	265812	AK-103 (C25-C36)	644825	75.52	
C16	5.382	0.002	535090	588966				
C18	5.950	0.004	426552	486412				
C20	6.516	0.001	299207	417018	JET-A (C10-C18)	14115979	951.08	
C22	7.066	-0.001	151680	191609	MIN.OIL (C24-C38)	818362	60.89	
C24	7.589	-0.003	41377	68076				
C25	7.840	-0.004	18941	34935				
C26	8.081	-0.004	10184	19326				
C28	8.536	-0.004	7198	16562				
C32	9.363	0.016	5654	14527				
C34	9.726	0.005	3296	2150				
Filter Peak	9.935	0.014	4728	13862	BUNKERC (C10-C38)	20176332	2642.96	M
C36	10.068	-0.015	5111	10255				
C38	10.440	0.005	3967	4225				
C40	10.785	0.003	3571	2995				
o-terph	6.093	0.002	915732	804553				
Triacon Surr	8.975	0.010	729655	768312				

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	804553	39.5	87.8
Triacontane	768312	40.3	89.5

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a024.d

Date : 17-JUL-2012 15:27

Client ID: CW-TP-06-5.5-6. MS

Sample Info: VB51CMS

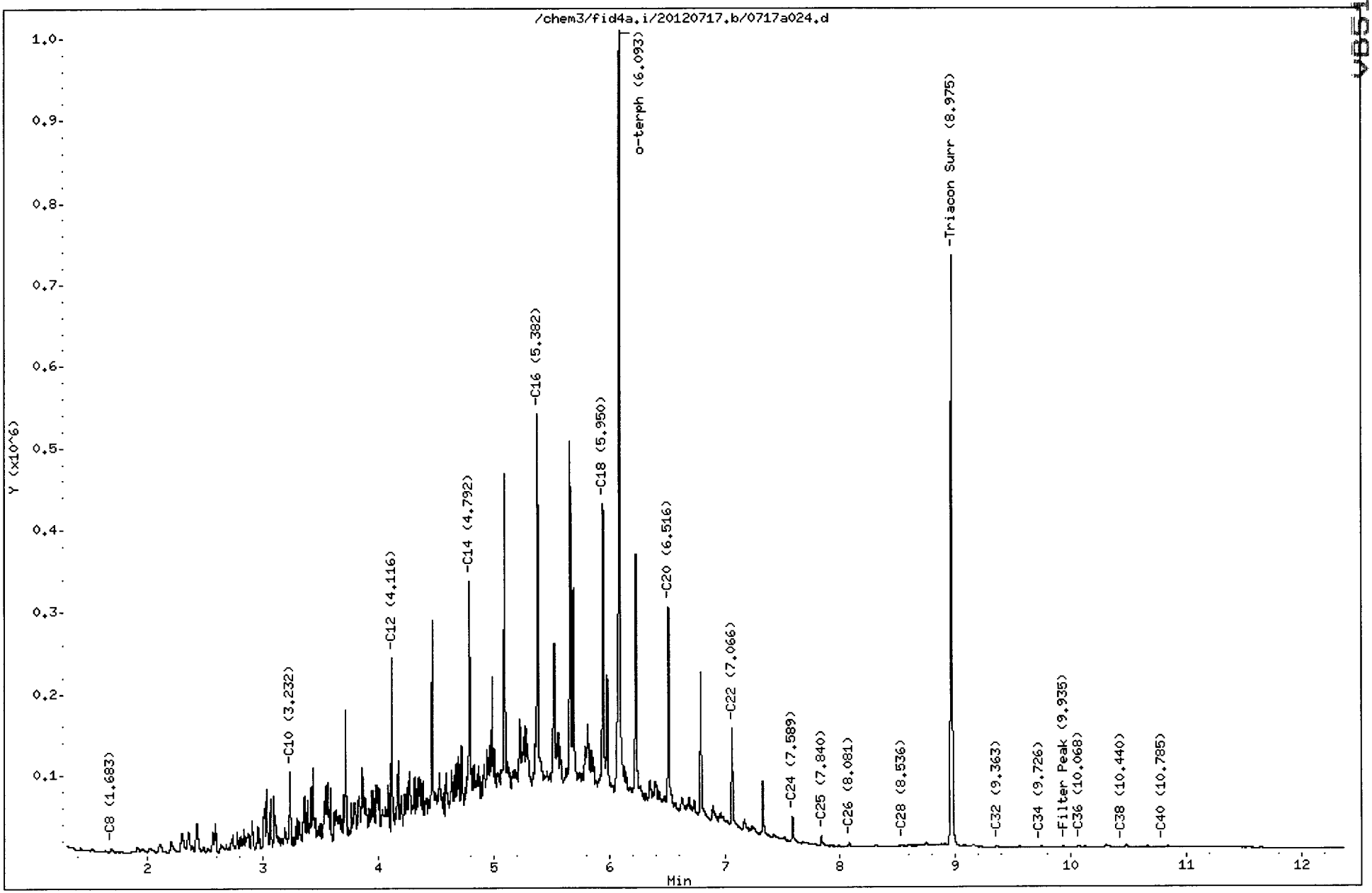
Column phase: RTX-1

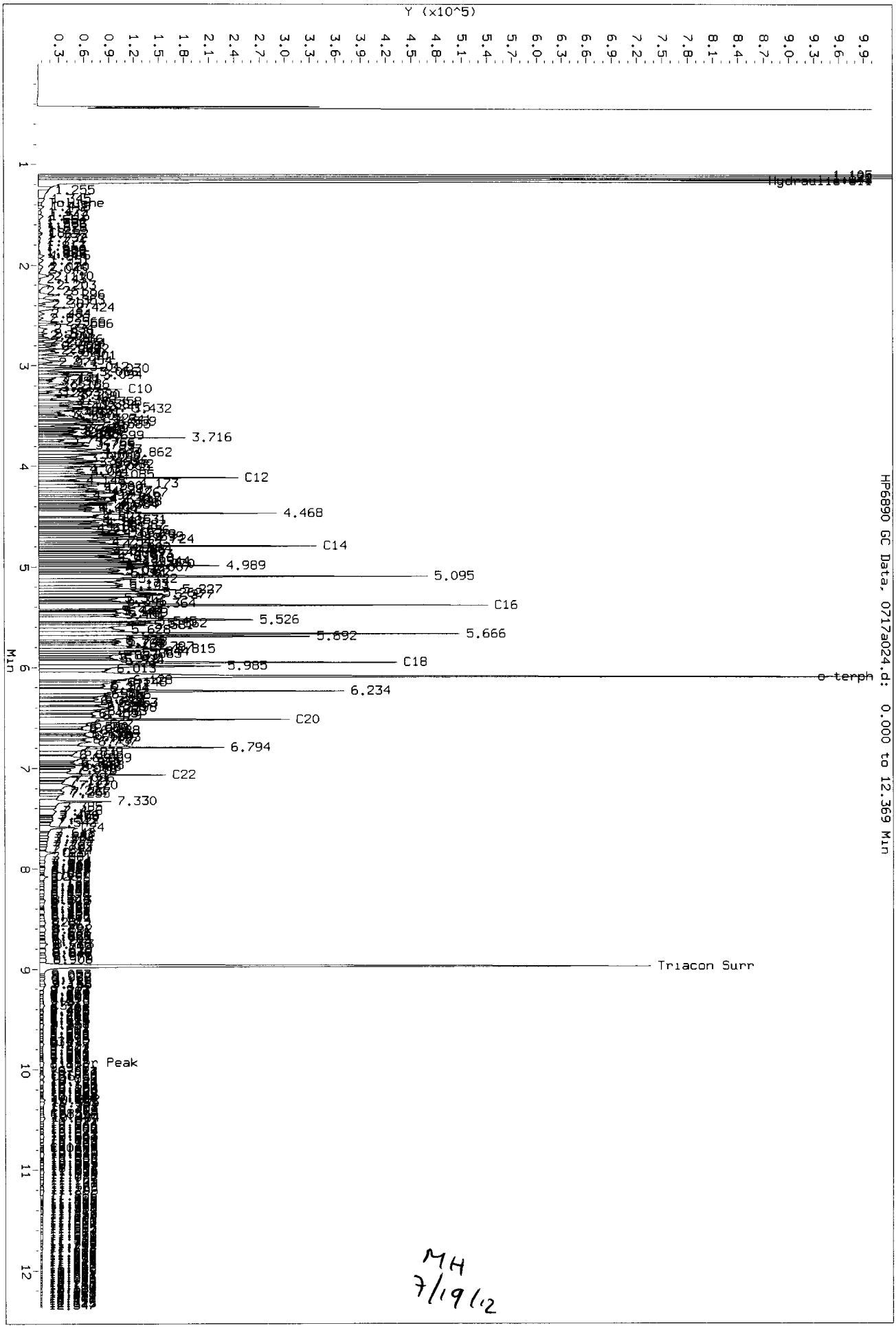
Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 : 50682

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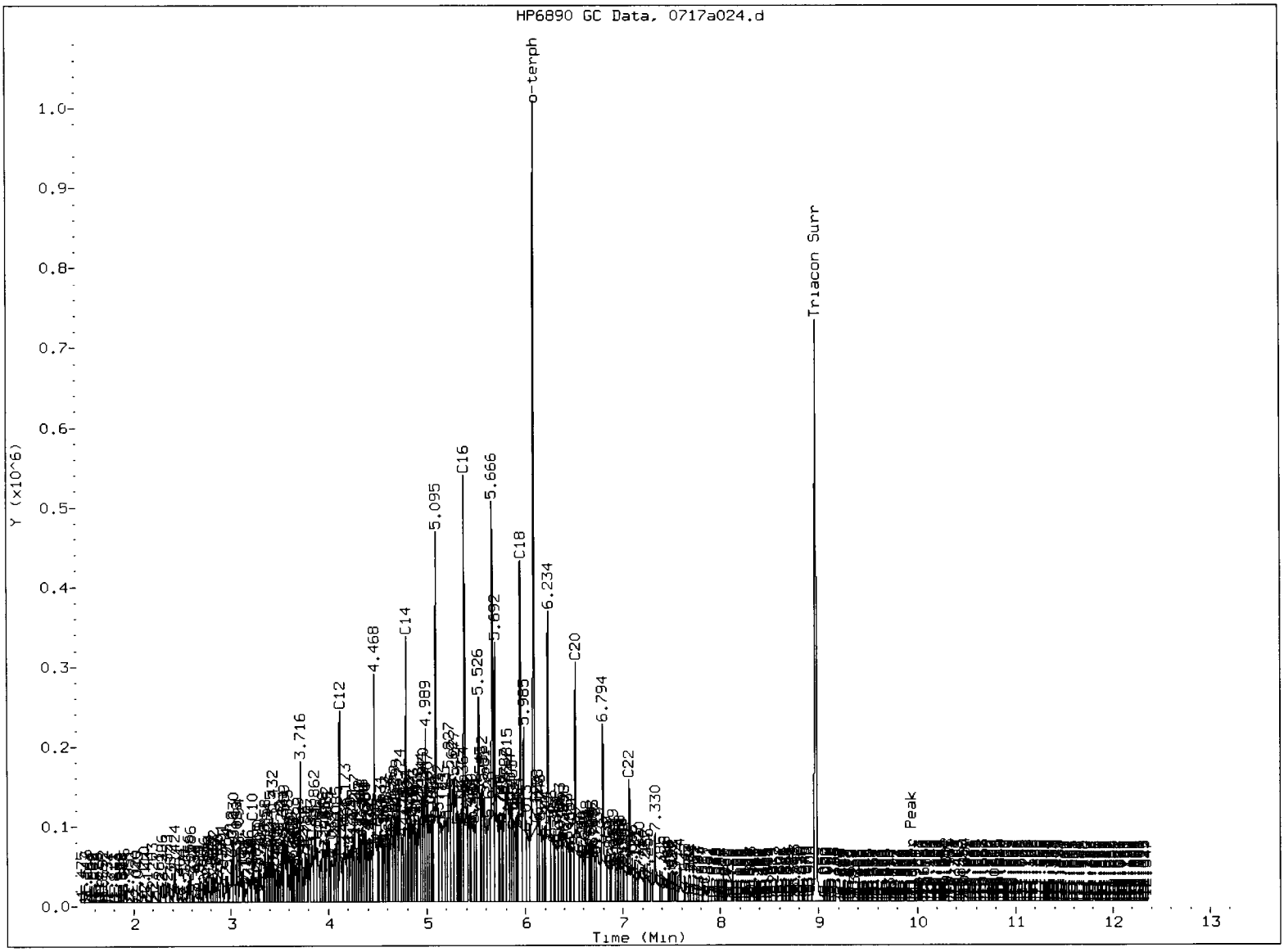
Injection Date: 17-JUL-2012 15:27
Instrument: fid4a.i
Client Sample ID: CW-TP-06-5.5-6. MS
Y (x10^5)
Min
Hydraulic
Toluene
C10
3.716
C12
4.468
C14
4.989
5.095
C16
5.526
5.666
C18
5.985
o-terph
6.234
C20
6.794
C22
7.330
Triacon Surr
Peak
HP6890 GC Data, 0717a024.d: 0.000 to 12.369 Min

MH
7/19/12

FID:4A-2C/RTX-1 VB51CMS FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a025.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51CMSD
Client ID: CW-TP-06-5.5-6. MSD
Injection: 17-JUL-2012 15:49
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.388	-0.003	4063	6061	GAS (Tol-C12)	3451189	229.41	
C8	1.686	0.018	4611	8223	DIESEL (C12-C24)	15972137	1090.25	
C10	3.233	0.005	93334	75167	M.OIL (C24-C38)	751539	59.79	
C12	4.116	-0.002	235051	178177	AK-102 (C10-C25)	18568427	1073.38	M
C14	4.792	-0.003	326110	262570	AK-103 (C25-C36)	600336	70.31	
C16	5.381	0.001	509342	540054				
C18	5.948	0.002	422192	471158				
C20	6.516	0.001	290299	317251	JET-A (C10-C18)	13554451	913.25	
C22	7.064	-0.003	149265	223118	MIN.OIL (C24-C38)	751539	55.92	
C24	7.588	-0.004	40922	58855				
C25	7.839	-0.005	18061	30755				
C26	8.080	-0.005	9740	19596				
C28	8.535	-0.004	6880	14598				
C32	9.357	0.010	5380	14341				
C34	9.717	-0.004	3168	1801				
Filter Peak	9.925	0.003	4628	12189	BUNKERC (C10-C38)	19246234	2521.12	M
C36	10.084	0.000	3541	1383				
C38	10.437	0.002	3644	2312				
C40	10.781	-0.001	3374	1862				
o-terph	6.093	0.002	883075	766867				
Triacon Surr	8.972	0.007	738928	732631				

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	766867	37.6	83.7
Triacontane	732631	38.4	85.3

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a025.d

Date : 17-JUL-2012 15:49

Client ID: CW-TP-06-5.5-6. MSD

Sample Info: VB51CMSD

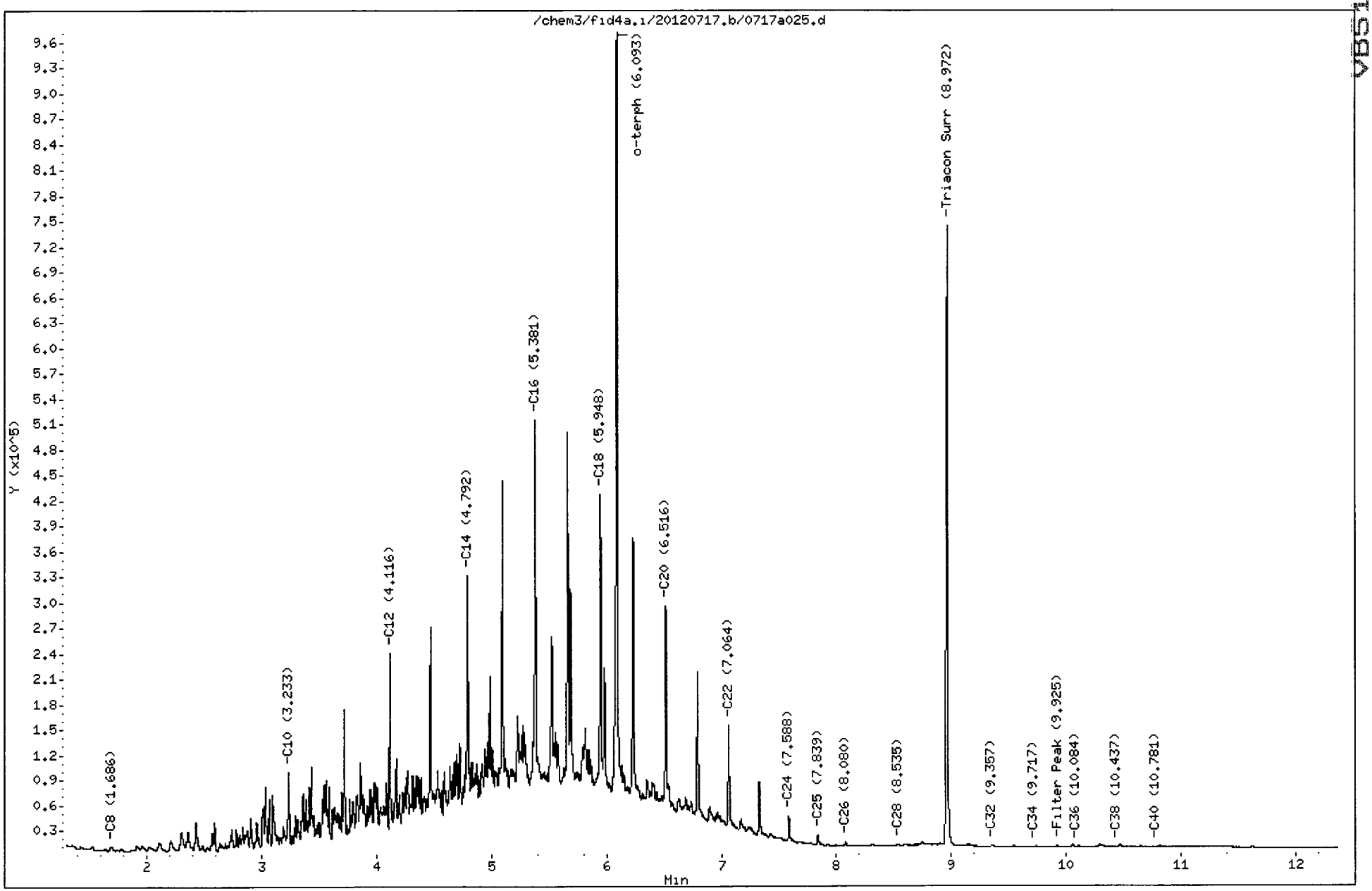
Column phase: RTX-1

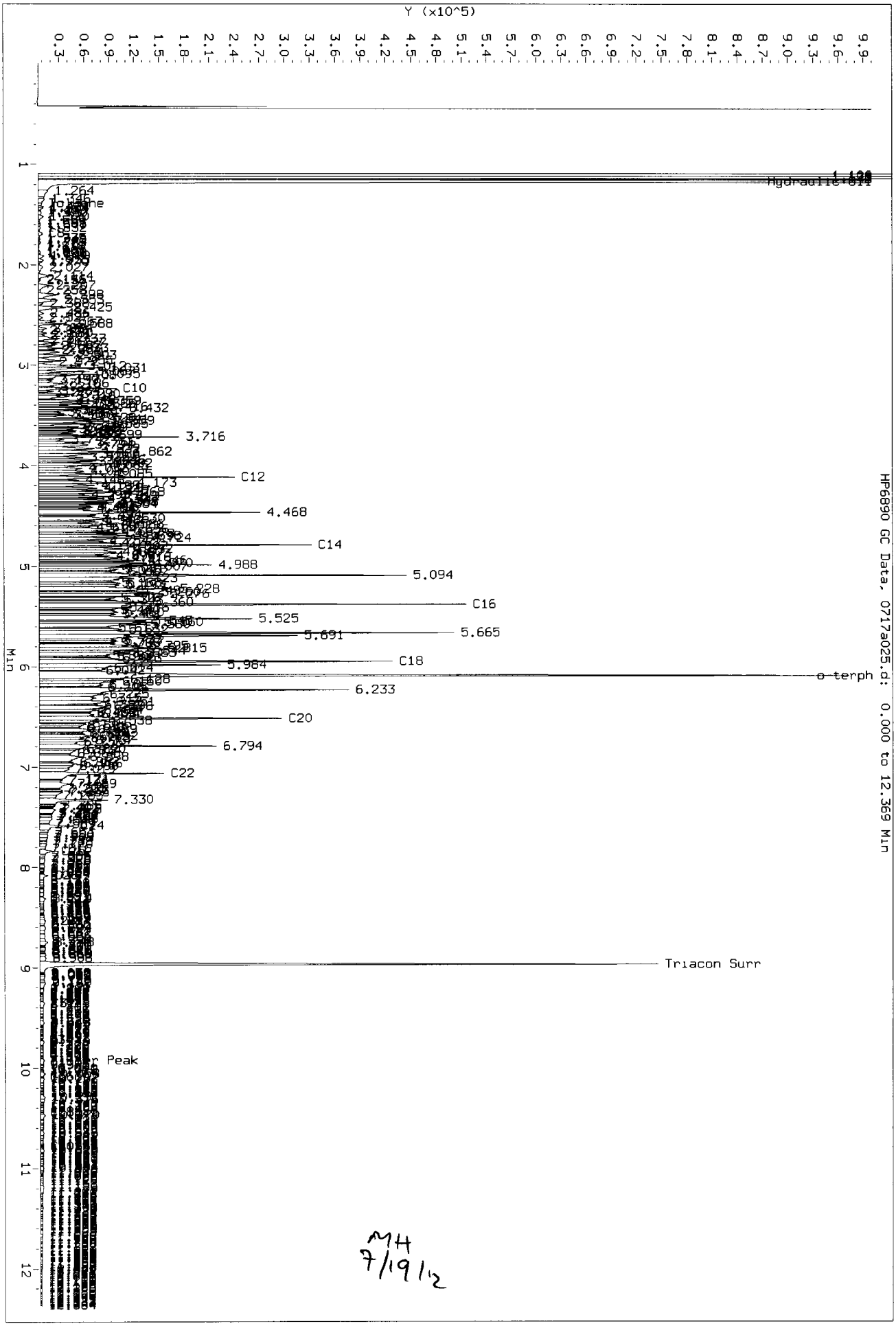
Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 : 66686

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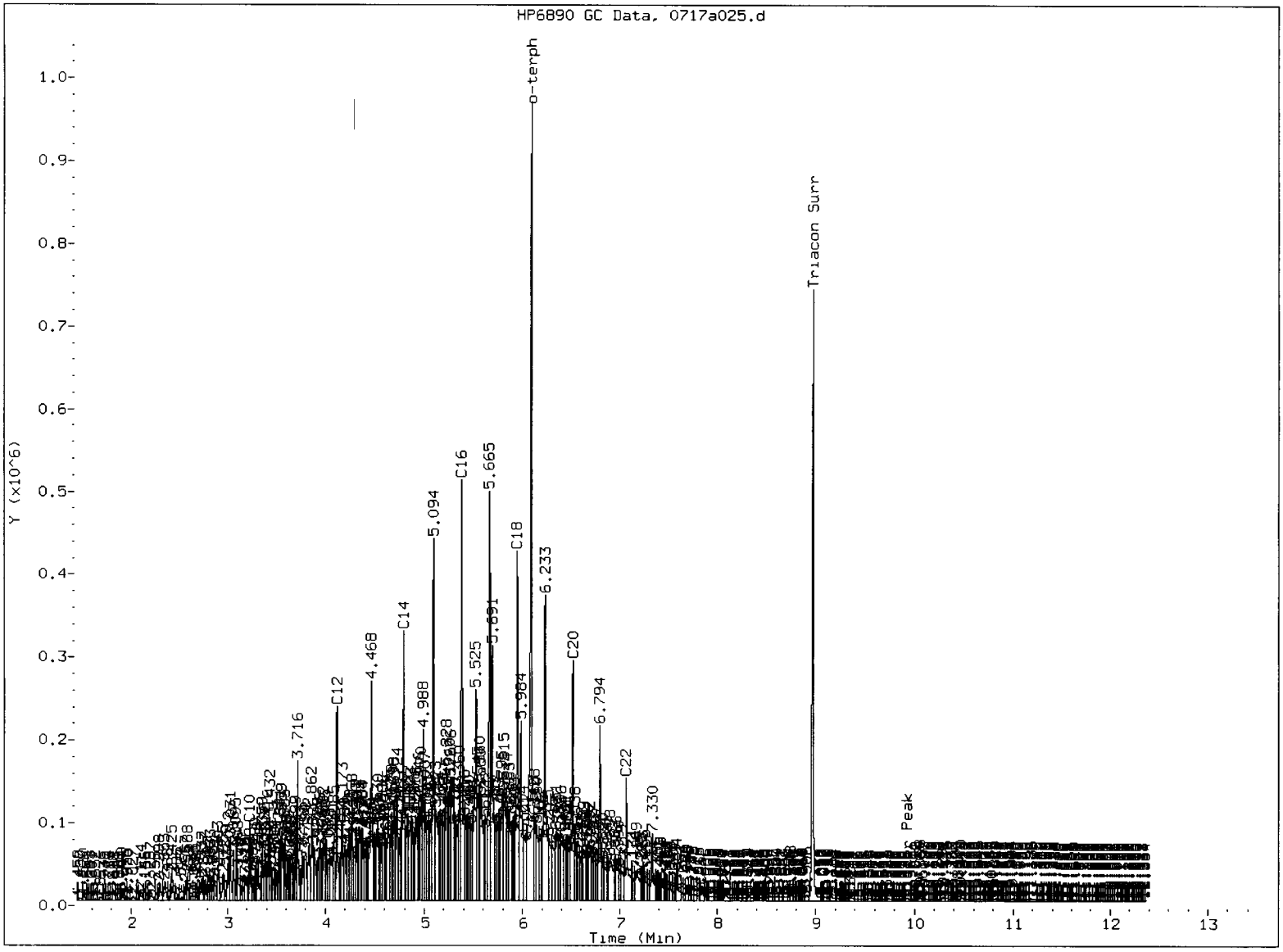
Injection Date: 17-JUL-2012 15:49
Instrument: fid4a.i
Client Sample ID: CW-TP-06-5.5-6, MSD
Y (x10^5)
Min
Hydraulic Oil
1.264
Toluene
C10
3.716
C12
4.468
C14
4.988
5.094
C16
5.525
5.665
C18
5.984
o-terph
6.233
C20
6.794
C22
7.330
Triacon Surr
Peak
HP6890 GC Data, 0717a025.d: 0.000 to 12.369 Min

MH
7/19/12

FID:4A-2C/RTX-1 VB51CMSD FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a029.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB54C
Client ID: CW-TP-05-7-8
Injection: 17-JUL-2012 17:15
Dilution Factor: 5

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.402	0.012	1317	1148	GAS (Tol-C12)	8909715	592.25	
C8	1.666	-0.002	4147	3851	DIESEL (C12-C24)	90807368	6198.46	
C10	3.219	-0.009	36098	31545	M.OIL (C24-C38)	9811875	780.64	
C12	4.124	0.006	264169	347670	AK-102 (C10-C25)	99556232	5755.03	M
C14	4.790	-0.005	639428	775864	AK-103 (C25-C36)	8443238	988.90	M
C16	5.379	-0.002	795947	2053745				
C18	5.946	0.000	511419	936351				
C20	6.524	0.009	361028	704570	JET-A (C10-C18)	73682632	4964.47	
C22	7.080	0.013	162801	76883	MIN.OIL (C24-C38)	9811875	730.01	M
C24	7.595	0.003	106576	56245				
C25	7.855	0.011	109949	275741				
C26	8.091	0.006	79337	32749				
C28	8.549	0.009	81947	110052				
C32	9.333	-0.014	48768	90454				
C34	9.742	0.021	54754	143253				
Filter Peak	9.933	0.012	46516	126491	BUNKERC (C10-C38)	108614718	14227.76	M
C36	10.074	-0.010	37539	92537				
C38	10.447	0.012	28015	15920				
C40	10.780	-0.002	24061	17111				
o-terph	6.102	0.011	134345	129319				
Triacon Surr	8.962	-0.003	169077	139824				

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	129319	6.3	70.5
Triacontane	139824	7.3	81.4

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a029.d

Date : 17-JUL-2012 17:15

Client ID: CW-TP-05-7-8

Sample Info: VB54C,5

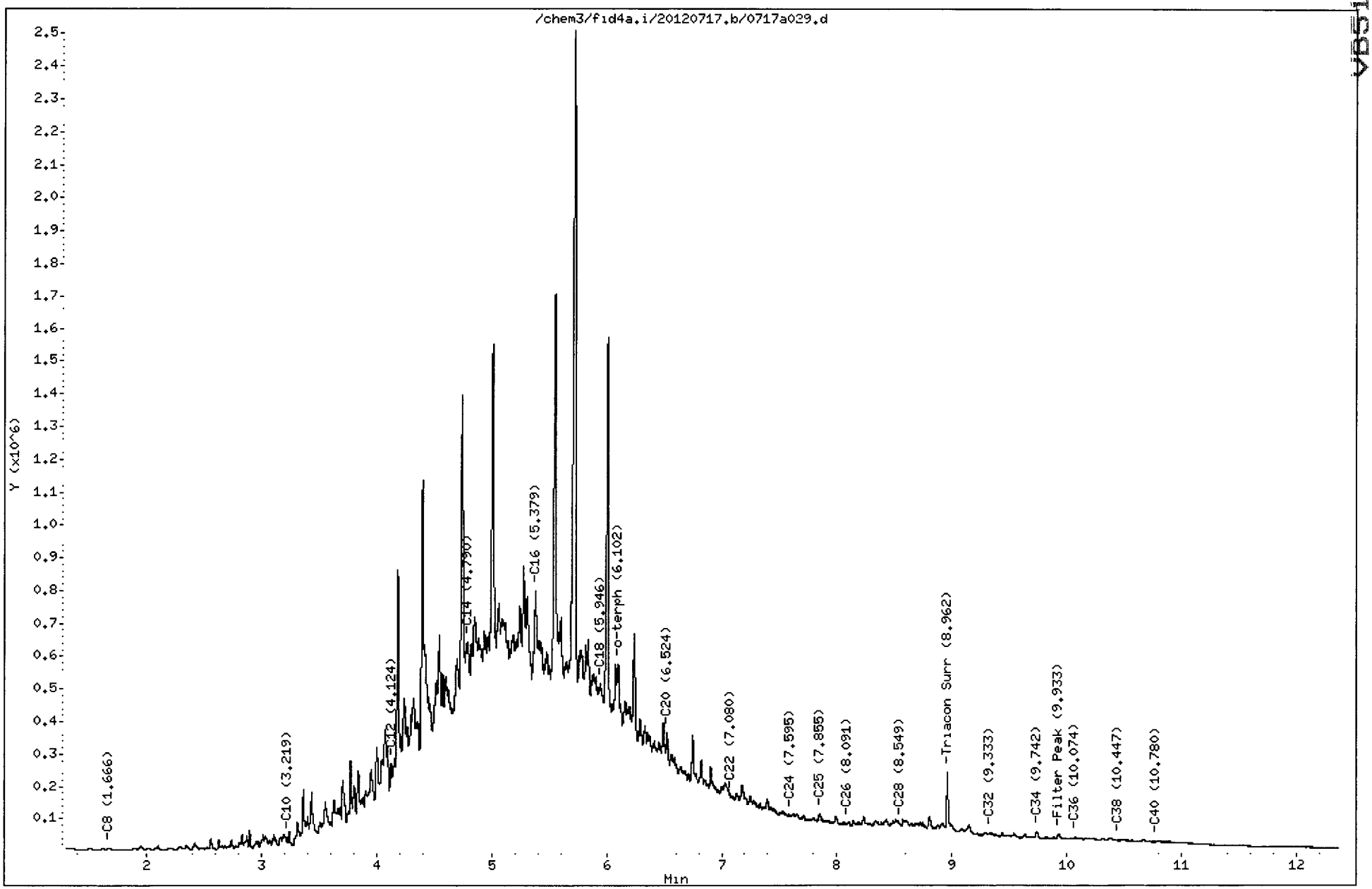
Column phase: RTX-1

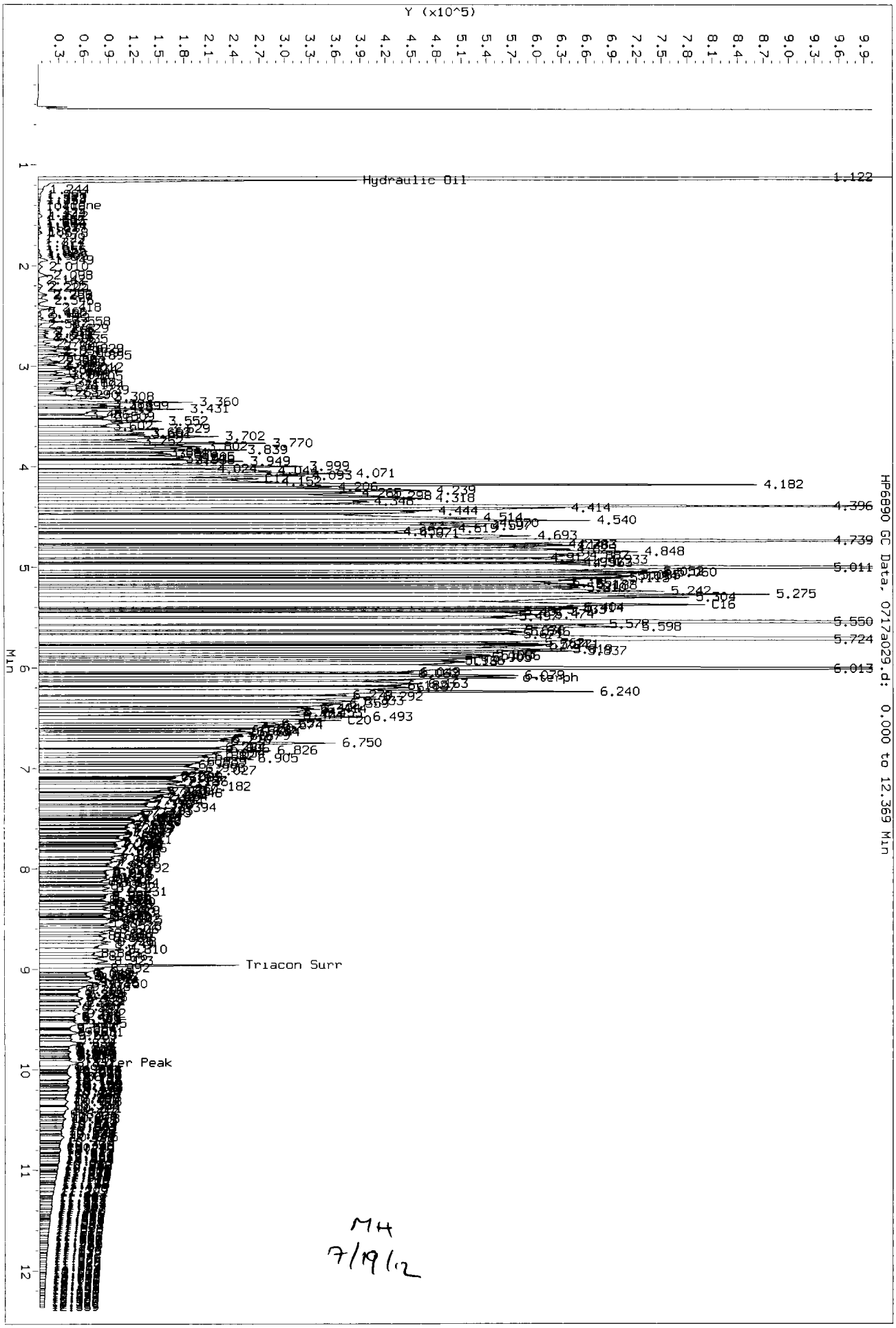
Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 : 06990





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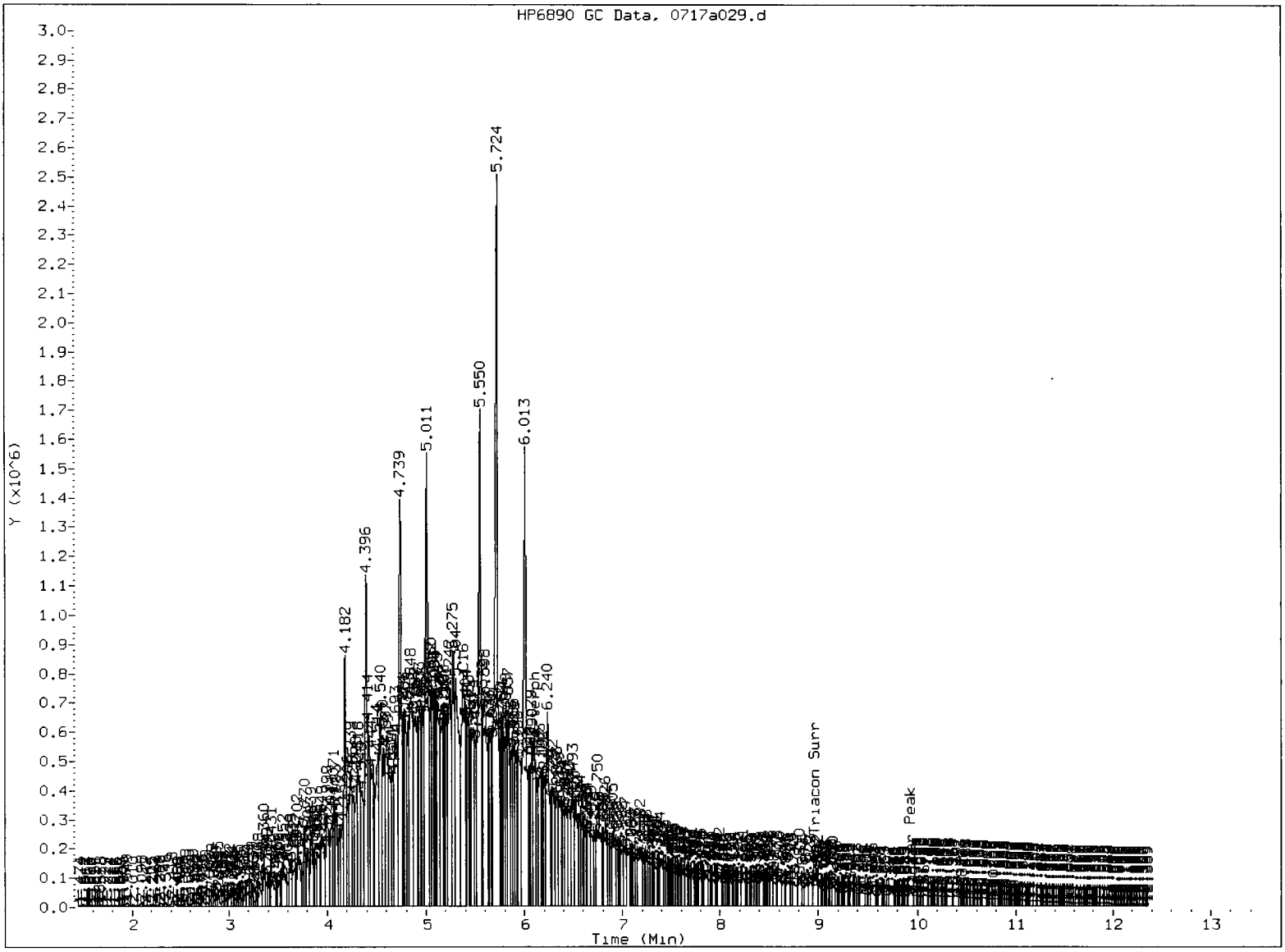
Injection Date: 17-JUL-2012 17:15
Instrument: fid4a.i
Client Sample ID: CW-TP-05-7-8

MH
7/19/12

FID:4A-2C/RTX-1 VB54C FID:4A SIGNAL



MANUAL INTEGRATION

~~1~~. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a030.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB54F
Client ID: CW-TP-03-7-8
Injection: 17-JUL-2012 17:36
Dilution Factor: 5

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.541	0.151	850	578	GAS (Tol-C12)	8933894	593.86	
C8	1.666	-0.002	4989	4209	DIESEL (C12-C24)	96047699	6556.16	
C10	3.219	-0.009	36291	32914	M.OIL (C24-C38)	9592986	763.23	
C12	4.122	0.004	255680	335858	AK-102 (C10-C25)	104747619	6055.13	M
C14	4.791	-0.004	672064	1029406	AK-103 (C25-C36)	8150034	954.56	M
C16	5.384	0.004	843031	2400974				
C18	5.945	-0.001	541915	940389				
C20	6.527	0.012	382583	695553	JET-A (C10-C18)	77389534	5214.23	
C22	7.049	-0.018	196459	299426	MIN.OIL (C24-C38)	9592986	713.73	M
C24	7.600	0.008	101385	77987				
C25	7.834	-0.010	83189	24641				
C26	8.080	-0.005	78601	74154				
C28	8.534	-0.006	85865	83594				
C32	9.354	0.007	51201	75964				
C34	9.712	-0.009	39612	23260				
Filter Peak	9.914	-0.007	37007	17532	BUNKERC (C10-C38)	113556434	14875.09	M
C36	10.074	-0.009	38909	58076				
C38	10.433	-0.001	33146	42138				
C40	10.779	-0.003	24903	25403				
o-terph	6.107	0.016	132969	120351				
Triacon Surr	8.963	-0.001	171843	141598				

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	120351	5.9	65.6
Triacontane	141598	7.4	82.4

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a030.d

Page 1

Date : 17-JUL-2012 17:36

Client ID: CW-TP-03-7-8

Instrument: fid4a.i

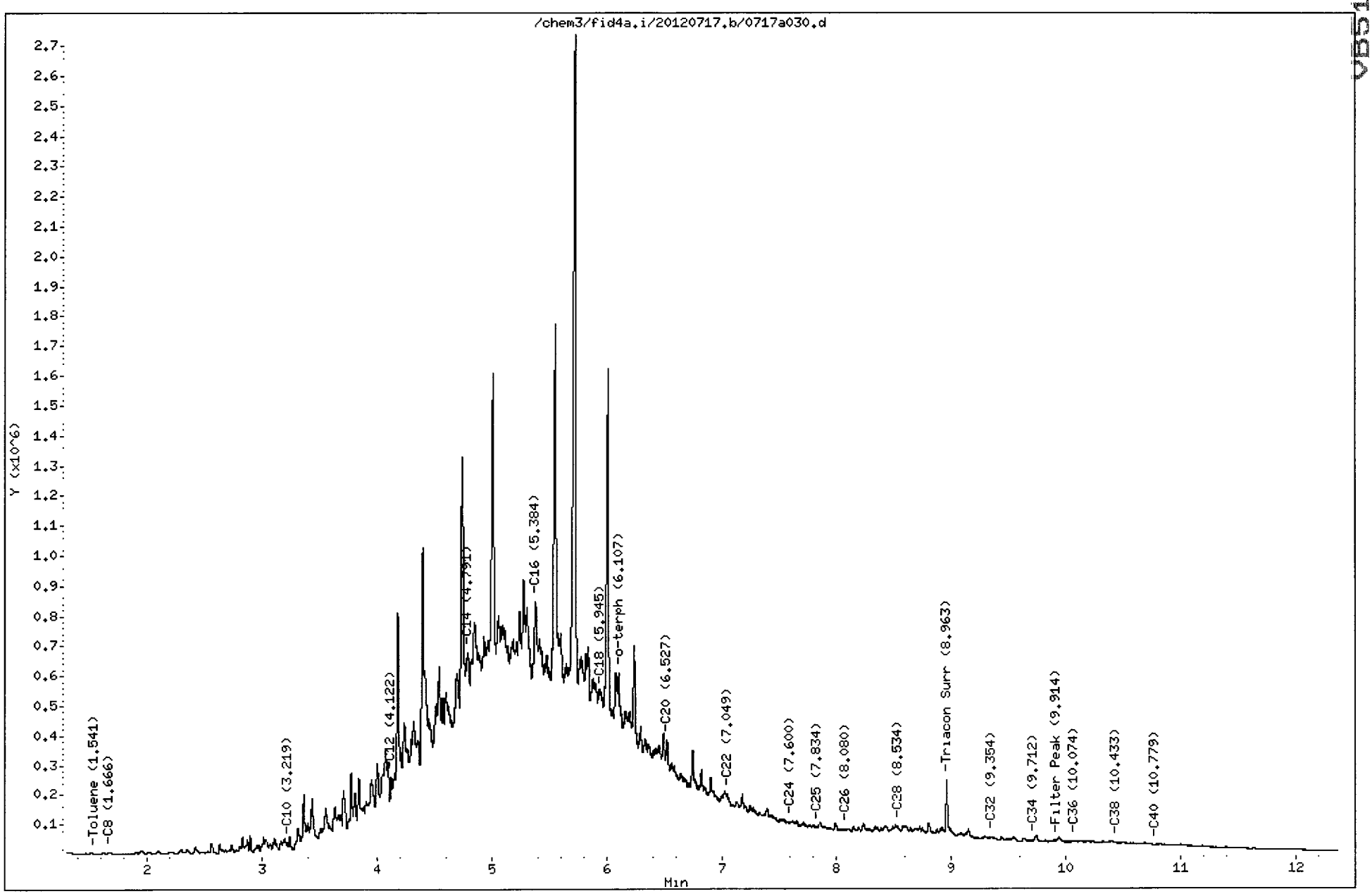
Sample Info: VB54F,5

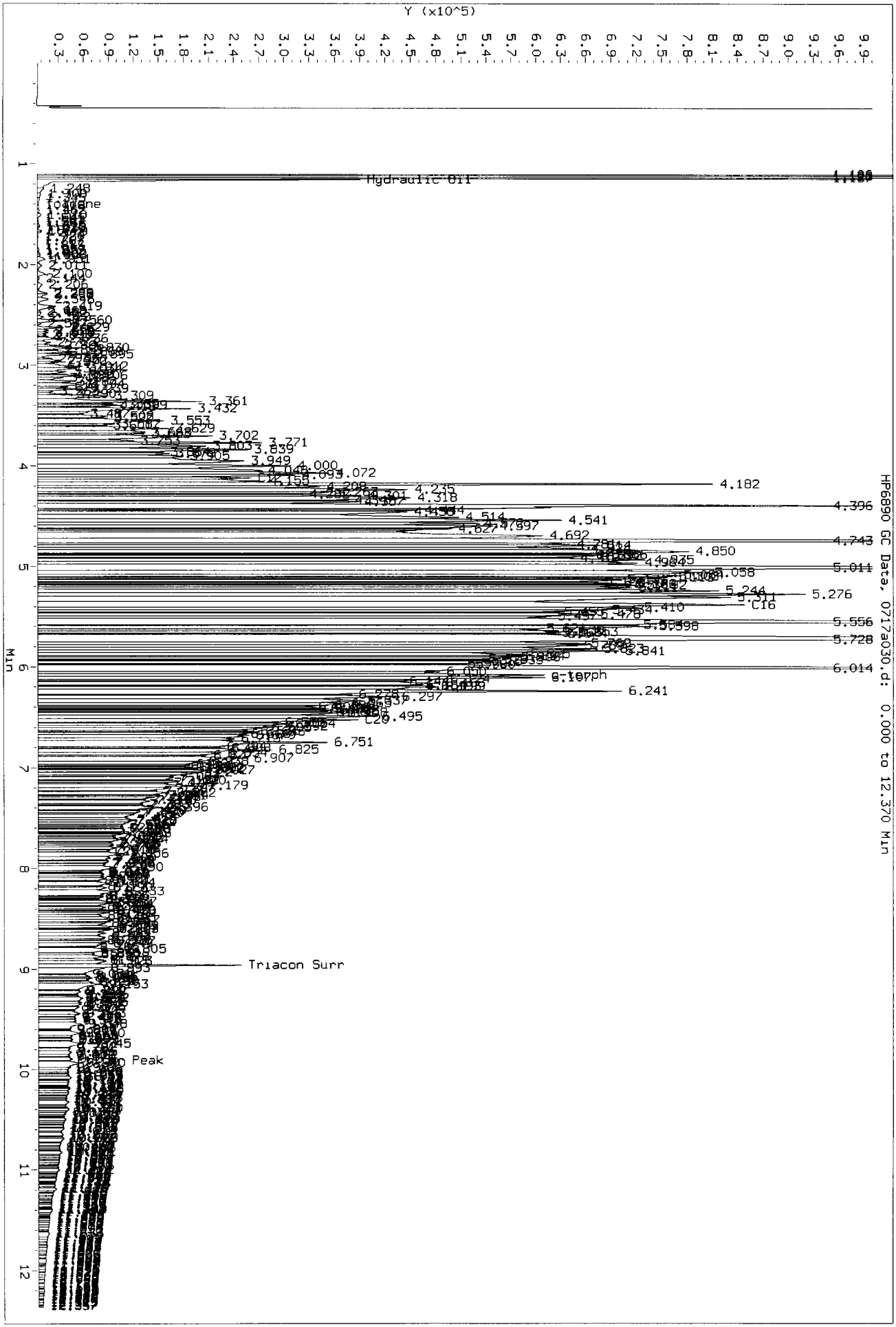
Operator: AR

Column phase: RTX-1

Column diameter: 0.25

VB51 ; 0069

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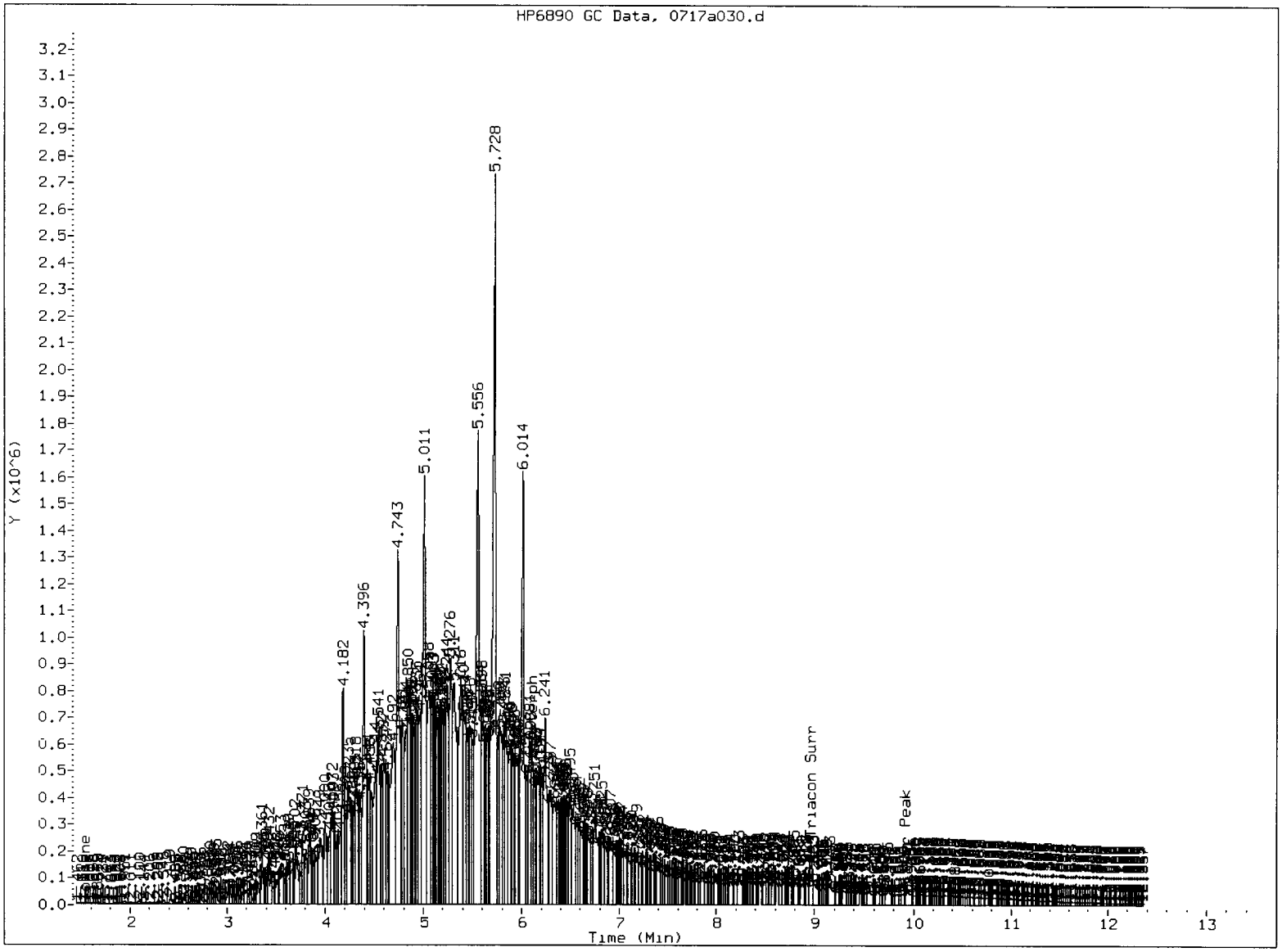
Data File: /chem3/fid4a.i/20120717.b/0717a030.d
Injection Date: 17-JUL-2012 17:36
Instrument: fid4a.i
Client Sample ID: CW-TP-03-7-8
Hydraulic Oil
Toluene
4.182
4.396
4.541
4.743
4.850
5.011
5.276
C16
5.556
5.728
6.014
6.241
C20
6.751
Triacon Surr
Peak
HP6890 GC Data, 0717a030.d: 0.000 to 12.370 Min
Min

FID:4A-2C/RTX-1 VB54F FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH
2/8
7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a031.d ARI ID: DIESEL #3
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 17-JUL-2012 17:57
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.392	0.001	2891	5461	GAS (Tol-C12)	876110	58.24	
C8	1.701	0.033	2366	5603	DIESEL (C12-C24)	3433924	234.40	
C10	3.222	-0.006	4389	2729	M.OIL (C24-C38)	104461	8.31	
C12	4.119	0.001	43056	37250	AK-102 (C10-C25)	4028857	232.90	M
C14	4.792	-0.003	70391	72179	AK-103 (C25-C36)	63414	7.43	
C16	5.378	-0.003	111404	112213				
C18	5.944	-0.002	87701	94031				
C20	6.512	-0.003	56355	88201	JET-A (C10-C18)	2992064	201.59	
C22	7.065	-0.002	24385	43493	MIN.OIL (C24-C38)	104461	7.77	
C24	7.597	0.005	4734	14044				
C25	7.852	0.008	1861	5649				
C26	8.081	-0.004	336	246				
C28	8.531	-0.008	530	735				
C32	9.351	0.004	267	372				
C34	9.728	0.007	916	1663				
Filter Peak	9.928	0.006	1380	2125	BUNKERC (C10-C38)	4123477	540.15	M
C36	10.093	0.009	1263	1978				
C38	10.443	0.008	1694	1336				
C40	10.777	-0.005	2538	3418				
o-terph	6.093	0.002	1073080	886993				
Triacon Surr	8.951	-0.014	35	18				

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	886993	43.5	96.8
Triacontane	18	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a031.d

Date : 17-JUL-2012 17:57

Client ID:

Sample Info: DIESEL #3

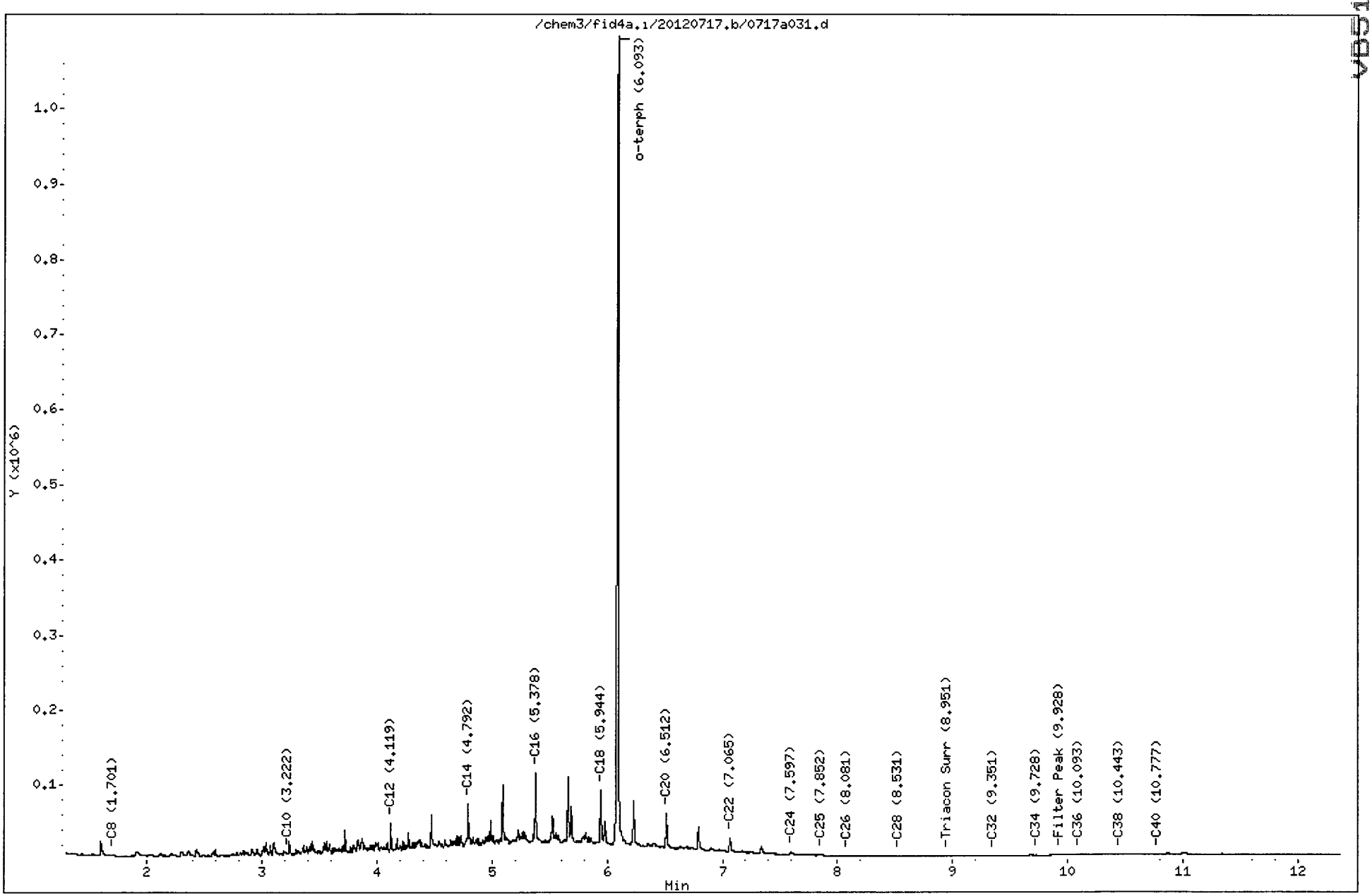
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 : 00698



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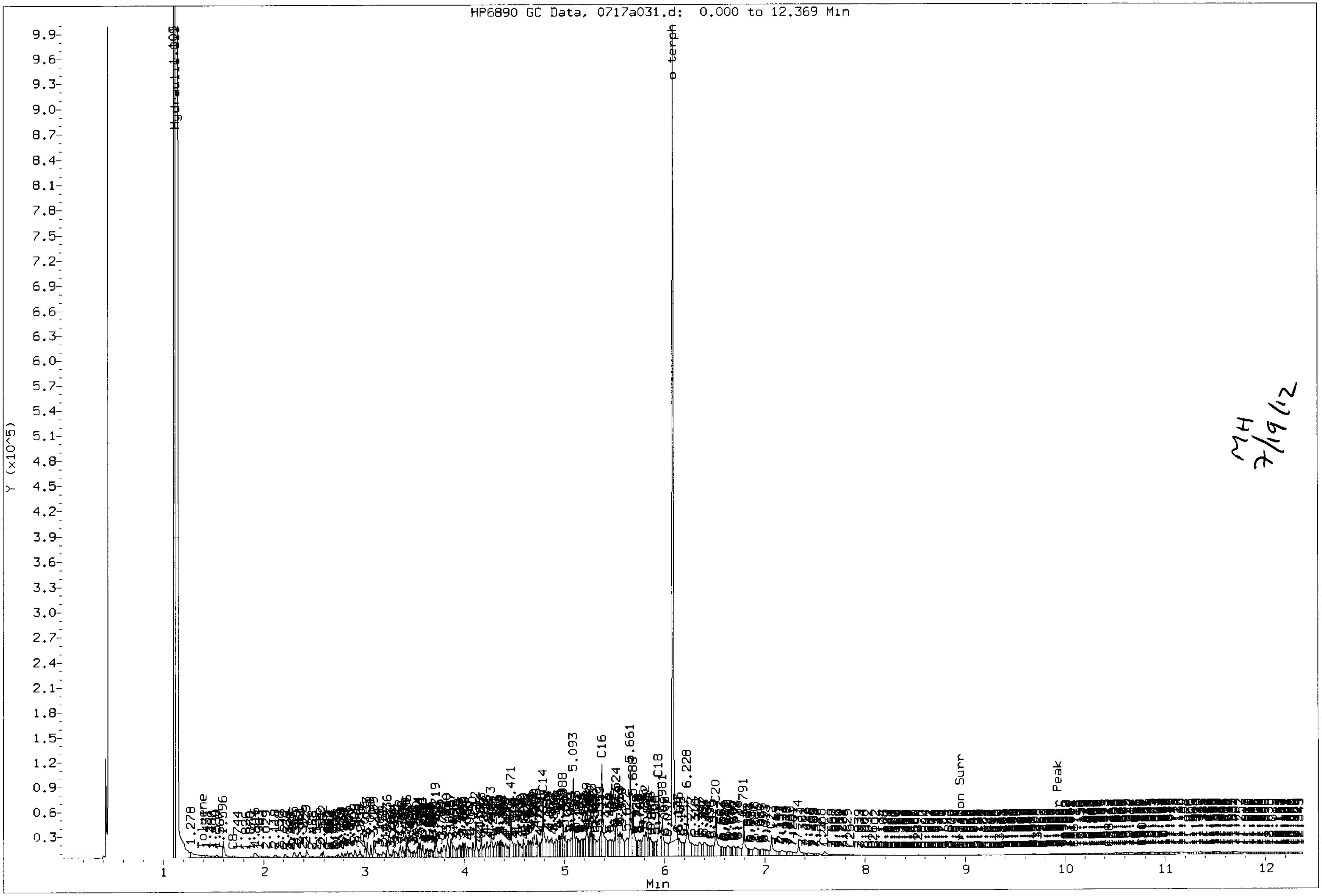
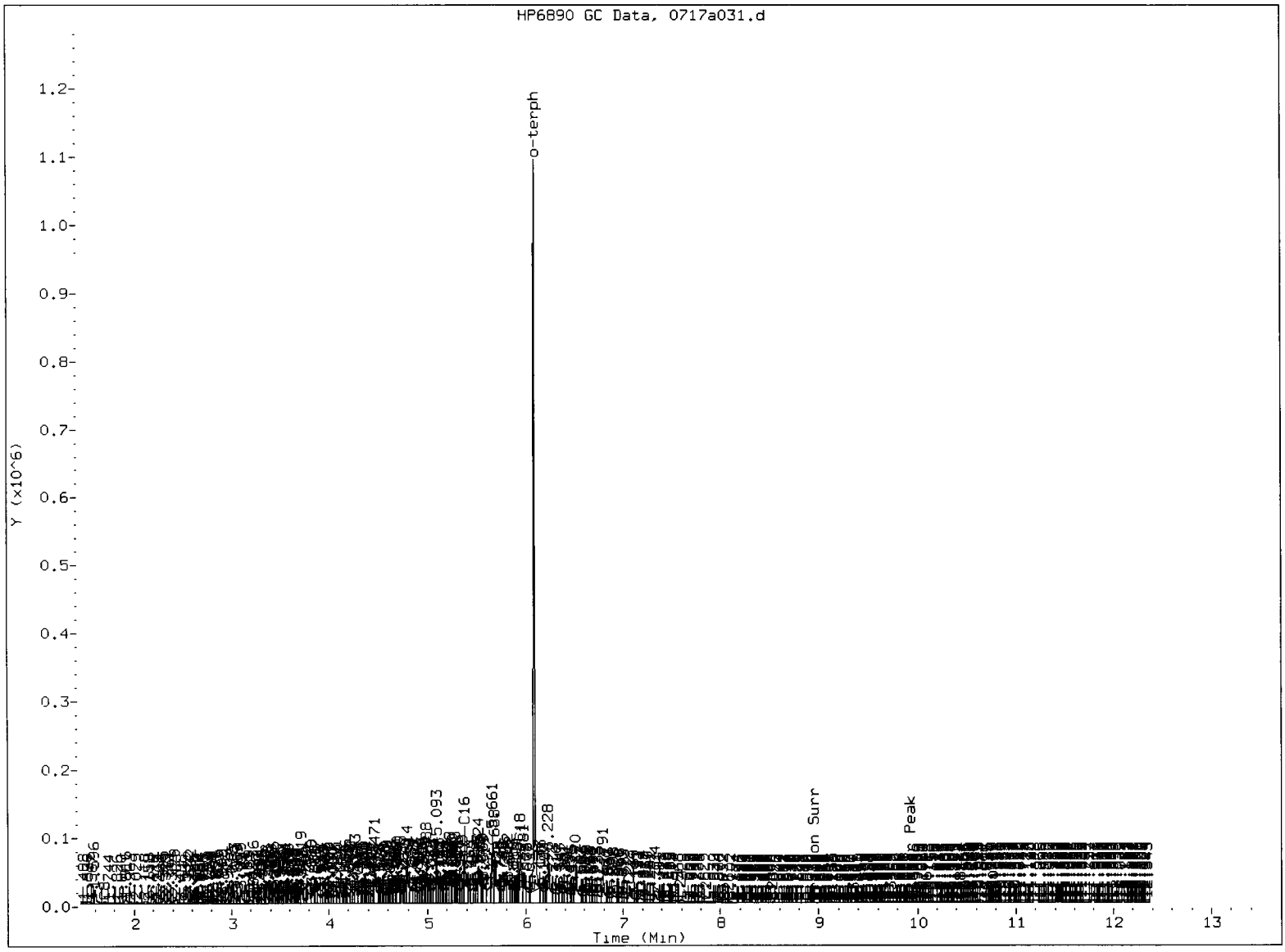
Injection Date: 17-JUL-2012 17:57
Instrument: fid4a.i
Client Sample ID:



MH
7/19/12

FID:4A-2C/RTX-1 DIESEL #3 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a032.d ARI ID: MOIL #3
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 17-JUL-2012 18:19
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.348	-0.043	51089	112630	GAS (Tol-C12)	302017	20.08	
C8	1.662	-0.006	2285	7242	DIESEL (C12-C24)	544012	37.13	
C10	3.239	0.011	2710	5013	M.OIL (C24-C38)	6410750	510.04	
C12	4.154	0.036	535	672	AK-102 (C10-C25)	805271	46.55	
C14	4.805	0.011	145	177	AK-103 (C25-C36)	5427421	635.68	M
C16	5.377	-0.004	67	98				
C18	5.949	0.003	216	237				
C20	6.512	-0.003	1101	1552	JET-A (C10-C18)	92478	6.23	
C22	7.069	0.002	4922	3714	MIN.OIL (C24-C38)	6410750	476.97	M
C24	7.595	0.003	19744	10437				
C25	7.844	0.000	27015	24035				
C26	8.083	-0.002	30880	19437				
C28	8.545	0.006	38317	20966				
C32	9.347	0.000	47183	78186				
C34	9.717	-0.005	47282	87727				
Filter Peak	9.917	-0.005	48423	49045	BUNKERC (C10-C38)	7026394	920.41	M
C36	10.076	-0.008	43184	50548				
C38	10.432	-0.003	37273	18038				
C40	10.792	0.010	30413	28549				
o-terph	6.094	0.003	425	1370				
Triacon Surr	8.968	0.004	830318	863517				

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1370	0.1	0.1
Triacontane	863517	45.2	100.5

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a032.d

Date : 17-JUL-2012 18:19

Client ID:

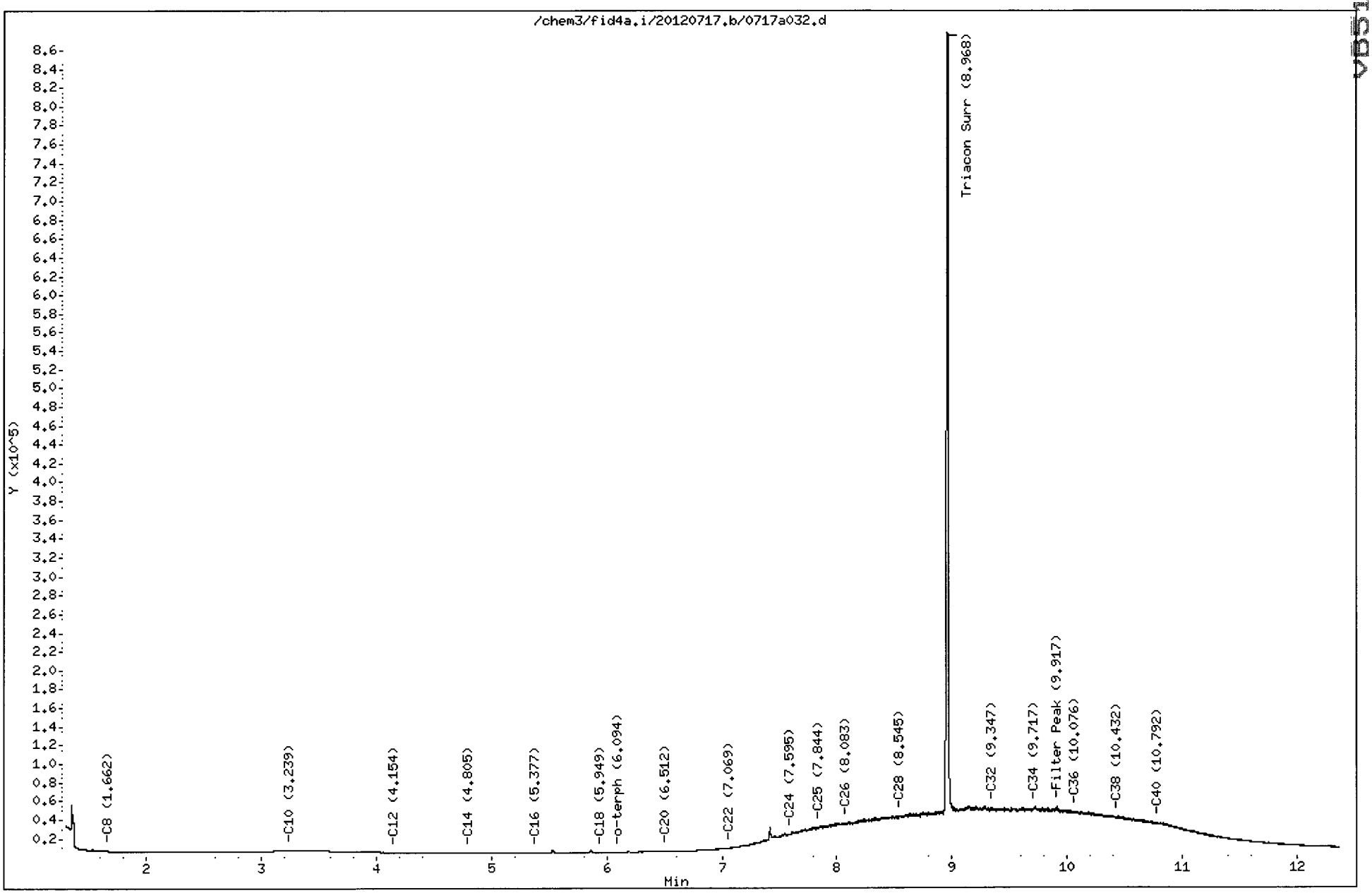
Sample Info: MOIL #3

Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25



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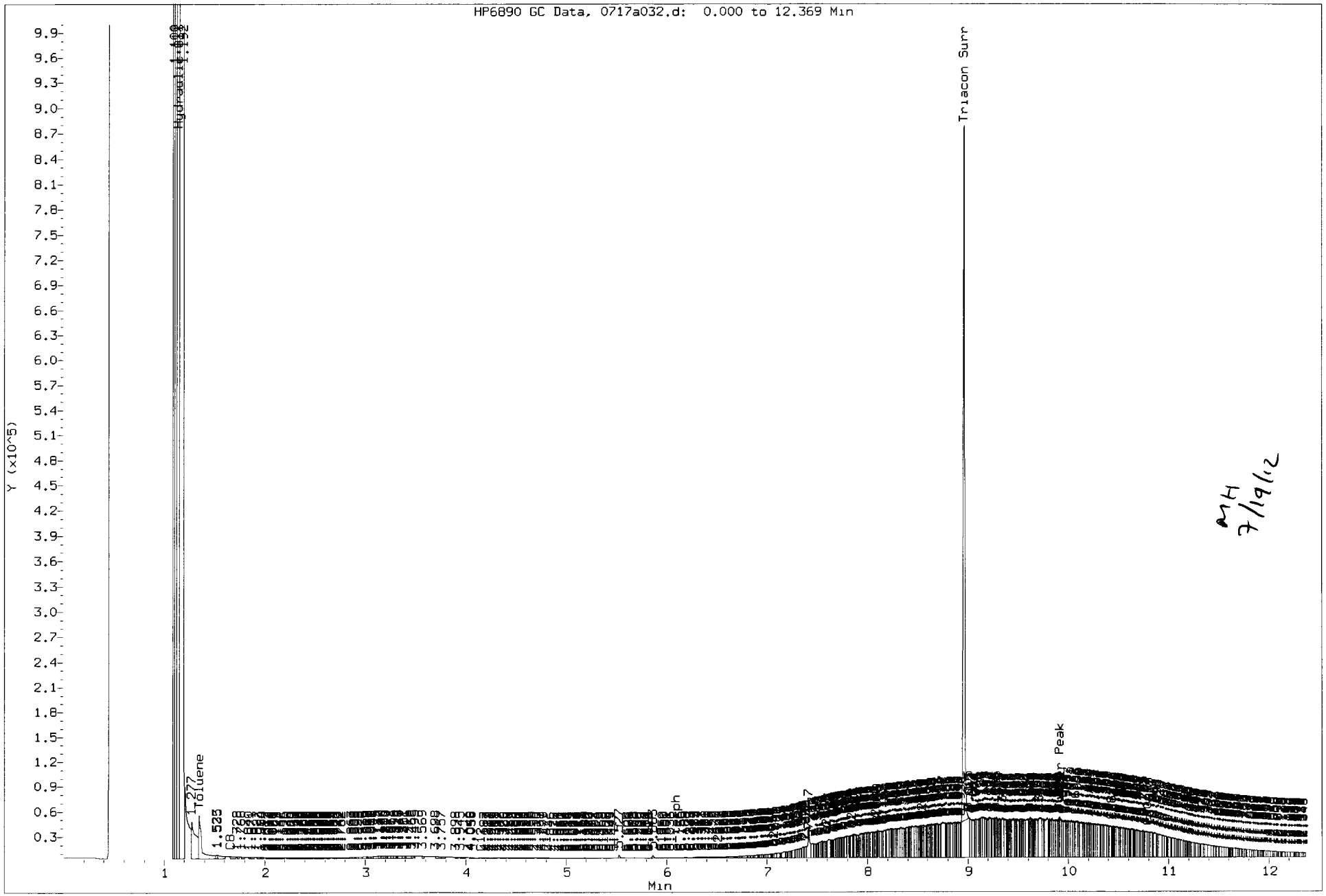
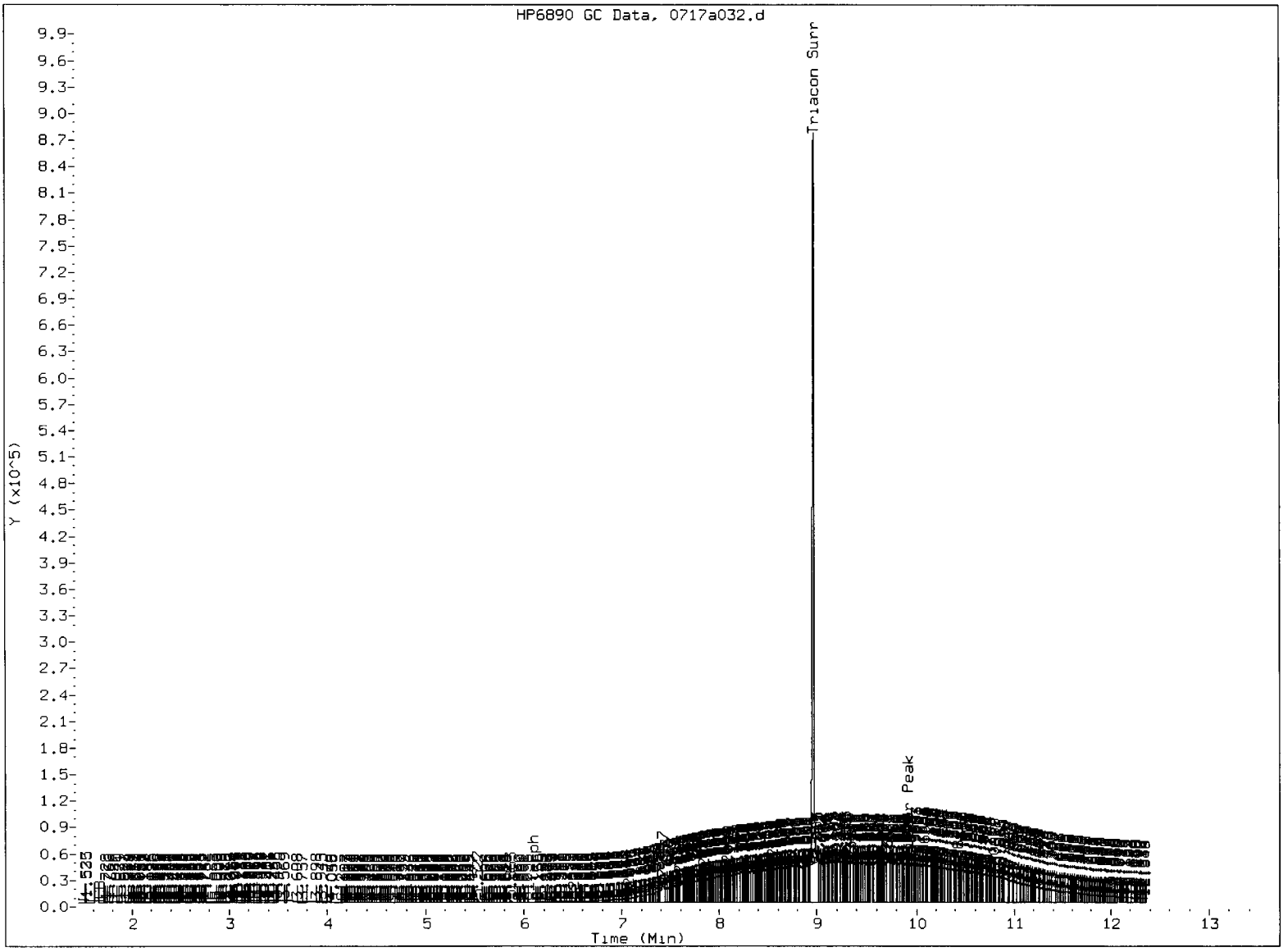
Injection Date: 17-JUL-2012 18:19
Instrument: fid4a.i
Client Sample ID:



MH 7/19/12

FID:4A-2C/RTX-1 MOIL #3 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a035.d ARI ID: VB54P
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m Client ID: CW-TP-08-7-8
Instrument: fid4a.i Injection: 17-JUL-2012 19:23
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.389	-0.001	5131	8019	GAS (Tol-C12)	599565	39.85	
C8	1.685	0.018	5226	9719	DIESEL (C12-C24)	18162377	1239.75	
C10	3.222	-0.006	1920	1378	M.OIL (C24-C38)	9554705	760.18	
C12	4.118	0.000	34653	32319	AK-102 (C10-C25)	18988513	1097.67	M
C14	4.791	-0.003	80731	156004	AK-103 (C25-C36)	8348625	977.82	M
C16	5.382	0.001	128147	148228				
C18	5.946	0.001	133218	252474				
C20	6.508	-0.007	102191	142460	JET-A (C10-C18)	10613053	715.07	
C22	7.066	-0.001	81267	109844	MIN.OIL (C24-C38)	9554705	710.88	M
C24	7.588	-0.003	71295	126985				
C25	7.840	-0.004	68285	123150				
C26	8.084	0.000	69848	114678				
C28	8.536	-0.003	92493	178294				
C32	9.336	-0.010	64759	98931				
C34	9.718	-0.003	52696	131888				
Filter Peak	9.926	0.005	43834	59011	BUNKERC (C10-C38)	28099761	3680.87	M
C36	10.078	-0.005	42481	51019				
C38	10.435	0.001	37486	46222				
C40	10.772	-0.009	30551	38098				
o-terph	6.094	0.003	810686	661084				
Triacon Surr	8.965	0.001	708159	668395				

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	661084	32.5	72.1
Triacontane	668395	35.0	77.8

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a035.d

Date : 17-JUL-2012 19:23

Client ID: CW-TP-08-7-8

Sample Info: VB54P

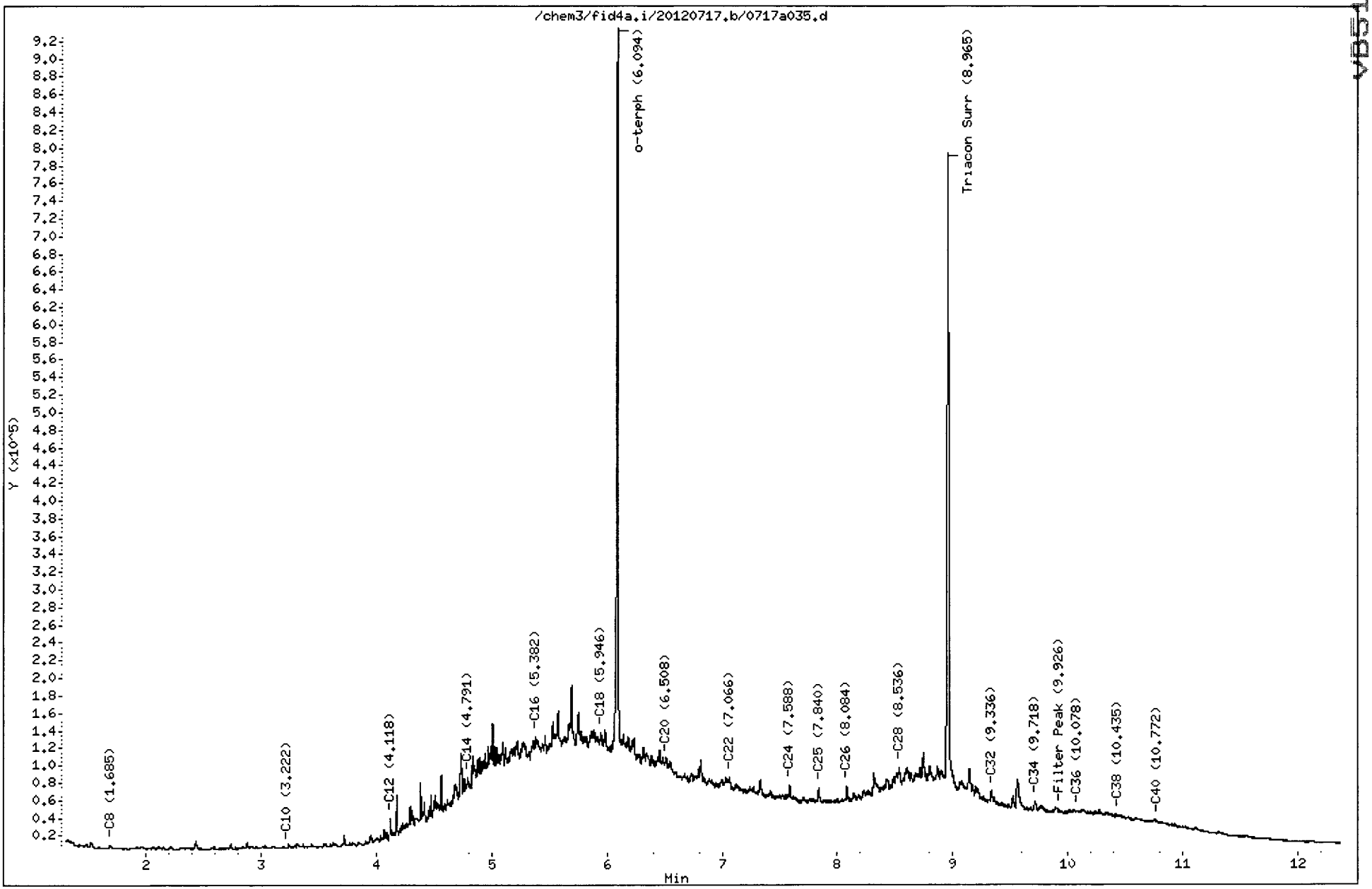
Column phase: RTX-1

Instrument: fid4a.i

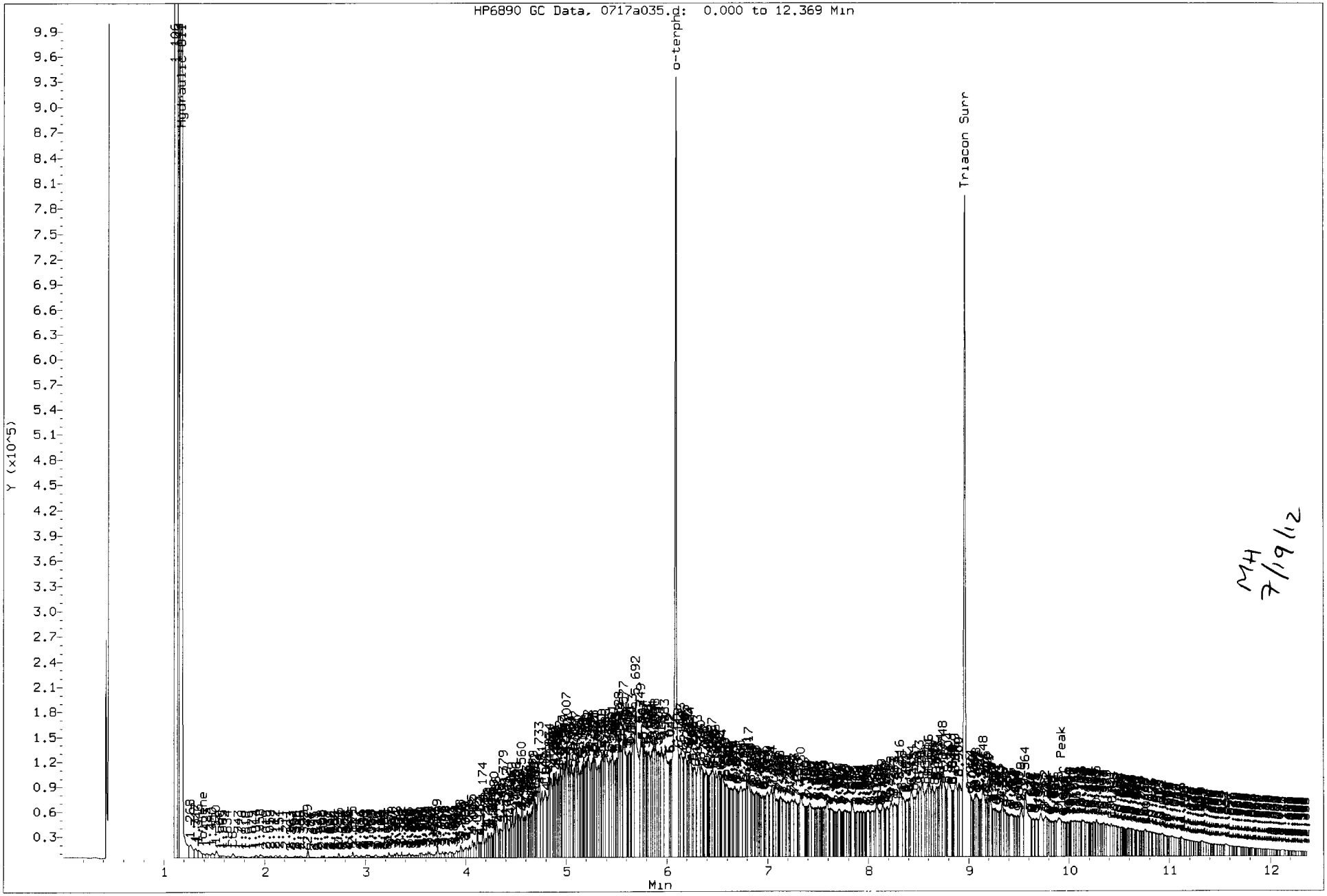
Operator: AR

Column diameter: 0.25

VB54 : 00706



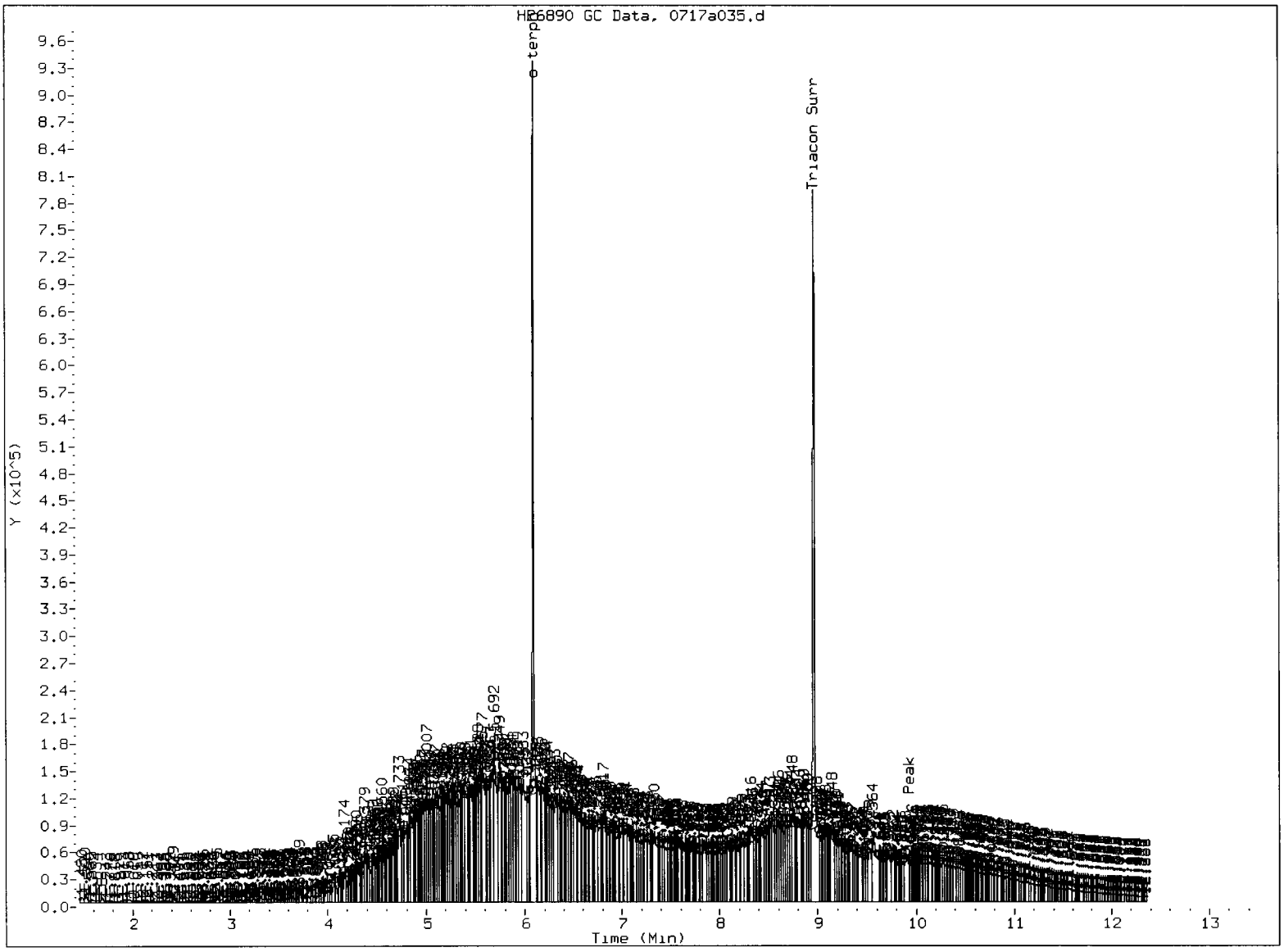
Data File: /chem3/fid4a.i/20120717.b/0717a035.d
Injection Date: 17-JUL-2012 19:23
Instrument: fid4a.i
Client Sample ID: CW-TP-08-7-8



VBS1:000707

MH 7/19/12

FID:4A-2C/RTX-1 VB54P FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717.b/0717a038.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51MBS1
Client ID: VB51MBS1
Injection: 17-JUL-2012 20:27
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.417	0.027	3655	19383	GAS (Tol-C12)	162152	10.78
C8	1.669	0.001	1739	1606	DIESEL (C12-C24)	18819	1.28 LRL
C10	3.219	-0.010	569	254	M.OIL (C24-C38)	114559	9.11 LRL
C12	4.125	0.007	248	185	AK-102 (C10-C25)	45553	2.63
C14	4.803	0.008	143	230	AK-103 (C25-C36)	77775	9.11
C16	5.379	-0.001	109	140			
C18	5.955	0.009	56	30			
C20	6.504	-0.011	47	38	JET-A (C10-C18)	39439	2.66
C22	7.066	-0.001	56	55	MIN.OIL (C24-C38)	114559	8.52
C24	7.587	-0.005	45	31			
C25	7.826	-0.018	144	156			
C26	8.084	-0.001	90	115			
C28	8.533	-0.006	853	1274			
C32	9.357	0.010	1179	2625			
C34	9.724	0.002	1083	1824			
Filter Peak	9.906	-0.015	2076	4267	BUNKERC (C10-C38)	159742	20.93
C36	10.090	0.007	1422	2383			
C38	10.440	0.005	1812	1327			
C40	10.780	-0.002	2545	1652			
o-terph	6.090	-0.001	899658	805117			
Triacon Surr	8.959	-0.005	818413	795060	NAS DIES (C10-C24)	45183	2.83

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	805117	39.5	87.8
Triacontane	795060	41.7	92.6

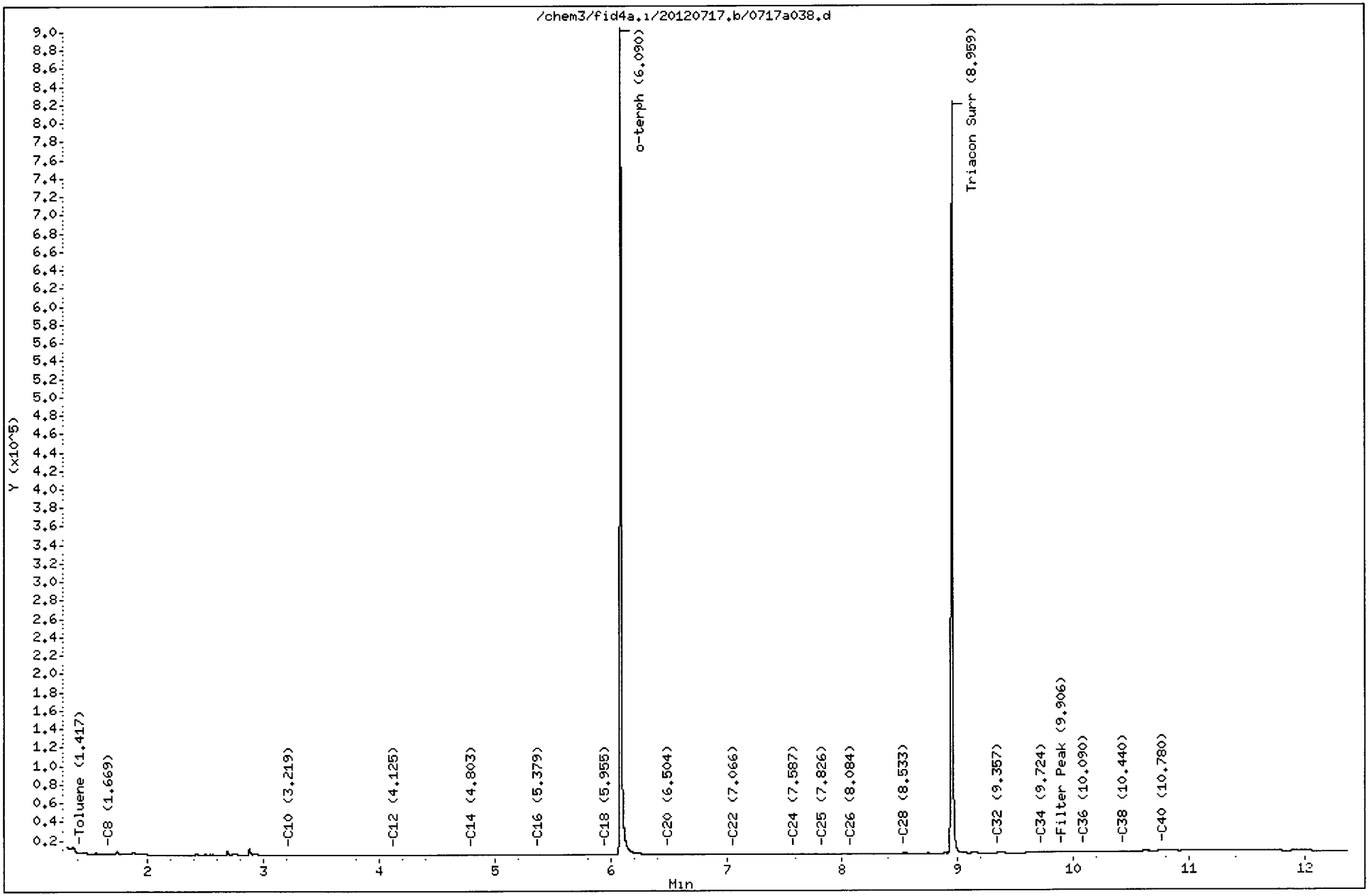
Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a038.d
Date : 17-JUL-2012 20:27
Client ID: VB51MBS1
Sample Info: VB51MBS1

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25

Column phase: RTX-1



VB51 - 0717@

Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717.b/0717a039.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51LCSS1
Client ID: VB51LCSS1
Injection: 17-JUL-2012 20:49
Dilution Factor: 1

FID:4A RESULTS

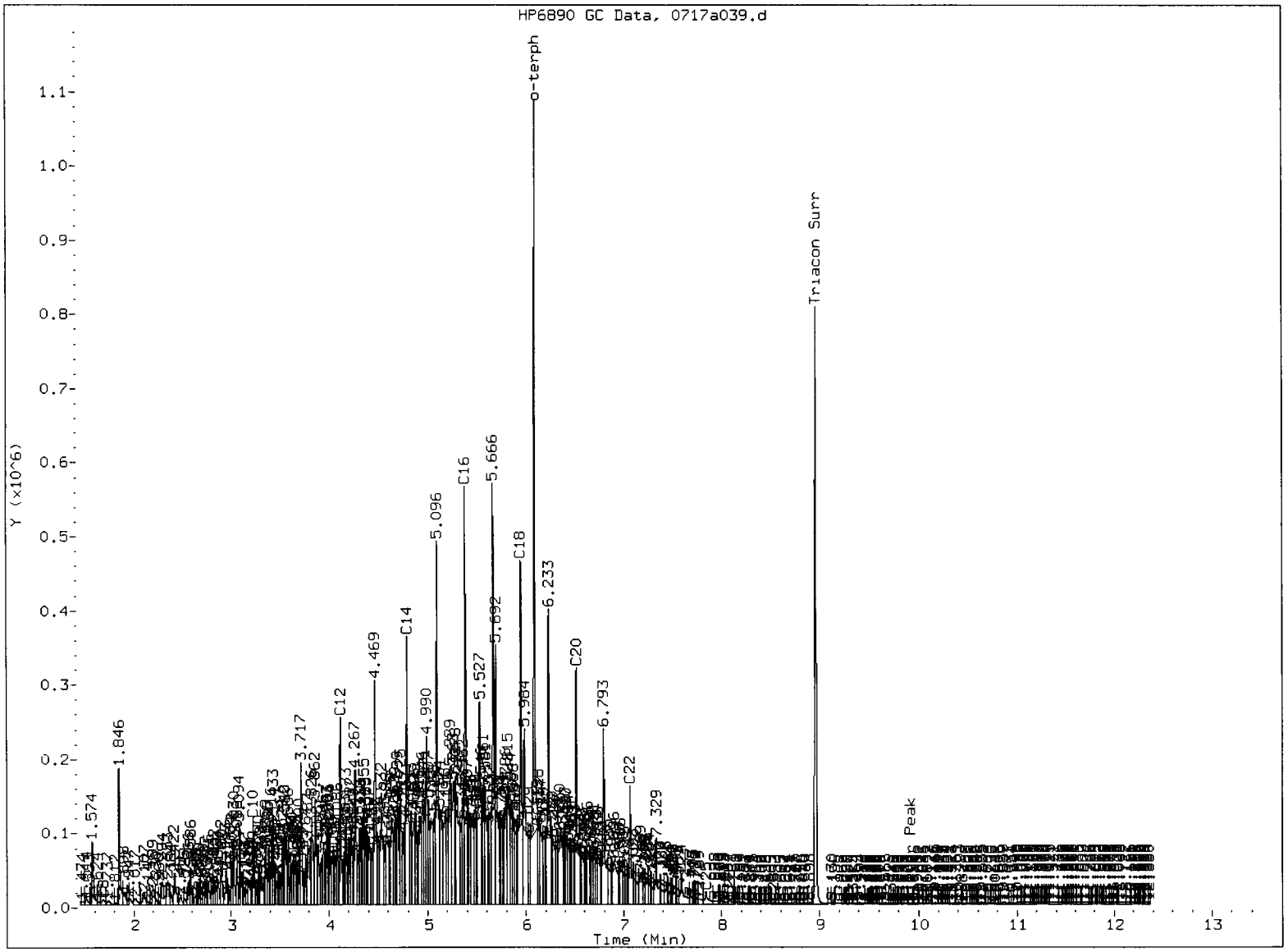
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.377	-0.013	4692	8052	GAS (Tol-C12)	4532859	301.31
C8	1.688	0.021	7039	14101	DIESEL (C12-C24)	18855174	1287.04 85.58% R
C10	3.233	0.005	113965	91688	M.OIL (C24-C38)	205669	16.36 LPL
C12	4.117	-0.001	251296	199661	AK-102 (C10-C25)	22001035	1271.81 M
C14	4.793	-0.001	360267	416780	AK-103 (C25-C36)	133208	15.60
C16	5.383	0.002	562592	522281			
C18	5.949	0.004	462178	591141			
C20	6.516	0.001	317801	437111	JET-A (C10-C18)	16385722	1104.01
C22	7.065	-0.002	159645	193738	MIN.OIL (C24-C38)	205669	15.30
C24	7.587	-0.004	40118	83168			
C25	7.840	-0.004	16153	39832			
C26	8.083	-0.002	6783	10658			
C28	8.530	-0.009	2424	2791			
C32	9.339	-0.008	180	91			
C34	9.721	0.000	122	127			
Filter Peak	9.919	-0.002	1384	1396	BUNKERC (C10-C38)	22147069	2901.11 M
C36	10.078	-0.005	357	270			
C38	10.437	0.002	640	530			
C40	10.772	-0.009	1090	1377			
o-terph	6.095	0.004	986953	854743			
Triacon Surr	8.963	-0.002	804895	784192	NAS DIES (C10-C24)	21941400	1375.55 M

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	854743	42.0	93.2
Triacontane	784192	41.1	91.3

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 VB51LCSS1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other SPO – Surr pk. overlap

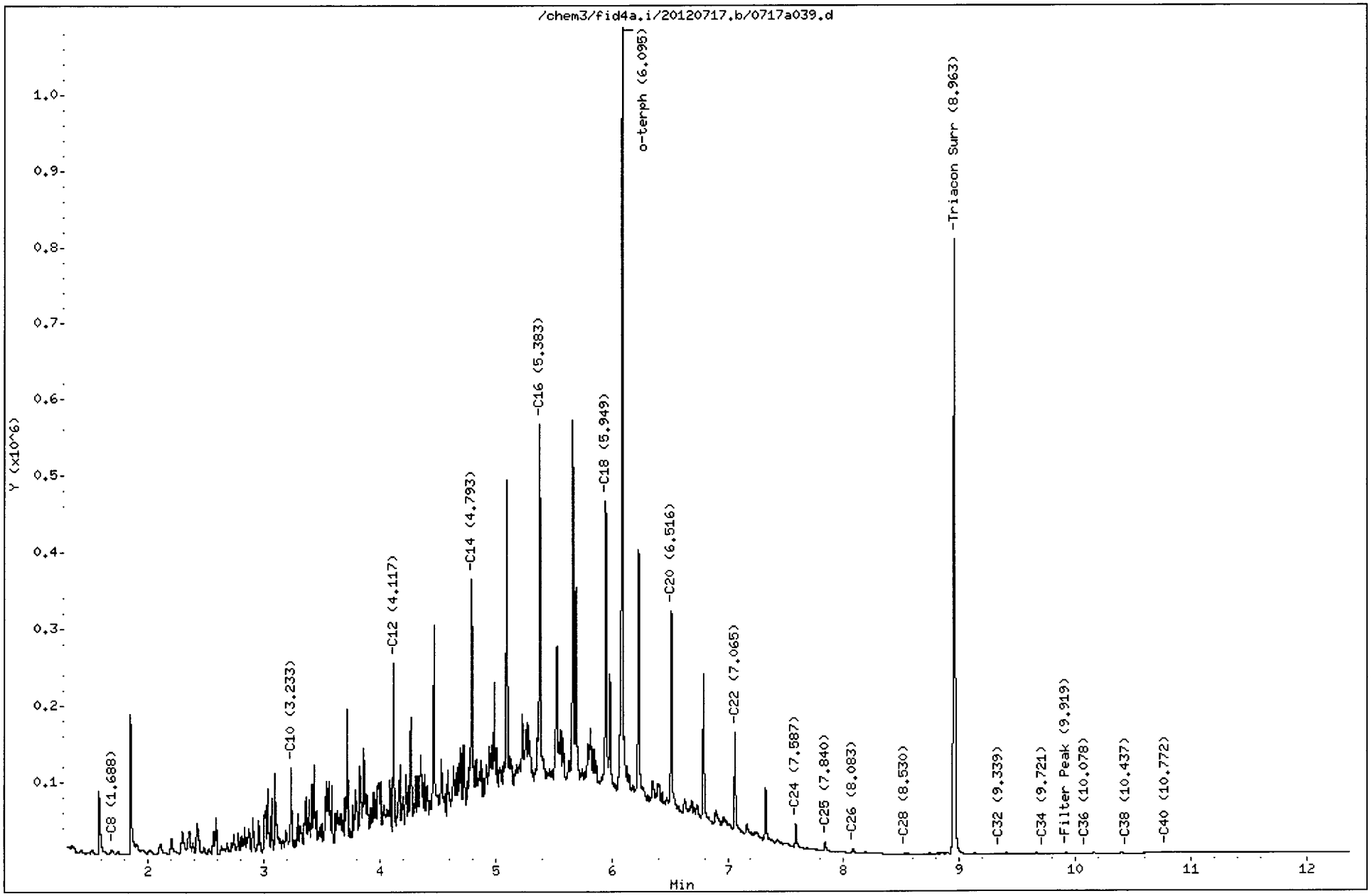
Analyst: AR Date: 7/20/2012

Data File: /chem3/fid4a.i/20120717.b/0717a039.d
Date : 17-JUL-2012 20:49
Client ID: VB51LCSS1
Sample Info: VB51LCSS1

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25

Column phase: RTX-1



VB51 : 07713

Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717.b/0717a040.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51B
Client ID: CW-TP-06-5.5-6.5
Injection: 17-JUL-2012 21:10
Dilution Factor: 1

FID:4A RESULTS

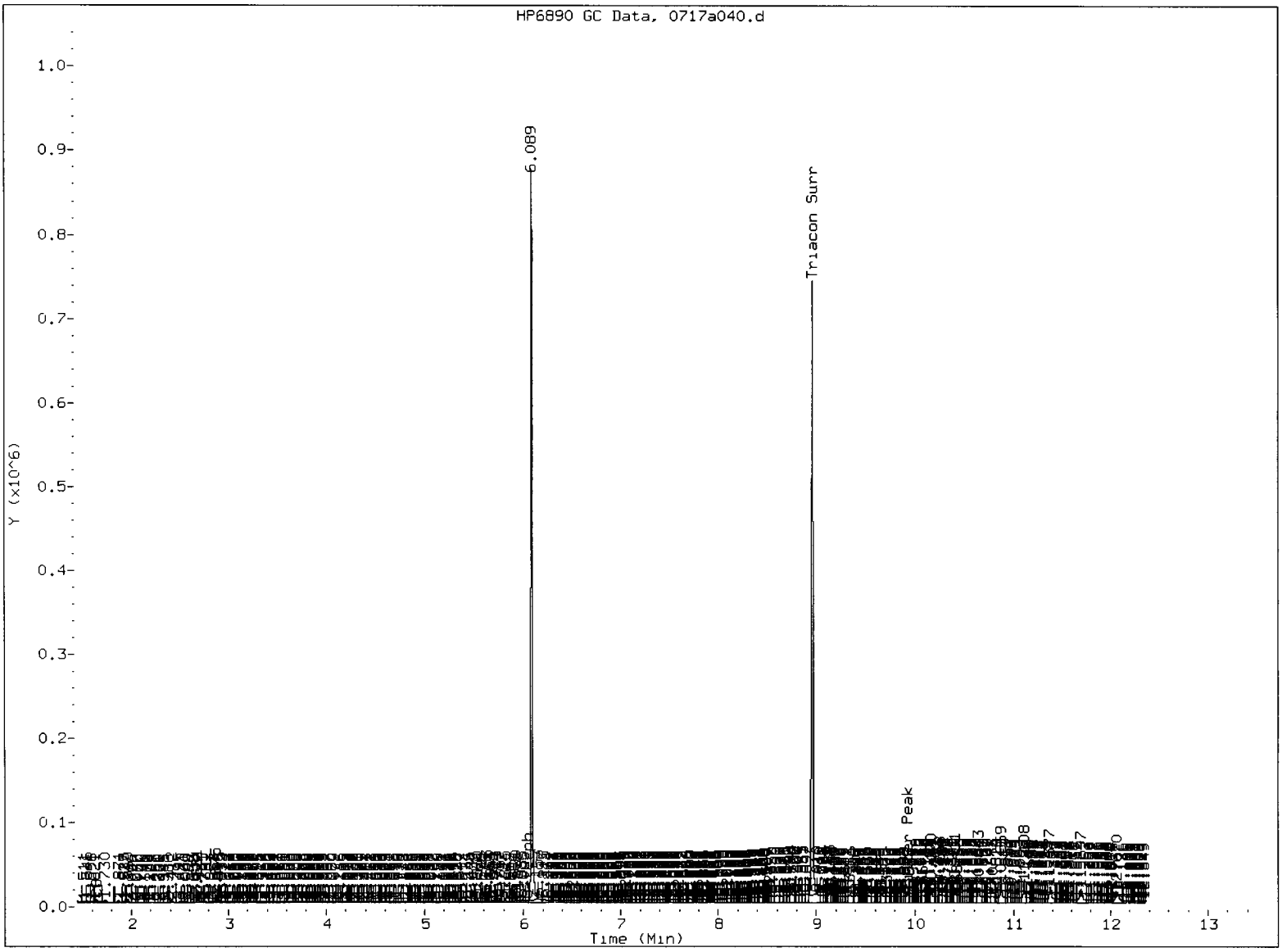
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.409	0.019	3193	11458	GAS (Tol-C12)	157247	10.45	
C8	1.642	-0.025	3992	7564	DIESEL (C12-C24)	385213	26.29	LRL (Dies)
C10	3.226	-0.002	620	412	M.OIL (C24-C38)	1164518	92.65	LRL (mei l)
C12	4.132	0.014	675	808	AK-102 (C10-C25)	461611	26.68	M
C14	4.806	0.011	917	2128	AK-103 (C25-C36)	969274	113.52	M
C16	5.384	0.003	1158	2198				
C18	5.939	-0.007	1988	3625				
C20	6.512	-0.003	2647	2353	JET-A (C10-C18)	156195	10.52	
C22	7.056	-0.011	3238	5335	MIN.OIL (C24-C38)	1164518	86.64	M
C24	7.589	-0.002	3749	4205				
C25	7.846	0.002	4069	2399				
C26	8.090	0.005	4511	2663				
C28	8.529	-0.010	8548	13240				
C32	9.342	-0.005	9309	24486				
C34	9.721	0.000	8382	14697				
Filter Peak	9.925	0.004	11968	16183	BUNKERC (C10-C38)	1593252	208.70	M
C36	10.078	-0.005	8544	15832				
C38	10.433	-0.002	9824	13448				
C40	10.782	0.000	7657	19566				
o-terph	6.089	-0.001	870193	732438				
Triacon Surr	8.964	-0.001	731876	718913	NAS DIES (C10-C24)	428734	26.88	M

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	732438	36.0	79.9
Triacontane	718913	37.7	83.7

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 VB51B FID:4A SIGNAL



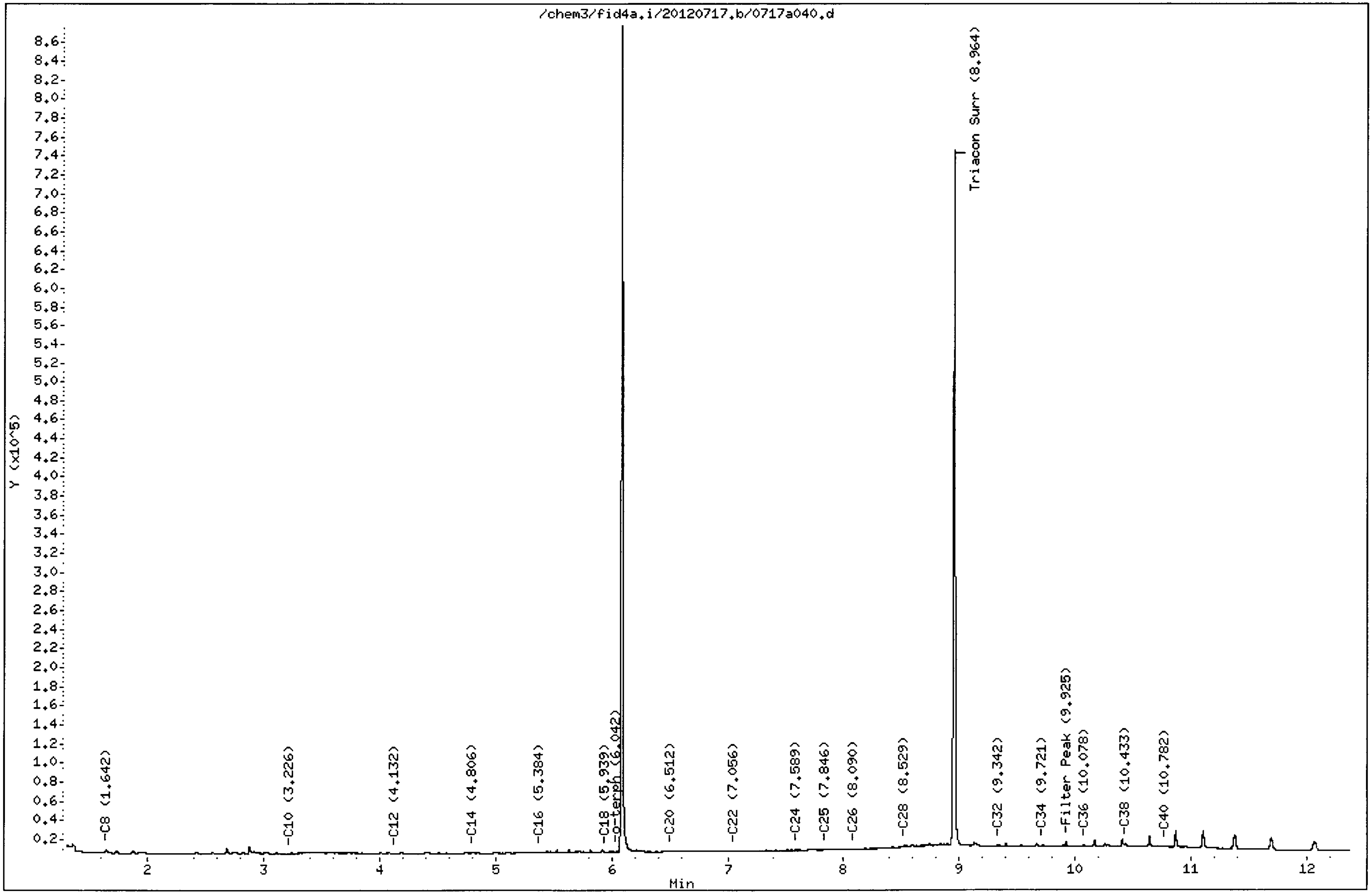
MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other SPC

Analyst: AR Date: 7/20/202

Data File: /chem3/fid4a.i/20120717.b/0717a040.d
Date : 17-JUL-2012 21:10
Client ID: CW-TP-06-5.5-6.5
Sample Info: VB51B
Column phase: RTX-1

Instrument: fid4a.i
Operator: AR
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717.b/0717a041.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51BMS
Client ID: CW-TP-06-5.5-6. MS
Injection: 17-JUL-2012 21:32
Dilution Factor: 1

FID:4A RESULTS

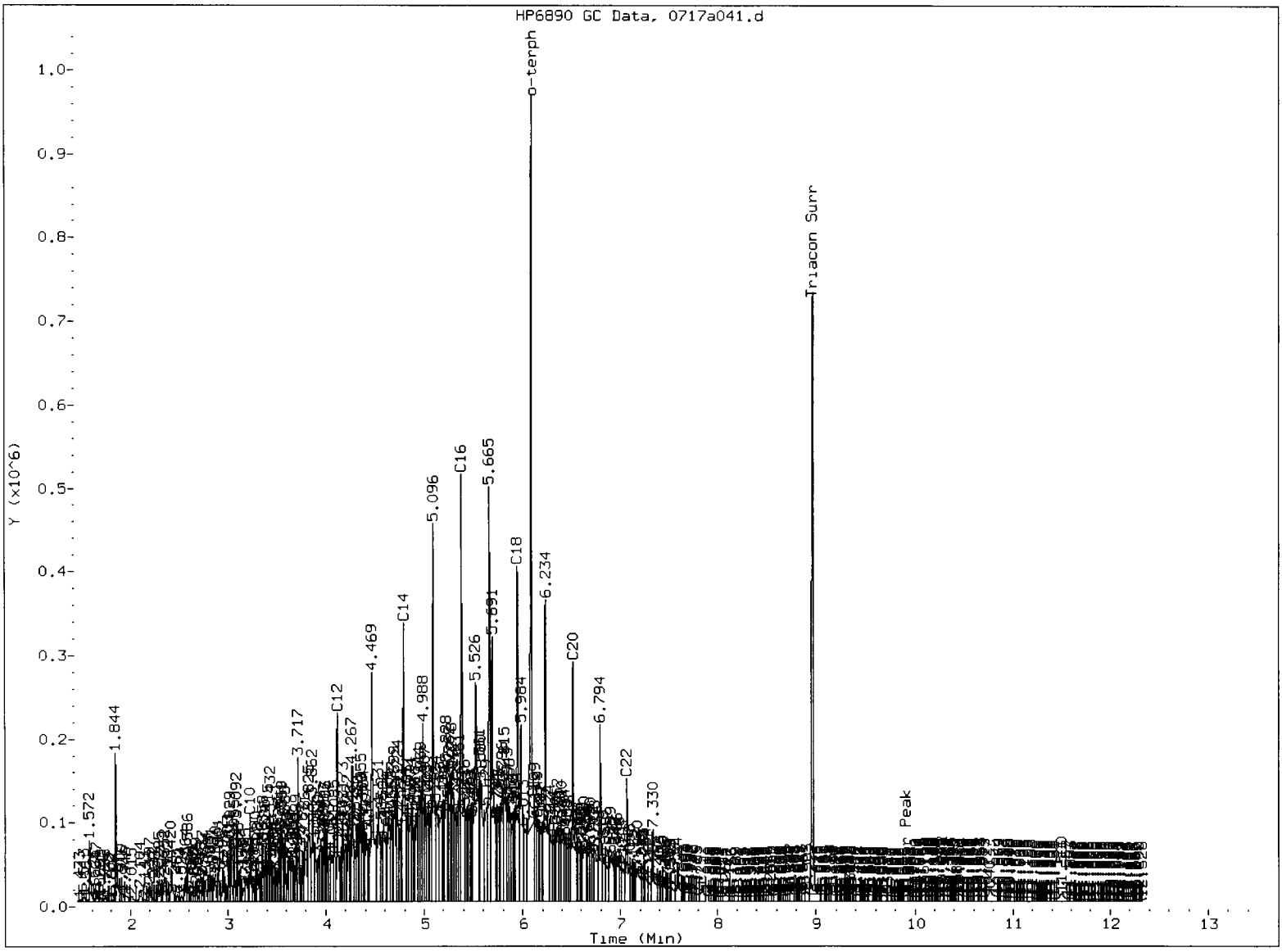
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.415	0.024	7435	11524	GAS (Tol-C12)	4059125	269.82
C8	1.678	0.010	5133	3830	DIESEL (C12-C24)	17545322	1197.63 79.8%R
C10	3.233	0.004	102285	80594	M.OIL (C24-C38)	1258651	100.14 Moil
C12	4.117	-0.001	224506	180405	AK-102 (C10-C25)	20420351	1180.44 M
C14	4.792	-0.002	332177	398721	AK-103 (C25-C36)	1016961	119.11 M
C16	5.382	0.001	510767	573794			
C18	5.949	0.003	400479	475985			
C20	6.516	0.000	285719	392914	JET-A (C10-C18)	14986910	1009.76
C22	7.065	-0.003	146891	200806	MIN.OIL (C24-C38)	1258651	93.64 M
C24	7.587	-0.005	40987	67083			
C25	7.838	-0.006	19550	43707			
C26	8.080	-0.005	11091	25274			
C28	8.534	-0.006	9907	16324			
C32	9.347	0.000	10354	15707			
C34	9.718	-0.003	6955	4620			
Filter Peak	9.912	-0.009	7956	18732	BUNKERC (C10-C38)	21588406	2827.93 M
C36	10.093	0.010	7901	15391			
C38	10.426	-0.009	7547	7628			
C40	10.768	-0.014	13979	57345			
o-terph	6.093	0.002	874129	778378			
Triacon Surr	8.968	0.003	719182	701049	NAS DIES (C10-C24)	20329755	1274.51 M

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	778378	38.2	84.9
Triacontane	701049	36.7	81.6

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 VB51BMS FID:4A SIGNAL



MANUAL INTEGRATION

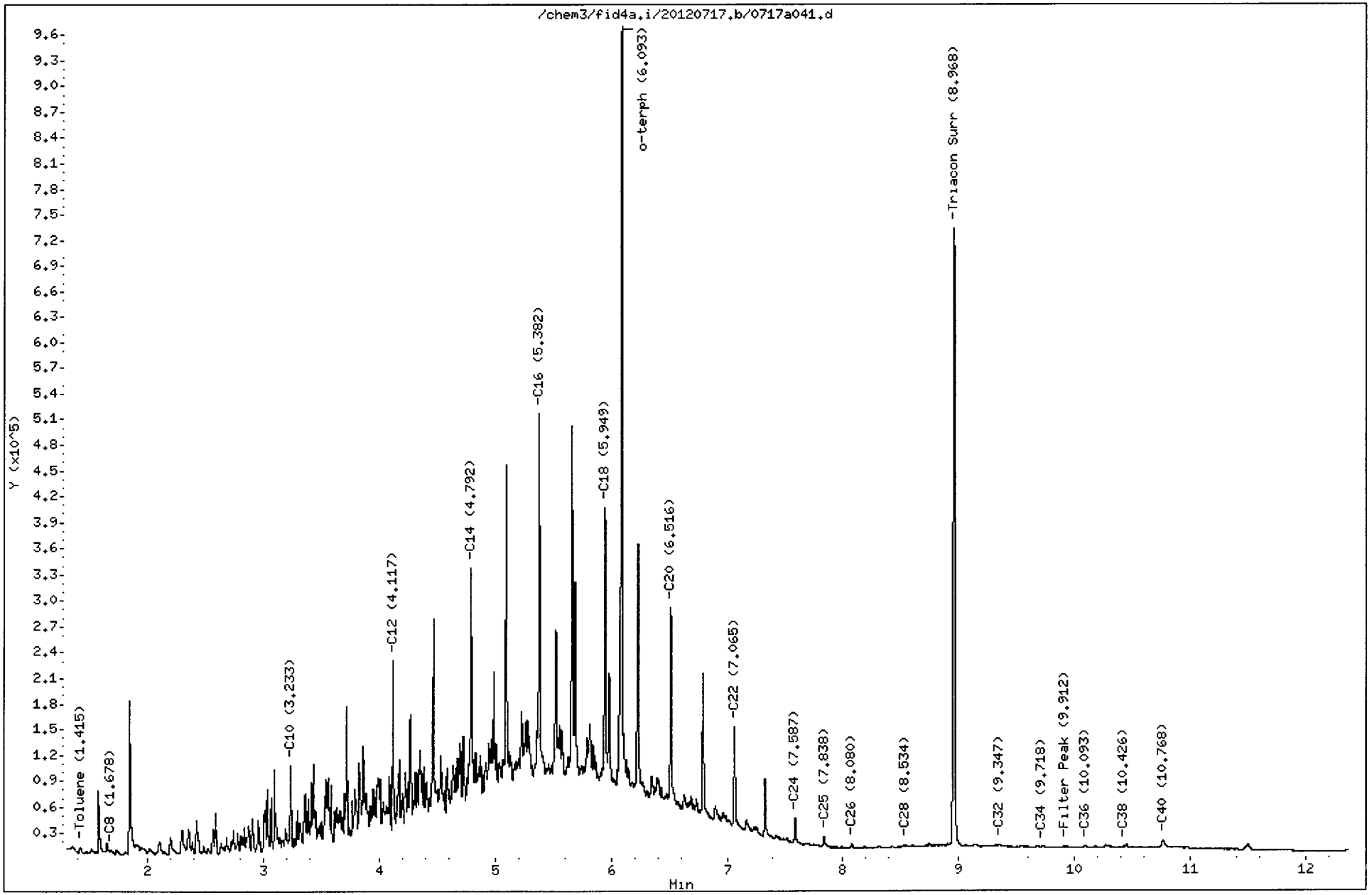
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other SPO

Analyst: AR Date: 7/20/2012

Data File: /chem3/fid4a.i/20120717.b/0717a041.d
Date : 17-JUL-2012 21:32
Client ID: CW-TP-06-5.5-6. MS
Sample Info: VB51BMS

Instrument: fid4a.i
Operator: AR
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717.b/0717a042.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51BMSD
Client ID: CW-TP-06-5.5-6. MSD
Injection: 17-JUL-2012 21:53
Dilution Factor: 1

FID:4A RESULTS

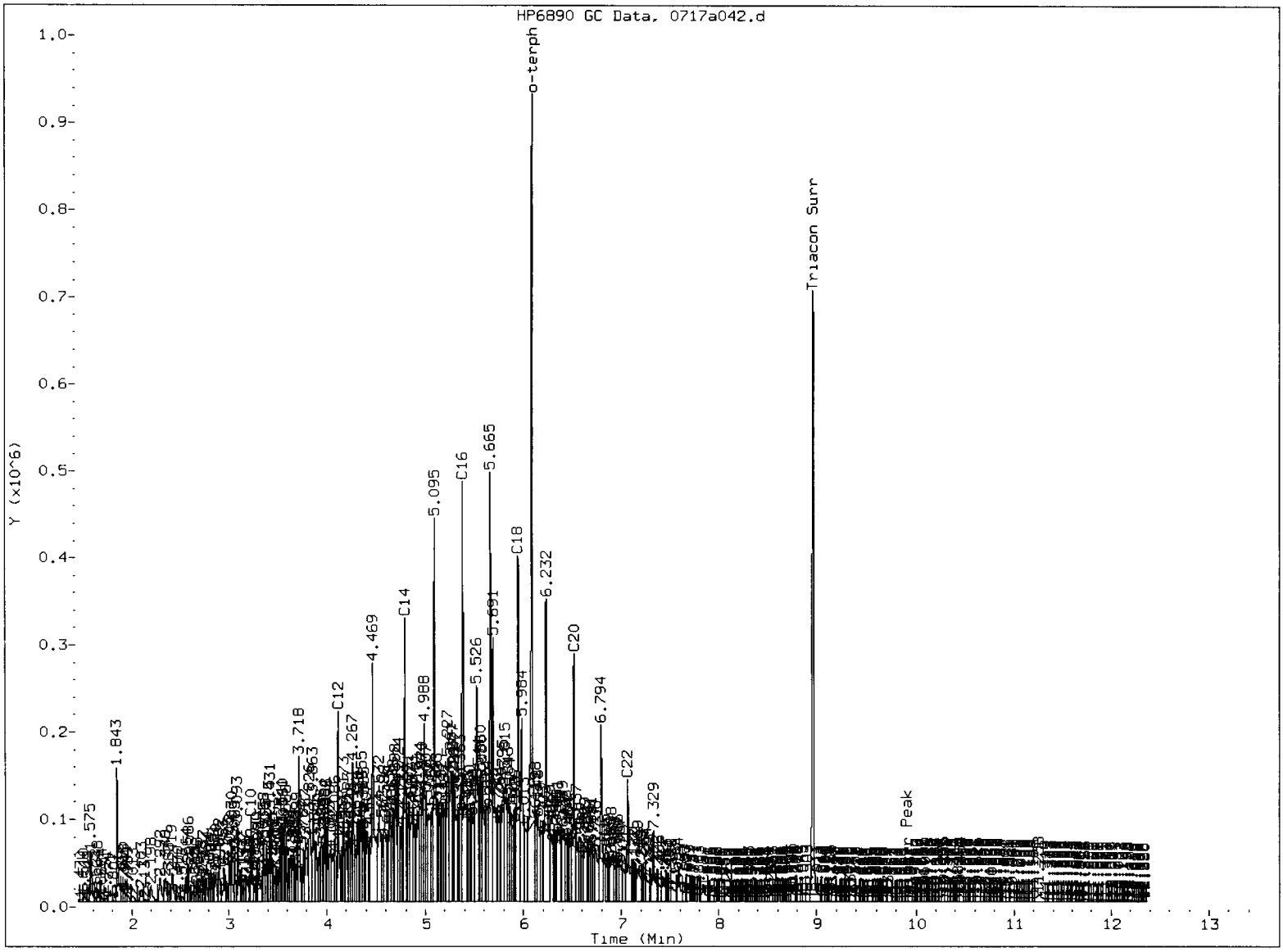
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.412	0.022	7256	11843	GAS (Tol-C12)	4071211	270.62	
C8	1.674	0.006	5865	4561	DIESEL (C12-C24)	16739021	1142.60	76.2%R
C10	3.233	0.005	95679	79648	M.OIL (C24-C38)	1151163	91.59	Moil
C12	4.117	-0.001	218636	181366	AK-102 (C10-C25)	19574231	1131.52	M
C14	4.792	-0.003	325075	300920	AK-103 (C25-C36)	957269	112.12	M
C16	5.382	0.001	481924	574841				
C18	5.949	0.003	396751	457004				
C20	6.516	0.001	284513	317494	JET-A (C10-C18)	14516473	978.07	
C22	7.065	-0.003	139865	206048	MIN.OIL (C24-C38)	1151163	85.65	M
C24	7.588	-0.003	39667	67057				
C25	7.839	-0.005	18776	45069				
C26	8.079	-0.006	10428	21858				
C28	8.535	-0.005	9201	13836				
C32	9.347	0.000	8546	22580				
C34	9.724	0.003	7597	19601				
Filter Peak	9.909	-0.013	7523	10593	BUNKERC (C10-C38)	20664751	2706.94	M
C36	10.080	-0.003	6257	2832				
C38	10.429	-0.006	6858	7438				
C40	10.773	-0.009	5718	6038				
o-terph	6.093	0.002	839649	737219				
Triacon Surr	8.966	0.001	693870	668460	NAS DIES (C10-C24)	19513588	1223.35	M

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	737219	36.2	80.4
Triacontane	668460	35.0	77.8

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 VB51BMSD FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other SPO ✓

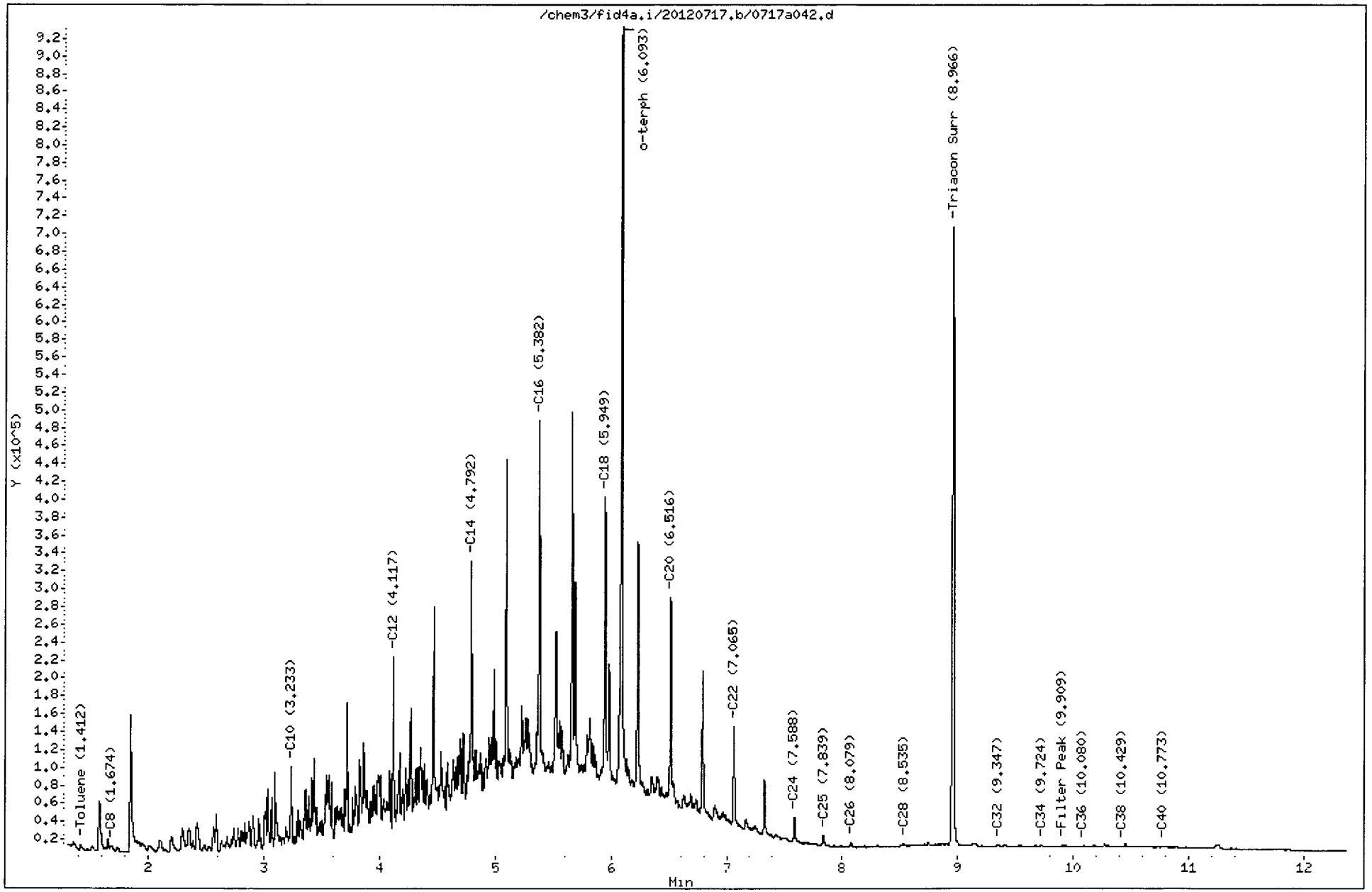
Analyst: AR Date: 7/20/2007

Data File: /chem3/fid4a.i/20120717.b/0717a042.d
Date : 17-JUL-2012 21:53
Client ID: CW-TP-06-5.5-6. MSD
Sample Info: VB51BMSD

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25

Column phase: RTX-1



VB51 : 060722

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a043.d ARI ID: DIESEL #4
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 17-JUL-2012 22:15
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.424	0.033	3345	8432	GAS (Tol-C12)	898300	59.71	
C8	1.696	0.028	2440	6171	DIESEL (C12-C24)	3533101	241.17	
C10	3.222	-0.006	4519	2815	M.OIL (C24-C38)	78945	6.28	
C12	4.120	0.002	44686	37608	AK-102 (C10-C25)	4143216	239.51	M
C14	4.792	-0.002	72485	73806	AK-103 (C25-C36)	50615	5.93	
C16	5.379	-0.002	110920	93961				
C18	5.945	-0.001	88378	93875				
C20	6.513	-0.003	56713	89178	JET-A (C10-C18)	3104434	209.17	
C22	7.065	-0.002	24684	46245	MIN.OIL (C24-C38)	78945	5.87	
C24	7.599	0.007	4772	15318				
C25	7.853	0.009	1946	6005				
C26	8.080	-0.005	473	315				
C28	8.530	-0.010	462	442				
C32	9.341	-0.006	137	203				
C34	9.698	-0.024	430	399				
Filter Peak	9.922	0.001	1153	1870	BUNKERC (C10-C38)	4212074	551.75	M
C36	10.104	0.021	2029	10748				
C38	10.436	0.002	1114	950				
C40	10.800	0.019	1689	3681				
o-terph	6.093	0.002	1020400	895927				
Triacon Surr	8.961	-0.003	47	23				

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	895927	44.0	97.7
Triacontane	23	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a043.d

Date : 17-JUL-2012 22:15

Client ID:

Sample Info: DIESEL #4

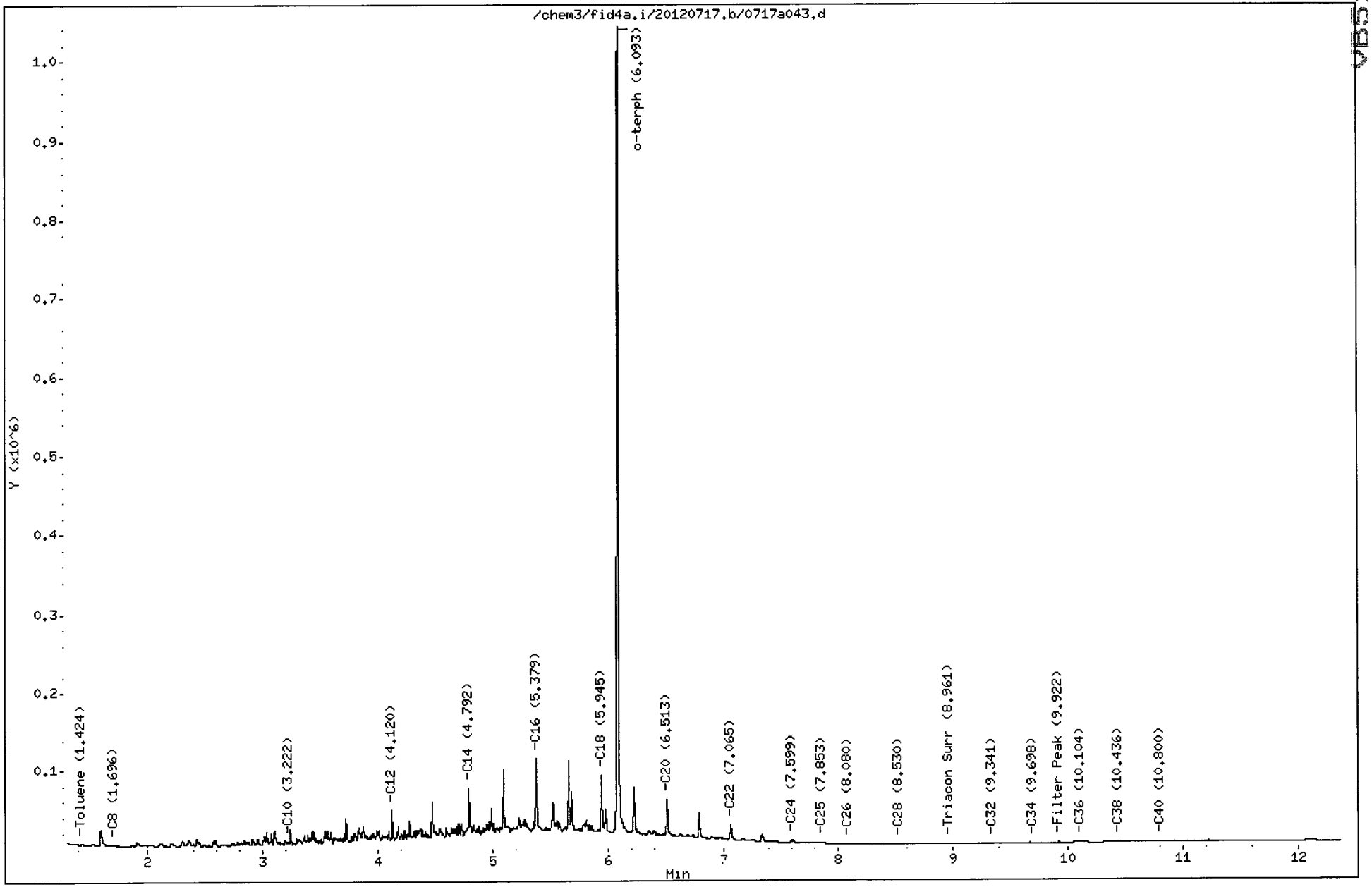
Column phase: RTX-1

Instrument: fid4a.i

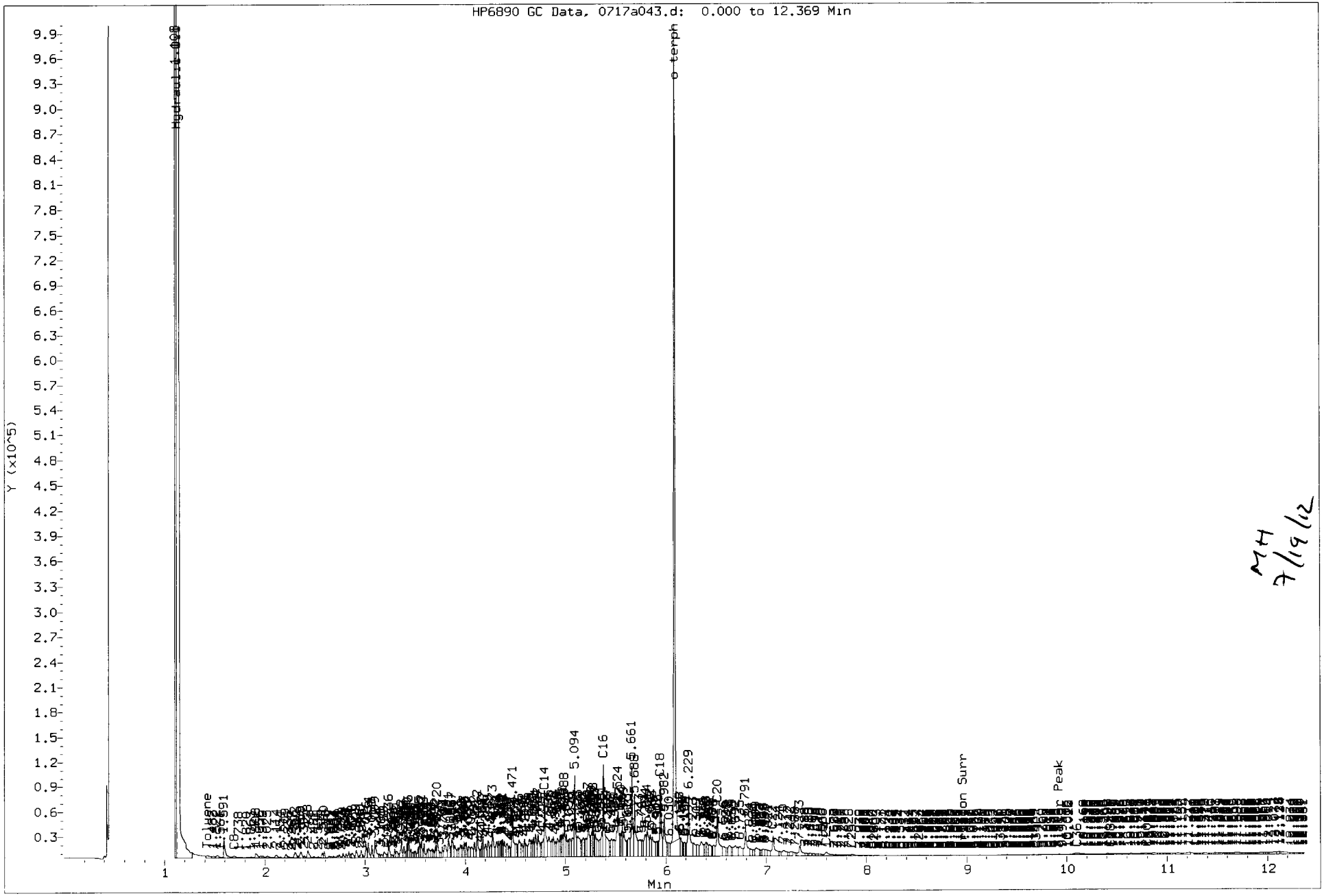
Operator: AR

Column diameter: 0.25

VB51 : 00721



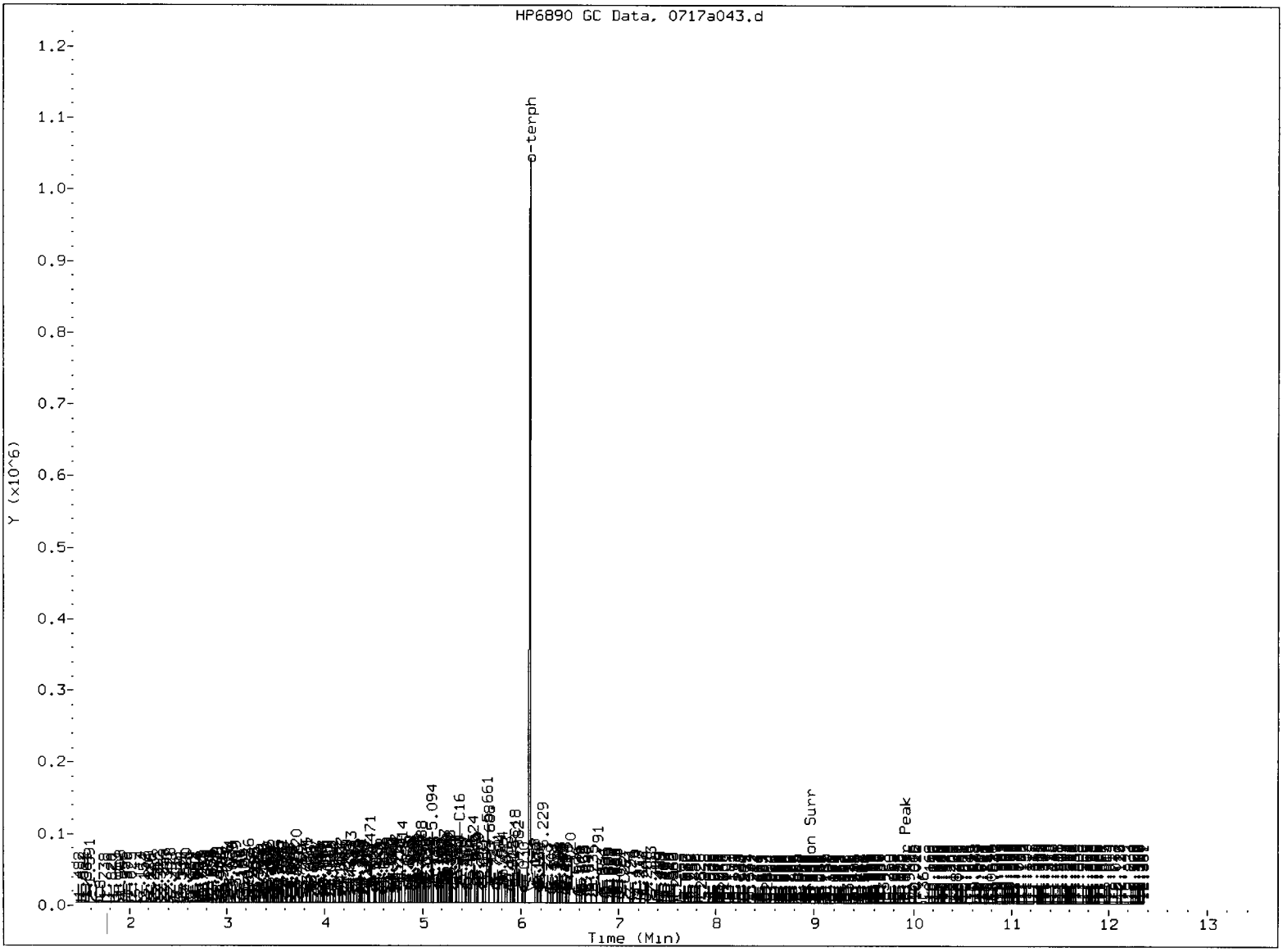
Data File: /chem3/fid4a.i/20120717.b/0717a043.d
Injection Date: 17-JUL-2012 22:15
Instrument: fid4a.i
Client Sample ID:



MH 7/19/12

VBS1 : 000725

FID:4A-2C/RTX-1 DIESEL #4 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a044.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: MOIL #4
Client ID:
Injection: 17-JUL-2012 22:36
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.346	-0.044	43009	89130	GAS (Tol-C12)	261111	17.36	
C8	1.723	0.055	1520	1870	DIESEL (C12-C24)	549673	37.52	
C10	3.238	0.010	2104	6045	M.OIL (C24-C38)	6232571	495.87	
C12	4.126	0.008	414	304	AK-102 (C10-C25)	831043	48.04	
C14	4.798	0.003	139	278	AK-103 (C25-C36)	5263287	616.45	M
C16	5.382	0.002	62	34				
C18	5.937	-0.009	181	69				
C20	6.514	-0.001	1114	2065	JET-A (C10-C18)	79332	5.35	
C22	7.065	-0.002	4890	2651	MIN.OIL (C24-C38)	6232571	463.71	M
C24	7.596	0.005	19946	13598				
C25	7.847	0.003	26653	16324				
C26	8.081	-0.004	30843	13396				
C28	8.542	0.003	38753	40922				
C32	9.338	-0.009	46482	63101				
C34	9.725	0.003	47002	76085				
Filter Peak	9.913	-0.008	46932	62049	BUNKERC (C10-C38)	6843912	896.50	M
C36	10.077	-0.006	41661	32825				
C38	10.426	-0.009	36462	46539				
C40	10.782	0.001	28966	15425				
o-terph	6.096	0.005	407	1220				
Triacon Surr	8.969	0.004	848791	863005				

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1220	0.1	0.1
Triacontane	863005	45.2	100.5

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717.b/0717a044.d

Date : 17-JUL-2012 22:36

Client ID:

Sample Info: MOIL #4

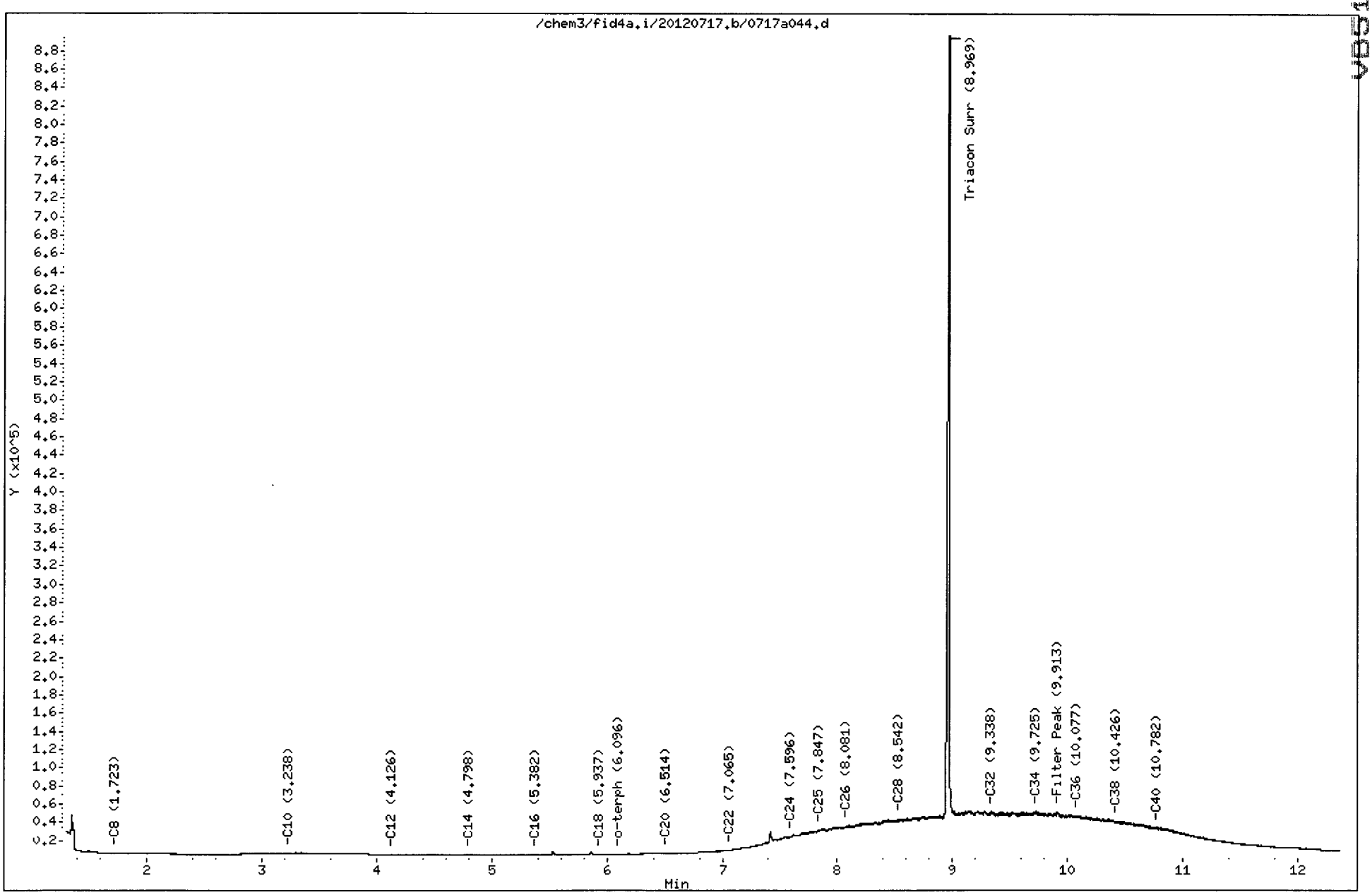
Column phase: RTX-1

Instrument: fid4a.i

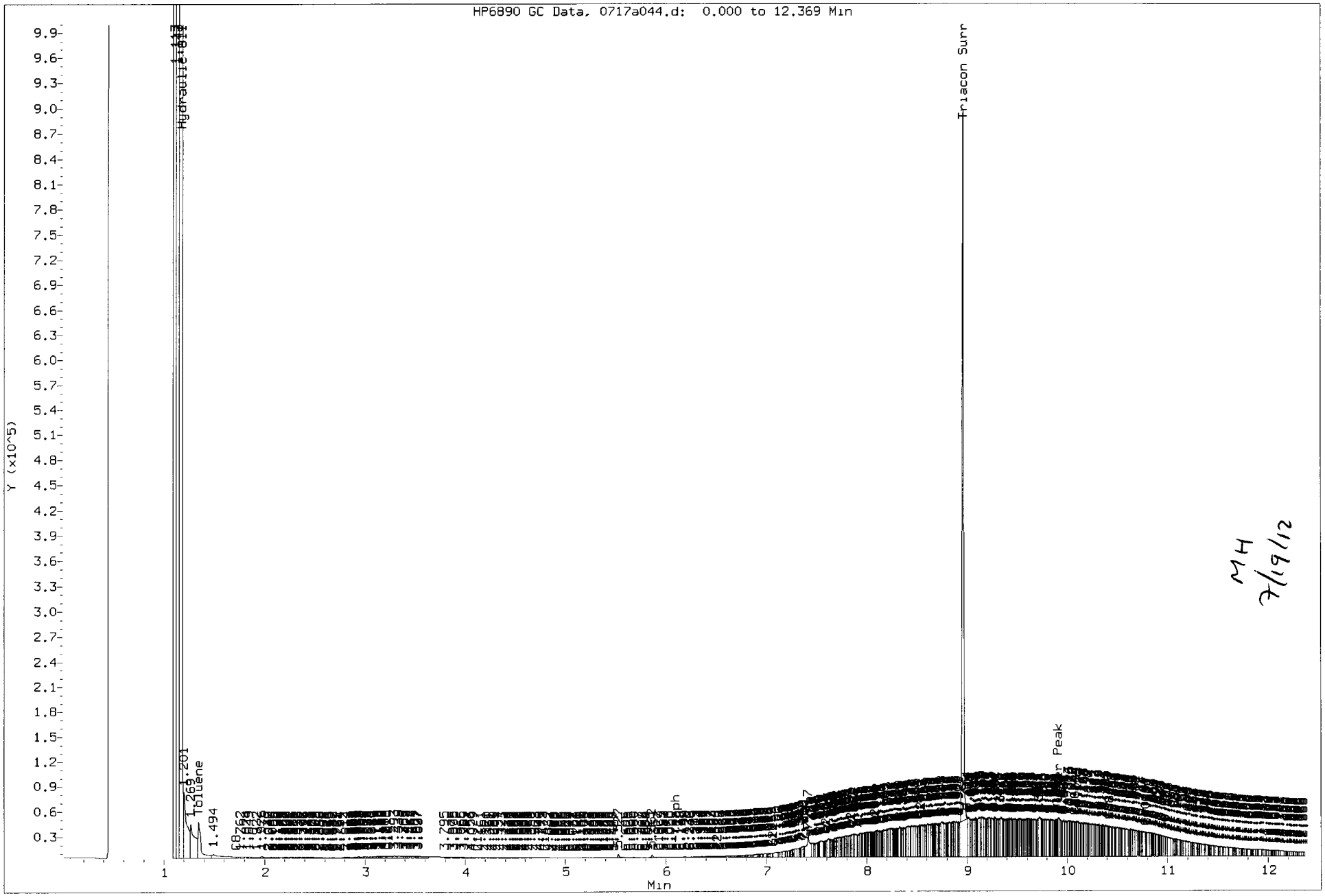
Operator: AR

Column diameter: 0.25

VBS1 00728



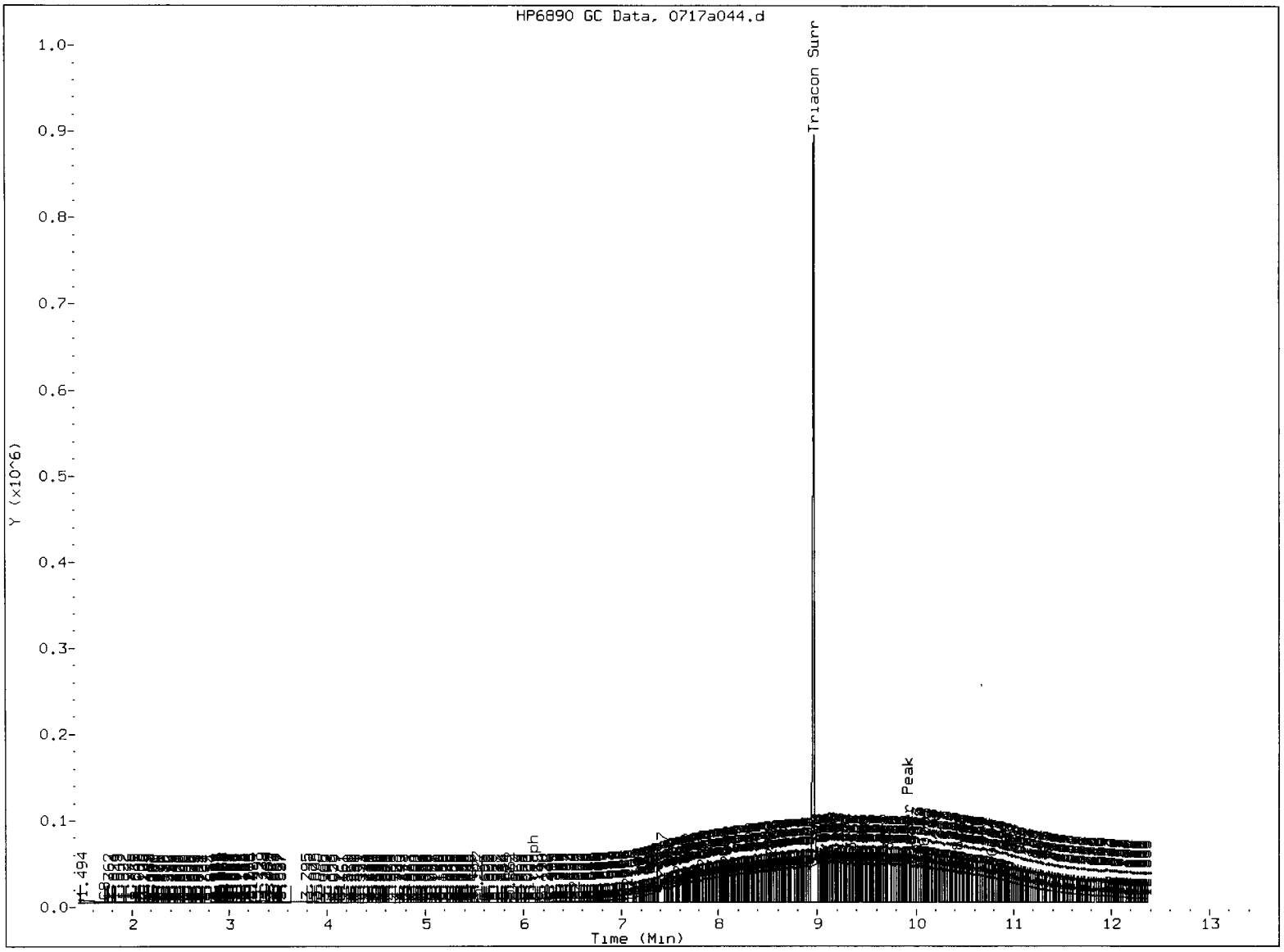
Data File: /chem3/fid4a.i/20120717.b/0717a044.d
Injection Date: 17-JUL-2012 22:36
Instrument: fid4a.i
Client Sample ID:



VBS1 : 00729

7/19/12
MH

FID:4A-2C/RTX-1 MOIL #4 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717.b/0717a050.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB54H
Client ID: CW-TP-02-8.2-9.2
Injection: 18-JUL-2012 00:45
Dilution Factor: 5

FID:4A RESULTS

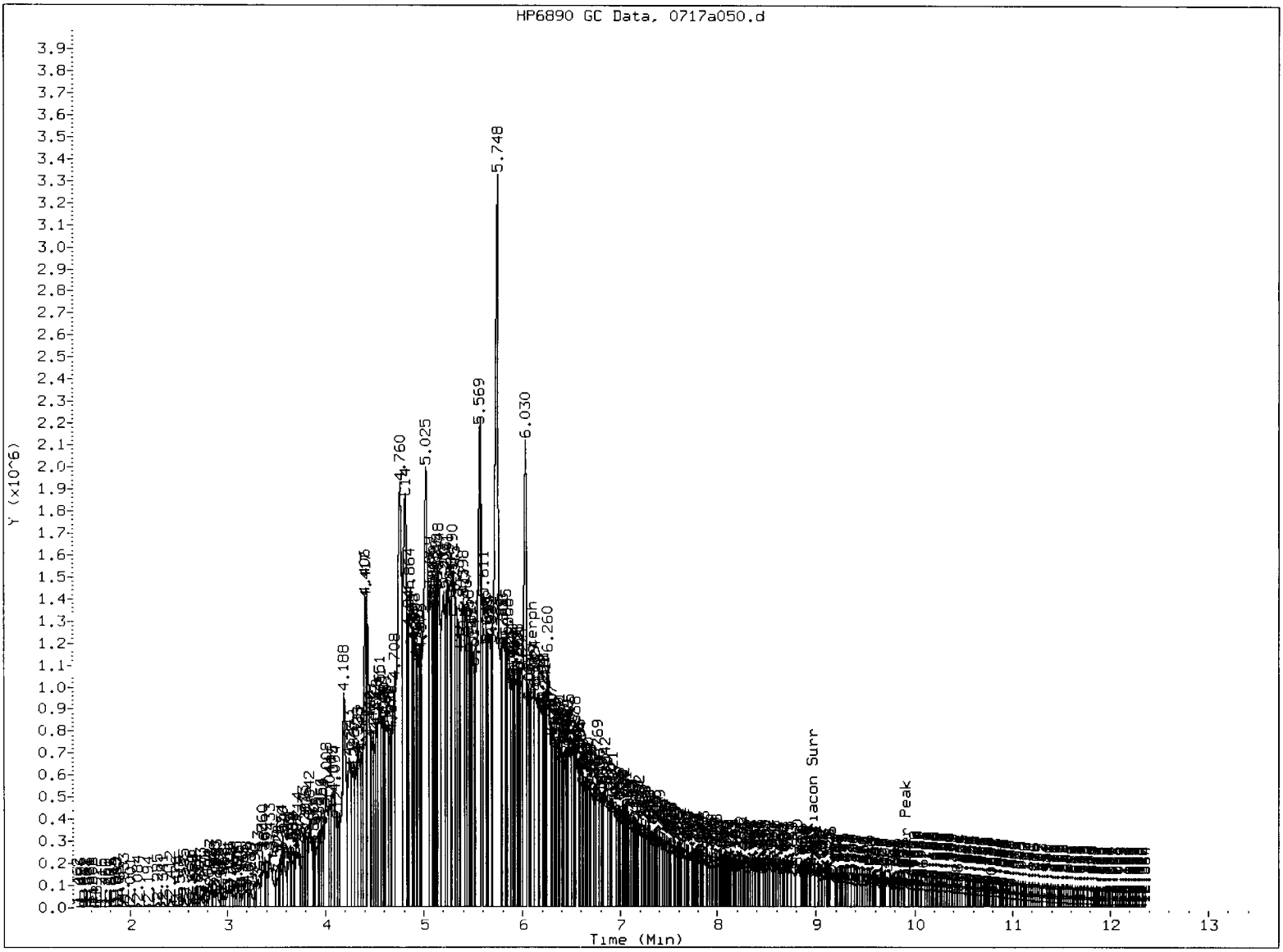
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.400	0.010	10291	16616	GAS (Tol-C12)	14610653	971.20	
C8	1.660	-0.008	4163	5696	DIESEL (C12-C24)	168582223	11507.32	Diesel (E)
C10	3.218	-0.011	59212	57767	M.OIL (C24-C38)	20316050	1616.36	Moil
C12	4.124	0.006	391500	508393	AK-102 (C10-C25)	182907865	10573.32	M
C14	4.814	0.019	1856411	4300838	AK-103 (C25-C36)	17462498	2045.27	M
C16	5.372	-0.009	1162660	641846				
C18	5.948	0.002	1039088	530845				
C20	6.510	-0.005	737047	1172575	JET-A (C10-C18)	132287681	8913.06	
C22	7.073	0.006	395467	191315	MIN.OIL (C24-C38)	20316050	1511.53	M
C24	7.593	0.002	229166	107724				
C25	7.840	-0.004	192855	79390				
C26	8.089	0.004	173709	117416				
C28	8.538	-0.001	170703	259514				
C32	9.353	0.006	103360	36454				
C34	9.720	-0.001	106637	224580				
Filter Peak	9.908	-0.013	94325	248585	BUNKERC (C10-C38)	201766481	26429.99	M
C36	10.076	-0.008	80112	137182				
C38	10.438	0.003	63377	41832				
C40	10.789	0.007	47622	51093				
o-terph	6.098	0.007	132824	139518				
Triacon Surr	8.959	-0.005	146892	128425	NAS DIES (C10-C24)	181450431	11375.49	M

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	139518	6.8	76.1
Triacontane	128425	6.7	74.8

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 VB54H FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Surr pk overlap - SPC

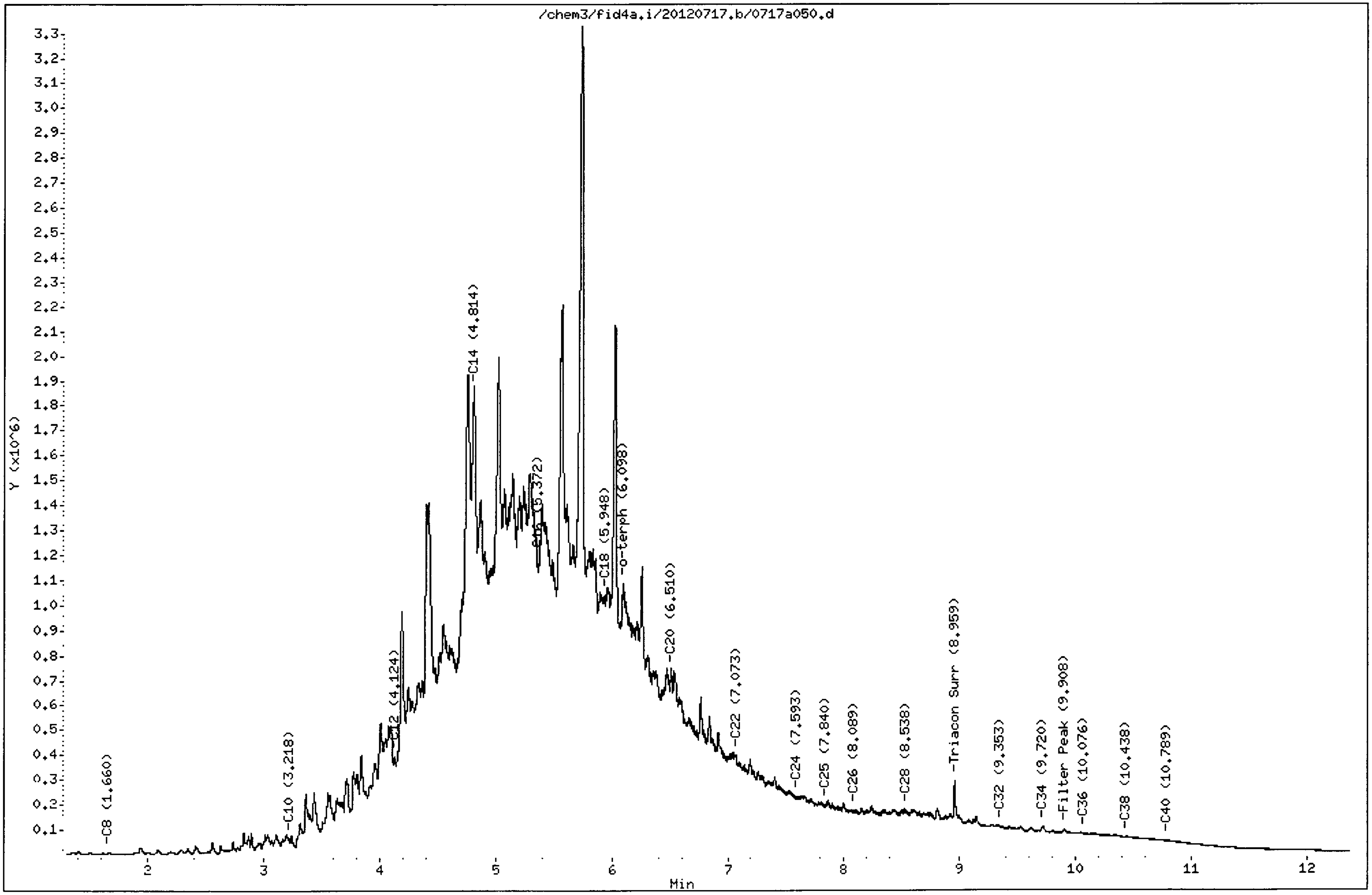
Analyst: AR Date: 7/20/2012

Data File: /chem3/fid4a.i/20120717.b/0717a050.d
Date : 18-JUL-2012 00:45
Client ID: CW-TP-02-8.2-9.2
Sample Info: VB54H,5

Column phase: RTX-1

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717.b/0717a052.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB540
Client ID: CW-TP-08-7-8
Injection: 18-JUL-2012 01:27
Dilution Factor: 5

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.410	0.019	3436	6014	GAS (Tol-C12)	170983	11.37	
C8	1.684	0.016	768	1714	DIESEL (C12-C24)	5778354	394.43	Diesel
C10	3.236	0.008	1329	934	M.OIL (C24-C38)	4662654	370.96	Moil
C12	4.122	0.004	5238	5524	AK-102 (C10-C25)	6104720	352.89	M
C14	4.786	-0.009	22680	38121	AK-103 (C25-C36)	4051956	474.58	M
C16	5.385	0.005	37712	101571				
C18	5.943	-0.003	40944	36876				
C20	6.512	-0.003	35881	53191	JET-A (C10-C18)	2913432	196.30	
C22	7.062	-0.006	31605	40693	MIN.OIL (C24-C38)	4662654	346.91	M
C24	7.589	-0.003	28713	39978				
C25	7.839	-0.005	27924	59550				
C26	8.081	-0.004	28653	25808				
C28	8.537	-0.002	36612	66866				
C32	9.349	0.002	30725	22503				
C34	9.726	0.004	25996	13818				
Filter Peak	9.930	0.009	24182	12420	BUNKERC (C10-C38)	10544191	1381.21	M
C36	10.092	0.008	23090	11829				
C38	10.439	0.004	19126	23061				
C40	10.781	0.000	15522	19739				
o-terph	6.086	-0.005	190821	140746				
Triacon Surr	8.949	-0.016	169292	139602	NAS DIES (C10-C24)	5881537	368.73	M

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

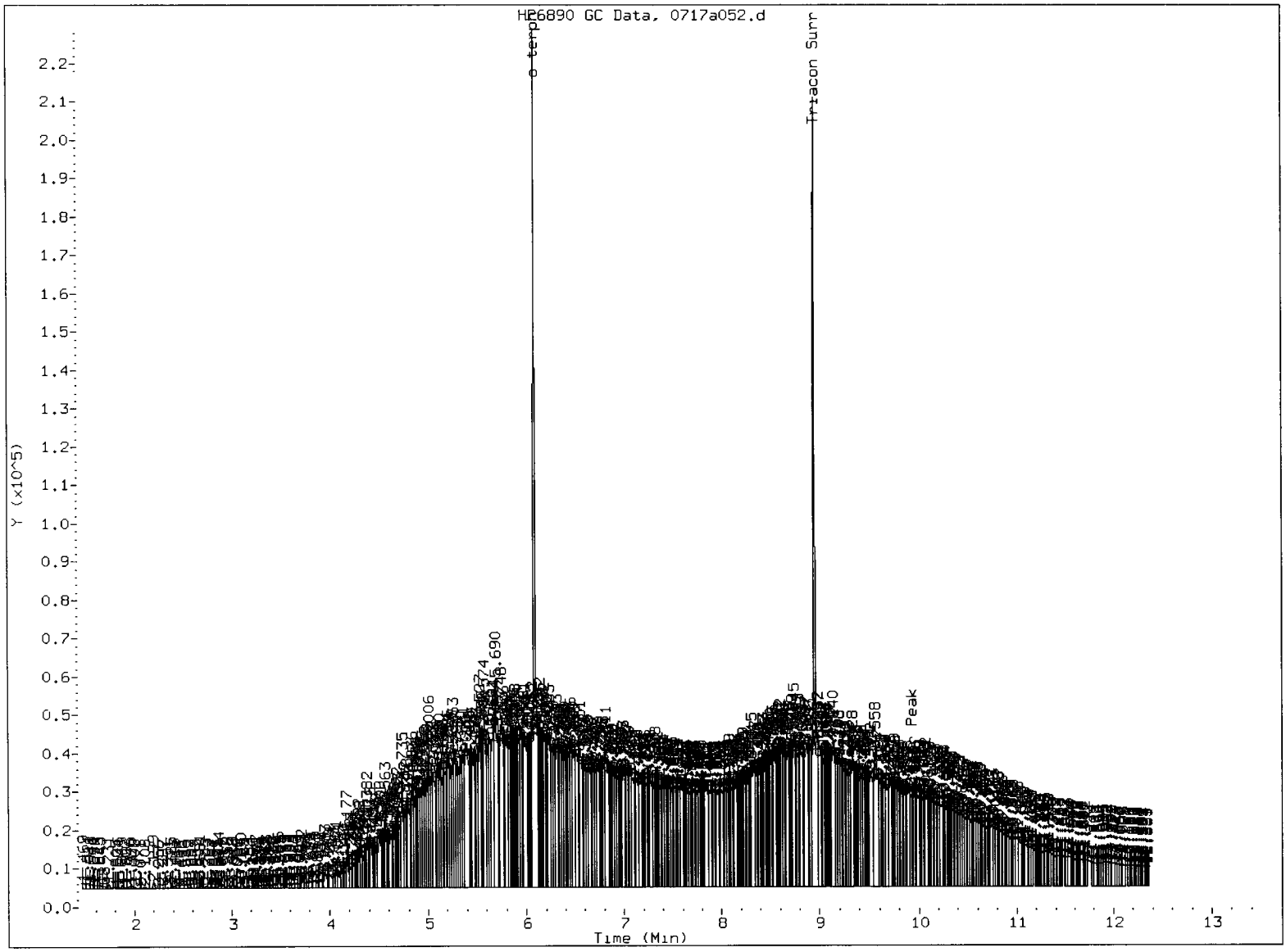
Surrogate	Area	Amount	%Rec
o-Terphenyl	140746	6.9	76.8
Triacontane	139602	7.3	81.3

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

VB51:00734

FID:4A-2C/RTX-1 VB540

FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other SPO

Analyst: AR Date: 7/20/202

Data File: /chem3/fid4a.i/20120717.b/0717a052.d

Date : 18-JUL-2012 01:27

Client ID: CW-TP-08-7-8

Sample Info: VB540,5

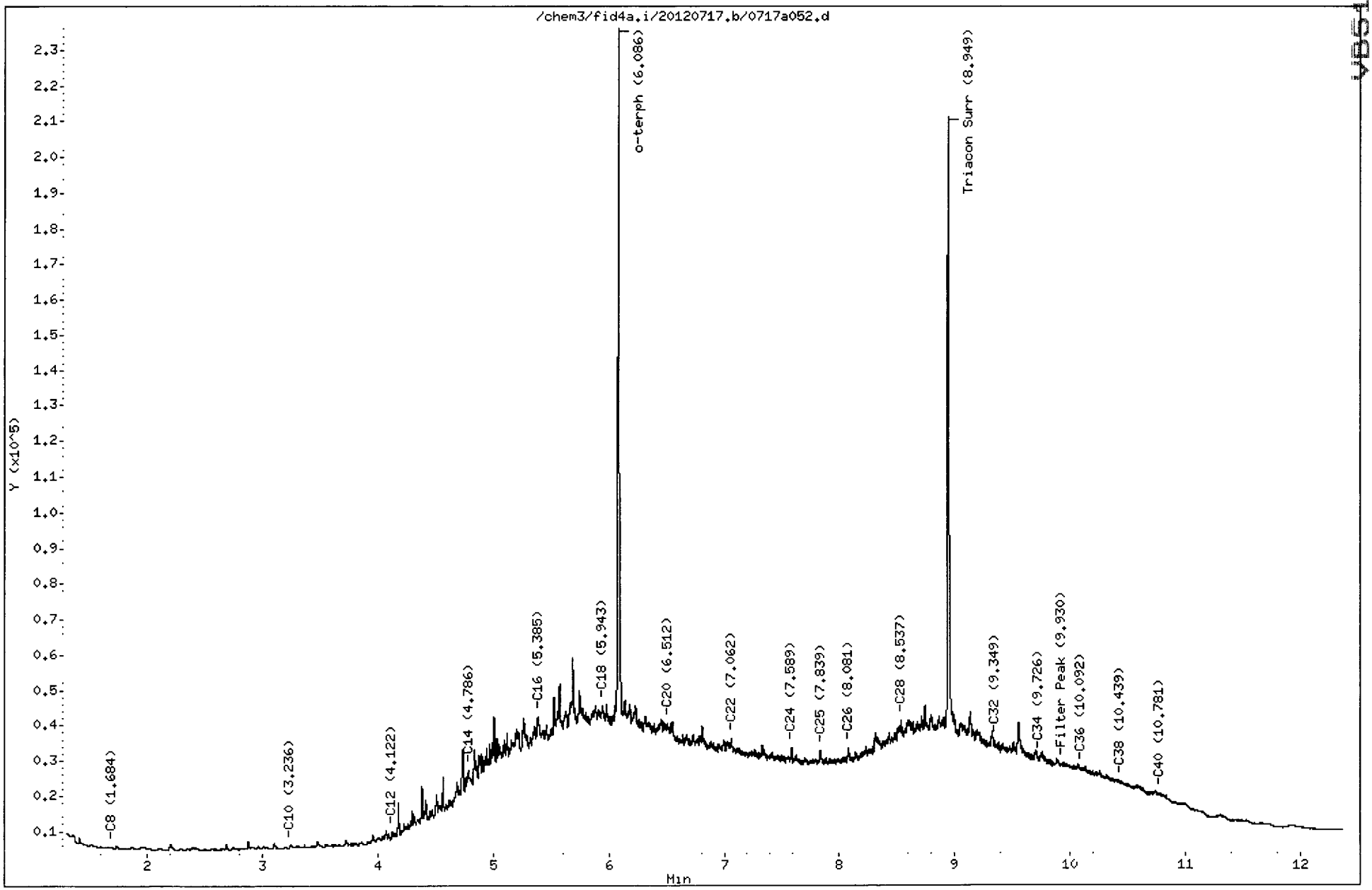
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB541 : 00736



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a055.d ARI ID: DIESEL #5
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m Client ID: DIESEL
Instrument: fid4a.i Injection: 18-JUL-2012 02:32
Operator: AR
Report Date: 07/20/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

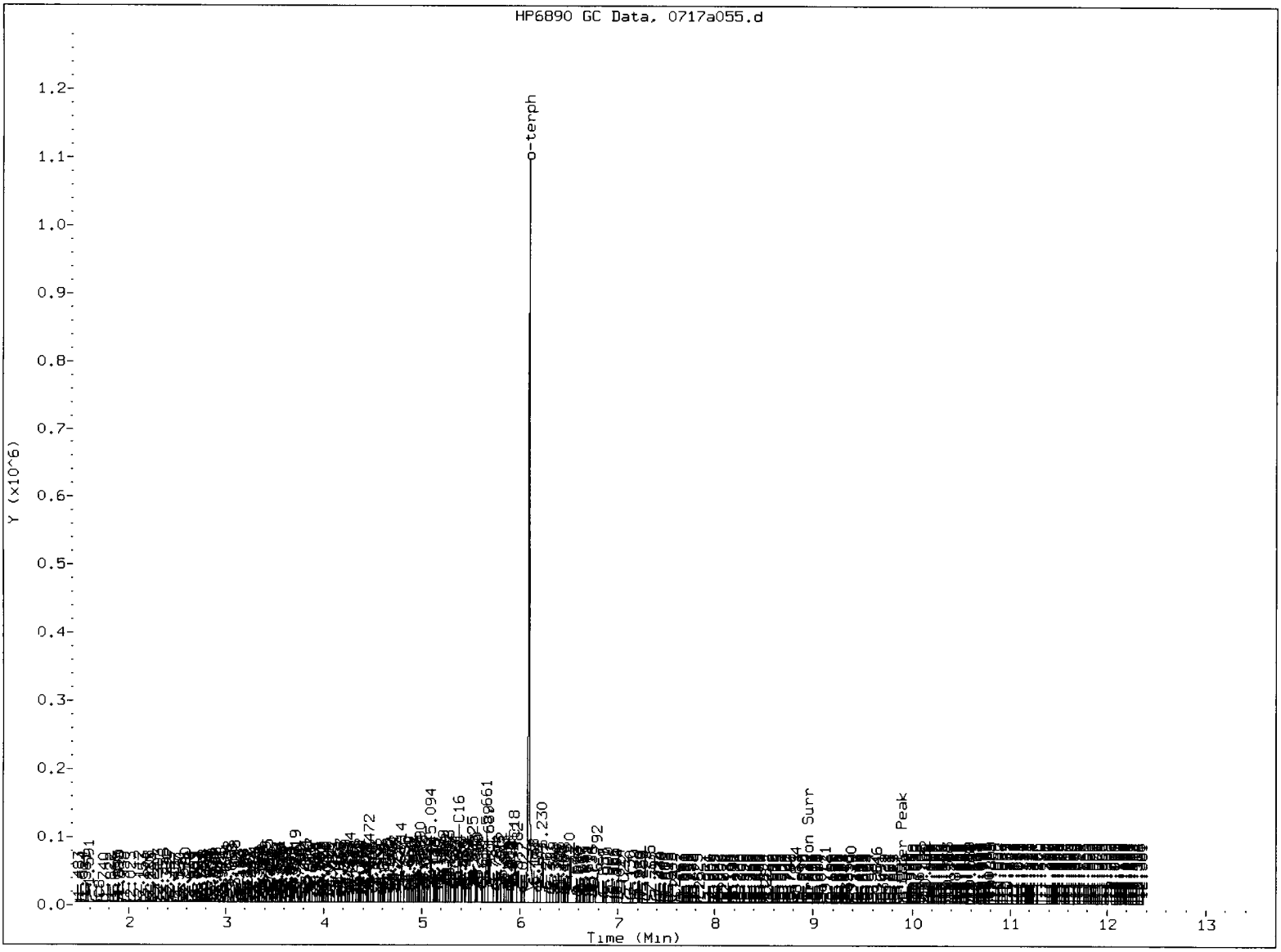
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.425	0.035	3170	7272	GAS (Tol-C12)	855407	56.86	
C8	1.695	0.027	2143	4393	DIESEL (C12-C24)	3519689	240.25	
C10	3.235	0.007	21242	17307	M.OIL (C24-C38)	222913	17.74	
C12	4.120	0.002	44857	37913	AK-102 (C10-C25)	4118484	238.08	M
C14	4.794	-0.001	73461	75888	AK-103 (C25-C36)	161544	18.92	
C16	5.379	-0.001	113659	96917				
C18	5.945	-0.001	91655	97081				
C20	6.514	-0.002	59112	96301	JET-A (C10-C18)	3077763	207.37	
C22	7.066	-0.001	26850	49551	MIN.OIL (C24-C38)	222913	16.58	
C24	7.595	0.003	5700	14506				
C25	7.847	0.003	2330	6272				
C26	8.093	0.008	866	2021				
C28	8.528	-0.011	6701	6514				
C32	9.338	-0.009	673	616				
C34	9.716	-0.005	1344	1304				
Filter Peak	9.894	-0.027	8949	14662	BUNKERC (C10-C38)	4330799	567.30	M
C36	10.074	-0.010	1918	1143				
C38	10.440	0.005	2802	4087				
C40	10.784	0.003	4054	2010				
o-terph	6.095	0.004	1072989	922543				
Triacon Surr	8.957	-0.008	692	1806	NAS DIES (C10-C24)	4107886	257.53	M

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	922543	45.3	100.6
Triacontane	1806	0.1	0.2

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 DIESEL #5 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: _____

Data File: /chem3/fid4a.i/20120717.b/0717a055.d

Date : 18-JUL-2012 02:32

Client ID: DIESEL

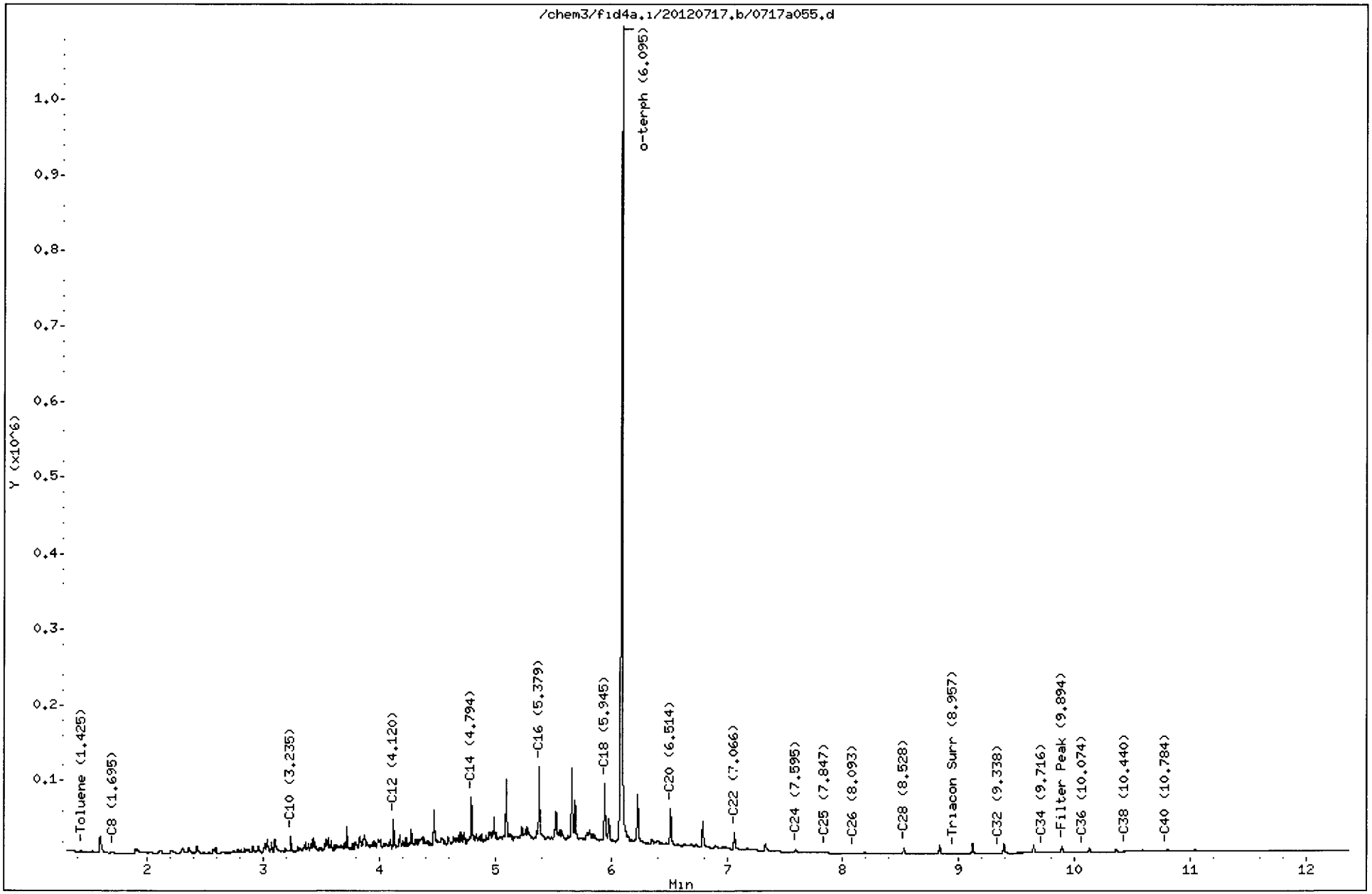
Sample Info: DIESEL #5

Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717.b/0717a056.d
Method: /chem3/fid4a.i/20120717.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: MOIL #5
Client ID: MOIL
Injection: 18-JUL-2012 02:53
Dilution Factor: 1

FID:4A RESULTS

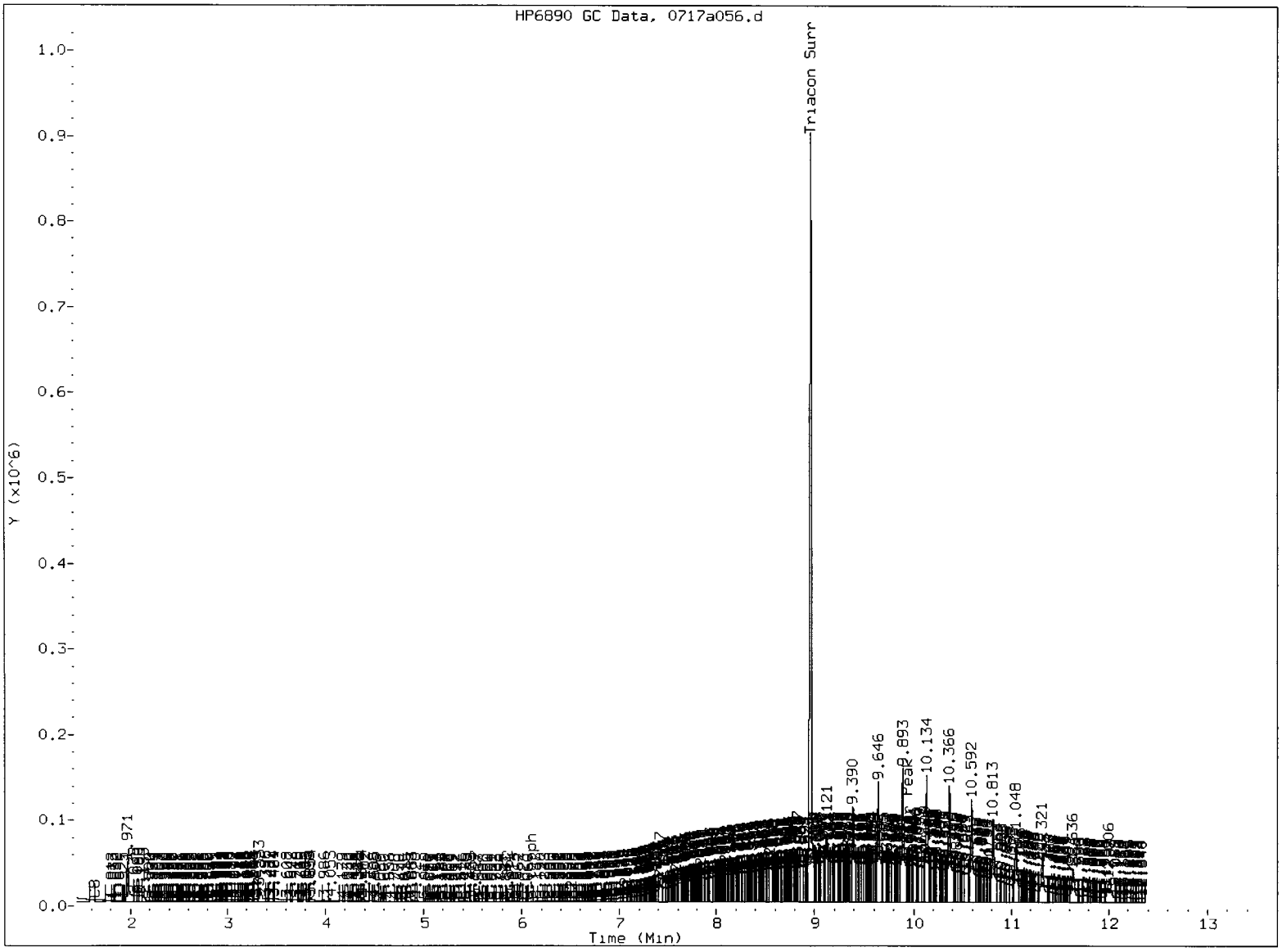
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.354	-0.036	53861	109855	GAS (Tol-C12)	510852	33.96	
C8	1.636	-0.031	2166	12070	DIESEL (C12-C24)	601594	41.06	
C10	3.220	-0.008	2733	1196	M.OIL (C24-C38)	6930602	551.40	
C12	----				AK-102 (C10-C25)	933011	53.93	
C14	4.797	0.003	234	357	AK-103 (C25-C36)	5736732	671.91	M
C16	5.377	-0.003	746	1432				
C18	5.939	-0.006	491	637				
C20	6.510	-0.005	1174	2111	JET-A (C10-C18)	173329	11.68	
C22	7.066	-0.001	5070	7448	MIN.OIL (C24-C38)	6930602	515.64	M
C24	7.587	-0.005	20042	19437				
C25	7.843	-0.001	27581	24039				
C26	8.090	0.005	32078	25394				
C28	8.549	0.010	39886	65397				
C32	9.342	-0.004	50198	49015				
C34	9.729	0.008	45992	12685				
Filter Peak	9.937	0.016	44635	22927	BUNKERC (C10-C38)	7664824	1004.04	M
C36	10.081	-0.002	44039	50754				
C38	10.436	0.002	36115	40457				
C40	10.780	-0.001	28685	27370				
o-terph	6.095	0.004	430	1090				
Triacon Surr	8.965	0.001	853684	875657	NAS DIES (C10-C24)	734222	46.03	

M Indicates manual integration within range.
Range Times: NW Diesel(4.118 - 7.592) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.43) AK103(7.84 - 10.08) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1090	0.1	0.1
Triacontane	875657	45.9	102.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 MOIL #5 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: _____

Data File: /chem3/fid4a.i/20120717.b/0717a056.d

Date : 18-JUL-2012 02:53

Client ID: MOIL

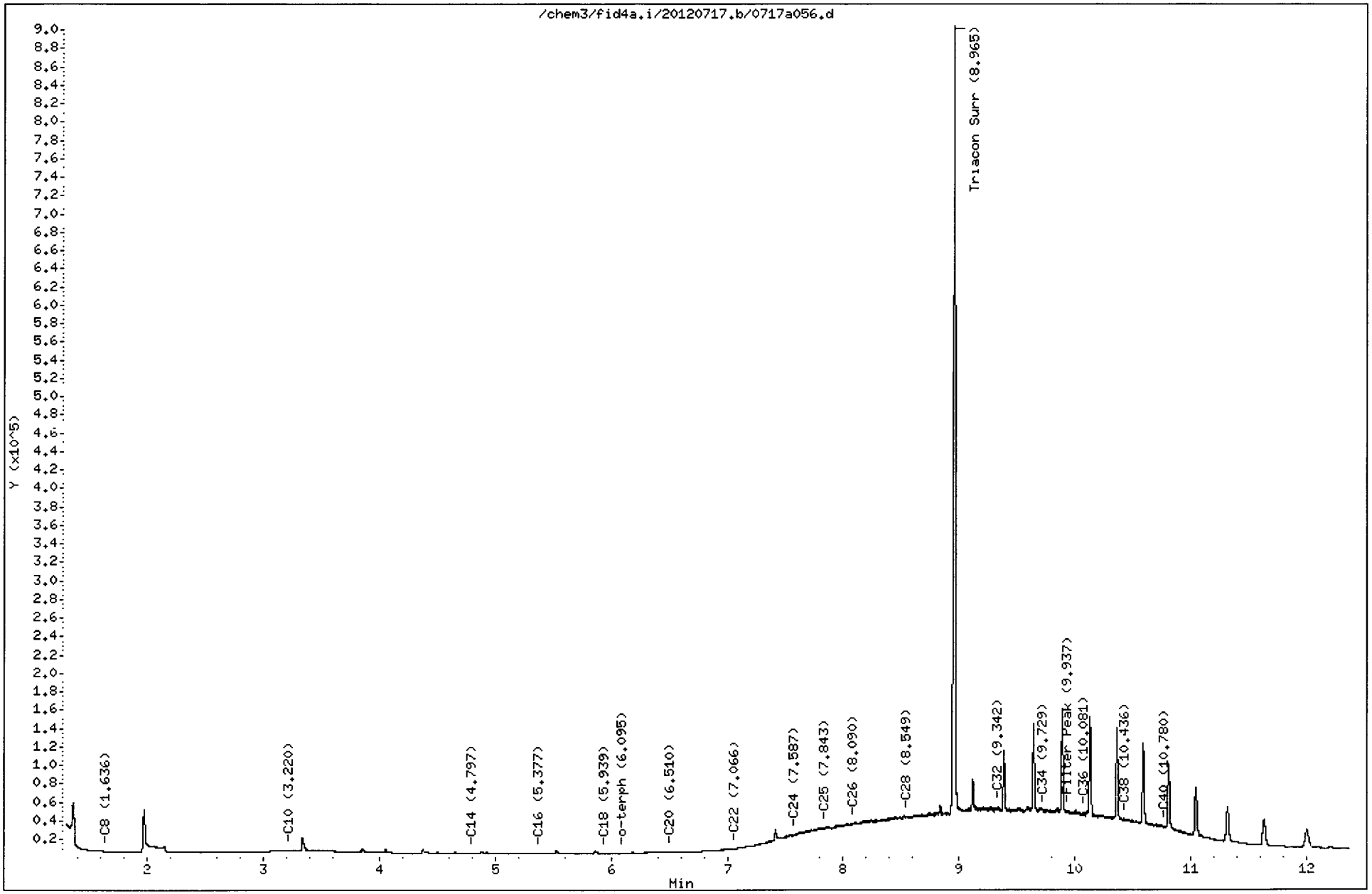
Sample Info: MOIL #5

Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a075.d ARI ID: RT
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 18-JUL-2012 09:43
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.386	0.000	392059	368068	GAS (Tol-C12)	1318660	87.65
C8	1.665	0.000	192039	240548	DIESEL (C12-C24)	1675493	114.37
C10	3.231	0.000	322165	211890	M.OIL (C24-C38)	2209323	175.78
C12	4.120	0.000	261581	247711	AK-102 (C10-C25)	2225569	128.65
C14	4.798	0.000	288005	260709	AK-103 (C25-C36)	1918605	224.71
C16	5.384	0.000	354846	265999			
C18	5.949	0.000	366346	272959			
C20	6.517	0.000	313973	277436	JET-A (C10-C18)	1361839	91.76
C22	7.069	0.000	319629	279531	MIN.OIL (C24-C38)	2209323	164.38
C24	7.593	0.000	349215	285959			
C25	7.845	0.000	436719	385314			
C26	8.087	0.000	332058	291079			
C28	8.542	0.000	338183	292453			
C32	9.355	0.000	318378	295856			
C34	9.732	0.000	312802	297992			
Filter Peak	9.932	0.000	1649	3924	BUNKERC (C10-C38)	4429980	580.30
C36	10.095	0.000	287513	298798			
C38	10.448	0.000	234254	263828			
C40	10.791	0.000	191054	236959			
o-terph	6.094	0.000	979040	952377			
Triacon Surr	8.971	0.000	884438	910619			

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	952377	46.8	103.9
Triacontane	910619	47.7	106.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a075.d

Date : 18-JUL-2012 09:43

Client ID:

Sample Info: RT

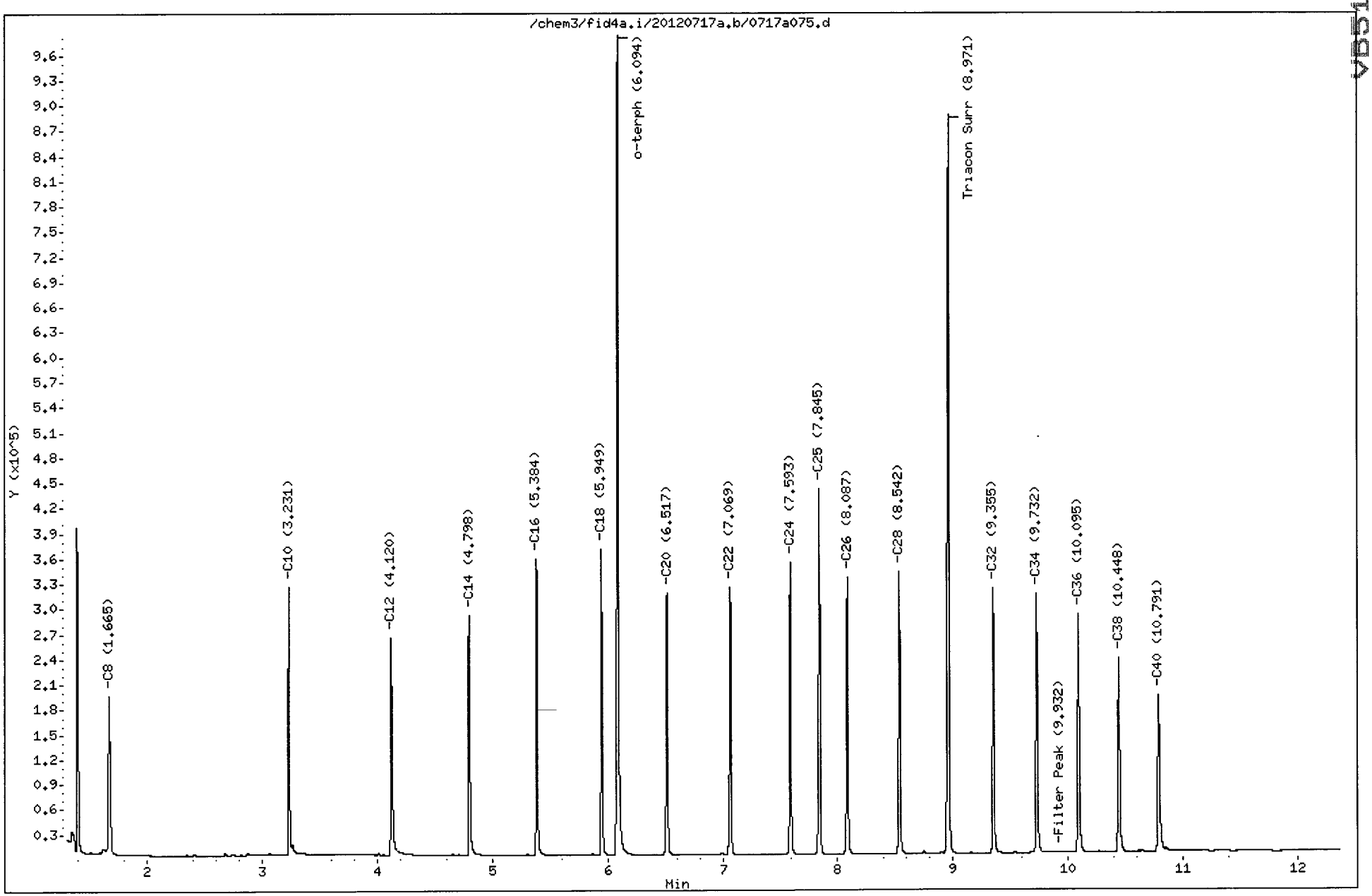
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 0071



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a076.d ARI ID: IB
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 18-JUL-2012 10:04
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.353	-0.033	83874	201655	GAS (Tol-C12)	459579	30.55
C8	----				DIESEL (C12-C24)	25838	1.76
C10	3.238	0.007	3463	5597	M.OIL (C24-C38)	66719	5.31
C12	4.139	0.018	526	712	AK-102 (C10-C25)	123409	7.13
C14	4.802	0.004	140	89	AK-103 (C25-C36)	47411	5.55
C16	5.384	0.000	197	311			
C18	5.945	-0.004	228	268			
C20	6.511	-0.006	313	476	JET-A (C10-C18)	110164	7.42
C22	7.061	-0.008	112	154	MIN.OIL (C24-C38)	66719	4.96
C24	7.586	-0.006	43	33			
C25	7.854	0.009	175	112			
C26	8.088	0.001	96	129			
C28	8.535	-0.006	569	701			
C32	9.353	-0.002	591	1051			
C34	9.739	0.007	543	350			
Filter Peak	9.945	0.013	1285	3295	BUNKERC (C10-C38)	189985	24.89
C36	10.107	0.012	943	1727			
C38	10.440	-0.008	1728	3476			
C40	10.798	0.007	1787	5030			
o-terph	6.091	-0.003	925857	950096			
Triacon Surr	8.973	0.002	867330	938889			

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	950096	46.6	103.6
Triacontane	938889	49.2	109.3

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a076.d

Date : 18-JUL-2012 10:04

Client ID:

Sample Info: IB

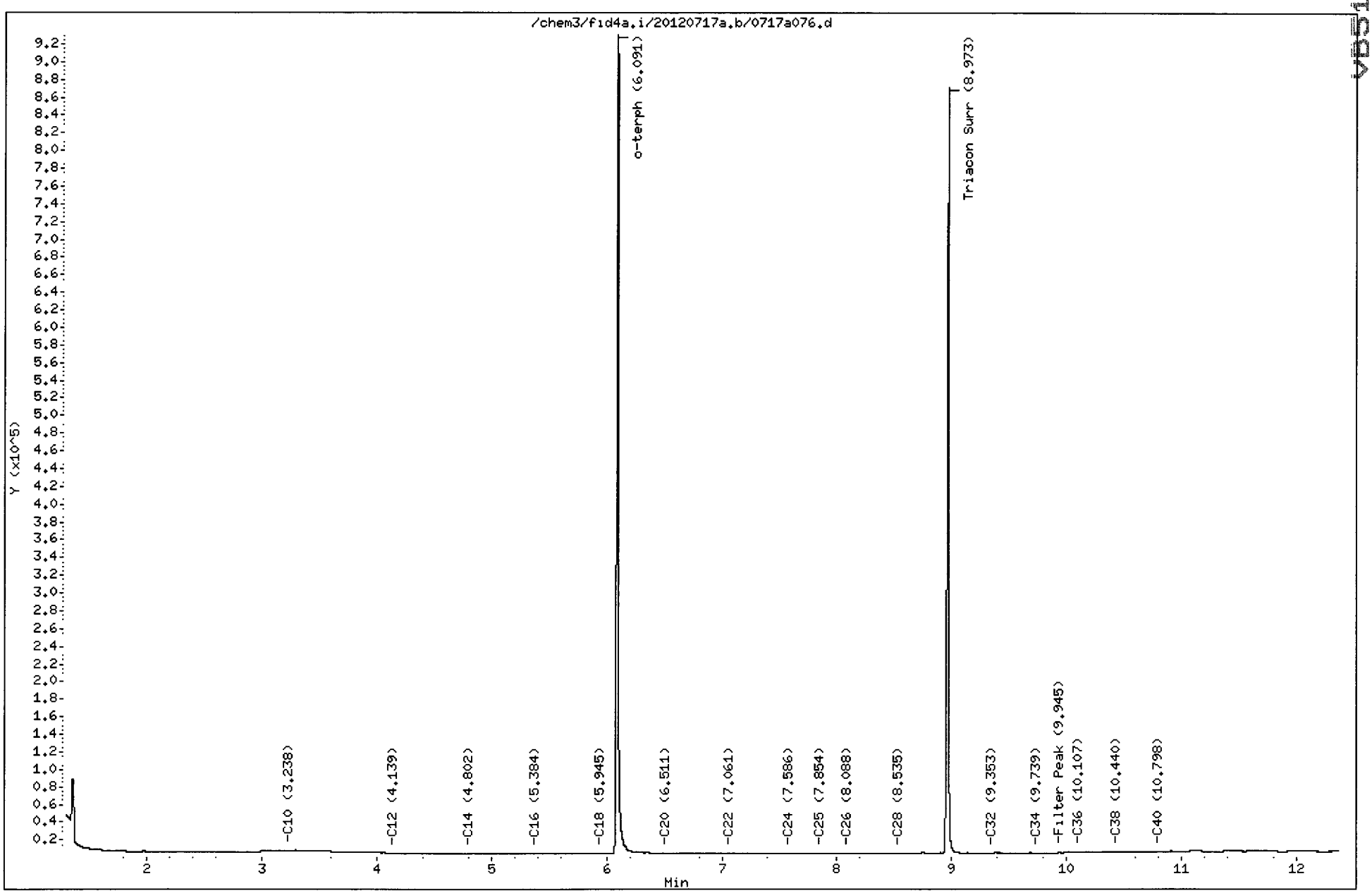
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51:00716



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a084.d ARI ID: DIESEL #9
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: DIESEL
Instrument: fid4a.i Injection: 18-JUL-2012 12:57
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.415	0.028	3338	7568	GAS (Tol-C12)	905579	60.20
C8	1.684	0.019	2338	5350	DIESEL (C12-C24)	3614250	246.71
C10	3.234	0.003	20776	17606	M.OIL (C24-C38)	67547	5.37
C12	4.120	0.000	43439	38330	AK-102 (C10-C25)	4236385	244.89 M
C14	4.794	-0.004	71080	76964	AK-103 (C25-C36)	37842	4.43
C16	5.380	-0.003	113954	116302			
C18	5.946	-0.002	95179	97693			
C20	6.515	-0.002	57173	94104	JET-A (C10-C18)	3217366	216.77
C22	7.068	-0.001	24312	40864	MIN.OIL (C24-C38)	67547	5.03
C24	7.602	0.009	4972	14014			
C25	7.857	0.012	2119	6430			
C26	8.074	-0.013	478	510			
C28	8.531	-0.011	378	338			
C32	9.342	-0.013	141	255			
C34	9.740	0.008	283	309			
Filter Peak	9.922	-0.010	390	1046	BUNKERC (C10-C38)	4294863	562.60 M
C36	10.105	0.010	538	760			
C38	10.447	-0.001	1468	3613			
C40	10.791	0.000	1656	2149			
o-terph	6.095	0.001	1067028	949842			
Triacon Surr	8.989	0.018	162	173			

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	949842	46.6	103.6
Triacontane	173	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a084.d

Date : 18-JUL-2012 12:57

Client ID: DIESEL

Sample Info: DIESEL #9

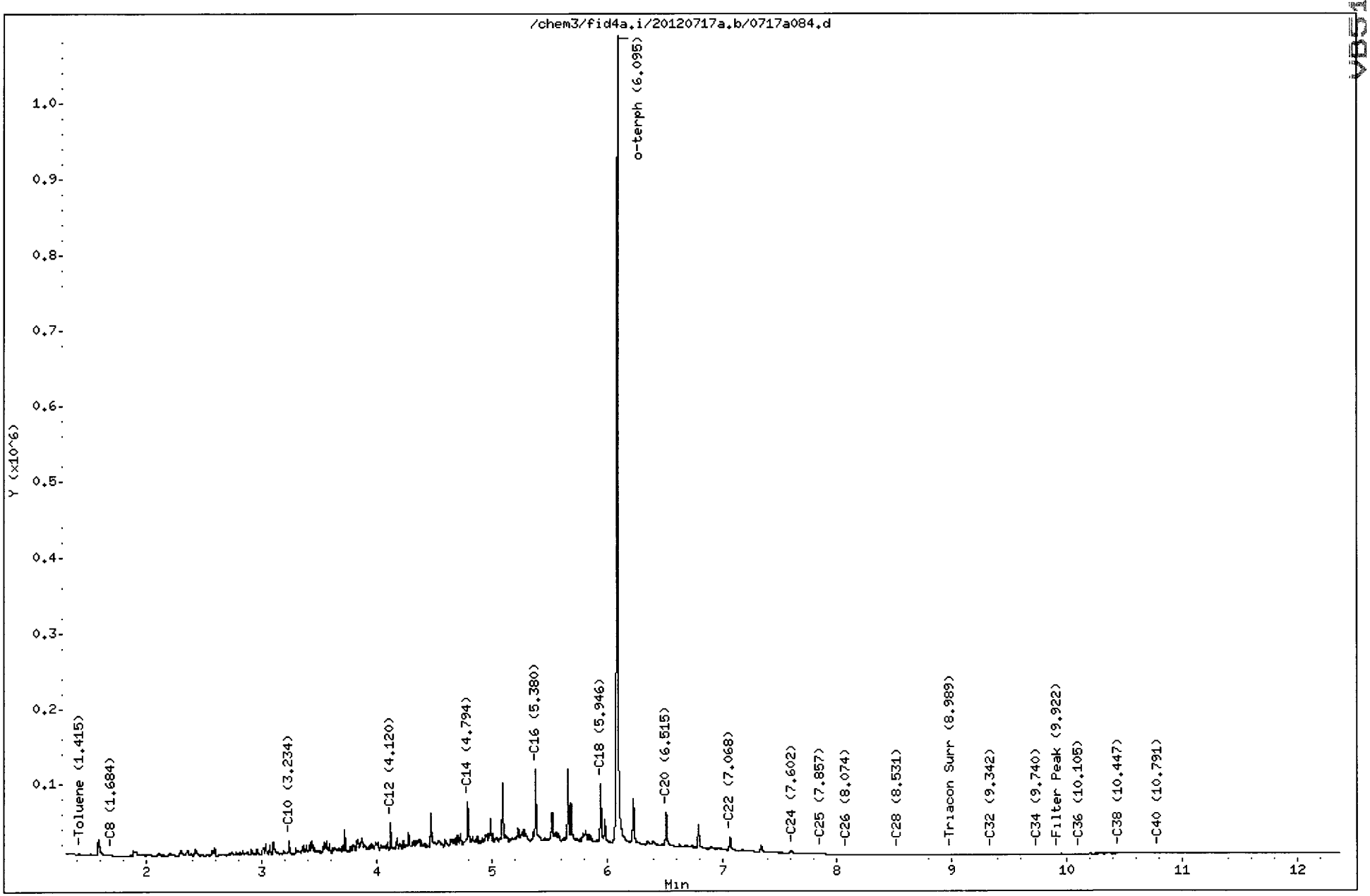
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 : 0717a



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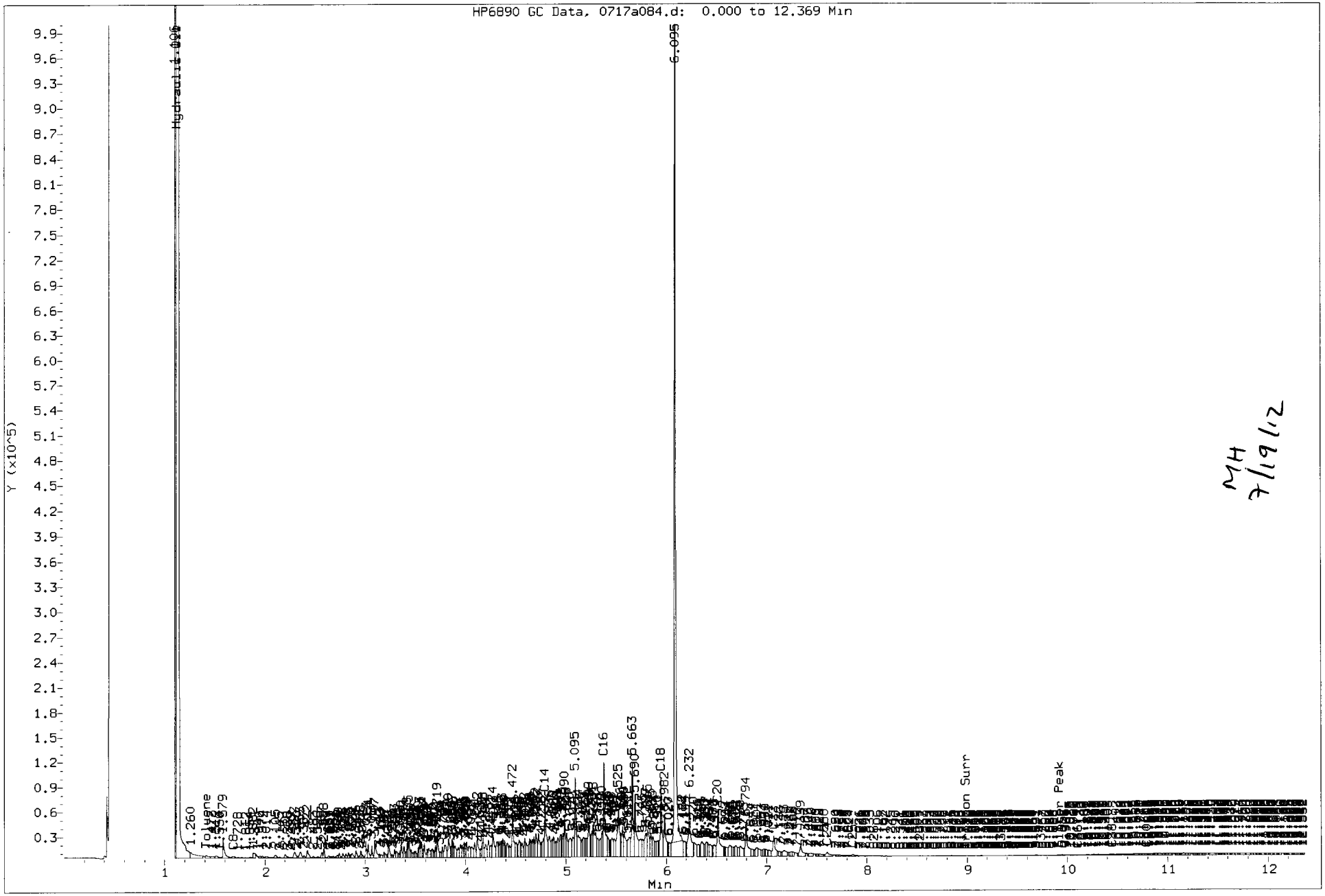
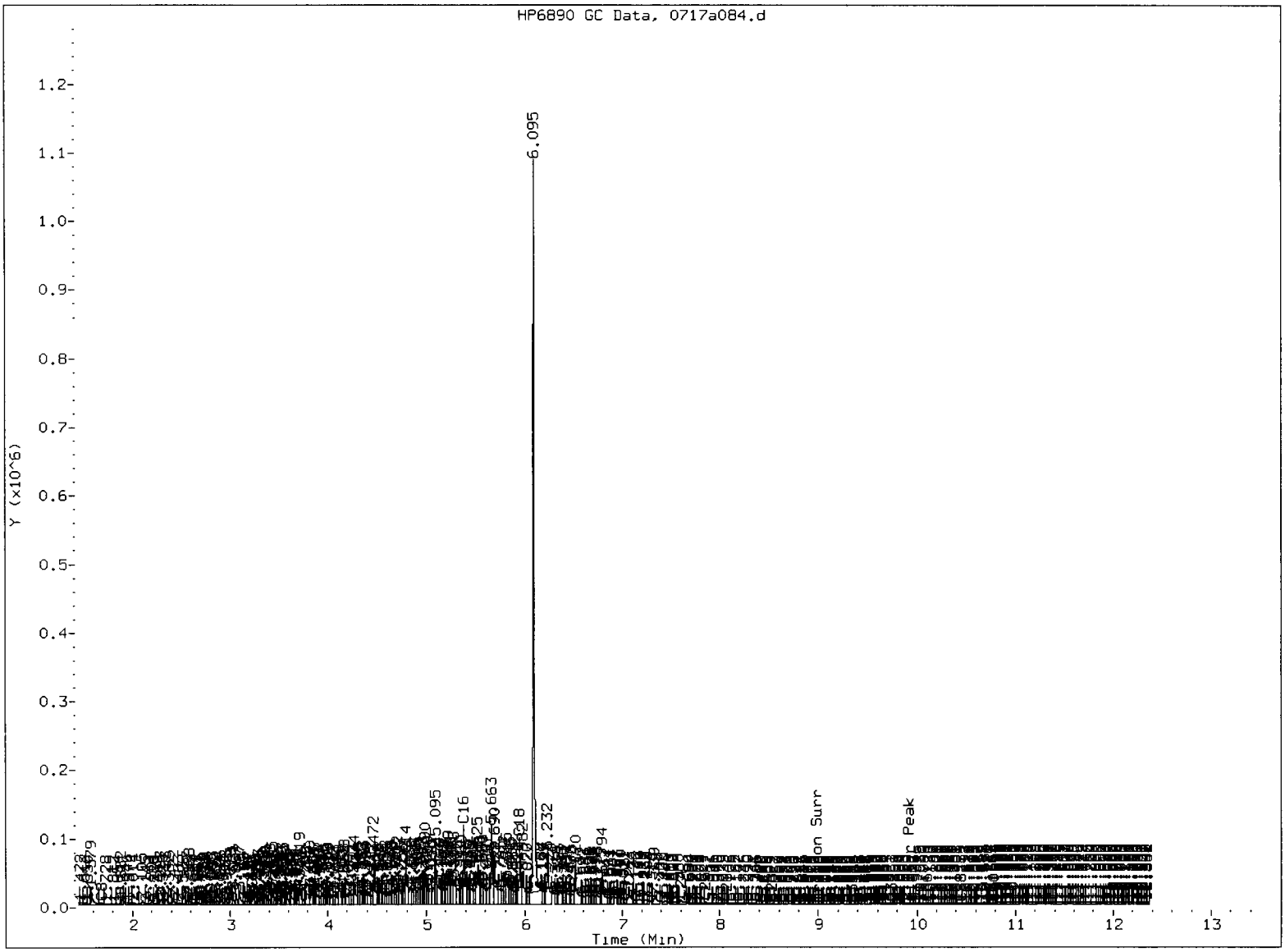
Injection Date: 18-JUL-2012 12:57
Instrument: fid4a.i
Client Sample ID: DIESEL



7/19/12
HH

VB51 : 00749

FID:4A-2C/RTX-1 DIESEL #9 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a085.d ARI ID: MOIL #9
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: MOIL
Instrument: fid4a.i Injection: 18-JUL-2012 13:19
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.354	-0.032	61582	152942	GAS (Tol-C12)	315254	20.96	
C8	1.725	0.060	2090	3447	DIESEL (C12-C24)	531279	36.26	
C10	3.239	0.008	2466	5141	M.OIL (C24-C38)	6249290	497.20	
C12	4.106	-0.014	596	1424	AK-102 (C10-C25)	825554	47.72	
C14	4.804	0.006	158	239	AK-103 (C25-C36)	5347902	626.36	M
C16	5.381	-0.002	63	96				
C18	5.940	-0.009	166	111				
C20	6.514	-0.003	1144	2350	JET-A (C10-C18)	94740	6.38	
C22	7.065	-0.004	4993	4959	MIN.OIL (C24-C38)	6249290	464.95	M
C24	7.594	0.001	20146	15358				
C25	7.846	0.001	27439	11258				
C26	8.084	-0.003	31013	20911				
C28	8.541	0.000	38191	31460				
C32	9.352	-0.003	46605	44942				
C34	9.734	0.002	45819	70684				
Filter Peak	9.945	0.013	42668	37441	BUNKERC (C10-C38)	6855880	898.07	M
C36	10.099	0.003	38933	36976				
C38	10.449	0.001	32312	19984				
C40	10.787	-0.004	26045	36924				
o-terph	6.097	0.003	644	1550				
Triacon Surr	8.974	0.003	855958	868625				

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1550	0.1	0.2
Triacontane	868625	45.5	101.1

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a085.d

Date : 18-JUL-2012 13:19

Client ID: MOIL

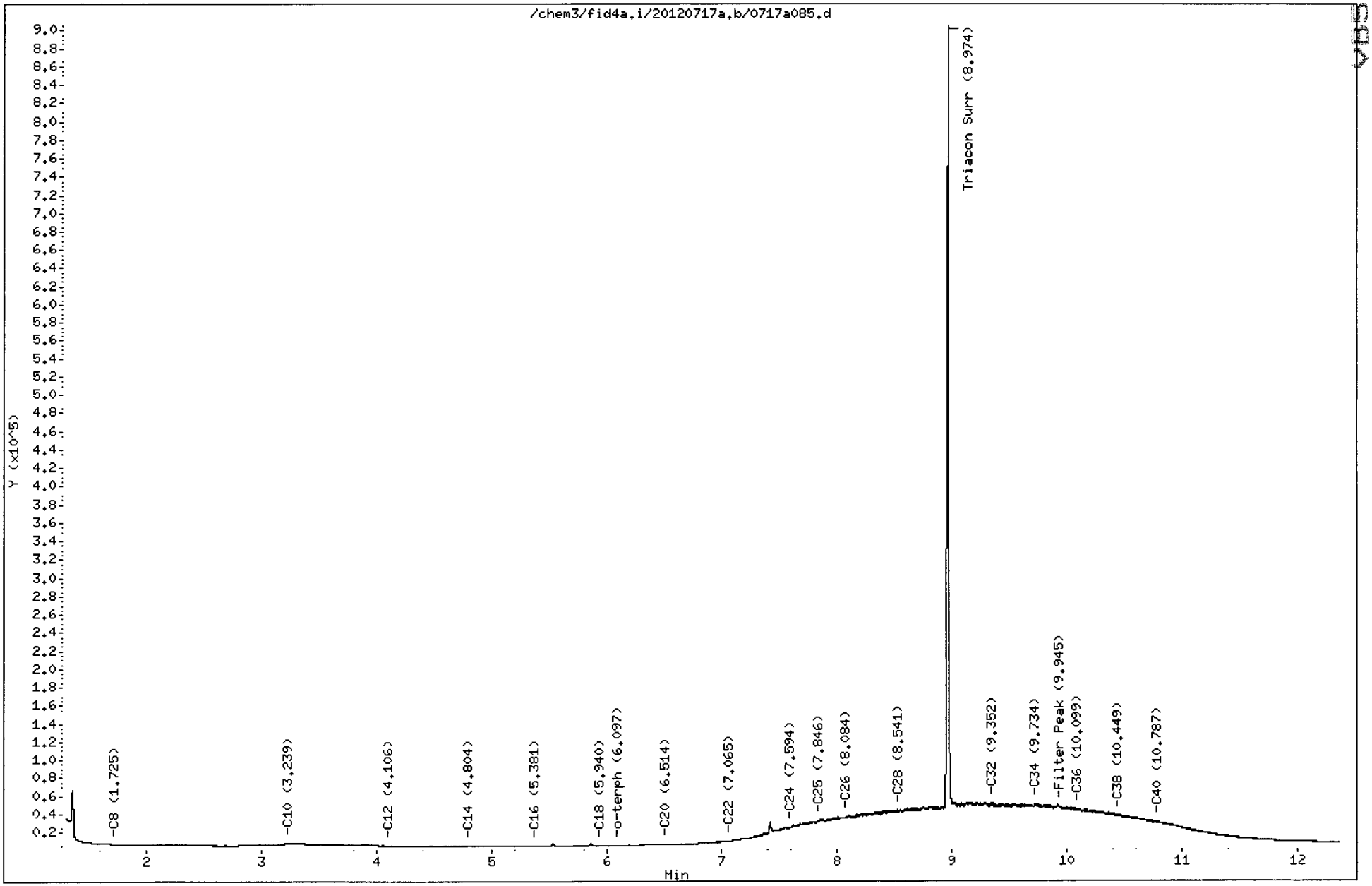
Sample Info: MOIL #9

Column phase: RTX-1

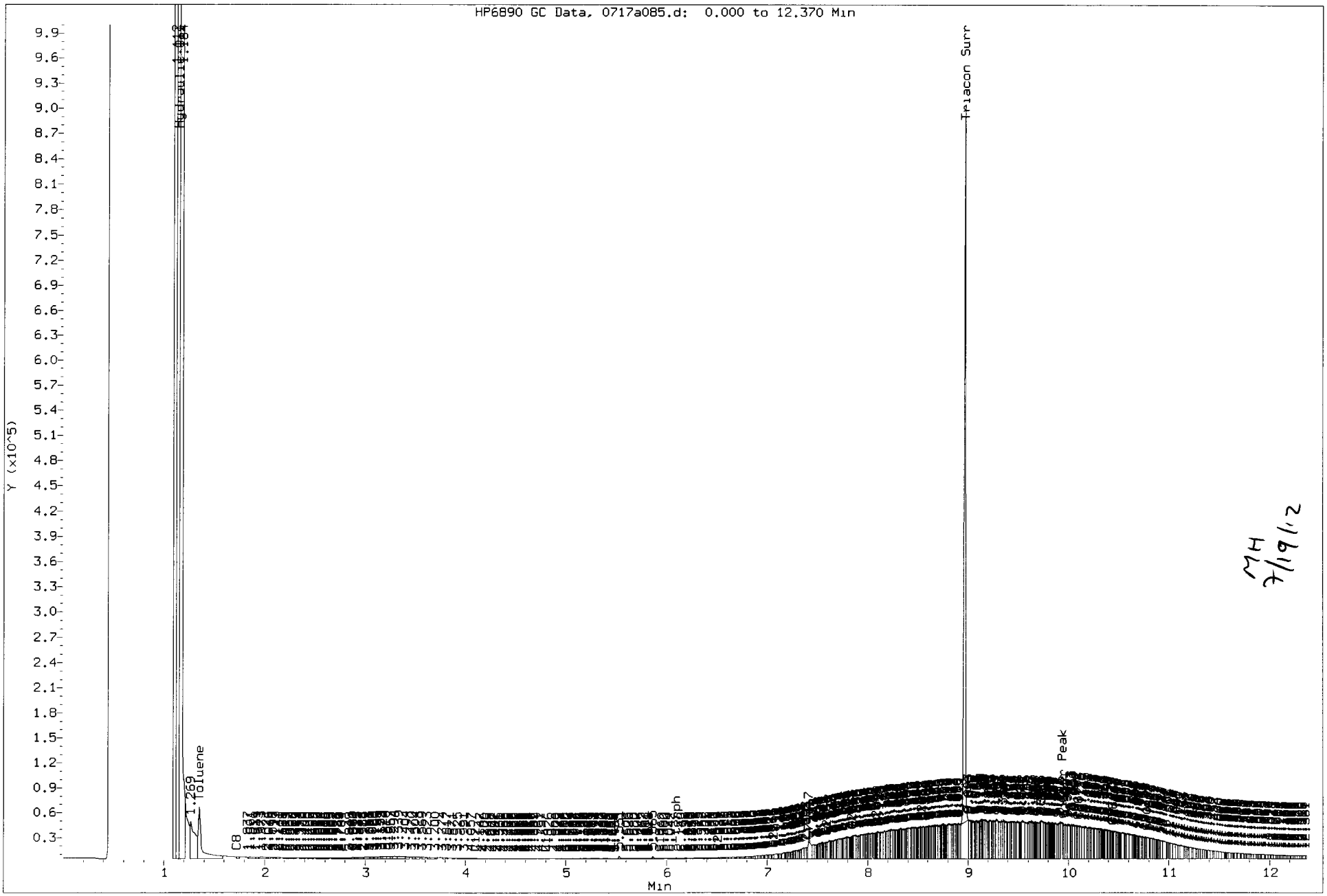
Instrument: fid4a.i

Operator: AR

Column diameter: 0.25



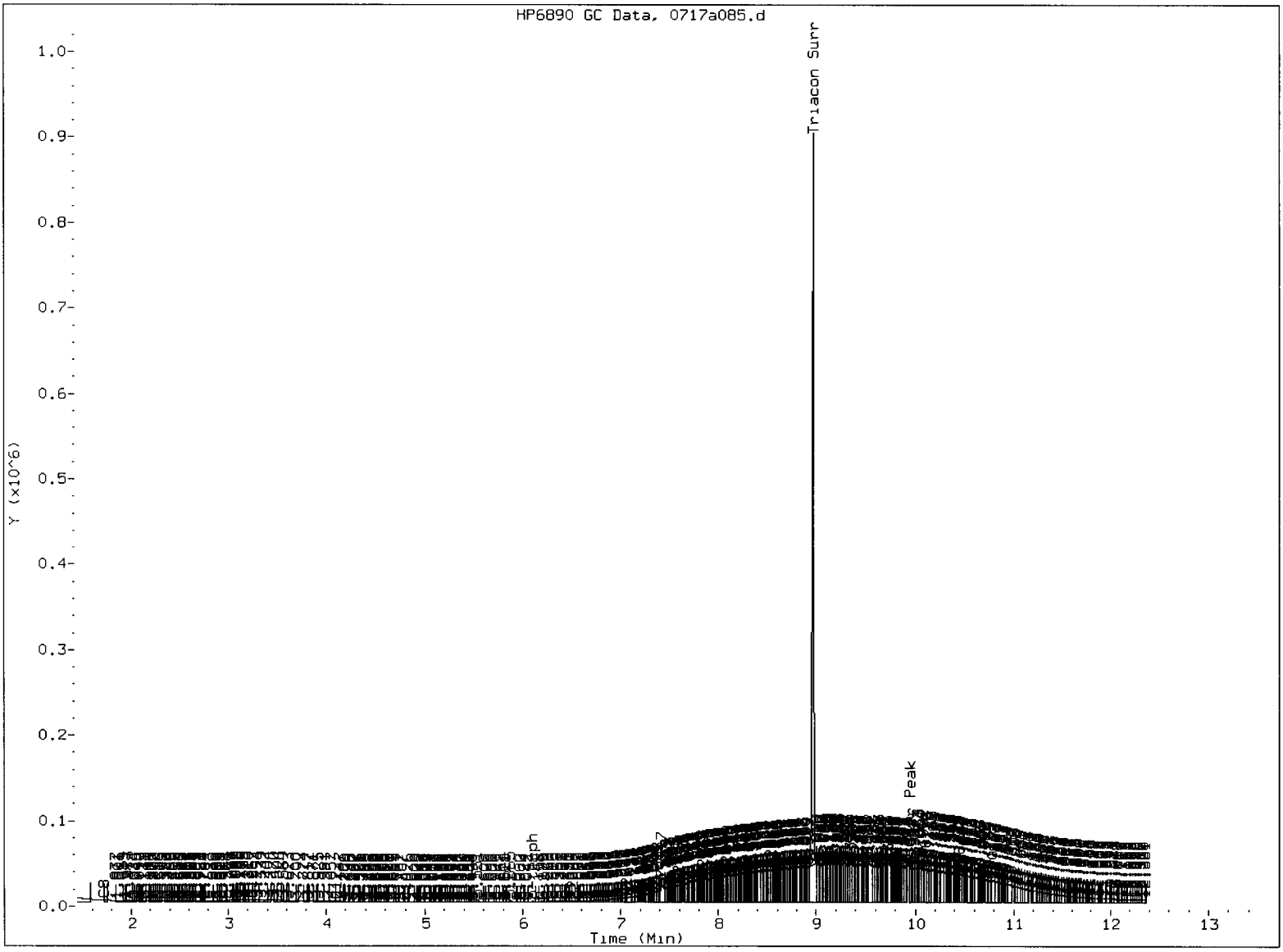
Data File: /chem3/fid4a.i/20120717a.b/0717a085.d
Injection Date: 18-JUL-2012 13:19
Instrument: fid4a.i
Client Sample ID: MOIL



MH 7/19/12

VB51 : 00753

FID:4A-2C/RTX-1 MOIL #9 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a091.d
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51H
Client ID: CW-TP-07-9-10
Injection: 18-JUL-2012 15:28
Dilution Factor: 10

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.412	0.025	2101	7754	GAS (Tol-C12)	651476	43.31	
C8	1.675	0.010	900	2537	DIESEL (C12-C24)	10254459	699.96	
C10	3.224	-0.007	2005	1745	M.OIL (C24-C38)	1505067	119.74	
C12	4.119	-0.001	31445	34306	AK-102 (C10-C25)	10977783	634.59	M
C14	4.801	0.003	61870	43211	AK-103 (C25-C36)	1267610	148.47	M
C16	5.372	-0.012	74664	48152				
C18	5.959	0.011	63664	70242				
C20	6.506	-0.011	42847	79466	JET-A (C10-C18)	7661153	516.18	
C22	7.066	-0.003	25439	11302	MIN.OIL (C24-C38)	1505067	111.98	M
C24	7.593	0.000	16303	7915				
C25	7.840	-0.005	13442	8387				
C26	8.085	-0.002	12240	16669				
C28	8.530	-0.012	13928	22200				
C32	9.359	0.004	7800	16020				
C34	9.729	-0.003	6217	1476				
Filter Peak	9.955	0.024	7705	21512	BUNKERC (C10-C38)	12348407	1617.55	M
C36	10.092	-0.003	6523	11960				
C38	10.447	-0.001	5441	1729				
C40	10.793	0.002	4520	4412				
o-terph	6.086	-0.008	74593	51285				
Triacon Surr	8.965	-0.006	66766	60120				

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	51285	2.5	55.9
Triacontane	60120	3.1	70.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a091.d

Date : 18-JUL-2012 15:28

Client ID: CW-TP-07-9-10

Sample Info: VB51H,10

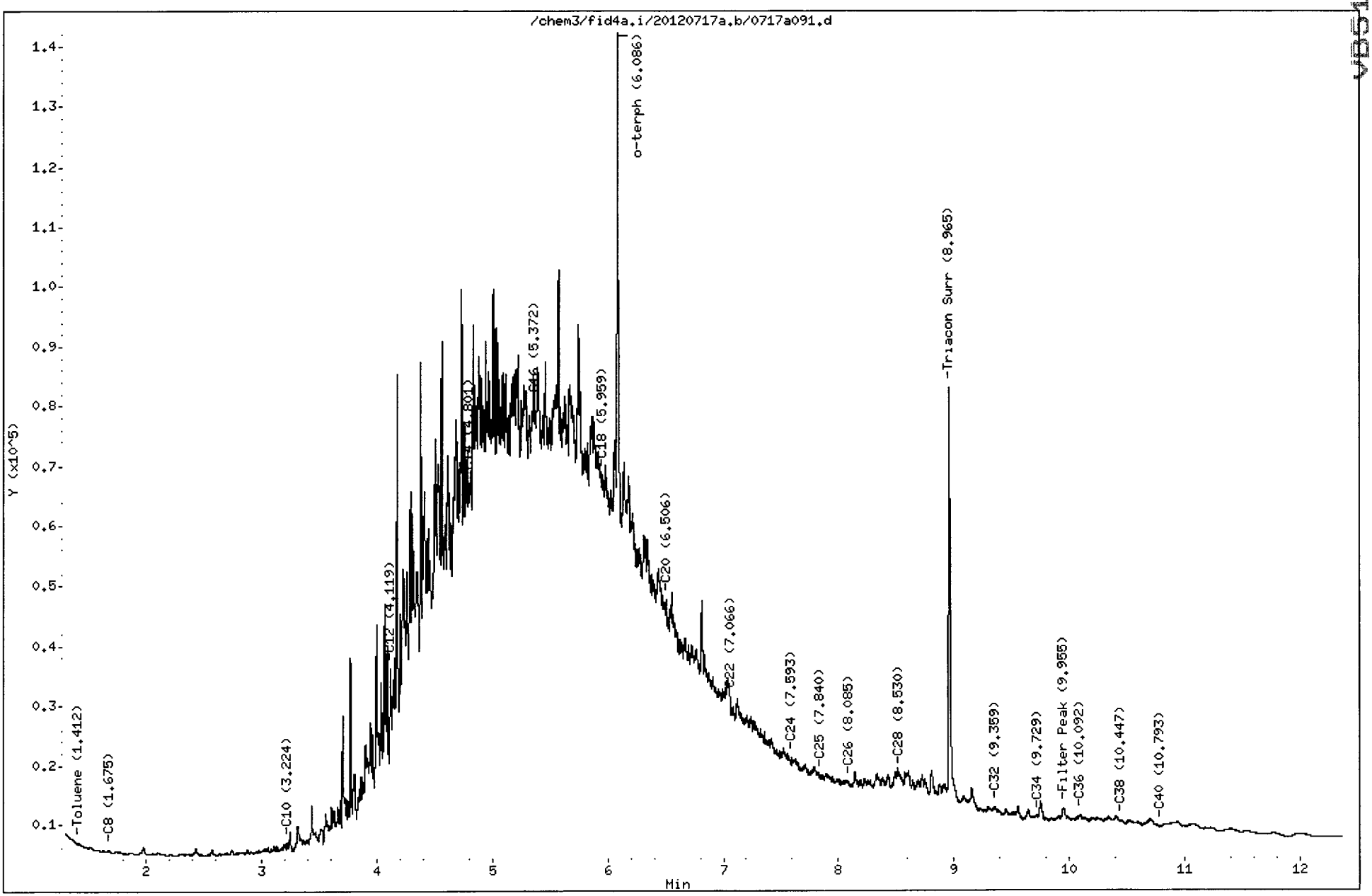
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 00756



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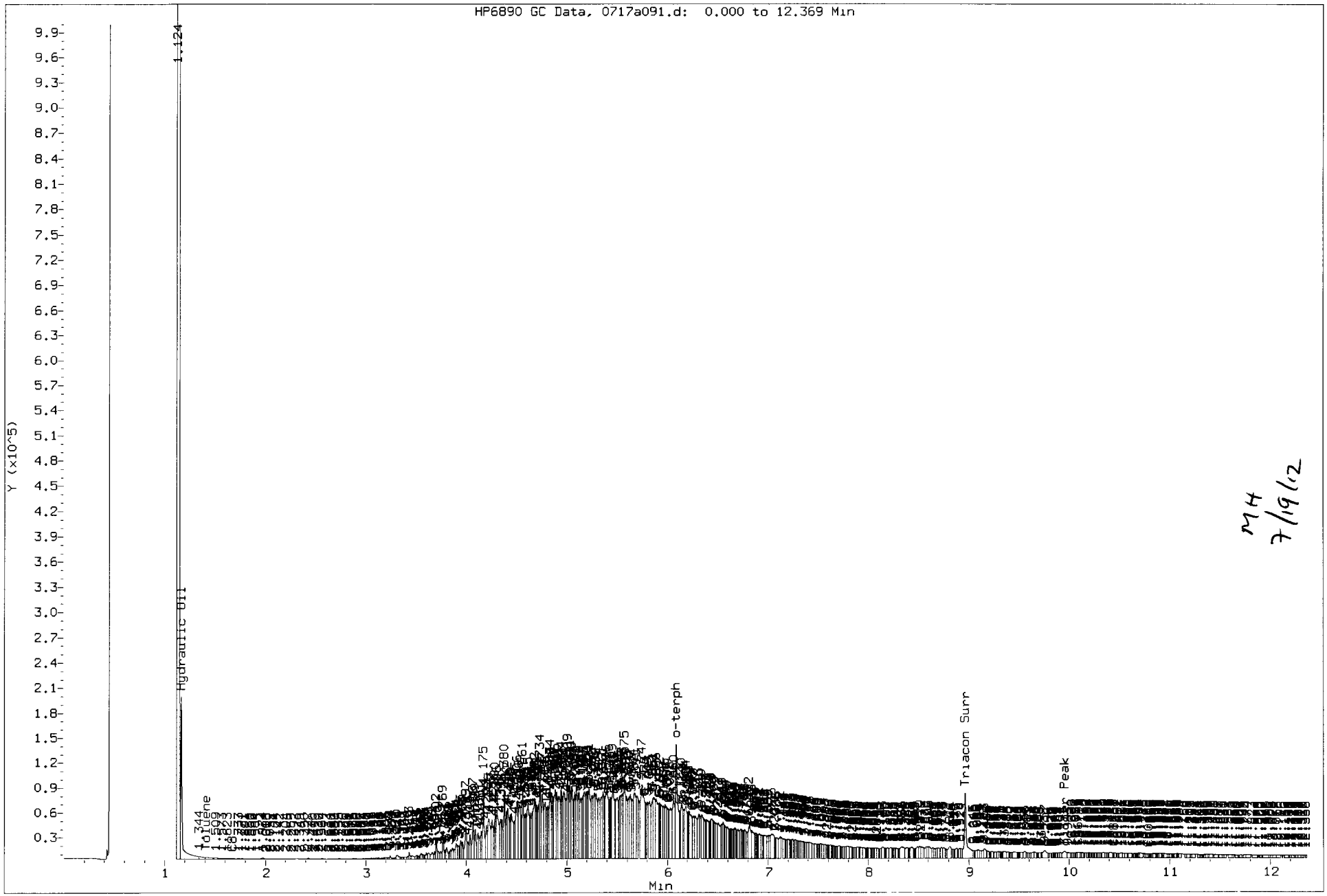
Injection Date: 18-JUL-2012 15:28
Instrument: fid4a.i
Client Sample ID: CW-TP-07-9-10

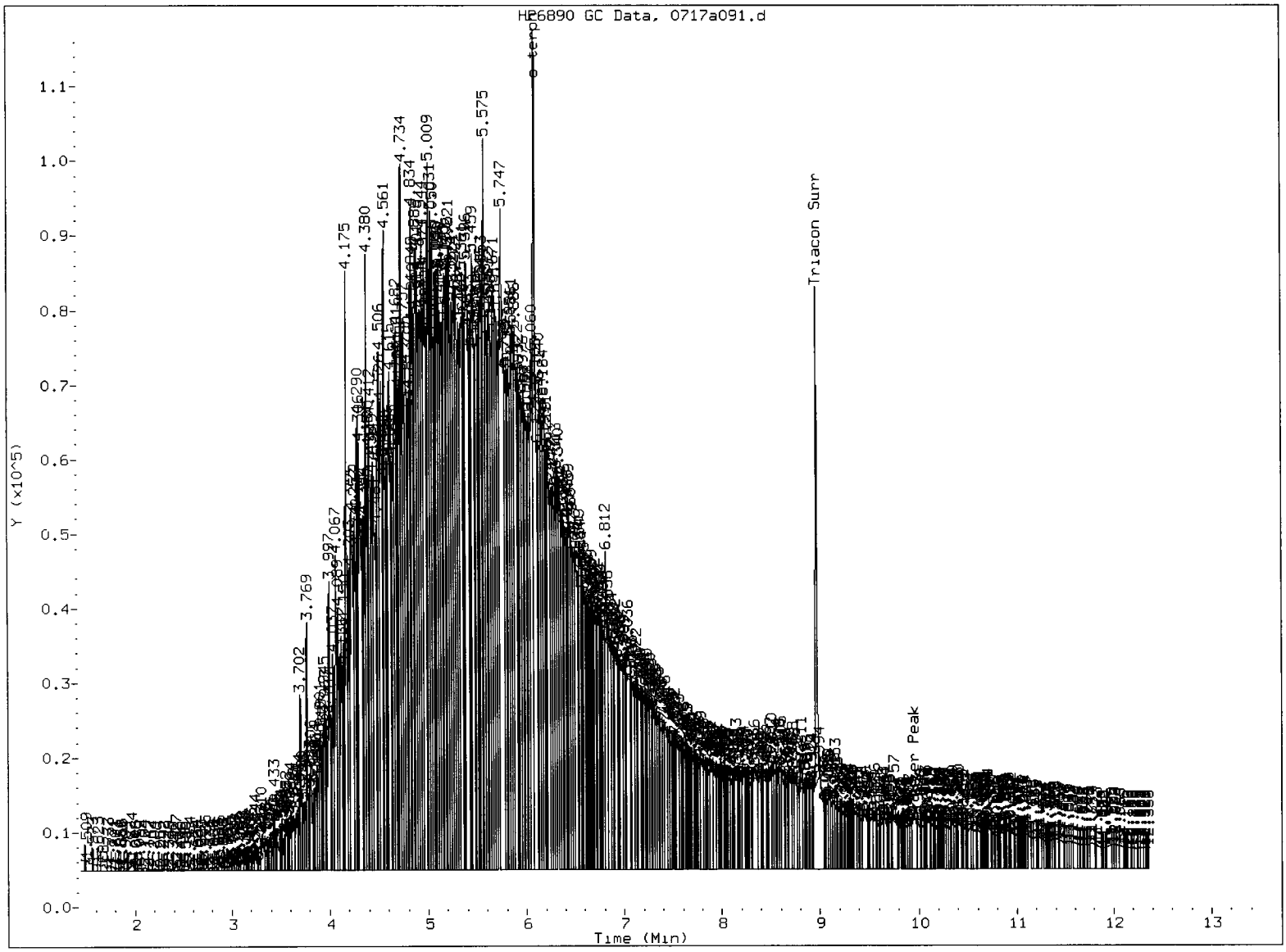


VBS1 00757

MH
7/19/12

FID:4A-2C/RTX-1 VB51H

FID:4A SIGNAL



MANUAL INTEGRATION

X. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a092.d ARI ID: VB51K
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: CW-TP-09-6.3-7.3
Instrument: fid4a.i Injection: 18-JUL-2012 15:49
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 200
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.408	0.022	1271	1639	GAS (Tol-C12)	2520030	167.51
C8	1.672	0.007	2212	3014	DIESEL (C12-C24)	17499415	1194.50
C10	3.241	0.010	19290	18789	M.OIL (C24-C38)	1830568	145.64
C12	4.118	-0.003	76384	83027	AK-102 (C10-C25)	19863205	1148.23
C14	4.810	0.013	145311	195853	AK-103 (C25-C36)	1579792	185.03
C16	5.395	0.011	113329	103121			
C18	5.939	-0.010	92480	128790			
C20	6.512	-0.005	69293	153045	JET-A (C10-C18)	15223920	1025.73
C22	7.074	0.005	32710	17169	MIN.OIL (C24-C38)	1830568	136.20
C24	7.587	-0.005	21073	12802			
C25	7.850	0.005	21876	53331			
C26	8.091	0.004	16149	13005			
C28	8.550	0.008	16150	21314			
C32	9.352	-0.002	8923	9988			
C34	9.749	0.017	9622	27298			
Filter Peak	9.943	0.011	8002	17095	BUNKERC (C10-C38)	21545475	2822.31
C36	10.085	-0.010	6362	10238			
C38	10.440	-0.008	5139	7068			
C40	10.794	0.003	4078	2075			
o-terph	----						
Triacon Surr	----						

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	0	0.0	0.0
Triacontane	0	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

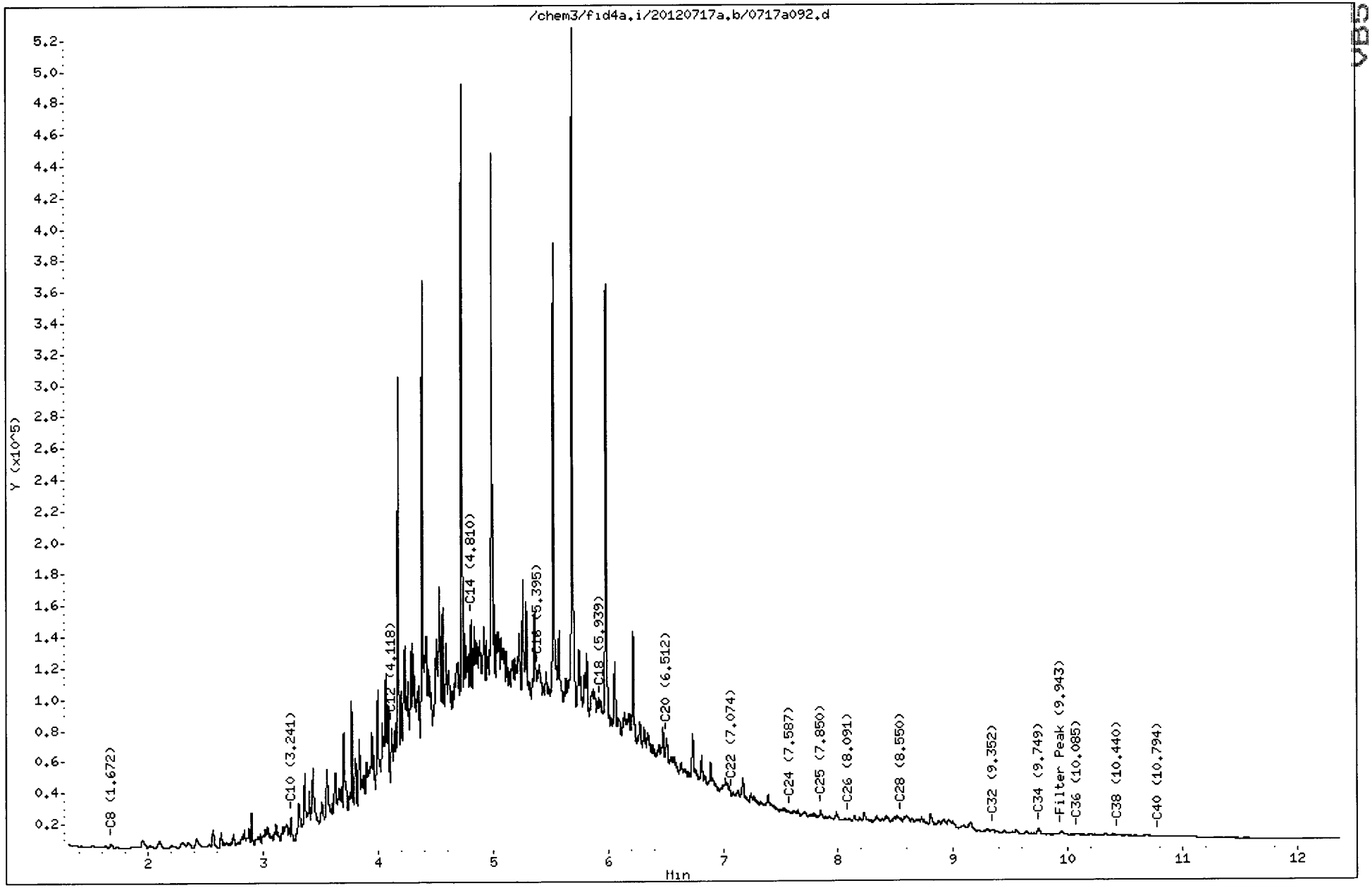
Data File: /chem3/fid4a.i/20120717a.b/0717a092.d
Date : 18-JUL-2012 15:49
Client ID: CW-TP-09-6.3-7.3
Sample Info: VB51K,200

Column phase: RTX-1

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25

VB51 : 00760



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a093.d ARI ID: VB51N
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: CW-TP-09-10-11
Instrument: fid4a.i Injection: 18-JUL-2012 16:10
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 100
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.406	0.020	1179	1515	GAS (Tol-C12)	2342196	155.69
C8	1.670	0.005	2102	3248	DIESEL (C12-C24)	16955632	1157.38
C10	3.241	0.010	17031	17549	M.OIL (C24-C38)	1836568	146.12
C12	4.118	-0.002	71117	77927	AK-102 (C10-C25)	19205554	1110.21
C14	4.809	0.012	139378	177610	AK-103 (C25-C36)	1523999	178.50
C16	5.385	0.001	106296	37808			
C18	5.939	-0.010	89314	113917			
C20	6.511	-0.006	68682	126519	JET-A (C10-C18)	14748794	993.72
C22	7.069	0.000	32210	19751	MIN.OIL (C24-C38)	1836568	136.64
C24	7.594	0.002	21248	16624			
C25	7.850	0.005	21694	57488			
C26	8.090	0.003	16242	21272			
C28	8.544	0.003	16203	22361			
C32	9.344	-0.010	8978	11129			
C34	9.732	0.000	9561	26952			
Filter Peak	9.927	-0.005	8001	19217	BUNKERC (C10-C38)	20840205	2729.92
C36	10.094	-0.001	5818	4285			
C38	10.455	0.008	4753	2709			
C40	10.795	0.004	4201	2410			
o-terph	----						
Triacon Surr	----						

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	0	0.0	0.0
Triacontane	0	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a093.d

Date : 18-JUL-2012 16:10

Client ID: CW-TP-09-10-11

Sample Info: VB51N,100

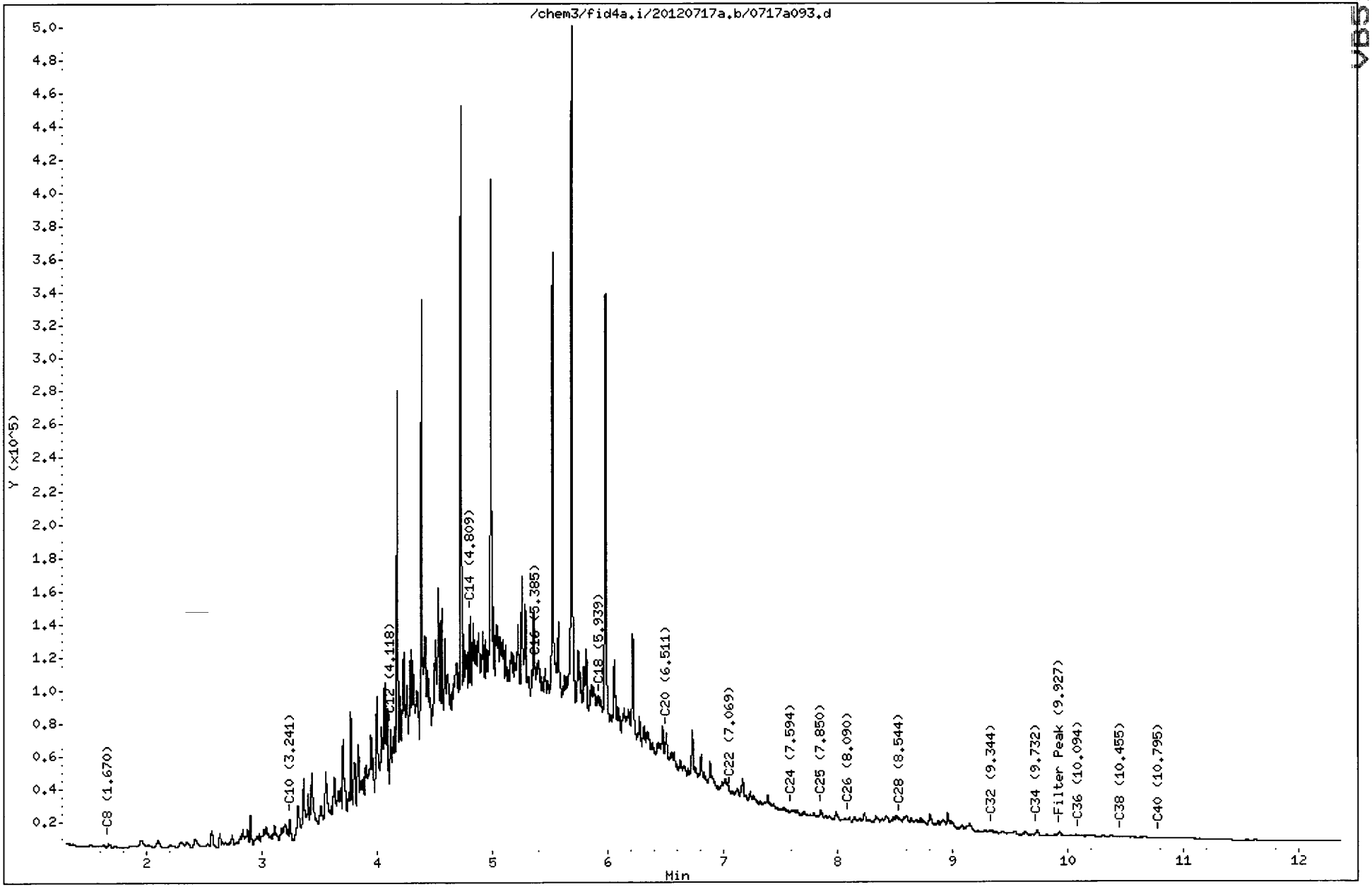
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 : 00762



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a094.d ARI ID: VB54C
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: CW-TP-05-7-8
Instrument: fid4a.i Injection: 18-JUL-2012 16:32
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 50
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.459	0.073	1039	2056	GAS (Tol-C12)	946147	62.89
C8	1.666	0.001	917	1822	DIESEL (C12-C24)	9656270	659.13
C10	3.221	-0.010	4125	3660	M.OIL (C24-C38)	1057663	84.15
C12	4.118	-0.002	31076	35304	AK-102 (C10-C25)	10595448	612.49
C14	4.809	0.011	80982	93182	AK-103 (C25-C36)	888935	104.12
C16	5.396	0.012	69013	105590			
C18	5.945	-0.004	49604	42392			
C20	6.512	-0.005	37449	85389	JET-A (C10-C18)	8081997	544.54
C22	7.070	0.001	17100	7060	MIN.OIL (C24-C38)	1057663	78.69
C24	7.594	0.001	11402	11671			
C25	7.853	0.009	11518	30657			
C26	8.097	0.010	8938	12219			
C28	8.526	-0.015	9246	18841			
C32	9.350	-0.005	5142	6622			
C34	9.745	0.013	5599	13439			
Filter Peak	9.935	0.003	4919	6682	BUNKERC (C10-C38)	11555431	1513.68
C36	10.099	0.004	3745	2059			
C38	10.444	-0.004	3739	6277			
C40	10.796	0.005	3070	2481			
o-terph	----						
Triacon Surr	----						

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	0	0.0	0.0
Triacontane	0	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a094.d

Date : 18-JUL-2012 16:32

Client ID: CW-TP-05-7-8

Sample Info: VB54C,50

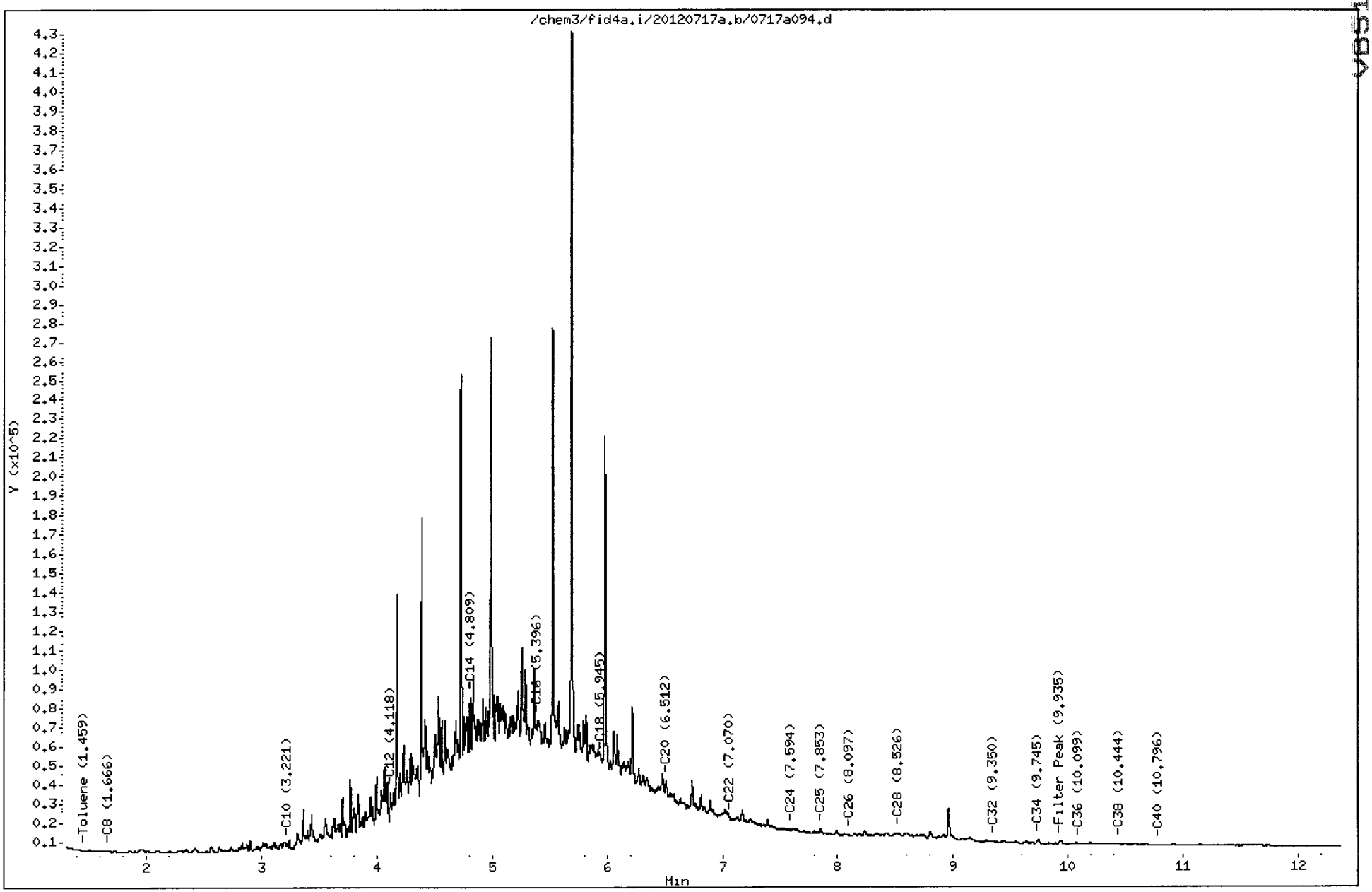
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 : 007514



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a095.d ARI ID: VB54F
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: CW-TP-03-7-8
Instrument: fid4a.i Injection: 18-JUL-2012 16:53
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 50
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.405	0.018	1401	3929	GAS (Tol-C12)	971354	64.57
C8	1.668	0.003	954	2021	DIESEL (C12-C24)	10189474	695.53
C10	3.221	-0.010	4320	3723	M.OIL (C24-C38)	1068117	84.98
C12	4.119	-0.001	30293	32373	AK-102 (C10-C25)	11125206	643.11
C14	4.809	0.012	84984	91166	AK-103 (C25-C36)	902659	105.72
C16	5.393	0.009	73562	51687			
C18	5.956	0.007	53007	31321			
C20	6.512	-0.005	39083	91573	JET-A (C10-C18)	8592912	578.96
C22	7.081	0.012	17153	22484	MIN.OIL (C24-C38)	1068117	79.47
C24	7.592	-0.001	10738	7358			
C25	7.849	0.004	11145	25474			
C26	8.095	0.008	8571	12540			
C28	8.550	0.008	8488	9364			
C32	9.351	-0.004	5462	7038			
C34	9.736	0.004	5853	20443			
Filter Peak	9.926	-0.006	5223	14548	BUNKERC (C10-C38)	12109039	1586.20
C36	10.097	0.002	3998	2041			
C38	10.453	0.005	3550	2451			
C40	10.783	-0.008	3252	2059			
o-terph	----						
Triacon Surr	----						

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	0	0.0	0.0
Triacontane	0	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a095.d

Date : 18-JUL-2012 16:53

Client ID: CW-TP-03-7-8

Sample Info: VB54F,50

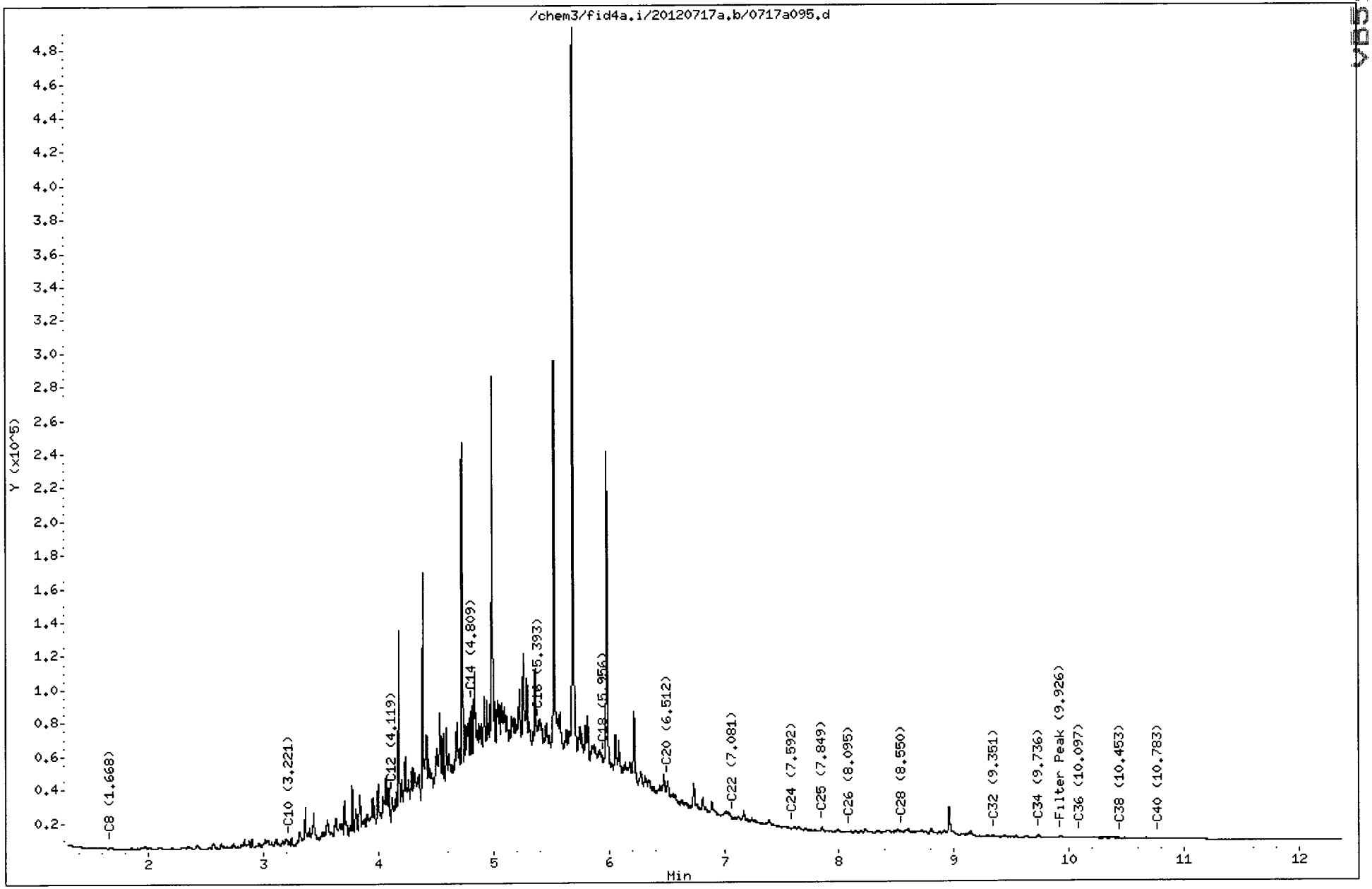
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 : 00766



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a096.d ARI ID: DIESEL #10
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 18-JUL-2012 17:14
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.379	-0.007	2969	5043	GAS (Tol-C12)	957426	63.64	
C8	1.663	-0.002	1299	694	DIESEL (C12-C24)	3826808	261.22	
C10	3.235	0.004	21346	18424	M.OIL (C24-C38)	59518	4.74	
C12	4.121	0.000	44255	39078	AK-102 (C10-C25)	4472701	258.55	M
C14	4.794	-0.004	71289	79810	AK-103 (C25-C36)	35363	4.14	
C16	5.380	-0.003	111725	119211				
C18	5.945	-0.003	96991	100535				
C20	6.514	-0.003	59228	94393	JET-A (C10-C18)	3323870	223.95	
C22	7.068	-0.001	23998	54622	MIN.OIL (C24-C38)	59518	4.43	
C24	7.605	0.012	4892	17861				
C25	7.860	0.015	1999	6595				
C26	8.110	0.023	750	1613				
C28	8.530	-0.012	427	478				
C32	9.347	-0.007	69	72				
C34	9.731	-0.001	191	261				
Filter Peak	9.927	-0.005	310	207	BUNKERC (C10-C38)	4521876	592.33	M
C36	10.097	0.002	437	654				
C38	10.441	-0.007	1143	2474				
C40	10.796	0.005	1214	929				
o-terph	6.095	0.001	1070848	937577				
Triacon Surr	8.968	-0.003	23	6				

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	937577	46.0	102.3
Triacontane	6	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a096.d

Date : 18-JUL-2012 17:14

Client ID:

Sample Info: DIESEL #10

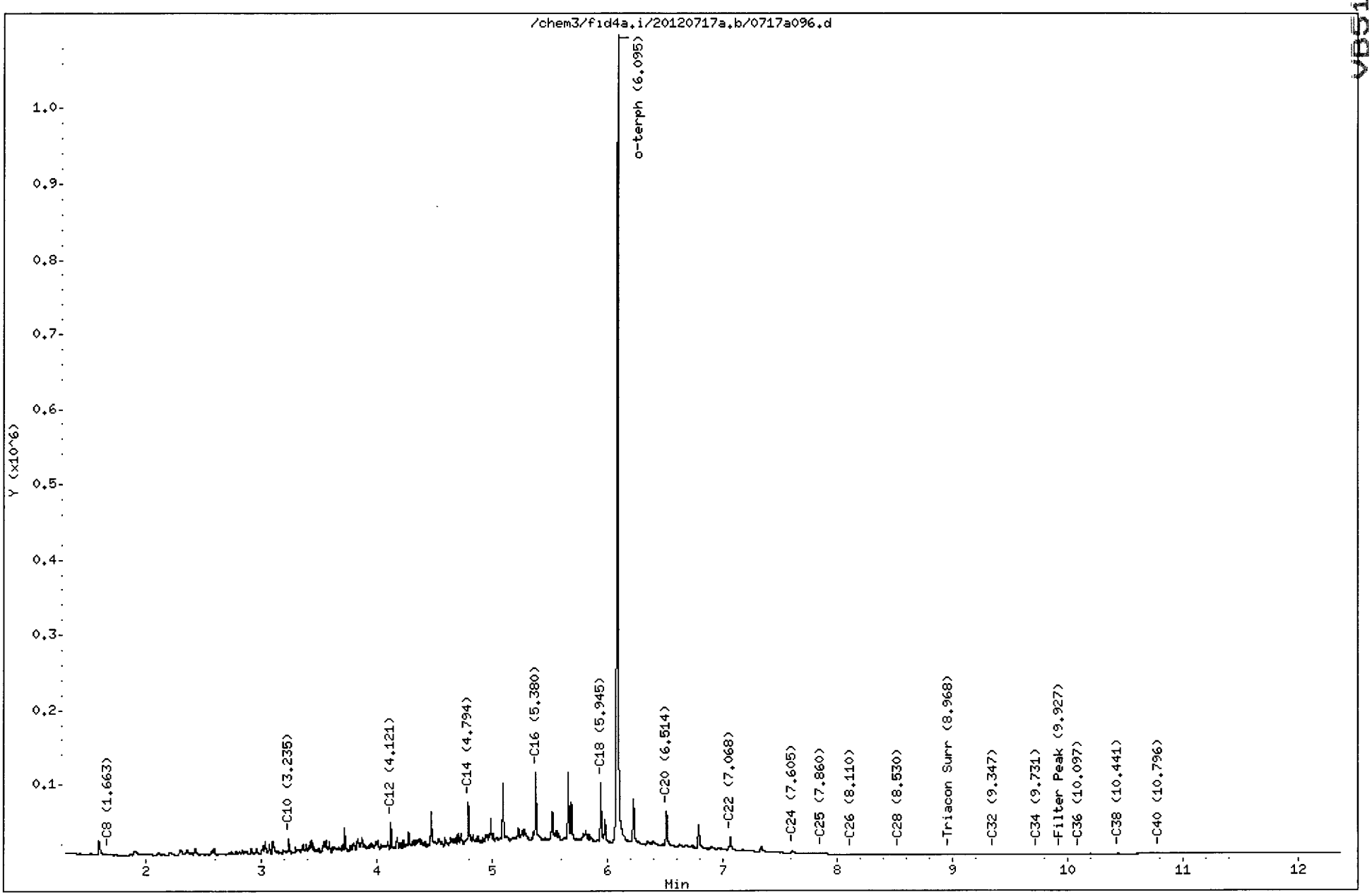
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VBS1 : 00768



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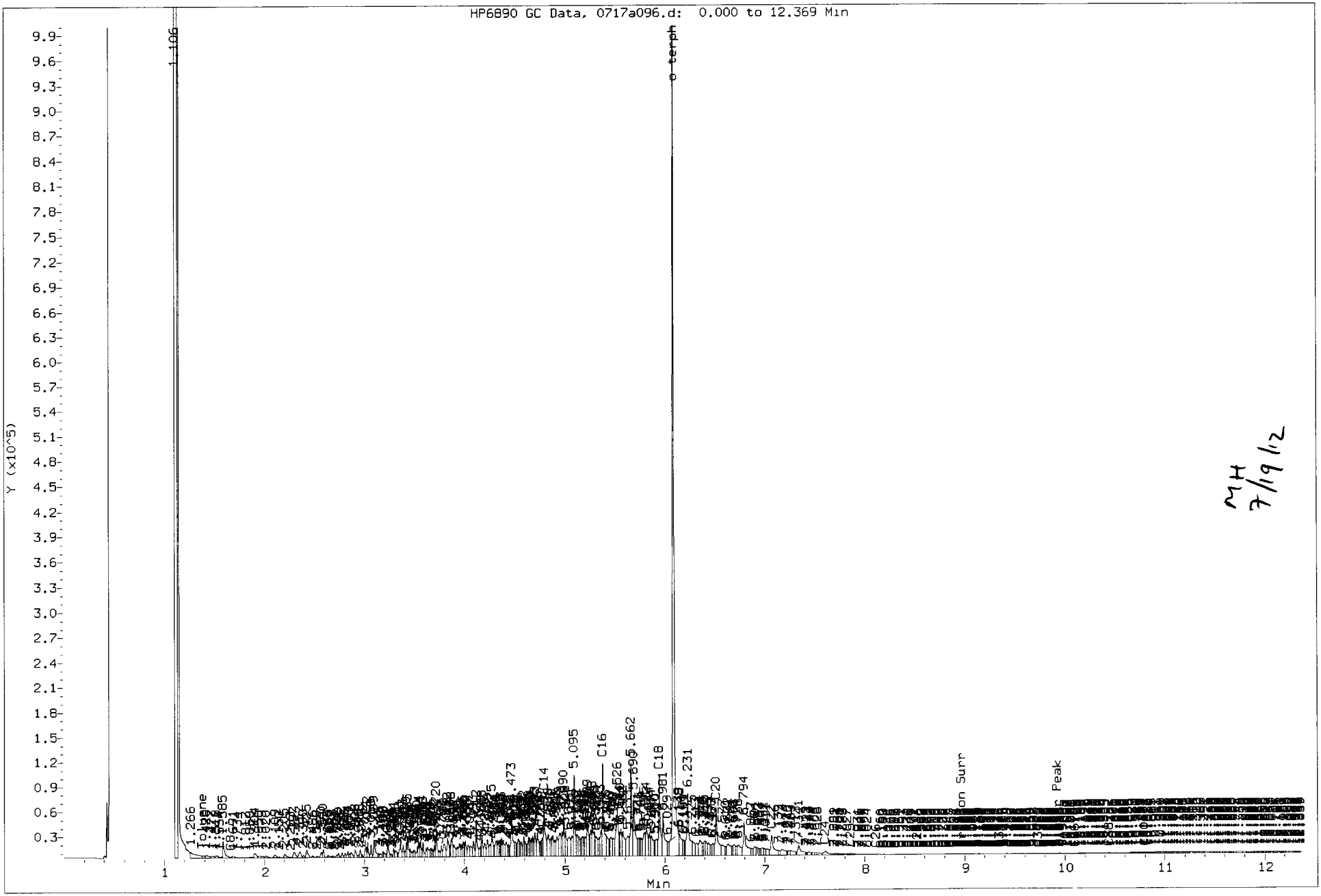
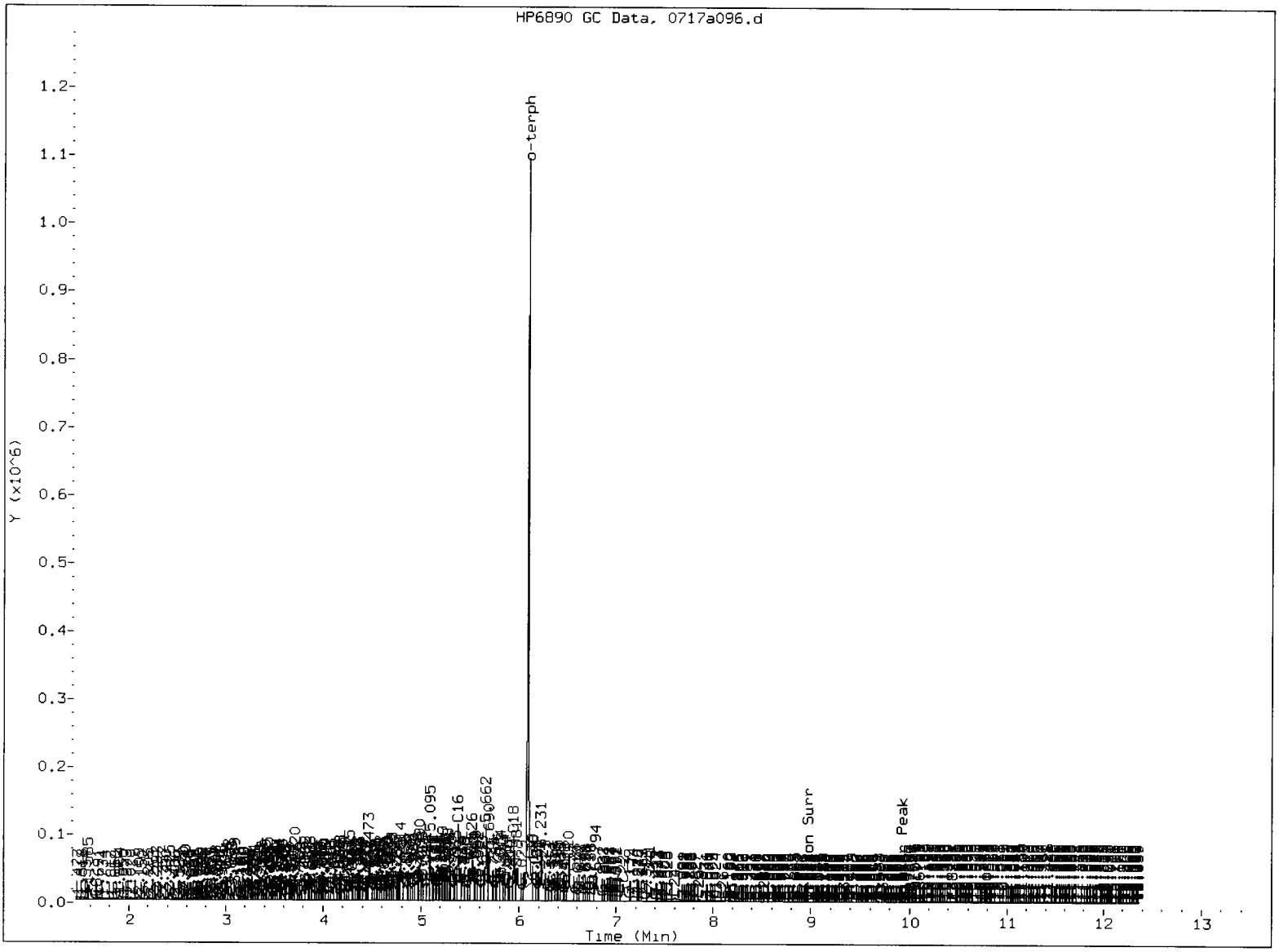
Injection Date: 18-JUL-2012 17:14
Instrument: fid4a.i
Client Sample ID:



MH 7/19/12

VBS1 00759

FID:4A-2C/RTX-1 DIESEL #10 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a097.d ARI ID: MOIL #10
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 18-JUL-2012 17:36
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.352	-0.034	44712	98405	GAS (Tol-C12)	304711	20.25	
C8	1.723	0.058	1734	5412	DIESEL (C12-C24)	564331	38.52	
C10	3.238	0.007	2592	5116	M.OIL (C24-C38)	6266058	498.53	
C12	4.119	-0.002	1093	1678	AK-102 (C10-C25)	909295	52.56	
C14	4.799	0.001	221	414	AK-103 (C25-C36)	5341584	625.62	M
C16	5.379	-0.004	67	76				
C18	5.952	0.004	205	201				
C20	6.513	-0.004	1121	2475	JET-A (C10-C18)	121231	8.17	
C22	7.074	0.005	5056	3937	MIN.OIL (C24-C38)	6266058	466.20	M
C24	7.589	-0.004	20314	19290				
C25	7.846	0.002	28163	10876				
C26	8.093	0.006	32567	54637				
C28	8.545	0.004	39253	56382				
C32	9.346	-0.009	46988	69209				
C34	9.726	-0.007	46520	55112				
Filter Peak	9.935	0.003	42649	60000	BUNKERC (C10-C38)	6925332	907.17	M
C36	10.094	-0.001	39325	54372				
C38	10.448	0.000	32331	31670				
C40	10.790	-0.001	25150	17979				
o-terph	6.096	0.002	633	1678				
Triacon Surr	8.971	0.000	861007	888396				

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1678	0.1	0.2
Triacontane	888396	46.5	103.4

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a097.d

Date : 18-JUL-2012 17:36

Client ID:

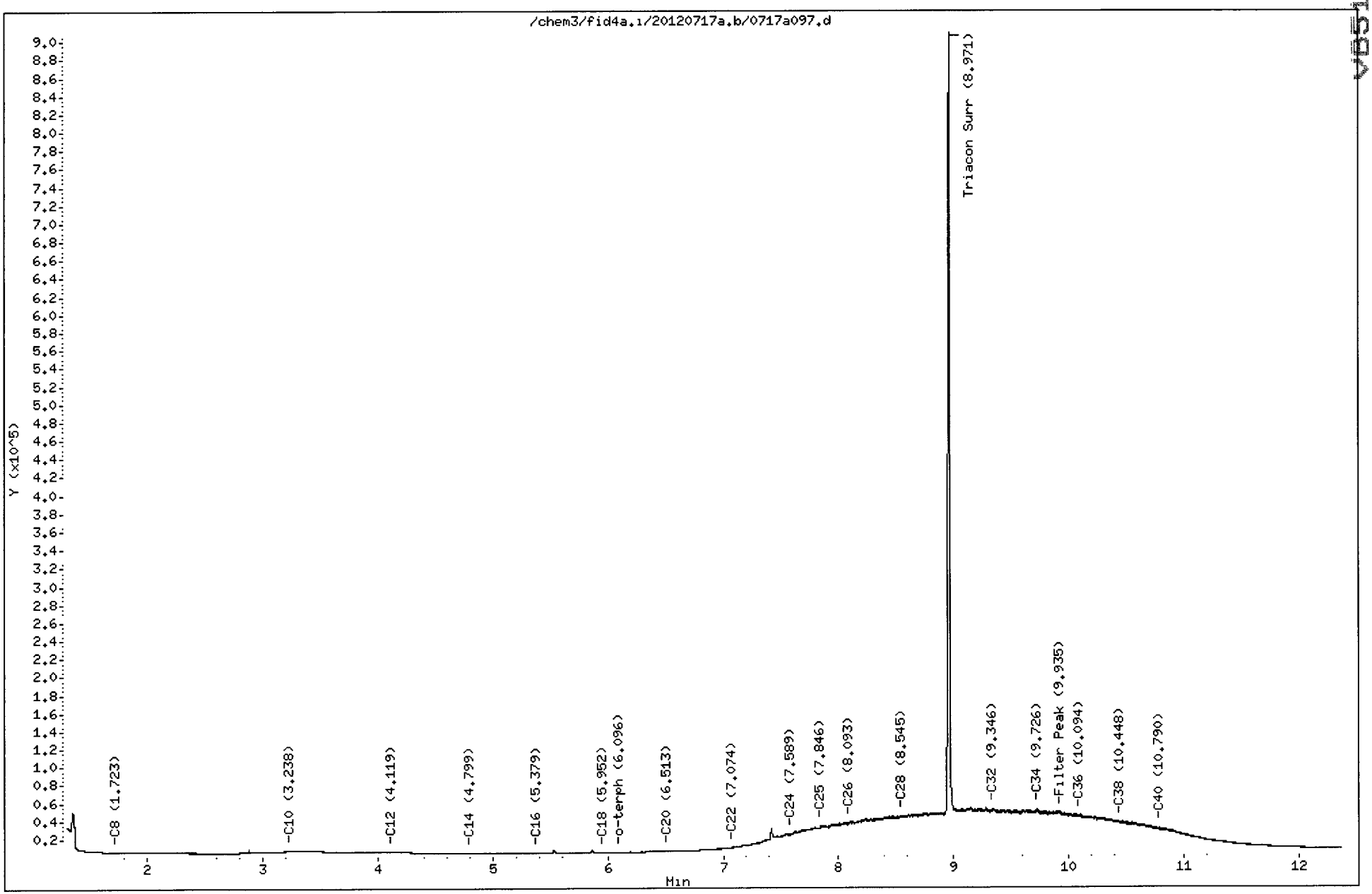
Sample Info: MOIL #10

Column phase: RTX-1

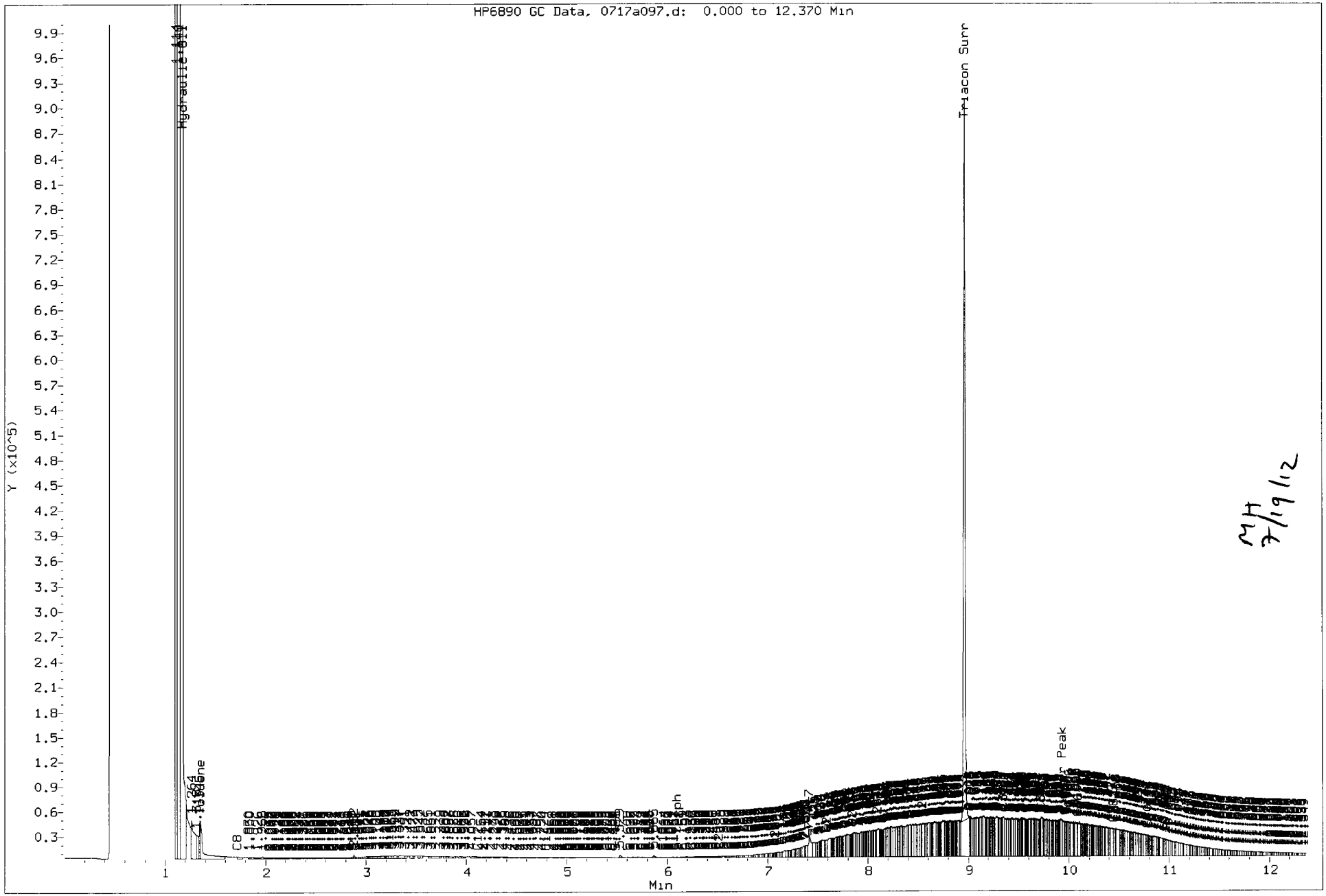
Instrument: fid4a.i

Operator: AR

Column diameter: 0.25



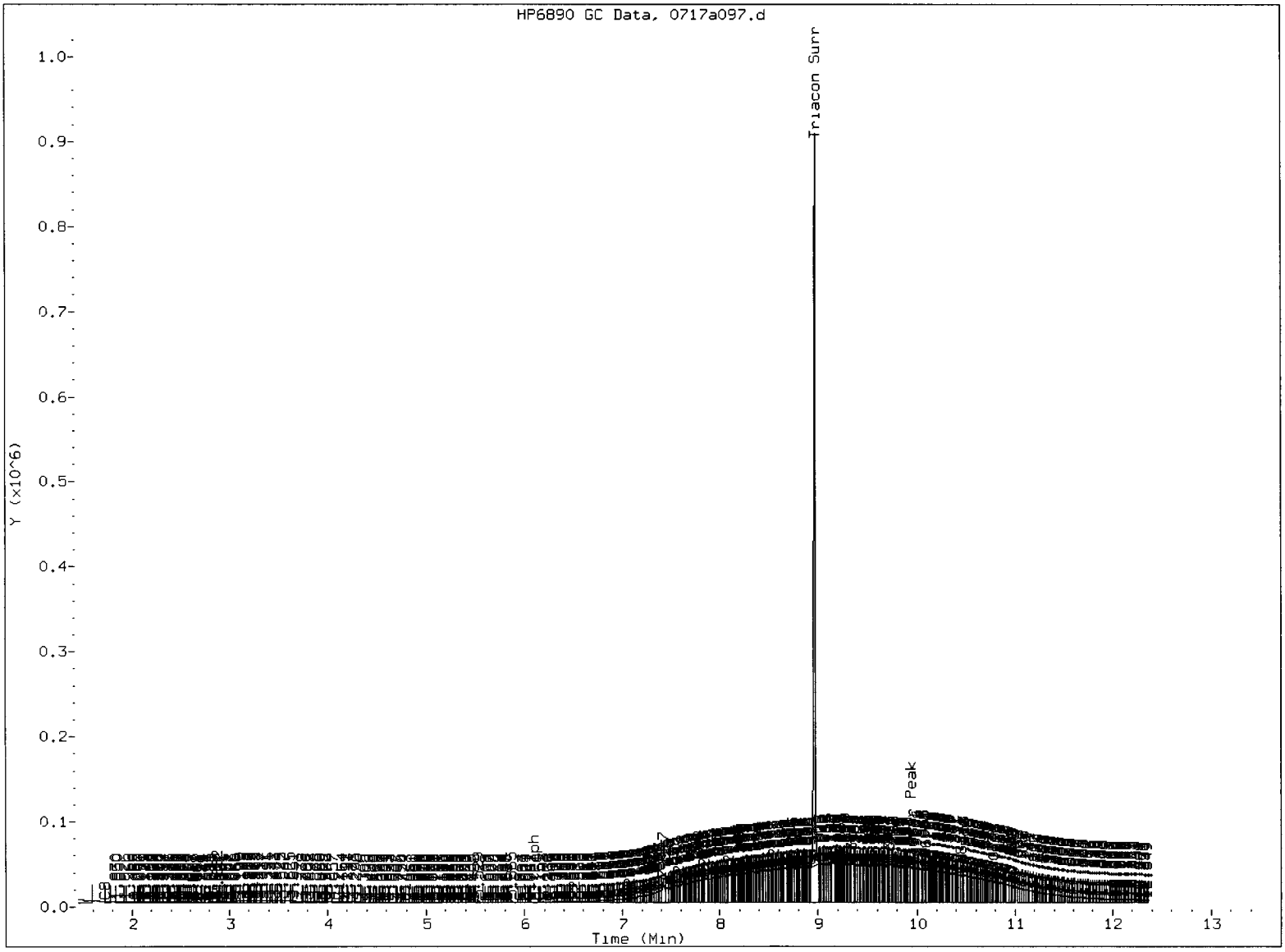
Data File: /chem3/fid4a.i/20120717a.b/0717a097.d
Injection Date: 18-JUL-2012 17:36
Instrument: fid4a.i
Client Sample ID:



MH 7/19/12

V651-09773

FID:4A-2C/RTX-1 MOIL #10 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a098.d ARI ID: VB54I
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: CW-TP-02-8.2-9.2
Instrument: fid4a.i Injection: 18-JUL-2012 17:57
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 50
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.396	0.010	1428	4056	GAS (Tol-C12)	1467721	97.56
C8	1.660	-0.005	1079	1969	DIESEL (C12-C24)	14695676	1003.12
C10	3.240	0.009	9693	9331	M.OIL (C24-C38)	1259563	100.21
C12	4.118	-0.002	44582	50946	AK-102 (C10-C25)	16106350	931.06
C14	4.809	0.011	119216	144510	AK-103 (C25-C36)	1056152	123.70
C16	5.395	0.011	107806	179658			
C18	5.941	-0.007	82465	100012			
C20	6.510	-0.007	56260	135693	JET-A (C10-C18)	12390739	834.84
C22	7.073	0.004	23735	8960	MIN.OIL (C24-C38)	1259563	93.71
C24	7.596	0.004	14839	8721			
C25	7.849	0.005	14414	30181			
C26	8.098	0.011	11271	23743			
C28	8.522	-0.019	11571	15343			
C32	9.344	-0.010	6355	10404			
C34	9.736	0.004	6765	17276			
Filter Peak	9.924	-0.007	5927	15049	BUNKERC (C10-C38)	17243143	2258.73
C36	10.096	0.001	4548	2391			
C38	10.448	0.000	3858	2569			
C40	10.796	0.006	3493	2820			
o-terph	----						
Triacon Surr	----						

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	0	0.0	0.0
Triacontane	0	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a098.d

Date : 18-JUL-2012 17:57

Client ID: CW-TP-02-8.2-9.2

Sample Info: VB54I,50

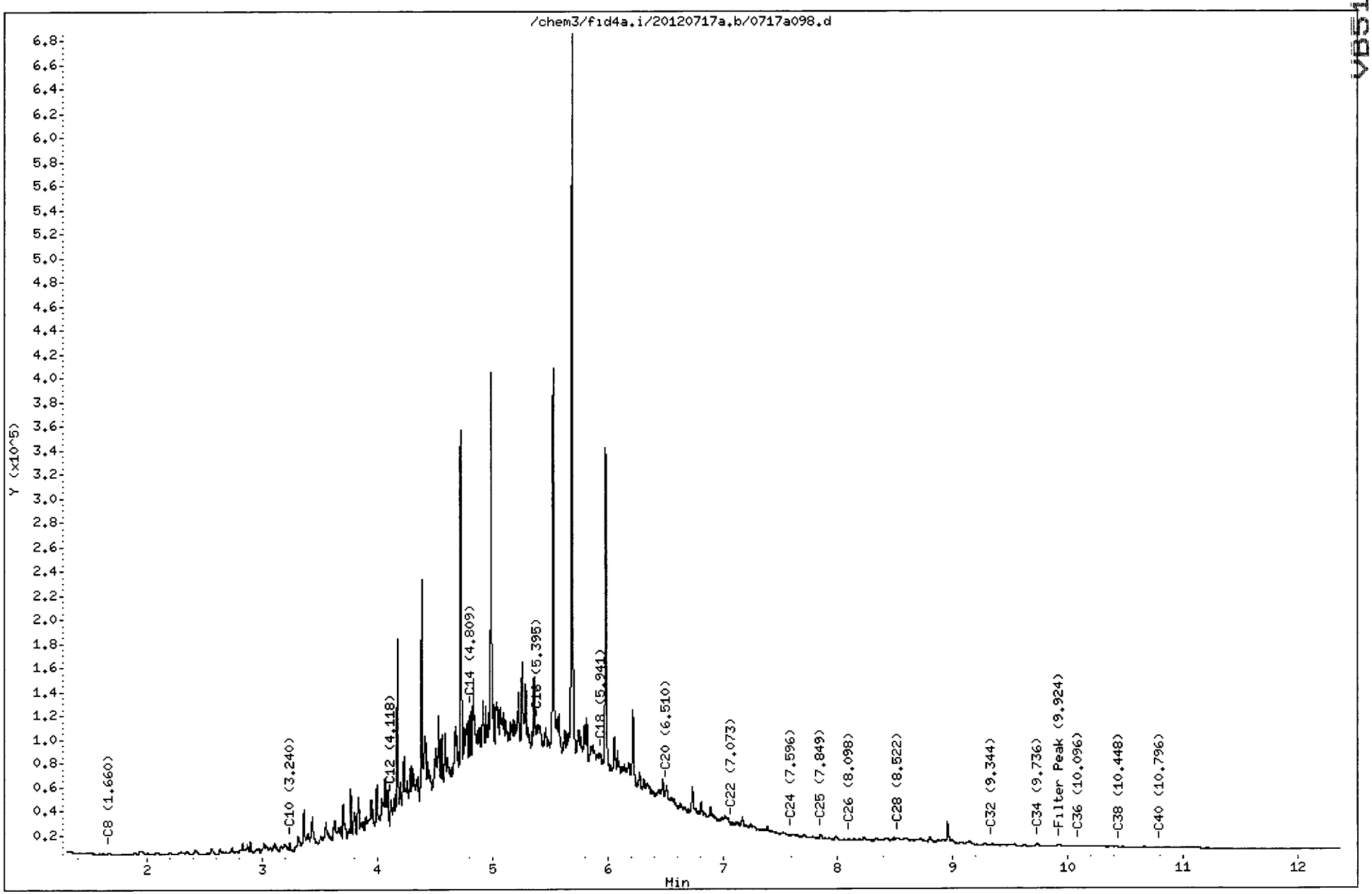
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 00776



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a099.d
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB54L
Client ID: CW-TP-01-8-9
Injection: 18-JUL-2012 18:18
Dilution Factor: 50

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.403	0.016	1097	1465	GAS (Tol-C12)	3131386	208.15
C8	1.668	0.003	2735	3519	DIESEL (C12-C24)	29925748	2042.71
C10	3.239	0.008	19538	21128	M.OIL (C24-C38)	2118662	168.56
C12	4.120	0.000	86118	95902	AK-102 (C10-C25)	32787097	1895.32
C14	4.786	-0.012	211900	188760	AK-103 (C25-C36)	1811079	212.12
C16	5.401	0.017	228130	336517			
C18	5.938	-0.011	169070	251710			
C20	6.513	-0.004	108774	187350	JET-A (C10-C18)	25654174	1728.48
C22	7.070	0.001	45073	16821	MIN.OIL (C24-C38)	2118662	157.63
C24	7.590	-0.003	26180	16633			
C25	7.848	0.004	24991	70143			
C26	8.094	0.007	18994	45568			
C28	8.543	0.001	17993	21251			
C32	9.361	0.006	9146	13794			
C34	9.720	-0.012	9888	35853			
Filter Peak	9.946	0.014	6645	11437	BUNKERC (C10-C38)	34721640	4548.29
C36	10.083	-0.013	6383	10991			
C38	10.447	-0.001	5233	2659			
C40	10.787	-0.004	4125	1553			
o-terph	----						
Triacon Surr	----						

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	0	0.0	0.0
Triacontane	0	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a099.d

Date : 18-JUL-2012 18:18

Client ID: CW-TP-01-8-9

Sample Info: VB54L,50

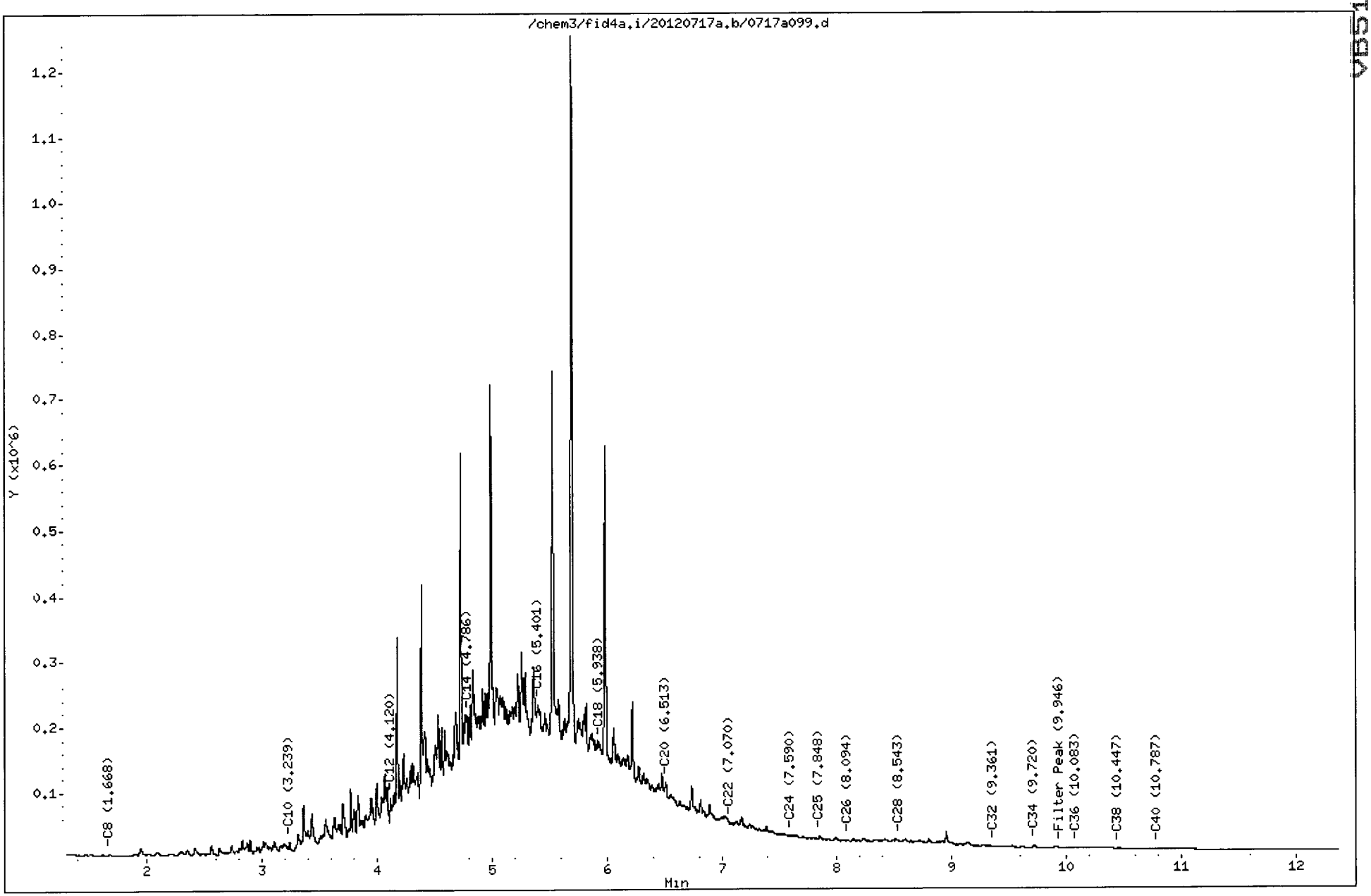
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB54L ; 08778



MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a100.d ARI ID: VB54S
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: CW-TP-04-8-9
Instrument: fid4a.i Injection: 18-JUL-2012 18:39
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 5
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.408	0.022	2127	6595	GAS (Tol-C12)	932791	62.00	
C8	1.672	0.007	1097	2779	DIESEL (C12-C24)	11847885	808.73	
C10	3.222	-0.009	3309	2954	M.OIL (C24-C38)	1358045	108.05	
C12	4.118	-0.002	36729	39057	AK-102 (C10-C25)	12795843	739.69	M
C14	4.808	0.010	95740	116907	AK-103 (C25-C36)	1144712	134.07	M
C16	5.384	0.000	81794	31923				
C18	5.940	-0.009	65306	64440				
C20	6.512	-0.005	49084	127817	JET-A (C10-C18)	9512693	640.93	
C22	7.065	-0.004	23106	9019	MIN.OIL (C24-C38)	1358045	101.04	M
C24	7.597	0.004	15385	21646				
C25	7.842	-0.003	15252	23904				
C26	8.087	0.000	11851	6049				
C28	8.550	0.008	11338	10776				
C32	9.342	-0.012	7354	11225				
C34	9.725	-0.008	7506	22298				
Filter Peak	9.946	0.015	4882	7218	BUNKERC (C10-C38)	14030666	1837.92	M
C36	10.091	-0.004	4664	6280				
C38	10.450	0.002	4046	1791				
C40	10.787	-0.004	3444	2581				
o-terph	6.087	-0.007	149021	102514				
Triacon Surr	8.954	-0.017	150119	134545				

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	102514	5.0	55.9
Triacontane	134545	7.0	78.3

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a100.d

Date : 18-JUL-2012 18:39

Client ID: CW-TP-04-8-9

Sample Info: VB54S,5

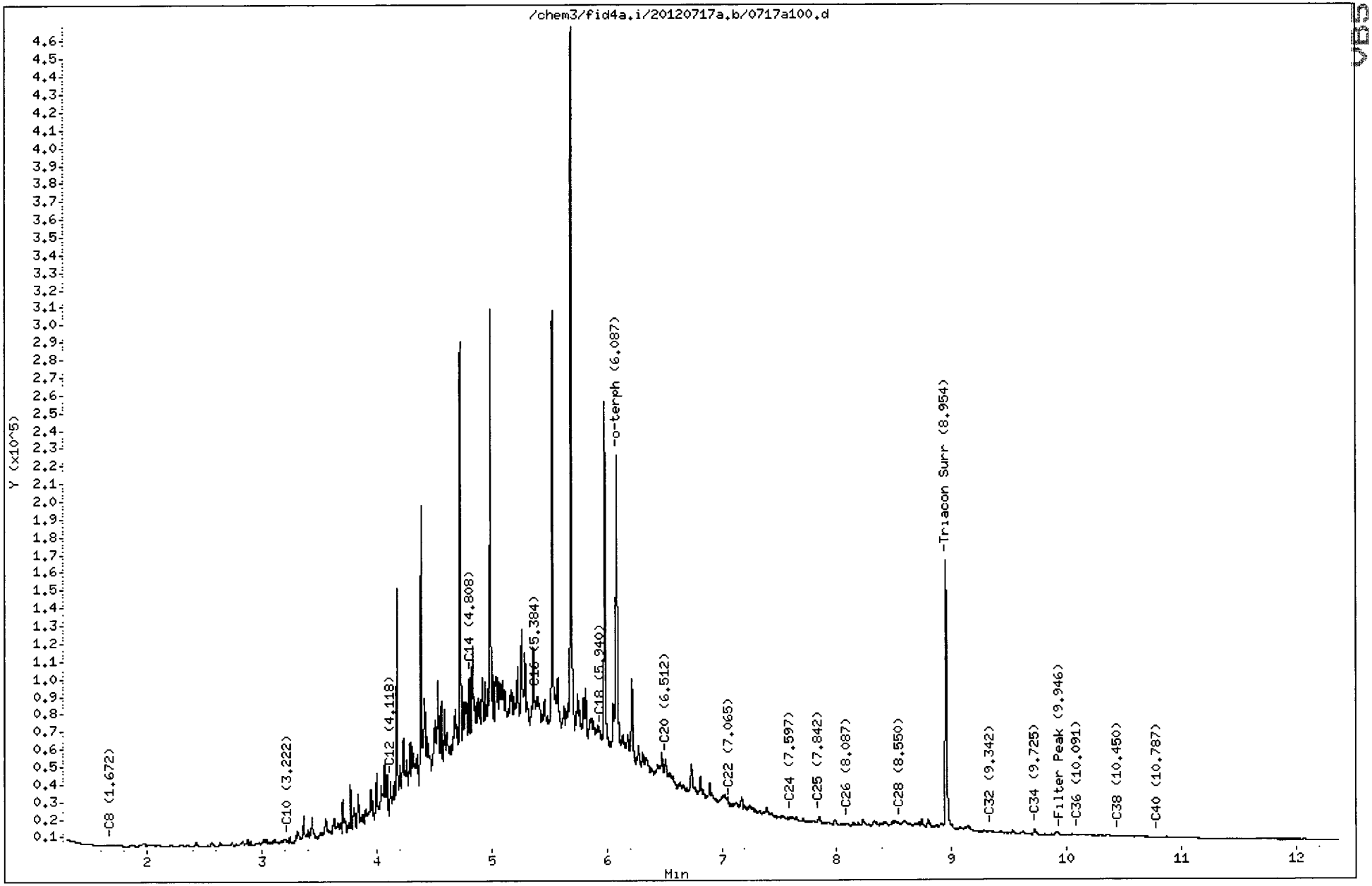
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 : 00726



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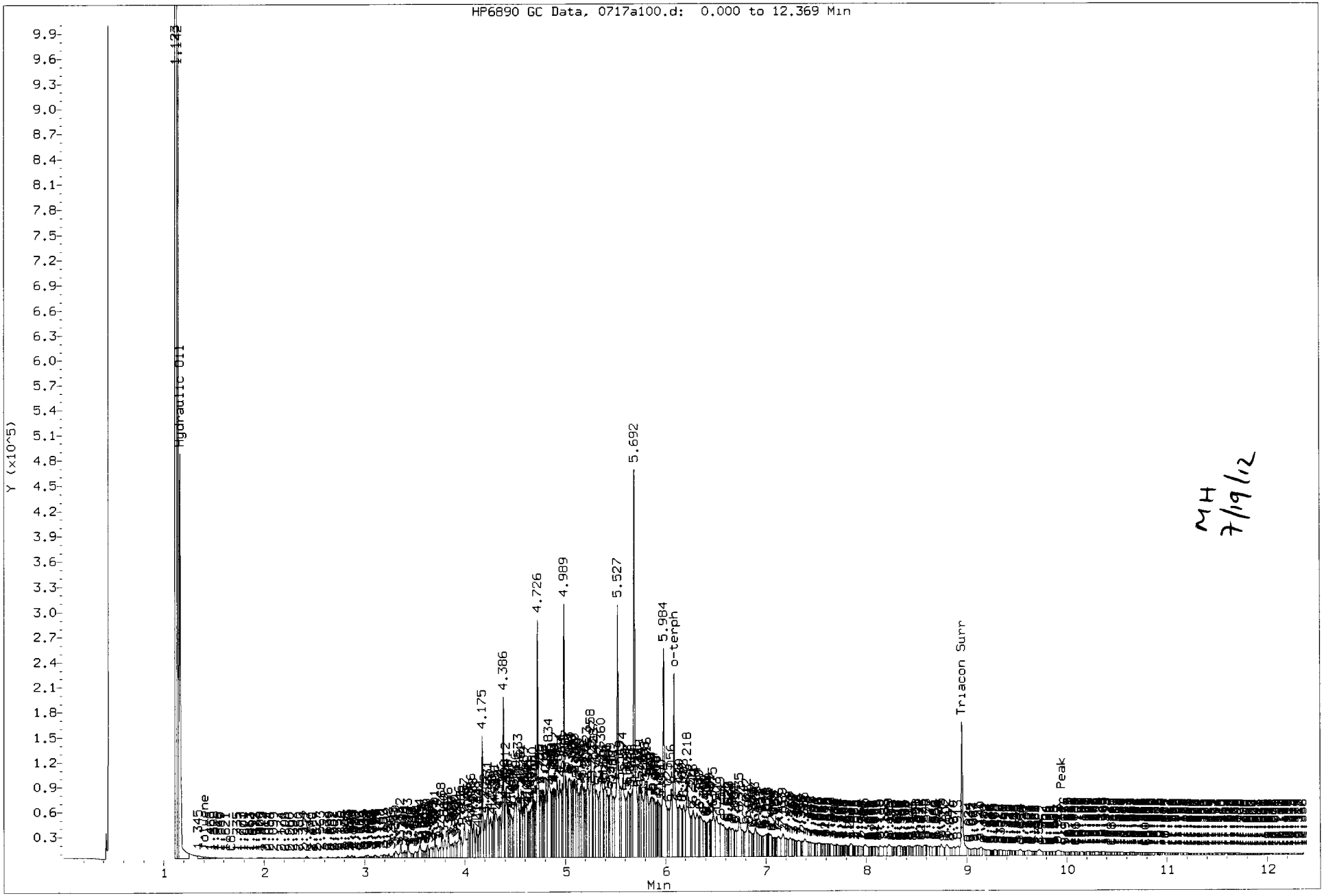
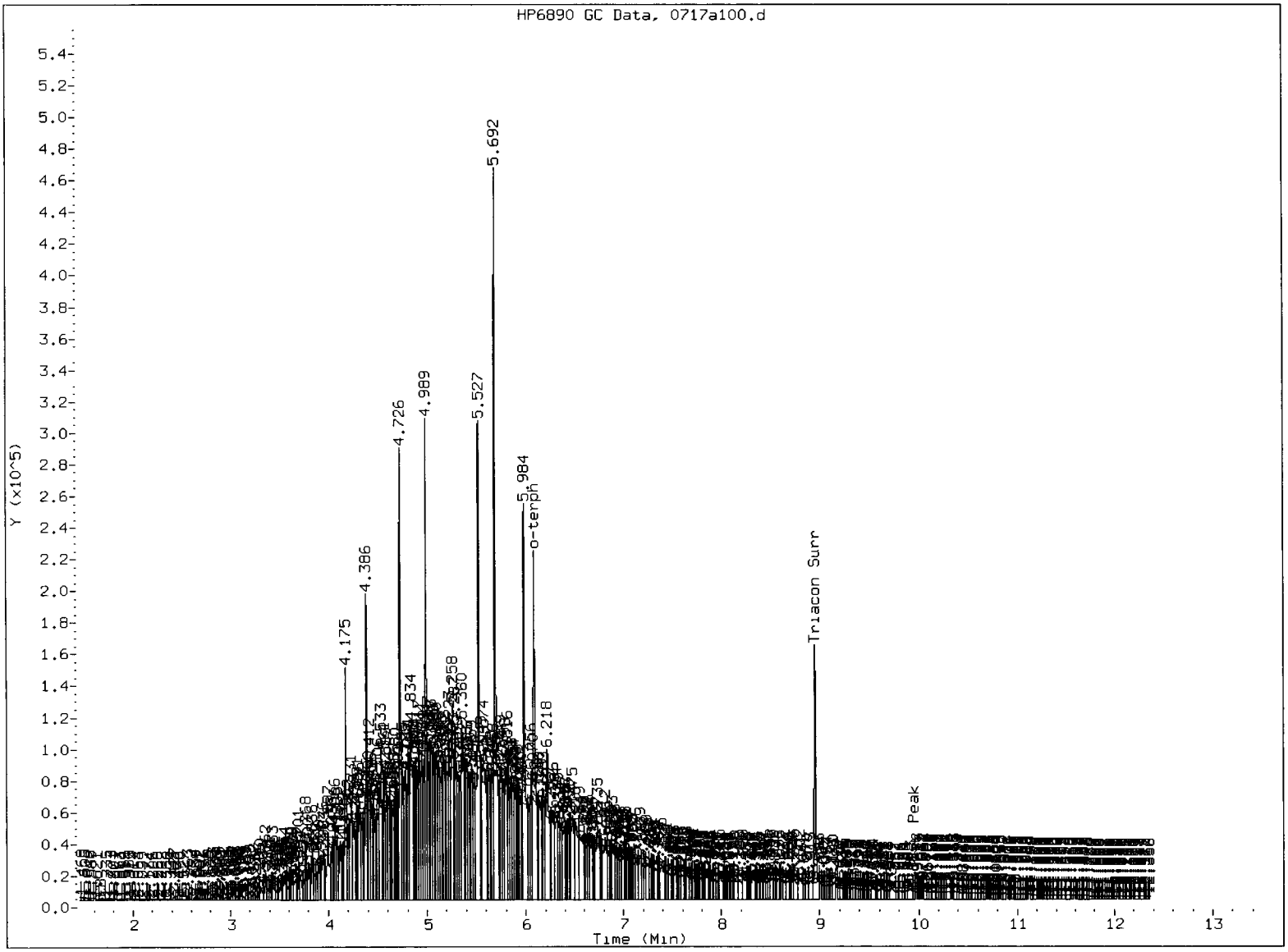
Injection Date: 18-JUL-2012 18:39
Instrument: fid4a.i
Client Sample ID: CW-TP-04-8-9



MH
7/19/12

VBSI : 00781

FID:4A-2C/RTX-1 VB54S FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a101.d
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/19/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB54V
Client ID: CW-TP-54-8-9
Injection: 18-JUL-2012 19:01
Dilution Factor: 5

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.416	0.030	2317	6635	GAS (Tol-C12)	940419	62.51	
C8	1.677	0.012	1077	2890	DIESEL (C12-C24)	13474811	919.78	
C10	3.222	-0.009	2957	2737	M.OIL (C24-C38)	1621265	128.99	
C12	4.119	-0.002	39468	42948	AK-102 (C10-C25)	14479185	837.00	M
C14	4.808	0.010	111205	127544	AK-103 (C25-C36)	1358829	159.15	M
C16	5.384	0.000	93880	37091				
C18	5.942	-0.007	75223	69101				
C20	6.512	-0.005	57607	93146	JET-A (C10-C18)	10717509	722.11	
C22	7.074	0.005	26185	7760	MIN.OIL (C24-C38)	1621265	120.62	M
C24	7.599	0.006	17643	29036				
C25	7.848	0.004	17530	42935				
C26	8.093	0.006	13742	7415				
C28	8.527	-0.015	14729	36202				
C32	9.361	0.006	7574	10890				
C34	9.726	-0.006	8507	27511				
Filter Peak	9.917	-0.015	7475	23822	BUNKERC (C10-C38)	15940858	2088.14	M
C36	10.091	-0.005	5441	2120				
C38	10.443	-0.005	4430	1043				
C40	10.794	0.003	3806	1504				
o-terph	6.087	-0.007	163274	113326				
Triacon Surr	8.954	-0.017	156914	141807				

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	113326	5.6	61.8
Triacontane	141807	7.4	82.6

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a101.d

Date : 18-JUL-2012 19:01

Client ID: CW-TP-54-8-9

Sample Info: VB54V,5

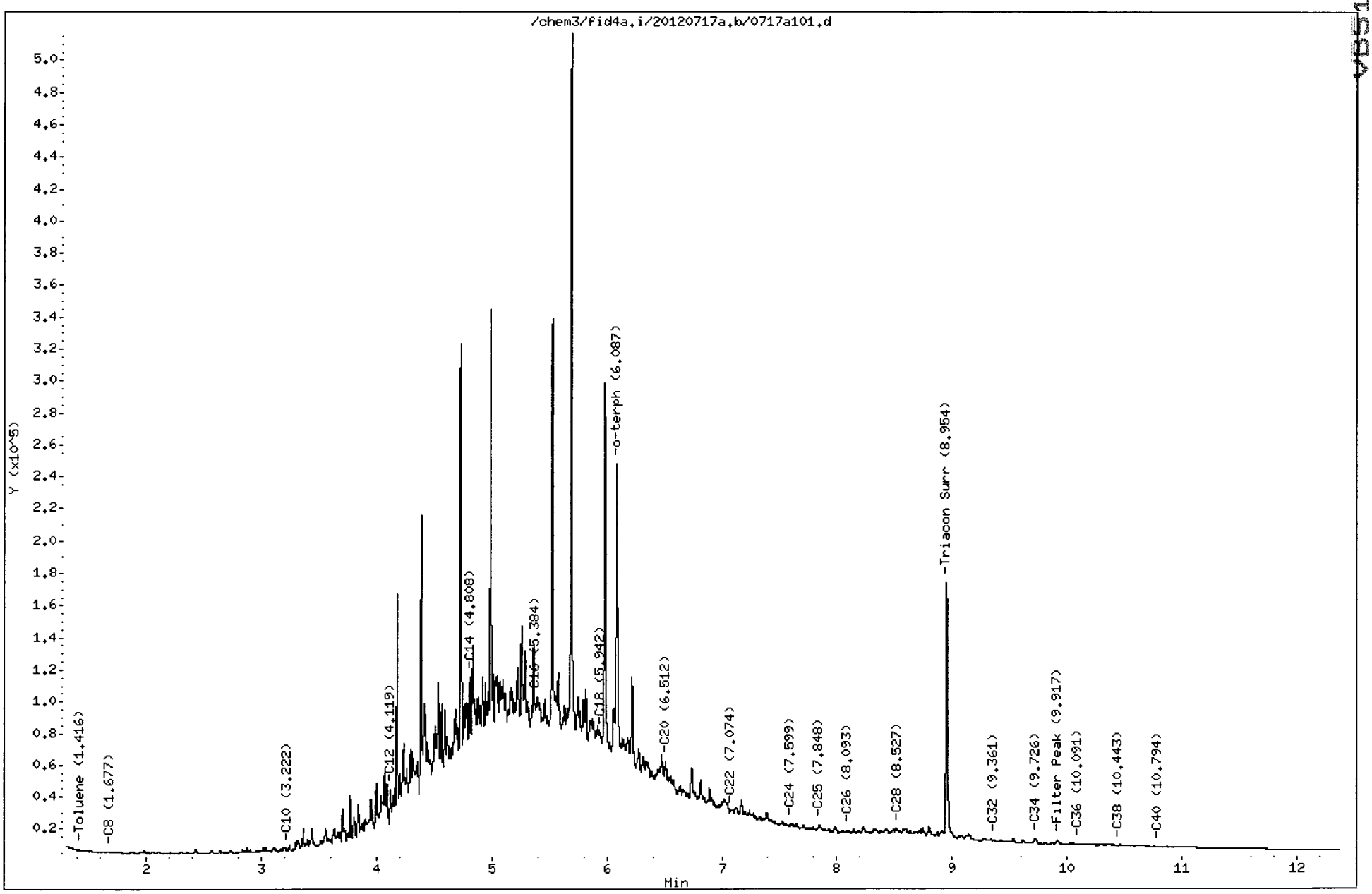
Column phase: RTX-1

Instrument: fid4a.i

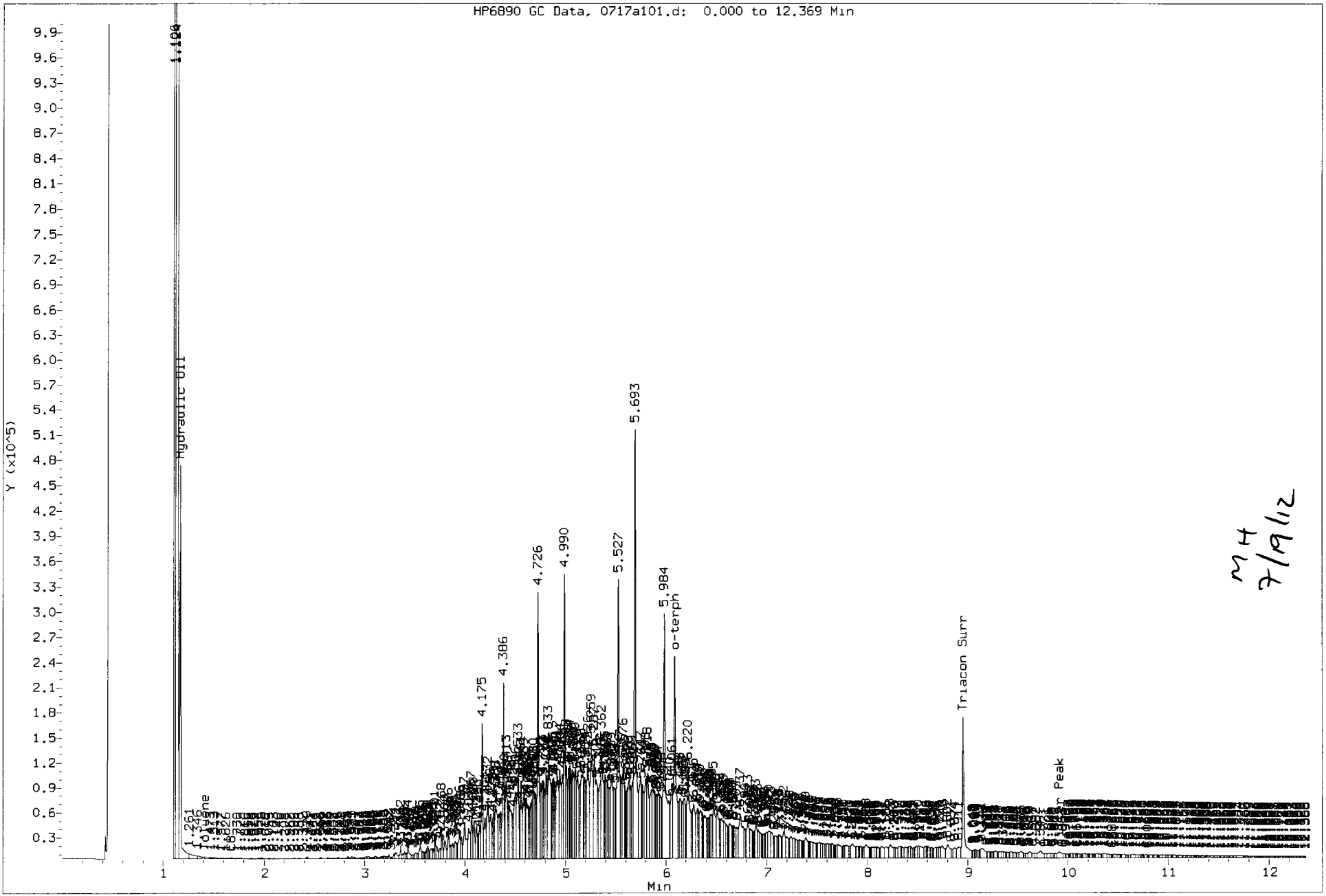
Operator: AR

Column diameter: 0.25

VB54 : 00784



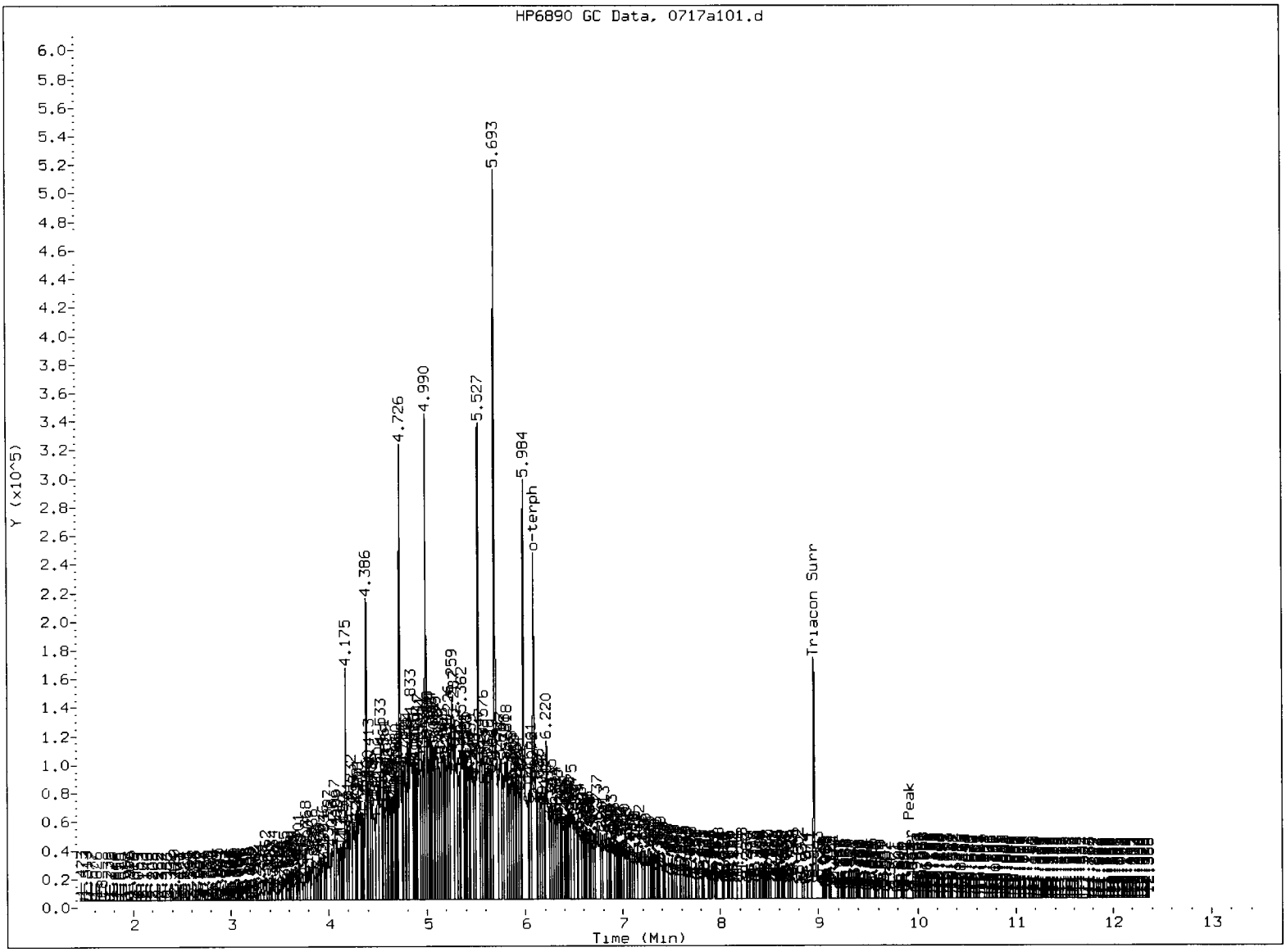
Data File: /chem3/fid4a.i/20120717a.b/0717a101.d
Injection Date: 18-JUL-2012 19:01
Instrument: fid4a.i
Client Sample ID: CW-TP-54-8-9



MH 7/9/12

VBS1 : 00785

FID:4A-2C/RTX-1 VB54V FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717a.b/0717a102.d
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51G
Client ID: CW-TP-07-9-10
Injection: 18-JUL-2012 19:22
Dilution Factor: 10

FID:4A RESULTS

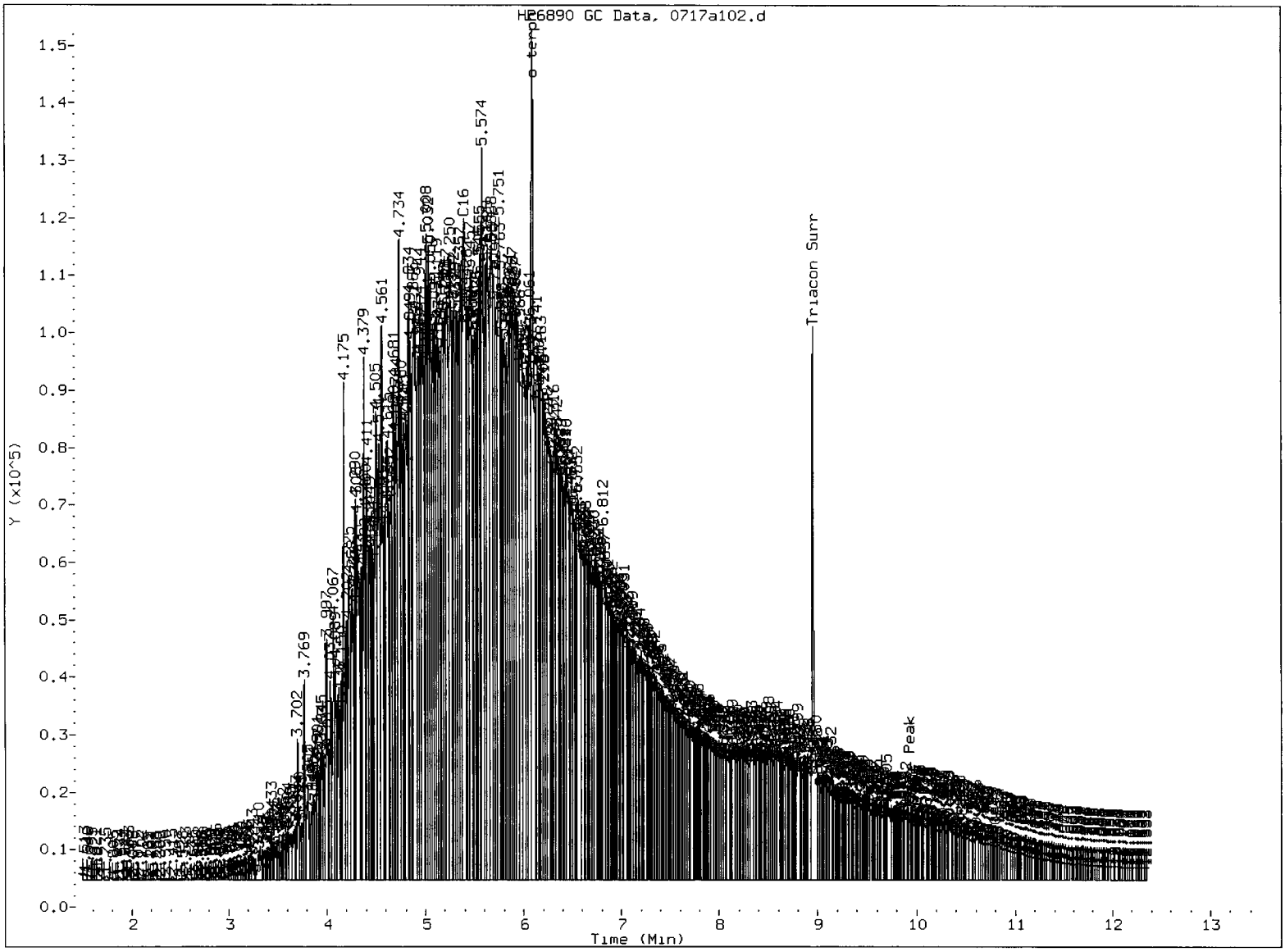
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.409	0.022	1610	2208	GAS (Tol-C12)	705962	46.93	
C8	1.647	-0.018	2243	3307	DIESEL (C12-C24)	13921080	950.24	Diesel
C10	3.224	-0.007	2090	1939	M.OIL (C24-C38)	2555138	203.29	Moil
C12	4.119	-0.001	33498	40340	AK-102 (C10-C25)	14789606	854.94	M
C14	4.809	0.012	80874	126914	AK-103 (C25-C36)	2183788	255.77	M
C16	5.387	0.003	115111	236008				
C18	5.953	0.004	90140	33693				
C20	6.521	0.004	61385	32526	JET-A (C10-C18)	9811375	661.05	
C22	7.069	0.000	40015	11080	MIN.OIL (C24-C38)	2555138	190.10	M
C24	7.591	-0.002	28315	18544				
C25	7.840	-0.005	23493	12492				
C26	8.080	-0.007	21626	33579				
C28	8.543	0.001	21218	29838				
C32	9.353	-0.002	13527	7680				
C34	9.711	-0.022	13619	29635				
Filter Peak	9.924	-0.007	10224	12695	BUNKERC (C10-C38)	17130150	2243.93	M
C36	10.101	0.005	9346	8469				
C38	10.459	0.011	7596	7031				
C40	10.793	0.002	6078	7023				
o-terph	6.087	-0.007	85114	63486				
Triacon Surr	8.948	-0.023	77667	65844	NAS DIES (C10-C24)	14575012	913.74	M

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	63486	3.1	69.3
Triacontane	65844	3.4	76.7

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 VB51G FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Surr peak overlap

Analyst: AR Date: 7/20/2012

Data File: /chem3/fid4a.i/20120717a.b/0717a102.d

Date : 18-JUL-2012 19:22

Client ID: CW-TP-07-9-10

Sample Info: VB51G,10

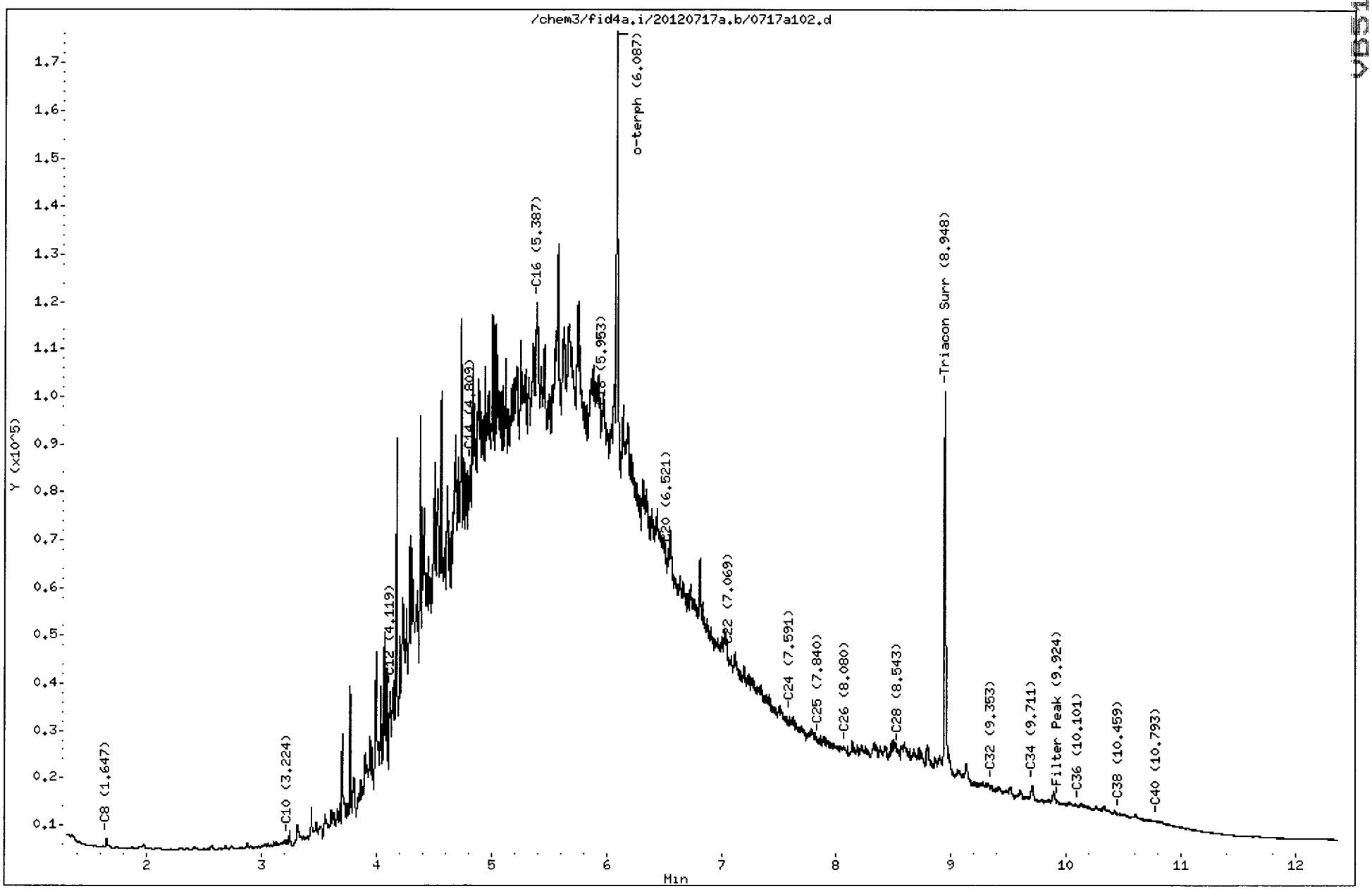
Column phase: RTX-1

Instrument: fid4a.i

Operator: AR

Column diameter: 0.25

VB51 : 00785



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717a.b/0717a103.d ARI ID: VB51J
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: CW-TP-09-6.3-7.3
Instrument: fid4a.i Injection: 18-JUL-2012 19:44
Operator: AR
Report Date: 07/20/2012 Dilution Factor: 250
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.364	-0.022	2209	4423	GAS (Tol-C12)	2067756	137.45
C8	1.671	0.007	1853	3157	DIESEL (C12-C24)	17634760	1203.74 Diesel
C10	3.240	0.010	16158	15417	M.OIL (C24-C38)	2355939	187.44 Moil
C12	4.117	-0.003	62442	73192	AK-102 (C10-C25)	19661766	1136.58
C14	4.809	0.011	132165	163341	AK-103 (C25-C36)	2007676	235.15
C16	5.386	0.003	131394	187530			
C18	5.925	-0.023	104357	234040			
C20	6.510	-0.007	76214	143187	JET-A (C10-C18)	14343431	966.41
C22	7.083	0.015	42486	64109	MIN.OIL (C24-C38)	2355939	175.28
C24	7.593	0.001	27967	28293			
C25	7.849	0.005	26685	75924			
C26	8.095	0.008	21413	34357			
C28	8.545	0.004	20772	21815			
C32	9.353	-0.001	11434	4469			
C34	9.742	0.010	9247	8080			
Filter Peak	9.946	0.014	8362	5112	BUNKERC (C10-C38)	21797943	2855.38
C36	10.090	-0.005	8062	8652			
C38	10.448	0.001	6722	10503			
C40	10.782	-0.008	5146	5047			
o-terph	----						
Triacon Surr	----				NAS DIES (C10-C24)	19442004	1218.86

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	0	0.0	0.0
Triacontane	0	0.0	0.0

CT

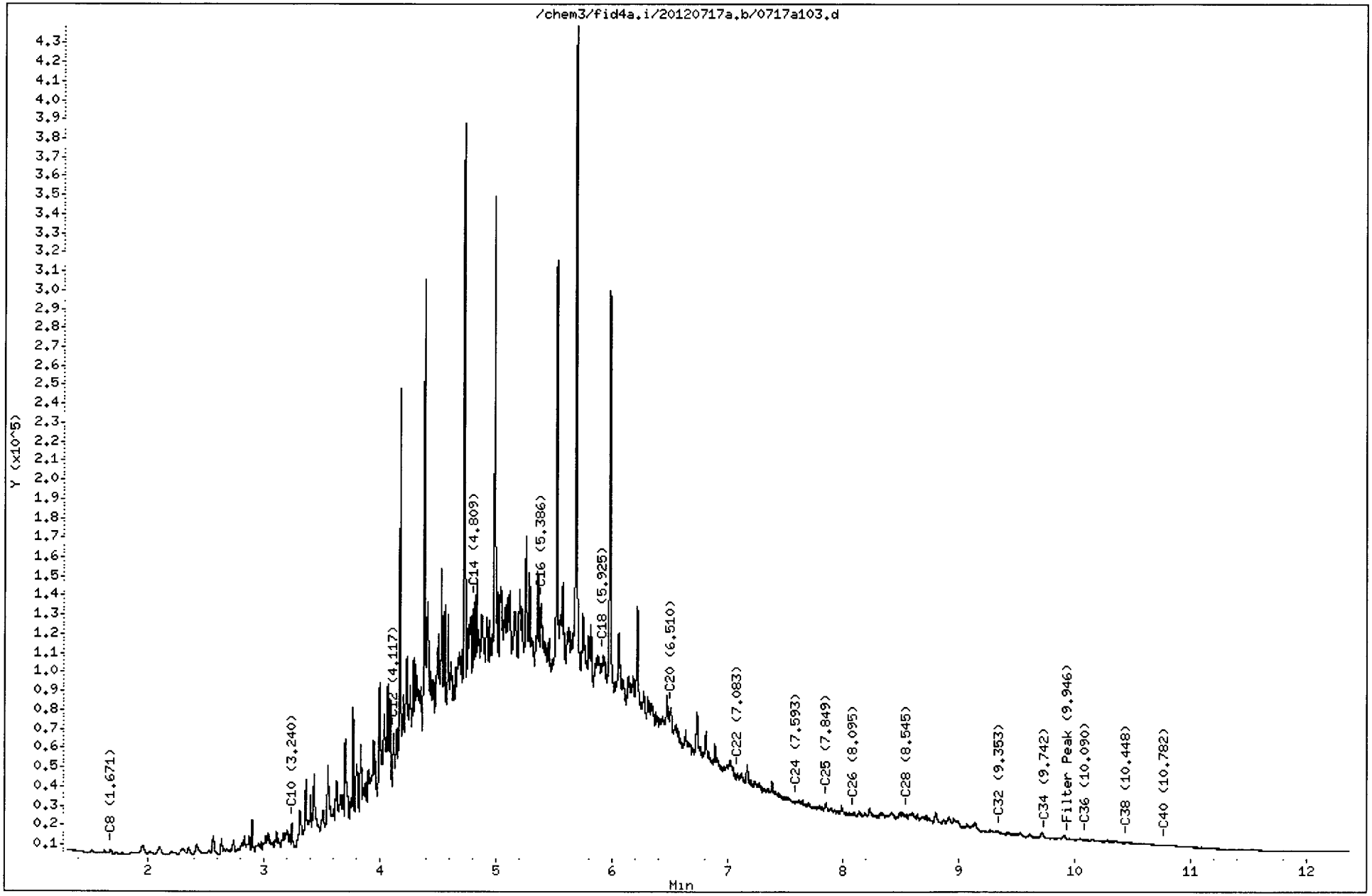
Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a103.d
Date : 18-JUL-2012 19:44
Client ID: CW-TP-09-6.3-7.3
Sample Info: VB51J,250

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717a.b/0717a104.d
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB51M
Client ID: CW-TP-09-10-11
Injection: 18-JUL-2012 20:05
Dilution Factor: 100

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.362	-0.024	2213	5495	GAS (Tol-C12)	2600397	172.85
C8	1.669	0.004	1946	1503	DIESEL (C12-C24)	22625550	1544.41 Diesel
C10	3.240	0.009	18230	19263	M.OIL (C24-C38)	3117433	248.03 Moil
C12	4.117	-0.003	76825	92584	AK-102 (C10-C25)	25228461	1458.38
C14	4.809	0.011	168060	199558	AK-103 (C25-C36)	2625908	307.56
C16	5.389	0.005	164738	347430			
C18	5.960	0.011	116734	41661			
C20	6.510	-0.007	97658	179554	JET-A (C10-C18)	18391211	1239.13
C22	7.075	0.006	52122	66745	MIN.OIL (C24-C38)	3117433	231.94
C24	7.592	0.000	36236	27892			
C25	7.848	0.004	34312	63772			
C26	8.083	-0.004	26979	11707			
C28	8.527	-0.015	27145	38238			
C32	9.355	0.000	15314	24154			
C34	9.751	0.018	11511	9307			
Filter Peak	9.930	-0.002	11227	5239	BUNKERC (C10-C38)	28025660	3671.16
C36	10.088	-0.007	10106	6961			
C38	10.437	-0.011	8620	9856			
C40	10.794	0.004	6397	8184			
o-terph	----						
Triacon Surr	----				NAS DIES (C10-C24)	24908228	1561.55

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	0	0.0	0.0
Triacontane	0	0.0	0.0

CD

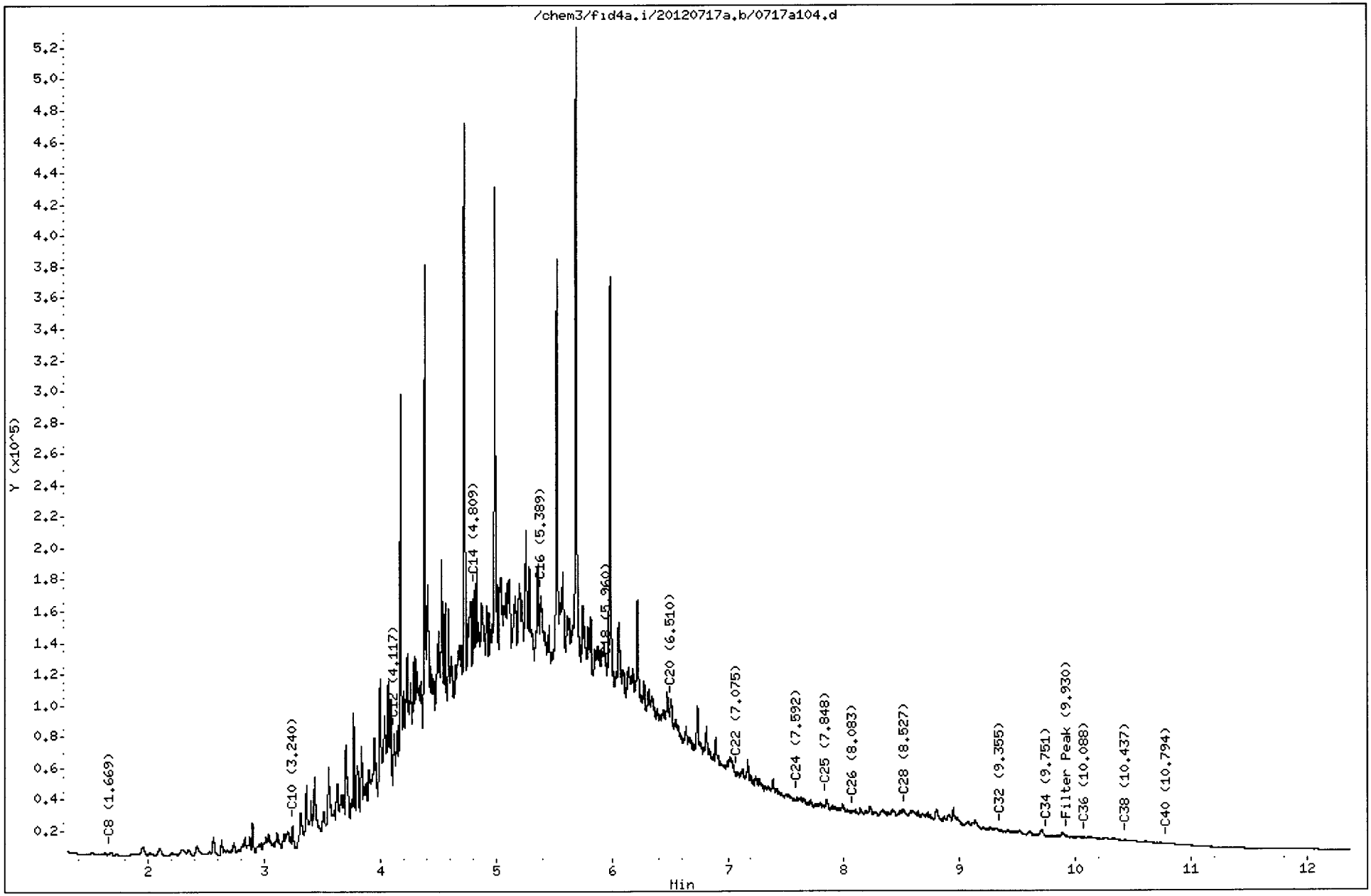
Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a104.d
Date : 18-JUL-2012 20:05
Client ID: CW-TP-09-10-11
Sample Info: VB51M,100

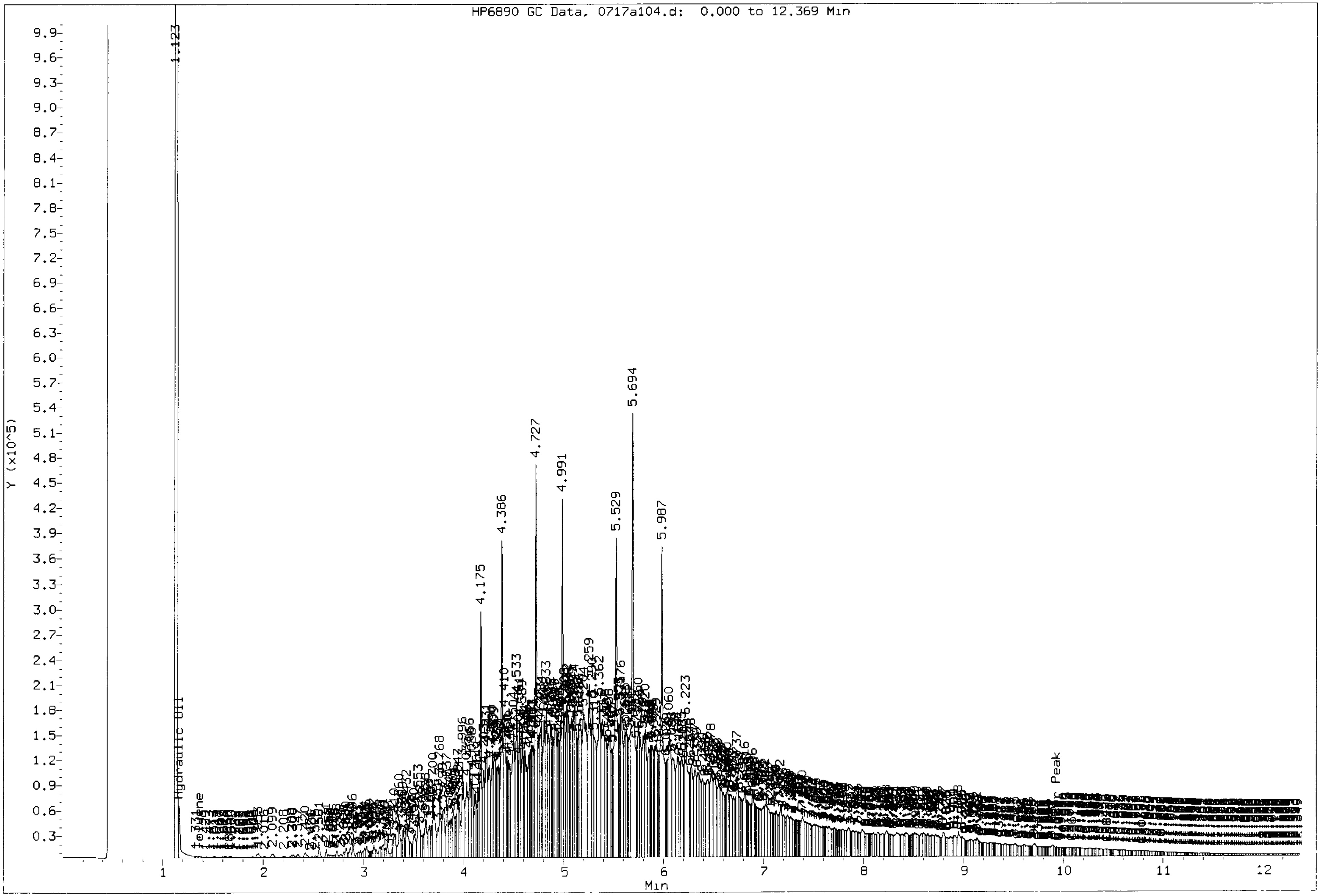
Instrument: fid4a.i

Operator: AR
Column diameter: 0.25

Column phase: RTX-1



Data File: /chem3/fid4a.i/20120717a.b/0717a104.d
Injection Date: 18-JUL-2012 20:05
Instrument: fid4a.i
Client Sample ID: CW-TP-09-10-11



Analytical Resources Inc.
407S TPH Quantitation Report

7/20/2012

Data file: /chem3/fid4a.i/20120717a.b/0717a105.d
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB54B
Client ID: CW-TP-05-7-8
Injection: 18-JUL-2012 20:27
Dilution Factor: 50

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.410	0.024	1242	2602	GAS (Tol-C12)	974118	64.75	
C8	1.673	0.008	827	1387	DIESEL (C12-C24)	11492732	784.49	Diesel
C10	3.221	-0.010	4191	3796	M.OIL (C24-C38)	1593001	126.74	Moil
C12	4.117	-0.003	32019	36592	AK-102 (C10-C25)	12493495	722.21	M
C14	4.808	0.010	89032	99685	AK-103 (C25-C36)	1350294	158.15	M
C16	5.386	0.002	86614	93741				
C18	5.930	-0.019	69194	122866				
C20	6.510	-0.007	47029	84041	JET-A (C10-C18)	9142813	616.01	
C22	7.075	0.006	24173	11827	MIN.OIL (C24-C38)	1593001	118.52	M
C24	7.588	-0.004	16729	9253				
C25	7.849	0.005	16452	42103				
C26	8.092	0.005	13595	16297				
C28	8.557	0.016	12164	3104				
C32	9.357	0.002	7974	3750				
C34	9.729	-0.003	8219	19197				
Filter Peak	9.931	0.000	6748	5839	BUNKERC (C10-C38)	13952967	1827.74	M
C36	10.097	0.001	5902	5767				
C38	10.432	-0.016	4866	4783				
C40	10.800	0.009	4148	6996				
o-terph	6.085	-0.009	17436	14786				
Triacon Surr	8.954	-0.017	14602	13435	NAS DIES (C10-C24)	12359965	774.87	M

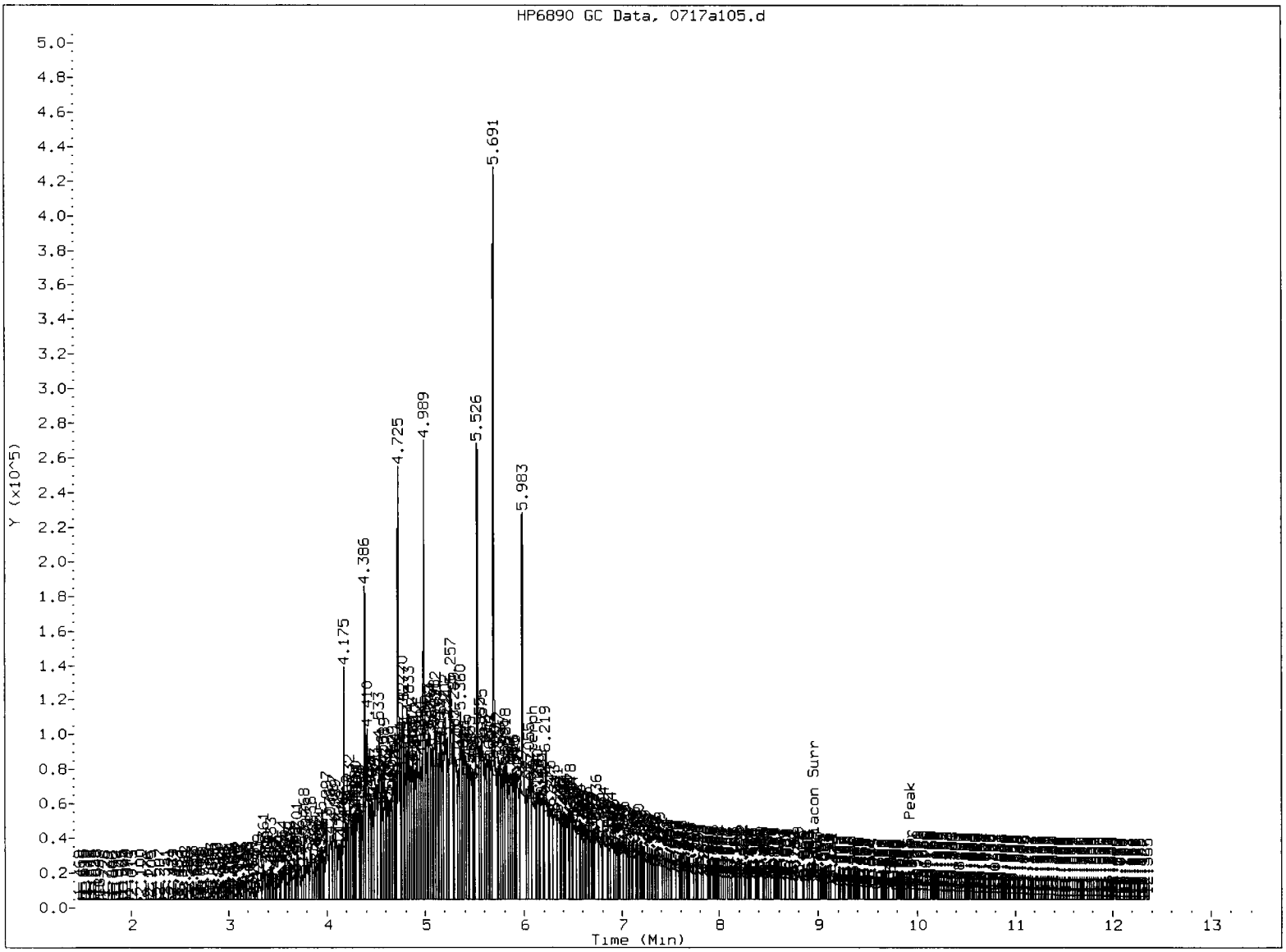
M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	14786	0.7	80.7
Triacontane	13435	0.7	78.2

CD

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 VB54B FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other SPO

Analyst: AR Date: 7/20/2018

Data File: /chem3/fid4a.i/20120717a.b/0717a105.d

Page 1

Date : 18-JUL-2012 20:27

Client ID: CW-TP-05-7-8

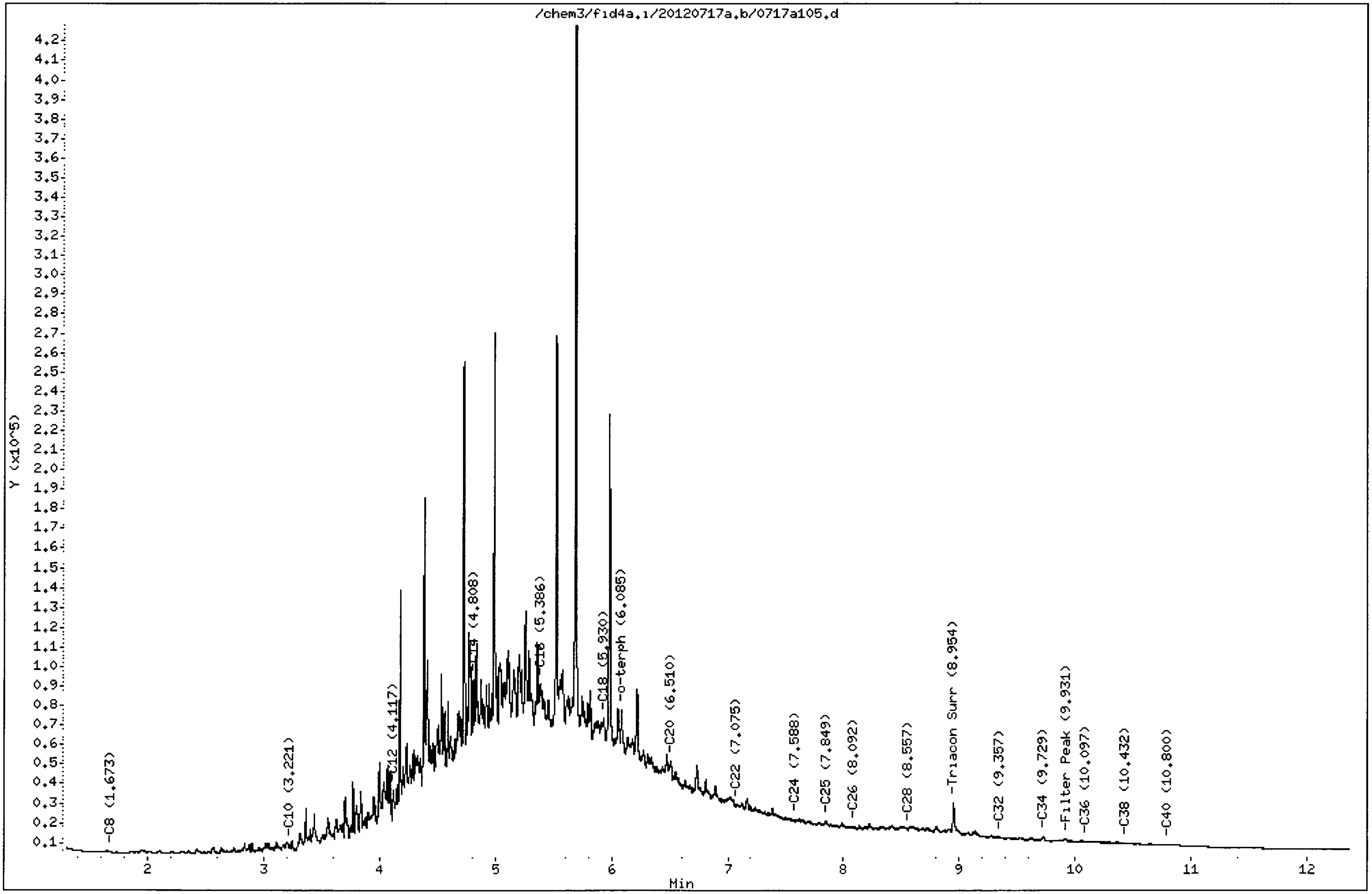
Instrument: fid4a.i

Sample Info: VB54B,50

Operator: AR

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717a.b/0717a106.d ARI ID: VB54E
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: CW-TP-03-7-8
Instrument: fid4a.i Injection: 18-JUL-2012 20:48
Operator: AR
Report Date: 07/20/2012 Dilution Factor: 50
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.414	0.028	1128	2446	GAS (Tol-C12)	1042545	69.30	
C8	1.677	0.012	771	1160	DIESEL (C12-C24)	13073299	892.38	Diesel
C10	3.222	-0.009	4503	4177	M.OIL (C24-C38)	1779919	141.61	Moil
C12	4.117	-0.003	33361	40347	AK-102 (C10-C25)	14152374	818.10	M
C14	4.808	0.011	99710	106278	AK-103 (C25-C36)	1491261	174.66	M
C16	5.387	0.003	101735	197727				
C18	5.928	-0.021	79552	155412				
C20	6.510	-0.007	53371	114501	JET-A (C10-C18)	10445261	703.76	
C22	7.068	-0.001	26639	13393	MIN.OIL (C24-C38)	1779919	132.43	M
C24	7.594	0.002	17962	16426				
C25	7.851	0.006	17450	39256				
C26	8.089	0.002	14257	16566				
C28	8.546	0.005	13847	8911				
C32	9.356	0.002	9355	8193				
C34	9.727	-0.005	9851	27635				
Filter Peak	9.922	-0.010	8558	10216	BUNKERC (C10-C38)	15780822	2067.18	M
C36	10.096	0.001	7132	6639				
C38	10.457	0.009	5935	2324				
C40	10.791	0.000	5086	6583				
o-terph	6.087	-0.007	19021	13974				
Triacon Surr	8.952	-0.019	16545	14258	NAS DIES (C10-C24)	14000904	877.74	M

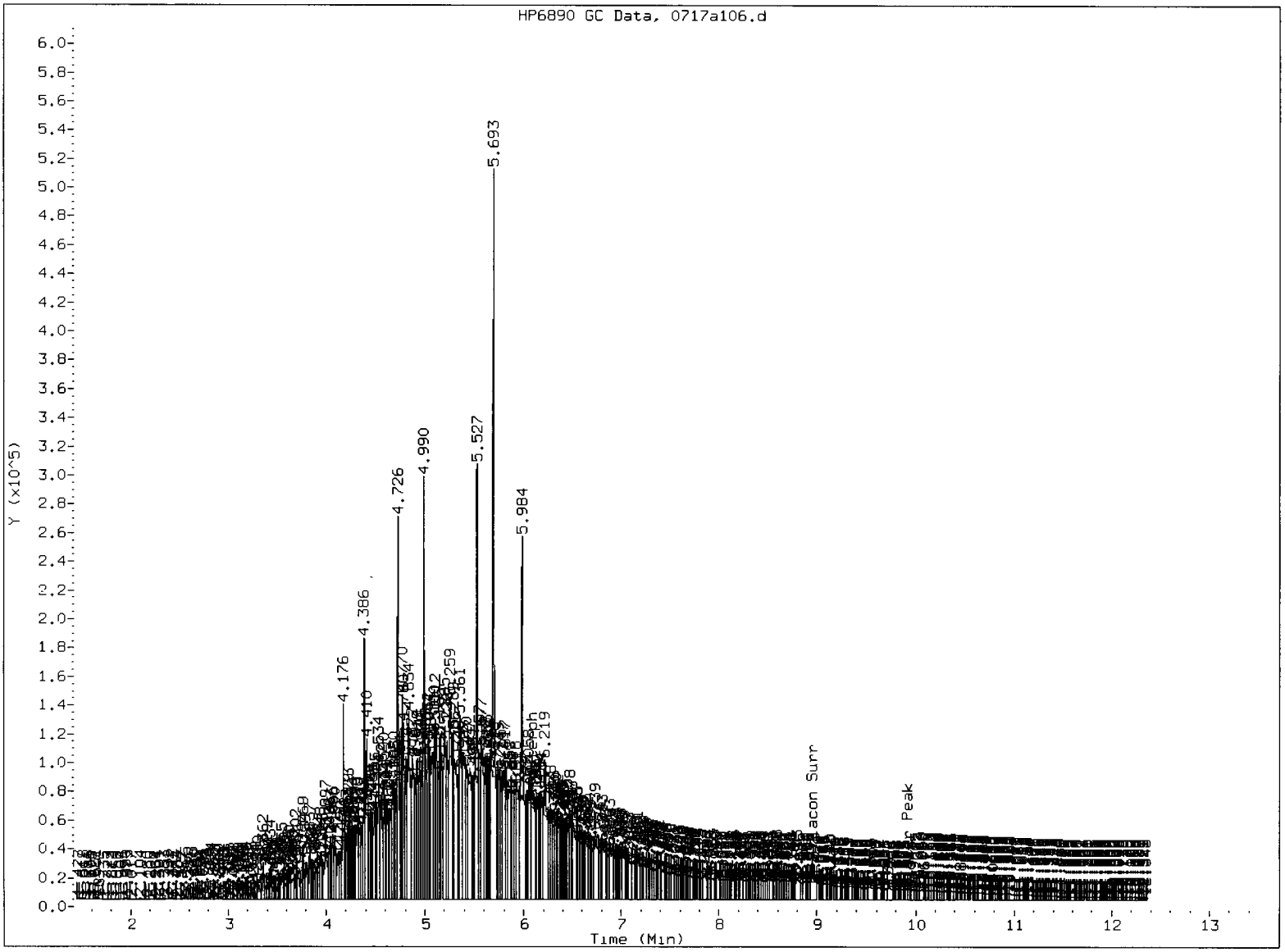
M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	13974	0.7	76.2
Triacontane	14258	0.7	83.0

CT

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 VB54E FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other SPO

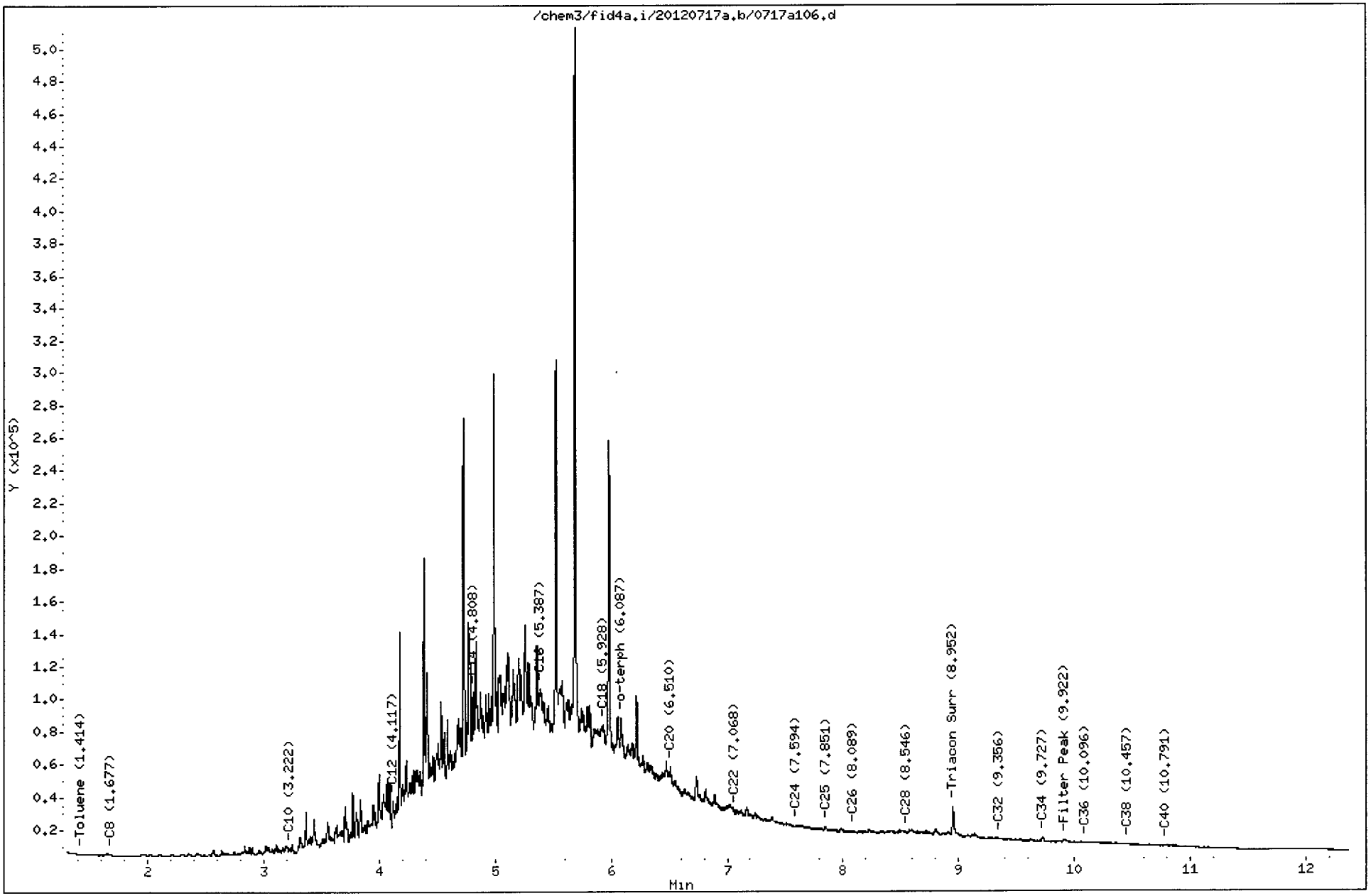
Analyst: AR Date: 7/20/20R

Data File: /chem3/fid4a.i/20120717a.b/0717a106.d
Date : 18-JUL-2012 20:48
Client ID: CW-TP-03-7-8
Sample Info: VB54E,50

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25

Column phase: RTX-1



VB54 : 00000

Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717a.b/0717a107.d
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB54H
Client ID: CW-TP-02-8.2-9.2
Injection: 18-JUL-2012 21:10
Dilution Factor: 50

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.415	0.029	2406	4807	GAS (Tol-C12)	1419584	94.36
C8	1.675	0.010	811	1361	DIESEL (C12-C24)	17038420	1163.03 Diesel
C10	3.221	-0.010	6259	5706	M.OIL (C24-C38)	1936773	154.09 Moil
C12	4.117	-0.003	44753	54585	AK-102 (C10-C25)	18463571	1067.32 M
C14	4.797	0.000	99680	25529	AK-103 (C25-C36)	1639532	192.03 M
C16	5.389	0.005	129688	349871			
C18	5.928	-0.020	103987	191625			
C20	6.511	-0.006	68801	123021	JET-A (C10-C18)	13825227	931.49
C22	7.079	0.010	33760	62333	MIN.OIL (C24-C38)	1936773	144.10 M
C24	7.592	-0.001	21598	27412			
C25	7.843	-0.001	19684	12423			
C26	8.085	-0.002	16344	7669			
C28	8.545	0.003	15549	18208			
C32	9.360	0.005	9887	5682			
C34	9.720	-0.012	9638	10728			
Filter Peak	9.947	0.015	7337	4060	BUNKERC (C10-C38)	20228032	2649.73 M
C36	10.094	-0.001	6936	9007			
C38	10.445	-0.002	5704	3892			
C40	10.797	0.007	4587	1273			
o-terph	6.085	-0.008	12338	6331			
Triacon Surr	8.952	-0.019	13712	11416	NAS DIES (C10-C24)	18291259	1146.72 M

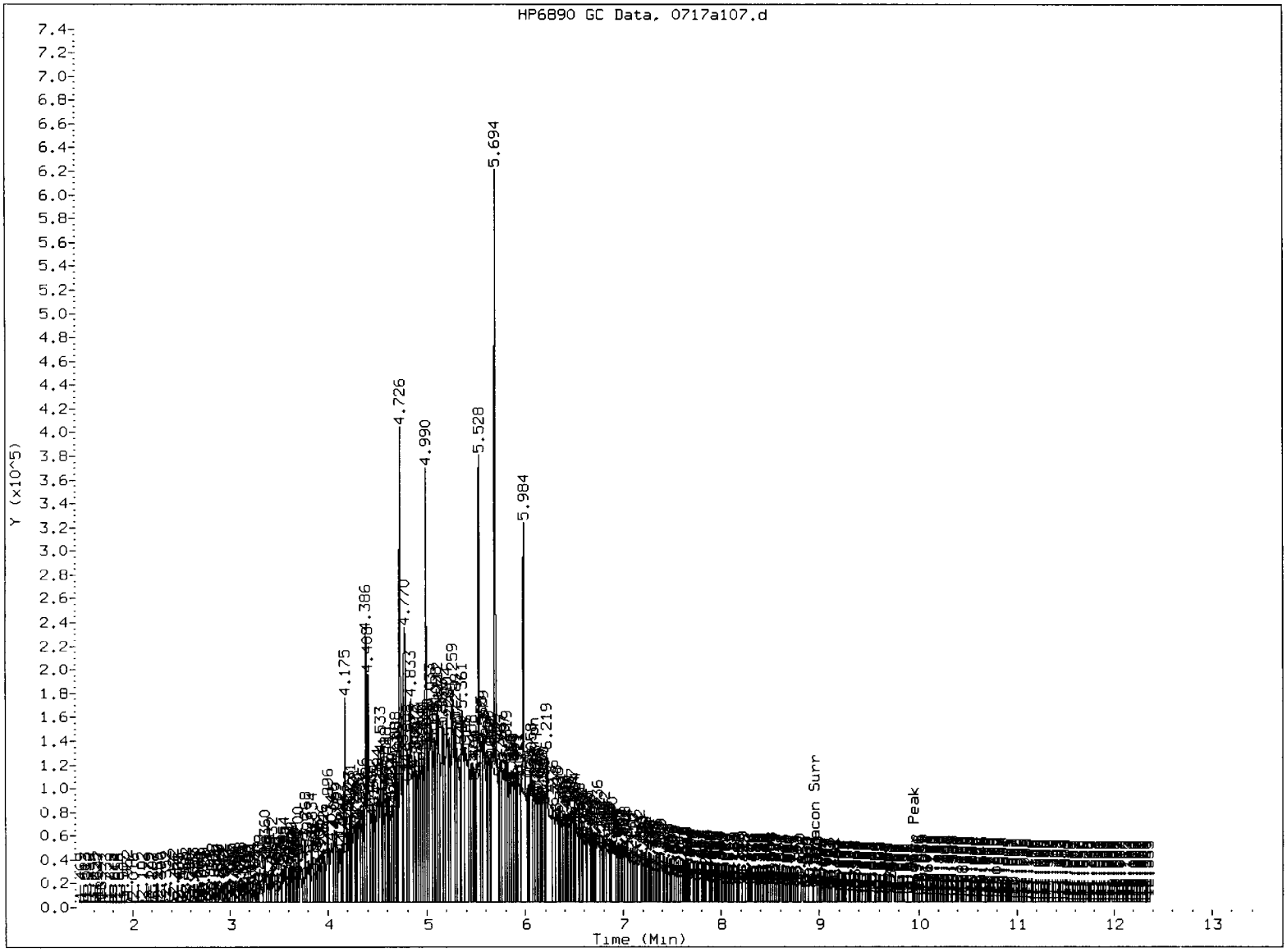
M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	6331	0.3	34.5 ?
Triacontane	11416	0.6	66.5 CD

Analyte concentrations on the 5X dup well to the 5X included for comparison

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 VB54H FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other SPC

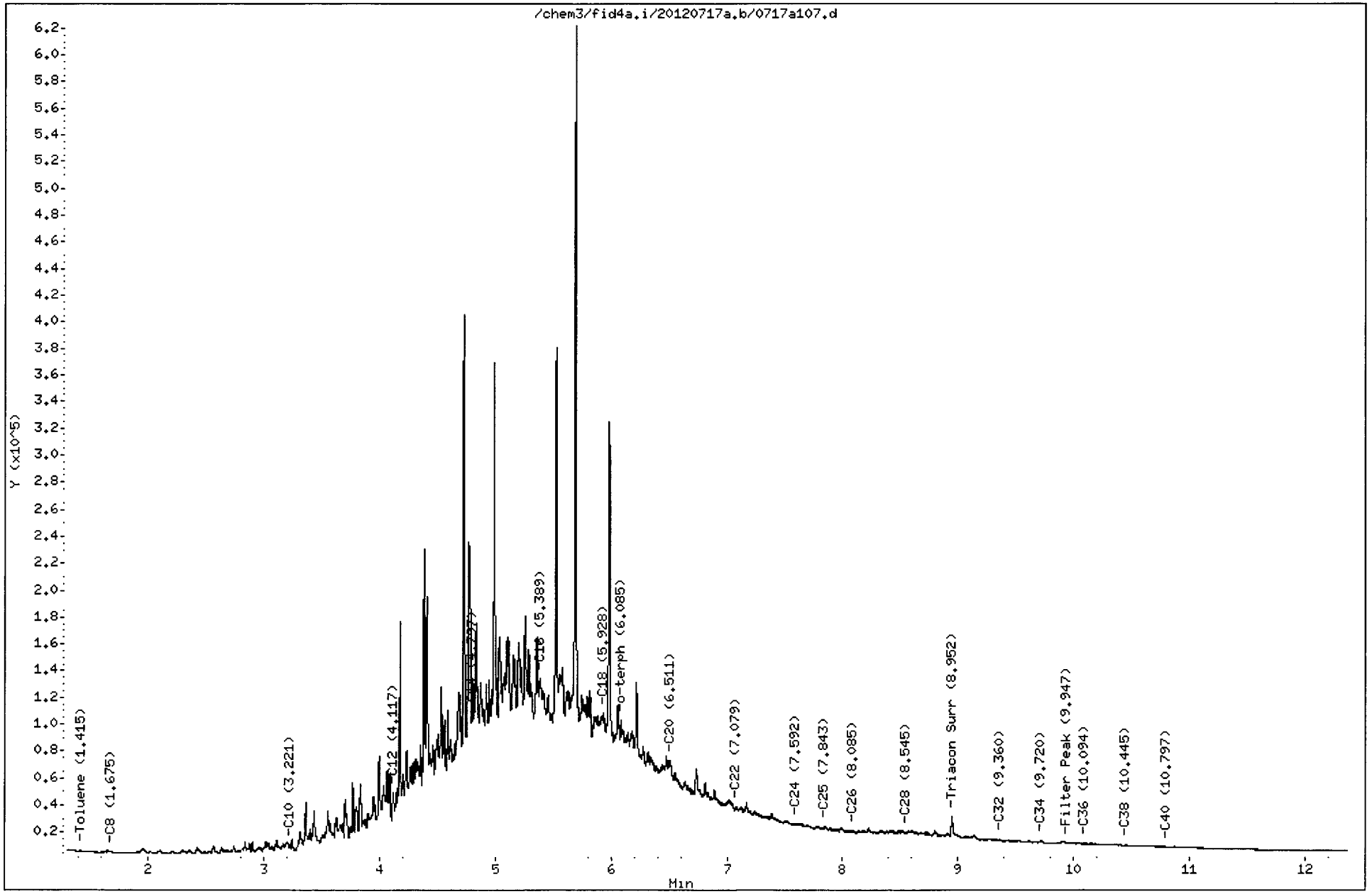
Analyst: AR Date: 7/20/2012

Data File: /chem3/fid4a.i/20120717a.b/0717a107.d
Date : 18-JUL-2012 21:10
Client ID: CW-TP-02-8.2-9.2
Sample Info: VB54H,50

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25

Column phase: RTX-1



VB51 : 00003

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a108.d ARI ID: DIESEL #11
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 18-JUL-2012 21:31
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.421	0.034	3580	8517	GAS (Tol-C12)	950600	63.19	
C8	1.666	0.001	1327	734	DIESEL (C12-C24)	3770012	257.34	
C10	3.236	0.005	21429	18506	M.OIL (C24-C38)	57280	4.56	
C12	4.121	0.000	43291	38975	AK-102 (C10-C25)	4415626	255.25	M
C14	4.794	-0.004	71305	79719	AK-103 (C25-C36)	37084	4.34	
C16	5.380	-0.004	114329	122931				
C18	5.946	-0.003	93348	99334				
C20	6.514	-0.003	59607	94612	JET-A (C10-C18)	3282899	221.19	
C22	7.069	0.000	24779	58313	MIN.OIL (C24-C38)	57280	4.26	
C24	7.587	-0.006	2752	2555				
C25	7.862	0.018	1939	7486				
C26	8.078	-0.009	601	772				
C28	8.529	-0.013	436	596				
C32	9.357	0.002	77	50				
C34	9.737	0.004	212	173				
Filter Peak	9.928	-0.004	788	1172	BUNKERC (C10-C38)	4464881	584.87	M
C36	10.088	-0.007	403	620				
C38	10.447	-0.001	682	567				
C40	10.792	0.001	1150	908				
o-terph	6.094	0.000	1064725	947310				
Triacon Surr	8.972	0.001	26	11				

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	947310	46.5	103.3
Triacontane	11	0.0	0.0

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a108.d

Date : 18-JUL-2012 21:31

Client ID:

Sample Info: DIESEL #11

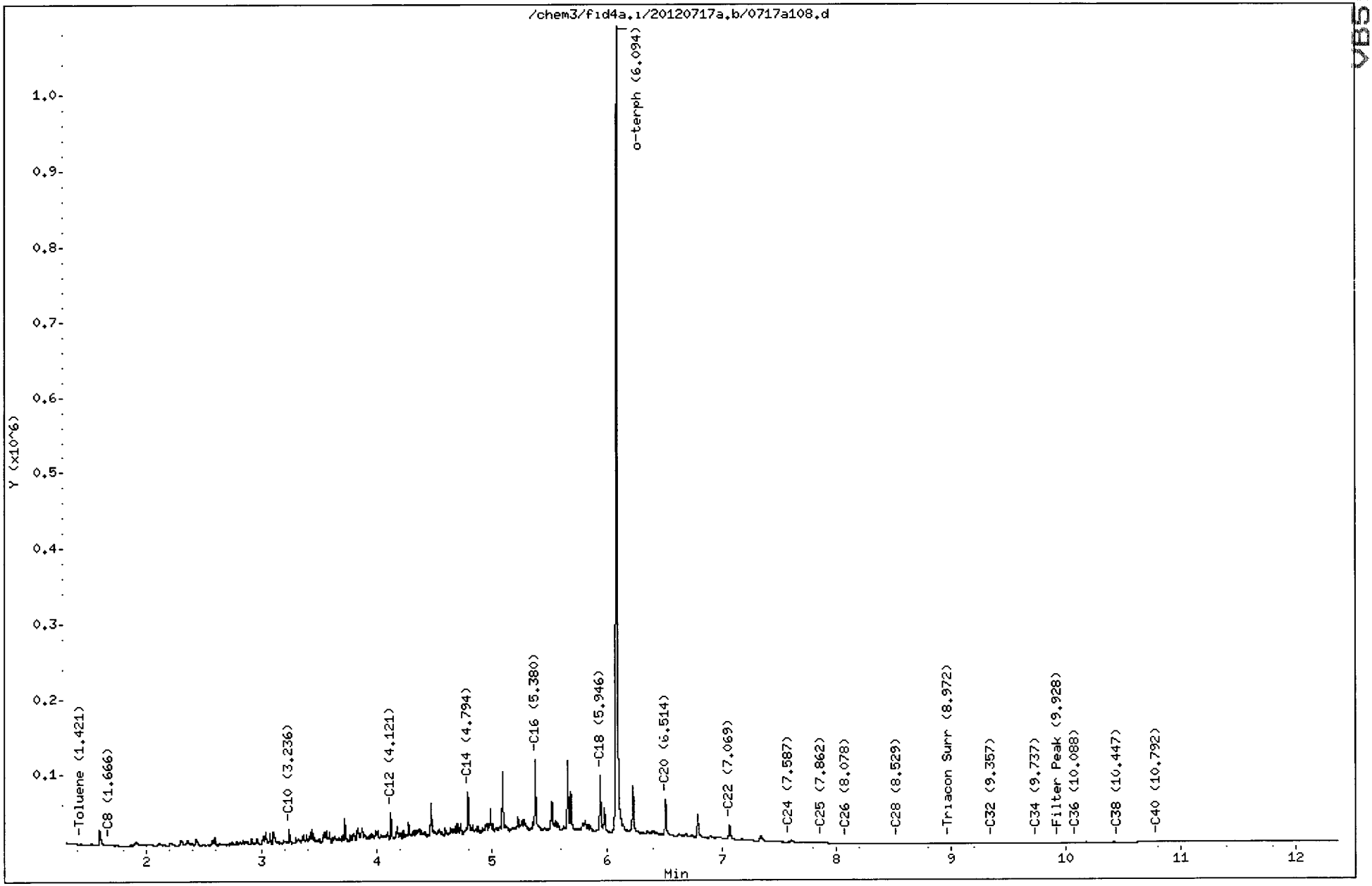
Column phase: RTX-1

Instrument: fid4a.i

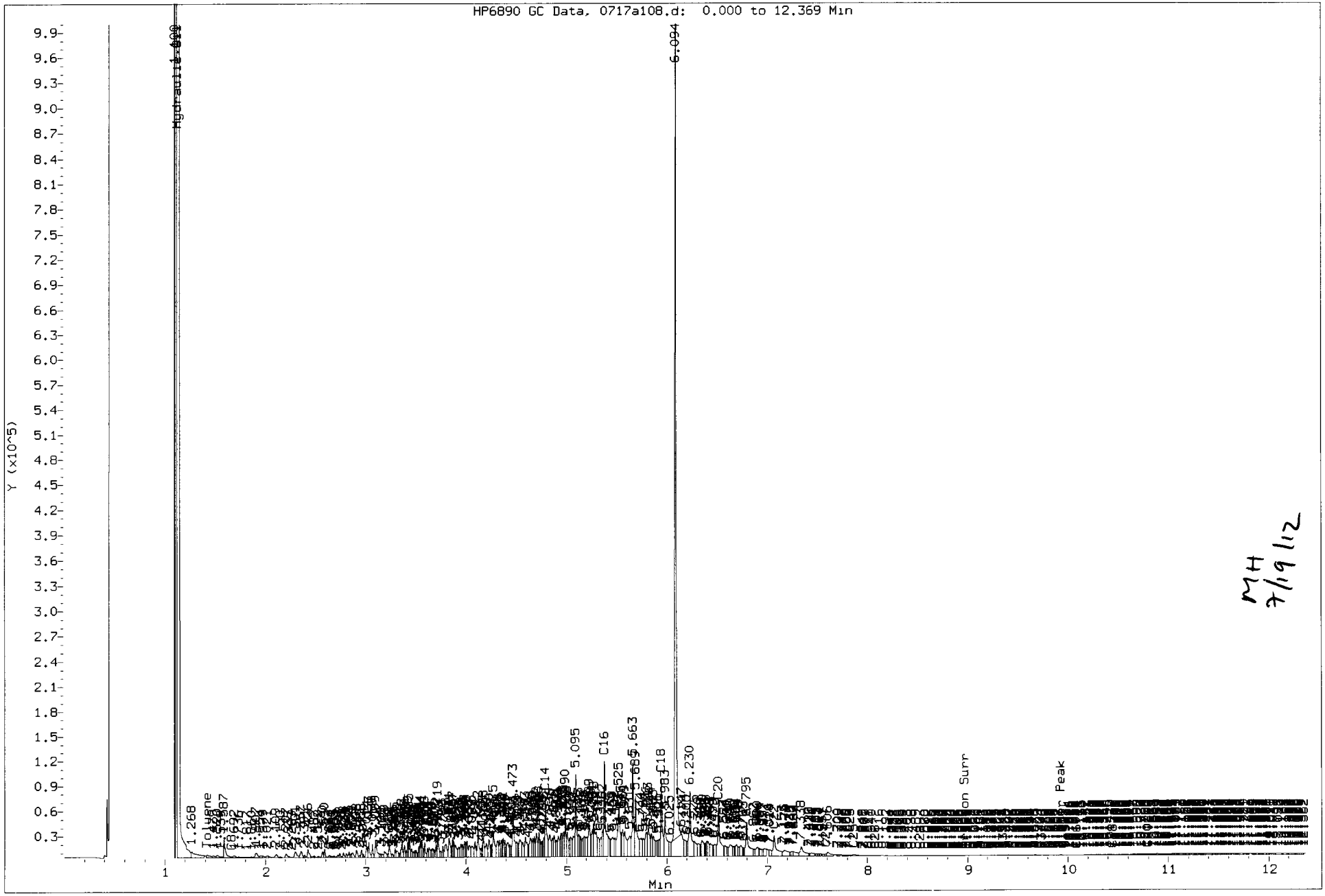
Operator: AR

Column diameter: 0.25

VB51 : 008805



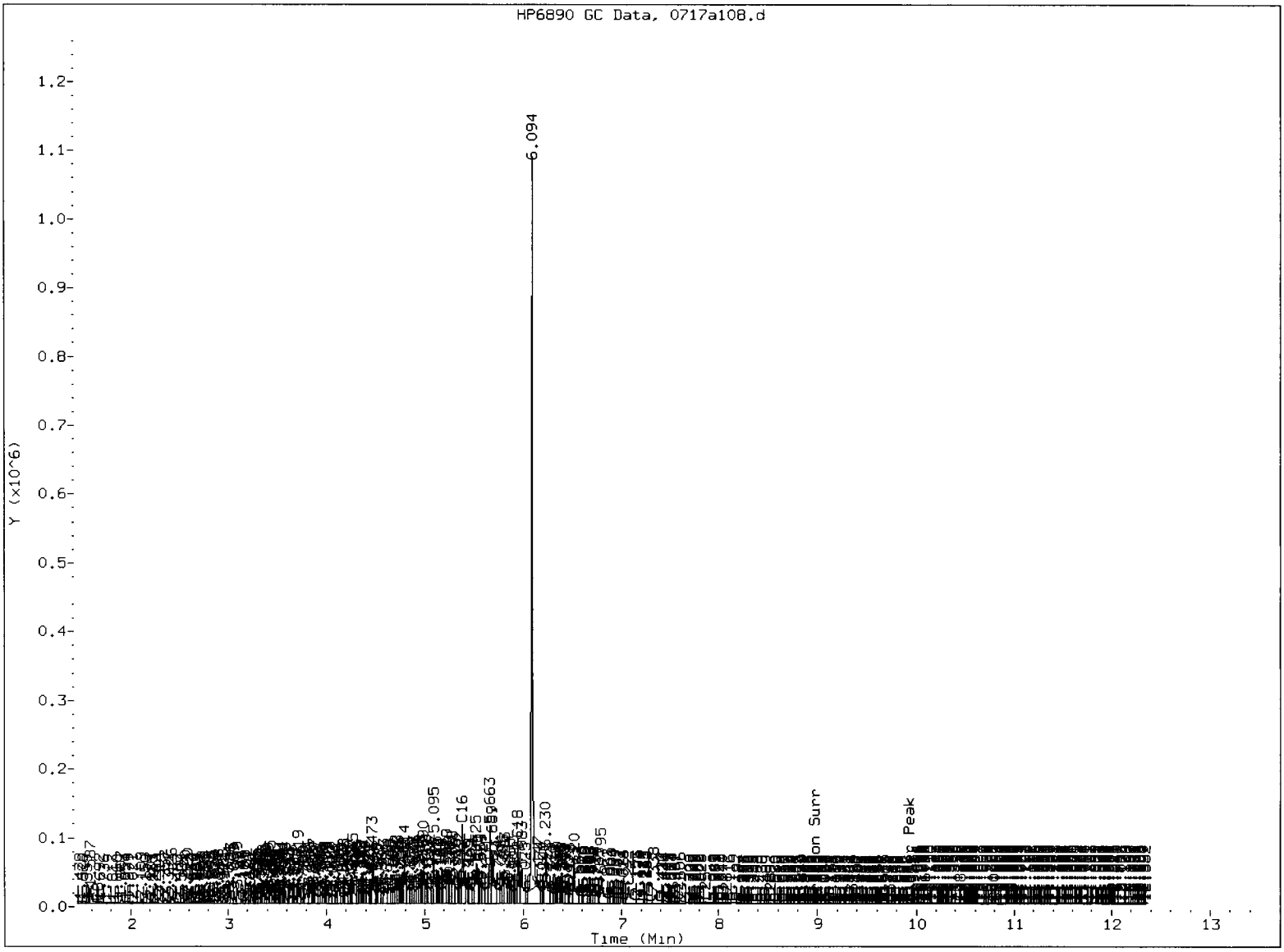
Data File: /chem3/fid4a.i/20120717a.b/0717a108.d
Injection Date: 18-JUL-2012 21:31
Instrument: fid4a.i
Client Sample ID:



VB51 : 00806

MH 7/19/12

FID:4A-2C/RTX-1 DIESEL #11 FID:4A SIGNAL



MANUAL INTEGRATION

X 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

MH 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a109.d ARI ID: MOIL #11
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 18-JUL-2012 21:53
Operator: AR
Report Date: 07/19/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.355	-0.031	46449	98845	GAS (Tol-C12)	301431	20.04	
C8	1.724	0.059	1627	226	DIESEL (C12-C24)	561422	38.32	
C10	3.240	0.009	2437	5244	M.OIL (C24-C38)	6135546	488.15	
C12	4.144	0.024	663	834	AK-102 (C10-C25)	849651	49.12	
C14	4.797	0.000	264	291	AK-103 (C25-C36)	5310789	622.02	M
C16	5.385	0.002	69	15				
C18	5.961	0.013	226	328				
C20	6.517	0.000	1156	1858	JET-A (C10-C18)	110808	7.47	
C22	7.069	0.000	5150	2316	MIN.OIL (C24-C38)	6135546	456.49	M
C24	7.588	-0.004	20829	13649				
C25	7.846	0.001	27902	19241				
C26	8.083	-0.004	32604	15336				
C28	8.546	0.004	39661	10065				
C32	9.346	-0.009	48332	85038				
C34	9.743	0.010	44475	36724				
Filter Peak	9.942	0.010	41542	54889	BUNKERC (C10-C38)	6783015	888.53	M
C36	10.096	0.000	39576	21776				
C38	10.443	-0.005	32925	32936				
C40	10.790	-0.001	24861	9636				
o-terph	6.096	0.002	634	1495				
Triacon Surr	8.968	-0.003	835761	892160				

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1495	0.1	0.2
Triacontane	892160	46.7	103.9

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.i/20120717a.b/0717a109.d

Date : 18-JUL-2012 21:53

Client ID:

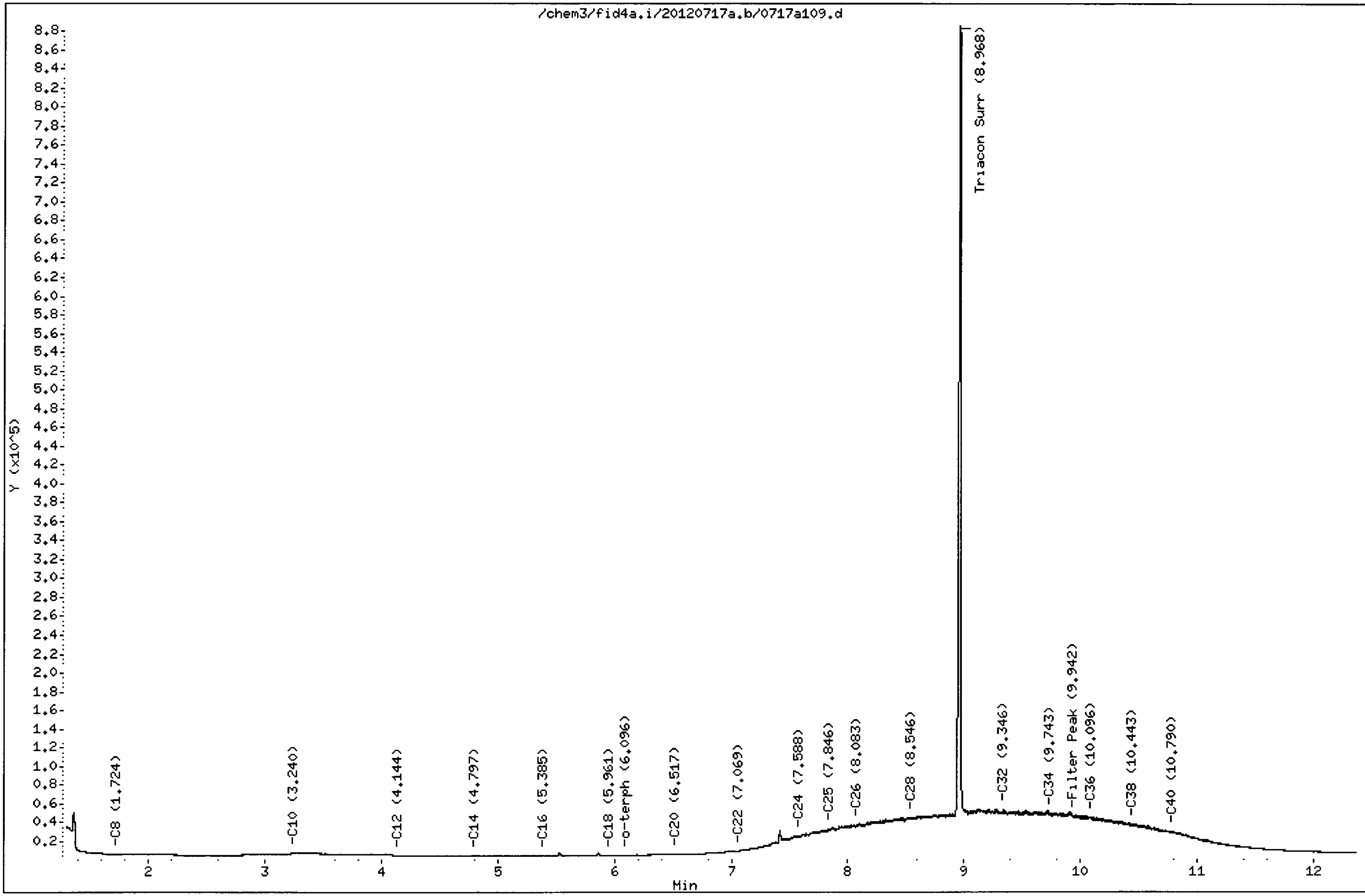
Sample Info: MOIL #11

Column phase: RTX-1

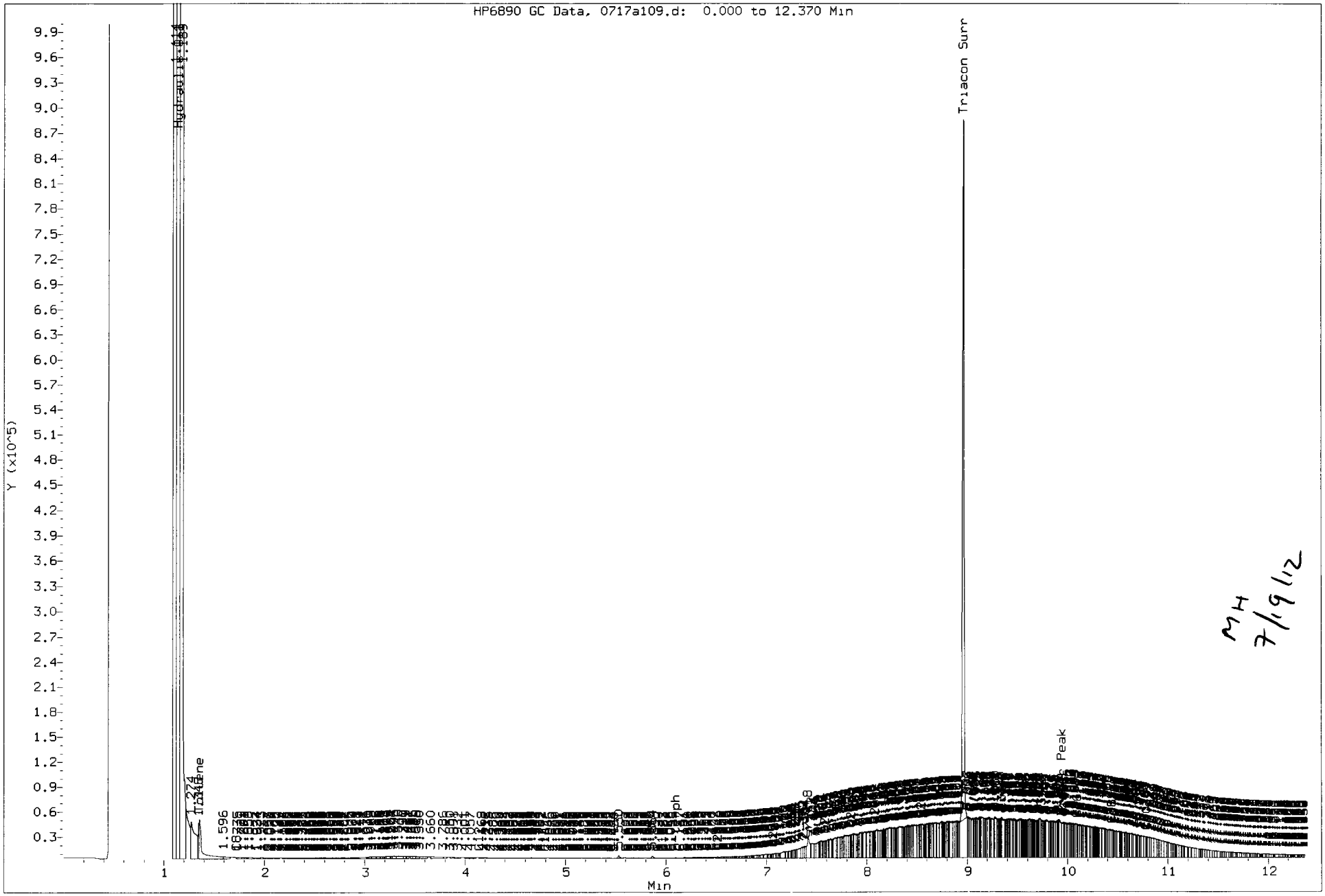
Instrument: fid4a.i

Operator: AR

Column diameter: 0.25



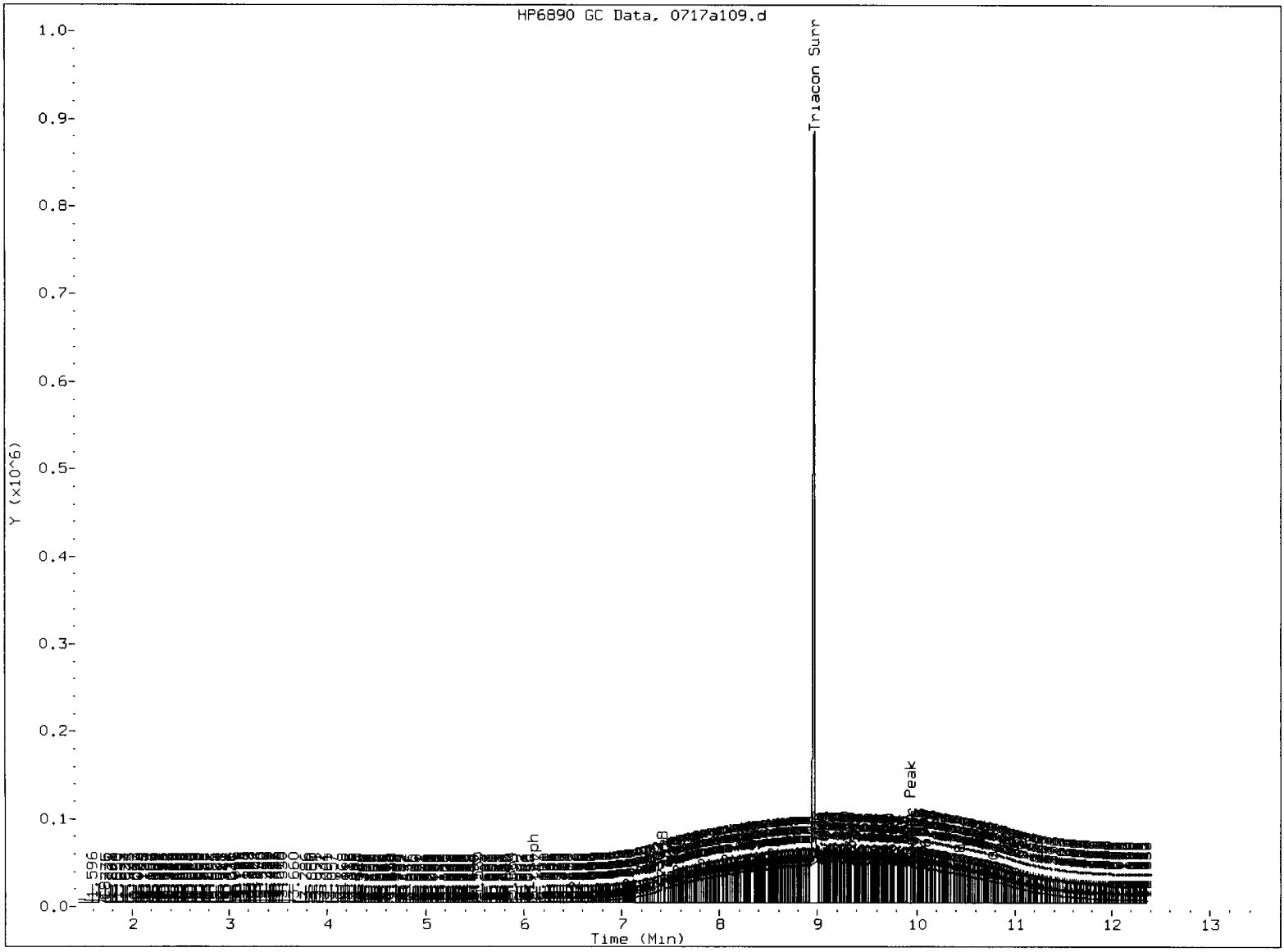
Data File: /chem3/fid4a.i/20120717a.b/0717a109.d
Injection Date: 18-JUL-2012 21:53
Instrument: fid4a.i
Client Sample ID:



VBS1 : 00010

MH
7/19/12

FID:4A-2C/RTX-1 MOIL #11 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH Date: 7/19/12

Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717a.b/0717a111.d ARI ID: VB54K
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: CW-TP-01-8-9
Instrument: fid4a.i Injection: 18-JUL-2012 22:36
Operator: AR
Report Date: 07/20/2012 Dilution Factor: 100
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.368	-0.018	1565	4240	GAS (Tol-C12)	1430896	95.11
C8	1.657	-0.007	466	388	DIESEL (C12-C24)	15906914	1085.80 Diesel
C10	3.221	-0.010	6455	6037	M.OIL (C24-C38)	1526515	121.45 Moil
C12	4.117	-0.003	41655	48944	AK-102 (C10-C25)	17279254	998.86
C14	4.809	0.011	121001	141206	AK-103 (C25-C36)	1285318	150.54
C16	5.384	0.001	124386	176942			
C18	5.952	0.003	86688	27137			
C20	6.508	-0.008	63043	87327	JET-A (C10-C18)	13080083	881.29
C22	7.068	-0.001	28604	15240	MIN.OIL (C24-C38)	1526515	113.57
C24	7.593	0.001	17749	11189			
C25	7.845	0.001	16210	40113			
C26	8.091	0.004	13329	9005			
C28	8.542	0.000	12113	6613			
C32	9.366	0.011	7200	9663			
C34	9.742	0.010	5806	4151			
Filter Peak	9.933	0.001	5485	2690	BUNKERC (C10-C38)	18662217	2444.62
C36	10.098	0.003	5090	1915			
C38	10.450	0.003	4337	6258			
C40	10.799	0.009	3739	3230			
o-terph	----						
Triacon Surr	----				NAS DIES (C10-C24)	17135702	1074.27

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	0	0.0	0.0
Triacontane	0	0.0	0.0

CV

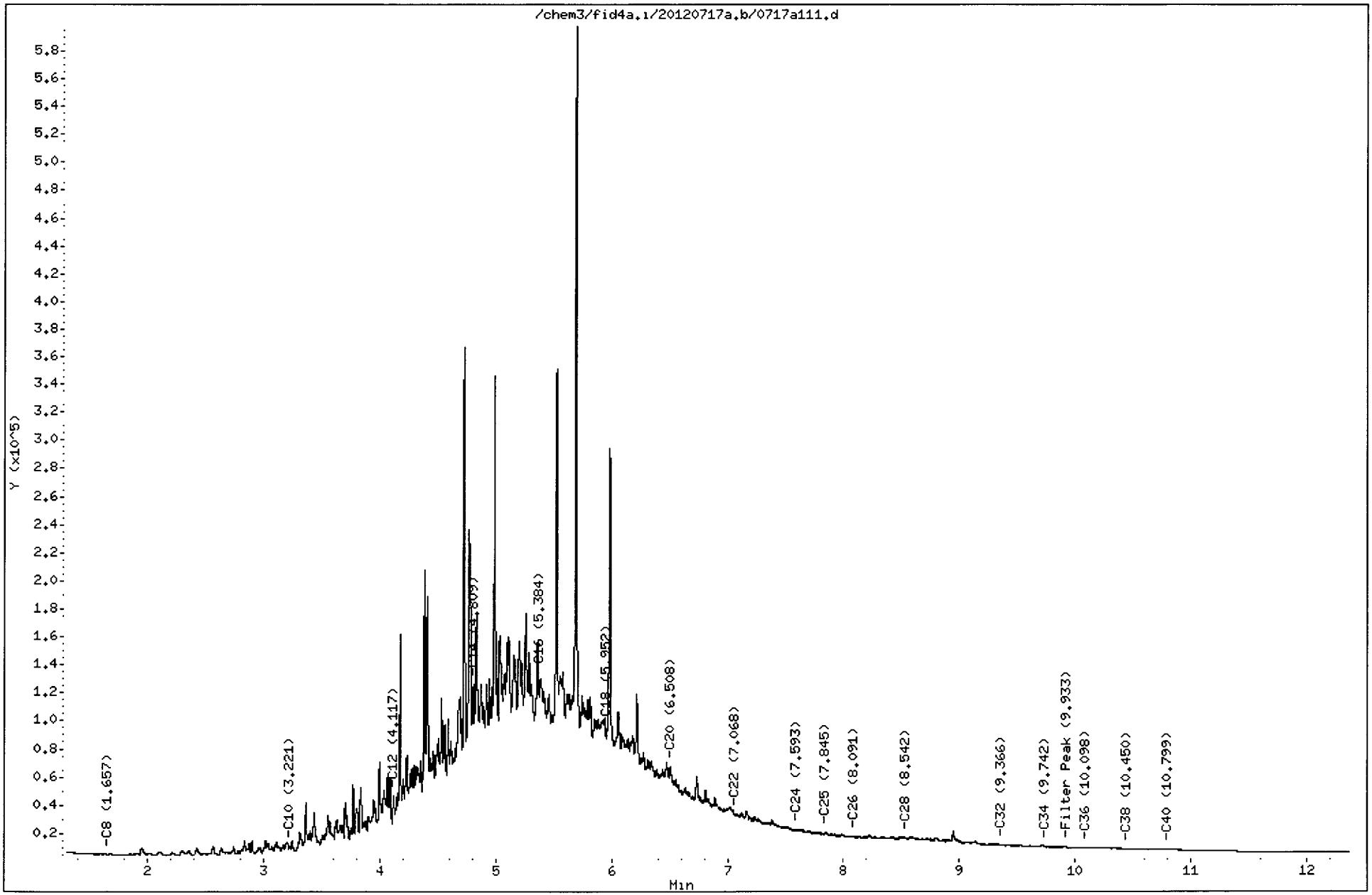
Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

Data File: /chem3/fid4a.1/20120717a.b/0717a111.d
Date : 18-JUL-2012 22:36
Client ID: CW-TP-01-8-9
Sample Info: WB54K,100

Instrument: fid4a.1

Operator: AR
Column diameter: 0.25

Column phase: RTX-1



AR 7/20/2012

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a112.d
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB54R
Client ID: CW-TP-04-8-9
Injection: 18-JUL-2012 22:57
Dilution Factor: 5

FID:4A RESULTS

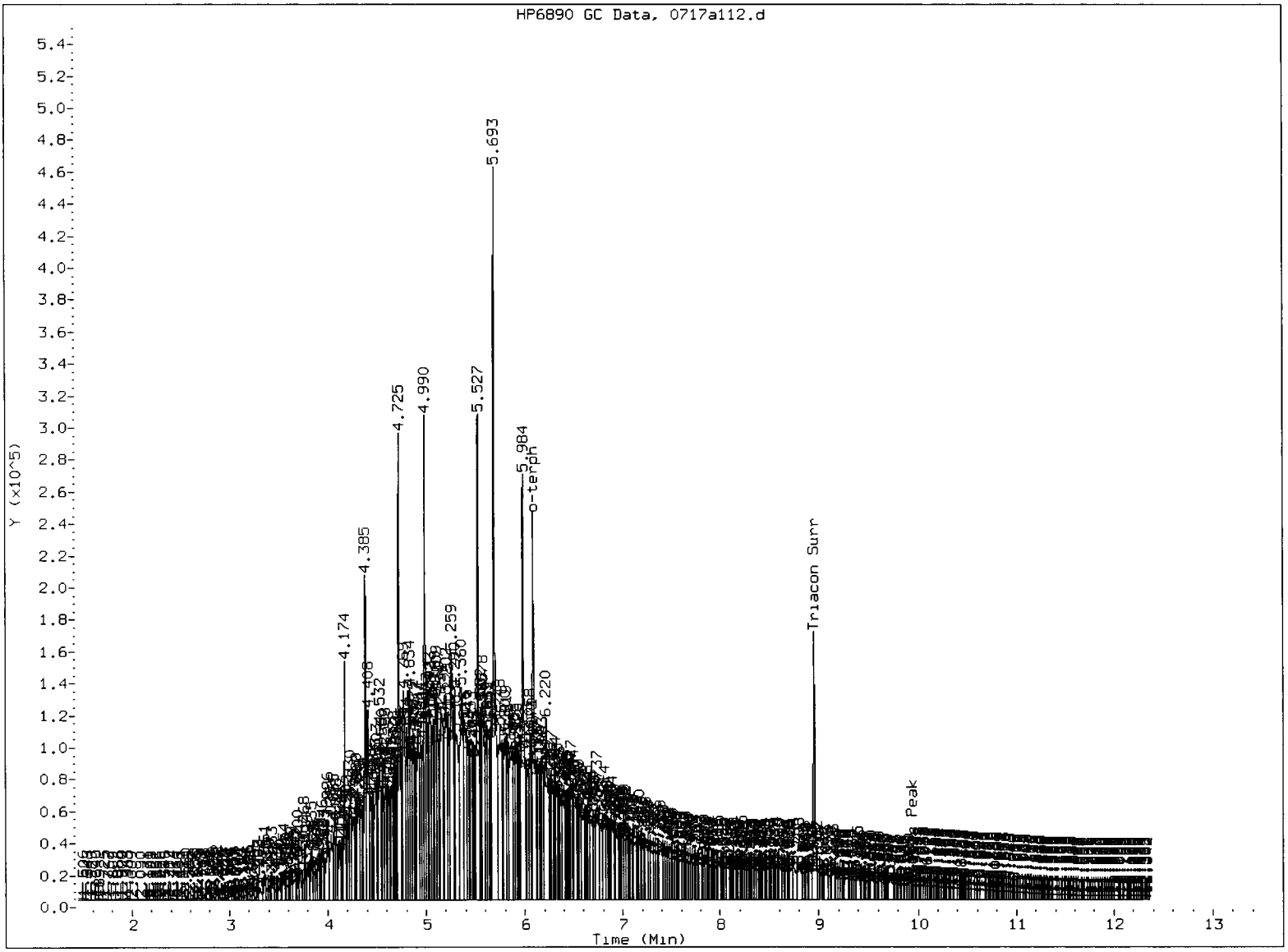
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.404	0.017	1924	3807	GAS (Tol-C12)	972185	64.62	
C8	1.669	0.004	837	1418	DIESEL (C12-C24)	14984541	1022.84	Diesel
C10	3.240	0.009	4996	4682	M.OIL (C24-C38)	2372668	188.77	Mo i l
C12	4.116	-0.004	37038	43950	AK-102 (C10-C25)	16068997	928.90	M
C14	4.807	0.009	107571	126080	AK-103 (C25-C36)	2009173	235.32	M
C16	5.387	0.003	112195	221710				
C18	5.952	0.003	83280	34146				
C20	6.510	-0.007	66142	116635	JET-A (C10-C18)	11284290	760.29	
C22	7.066	-0.003	35306	17466	MIN.OIL (C24-C38)	2372668	176.53	M
C24	7.582	-0.010	24581	35305				
C25	7.849	0.005	23668	30094				
C26	8.092	0.005	20671	20936				
C28	8.551	0.009	19288	17377				
C32	9.366	0.011	12465	18403				
C34	9.723	-0.009	12808	35302				
Filter Peak	9.940	0.008	9076	4830	BUNKERC (C10-C38)	18230607	2388.08	M
C36	10.096	0.000	8527	11625				
C38	10.443	-0.005	6695	4073				
C40	10.786	-0.005	5445	5931				
o-terph	6.087	-0.007	154497	110772				
Triacon Surr	8.953	-0.018	149549	128142	NAS DIES (C10-C24)	15857940	994.17	M

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	110772	5.4	60.4
Triacontane	128142	6.7	74.6

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 VB54R FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other SPC

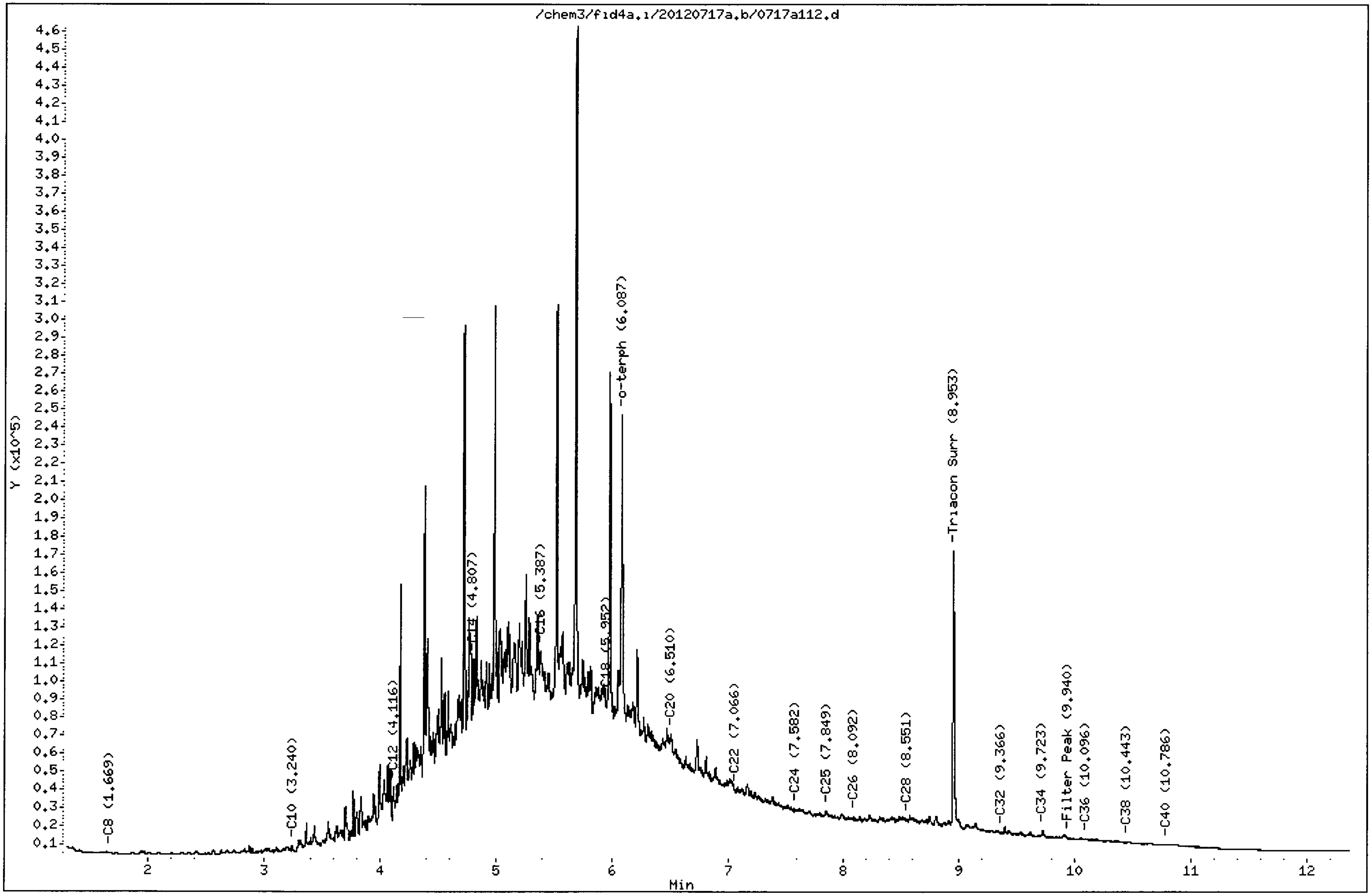
Analyst: AR Date: 7/20/2012

Data File: /chem3/fid4a.i/20120717a.b/0717a112.d
Date : 18-JUL-2012 22:57
Client ID: CW-TP-04-8-9
Sample Info: VB54R,5

Column phase: RTX-1

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

AR 7/20/2012

Data file: /chem3/fid4a.i/20120717a.b/0717a113.d
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m
Instrument: fid4a.i
Operator: AR
Report Date: 07/20/2012
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

ARI ID: VB54U
Client ID: CW-TP-54-8-9
Injection: 18-JUL-2012 23:19
Dilution Factor: 5

FID:4A RESULTS

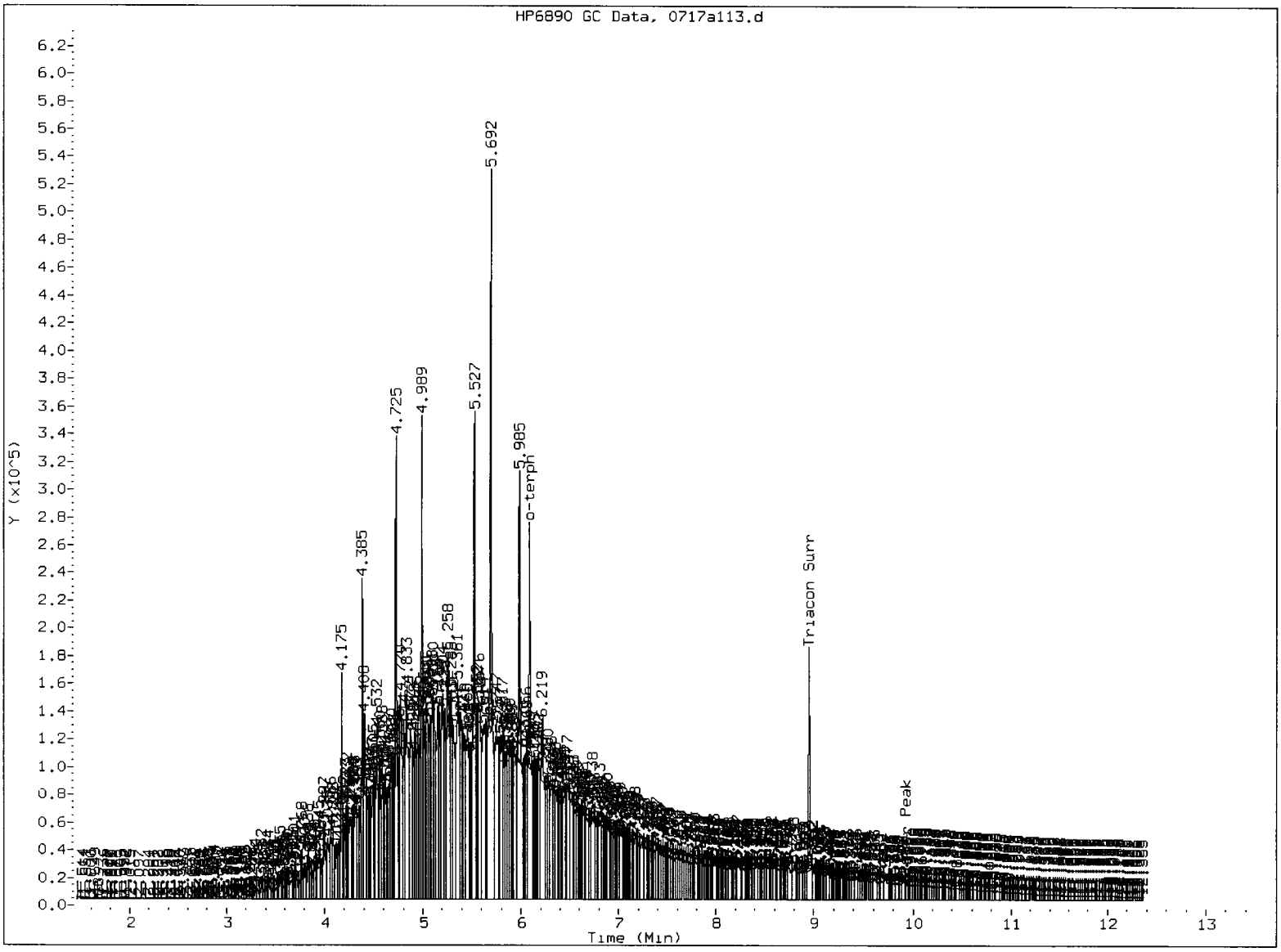
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.414	0.028	2030	4986	GAS (Tol-C12)	1014693	67.45
C8	1.676	0.011	714	1246	DIESEL (C12-C24)	17685434	1207.20 Diesel
C10	3.222	-0.009	2854	2677	M.OIL (C24-C38)	2809322	223.51 Mo.
C12	4.117	-0.003	40349	47515	AK-102 (C10-C25)	18835866	1088.84 M
C14	4.808	0.010	126400	157691	AK-103 (C25-C36)	2405275	281.71 M
C16	5.385	0.002	134066	226840			
C18	5.924	-0.025	110528	200367			
C20	6.511	-0.006	77841	139169	JET-A (C10-C18)	13208602	889.95
C22	7.076	0.007	42844	20091	MIN.OIL (C24-C38)	2809322	209.02 M
C24	7.594	0.001	30108	45717			
C25	7.848	0.003	28361	47397			
C26	8.083	-0.004	23167	23257			
C28	8.548	0.007	22278	19535			
C32	9.360	0.006	14419	15675			
C34	9.718	-0.014	15148	47374			
Filter Peak	9.928	-0.003	10955	17037	BUNKERC (C10-C38)	21421110	2806.01 M
C36	10.096	0.001	10198	12437			
C38	10.449	0.002	8275	15603			
C40	10.784	-0.007	6294	4852			
o-terph	6.087	-0.007	170974	126870			
Triacon Surr	8.953	-0.018	160799	137732	NAS DIES (C10-C24)	18611788	1166.81 M

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	126870	6.2	69.2
Triacontane	137732	7.2	80.2

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 VB54U FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other SPC

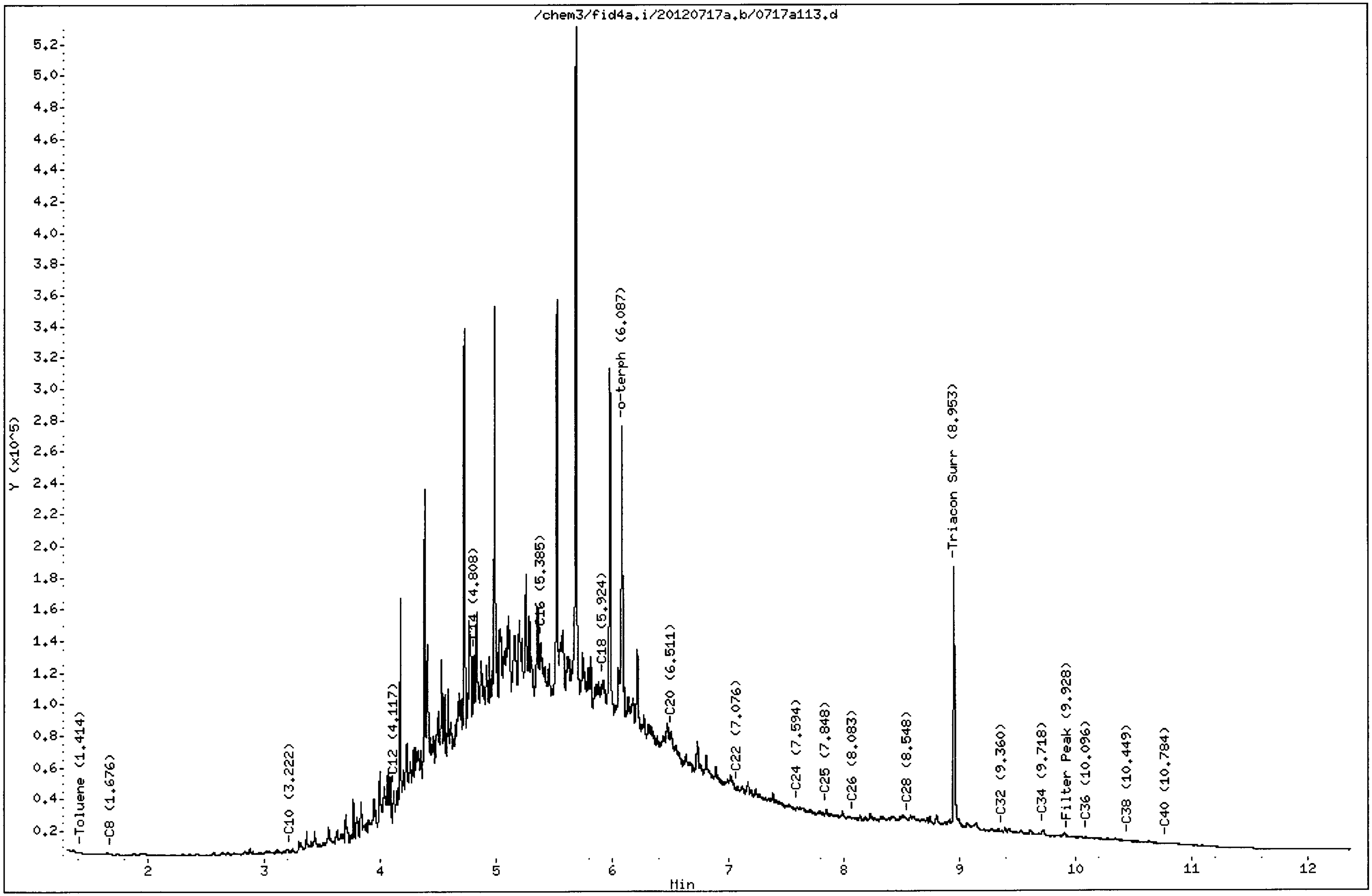
Analyst: AR Date: 7/20/202

Data File: /chem3/fid4a.i/20120717a.b/0717a113.d
Date : 18-JUL-2012 23:19
Client ID: CW-TP-54-8-9
Sample Info: VB54U,5

Column phase: RTX-1

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a120.d ARI ID: DIESEL #12
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID: DIESEL
Instrument: fid4a.i Injection: 19-JUL-2012 01:49
Operator: AR
Report Date: 07/20/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

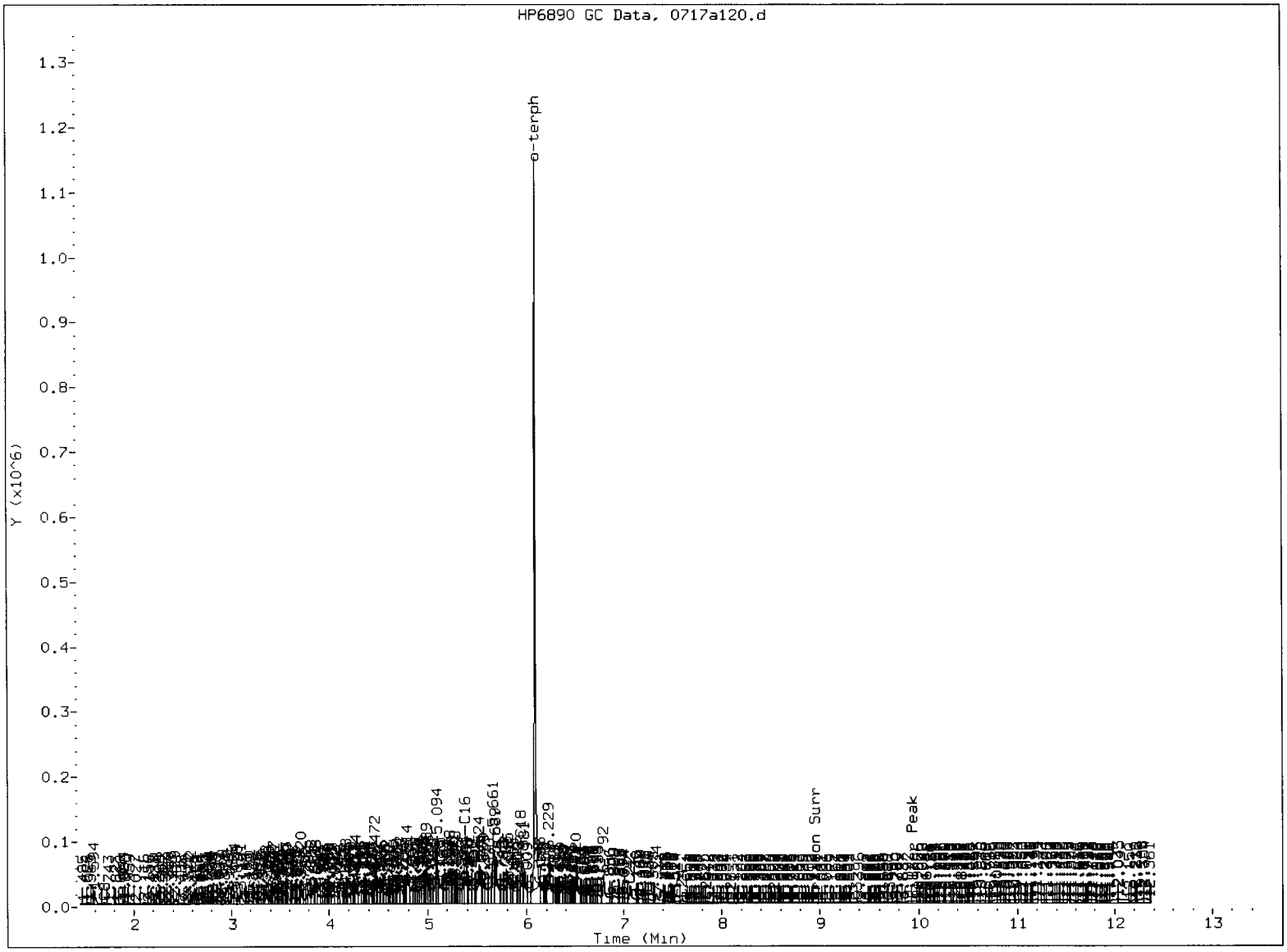
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.387	0.001	2515	4603	GAS (Tol-C12)	923029	61.36	
C8	1.698	0.033	2158	4704	DIESEL (C12-C24)	3829025	261.37	
C10	3.237	0.006	21277	18519	M.OIL (C24-C38)	232457	18.49	
C12	4.120	0.000	45463	39812	AK-102 (C10-C25)	4477701	258.84	M
C14	4.793	-0.004	75883	79202	AK-103 (C25-C36)	169328	19.83	
C16	5.379	-0.004	119486	102288				
C18	5.945	-0.004	98311	103797				
C20	6.513	-0.004	62705	88836	JET-A (C10-C18)	3323164	223.90	
C22	7.067	-0.002	27550	53783	MIN.OIL (C24-C38)	232457	17.30	
C24	7.595	0.002	6478	15230				
C25	7.848	0.003	3264	7926				
C26	8.091	0.004	1325	3446				
C28	8.544	0.002	661	1282				
C32	9.370	0.016	1585	4982				
C34	9.706	-0.026	1766	4158				
Filter Peak	9.935	0.004	2796	8023	BUNKERC (C10-C38)	4696441	615.20	M
C36	10.085	-0.011	2142	4134				
C38	10.437	-0.011	2609	1657				
C40	10.794	0.003	3779	1279				
o-terph	6.094	0.000	1126414	970600				
Triacon Surr	8.956	-0.015	1031	2577	NAS DIES (C10-C24)	4463983	279.86	M

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	970600	47.6	105.9
Triacontane	2577	0.1	0.3

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 DIESEL #12 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

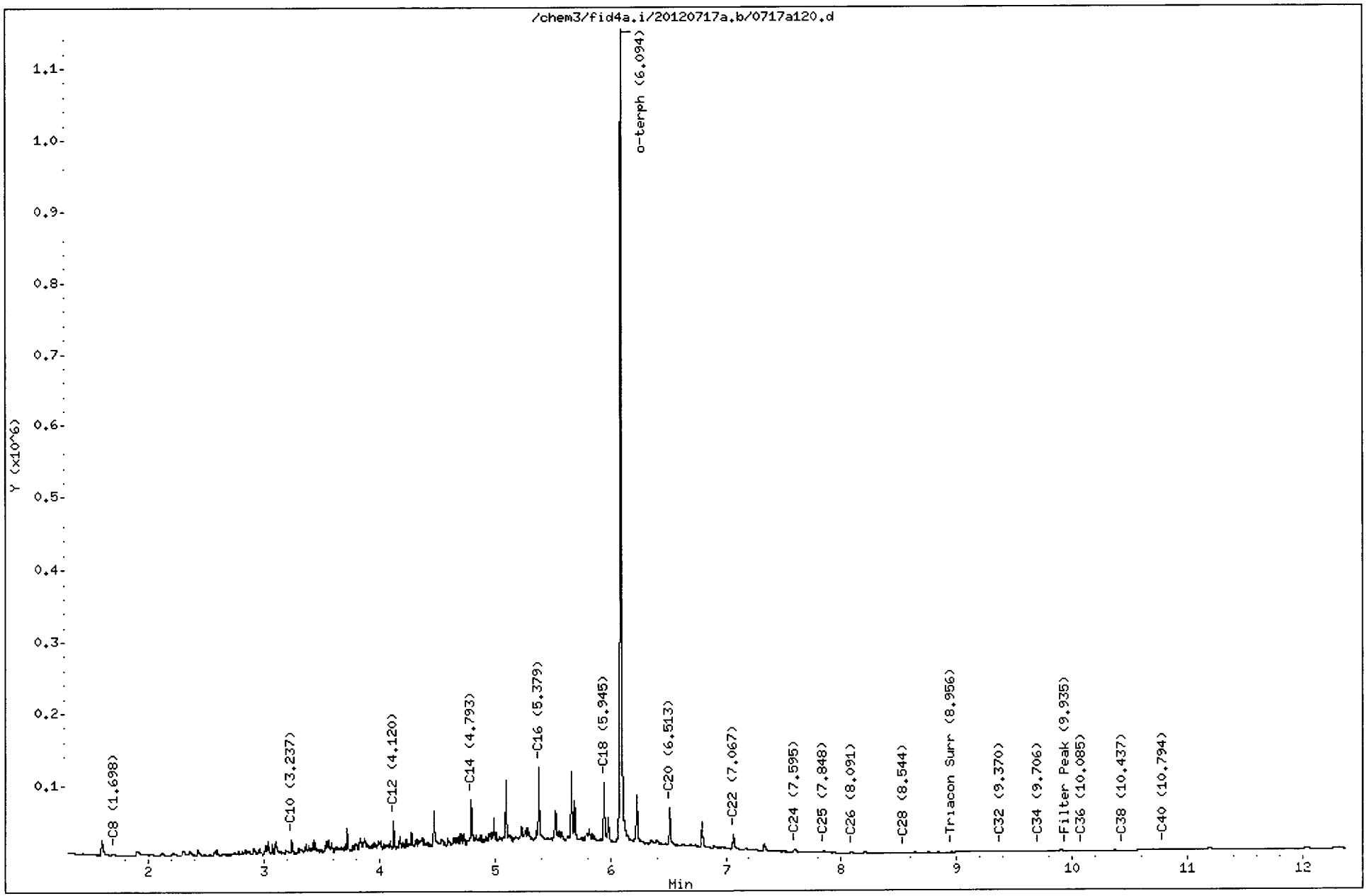
Analyst: _____ Date: _____

Data File: /chem3/fid4a.i/20120717a.b/0717a120.d
Date : 19-JUL-2012 01:49
Client ID: DIESEL
Sample Info: DIESEL #12

Column phase: RTX-1

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120717a.b/0717a121.d ARI ID: MOIL #12
Method: /chem3/fid4a.i/20120717a.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 19-JUL-2012 02:11
Operator: AR
Report Date: 07/20/2012 Dilution Factor: 1
Macro: 13-JUL-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:10-JUL-2012 M.Oil:12-JUN-2012

FID:4A RESULTS

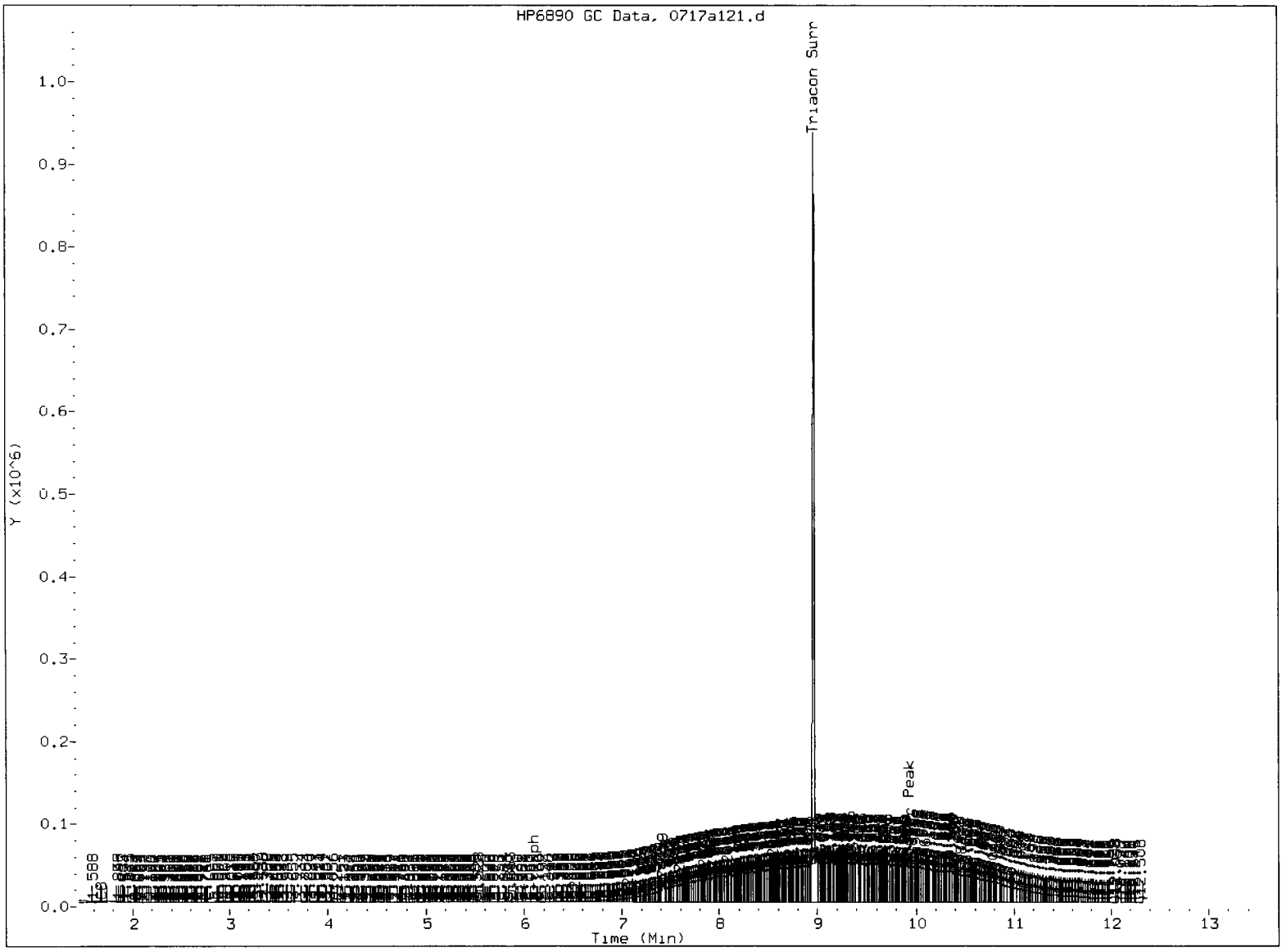
Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.346	-0.041	39392	96407	GAS (Tol-C12)	235247	15.64	
C8	1.677	0.012	1363	4169	DIESEL (C12-C24)	589867	40.26	
C10	3.237	0.006	2067	4687	M.OIL (C24-C38)	6416272	510.48	
C12	4.104	-0.016	719	1286	AK-102 (C10-C25)	874043	50.53	
C14	4.801	0.004	236	446	AK-103 (C25-C36)	5456198	639.05	M
C16	5.381	-0.002	77	72				
C18	5.960	0.011	258	527				
C20	6.515	-0.002	1236	2404	JET-A (C10-C18)	96083	6.47	
C22	7.060	-0.009	5282	7079	MIN.OIL (C24-C38)	6416272	477.38	M
C24	7.589	-0.004	21333	19009				
C25	7.840	-0.005	28284	12488				
C26	8.086	-0.001	33368	9728				
C28	8.549	0.007	41161	32950				
C32	9.362	0.008	48832	31124				
C34	9.735	0.003	46051	51452				
Filter Peak	9.925	-0.007	44278	42442	BUNKERC (C10-C38)	7075750	926.87	M
C36	10.093	-0.002	42195	21331				
C38	10.458	0.010	33250	50277				
C40	10.788	-0.002	25215	25905				
o-terph	6.096	0.002	675	1595				
Triacon Surr	8.966	-0.005	886433	899071	NAS DIES (C10-C24)	659478	41.34	

M Indicates manual integration within range.
Range Times: NW Diesel(4.120 - 7.593) AK102(3.23 - 7.84) Jet A(3.23 - 5.95)
NW M.Oil(7.59 - 10.45) AK103(7.84 - 10.10) OR Diesel(3.23 - 8.54)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1595	0.1	0.2
Triacontane	899071	47.1	104.7

Analyte	RF	Curve Date
o-Terph Surr	20371.2	10-JUL-2012
Triacon Surr	19086.0	12-JUN-2012
Gas	15043.9	10-MAY-2012
Diesel	14650.0	10-JUL-2012
Motor Oil	12569.0	12-JUN-2012
AK102	17299.0	10-JUL-2012
AK103	8538.0	24-MAY-2012
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
NAS Diesel	15951.0	18-AUG-2011
Bunker C	7634.0	13-JUL-2012

FID:4A-2C/RTX-1 MOIL #12 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

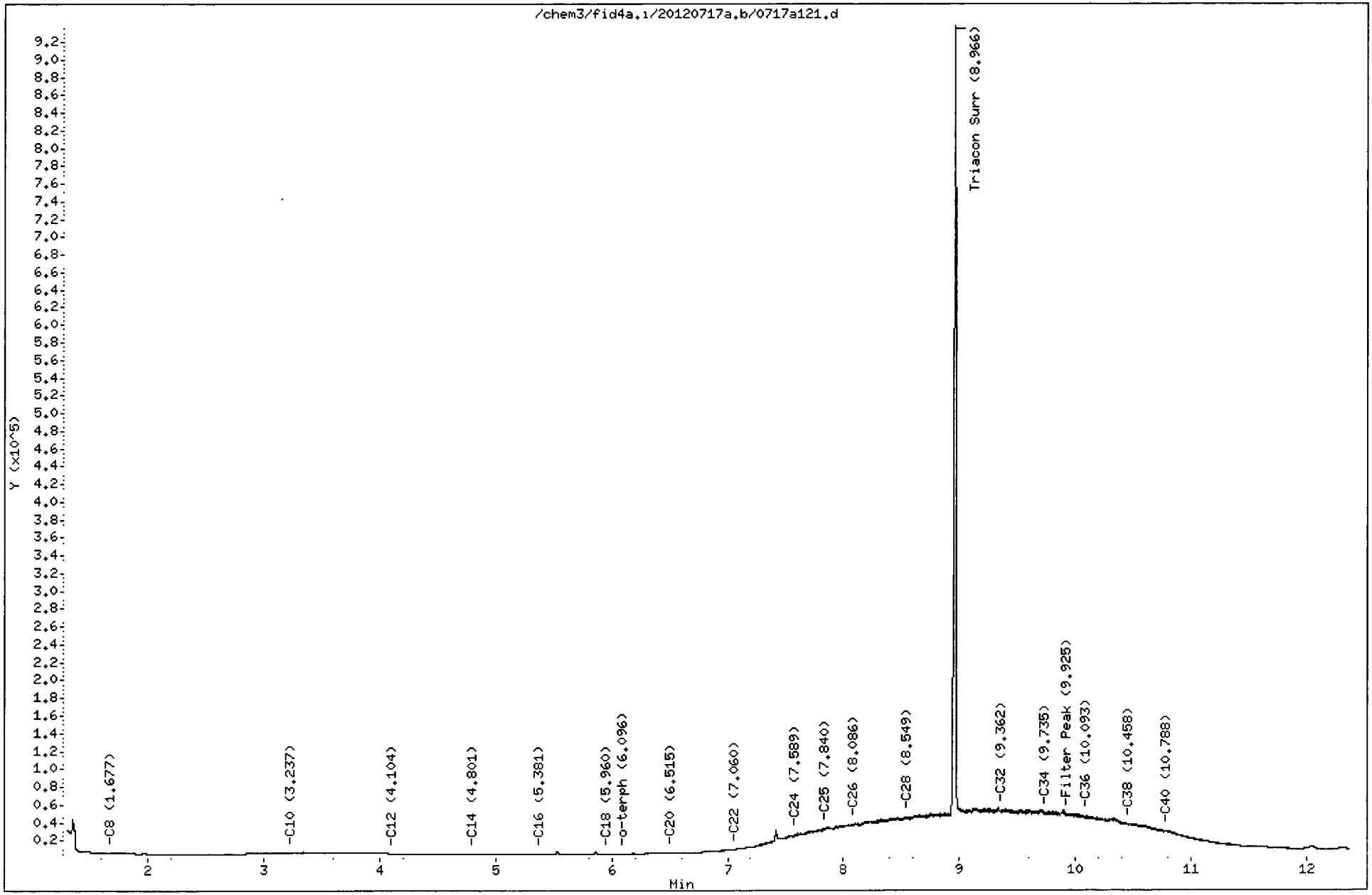
Analyst: _____ Date: _____

Data File: /chem3/fid4a.i/20120717a.b/0717a121.d
Date : 19-JUL-2012 02:11
Client ID:
Sample Info: MOIL #12

Instrument: fid4a.i

Operator: AR
Column diameter: 0.25

Column phase: RTX-1



TPHG Raw Data
Preparation Log

ARI Job ID: VB51, VB54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Volatile Organics Extraction Bench Sheet

(8260B, 8260B-SIM, 8021, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

ARI Project No.	Client ID/Project	Extraction Date	MeOH Lot No.	Analyst
• VB51 / VB54	Anchor	1st Extraction: 07/11/12		
		2nd Extraction: 07/12/12		

	Lab ID	Vial No.	Preservative		Method 5035 Sample Weight					Comments
			$NaHSO_3$	CH_3OH	Vial Weight (g)	Tare (from vial) (g)	Sample Weight (g)	Extract Volume (mL)	MeOH Spilt Volume (µL)	
	MB:									
	LCS:									
	LCSD:									
1	VB51A	2		yes	34.21 g	28.097 g	6.113	5mL	900µL	MS/MSD Sample 51A
2	VB51F	3		yes	35.46 g	28.051 g	7.119	5mL	90µL / 900µL	
3	VB51I	4		yes	36.41 g	28.310 g	8.100	5mL	90µL / 90µL	
4	VB51L	6		yes	43.33 g	28.082 g	15.248	5mL	90µL / 180µL	
5	VB54A	3		yes	35.75 g	28.031	7.719	5mL	90µL / 90µL	
6	VB54D	3		yes	38.68 g	28.221 g	9.859	5mL	90µL / 90µL	
7	VB54G	3		yes	37.59 g	28.213 g	9.377	5mL	90µL / 90µL	
8	VB54J	2		yes	35.82 g	28.209 g	7.611	5mL	90µL / 90µL	
9	VB54N	2		yes	35.64 g	28.202 g	7.438	5mL	90µL / 900µL	
10	VB54Q	2		yes	37.46 g	28.099 g	9.361	5mL	90µL / 900µL	
11	VB54T	2		yes	35.12 g	28.030 g	7.090	5mL	90µL / 90µL	
12										
13	VB51Ams	2		yes	34.21 g	28.097 g	6.113	5mL	900µL	
14	VB51Amsd	2		yes	34.21 g	28.097 g	6.113	5mL	900µL	
15										
16										
17										
18										
19										
20										
	Balance ID:		4005C016							

	Solution ID	Concentration	Amount Spiked	Analyst	Witness
Surrogate:					
Spike:					

VB51-080212

TPHG Raw Data
Initial Calibration Notes and Raw Data

ARI Job ID: VB51, VB54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Initial Calibration Notes

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.3) **710S**(RSK-175)

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6

Curve Date(s): 5/15/12 Internal Standard ID N/A Expiration N/A

~~BFB Tune Meets Criteria?~~	~~YES / NO~~	ICV Exceeding ±20%?	YES / NO
ICal Meets %RSD & r^2 Criteria?	YES / NO	ICV Exceeding ±30%?	YES / NO
Q flag applied?	YES / NO	Linear Fits Used?	YES / NO
Manual Integrations for ICal?	YES / NO	Quadratic Fits Used?	YES / NO
Spectral Library Updated?	YES / NO	Calibration Points Dropped? (1) Low	YES / NO
Minimum Response Factors Met	YES / NO	Purge Volume (mL)	5

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
SPEX	VW745-3	11/1/12	Protocol	VW736-2	9/12/12
Restek	VW737-3	9/16/12	Ultra Scientific	VW 730-3	8/8/12

Detail problems, corrective actions and/or other pertinent information below:

Low point of gas curve out of 15% by 3% high. overall RSD < 10%

Target ICV 2.5, Target BICV 25

Prim & Second Source for gas from same vendor different lots though.

Low point for both FID & PID MTBE was dropped.

Analyst: JW **Date:** 5/16/12

Reviewer: [signature] **Date:** 5/16/12

VB51 : 00829

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2012 15:15
End Cal Date : 15-MAY-2012 18:09
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc051512a-2.b/PIDB.m
Cal Date : 16-May-2012 09:58 jonw
Curve Type : Average

Calibration File Names:
Level 1: /chem3/pid1.i/vpcc051512a-2.b/0515a017.d/0515a017.cdf
Level 2: /chem3/pid1.i/vpcc051512a-2.b/0515a016.d/0515a016.cdf
Level 3: /chem3/pid1.i/vpcc051512a-2.b/0515a015.d/0515a015.cdf
Level 4: /chem3/pid1.i/vpcc051512a-2.b/0515a014.d/0515a014.cdf
Level 5: /chem3/pid1.i/vpcc051512a-2.b/0515a013.d/0515a013.cdf
Level 6: /chem3/pid1.i/vpcc051512a-2.b/0515a012.d/0515a012.cdf
Level 7: /chem3/pid1.i/vpcc051512a-2.b/0515a011.d/0515a011.cdf

Compound	0.25000 Level 1	0.50000 Level 2	5.000 Level 3	25.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	200.000 Level 7							
1 MTBE	+++++	82.00000	87.00000	83.36000	87.54000	91.76000	84.10214	9.307
	89.05500							
2 Benzene	264	256	243	236	245	252	249	3.692
	250							
4 Toluene	228	206	217	209	218	227	218	3.953
	224							
5 Ethylbenzene	176	202	192	187	195	203	193	4.963
	200							
6 M/P-Xylene	214	218	209	204	213	225	215	3.151
	220							
7 O-Xylene	164	162	164	162	169	180	168	4.114
	175							

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2012 15:15
End Cal Date : 15-MAY-2012 18:09
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc051512a-2.b/PIDB.m
Cal Date : 16-May-2012 09:58 jonw
Curve Type : Average

Compound	0.25000 Level 1	0.50000 Level 2	5.000 Level 3	25.000 Level 4	50.000 Level 5	100.000 Level 6	200.000 Level 7	___ RRF	% RSD
$ 3 TFT(Surr)	39.45455	37.36364	35.95522	33.38000	37.80451	37.51685	38.06000	37.07640	5.206
$ 8 BB(Surr)	87.63636	82.88636	80.17910	71.43000	83.84211	81.74157	83.13000	81.54936	6.150

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2012 15:15
End Cal Date : 15-MAY-2012 18:09
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc051512a-2.b/PIDB.m
Cal Date : 16-May-2012 09:58 jonw
Curve Type : Average

Average %RSD Results.
Calculated Average %RSD = 5.06693
Maximun Average %RSD = 20.00000
* Passed Average %RSD Test.

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2012 15:15
End Cal Date : 15-MAY-2012 18:09
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc051512a-1.b/FID.m
Cal Date : 16-May-2012 10:37 jonw
Curve Type : Average

Calibration File Names:
Level 1: /chem3/pid1.i/vpcc051512a-1.b/0515a017.d/0515a017.cdf
Level 2: /chem3/pid1.i/vpcc051512a-1.b/0515a016.d/0515a016.cdf
Level 3: /chem3/pid1.i/vpcc051512a-1.b/0515a015.d
Level 4: /chem3/pid1.i/vpcc051512a-1.b/0515a014.d
Level 5: /chem3/pid1.i/vpcc051512a-1.b/0515a013.d
Level 6: /chem3/pid1.i/vpcc051512a-1.b/0515a012.d
Level 7: /chem3/pid1.i/vpcc051512a-1.b/0515a011.d/0515a011.cdf

Compound	0.000e+00 Level 1	0.000e+00 Level 2	0.000e+00 Level 3	0.000e+00 Level 4	0.000e+00 Level 5	0.000e+00 Level 6	0.000e+00 Level 7	___ RRF	% RSD	
1 NWTPHG	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
2 WAGAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
3 AK101	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
4 8015GAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
5 2-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
6 MTBE	+++++	498	650	600	617	623	594	597	8.767	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2012 15:15
End Cal Date : 15-MAY-2012 18:09
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc051512a-1.b/FID.m
Cal Date : 16-May-2012 10:37 jonw
Curve Type : Average

Compound	0.000e+00 Level 1	0.000e+00 Level 2	0.000e+00 Level 3	0.000e+00 Level 4	0.000e+00 Level 5	0.000e+00 Level 6	RRF	% RSD	
	0.000e+00 Level 7								
7 nC6	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
8 nC7	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
9 BENZENE	1544	1464	1380	1252	1262	1275			
	1223						1343	9.125	
11 nC8	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
12 Toluene	1620	1408	1337	1237	1242	1255			
	1203						1329	11.059	
13 nC9	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	<-
14 ETHYLBENZENE	124	118	109	98.80000	100	100			
	96.00000						107	10.139	
15 M/P-XYLENE	1368	1462	1282	1162	1167	1190			
	1141						1253	9.772	
16 O-XYLENE	1096	1486	1300	1185	1191	1212			
	1161						1233	10.316	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2012 15:15
End Cal Date : 15-MAY-2012 18:09
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc051512a-1.b/FID.m
Cal Date : 16-May-2012 10:37 jonw
Curve Type : Average

Compound	0.000e+00 Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	0.000e+00 Level 7	RRF	% RSD	
17 nC10-Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
20 1,2,4-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
21 nc11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
22 nC12-Dodecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
23 nC13	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
24 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-
$ 10 TFT(Surr)	34.04545	31.15909	29.35821	26.87000	29.69173	29.31461	29.24000	29.95416	7.345	
$ 18 BB(Surr)	22.13636	20.20455	19.31343	16.91000	19.51128	18.47191	18.94000	19.35536	8.281	
$ 19 BFB(Surr)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	<-

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2012 15:15
End Cal Date : 15-MAY-2012 18:09
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/vpcc051512a-1.b/FID.m
Cal Date : 16-May-2012 10:37 jonw
Curve Type : Average

Average %RSD Results.
Calculated Average %RSD = 9.35055
Maximun Average %RSD = 20.00000
* Passed Average %RSD Test.

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a011.d ARI ID: B200
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a011.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 15:15
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.000	5848	73330	195.1	TFT(Surr)
15.404	-0.002	3788	31272	195.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	1698108	4.977
8015C 2MP-TMB	(4.20 to 16.22)	678311	1703317	2.511
AK101 nC6-nC10	(4.70 to 15.12)	538315	1580683	2.936
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	1705516	4.744

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.883	-0.002	7612	204.7	TFT(Surr)
15.413	0.000	16626	203.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.050	0.000	49949	203.28N	Benzene
9.913	-0.004	44719	204.23N	Toluene
12.809	-0.001	40022	204.92	Ethylbenzene
12.974	0.007	87899	409.01	M/P-Xylene
13.920	0.000	34956	205.56N	O-Xylene
4.567	0.000	17811	202.55N	MTBE

JW 5/16/12

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

VB51:00837

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a011.d

Date : 15-MAY-2012 15:15

Client ID:

Sample Info: B200

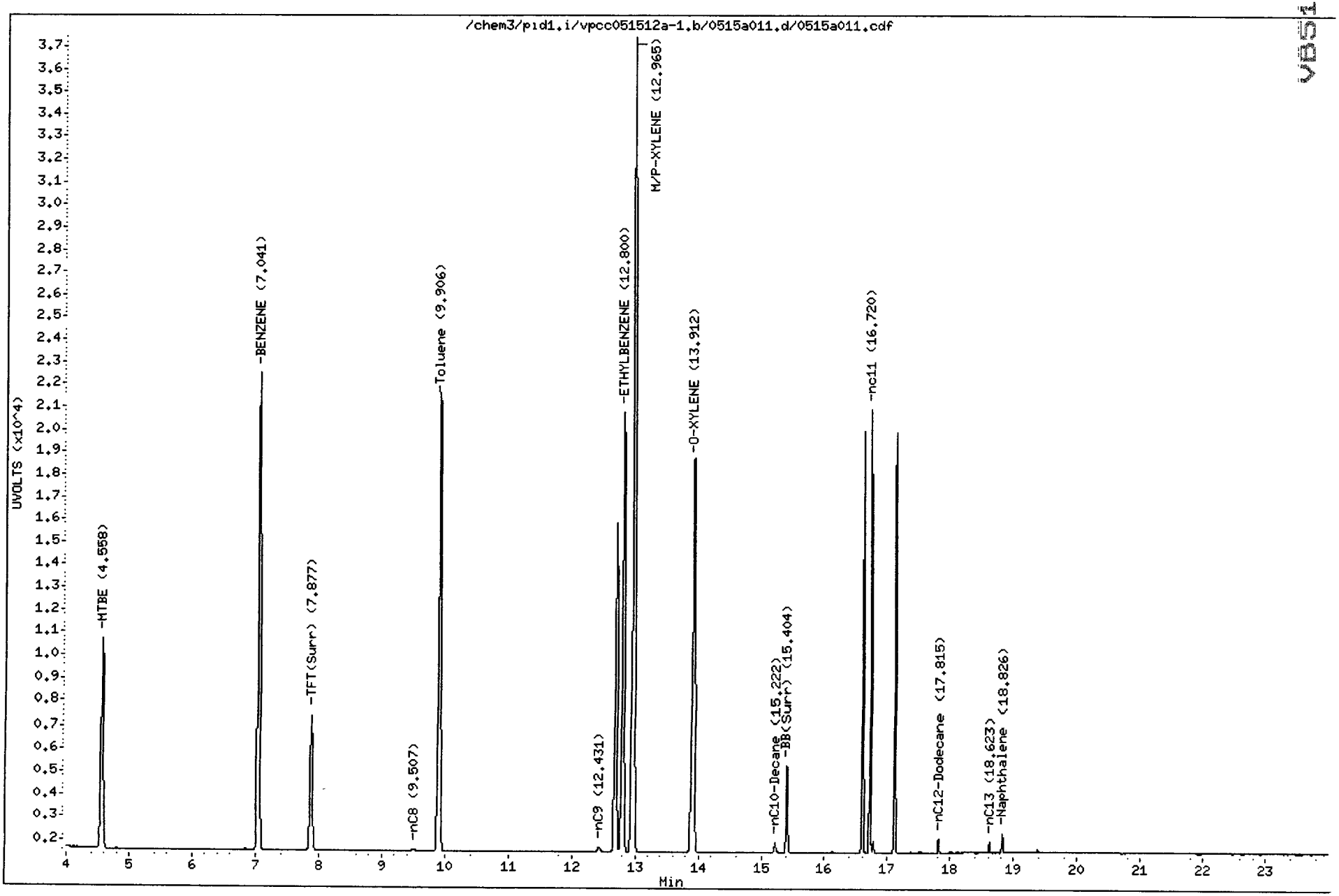
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51 : 00838



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a011.d

Page 1

Date : 15-MAY-2012 15:15

Client ID:

Instrument: pid1.i

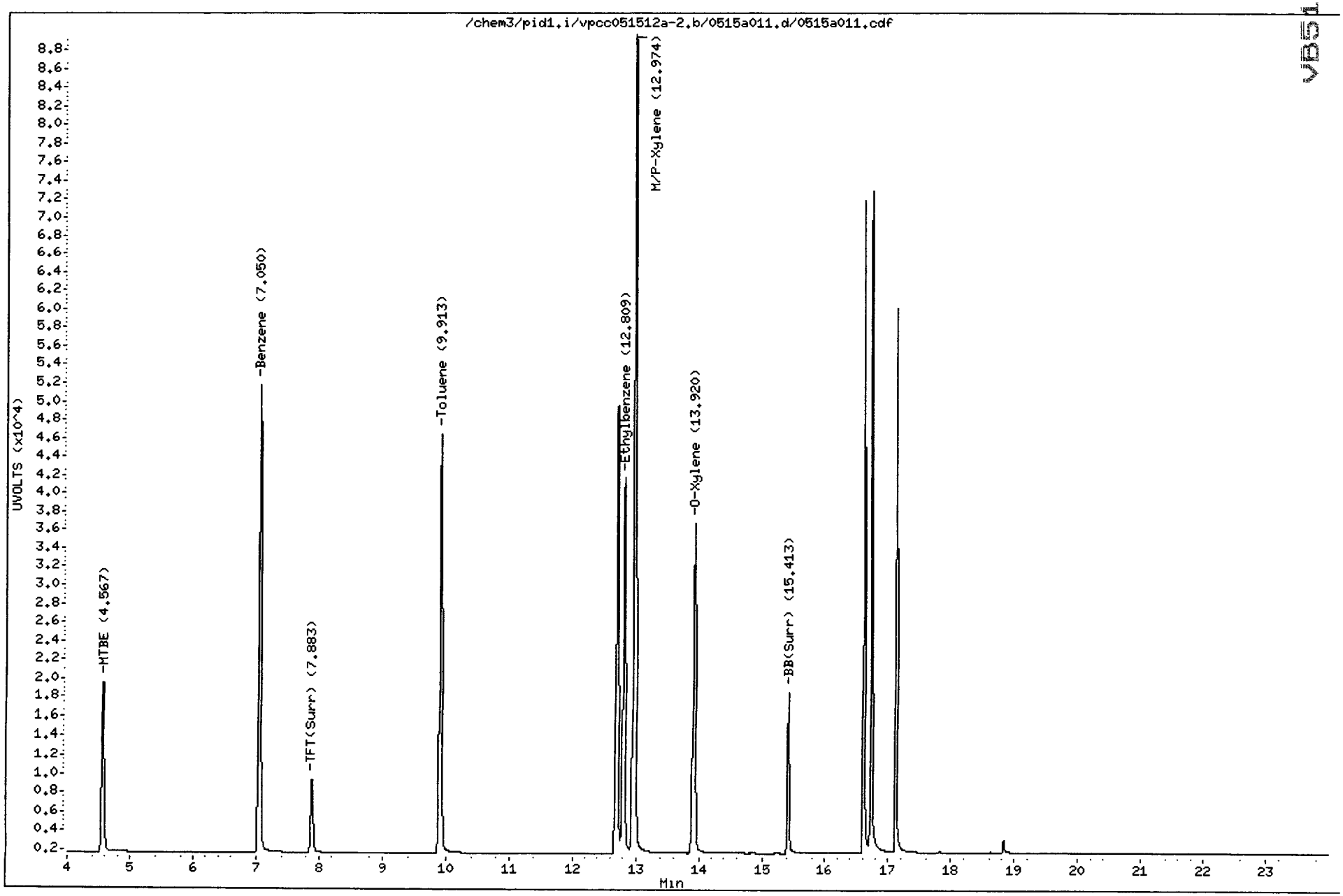
Sample Info: B200

Operator: JW

Column phase: RTX 502-2 PID

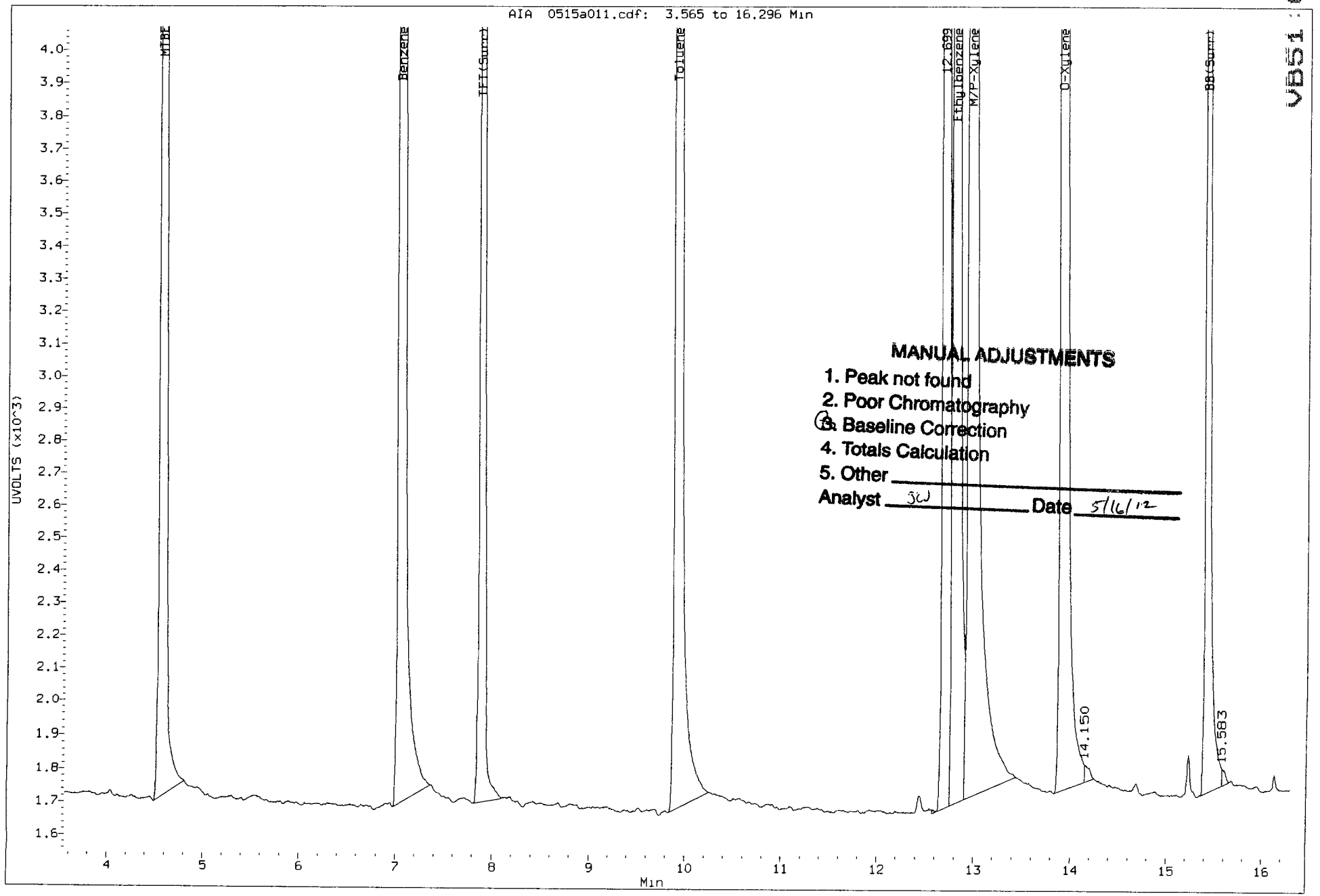
Column diameter: 0.18

VB51 : 00839



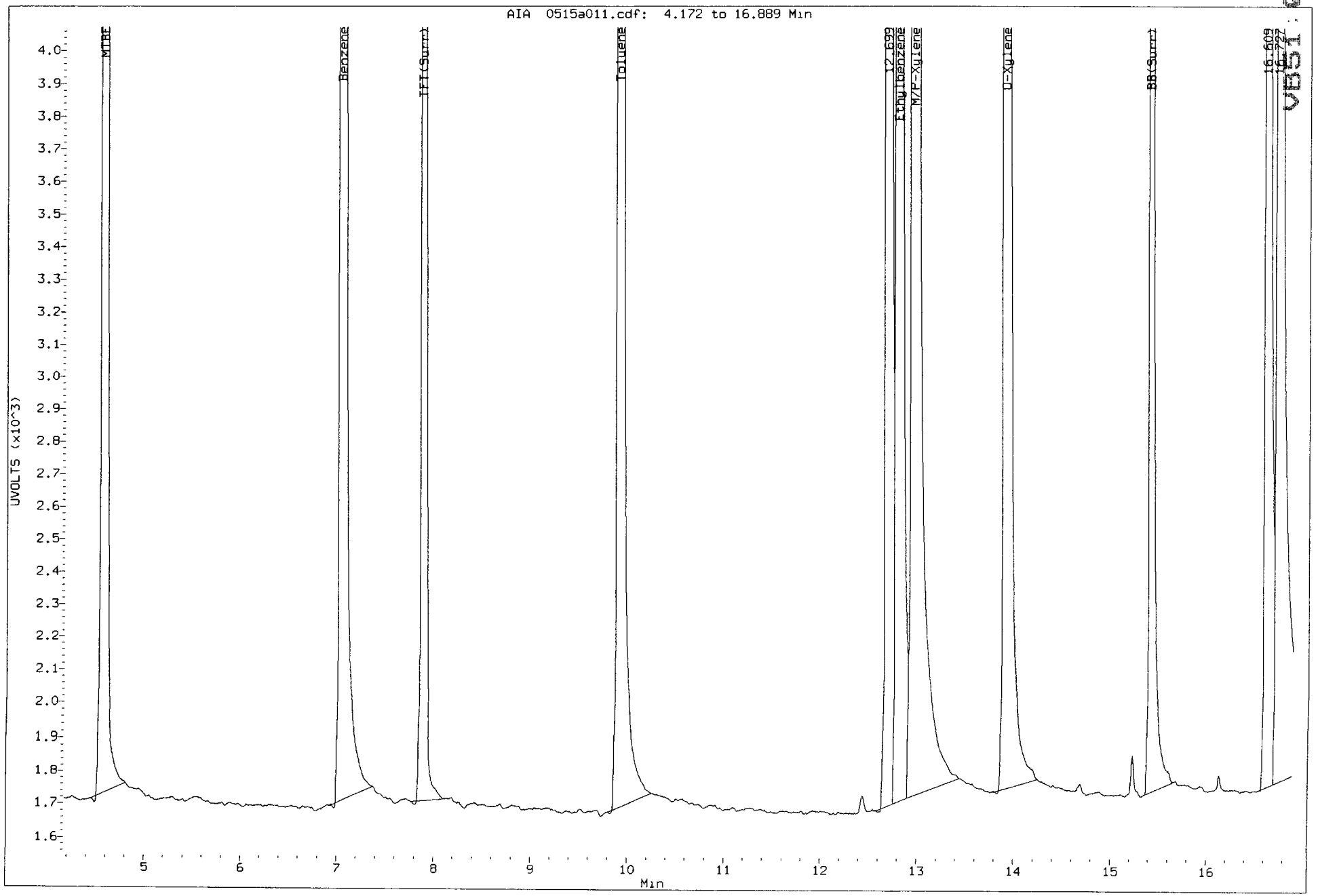
Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a011.d/0515a011.cdf
Injection Date: 15-MAY-2012 15:15
Instrument: pid1.i
Client Sample ID:

VB51 : 00840



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a011.d/0515a011.cdf
Injection Date: 15-MAY-2012 15:15
Instrument: pid1.i
Client Sample ID:

Before JW 5/16/12



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a012.d ARI ID: B100
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a012.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 15:44
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.000	5218	64997	178.2	TFT(Surr)
15.405	-0.001	3288	27622	175.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	885150	2.594
8015C 2MP-TMB	(4.20 to 16.22)	678311	886981	1.308
AK101 nC6-nC10	(4.70 to 15.12)	538315	823744	1.530
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	886561	2.466

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.002	6678	179.7	TFT(Surr)
15.413	0.000	14550	178.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.047	-0.003	25178	102.56N	Benzene
9.914	-0.003	22713	103.73	Toluene
12.807	-0.003	20267	103.77	Ethylbenzene
12.970	0.003	44918	209.01	M/P-Xylene
13.919	-0.001	17984	105.75	O-Xylene
4.566	-0.001	9176	104.35	MTBE

JW 5/16/12

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a012.d

Date : 15-MAY-2012 15:44

Client ID:

Sample Info: B100

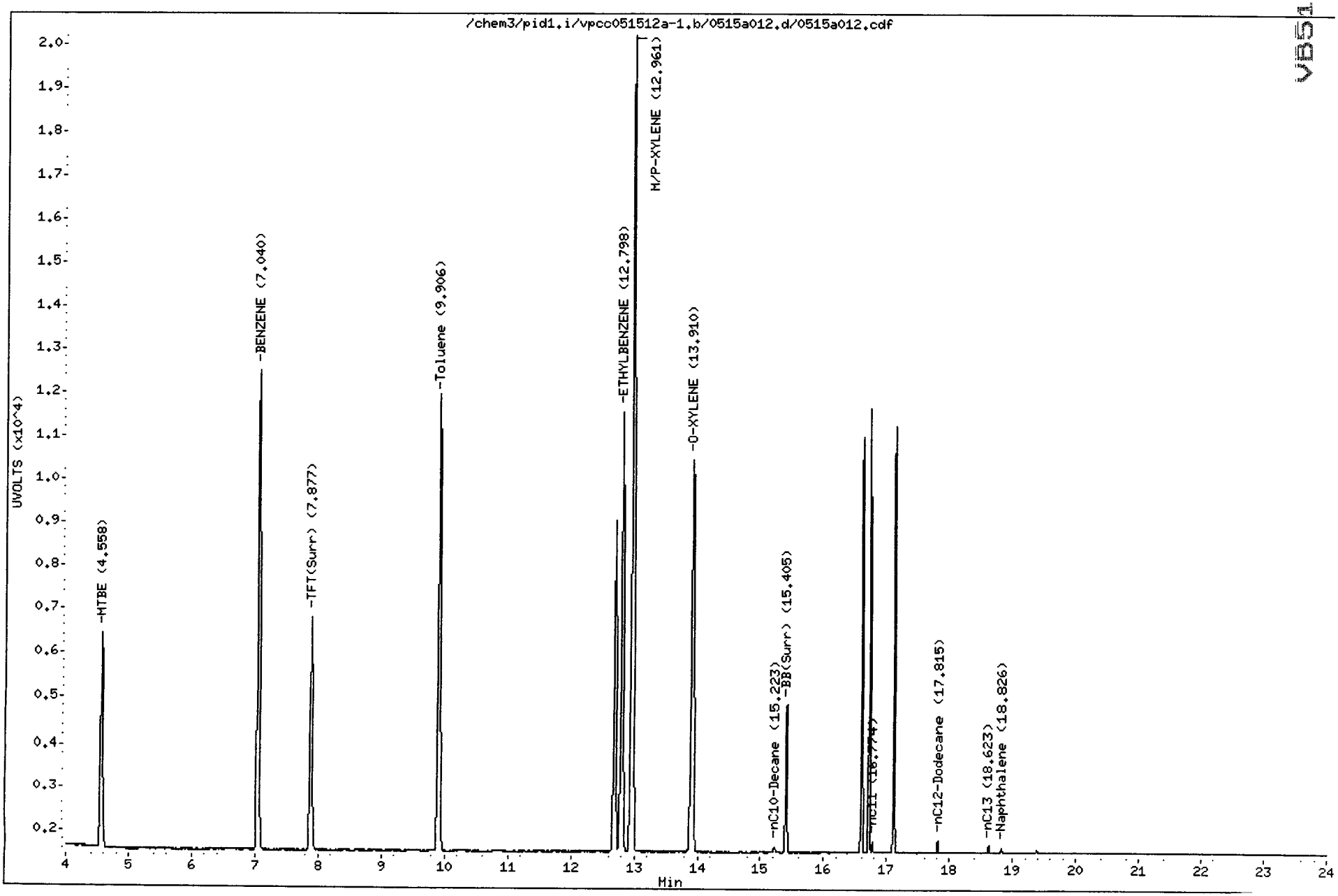
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51-00813



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a012.d

Date : 15-MAY-2012 15:44

Client ID:

Sample Info: B100

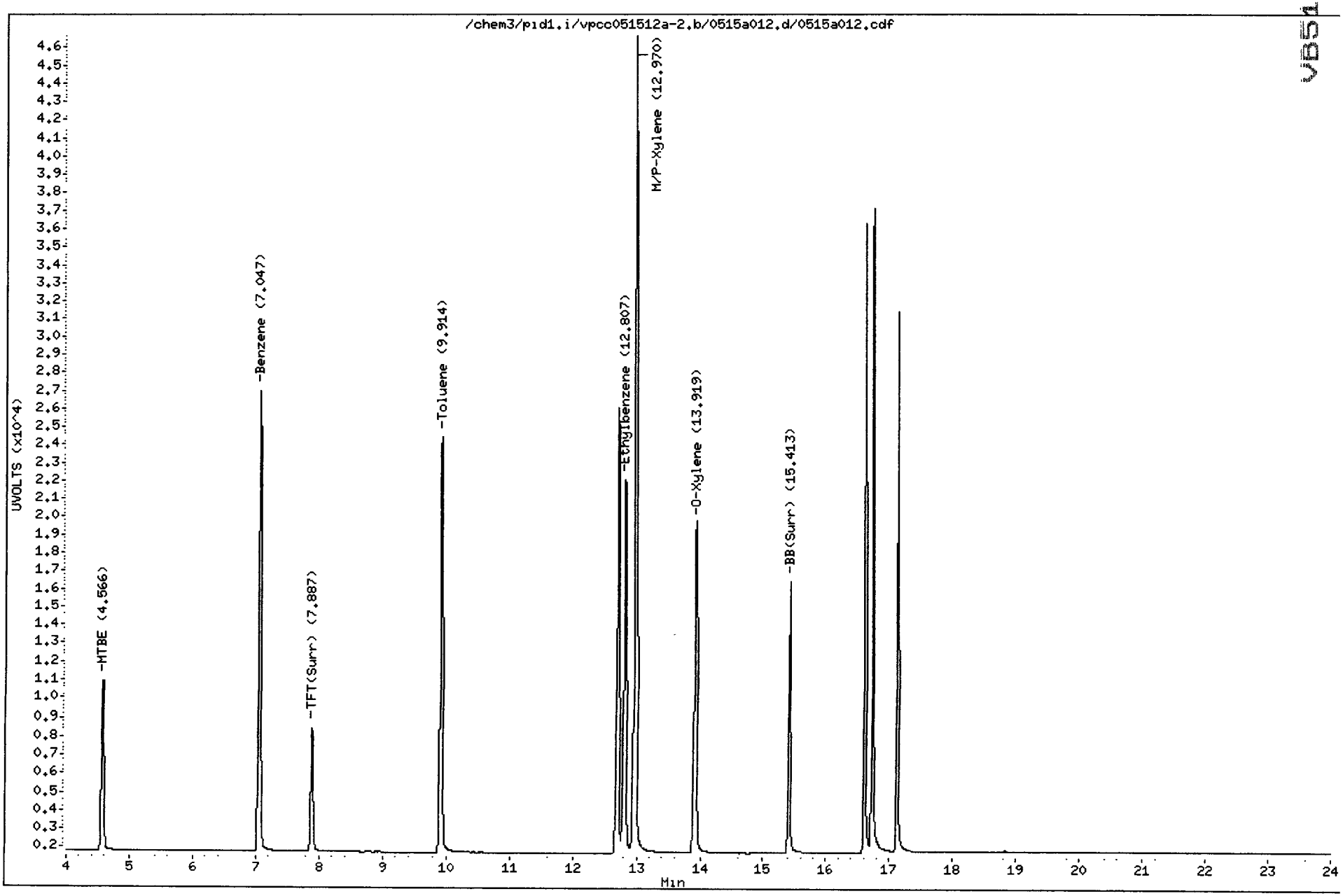
Column phase: RTX 502-2 PID

Instrument: pid1.i

Operator: JW

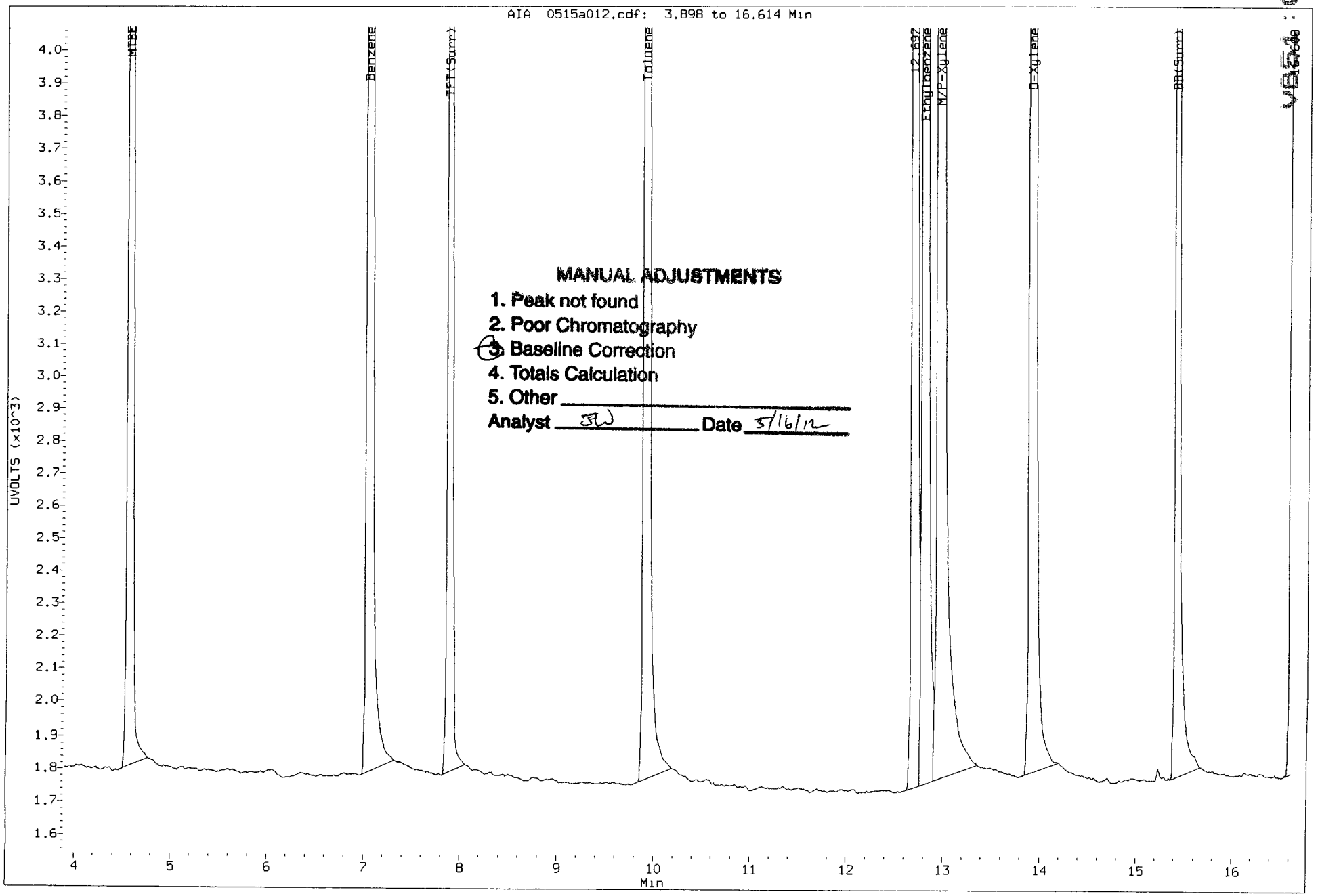
Column diameter: 0.18

VB51 00814



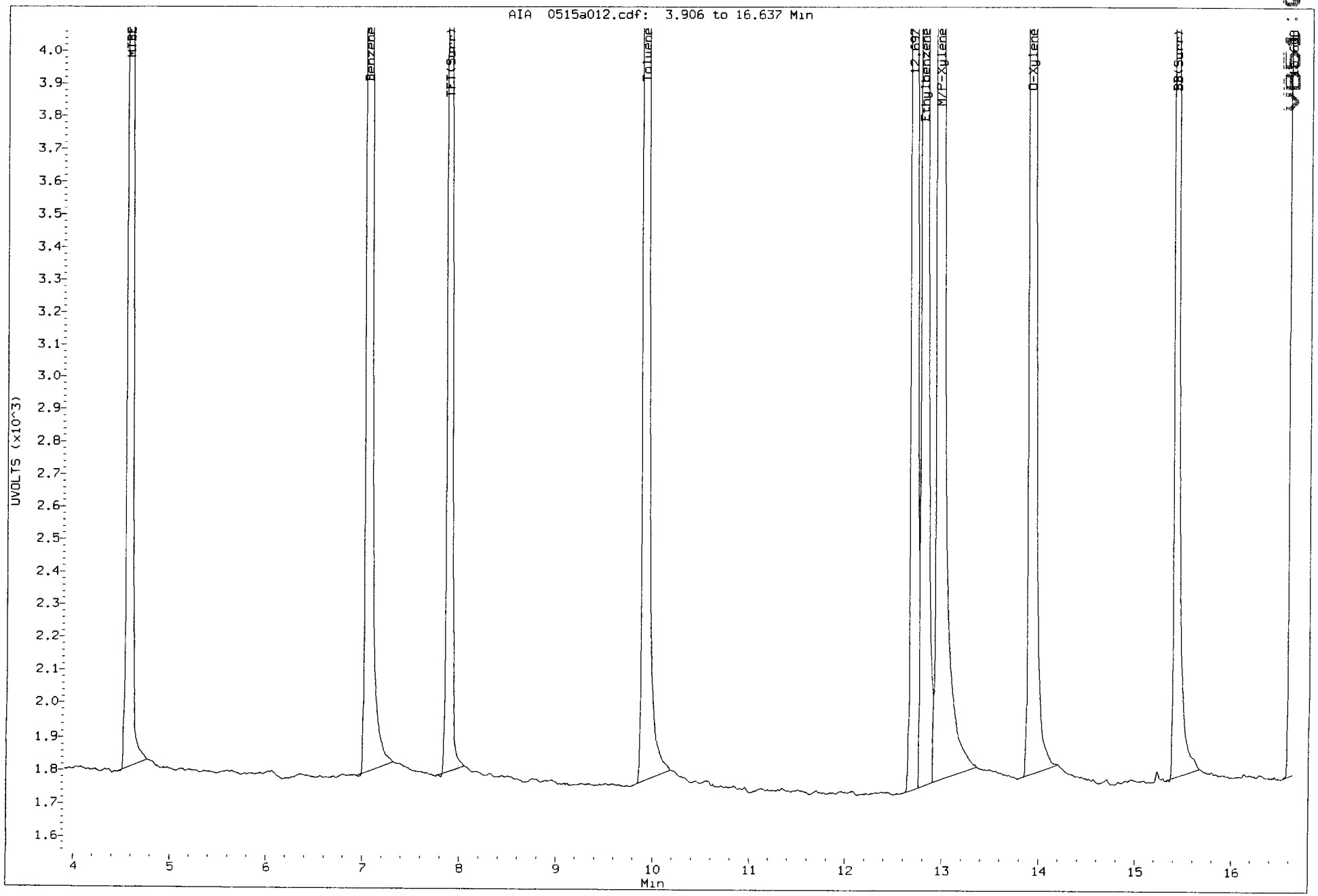
Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a012.d/0515a012.cdf
Injection Date: 15-MAY-2012 15:44
Instrument: pid1.i
Client Sample ID:

VB5[illegible] 008345



Before JW 5/16/12

Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a012.d/0515a012.cdf
Injection Date: 15-MAY-2012 15:44
Instrument: pid1.i
Client Sample ID:



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a013.d ARI ID: B50
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a013.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 16:13
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.876	-0.001	3949	49229	134.2	TFT(Surr)
15.404	-0.002	2595	21343	136.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	436780	1.280
8015C 2MP-TMB	(4.20 to 16.22)	678311	436355	0.643
AK101 nC6-nC10	(4.70 to 15.12)	538315	405502	0.753
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	437314	1.216

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.883	-0.002	5028	135.3	TFT(Surr)
15.413	0.000	11151	136.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.047	-0.003	12254	49.94N	Benzene
9.913	-0.004	10913	49.85N	Toluene
12.806	-0.004	9732	49.83	Ethylbenzene
12.967	0.000	21327	99.24	M/P-Xylene
13.918	-0.002	8453	49.71	O-Xylene
4.567	0.000	4377	49.82N	MTBE

JW 5/16/12

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a013.d

Date : 15-MAY-2012 16:13

Client ID:

Sample Info: B50

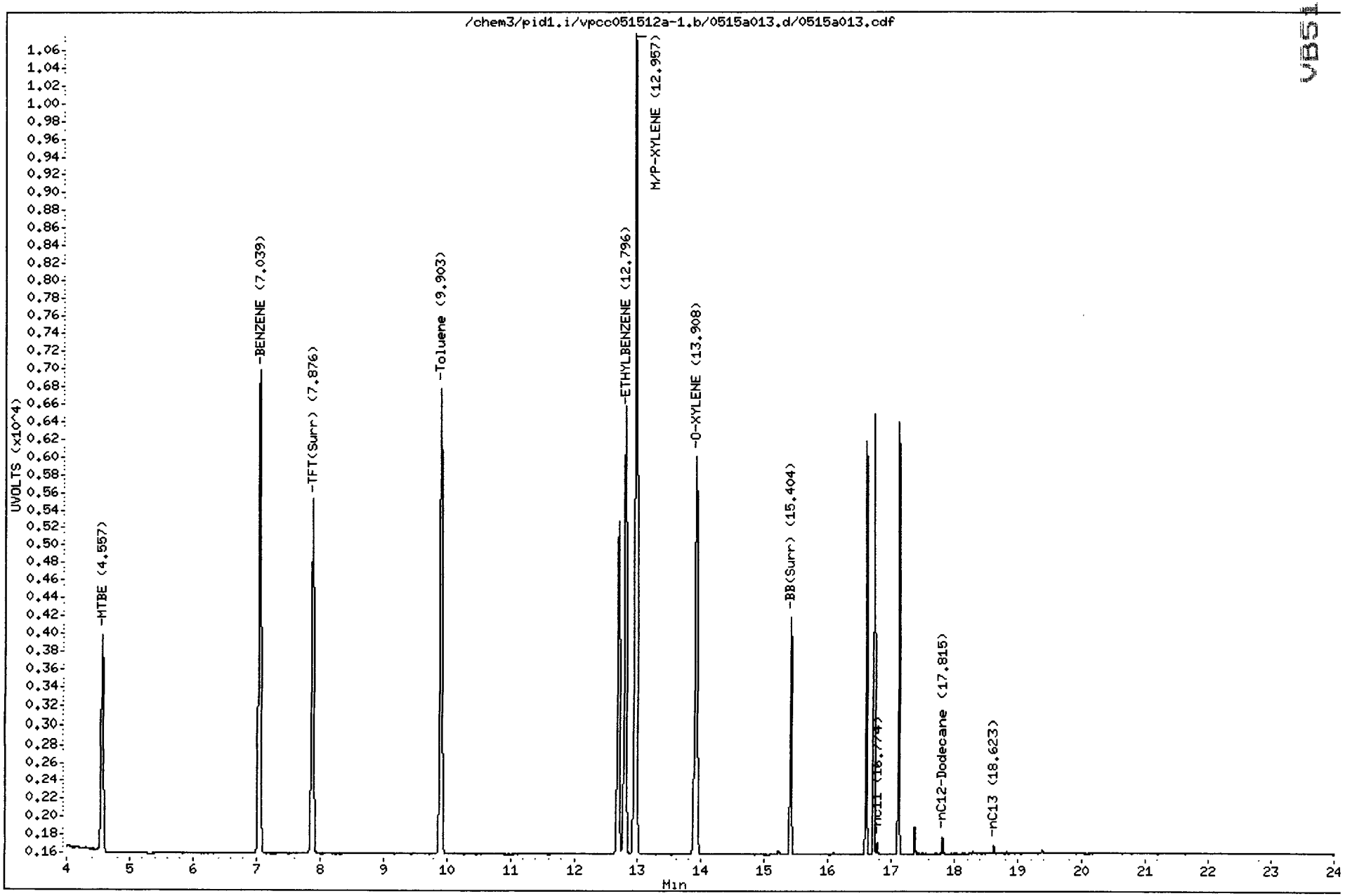
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51 : 00848



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a013.d

Page 1

Date : 15-MAY-2012 16:13

Client ID:

Instrument: pid1.i

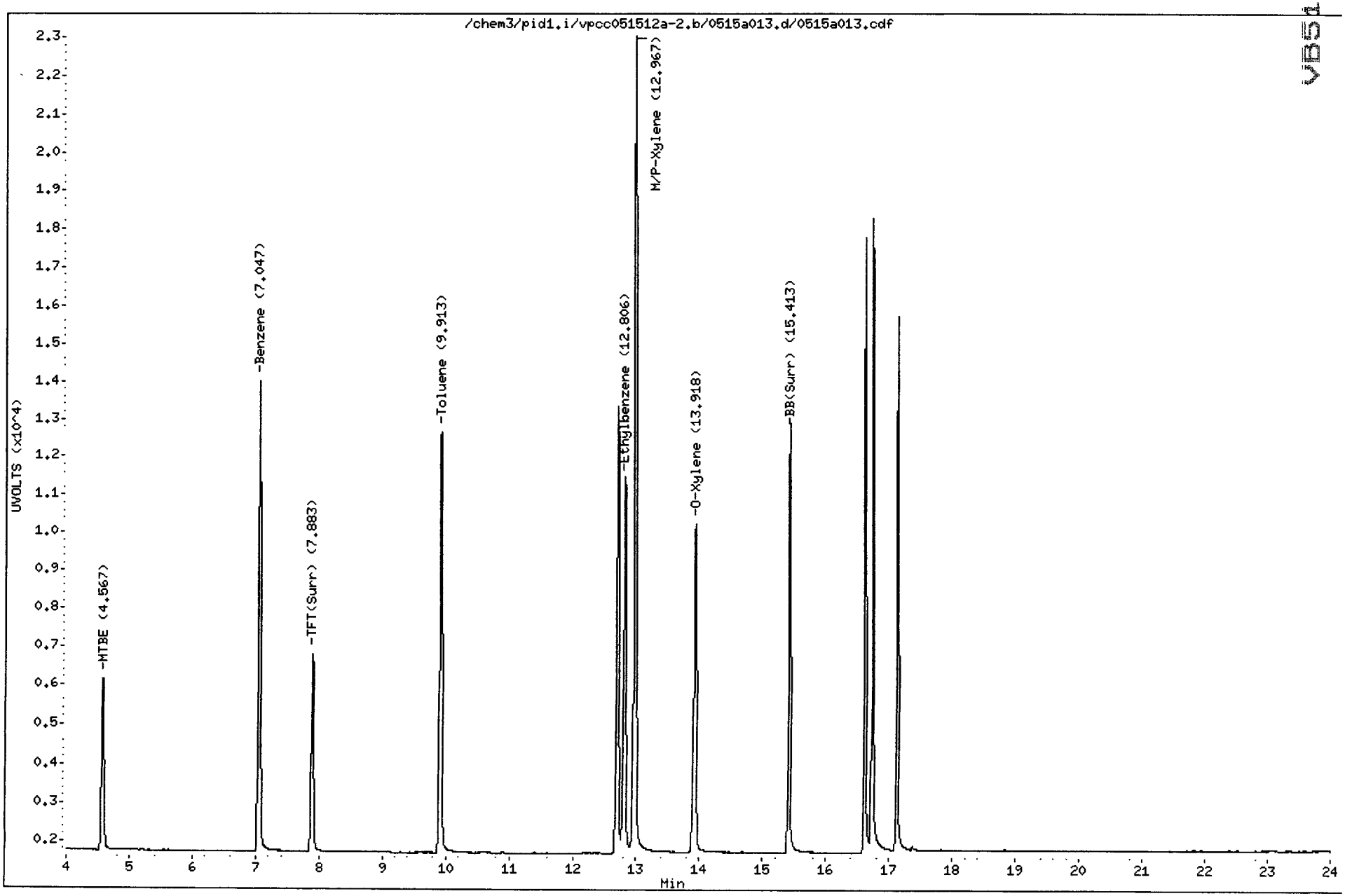
Sample Info: B50

Operator: JW

Column phase: RTX 502-2 PID

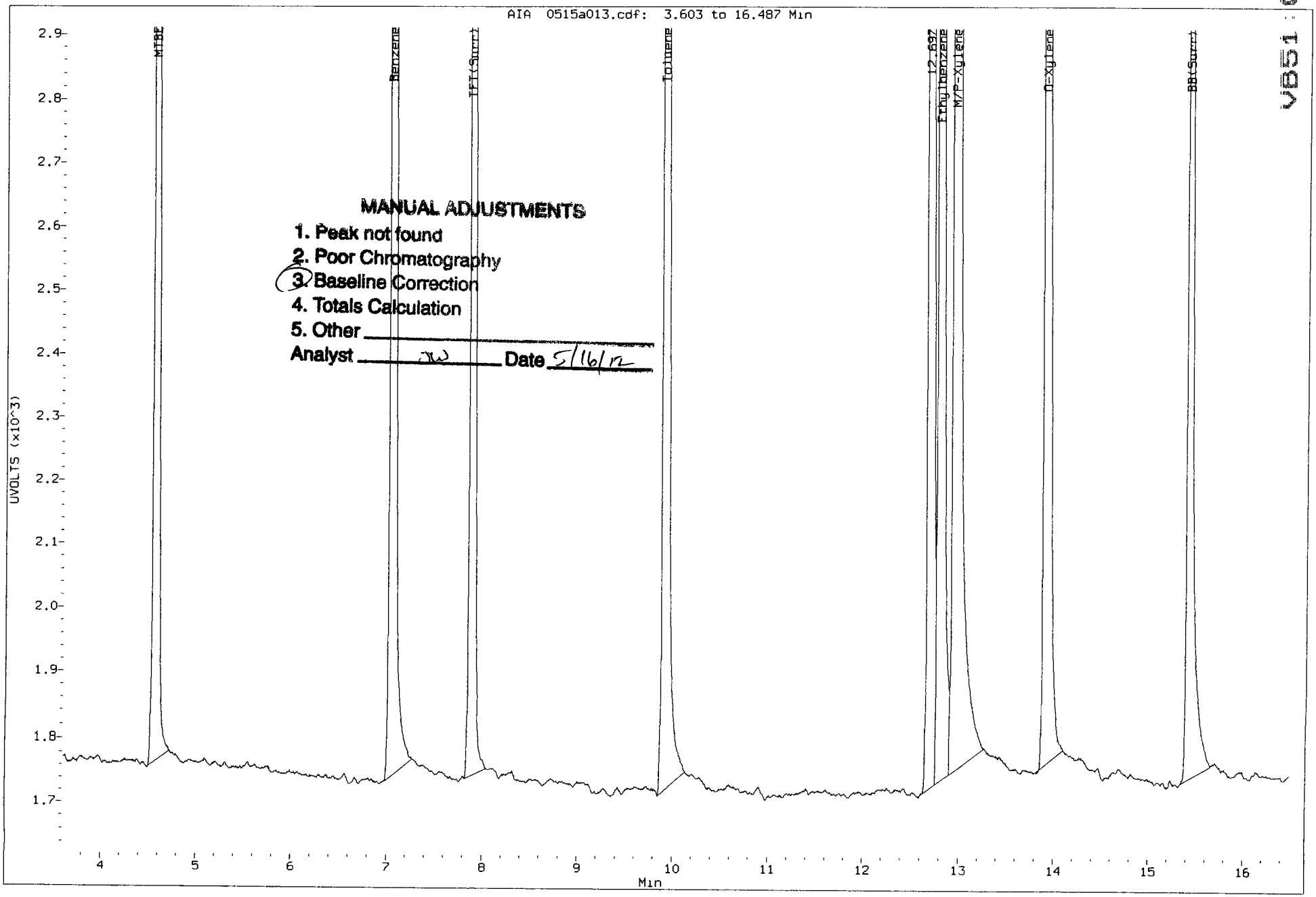
Column diameter: 0.18

VB51-60819



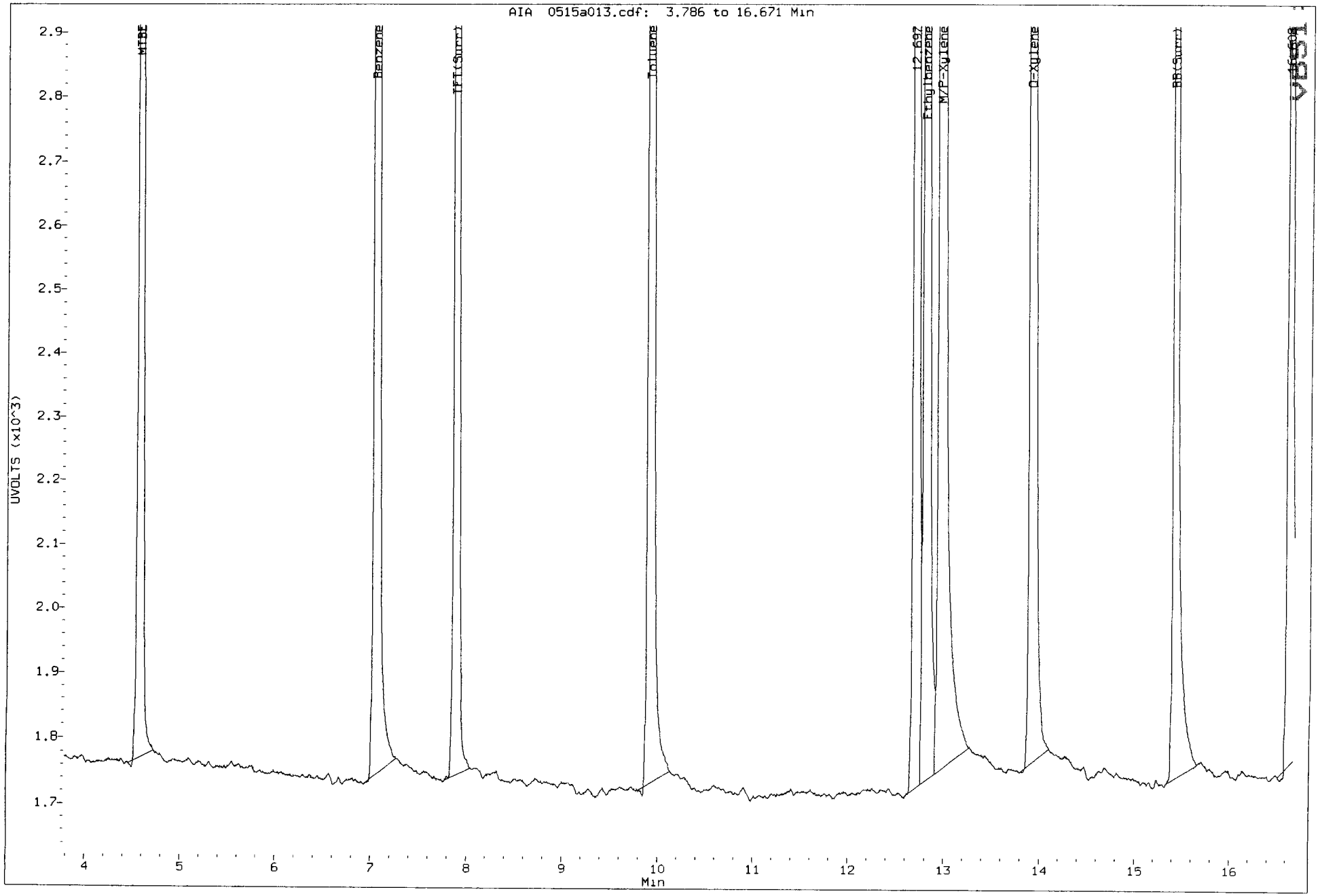
Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a013.d/0515a013.cdf
Injection Date: 15-MAY-2012 16:13
Instrument: pid1.i
Client Sample ID:

VB51 60850



Before
SD
5/16/12

Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a013.d/0515a013.cdf
Injection Date: 15-MAY-2012 16:13
Instrument: pid1.i
Client Sample ID:



00851

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a014.d ARI ID: B25
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a014.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 16:42
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.000	2687	33722	93.4	TFT(Surr)
15.405	-0.001	1691	14213	91.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	217042	0.636
8015C 2MP-TMB	(4.20 to 16.22)	678311	216863	0.320
AK101 nC6-nC10	(4.70 to 15.12)	538315	201866	0.375
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	217451	0.605

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.883	-0.002	3338	89.9	TFT(Surr)
15.413	0.000	7143	87.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.047	-0.003	5889	24.01N	Benzene
9.913	-0.004	5217	23.84N	Toluene
12.805	-0.005	4673	23.93	Ethylbenzene
12.966	-0.001	10216	47.54	M/P-Xylene
13.917	-0.003	4060	23.88N	O-Xylene
4.567	0.000	2084	23.73N	MTBE

JW 5/16/12

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a014.d

Page 1

Date : 15-MAY-2012 16:42

Client ID:

Instrument: pid1.i

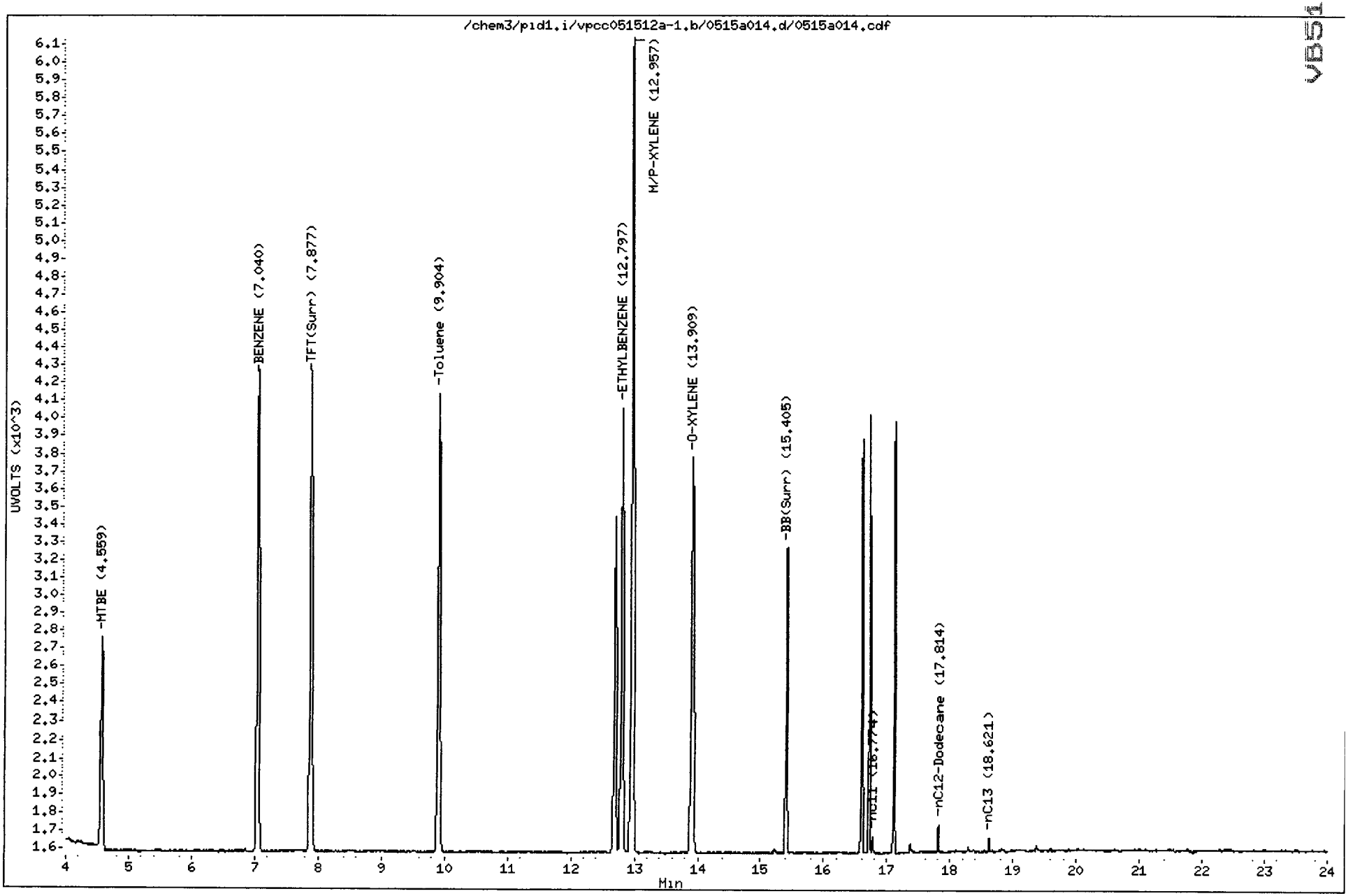
Sample Info: B25

Operator: JW

Column phase: RTX 502-2 FID

Column diameter: 0.18

VB51 : 6853



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a014.d

Date : 15-MAY-2012 16:42

Client ID:

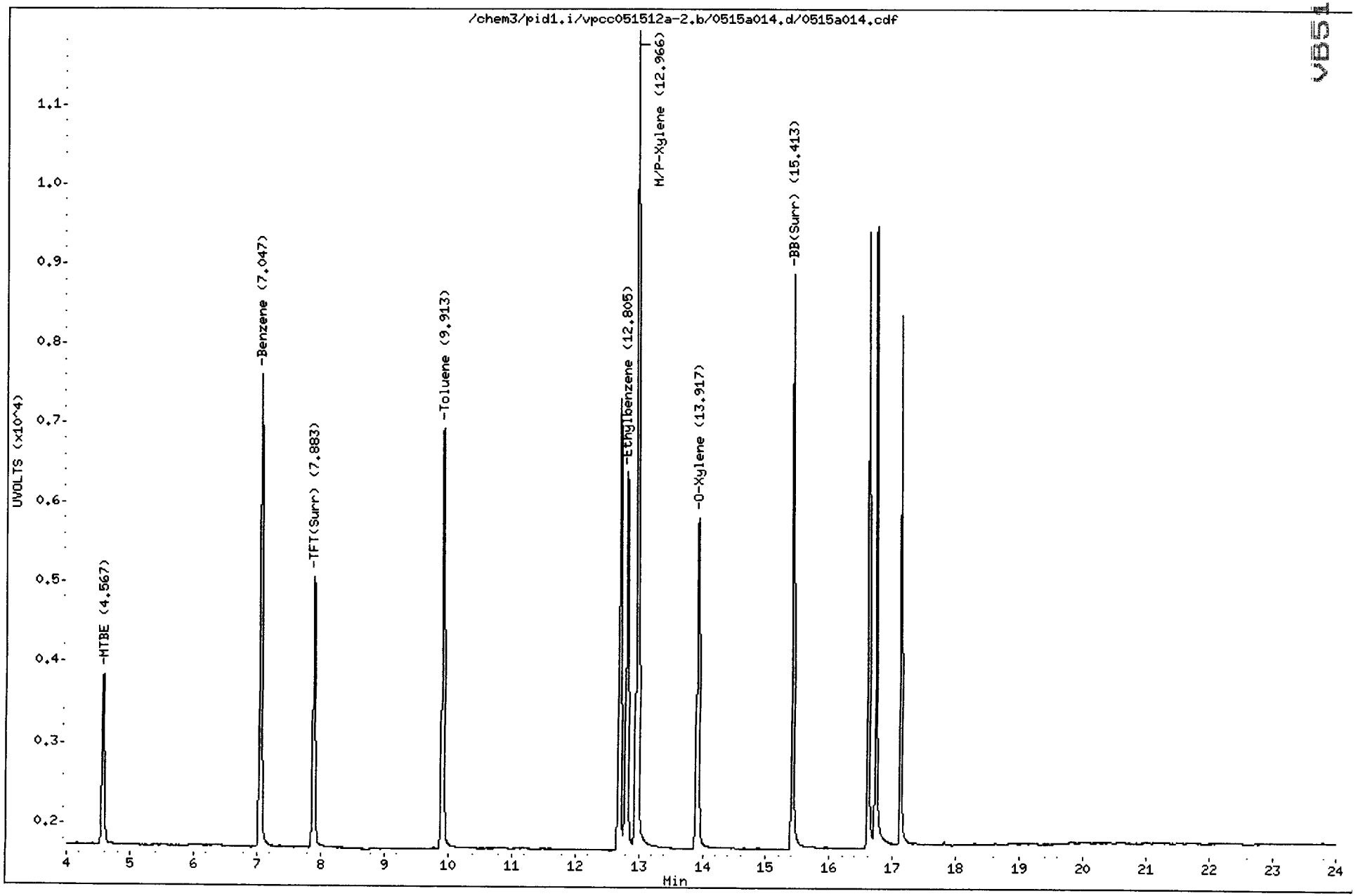
Sample Info: B25

Column phase: RTX 502-2 PID

Instrument: pid1.i

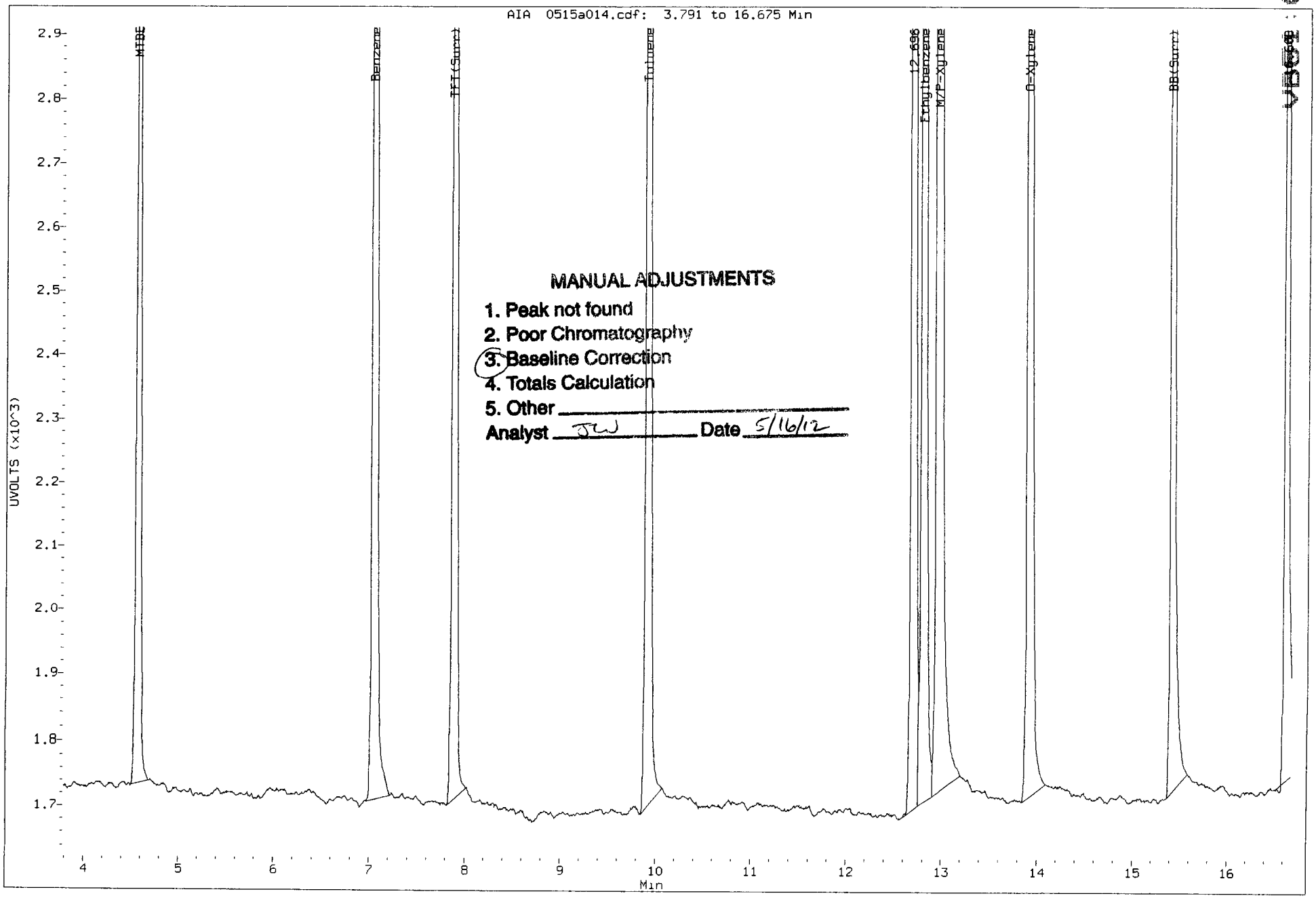
Operator: JW

Column diameter: 0.18



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a014.d/0515a014.cdf
Injection Date: 15-MAY-2012 16:42
Instrument: pid1.i
Client Sample ID:

00855



MANUAL ADJUSTMENTS

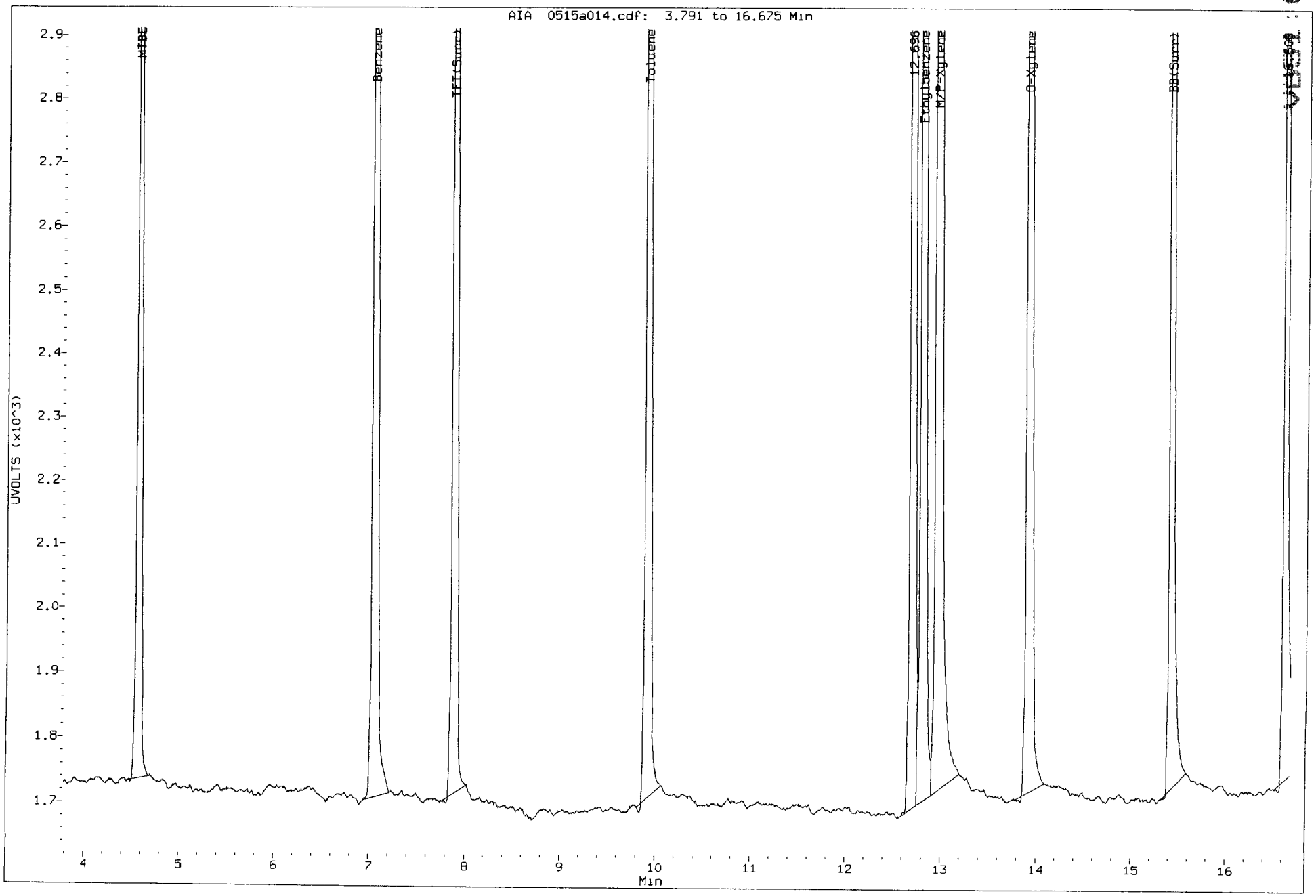
1. Peak not found
2. Poor Chromatography
3. Baseline Correction
4. Totals Calculation
5. Other _____

Analyst JW Date 5/16/12

Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a014.d/0515a014.cdf
Injection Date: 15-MAY-2012 16:42
Instrument: pid1.i
Client Sample ID:

Before JW 5/16/12

00856



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a015.d ARI ID: B5
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a015.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 17:11
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.000	1967	24716	68.1	TFT(Surr)
15.405	-0.002	1294	10760	69.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	48329	0.142
8015C 2MP-TMB	(4.20 to 16.22)	678311	47589	0.070
AK101 nC6-nC10	(4.70 to 15.12)	538315	44339	0.082
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	48329	0.134

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.002	2409	64.9	TFT(Surr)
15.413	0.000	5372	65.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.047	-0.003	1217	4.97N	Benzene
9.913	-0.004	1083	4.95N	Toluene
12.806	-0.004	960	4.92	Ethylbenzene
12.966	-0.001	2092	9.74	M/P-Xylene
13.917	-0.003	820	4.82N	O-Xylene
4.567	0.000	435	4.96N	MTBE

JW 5/16/12

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a015.d

Date : 15-MAY-2012 17:11

Client ID:

Sample Info: B5

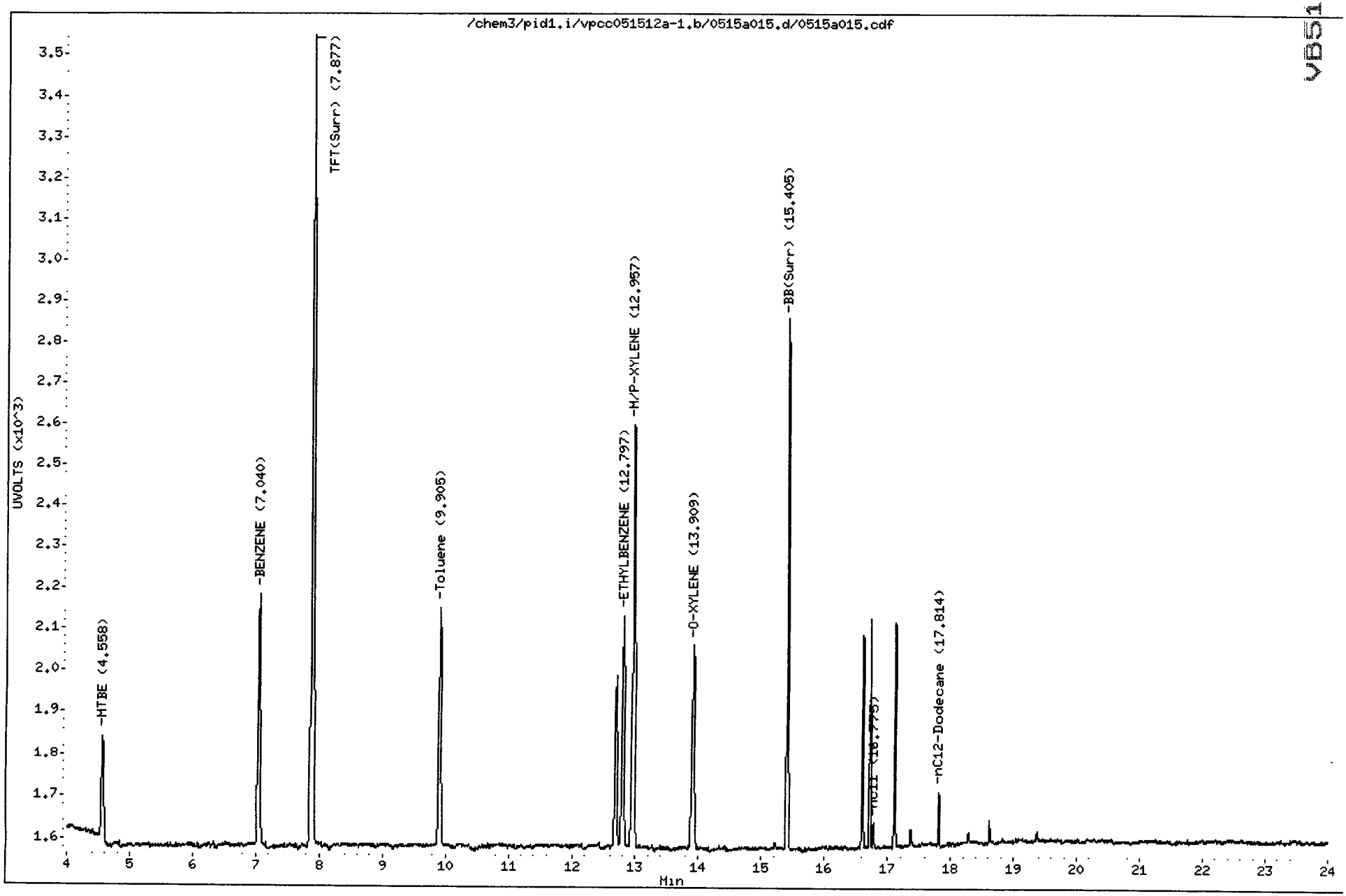
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51 00858



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a015.d

Date : 15-MAY-2012 17:11

Client ID:

Sample Info: B5

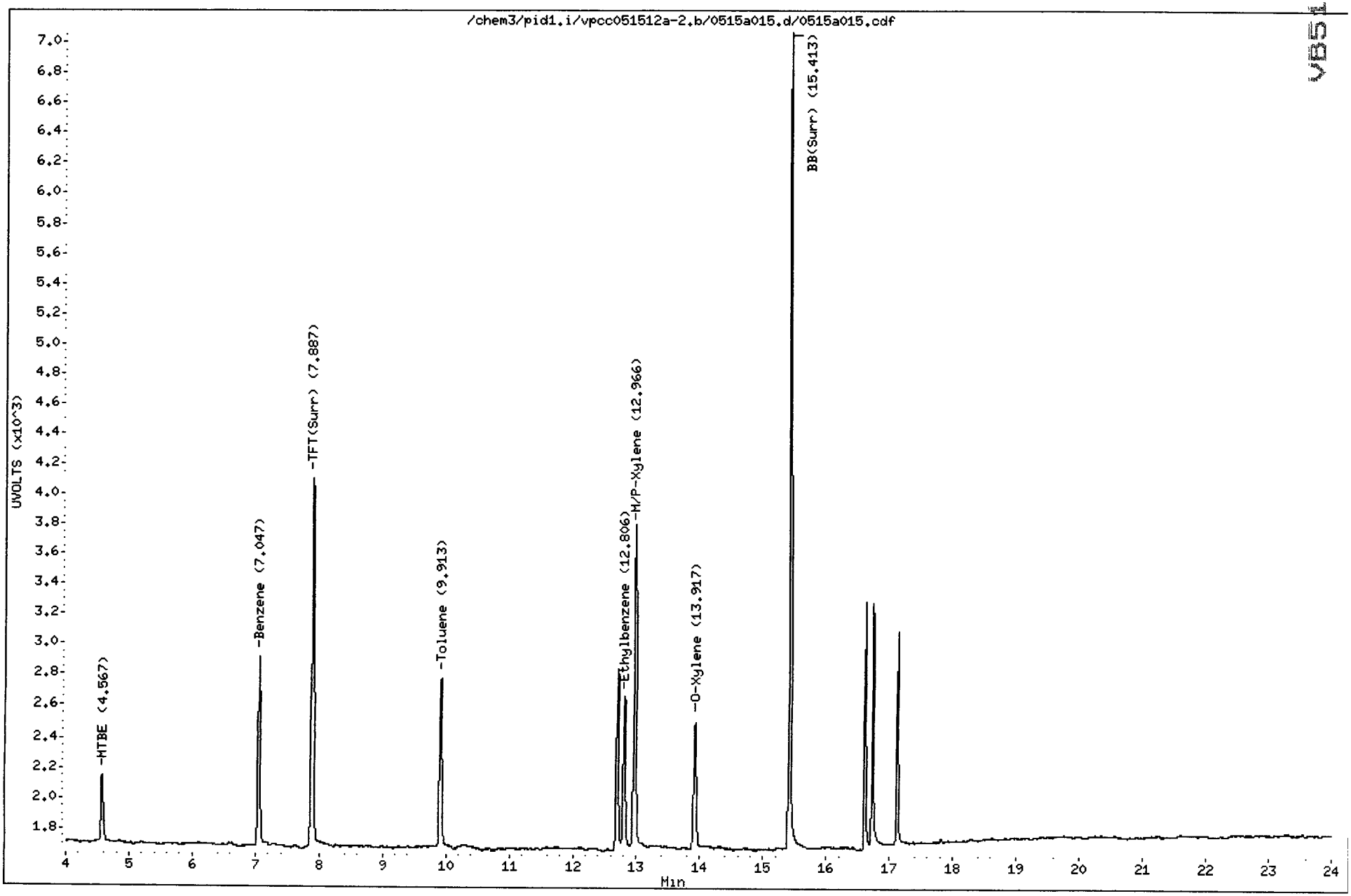
Column phase: RTX 502-2 PID

Instrument: pid1.i

Operator: JW

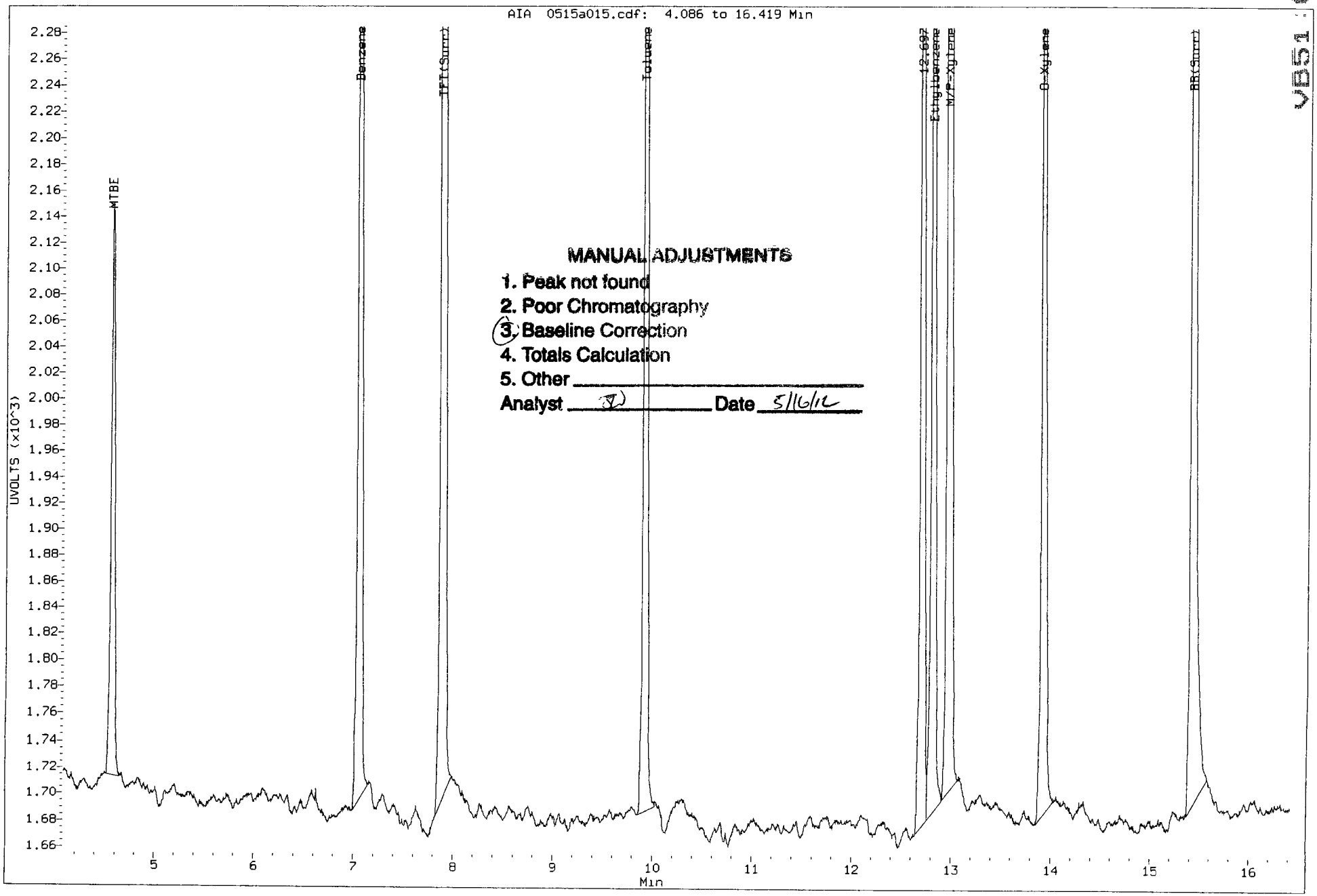
Column diameter: 0.18

VB51 00859



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a015.d/0515a015.cdf
Injection Date: 15-MAY-2012 17:11
Instrument: pid1.i
Client Sample ID:

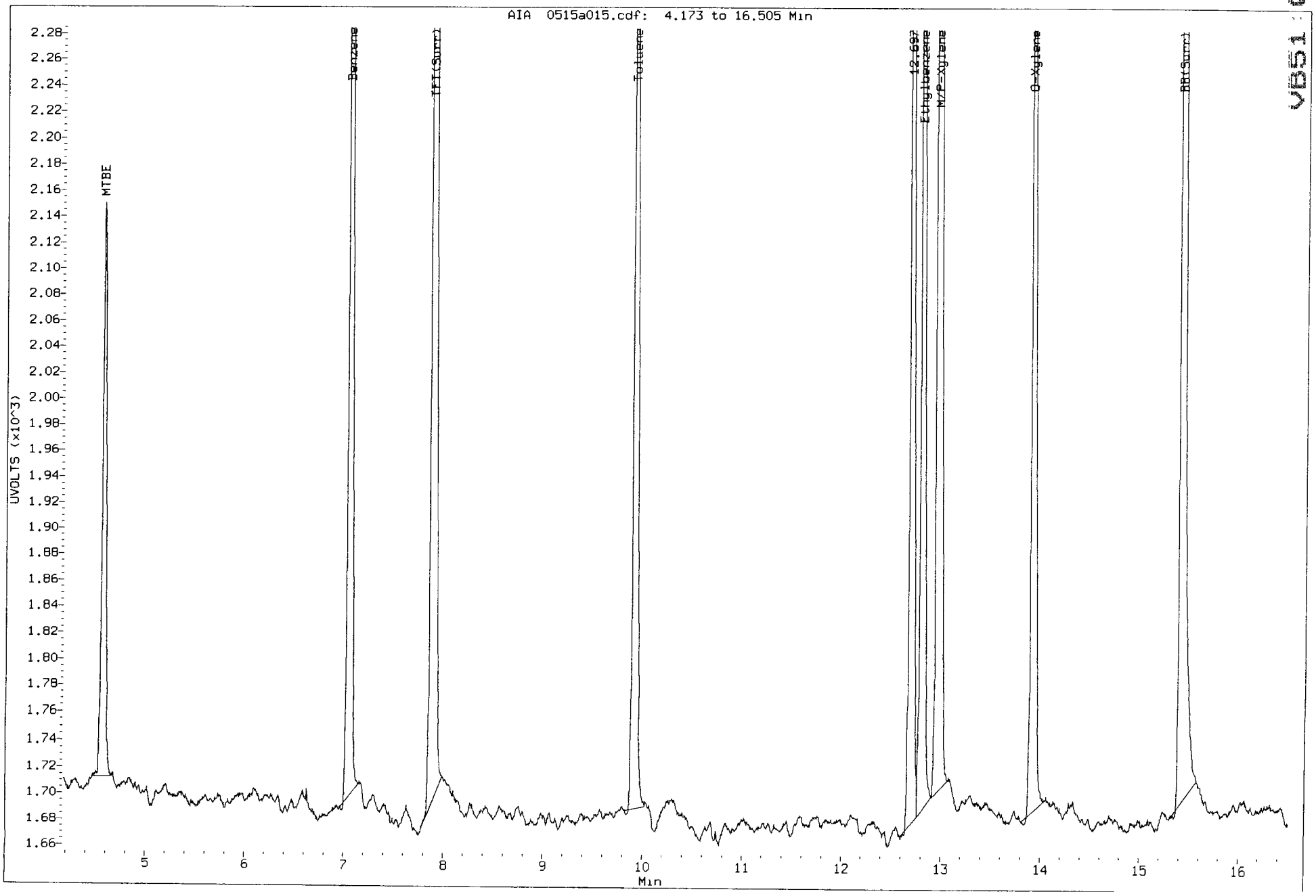
VB51 00869



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a015.d/0515a015.cdf
Injection Date: 15-MAY-2012 17:11
Instrument: pid1.i
Client Sample ID:

Before JW 5/16/12

VB51 00861



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a016.d ARI ID: B0.50
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a016.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 17:40
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.000	1371	17249	45.7	TFT(Surr)
15.405	-0.002	889	7539	45.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	6034	0.018 M
8015C 2MP-TMB	(4.20 to 16.22)	678311	5159	0.008 M
AK101 nC6-nC10	(4.70 to 15.12)	538315	4910	0.009 M
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	6034	0.017 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.883	-0.002	1644	44.3	TFT(Surr)
15.413	0.000	3647	44.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.047	-0.003	128	0.52N	Benzene
9.913	-0.004	103	0.48N	Toluene
12.807	-0.003	101	0.51N	Ethylbenzene
12.967	0.000	218	1.01N	M/P-Xylene
13.920	0.000	81	0.48N	O-Xylene
4.563	-0.004	41	0.47N	MTBE

JW 5/16/12

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a016.d

Date : 15-MAY-2012 17:40

Client ID:

Sample Info: B0.50

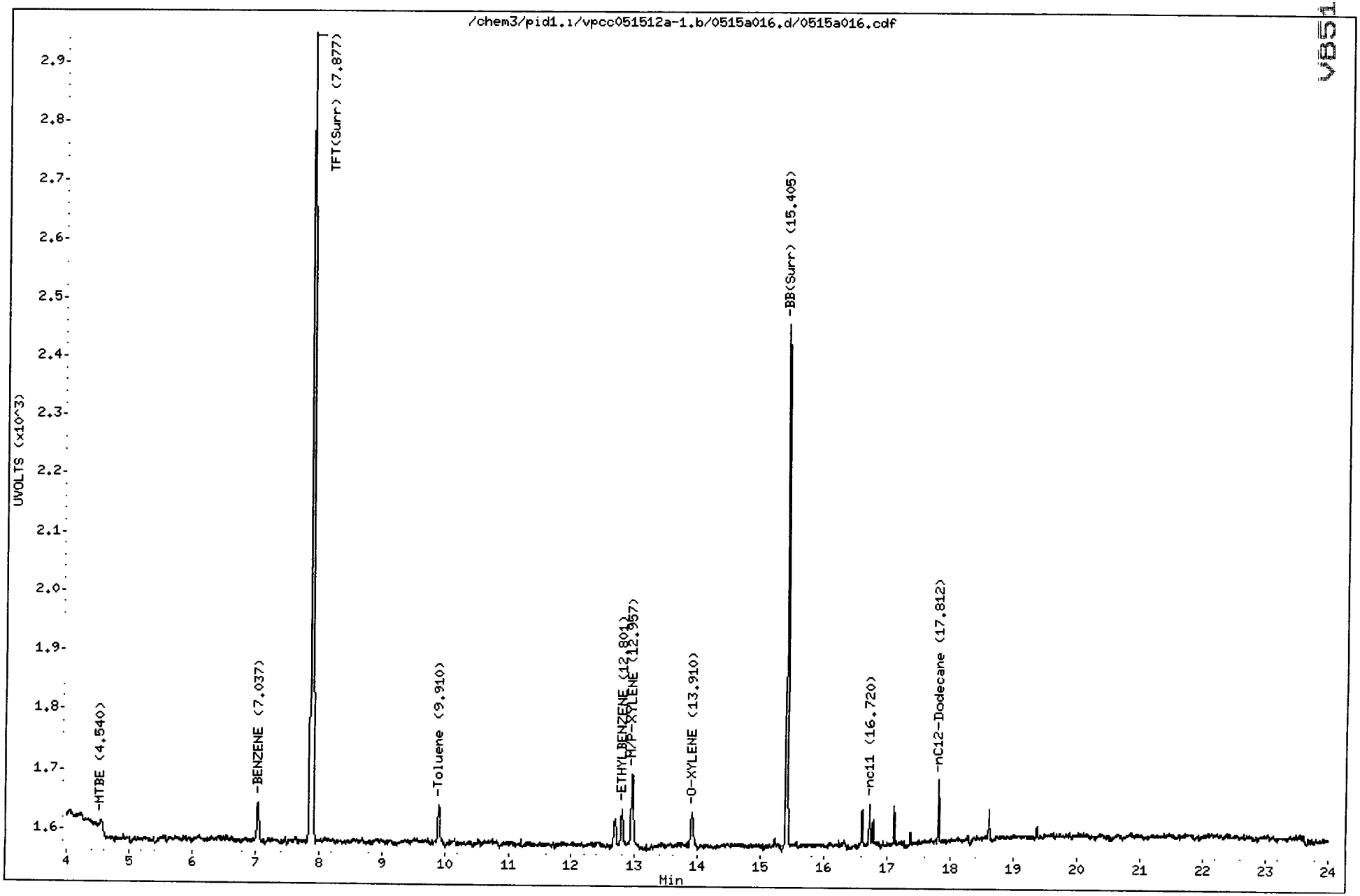
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51 : 00863



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a016.d

Date : 15-MAY-2012 17:40

Client ID:

Sample Info: B0.50

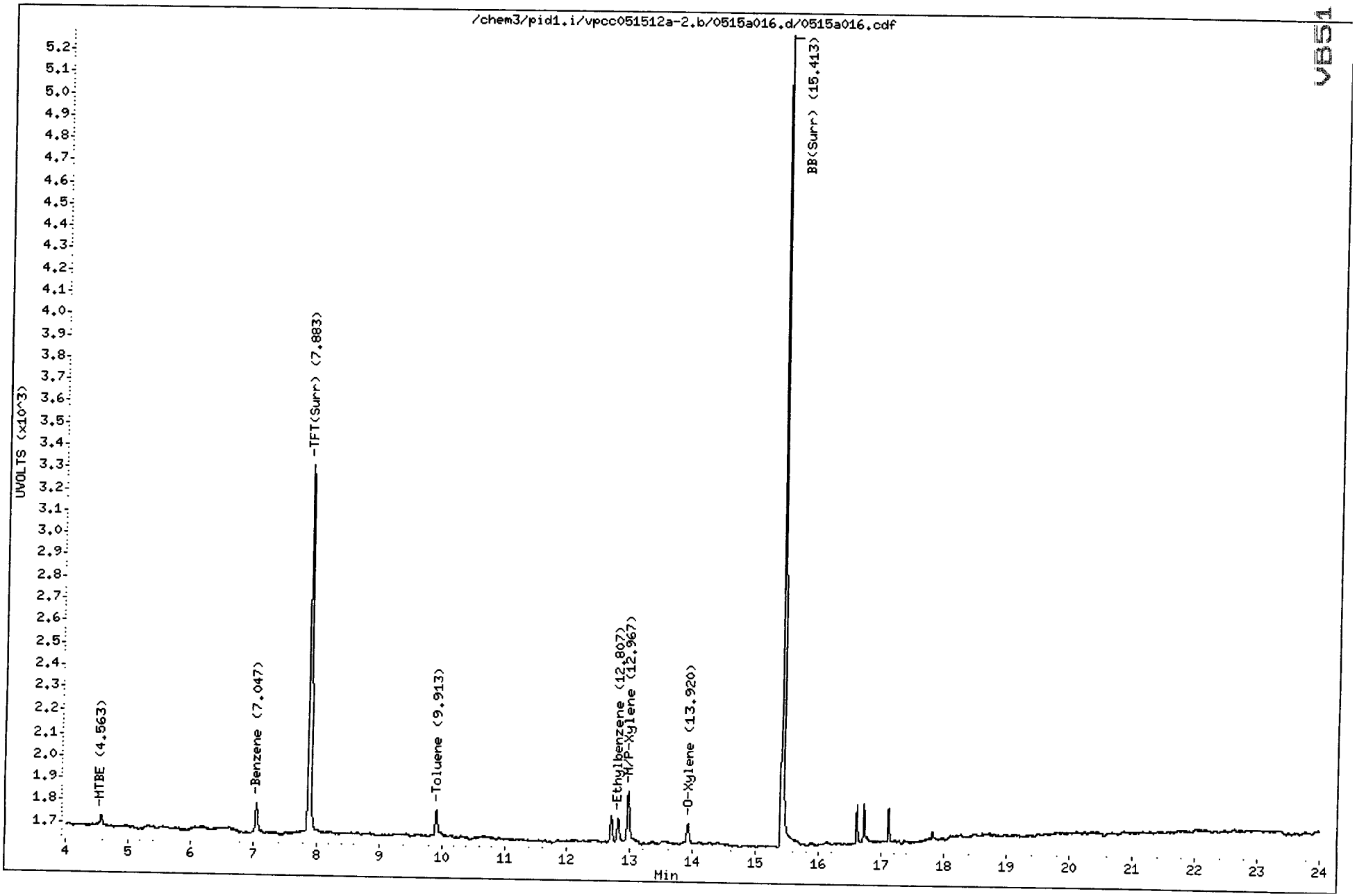
Column phase: RTX 502-2 PID

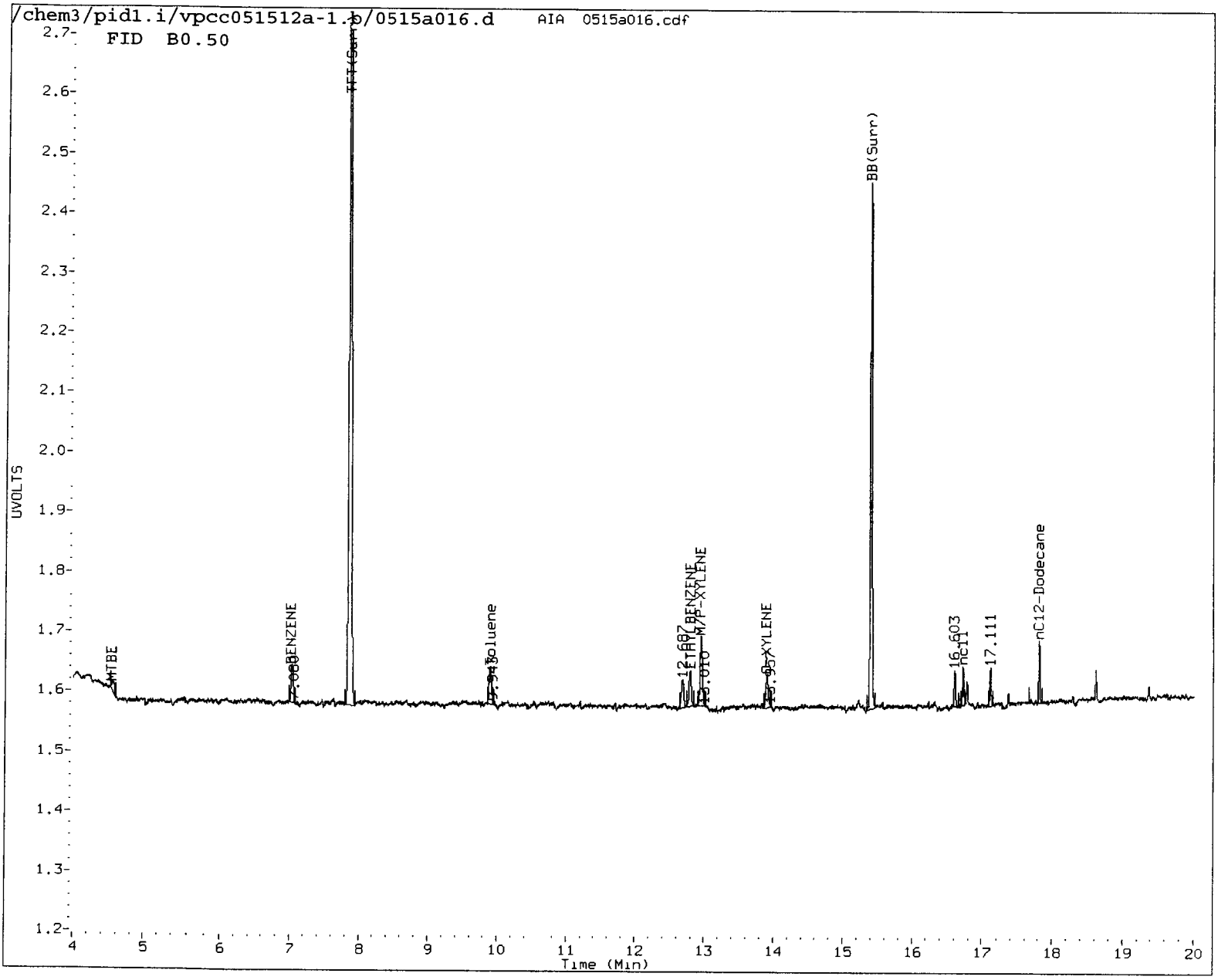
Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51 : 00864





MANUAL INTEGRATION

(1) Baseline correction
2. Poor chromatography
(3) Peak not found
4. Totals calculation

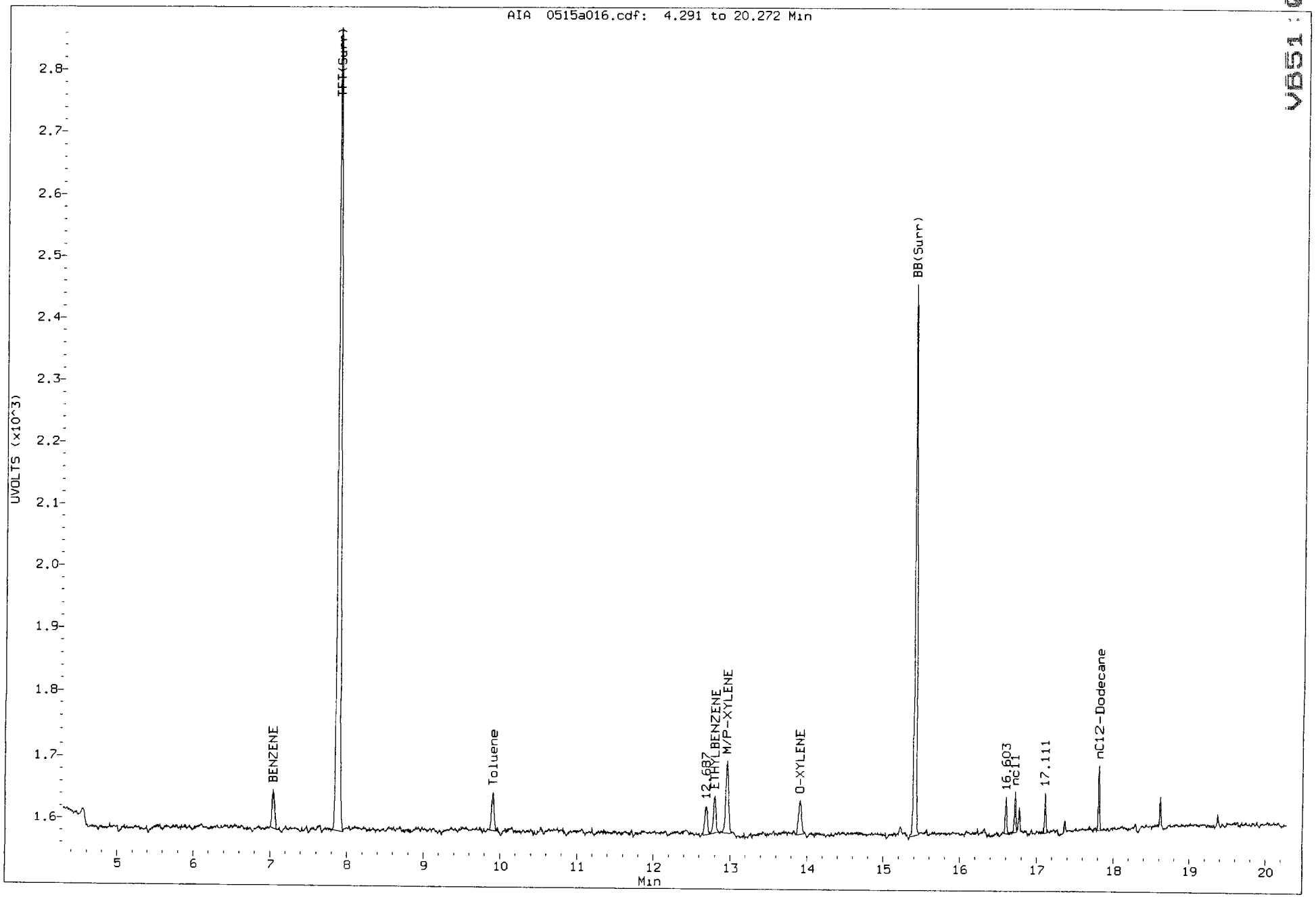
5. Other _____

Analyst: JC Date: 5/16/12

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a016.d/0515a016.cdf
Injection Date: 15-MAY-2012 17:40
Instrument: pid1.i
Client Sample ID:

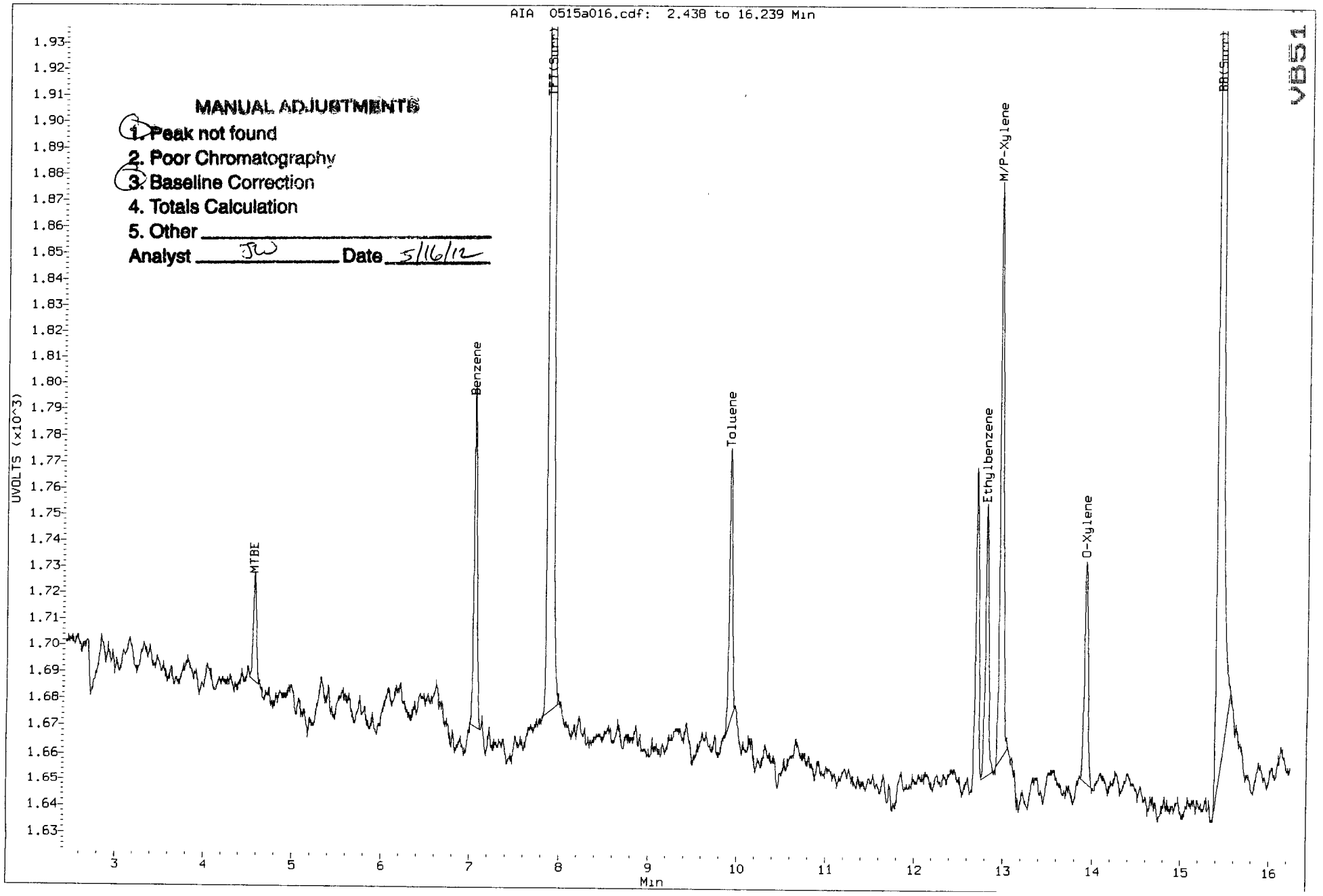
Before JW 5/16/12

VB51 00865



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a016.d/0515a016.cdf
Injection Date: 15-MAY-2012 17:40
Instrument: pid1.i
Client Sample ID:

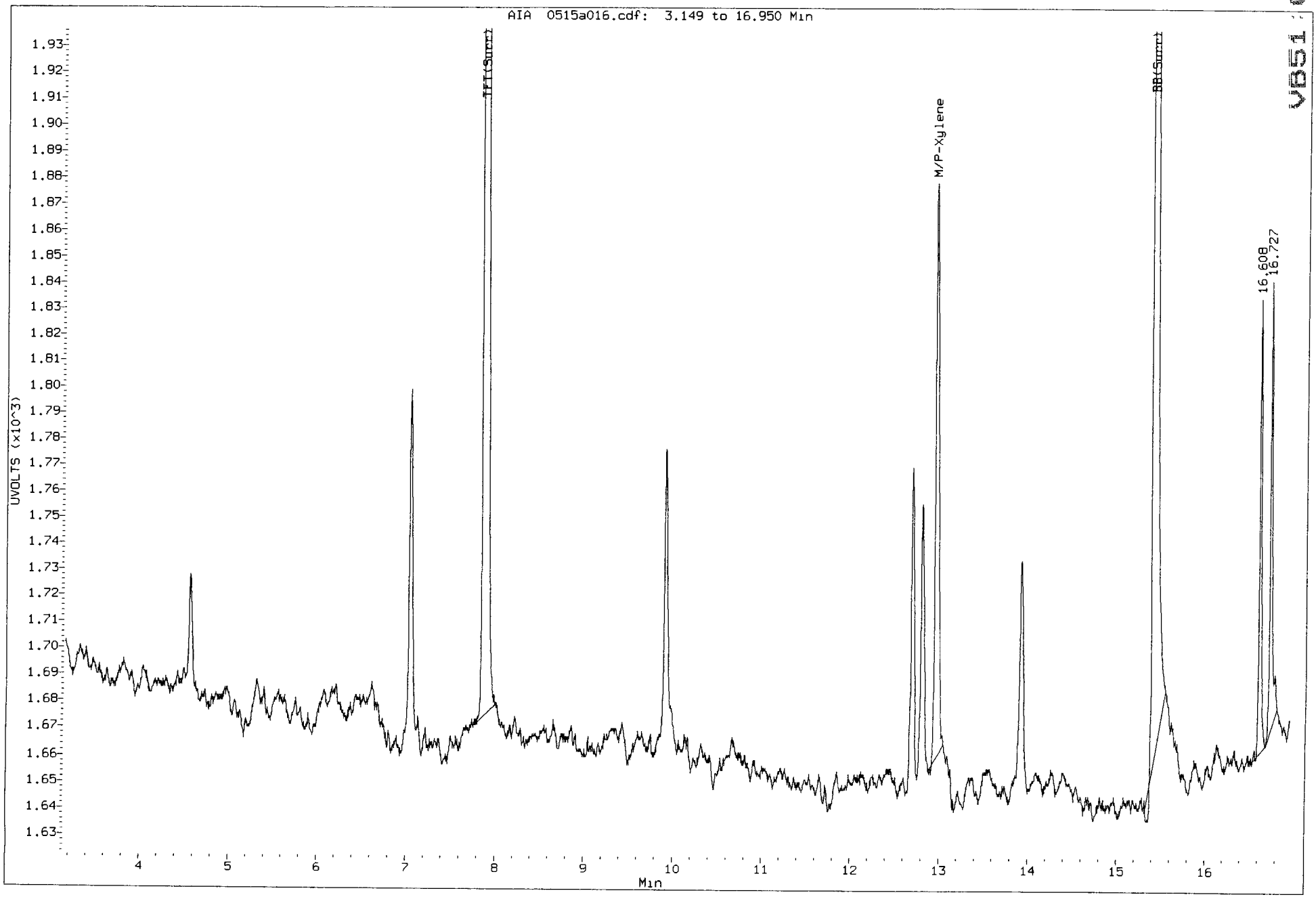
VB51 00867



Before
BW
5/16/12

Data File: /chem3/pid1.1/vpcc051512a-2.b/0515a016.d/0515a016.cdf
Injection Date: 15-MAY-2012 17:40
Instrument: pid1.1
Client Sample ID:

VB51 00868



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a017.d ARI ID: B0.25
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a017.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 18:09
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.000	749	9365	25.0	TFT(Surr)
15.407	0.000	487	4152	25.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	2220	0.007 M
8015C 2MP-TMB	(4.20 to 16.22)	678311	2234	0.003 M
AK101 nC6-nC10	(4.70 to 15.12)	538315	2234	0.004 M
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	2220	0.006 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	0.000	868	23.4	TFT(Surr)
15.413	0.000	1928	23.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.050	0.000	66	0.26N	Benzene
9.917	0.000	57	0.26N	Toluene
12.810	0.000	44	0.23N	Ethylbenzene
12.967	0.000	107	0.50N	M/P-Xylene
13.920	0.000	41	0.24N	O-Xylene
4.567	0.000	17	0.20N	MTBE

JW 5/16/12

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a017.d

Date : 15-MAY-2012 18:09

Client ID:

Sample Info: B0.25

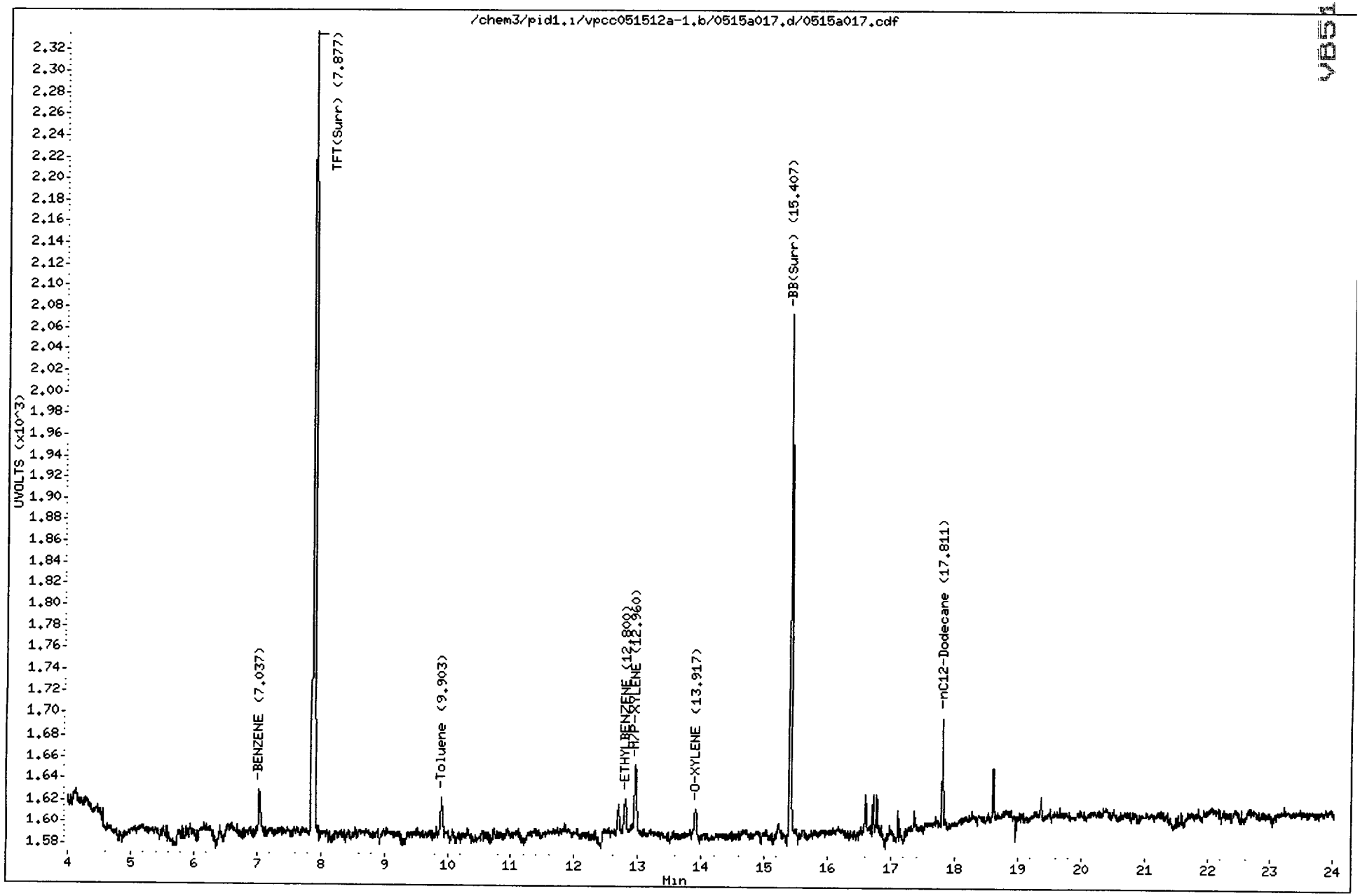
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51 000870



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a017.d

Date : 15-MAY-2012 18:09

Client ID:

Sample Info: B0.25

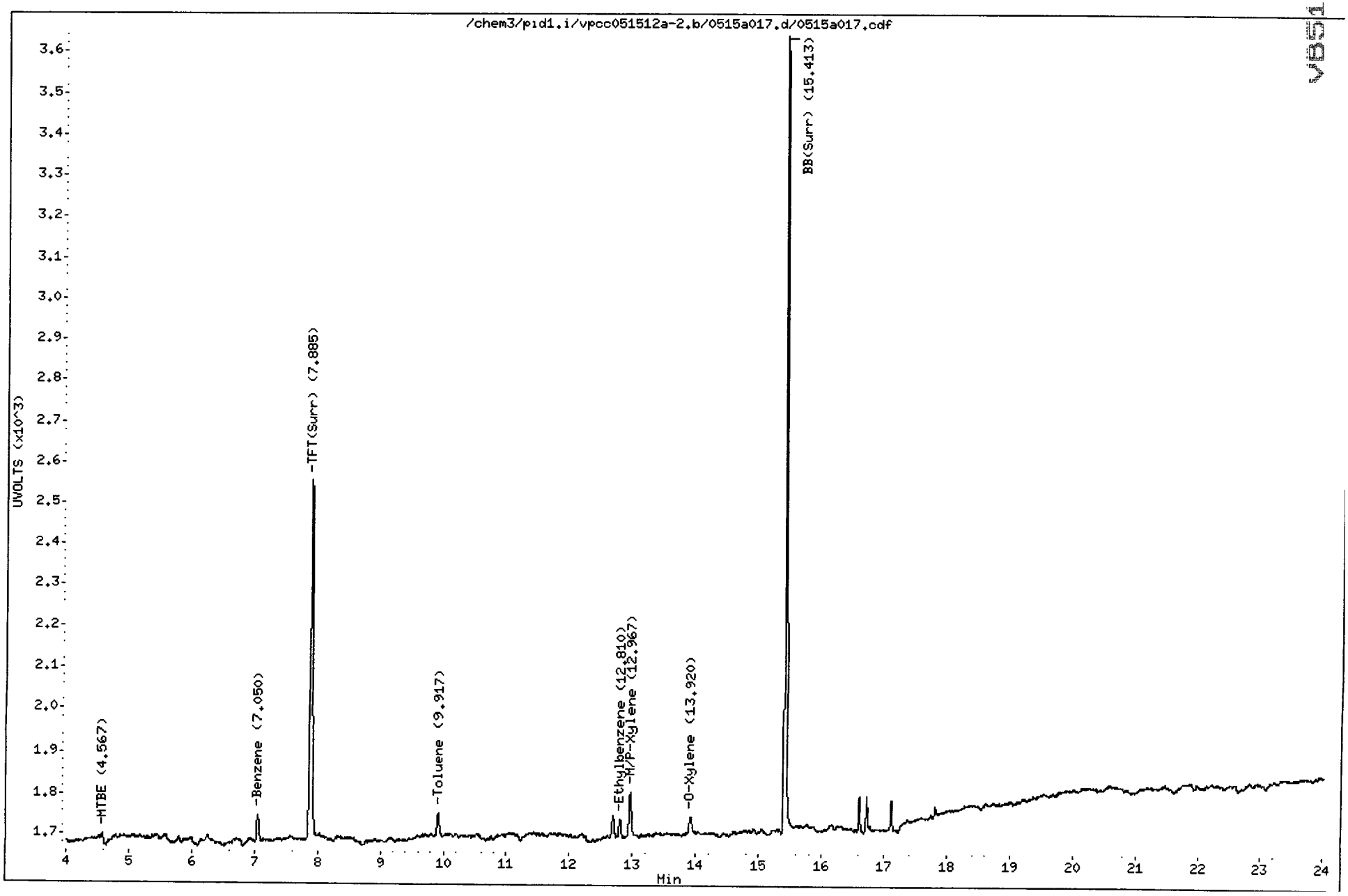
Column phase: RTX 502-2 PID

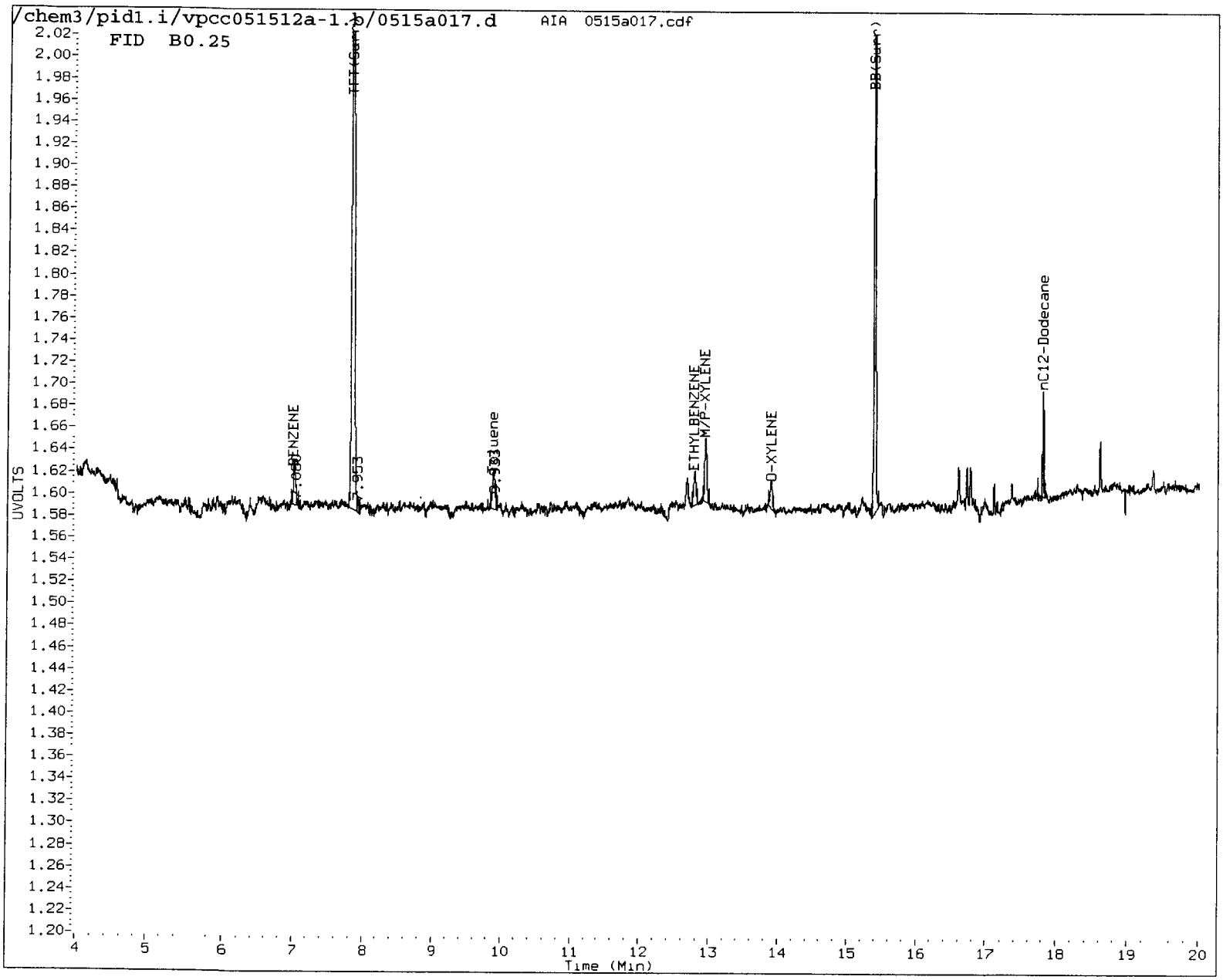
Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51 00871





MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

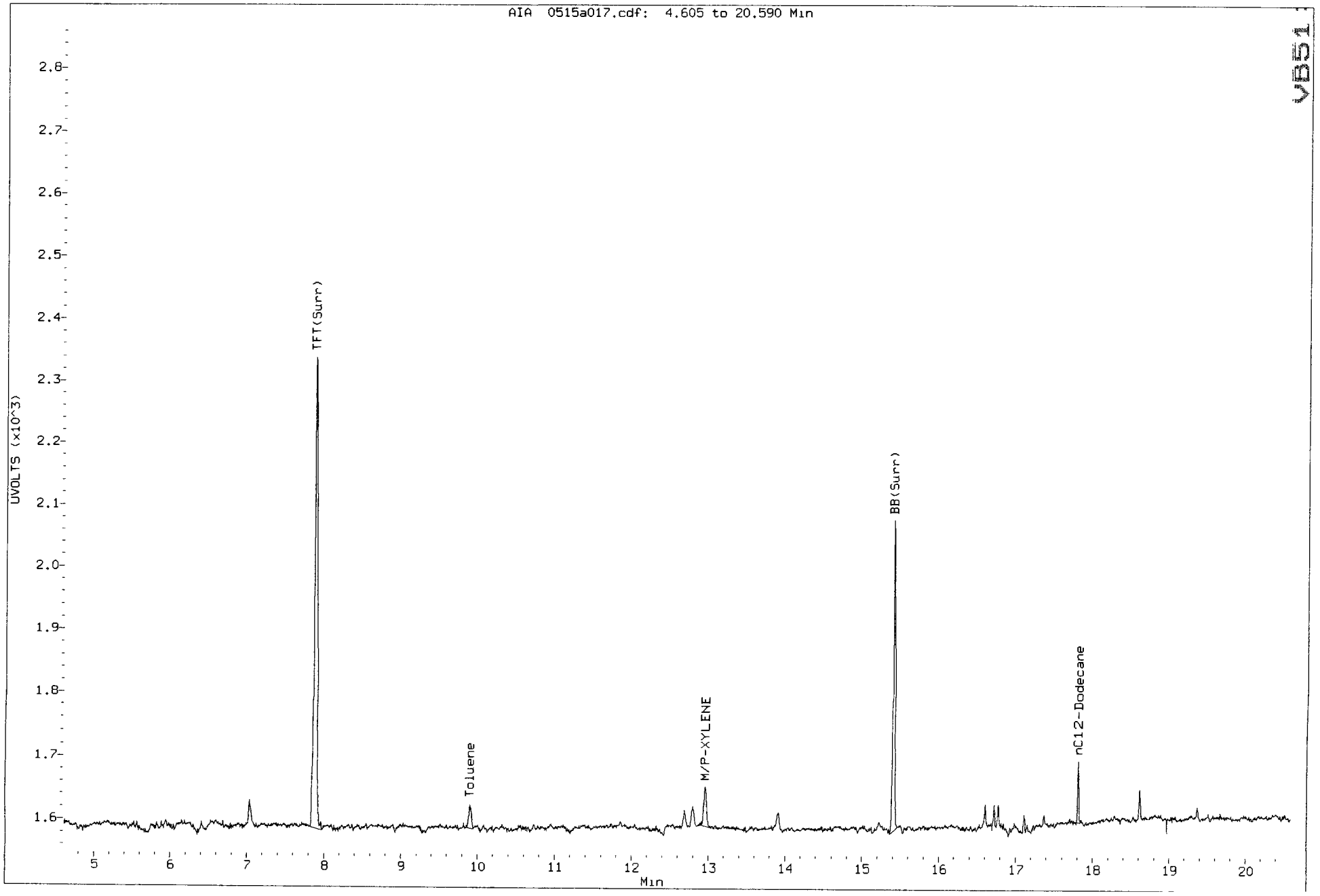
5. Other _____

Analyst: JLS Date: 5/16/12

Before JW 5/16/12

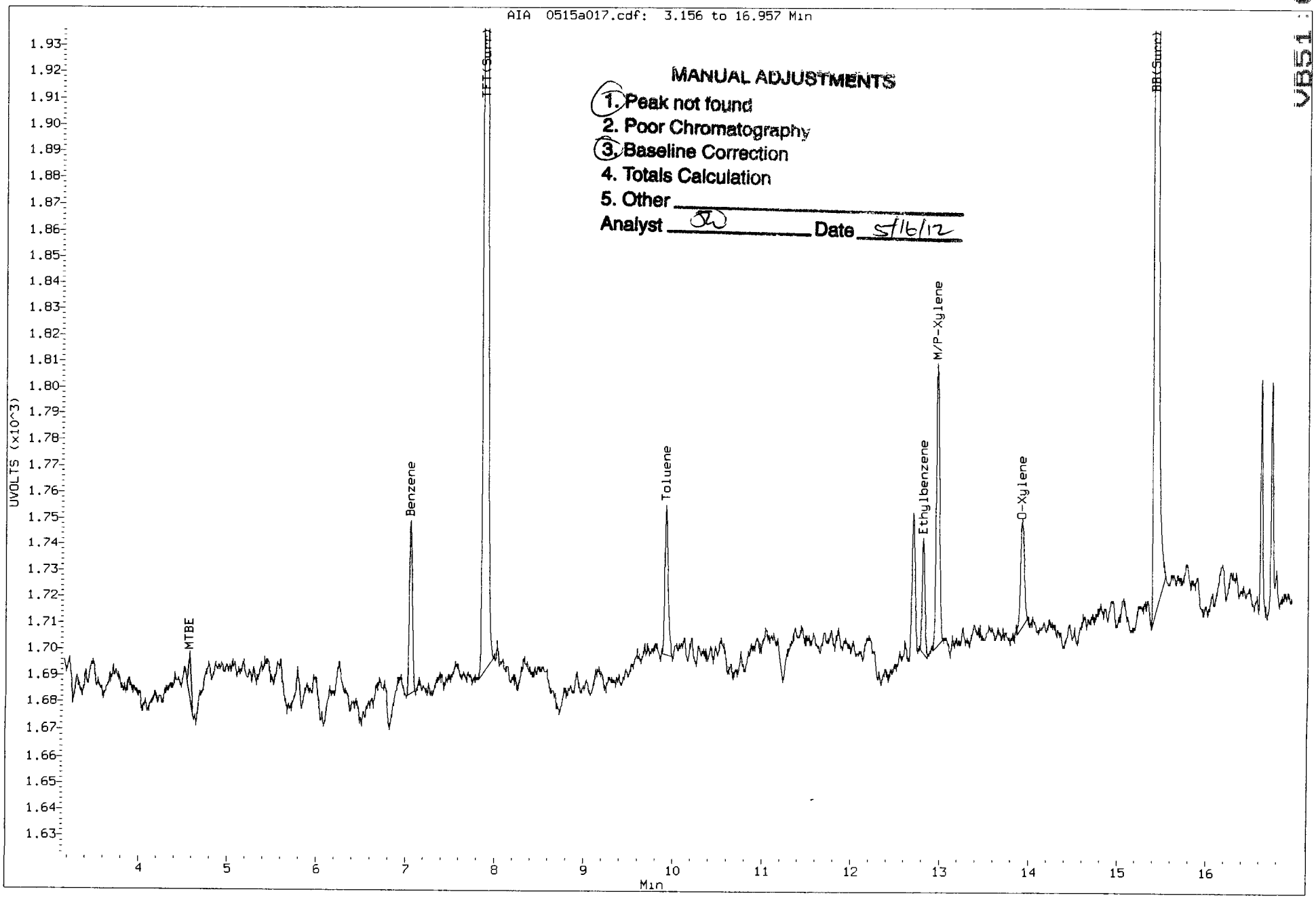
VB51 00873

Data File: /chem3/pid1.1/vpcc051512a-1.b/0515a017.d/0515a017.cdf
Injection Date: 15-MAY-2012 18:09
Instrument: pid1.1
Client Sample ID:



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a017.d/0515a017.cdf
Injection Date: 15-MAY-2012 18:09
Instrument: pid1.i
Client Sample ID:

VB51 000874



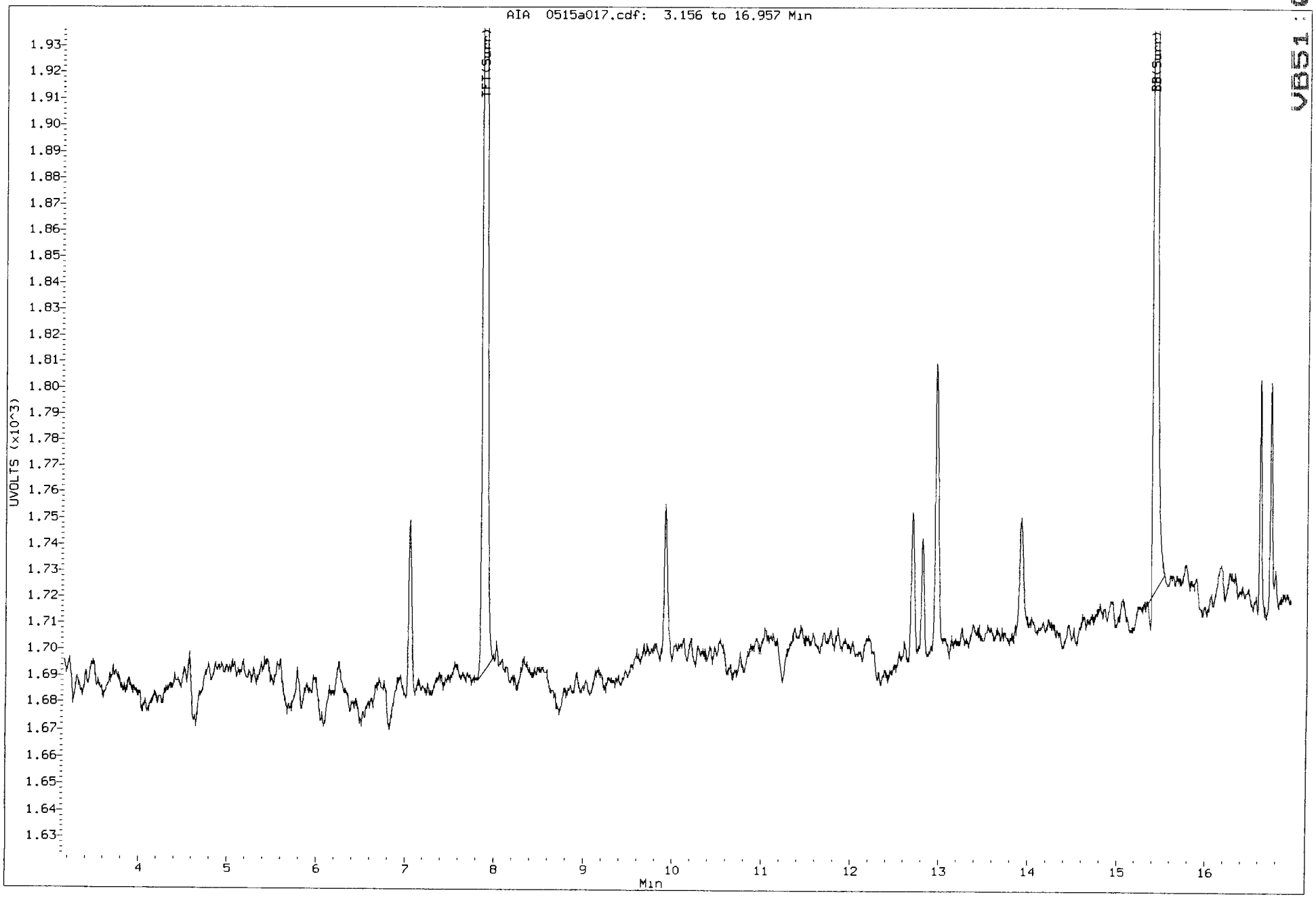
MANUAL ADJUSTMENTS

1. Peak not found
2. Poor Chromatography
3. Baseline Correction
4. Totals Calculation
5. Other _____

Analyst _____ Date 5/16/12

Before
JW
5/16/12

Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a017.d/0515a017.cdf
Injection Date: 15-MAY-2012 18:09
Instrument: pid1.i
Client Sample ID:



VB51 00875

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a018.d ARI ID: BICV25
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a018.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 18:38
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	0.001	2723	33750	90.9	TFT(Surr)
15.407	0.000	1789	14932	92.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	214028	0.627
8015C 2MP-TMB	(4.20 to 16.22)	678311	215867	0.318
AK101 nC6-nC10	(4.70 to 15.12)	538315	200570	0.373
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	214028	0.595

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	0.001	3302	89.1	TFT(Surr)
15.414	0.001	7493	91.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.047	-0.003	5710	22.90N	Benzene
9.913	-0.004	5086	23.30N	Toluene
12.807	-0.003	4505	23.28	Ethylbenzene
12.968	0.001	9892	46.07	M/P-Xylene
13.920	0.000	3974	23.65N	O-Xylene
4.566	-0.001	2061	24.51	MTBE

JW 5/16/12

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a018.d

Date : 15-MAY-2012 18:38

Client ID:

Sample Info: BICV25

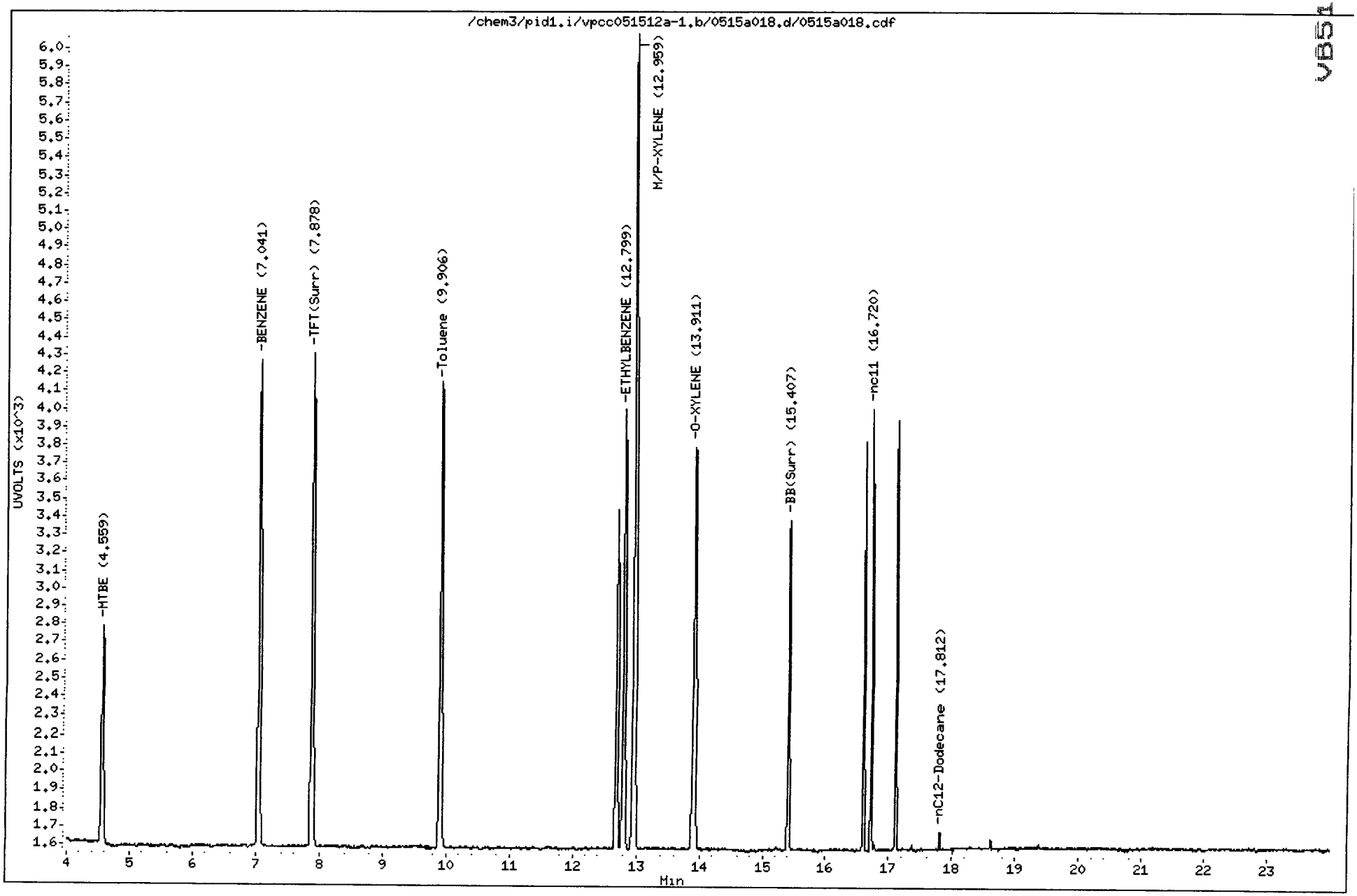
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51 : 00877



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a018.d

Date : 15-MAY-2012 18:38

Client ID:

Sample Info: BICV25

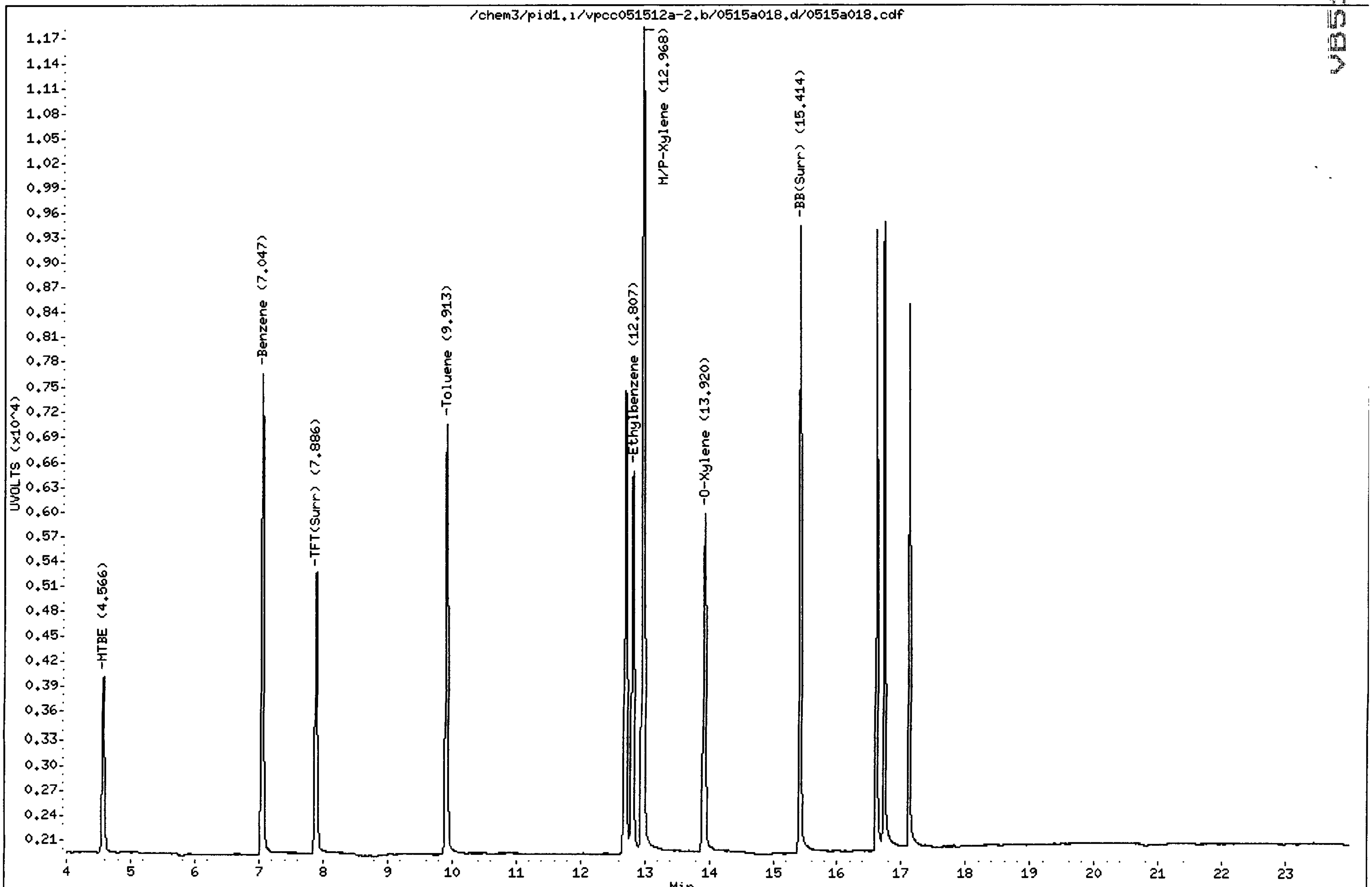
Column phase: RTX 502-2 PID

Page 1

Instrument: pid1.i

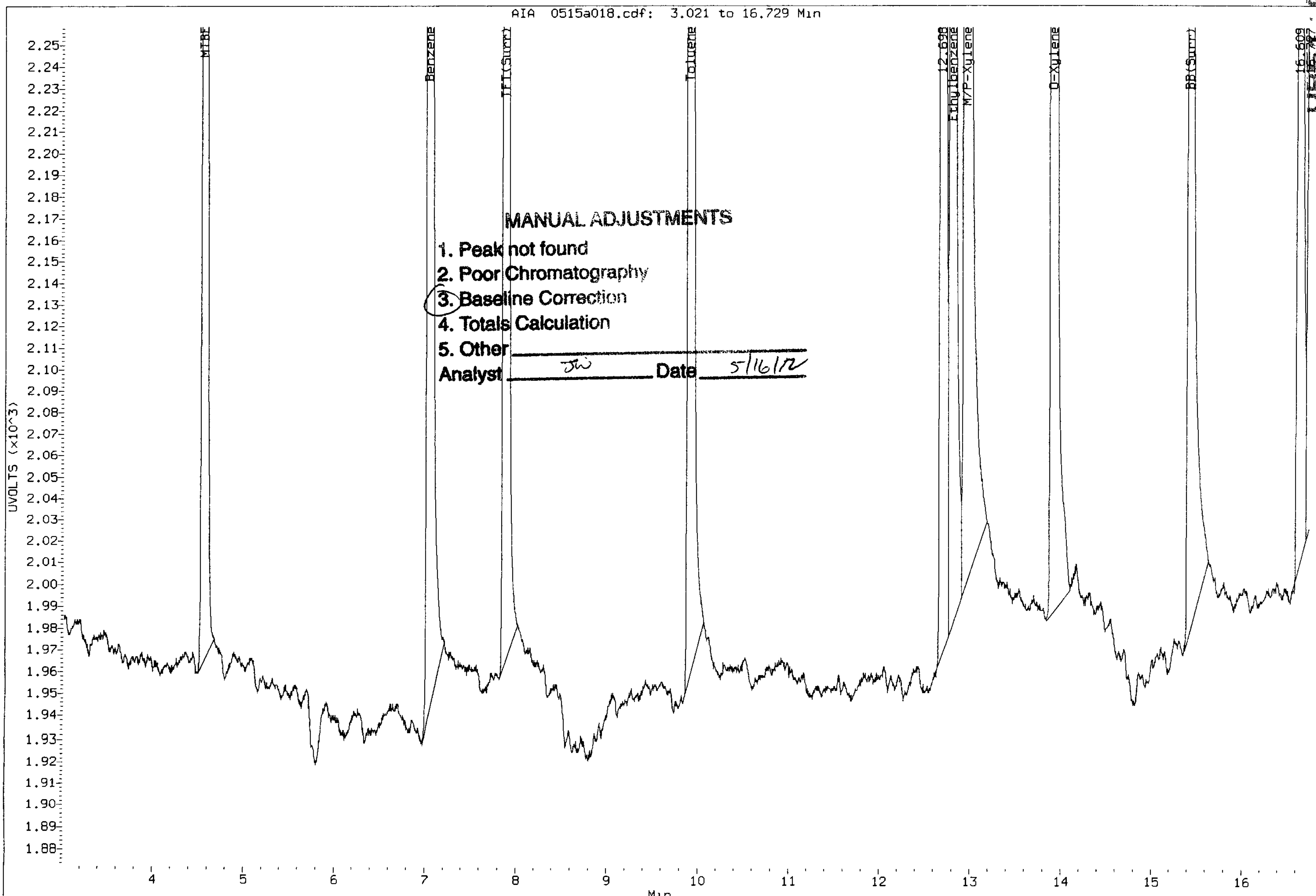
Operator: JW

Column diameter: 0.18



VB51 : 00878

Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a018.d/0515a018.cdf
Injection Date: 15-MAY-2012 18:38
Instrument: pid1.i
Client Sample ID:



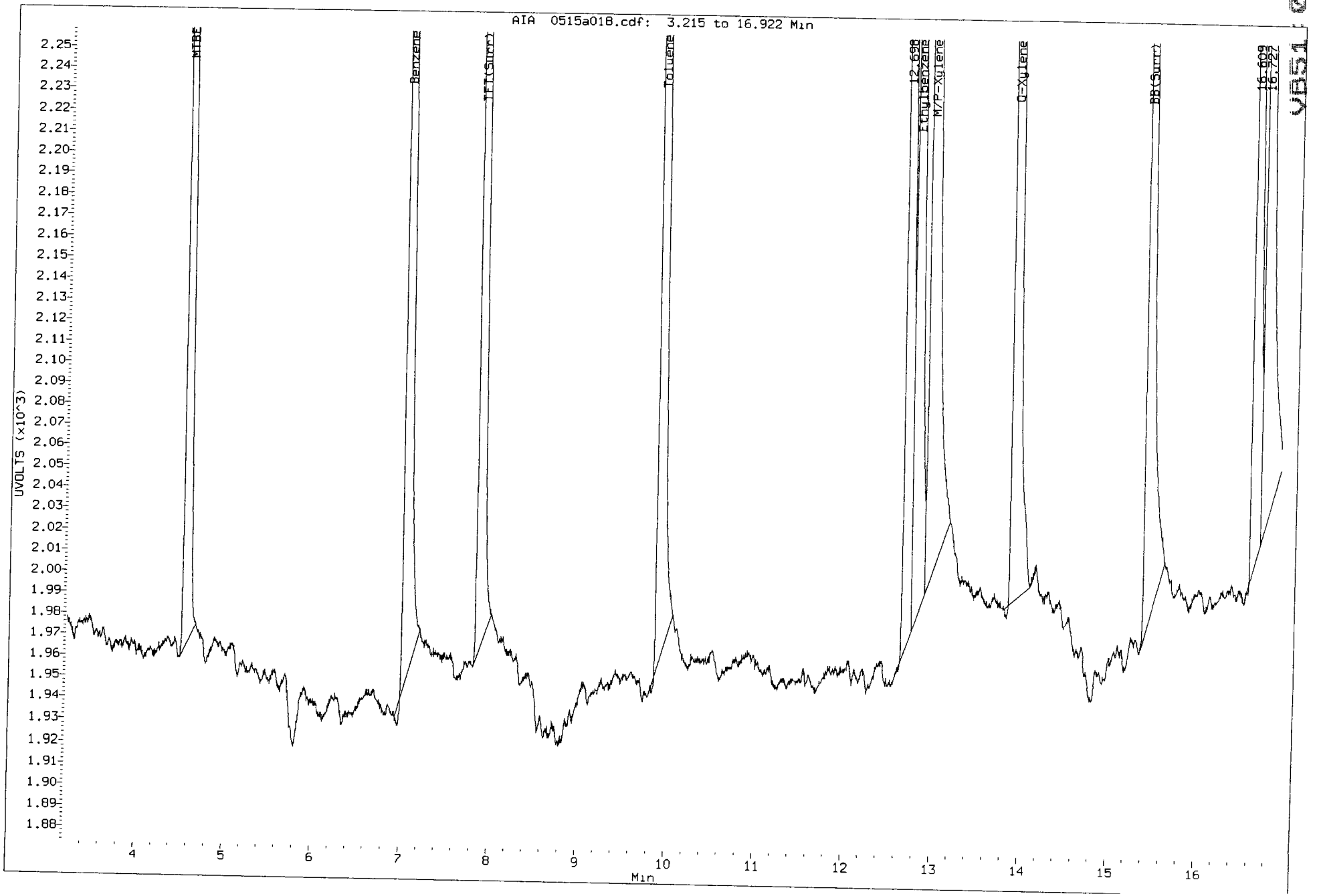
MANUAL ADJUSTMENTS

1. Peak not found
2. Poor Chromatography
3. Baseline Correction
4. Totals Calculation
5. Other ____
Analyst JW Date 5/16/12

VB51 : 00879

Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a018.d/0515a018.cdf
Injection Date: 15-MAY-2012 18:38
Instrument: pid1.i
Client Sample ID:

Before
JW
5/16/12



JBS1 10881

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/vpcc051512a-1.b/FID.m
Batch File: /chem3/pid1.i/vpcc051512a-1.b
Inst ID: pid1.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07
FILENAME:	0515a011	0515a012	0515a013	0515a014	0515a015	0515a016	0515a017
INJ.DATE:	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012
INJ.TIME:	15:15	15:44	16:13	16:42	17:11	17:40	18:09

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1	NWTPHG	+++++	+++++	+++++	+++++	+++++	+++++	+++++	0.492	0.422-0.562	+++++	+++++
2	WAGAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	0.937	0.867-1.007	+++++	+++++
3	AK101	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.251	1.181-1.321	+++++	+++++
4	8015GAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.539	1.469-1.609	+++++	+++++
5	2-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.296	4.226-4.366	+++++	+++++
6	MTBE	4.558	4.558	4.557	4.559	4.558	4.540	+++++	4.558	4.488-4.628	4.555	0.007
7	nC6	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.796	4.726-4.866	+++++	+++++
8	nC7	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.841	6.771-6.911	+++++	+++++
9	BENZENE	7.041	7.040	7.039	7.040	7.040	7.037	7.037	7.041	6.971-7.111	7.039	0.002
$ 10	TFT(Surr)	7.877	7.877	7.876	7.877	7.877	7.877	7.877	7.877	7.807-7.947	7.877	0.000
11	nC8	9.507	+++++	+++++	+++++	+++++	+++++	+++++	9.507	9.437-9.577	9.507	0.000
12	Toluene	9.906	9.906	9.903	9.904	9.905	9.910	9.903	9.906	9.836-9.976	9.905	0.002
13	nC9	12.431	+++++	+++++	+++++	+++++	+++++	+++++	12.431	12.361-12.501	12.431	0.000
14	ETHYLBENZENE	12.800	12.798	12.796	12.797	12.797	12.801	12.800	12.800	12.730-12.870	12.798	0.002
15	M/P-XYLENE	12.965	12.961	12.957	12.957	12.957	12.957	12.960	12.965	12.895-13.035	12.959	0.003
16	O-XYLENE	13.912	13.910	13.908	13.909	13.909	13.910	13.917	13.912	13.842-13.982	13.911	0.003
17	nC10-Decane	15.222	15.223	+++++	+++++	+++++	+++++	+++++	15.222	15.152-15.292	15.222	0.001

Reviewer 1 JW Date: 5/16/12
Reviewer 2 _____ Date: _____

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/vpcc051512a-1.b/FID.m
Batch File: /chem3/pid1.i/vpcc051512a-1.b
Inst ID: pid1.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
$ 18 BB(Surr)	15.404	15.405	15.404	15.405	15.405	15.405	15.407	15.404	15.334-15.474	15.405	0.001
$ 19 BFB(Surr)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.027	15.957-16.097	+++++	+++++
20 1,2,4-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.122	16.052-16.192	+++++	+++++
21 nc11	16.720	16.774	16.774	16.774	16.775	16.720	+++++	16.720	16.650-16.790	16.756	0.028
22 nC12-Dodecane	17.815	17.815	17.815	17.814	17.814	17.812	17.811	17.815	17.745-17.885	17.814	0.002
23 nC13	18.623	18.623	18.623	18.621	+++++	+++++	+++++	18.623	18.553-18.693	18.623	0.001
24 Naphthalene	18.826	18.826	+++++	+++++	+++++	+++++	+++++	18.826	18.756-18.896	18.826	0.000

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m
Batch File: /chem3/pid1.i/vpcc051512a-2.b
Inst ID: pid1.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07
FILENAME:	0515a011	0515a012	0515a013	0515a014	0515a015	0515a016	0515a017
INJ.DATE:	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012
INJ.TIME:	15:15	15:44	16:13	16:42	17:11	17:40	18:09

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 MTBE	4.567	4.566	4.567	4.567	4.567	4.563	4.567	4.567	4.517-4.617	4.566	0.001
2 Benzene	7.050	7.047	7.047	7.047	7.047	7.047	7.050	7.050	7.000-7.100	7.048	0.002
$ 3 TFT(Surr)	7.883	7.887	7.883	7.883	7.887	7.883	7.885	7.883	7.833-7.933	7.885	0.002
4 Toluene	9.913	9.914	9.913	9.913	9.913	9.913	9.917	9.913	9.863-9.963	9.914	0.001
5 Ethylbenzene	12.809	12.807	12.806	12.805	12.806	12.807	12.810	12.809	12.759-12.859	12.807	0.002
6 M/P-Xylene	12.974	12.970	12.967	12.966	12.966	12.967	12.967	12.974	12.924-13.024	12.968	0.003
7 O-Xylene	13.920	13.919	13.918	13.917	13.917	13.920	13.920	13.920	13.890-13.950	13.919	0.002
$ 8 BB(Surr)	15.413	15.413	15.413	15.413	15.413	15.413	15.413	15.413	15.363-15.463	15.413	0.000

Reviewer 1 JW Date: 5/16/12
Reviewer 2 Date: 5/16/12

6a
GAS INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: vpcc051512a-1

Instrument/Det: PID1.I/RTX 502-2 FID Project:

Calibration Date: 15-MAY-2012 SDG No.: vpcc051512a-1

Gas Range	RF1 0.1	RF2 0.25	RF3 1.0	RF4 2.5	RF5 5.0	RF6 10	Ave RF	%RSD
WA Gas	397850	330558	346678	320641	323467	327952	341191	8.6
AK Gas	578815	518252	551660	511858	514576	554726	538315	5.1
NW Gas	423295	349064	365464	337312	339367	342672	359529	9.1
Cal Gas	755385	658594	687617	636075	639358	676292	675554	6.5
8015Gas	751115	659688	694925	640845	641633	681663	678311	6.1

Surrogates Rel. Rec.	RF1 22	RF2 44	RF3 67	RF4 100	RF5 133	RF6 178	Ave RF	%RSD

<- Indicates %RSD outside limits
Surrogate areas are not included in RF calculation.

Quant Ranges :
WA Gas Toluene - nC12
AK Gas nC6 - nC10
NW Gas Toluene - Naphthalene
Cal Gas nC6 - nC12
8015 Gas 2-Methylpentane - 1,2,4-Trimethylbenzene

Calibration Files	Analysis Time
0515a024.d	15-MAY-2012 21:34
0515a023.d	15-MAY-2012 21:05
0515a022.d	15-MAY-2012 20:36
0515a021.d	15-MAY-2012 20:06
0515a020.d	15-MAY-2012 19:37
0515a019.d	15-MAY-2012 19:07

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a010.d ARI ID: RT+BCAL1
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a010.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 14:45
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.875	-0.002	2894	36194	96.6	TFT(Surr)
15.404	-0.003	1841	15297	95.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

JW 5/16/12

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	412429	1.209
8015C 2MP-TMB	(4.20 to 16.22)	678311	494923	0.730
AK101 nC6-nC10	(4.70 to 15.12)	538315	347771	0.646
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	444052	1.235

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.883	-0.002	3680	99.3	TFT(Surr)
15.412	-0.001	7897	96.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.046	-0.004	6025	24.16	Benzene
9.911	-0.006	5414	24.80	Toluene
12.804	-0.006	4803	24.82	Ethylbenzene
12.965	-0.002	10456	48.69	M/P-Xylene
13.916	-0.004	4175	24.85	O-Xylene
4.564	-0.003	2169	25.79	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a010.d

Page 1

Date : 15-MAY-2012 14:45

Client ID:

Instrument: pid1.i

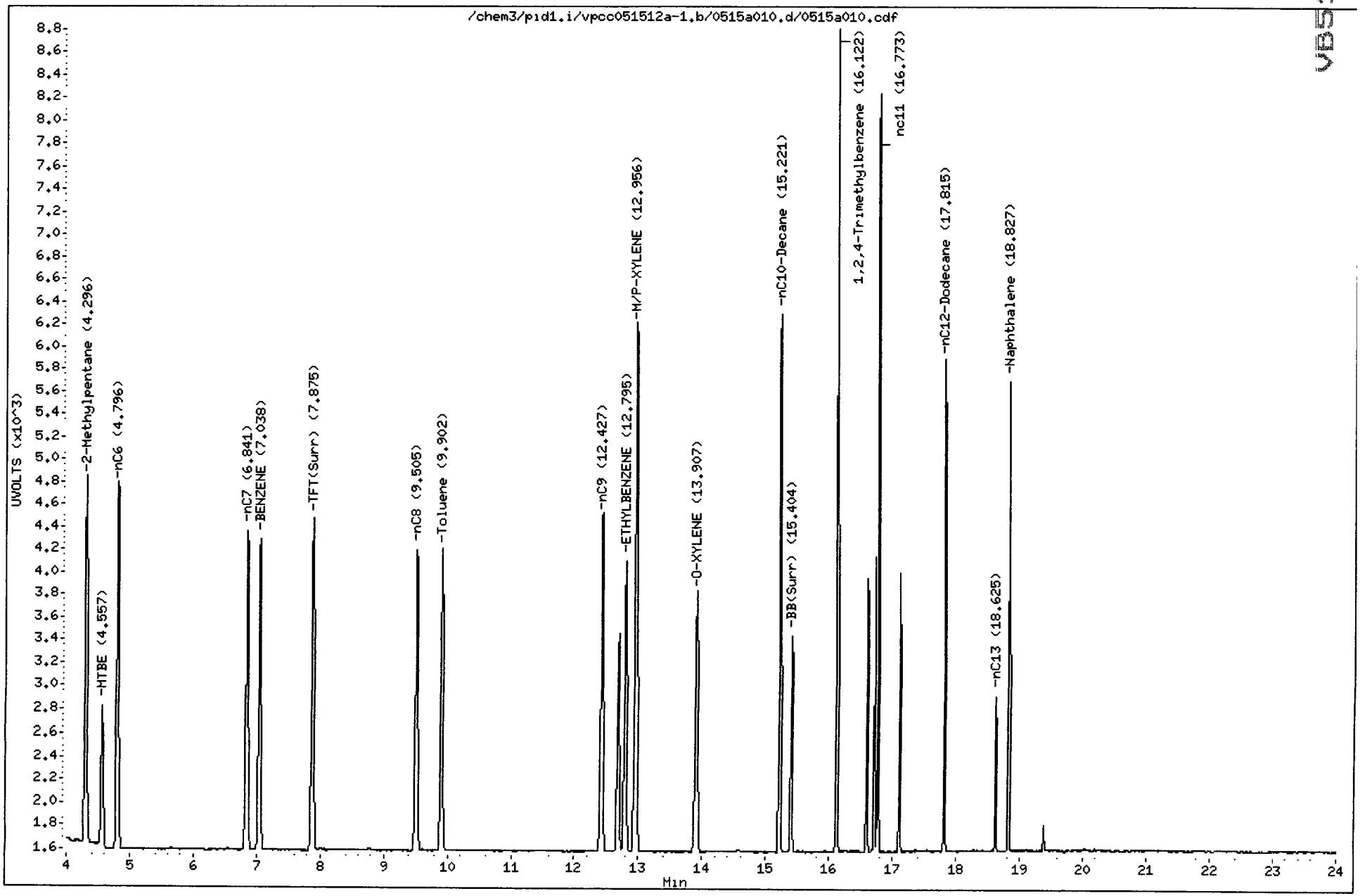
Sample Info: RT+BCAL1

Operator: JW

Column phase: RTX 502-2 FID

Column diameter: 0.18

VB51:00886



Data File: /chem3/pid1.i/vpcc051512a-2.b/0515a010.d

Date : 15-MAY-2012 14:45

Client ID:

Sample Info: RT+BCAL1

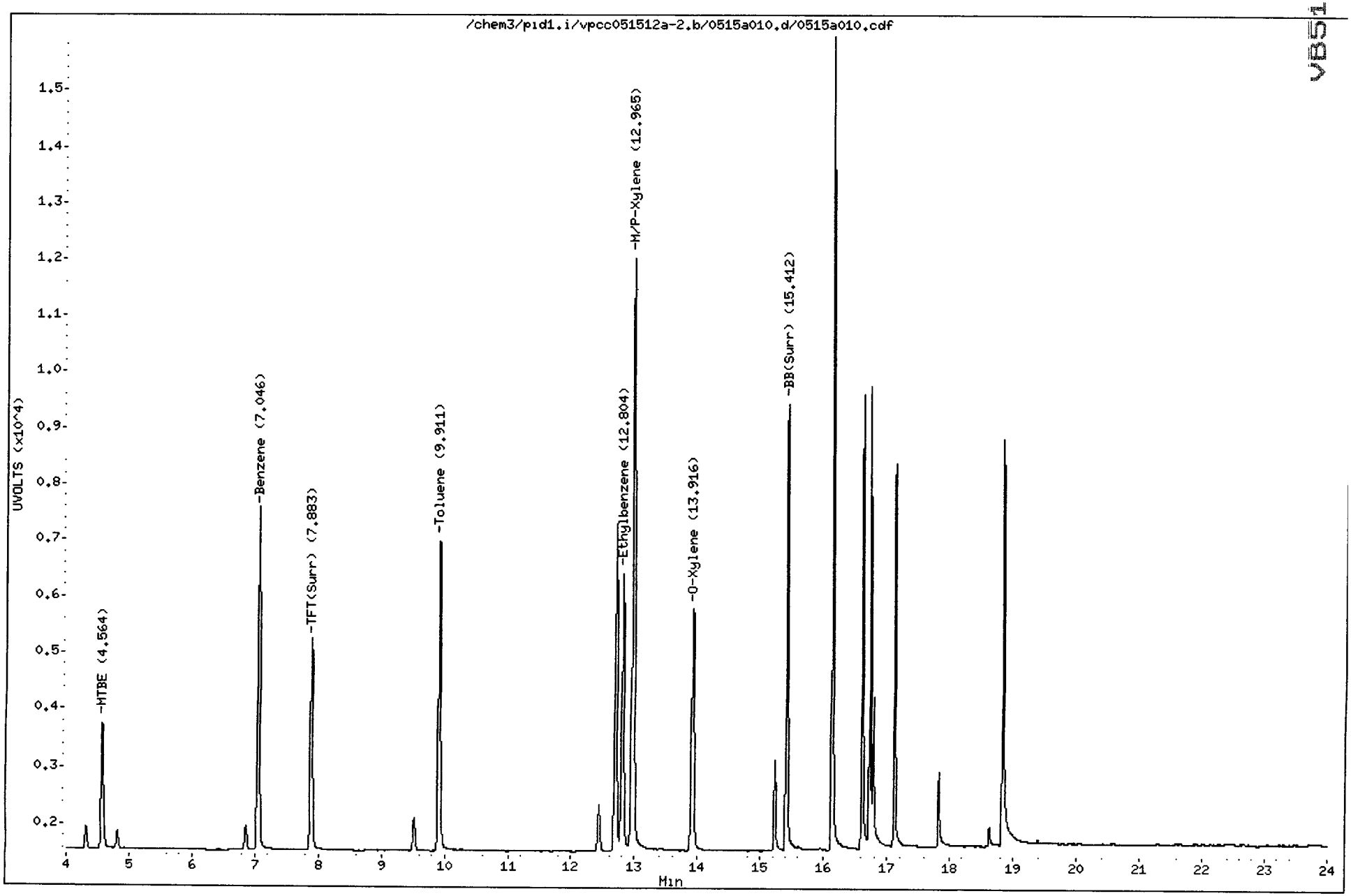
Column phase: RTX 502-2 PID

Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51 00887



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a019.d ARI ID: G10
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a019.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 19:07
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.873	-0.003	3479	50086	116.1	TFT(Surr)
15.407	0.000	1803	14171	93.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	3279524	9.612 M
8015C 2MP-TMB	(4.20 to 16.22)	678311	6816632	10.049 M
AK101 nC6-nC10	(4.70 to 15.12)	538315	5547255	10.305 M
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	3426724	9.531 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

JW 5/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	0.000	4432	119.5	TFT(Surr)
15.415	0.002	8489	104.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.052	0.002	8495	34.07	Benzene
9.922	0.005	81789	374.62	Toluene
12.812	0.002	20875	107.89	Ethylbenzene
12.980	0.013	83318	388.01	M/P-Xylene
13.926	0.006	29933	178.16	O-Xylene
4.563	-0.004	1561	18.56	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

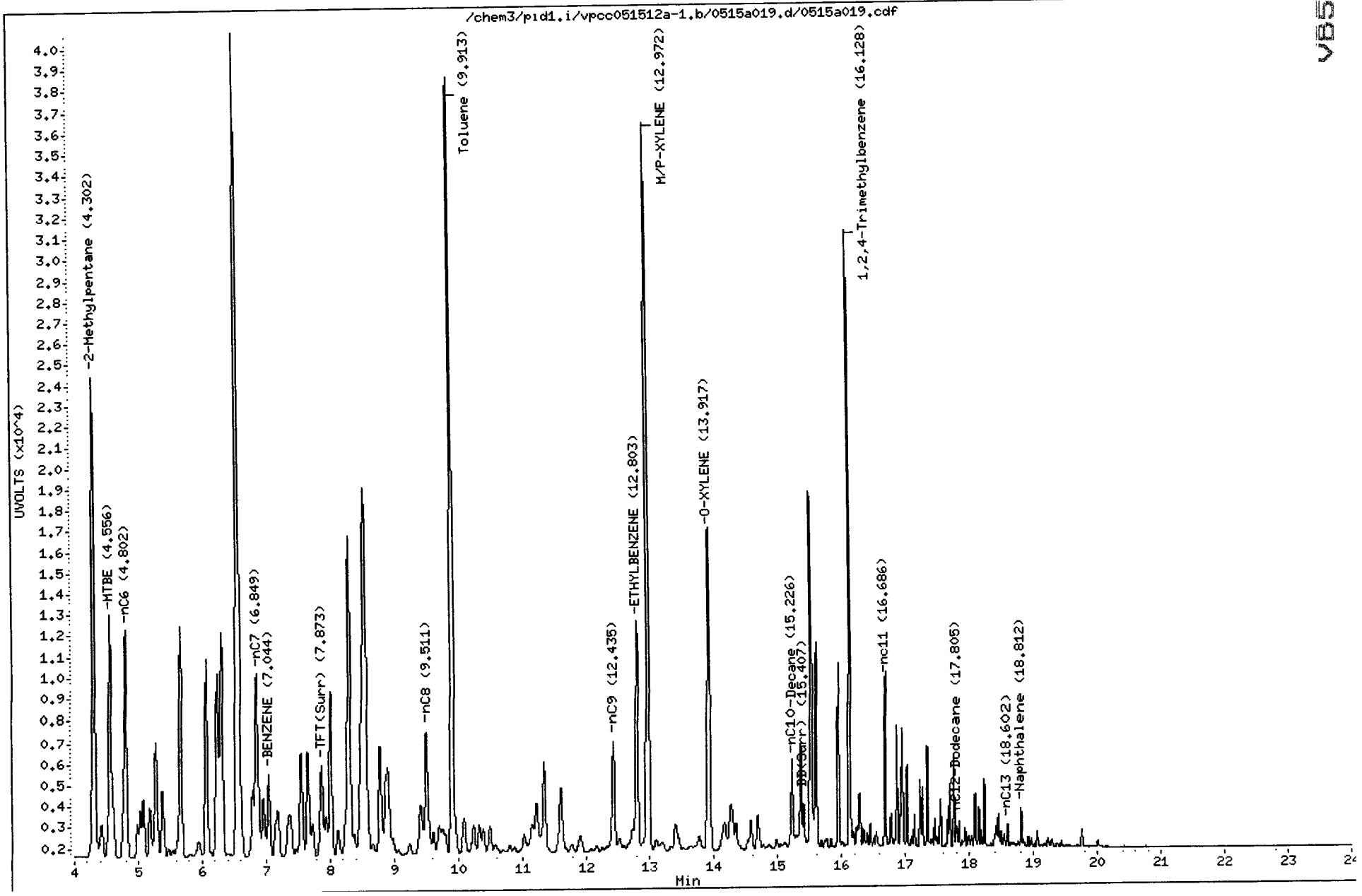
Data File: /chem3/pid1.1/vpcc051512a-1.b/0515a019.d
Date : 15-MAY-2012 19:07
Client ID:
Sample Info: G10

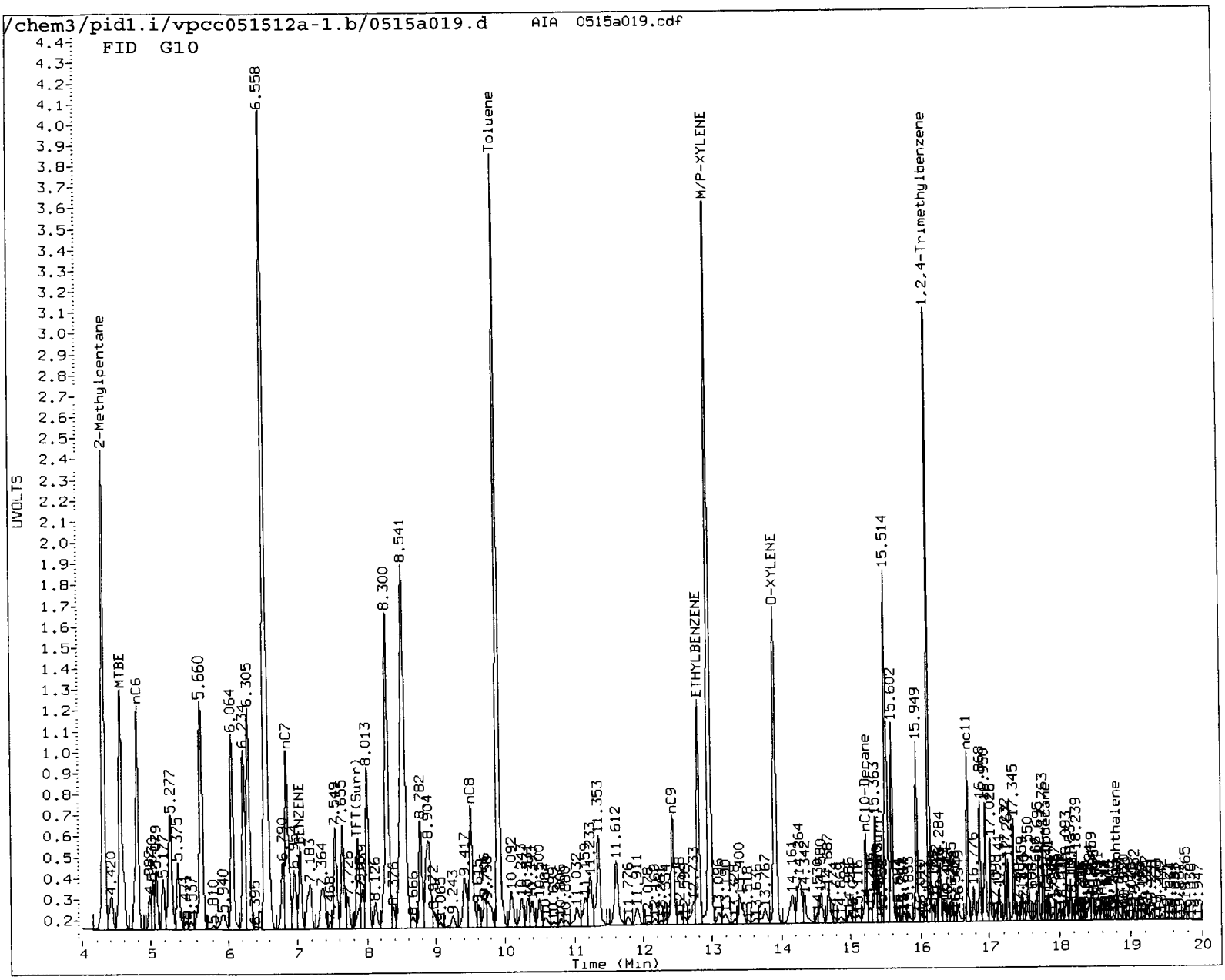
Column phase: RTX 502-2 FID

Instrument: pid1.1

Operator: JW
Column diameter: 0.18

VB51 : 00889

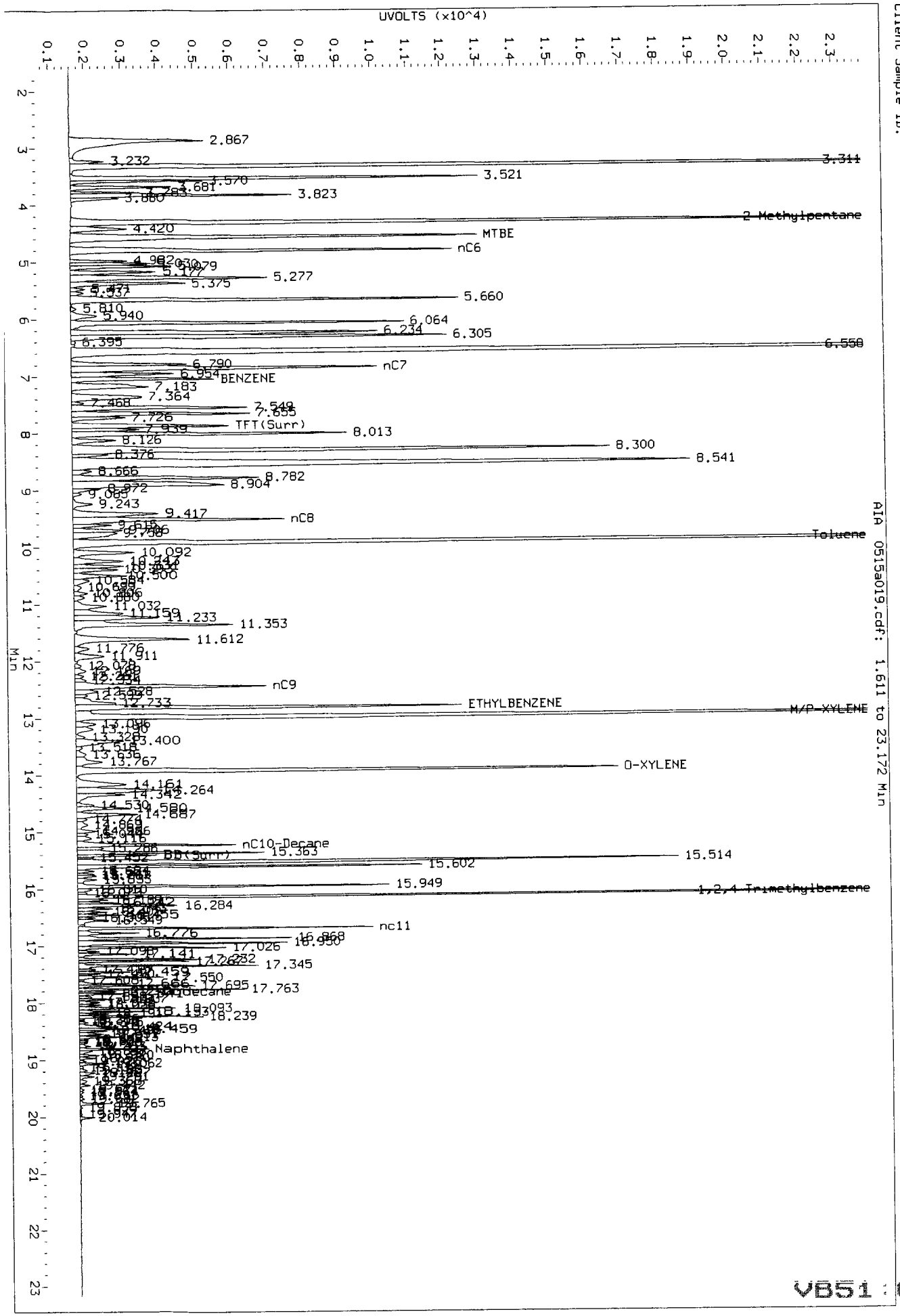




MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Overlap Peaks

Analyst: JW Date: 5/16/12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Injection Date: 15-MAY-2012 19:07
Instrument: pid1.i
Client Sample ID:
UVOLTS (x10^4)
AIA 0515a019.cdf: 1.611 to 23.172 Min
Min
2.867
3.232
3.311
3.521
3.570
3.681
3.823
2-Methylpentane
4.420
MTBE
nC6
5.277
5.375
5.660
5.810
5.940
6.064
6.234
6.305
6.395
6.550
6.790
nC7
6.954
BENZENE
7.183
7.364
7.468
7.549
7.655
7.726
7.939
TFT(Surr)
8.013
8.126
8.300
8.376
8.541
8.666
8.782
8.904
9.243
9.417
nC8
Toluene
10.092
11.233
11.353
11.612
nC9
12.733
ETHYLBENZENE
M/P-XYLENE
13.400
13.767
O-XYLENE
14.161
14.264
14.887
nC10-Decane
15.363
BB(Surr)
15.514
15.602
15.949
1,2,4-Trimethylbenzene
16.284
nc11
16.776
16.868
16.950
17.026
17.345
17.695
17.763
18.239
Naphthalene
20.014

Before SVOA

After
5/16/12

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a020.d/0515a020.cdf
Injection Date: 15-MAY-2012 19:37
Instrument: pid1.i
Client Sample ID:

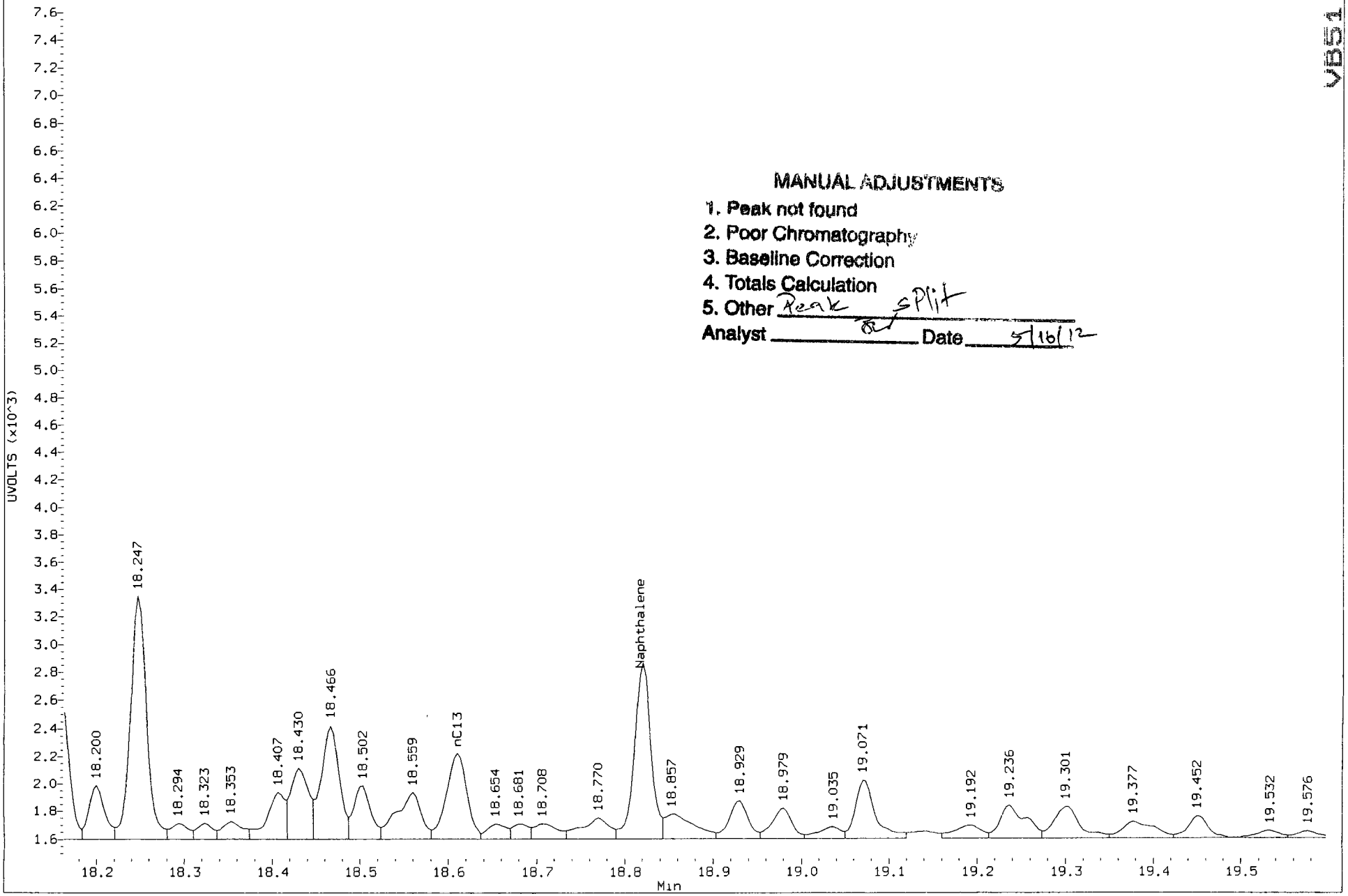
VB51 : 00892

AIA 0515a020.cdf: 18.163 to 19.597 Min

MANUAL ADJUSTMENTS

1. Peak not found
2. Poor Chromatography
3. Baseline Correction
4. Totals Calculation
5. Other Peak Split

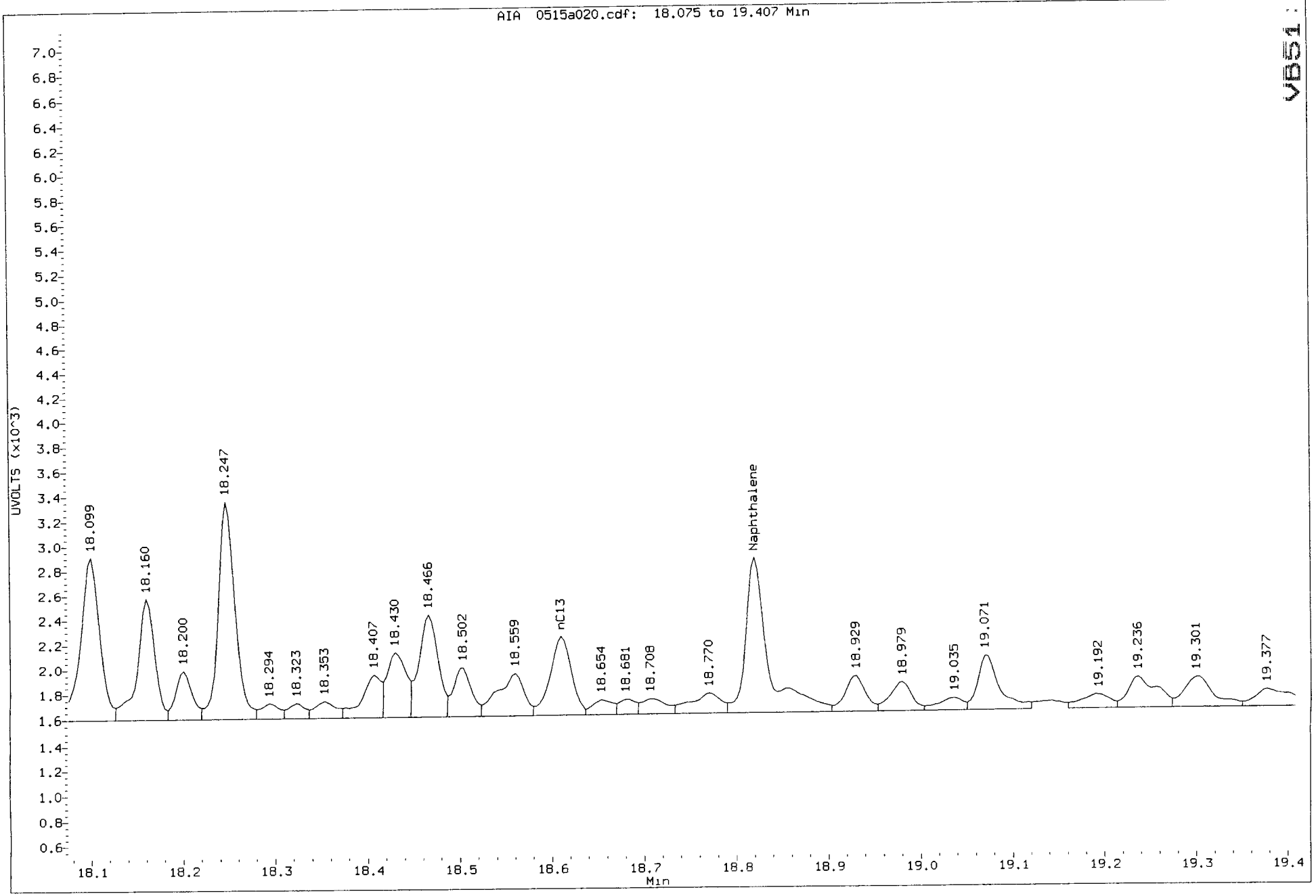
Analyst _____ Date 5/16/12



Before
JW
5/16/12

VB51:00893

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a020.d/0515a020.cdf
Injection Date: 15-MAY-2012 19:37
Instrument: pid1.i
Client Sample ID:



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a020.d ARI ID: G5
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a020.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 19:37
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	0.001	3431	53338	114.5	TFT(Surr)
15.407	0.000	2038	19752	105.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	1617334	4.740
8015C 2MP-TMB	(4.20 to 16.22)	678311	3208164	4.730
AK101 nC6-nC10	(4.70 to 15.12)	538315	2572880	4.780
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	1696836	4.720 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

JLD 5/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.002	3896	105.1	TFT(Surr)
15.415	0.002	8359	102.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.052	0.002	4229	16.96	Benzene
9.919	0.002	41027	187.92	Toluene
12.810	0.000	10373	53.61	Ethylbenzene
12.976	0.009	41488	193.21	M/P-Xylene
13.923	0.003	15152	90.18	O-Xylene
4.561	-0.006	782	9.30	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a020.d

Date : 15-MAY-2012 19:37

Client ID:

Sample Info: G5

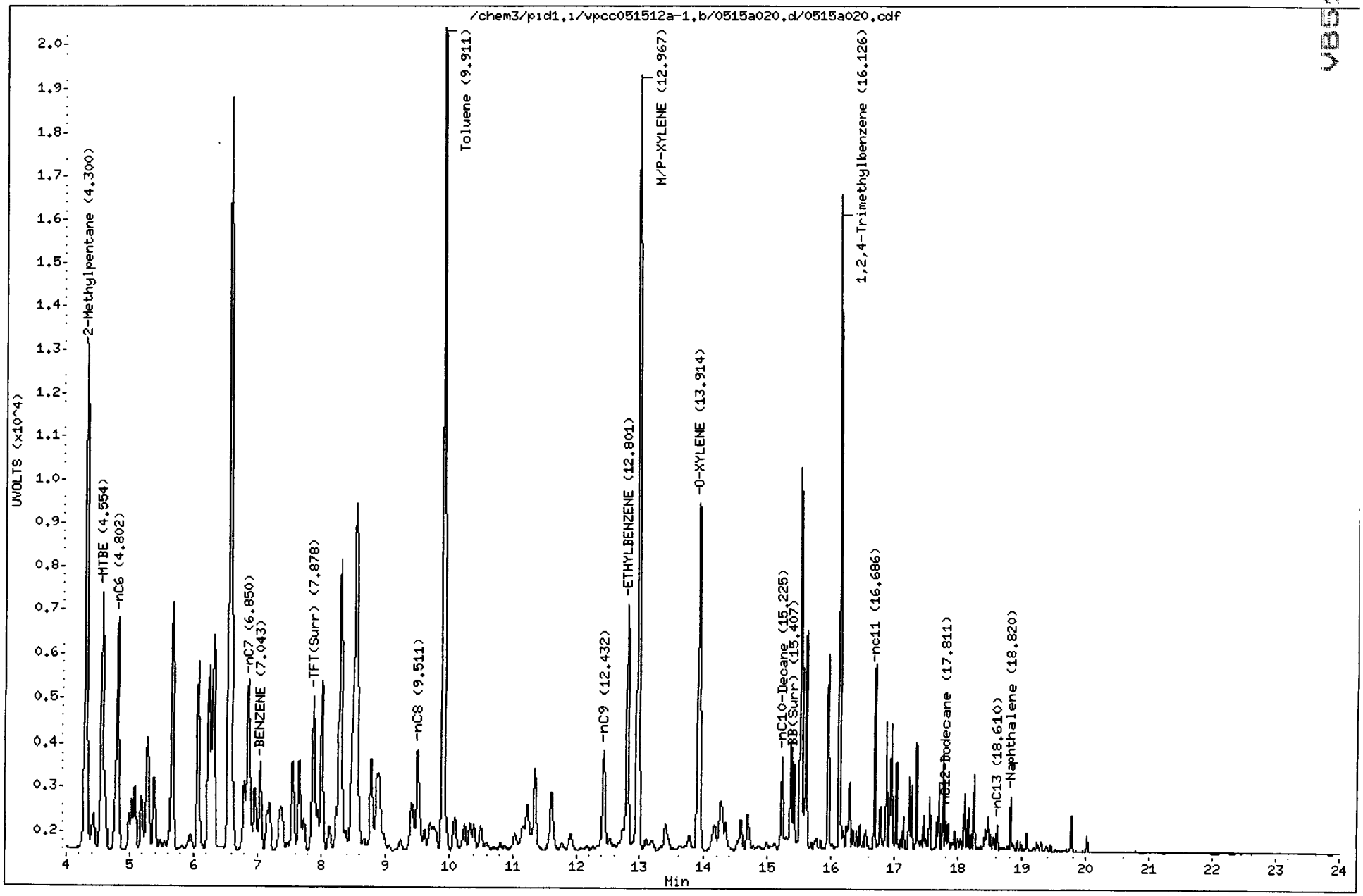
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51.00895



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a021.d ARI ID: G2.5
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a021.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 20:06
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.003	3126	45313	104.4	TFT(Surr)
15.407	0.000	1940	17647	100.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	801602	2.349
8015C 2MP-TMB	(4.20 to 16.22)	678311	1602112	2.362 M
AK101 nC6-nC10	(4.70 to 15.12)	538315	1279645	2.377 M
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	843279	2.346 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

JW 5/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.003	3679	99.2	TFT(Surr)
15.414	0.001	8145	99.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	0.001	2111	8.47	Benzene
9.917	0.000	20322	93.08	Toluene
12.809	-0.001	5151	26.62	Ethylbenzene
12.973	0.006	20635	96.10	M/P-Xylene
13.921	0.001	7371	43.87	O-Xylene
4.560	-0.007	392	4.66	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a021.d

Date : 15-MAY-2012 20:06

Client ID:

Sample Info: G2.5

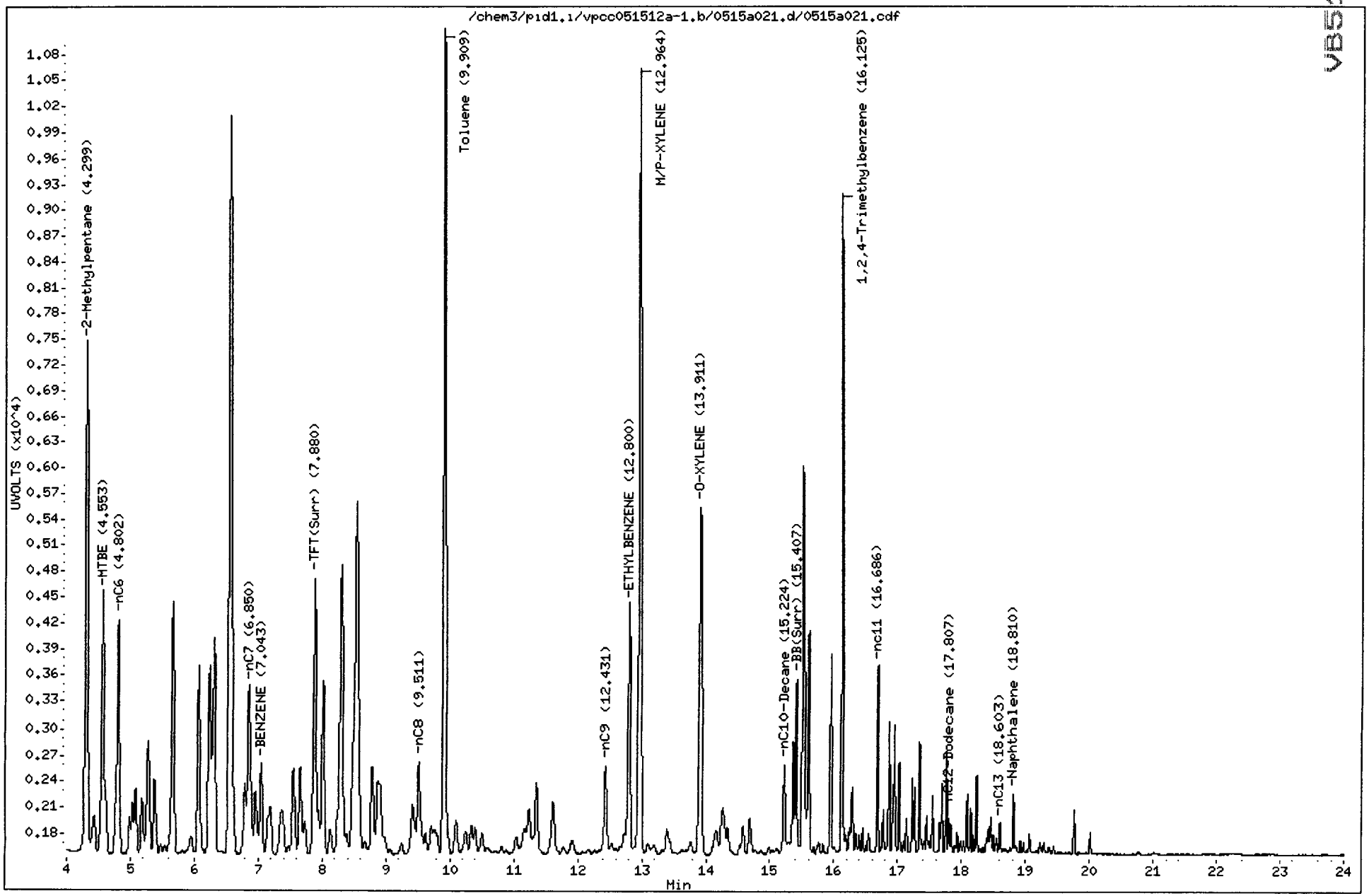
Column phase: RTX 502-2 FID

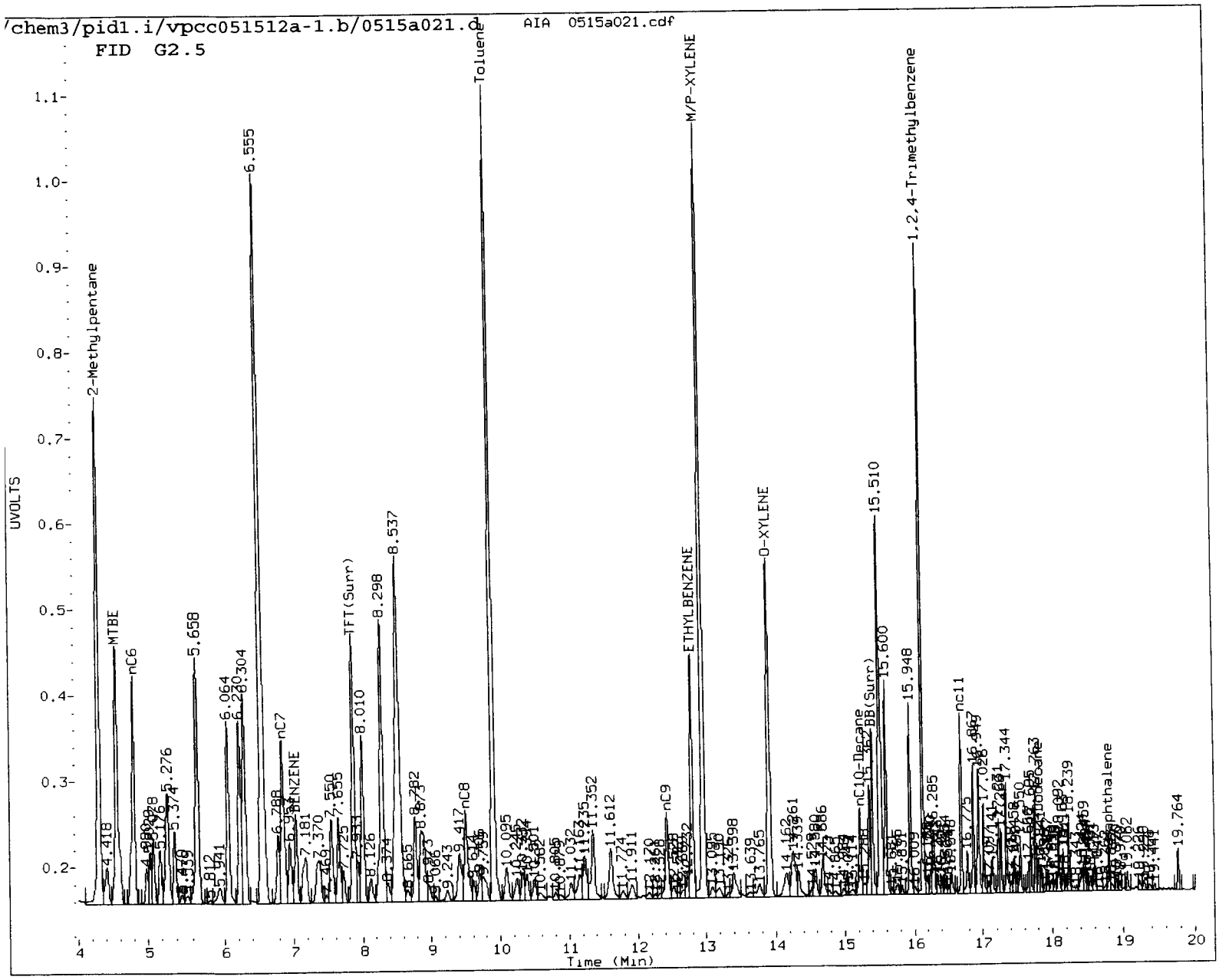
Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51:00037

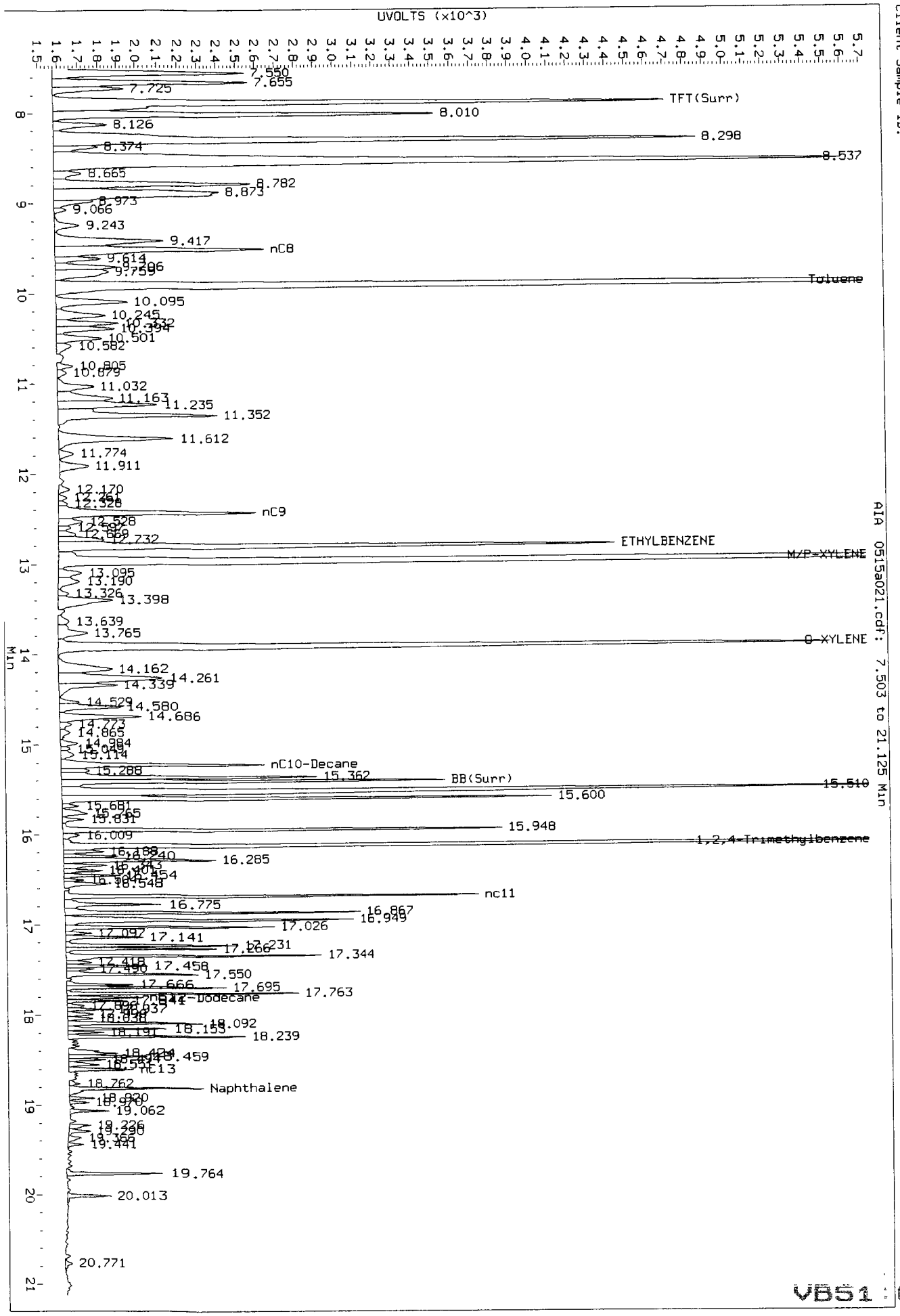




MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other Peak Split

Analyst: JW Date: 5/16/12



Before
5/16/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a022.d ARI ID: G1.0
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a022.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 20:36
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.879	0.003	3002	42368	100.2	TFT(Surr)
15.407	0.000	1962	17216	101.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	346678	1.016 M
8015C 2MP-TMB	(4.20 to 16.22)	678311	694925	1.024 M
AK101 nC6-nC10	(4.70 to 15.12)	538315	551660	1.025 M
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	365464	1.017 M

M Indicates manual integration within range

JW 5/16/12

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.003	3683	99.3	TFT(Surr)
15.414	0.001	8230	100.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.050	0.000	943	3.78	Benzene
9.916	-0.001	8939	40.94	Toluene
12.808	-0.002	2254	11.65	Ethylbenzene
12.971	0.004	9054	42.16	M/P-Xylene
13.921	0.001	3250	19.34	O-Xylene
4.558	-0.009	172	2.05	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a022.d

Date : 15-MAY-2012 20:36

Client ID:

Sample Info: G1.0

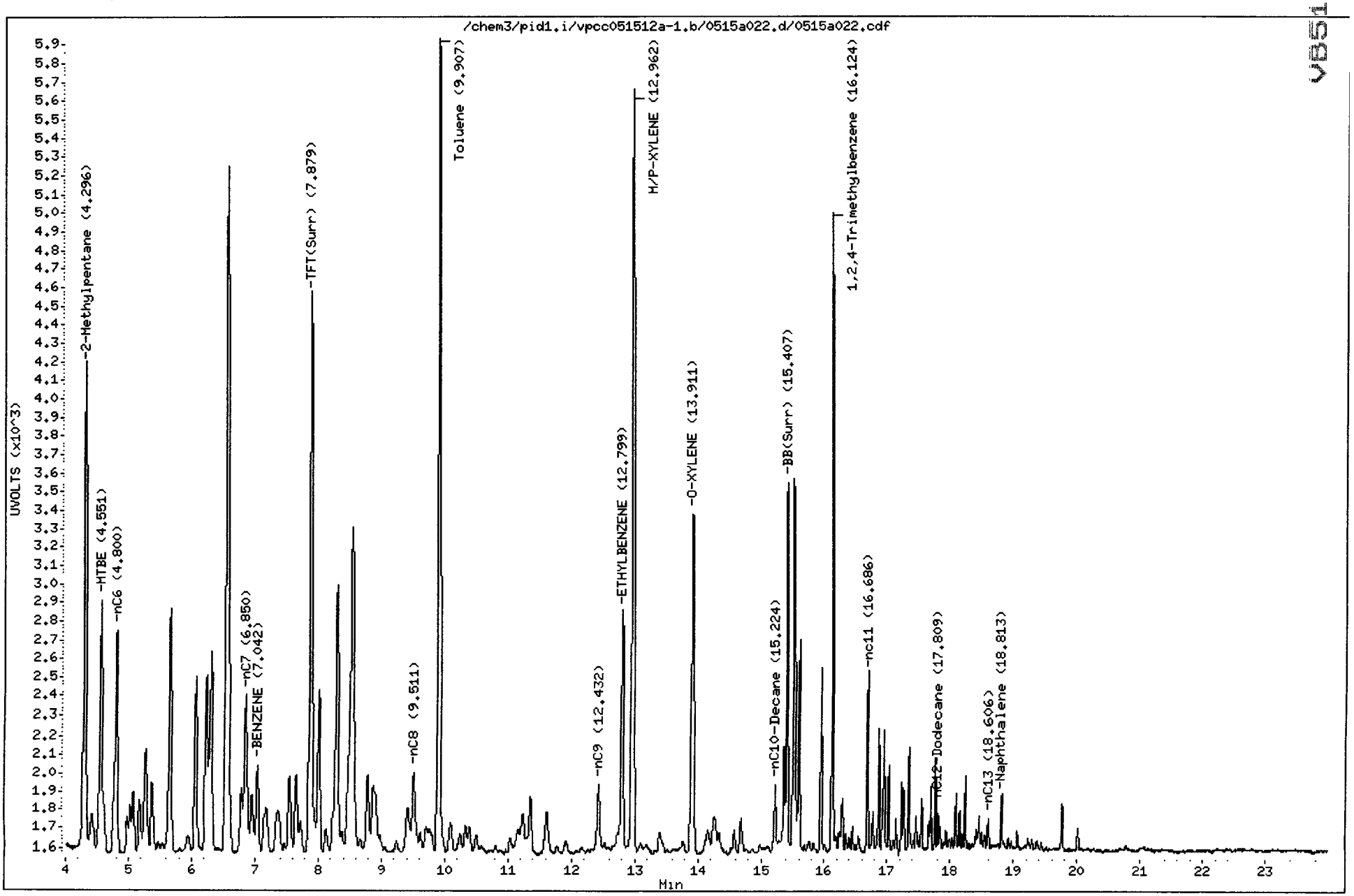
Column phase: RTX 502-2 FID

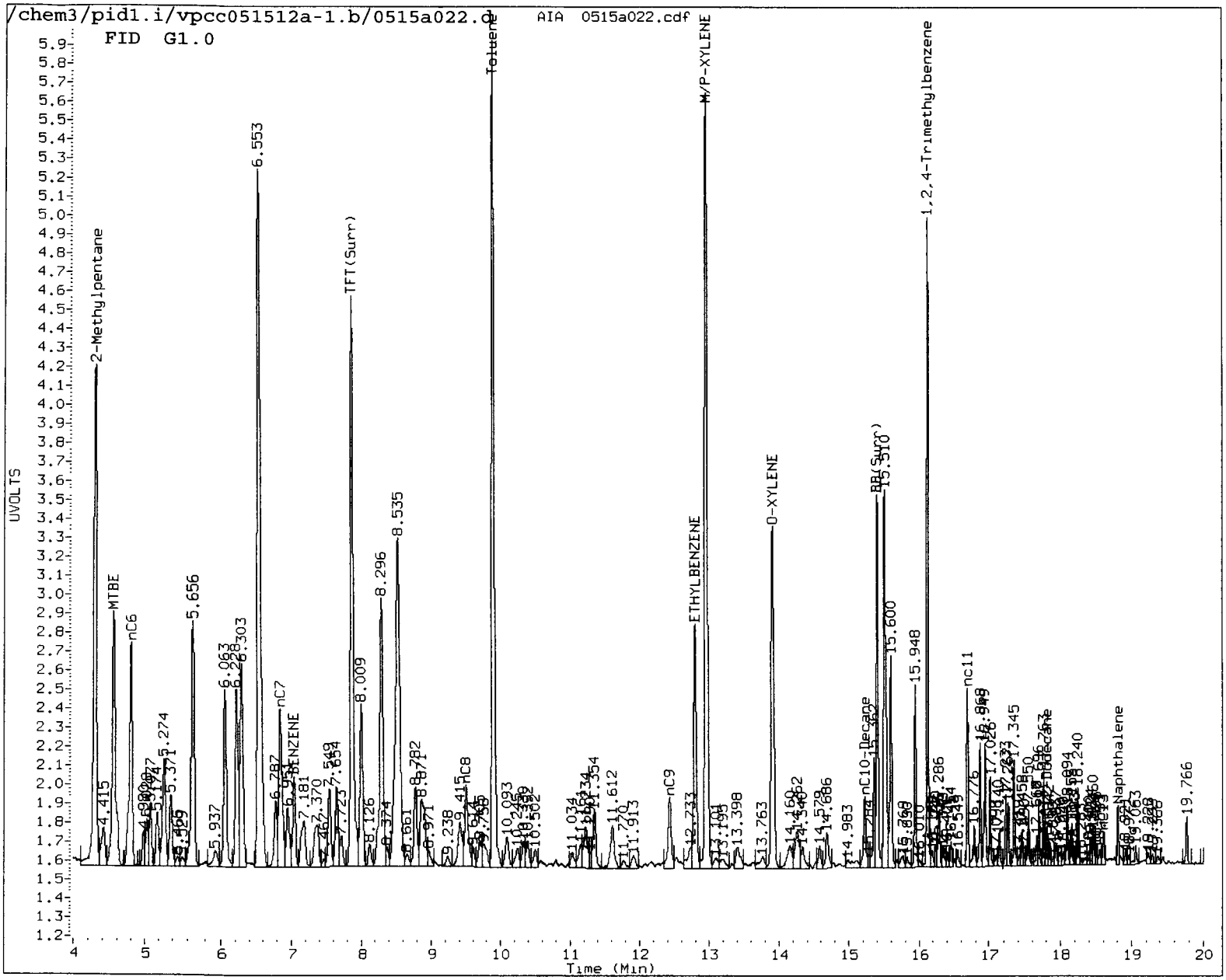
Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51 : 00901



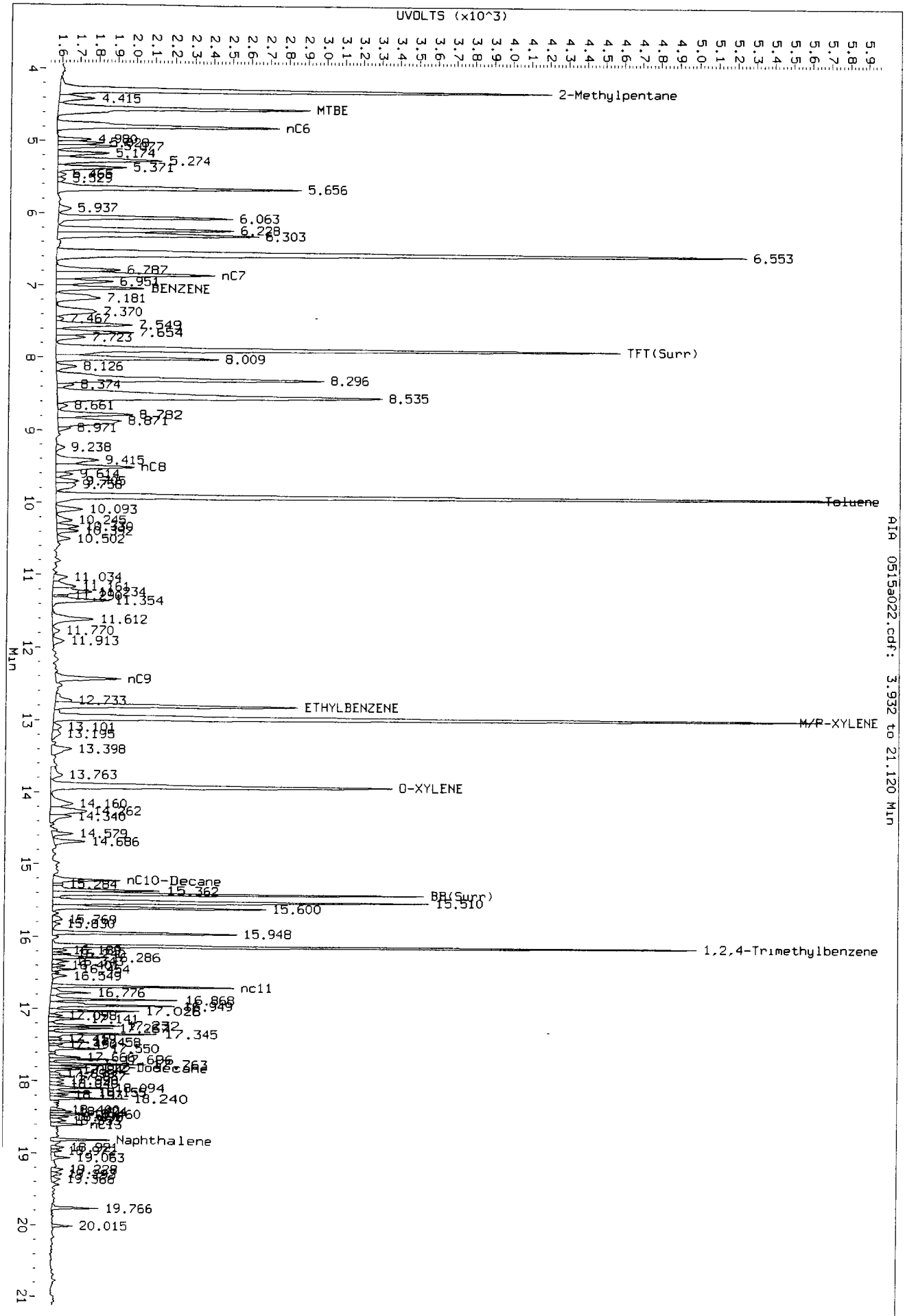


MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: JW Date: 5/16/12



Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a022.d/0515a022.cdf
Injection Date: 15-MAY-2012 20:36
Instrument: pid1.i
Client Sample ID:

AIA 0515a022.cdf: 3.932 to 21.120 Min

Before
5/16/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a023.d ARI ID: G0.25
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a023.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 21:05
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.881	0.004	2840	36573	94.8	TFT(Surr)
15.407	0.001	1901	16378	98.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	82640	0.242 M
8015C 2MP-TMB	(4.20 to 16.22)	678311	164922	0.243 M
AK101 nC6-nC10	(4.70 to 15.12)	538315	129563	0.241 M
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	87266	0.243 M

M Indicates manual integration within range

JW 5/16/12

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.889	0.004	3475	93.7	TFT(Surr)
15.415	0.002	8052	98.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.050	0.000	202	0.81	Benzene
9.917	0.000	2004	9.18	Toluene
12.809	-0.001	503	2.60	Ethylbenzene
12.972	0.005	2016	9.39	M/P-Xylene
13.921	0.001	723	4.30	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

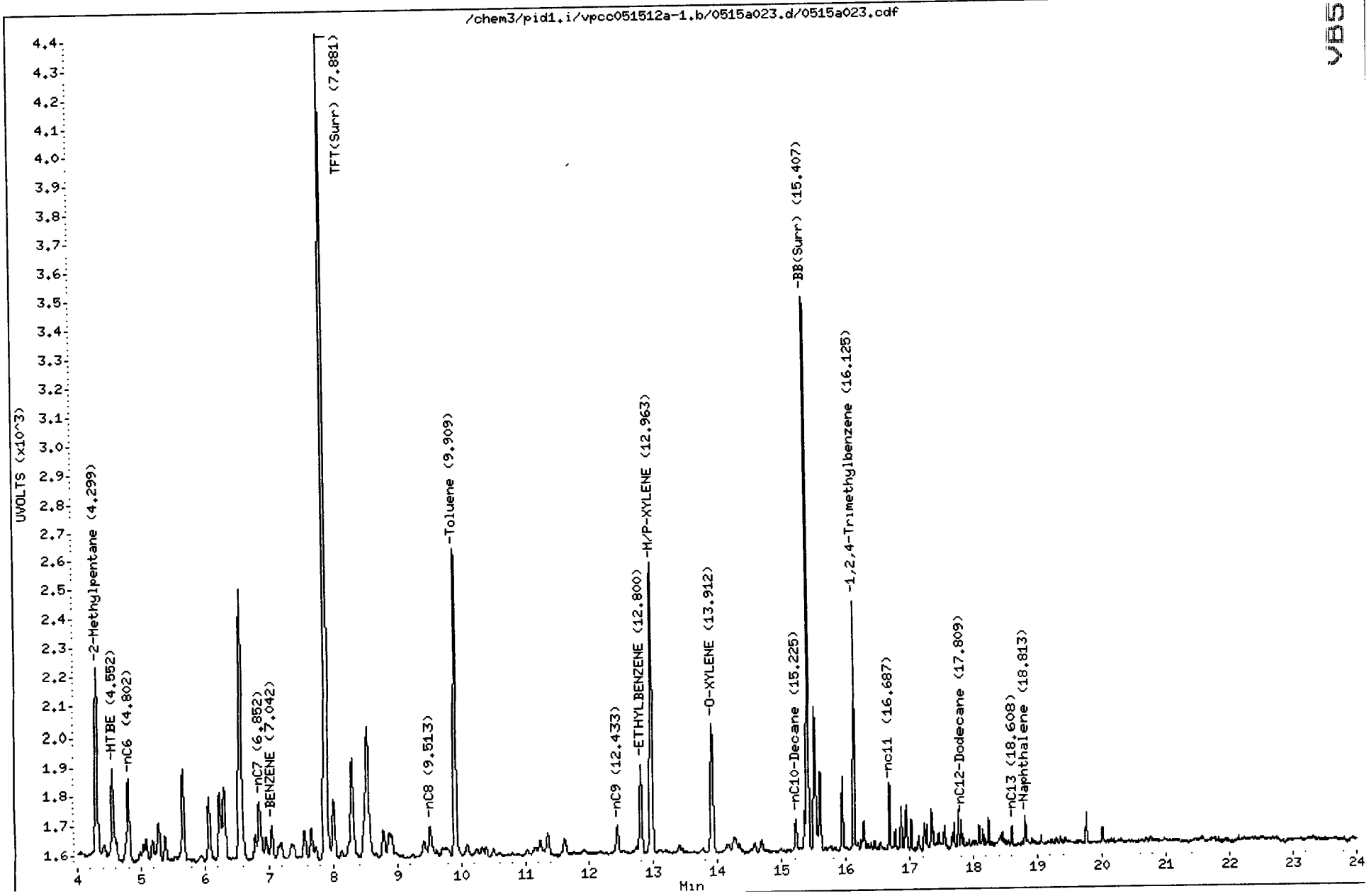
Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a023.d
Date : 15-MAY-2012 21:05
Client ID:
Sample Info: G0.25

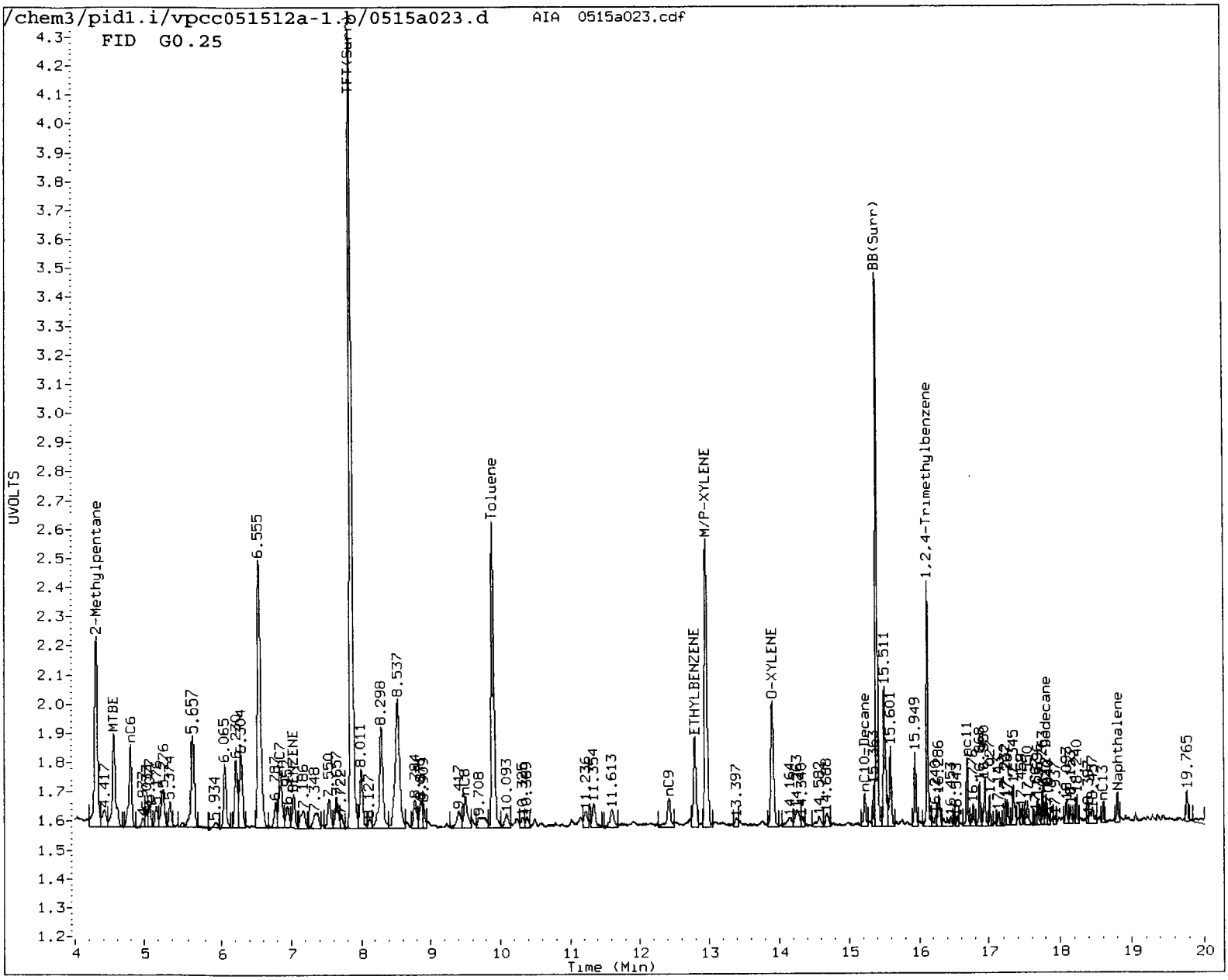
Instrument: pid1.i

Operator: JW
Column diameter: 0.18

Column phase: RTX 502-2 FID

VB51 : 00905



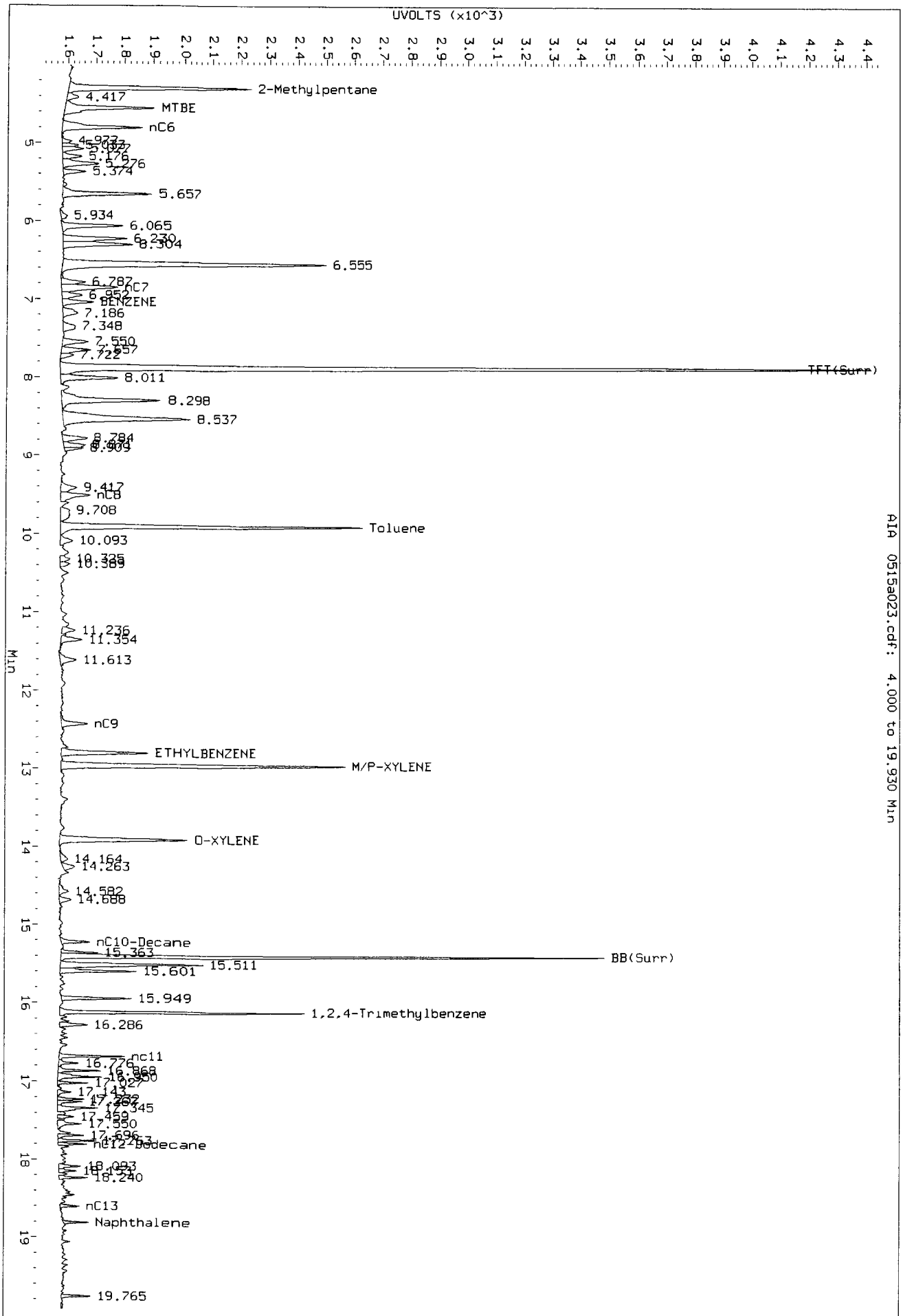


MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: JW Date: 5/16/12



Before 5/14/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a024.d ARI ID: G0.10
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a024.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 21:34
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.873	-0.004	2839	36068	94.8	TFT(Surr)
15.406	-0.001	1866	15984	96.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	39785	0.117 M
8015C 2MP-TMB	(4.20 to 16.22)	678311	75112	0.111 M
AK101 nC6-nC10	(4.70 to 15.12)	538315	57882	0.108 M
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	42330	0.118 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

JLW 5/16/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.881	-0.004	3455	93.2	TFT(Surr)
15.413	0.000	7940	97.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
9.911	-0.006	858	3.93	Toluene
12.806	-0.004	211	1.09	Ethylbenzene
12.969	0.002	857	3.99	M/P-Xylene
13.919	-0.001	296	1.76	O-Xylene
ND	---	---	---	MTBE

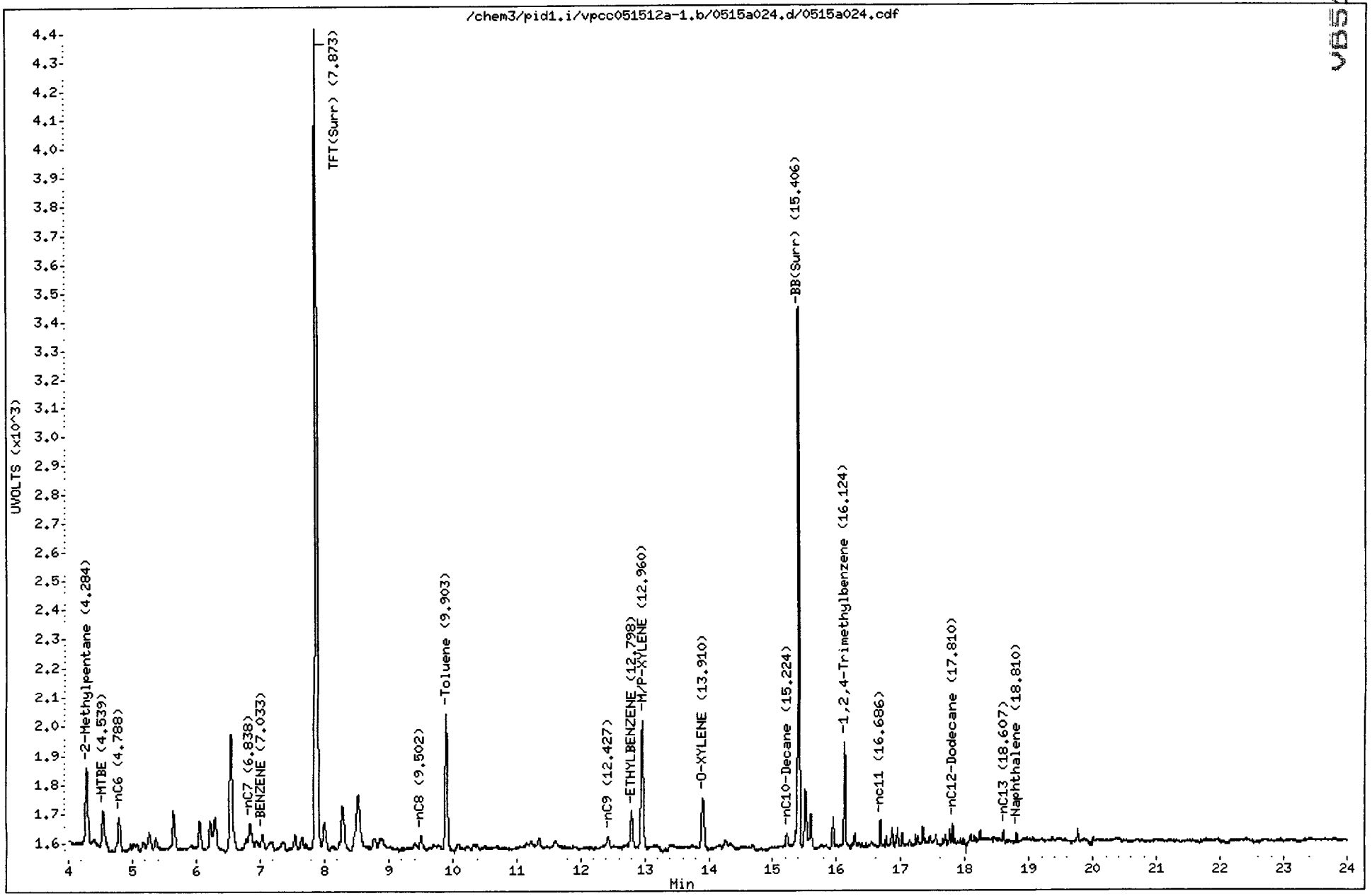
A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

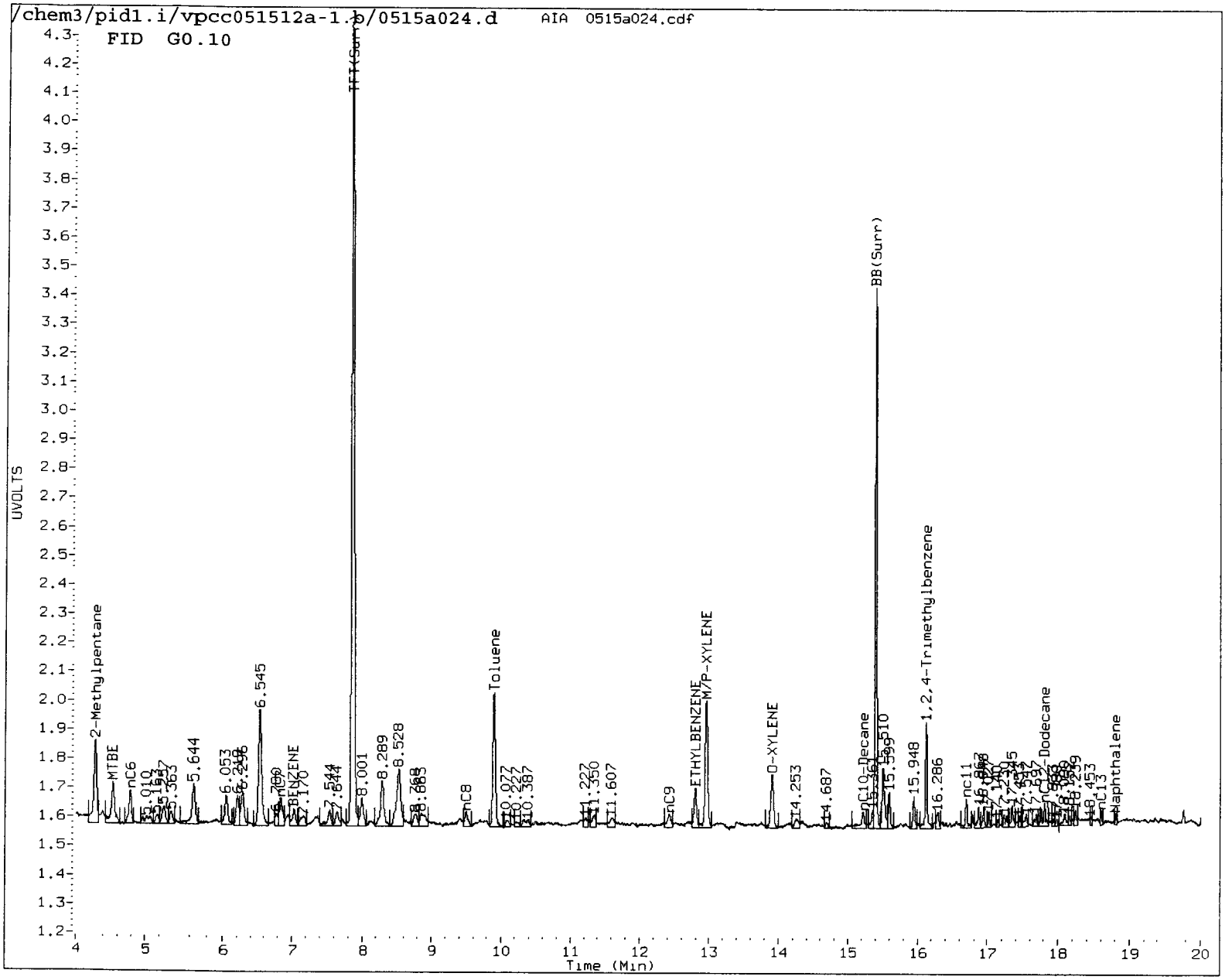
Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a024.d
Date : 15-MAY-2012 21:34
Client ID:
Sample Info: G0.10

Instrument: pid1.i

Operator: JW
Column diameter: 0.18

Column phase: RTX 502-2 FID





MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

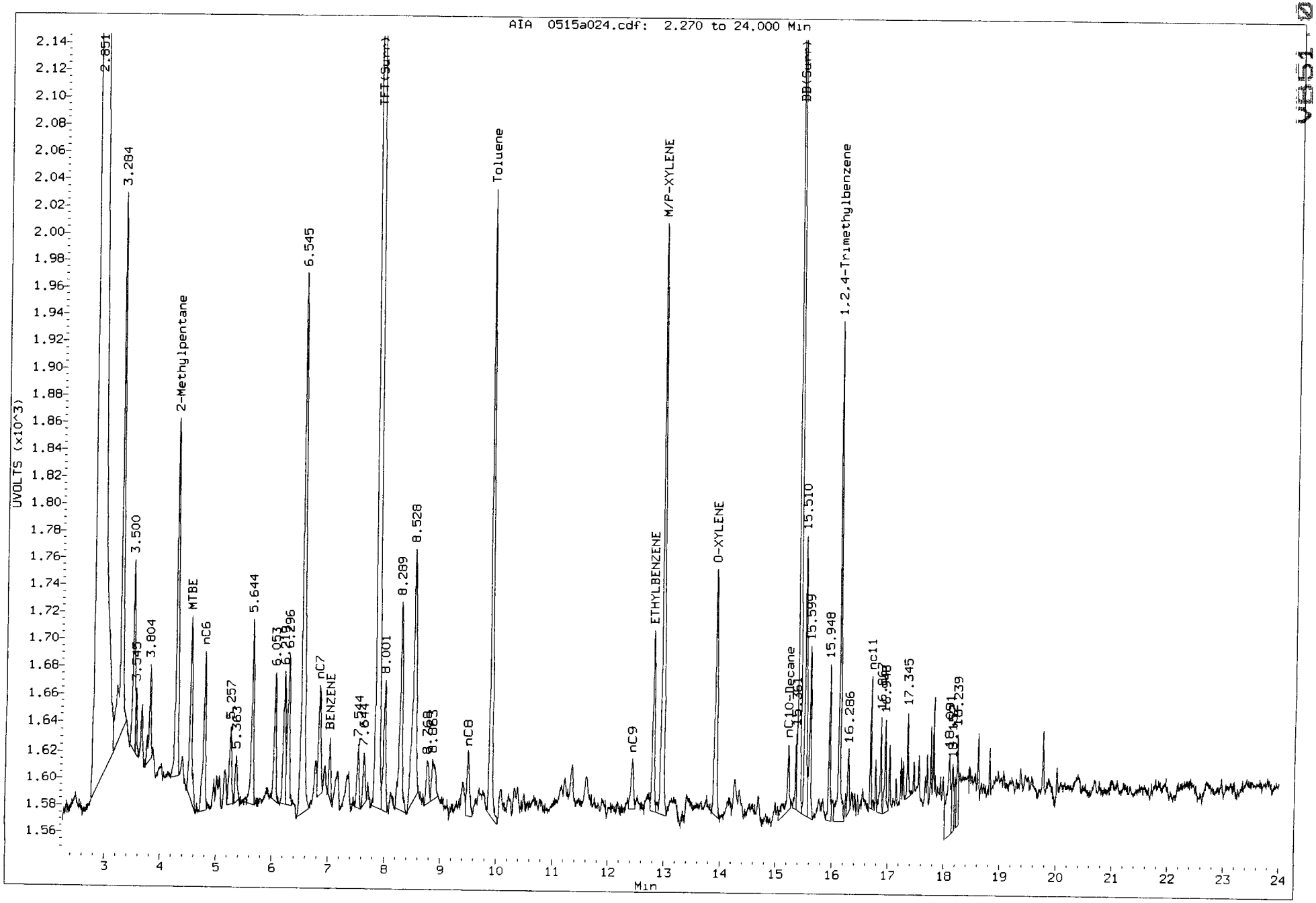
5. Other _____

Analyst: JW Date: 5/16/12

Data File: /chem3/pid1.1/vpcc051512a-1.b/0515a024.d/0515a024.cdf
Injection Date: 15-MAY-2012 21:34
Instrument: pid1.1
Client Sample ID:

Before JW 5/16/12

VB51 20511



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc051512a-1.b/0515a025.d ARI ID: GICV2.5
Data file 2: /chem3/pid1.i/vpcc051512a-2.b/0515a025.d Client ID:
Method: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m Injection Date: 15-MAY-2012 22:03
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.003	2878	41719	96.1	TFT(Surr)
15.407	0.000	1964	17259	101.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	782393	2.293 M
8015C 2MP-TMB	(4.20 to 16.22)	678311	1581623	2.332 M
AK101 nC6-nC10	(4.70 to 15.12)	538315	1079969	2.006 M
NWTPHG Tol-Nap	(9.80 to 18.93)	359529	818626	2.277 M

JW 5/16/12

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.003	3528	95.2	TFT(Surr)
15.414	0.001	8332	102.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.050	0.000	4503	18.06	Benzene
9.918	0.001	35278	161.59	Toluene
12.808	-0.002	5866	30.32	Ethylbenzene
12.973	0.006	23639	110.09	M/P-Xylene
13.921	0.001	6602	39.29	O-Xylene
4.569	0.002	23044	274.00	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a025.d

Date : 15-MAY-2012 22:03

Client ID:

Sample Info: GICV2.5

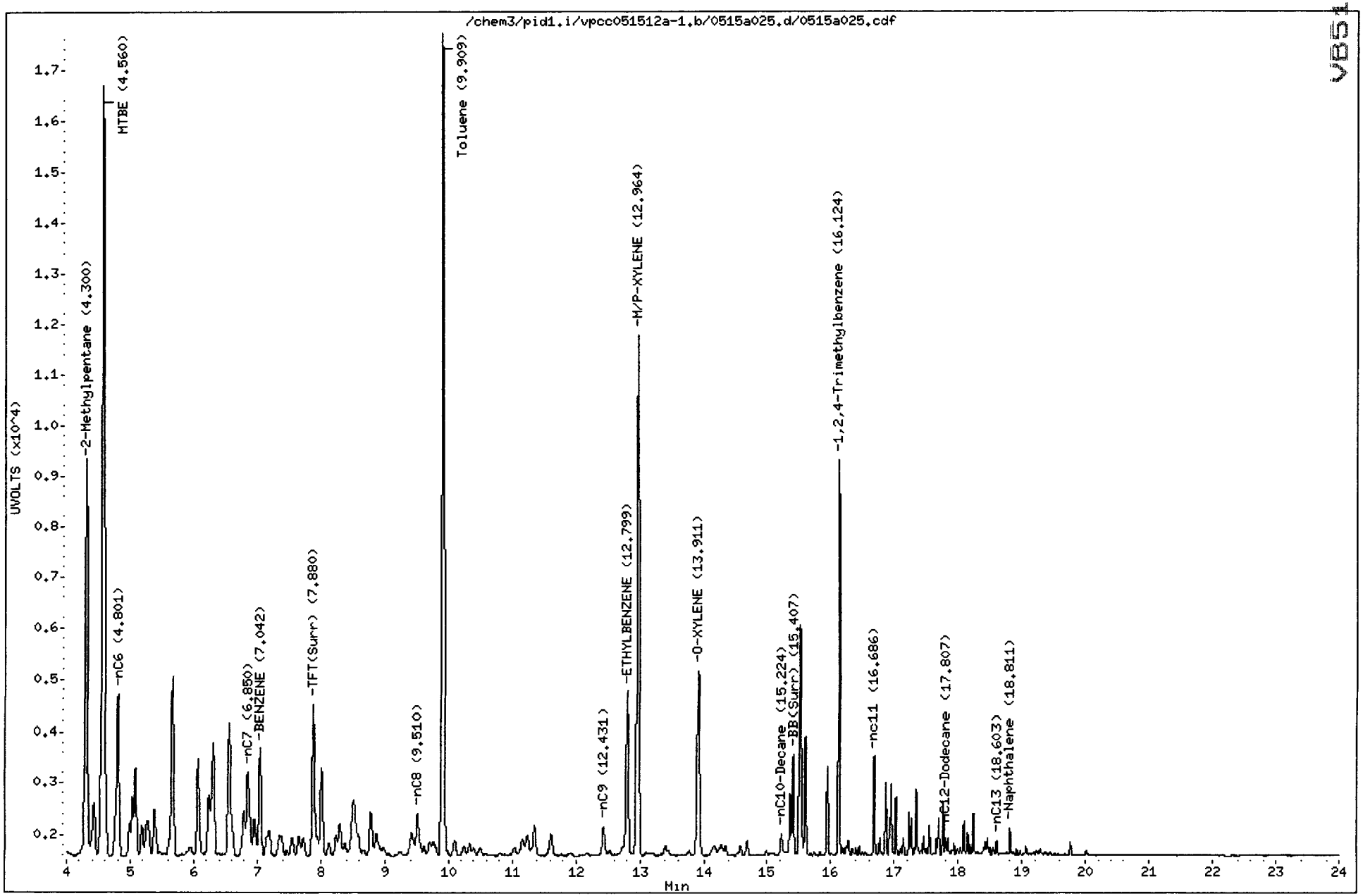
Column phase: RTX 502-2 FID

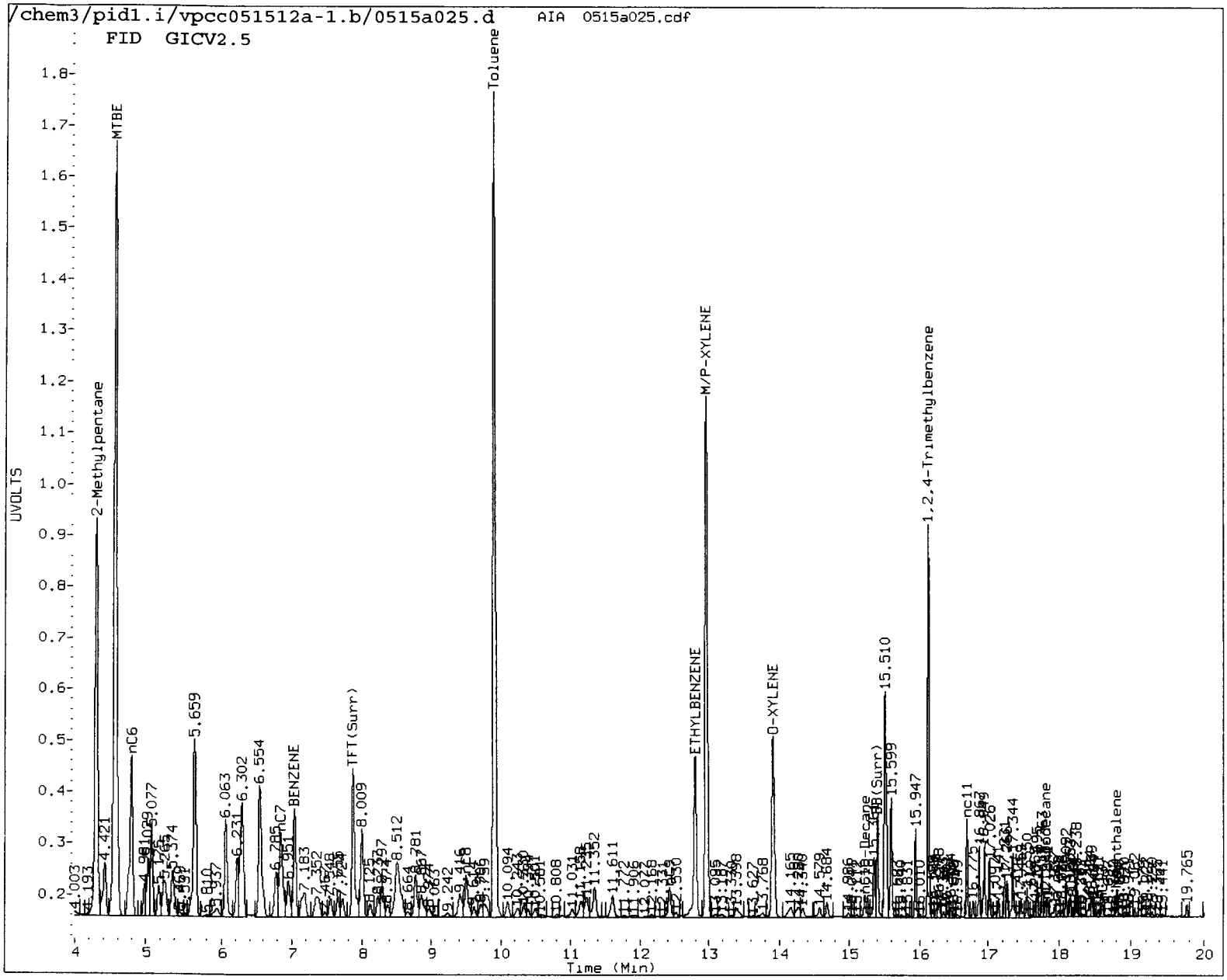
Instrument: pid1.i

Operator: JW

Column diameter: 0.18

VB51.00913



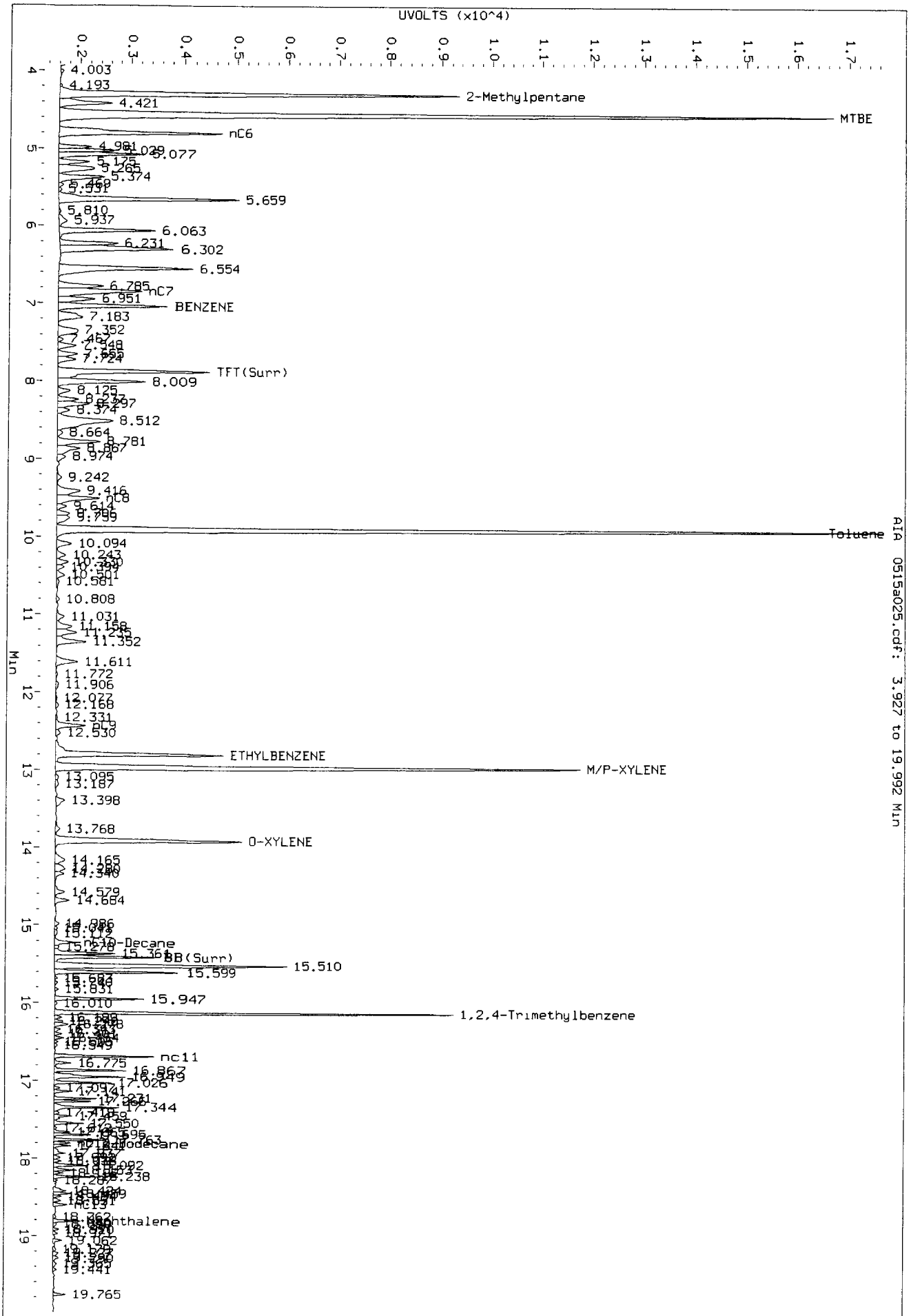


MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: JW Date: 5/16/12



Data File: /chem3/pid1.i/vpcc051512a-1.b/0515a025.d/0515a025.cdf
Injection Date: 15-MAY-2012 22:03
Instrument: pid1.i
Client Sample ID:

Before 5w 5/16/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/vpcc051512a-1.b/FID.m
Batch File: /chem3/pid1.i/vpcc051512a-1.b
Inst ID: pid1.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	0515a019	0515a020	0515a021	0515a022	0515a023	0515a024
INJ.DATE:	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012
INJ.TIME:	19:07	19:37	20:06	20:36	21:05	21:34

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1	NWTPHG	+++++	+++++	+++++	+++++	+++++	+++++	0.492	0.422-0.562	+++++	+++++
2	WAGAS	+++++	+++++	+++++	+++++	+++++	+++++	0.937	0.867-1.007	+++++	+++++
3	AK101	+++++	+++++	+++++	+++++	+++++	+++++	1.251	1.181-1.321	+++++	+++++
4	8015GAS	+++++	+++++	+++++	+++++	+++++	+++++	1.539	1.469-1.609	+++++	+++++
5	2-Methylpentane	4.302	4.300	4.299	4.296	4.299	4.284	4.296	4.226-4.366	4.297	0.006
6	MTBE	4.556	4.554	4.553	4.551	4.552	4.539	4.540	4.470-4.610	4.551	0.006
7	nC6	4.802	4.802	4.802	4.800	4.802	4.788	4.796	4.726-4.866	4.799	0.006
8	nC7	6.849	6.850	6.850	6.850	6.852	6.838	6.841	6.771-6.911	6.848	0.005
9	BENZENE	7.044	7.043	7.043	7.042	7.042	7.033	7.037	6.967-7.107	7.041	0.004
$ 10	TFT(Surr)	7.873	7.878	7.880	7.879	7.881	7.873	7.877	7.807-7.947	7.877	0.003
11	nC8	9.511	9.511	9.511	9.511	9.513	9.502	9.507	9.437-9.577	9.510	0.004
12	Toluene	9.913	9.911	9.909	9.907	9.909	9.903	9.903	9.833-9.973	9.909	0.003
13	nC9	12.435	12.432	12.431	12.432	12.433	12.427	12.431	12.361-12.501	12.432	0.002
14	ETHYLBENZENE	12.803	12.801	12.800	12.799	12.800	12.798	12.800	12.730-12.870	12.800	0.002
15	M/P-XYLENE	12.972	12.967	12.964	12.962	12.963	12.960	12.960	12.890-13.030	12.965	0.004
16	O-XYLENE	13.917	13.914	13.911	13.911	13.912	13.910	13.917	13.847-13.987	13.913	0.002
17	nC10-Decane	15.226	15.225	15.224	15.224	15.225	15.224	15.222	15.152-15.292	15.225	0.001

Reviewer 1 JW Date: 5/16/12
Reviewer 2 Date: 5/16/12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/vpcc051512a-1.b/FID.m
Batch File: /chem3/pid1.i/vpcc051512a-1.b
Inst ID: pid1.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
$ 18 BB(Surr)	15.407	15.407	15.407	15.407	15.407	15.406	15.407	15.337-15.477	15.407	0.001
$ 19 BFB(Surr)	+++++	+++++	+++++	+++++	+++++	+++++	16.027	15.957-16.097	+++++	+++++
20 1,2,4-Trimethylbenzene	16.128	16.126	16.125	16.124	16.125	16.124	16.122	16.052-16.192	16.125	0.001
21 nc11	16.686	16.686	16.686	16.686	16.687	16.686	16.720	16.650-16.790	16.686	0.000
22 nC12-Dodecane	17.805	17.811	17.807	17.809	17.809	17.810	17.811	17.741-17.881	17.809	0.002
23 nC13	18.602	18.610	18.603	18.606	18.608	18.607	18.623	18.553-18.693	18.606	0.003
24 Naphthalene	18.812	18.820	18.810	18.813	18.813	18.810	18.826	18.756-18.896	18.813	0.004

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/vpcc051512a-2.b/PIDB.m
Batch File: /chem3/pid1.i/vpcc051512a-2.b
Inst ID: pid1.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	0515a019	0515a020	0515a021	0515a022	0515a023	0515a024
INJ.DATE:	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012	15-MAY-2012
INJ.TIME:	19:07	19:37	20:06	20:36	21:05	21:34

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	1 MTBE	4.563	4.561	4.560	4.558	+++++	+++++	4.567	4.517-4.617	4.561	0.002
	2 Benzene	7.052	7.052	7.051	7.050	7.050	+++++	7.050	7.000-7.100	7.051	0.001
$	3 TFT(Surr)	7.885	7.887	7.888	7.888	7.889	7.881	7.885	7.835-7.935	7.886	0.003
	4 Toluene	9.922	9.919	9.917	9.916	9.917	9.911	9.917	9.867-9.967	9.917	0.003
	5 Ethylbenzene	12.812	12.810	12.809	12.808	12.809	12.806	12.810	12.760-12.860	12.809	0.002
	6 M/P-Xylene	12.980	12.976	12.973	12.971	12.972	12.969	12.967	12.917-13.017	12.973	0.004
	7 O-Xylene	13.926	13.923	13.921	13.921	13.921	13.919	13.920	13.890-13.950	13.922	0.002
$	8 BB(Surr)	15.415	15.415	15.414	15.414	15.415	15.413	15.413	15.363-15.463	15.414	0.001

Reviewer 1 JV Date: 5/16/12
Reviewer 2 Date: 5/16/12

VBS1 - 99918

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/pid1.i/vpcc051512a-1.b

ARI Job No.: RINS Method: FID.m Instrument: pid1.i Date: 15-MAY-2012

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1417	0515a009.d	RINSE		1	NO MANUAL INTEGRATION
1445	0515a010.d	RT+BCAL1		1	NO MANUAL INTEGRATION
1515	0515a011.d	B200		1	NO MANUAL INTEGRATION
1544	0515a012.d	B100		1	NO MANUAL INTEGRATION
1613	0515a013.d	B50		1	NO MANUAL INTEGRATION
1642	0515a014.d	B25		1	NO MANUAL INTEGRATION
1711	0515a015.d	B5		1	NO MANUAL INTEGRATION
1740	0515a016.d	B0.50		1	Toluene, MTBE, BENZENE, M/P-XYLENE, O-XYLENE, TFT(Surr),
1809	0515a017.d	B0.25		1	Toluene, BENZENE, ETHYLBENZENE, M/P-XYLENE, O-XYLENE, TFT(Surr), BB(Surr),
1838	0515a018.d	BICV25		1	NO MANUAL INTEGRATION
1907	0515a019.d	G10		1	TFT(Surr), BB(Surr),
1937	0515a020.d	G5		1	Naphthalene,
2006	0515a021.d	G2.5		1	Naphthalene, TFT(Surr),
2036	0515a022.d	G1.0		1	NO MANUAL INTEGRATION
2105	0515a023.d	G0.25		1	NO MANUAL INTEGRATION
2134	0515a024.d	G0.10		1	nC12-Dodecane, Naphthalene, nC13,
2203	0515a025.d	GICV2.5		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/pid1.i/vpcc051512a-2.b

ARI Job No.: RINS Method: PIDB.m Instrument: pid1.i Date: 15-MAY-2012

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1417	0515a009.d	RINSE		1	NO MANUAL INTEGRATION
1445	0515a010.d	RT+BCAL1		1	NO MANUAL INTEGRATION
1515	0515a011.d	B200		1	Benzene, Toluene, O-Xylene, MTBE, TFT(Surr), BB(Surr),
1544	0515a012.d	B100		1	Benzene, TFT(Surr), BB(Surr),
1613	0515a013.d	B50		1	Benzene, Toluene, MTBE, TFT(Surr),
1642	0515a014.d	B25		1	Benzene, Toluene, O-Xylene, MTBE, TFT(Surr), BB(Surr),
1711	0515a015.d	B5		1	Benzene, Toluene, O-Xylene, MTBE, TFT(Surr), BB(Surr),
1740	0515a016.d	B0.50		1	Benzene, Toluene, Ethylbenzene, M/P-Xylene, O-Xylene, MTBE, TFT(Surr), BB(Surr),
1809	0515a017.d	B0.25		1	Benzene, Toluene, Ethylbenzene, M/P-Xylene, O-Xylene, MTBE, BB(Surr),
1838	0515a018.d	BICV25		1	Benzene, Toluene, O-Xylene,
1907	0515a019.d	G10		1	NO MANUAL INTEGRATION
1937	0515a020.d	G5		1	NO MANUAL INTEGRATION
2006	0515a021.d	G2.5		1	NO MANUAL INTEGRATION
2036	0515a022.d	G1.0		1	NO MANUAL INTEGRATION
2105	0515a023.d	G0.25		1	NO MANUAL INTEGRATION
2134	0515a024.d	G0.10		1	NO MANUAL INTEGRATION
2203	0515a025.d	GICV2.5		1	NO MANUAL INTEGRATION

TPHG Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: VB51, VB54

Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Analyst Notes / Corrective Action Log

ARI Project ID: VB51, VB54 Client ID: Anchor QEA

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.2) **710S**(RSK-175)

Parameter(s): NWTPHG

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6 FINN-5

Purge Volume (mL) 5 Curve Date: 5/15/12 Analysis Start Date: 7/11/12

pH ≤ 2.0	YES / NO / NA	Method Blank In Control?	YES / NO
BFB Tune Meets Criteria?	YES / NO / NA	LCS / LCSD Recovery In Control?	YES / NO
Internal Standard Meets Criteria?	YES / NO / NA	Surrogate Recovery In Control?	YES / NO
ICal acceptable?	YES / NO	CCal acceptable?	YES / NO
Q flag applied?	YES / NO / NA	Q flag applied?	YES / NO / NA
Manual Integrations for ICal?	YES / NO	Manual Integrations for Samples?	Yes / NO
Special Analysis Criteria Met?	YES / NO / NA		

Bubbles/Headspace: None SM (≤ 2mm •) PB (2-4mm) LG (> 4mm ●) Head Space

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

BB inflated due to coelution in samples VB51 F & I, still w/in QC limits

Run & processed by JR, LIMS & package by JW

Additional Details on Reverse: Yes / No

Analyst: JW **Date:** 7/16/12

Reviewer: MW **Date:** 7/16

PID-1 Serial No.: 2750A-17141

Date: 7/11/12 Analysis: Gas Analyst: JR

Column 1 Serial No.: 821726 Column Type: RTX502-2

Column 2 Serial No.: — Column Type: —

GC Method: BTEX ICal Date: 5/15/12 Injection Volume: 5mL

IS	Ical/Ccal	ICV
VW746-3	VW726-1	VW745-3
	VW737-3	
	VW745-3	

Document All Maintenance Tasks In StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chen

	Time	Filename	LabID	ClientID	Vial#	pH	DF
1	0901	0711a001.d	RINSE				1
2	0930	0711a002.d	RT+BCAL				1
3	0959	0711a003.d	GCAL				1
4	1029	0711a004.d	0711LCS1				1
5	1058	0711a005.d	0711LCSD1				1
6	1127	0711a006.d	0711MB1				1
7	1605	0711a007.d	VB75D	Trip Blanks	1	1	1
8	1634	0711a008.d	VB54W	CW-TB	1	1	1
9	1703	0711a009.d	VB75A	C1	2	1	1
10	1732	0711a010.d	VB51A	CW-TP-06-5 5-6 5	2		1
11	1801	0711a011.d	VB51AMS		2		1
12	1831	0711a012.d	VB51AMSD		2		1
13	1900	0711a013.d	BCAL#2				1
14	1929	0711a014.d	GCAL#2				1
15	1958	0711a015.d	VB51F	CW-TP-07-9-10	3		1
16	2028	0711a016.d	VB51I	CW-TP-09-6.3-7 3	4		1
17	2057	0711a017.d	VB51L	CW-TP-09-10-11	6		1
18	2126	0711a018.d	VB54A	CW-TP-05-7-8	3		1
19	2155	0711a019.d	VB54D	CW-TP-03-7-8	3		1
20	2224	0711a020.d	VB54G	CW-TP-02-8 2-9 2	3		1
21	2254	0711a021.d	VB54J	CW-TP-01-8-9	2		1
22	2323	0711a022.d	VB54N	CW-TP-08-7-8	2		1
23	2352	0711a023.d	VB54Q	CW-TP-04-8-9	2		1
24	0022	0711a024.d	VB54T	CW-TP-54-8-9	2		1
25	0051	0711a025.d	BCAL#3				1
26	0120	0711a026.d	GCAL#3				1

JW 7/16/12

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

Analytical Resources Inc.: Organics Instrument Log

PID-1 Serial No.: 2750A-17141

Date: 7/12/12 Analysis: Gas Analyst: JR

Column 1 Serial No.: 821726 Column Type: RTX502-2

Column 2 Serial No.: ~~[illegible]~~ Column Type: ——

GC Method: BETX ICal Date: —— Injection Volume: 5 mL

IS	Ical/Ccal	ICV
VW 746-3	VW726	VW745-3
	VW737-3	
	VW 745-3	

Document All Maintenance Tasks In StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /ch JW 7/10/12

	Time	Filename	LabID	ClientID	Vial#	pH	DF
1	0747	0712a001 d	RINSE				1
2	0816	0712a002 d	RT+BCAL				1
3	0845	0712a003 d	GCAL				1
4	0914	0712a004.d	0712LCS1				1
5	0944	0712a005.d	0712LCSD1				1
6	1013	0712a006.d	0712MB1				1
7	1355	0712a007.d	VB51F	CW-TP-07-9-10	3		1
8	1424	0712a008 d	VB51I	CW-TP-09-6 3-7 3	4		1
9	1454	0712a009.d	VB51L	CW-TP-09-10-11	6		1
10	1523	0712a010 d	VB54A	CW-TP-05-7-8	3		1
11	1552	0712a011.d	VB54D	CW-TP-03-7-8	3		1
12	1622	0712a012 d	VB54G	CW-TP-02-8 2-9.2	3		1
13	1651	0712a013 d	BCAL#2				1
14	1720	0712a014 d	GCAL#2				1
15	1749	0712a015 d	VB54J	CW-TP-01-8-9	2		1
16	1818	0712a016 d	VB54N	CW-TP-08-7-8	2		1
17	1848	0712a017.d	VB54Q	CW-TP-04-8-9	2		1
18	1917	0712a018 d	VB54T	CW-TP-54-8-9	2		1
19	1946	0712a019 d	BCAL#3				1
20	2015	0712a020 d	GCAL#3				1

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071211-1.b/0711a002.d ARI ID: RT+BCAL
Data file 2: /chem3/pid1.i/vpcc071211-2.b/0711a002.d Client ID:
Method: /chem3/pid1.i/vpcc071211-2.b/PIDB.m Injection Date: 11-JUL-2012 09:30
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.876	0.002	3176	39437	106.0	TFT(Surr)
15.405	0.000	2026	16630	104.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	396687	1.163
8015C 2MP-TMB	(4.20 to 16.22)	678311	463815	0.684
AK101 nC6-nC10	(4.70 to 15.12)	538315	324790	0.603
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	430474	1.197

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.884	0.002	3952	106.6	TFT(Surr)
15.412	0.000	8404	103.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	0.002	5458	21.89	Benzene
9.913	0.002	4923	22.55	Toluene
12.805	0.001	4357	22.52	Ethylbenzene
12.966	0.001	9529	44.38	M/P-Xylene
13.917	0.001	3750	22.32	O-Xylene
4.578	0.003	1885	22.41	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071211-1.b/0711a002.d

Date : 11-JUL-2012 09:30

Client ID:

Sample Info: RT+BCAL

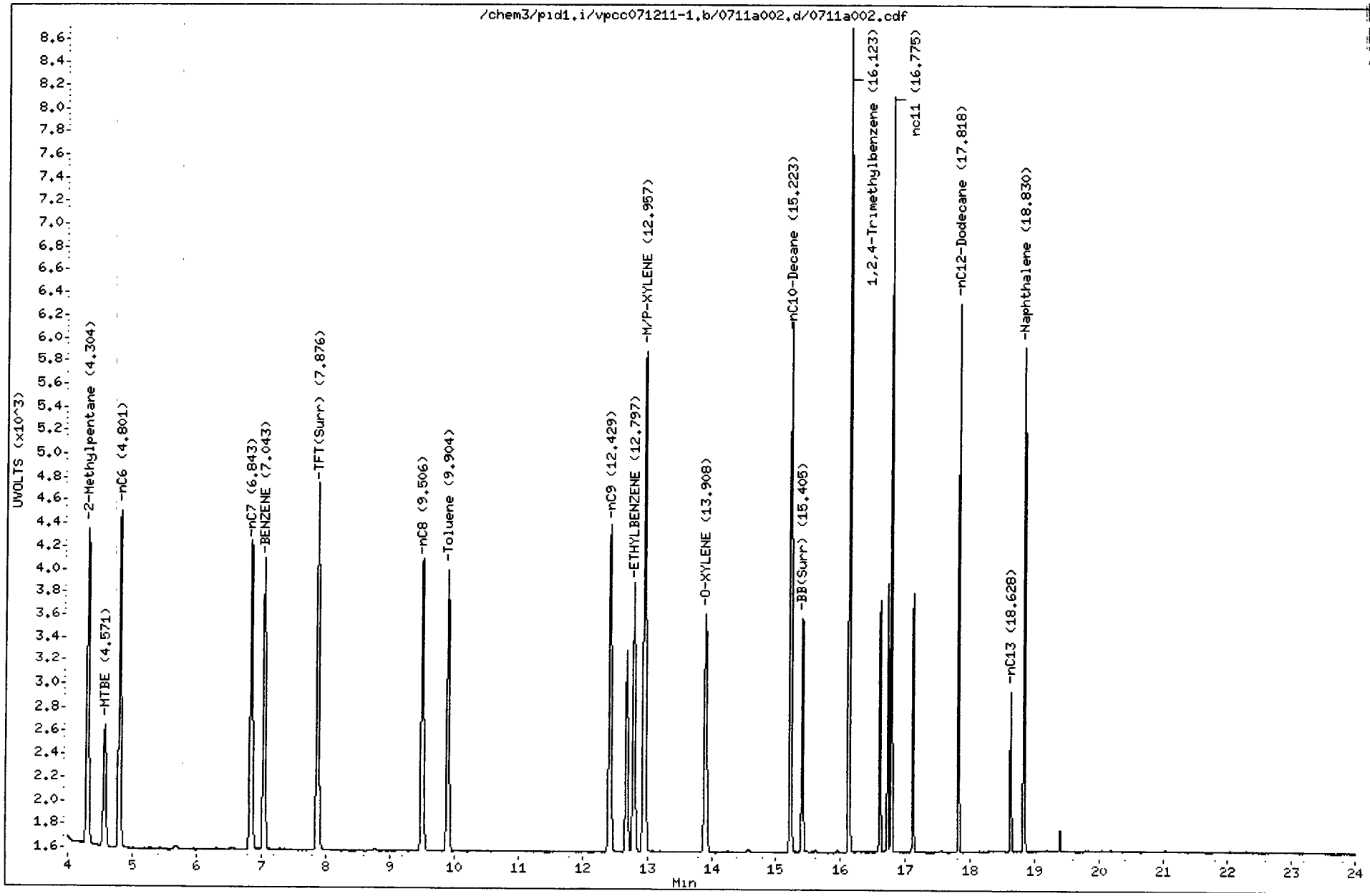
Instrument: pid1.i

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18

VB51:00926



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071211-1.b/0711a003.d ARI ID: GCAL
Data file 2: /chem3/pid1.i/vpcc071211-2.b/0711a003.d Client ID:
Method: /chem3/pid1.i/vpcc071211-2.b/PIDB.m Injection Date: 11-JUL-2012 09:59
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.002	3201	45539	106.9	TFT(Surr)
15.406	0.002	1961	17494	101.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	775884	2.274
8015C 2MP-TMB	(4.20 to 16.22)	678311	1560668	2.301
AK101 nC6-nC10	(4.70 to 15.12)	538315	1267287	2.354
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	817000	2.272

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	0.002	3770	101.7	TFT(Surr)
15.414	0.002	8096	99.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	0.002	2000	8.02	Benzene
9.915	0.004	19627	89.90	Toluene
12.807	0.003	5010	25.89	Ethylbenzene
12.971	0.006	19915	92.74	M/P-Xylene
13.920	0.003	7084	42.16	O-Xylene
4.564	-0.011	373	4.44	MTBE

\ Indicates Peak Area was used for quantitation instead of Height
J Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071211-1.b/0711a003.d

Date : 11-JUL-2012 09:59

Client ID:

Sample Info: GCAL

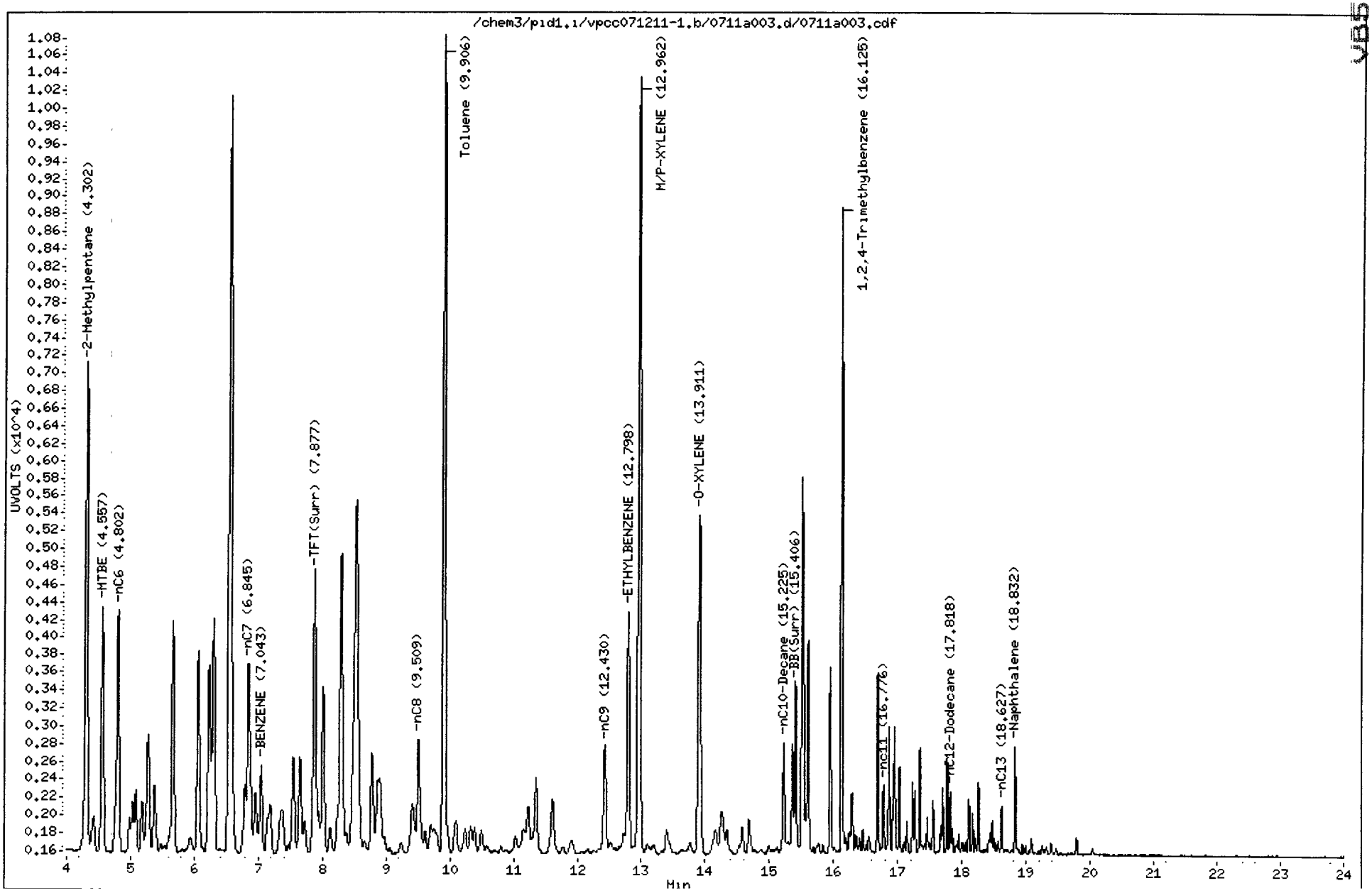
Instrument: pid1.i

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18

VB51 : 00928



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071211-1.b/0711a004.d ARI ID: 0711LCS1
Data file 2: /chem3/pid1.i/vpcc071211-2.b/0711a004.d Client ID:
Method: /chem3/pid1.i/vpcc071211-2.b/PIDB.m Injection Date: 11-JUL-2012 10:29
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.002	2938	41163	98.1	TFT(Surr)
15.407	0.002	1851	16179	95.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	319487	0.936
8015C 2MP-TMB	(4.20 to 16.22)	678311	644620	0.950
AK101 nC6-nC10	(4.70 to 15.12)	538315	520607	0.967
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	336748	0.937

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

7/13/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	0.004	3564	96.1	TFT(Surr)
15.413	0.002	7685	94.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.052	0.003	818	3.28	Benzene
9.914	0.003	8116	37.17	Toluene
12.807	0.003	2033	10.51	Ethylbenzene
12.970	0.005	8122	37.82	M/P-Xylene
13.919	0.003	2939	17.49	O-Xylene
4.566	-0.009	153	1.82	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

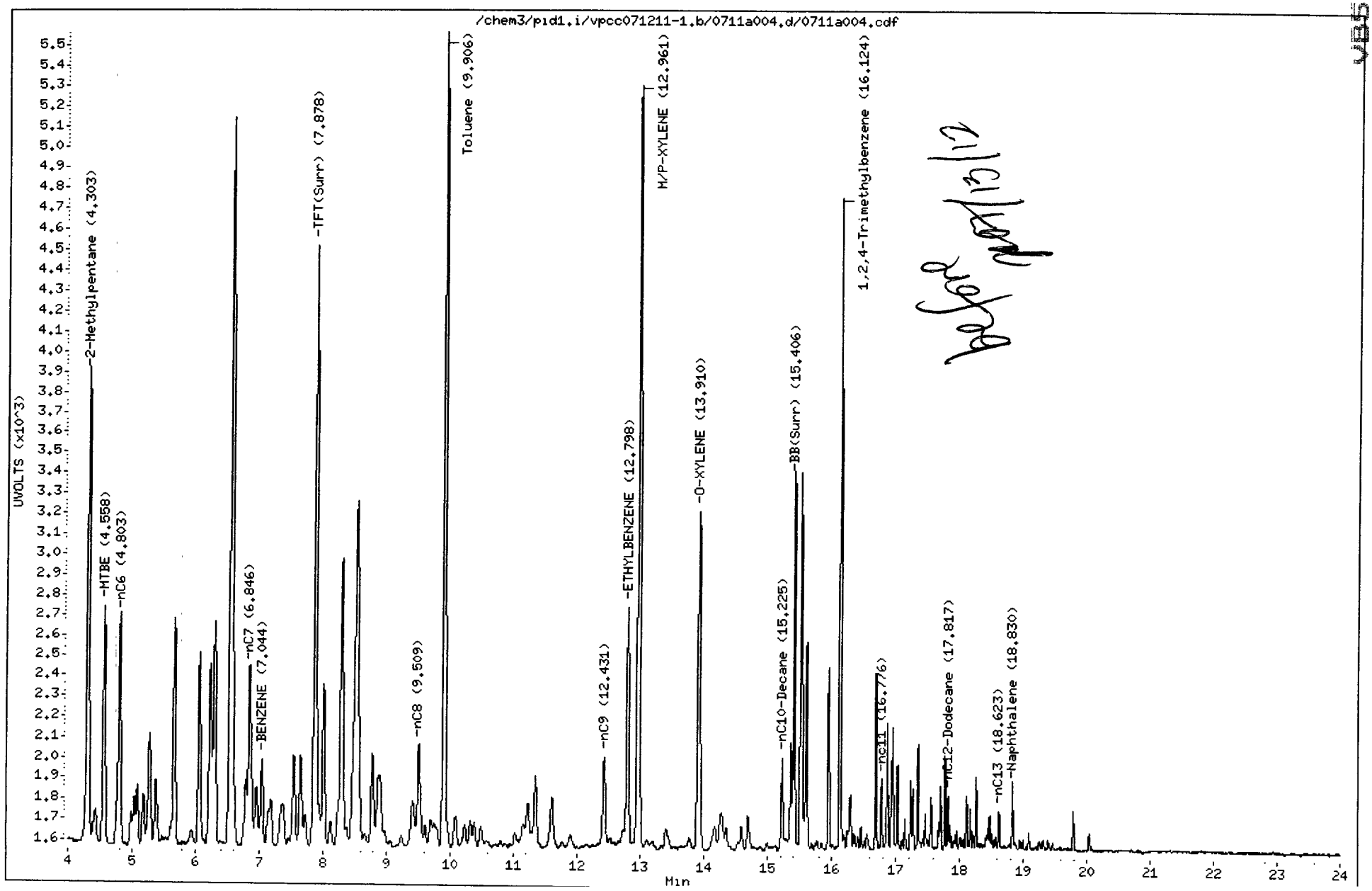
Data File: /chem3/pid1.i/vpcc071211-1.b/0711a004.d
Date : 11-JUL-2012 10:29
Client ID:
Sample Info: 0711LCS1

Instrument: pid1.i

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



7/12/12

Data File: /chem3/pid1.i/vpcc071211-1.b/0711a004.d

Date : 11-JUL-2012 10:29

Client ID:

Sample Info: 0711LCS1

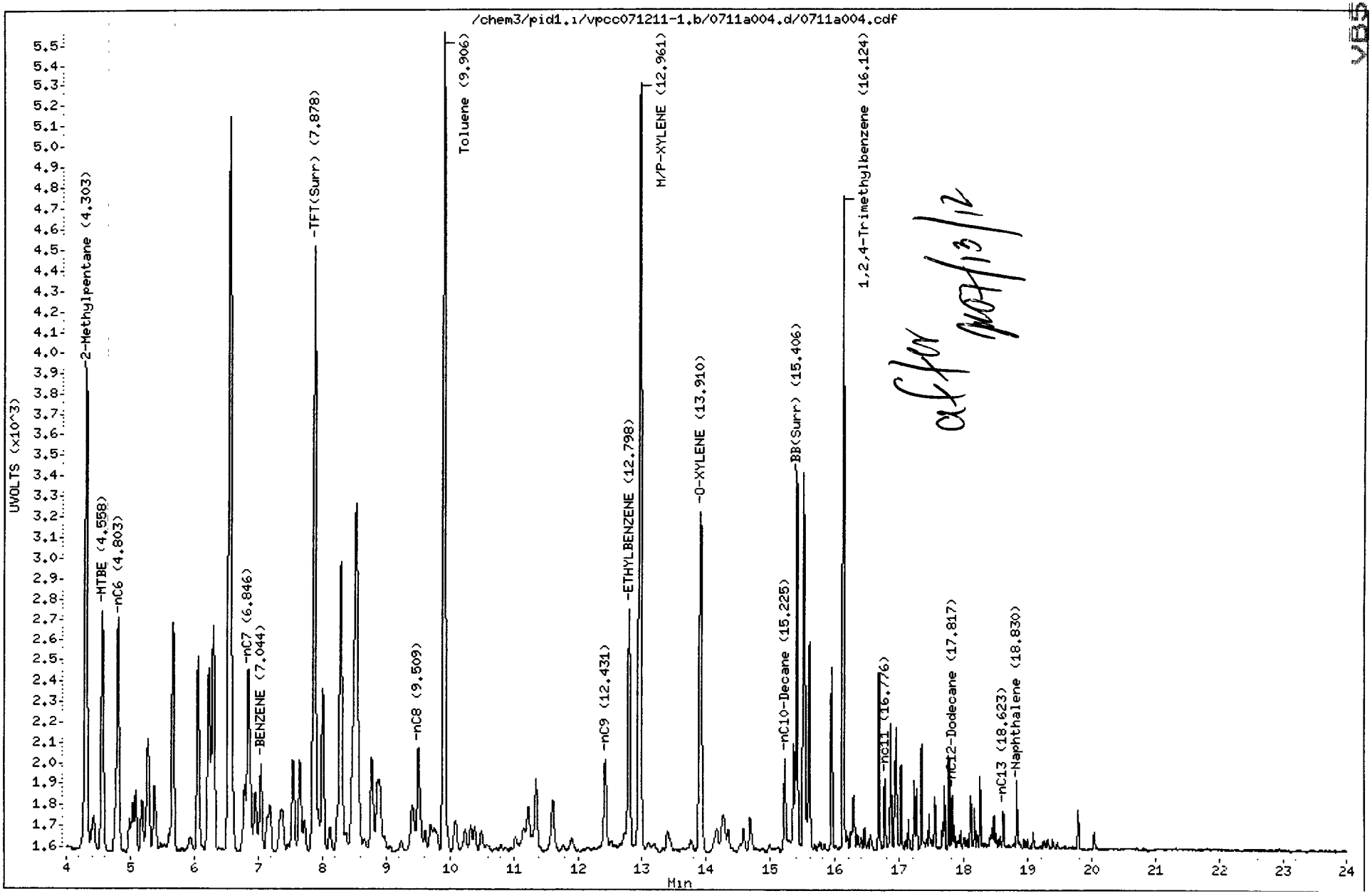
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB51 : 00331



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071211-1.b/0711a005.d ARI ID: 0711LCSD1
Data file 2: /chem3/pid1.i/vpcc071211-2.b/0711a005.d Client ID:
Method: /chem3/pid1.i/vpcc071211-2.b/PIDB.m Injection Date: 11-JUL-2012 10:58
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.002	2907	40601	97.0	TFT(Surr)
15.407	0.002	1835	16079	94.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	324670	0.952
8015C 2MP-TMB	(4.20 to 16.22)	678311	655105	0.966
AK101 nC6-nC10	(4.70 to 15.12)	538315	528155	0.981
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	340696	0.948

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/13/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	0.003	3521	95.0	TFT(Surr)
15.413	0.001	7658	93.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	0.002	849	3.40	Benzene
9.913	0.002	8323	38.12	Toluene
12.806	0.002	2059	10.64	Ethylbenzene
12.969	0.004	8317	38.73	M/P-Xylene
13.919	0.002	2999	17.85	O-Xylene
4.565	-0.010	153	1.82	MTBE

A Indicates Peak Area was used for quantitation instead of Height
V Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071211-1.b/0711a005.d
Date : 11-JUL-2012 10:58
Client ID:
Sample Info: 0711LCSD1

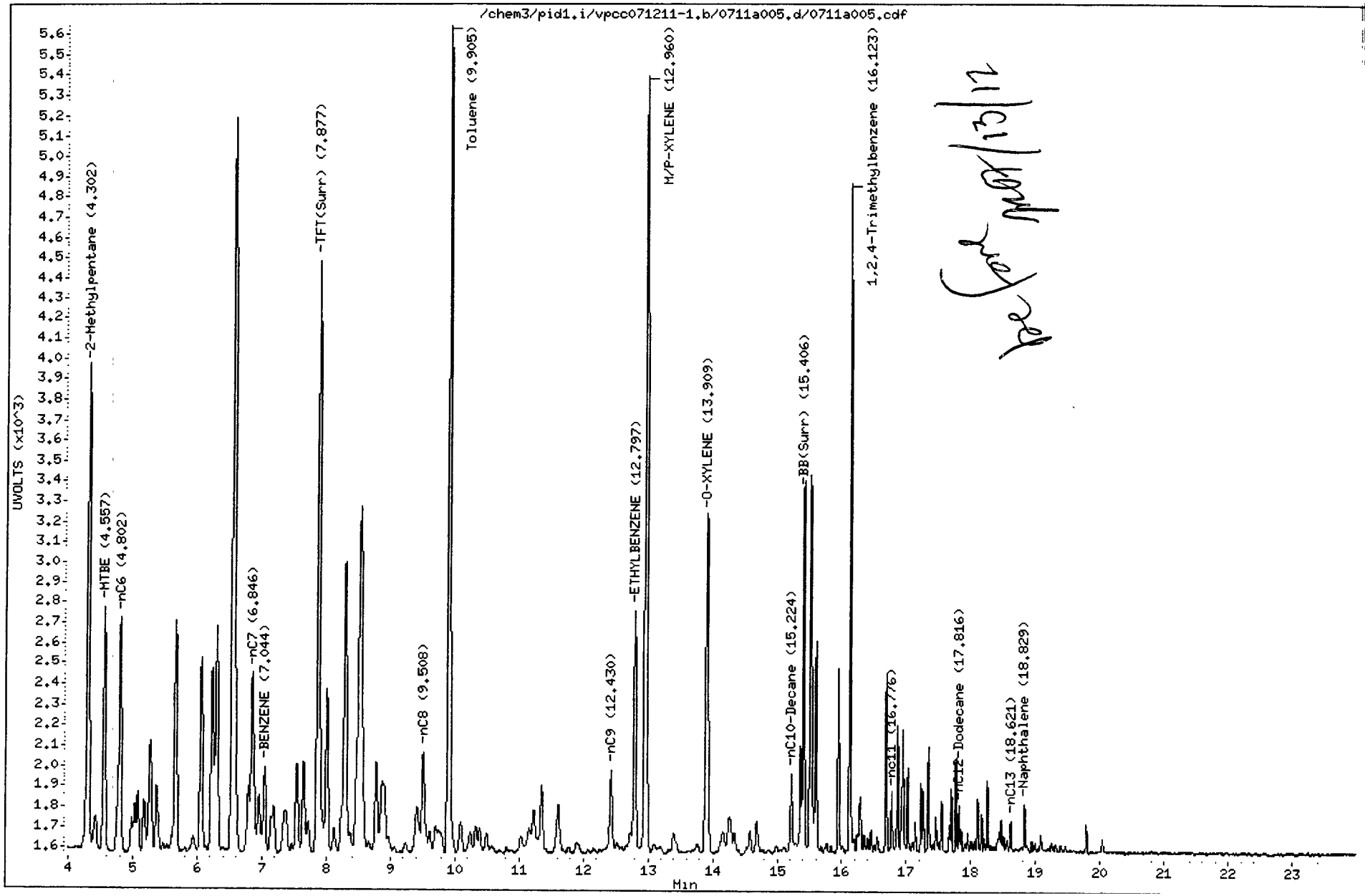
Instrument: pid1.i

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18

VB51 : 0933

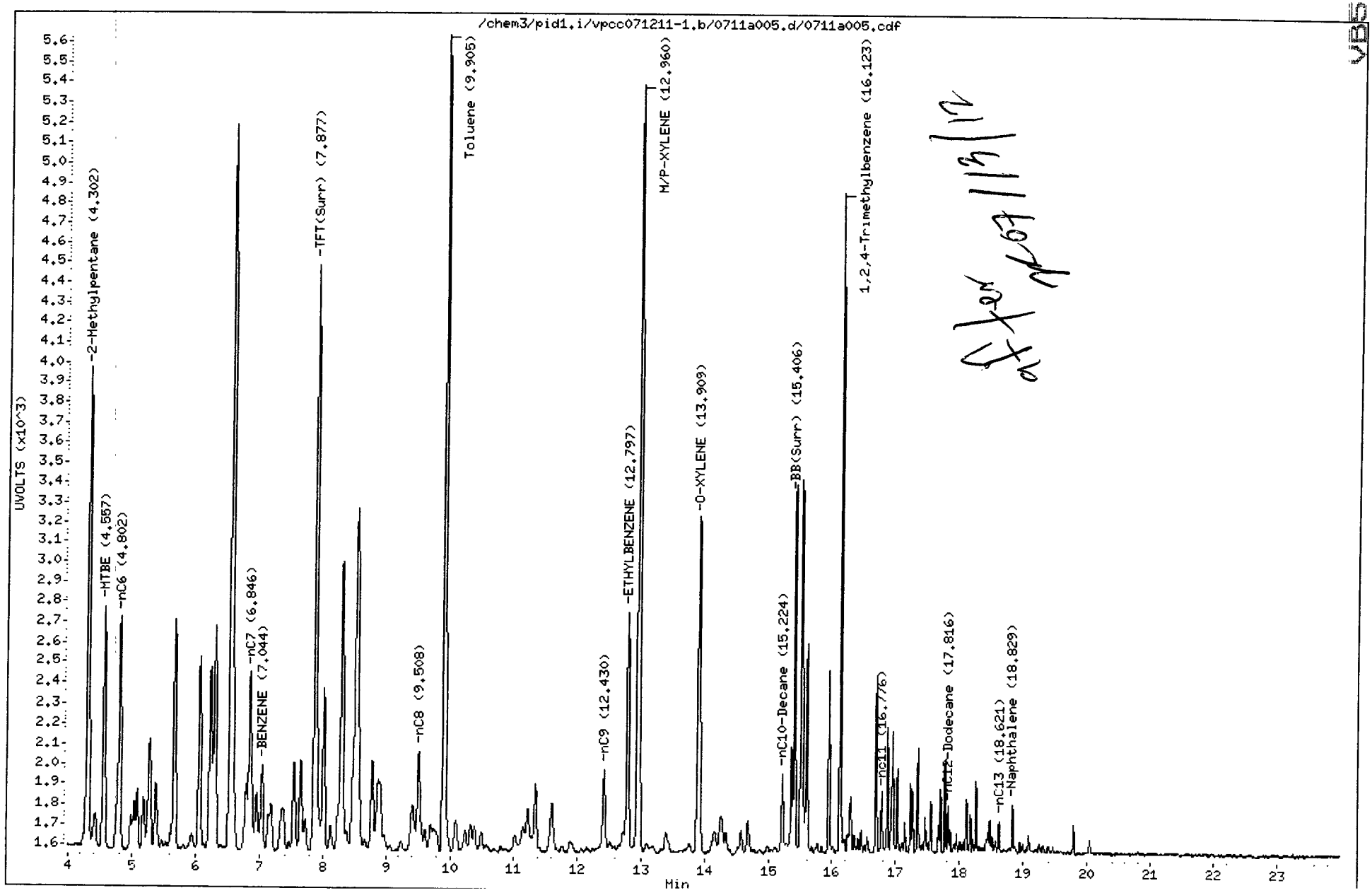


Data File: /chem3/pid1.i/vpcc071211-1.b/0711a005.d
Date : 11-JUL-2012 10:58
Client ID:
Sample Info: 0711LCSD1

Instrument: pid1.i

Operator: JR
Column phase: RTX 502-2 FID
Column diameter: 0.18

VB51.00531



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071211-1.b/0711a006.d ARI ID: 0711MB1
Data file 2: /chem3/pid1.i/vpcc071211-2.b/0711a006.d Client ID:
Method: /chem3/pid1.i/vpcc071211-2.b/PIDB.m Injection Date: 11-JUL-2012 11:27
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	0.003	2779	34442	92.8	TFT(Surr)
15.405	0.001	1806	15056	93.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	1832	0.005
8015C 2MP-TMB	(4.20 to 16.22)	678311	1265	0.002
AK101 nC6-nC10	(4.70 to 15.12)	538315	783	0.001
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	1832	0.005

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

07/13/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	0.003	3408	91.9	TFT(Surr)
15.413	0.001	7478	91.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.1/vpcc071211-1.b/0711a006.d

Date : 11-JUL-2012 11:27

Client ID:

Sample Info: 0711MB1

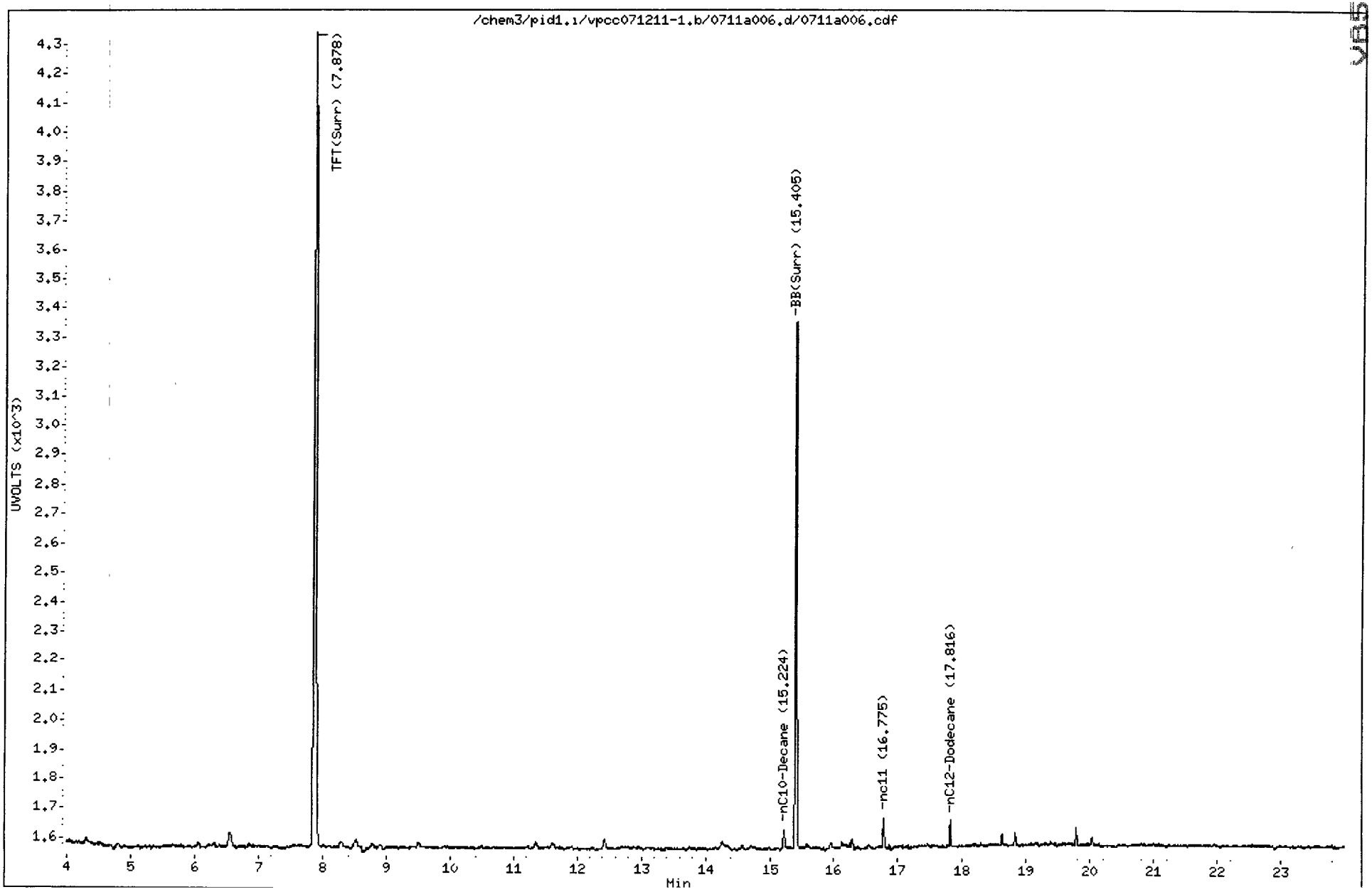
Instrument: pid1.1

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18

VB51 09936



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071211-1.b/0711a008.d
Data file 2: /chem3/pid1.i/vpcc071211-2.b/0711a008.d
Method: /chem3/pid1.i/vpcc071211-2.b/PIDB.m
Instrument: pid1.i
Gas Ical Date: 15-MAY-2012
BETX Ical Date: 15-MAY-2012

ARI ID: VB54W
Client ID: CW-TB
Injection Date: 11-JUL-2012 16:34
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.875	0.001	2908	36120	97.1	TFT(Surr)
15.405	0.001	1829	15269	94.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	0	0.000
8015C 2MP-TMB	(4.20 to 16.22)	678311	1	0.000
AK101 nC6-nC10	(4.70 to 15.12)	538315	0	0.000
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	0	0.000

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.884	0.001	3602	97.2	TFT(Surr)
15.413	0.001	7628	93.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071211-1.b/0711a008.d

Date : 11-JUL-2012 16:34

Client ID: CW-TB

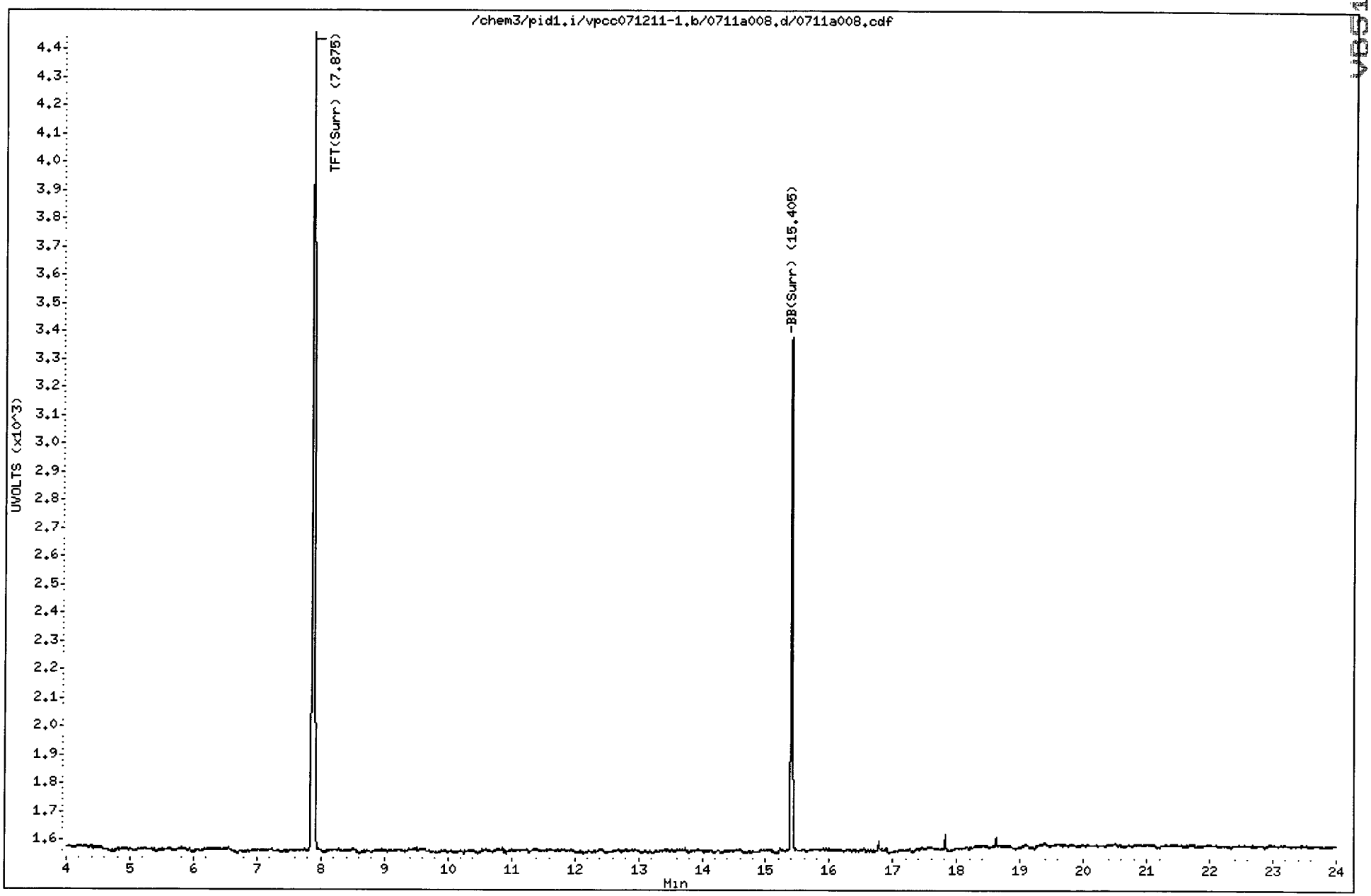
Sample Info: VB54W

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071211-1.b/0711a010.d ARI ID: VB51A
Data file 2: /chem3/pid1.i/vpcc071211-2.b/0711a010.d Client ID: CW-TP-06-5.5-6.5
Method: /chem3/pid1.i/vpcc071211-2.b/PIDB.m Injection Date: 11-JUL-2012 17:32
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.003	2820	35163	94.1	TFT(Surr)
15.405	0.001	1826	15270	94.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	0	0.000
8015C 2MP-TMB	(4.20 to 16.22)	678311	0	0.000
AK101 nC6-nC10	(4.70 to 15.12)	538315	0	0.000
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	0	0.000

JW 7/13/12

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	0.003	3466	93.5	TFT(Surr)
15.413	0.001	7536	92.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071211-1.b/0711a010.d

Date : 11-JUL-2012 17:32

Client ID: CW-TP-06-5.5-6.5

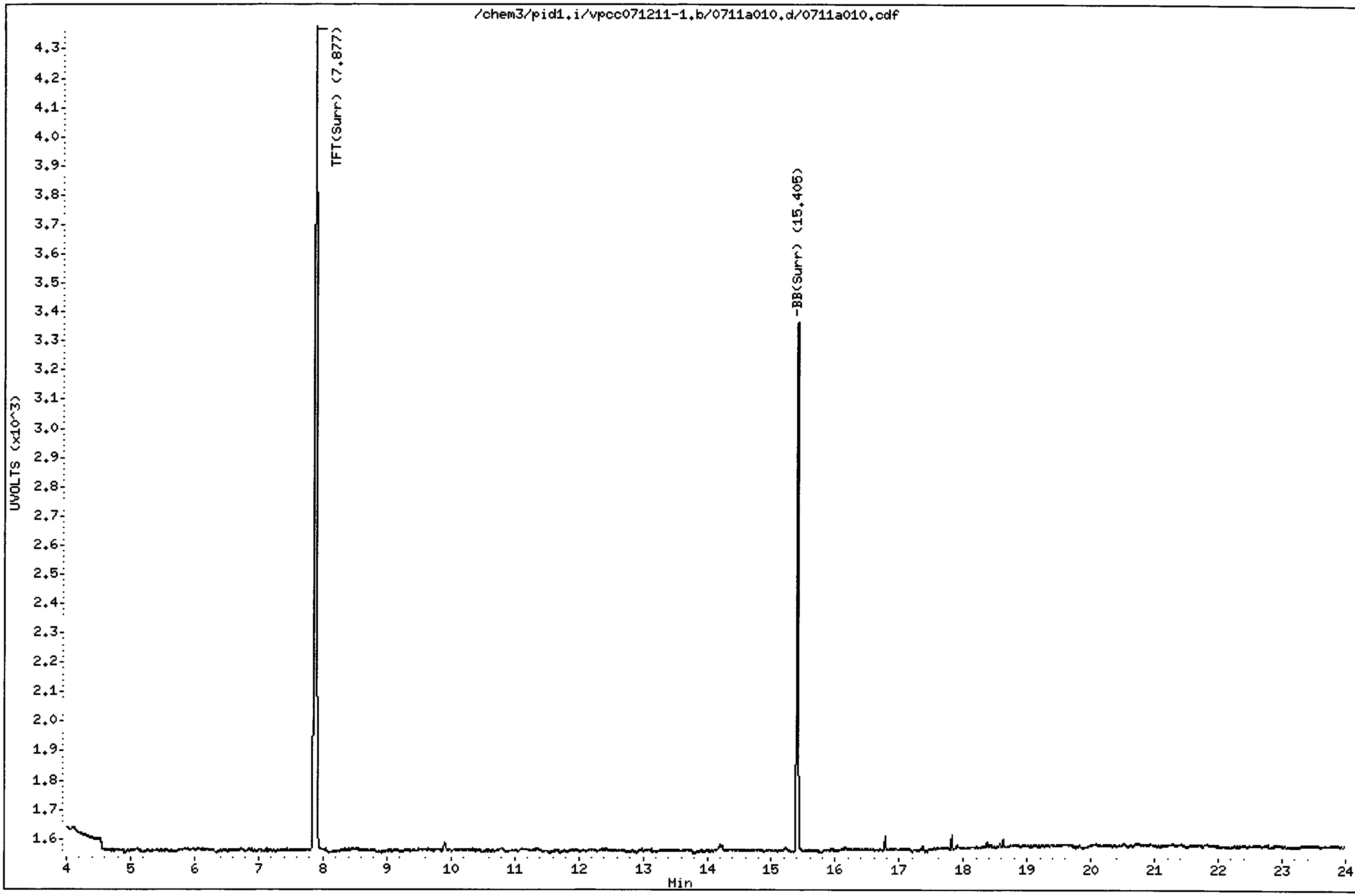
Sample Info: VB51A

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071211-1.b/0711a011.d ARI ID: VB51AMS
Data file 2: /chem3/pid1.i/vpcc071211-2.b/0711a011.d Client ID:
Method: /chem3/pid1.i/vpcc071211-2.b/PIDB.m Injection Date: 11-JUL-2012 18:01
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.002	2984	41509	99.6	TFT(Surr)
15.407	0.002	1892	16386	97.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	300650	0.881
8015C 2MP-TMB	(4.20 to 16.22)	678311	628310	0.926
AK101 nC6-nC10	(4.70 to 15.12)	538315	503260	0.935
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	315674	0.878

JW 7/13/12

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	0.003	3635	98.0	TFT(Surr)
15.414	0.002	7867	96.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	0.002	831	3.33	Benzene
9.914	0.003	8140	37.28	Toluene
12.806	0.002	2030	10.49	Ethylbenzene
12.970	0.005	8153	37.97	M/P-Xylene
13.919	0.003	2922	17.39	O-Xylene
4.565	-0.010	160	1.90	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071211-1.b/0711a011.d

Date : 11-JUL-2012 18:01

Client ID:

Sample Info: VB51AMS

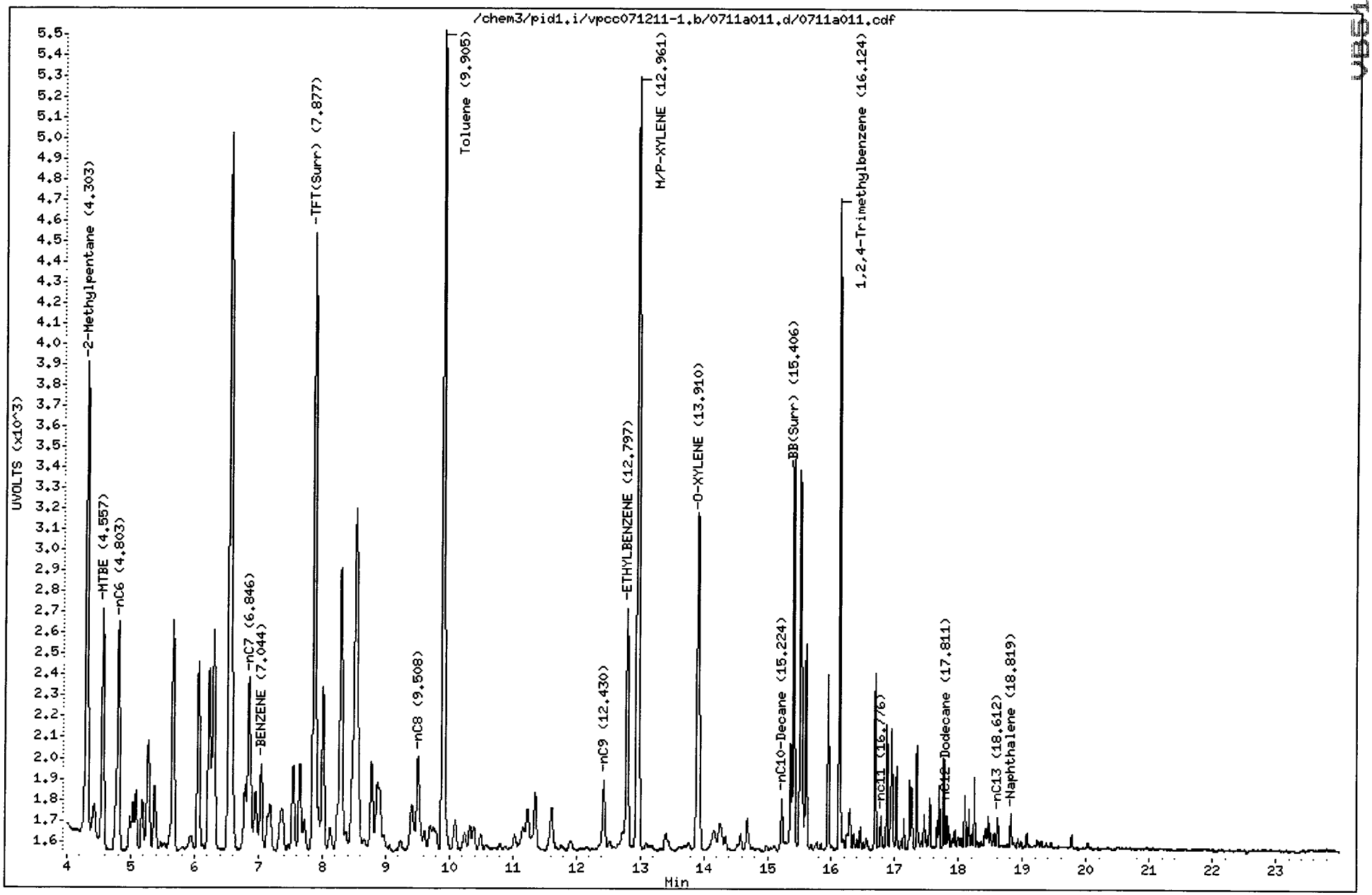
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB51 : 09512



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071211-1.b/0711a012.d ARI ID: VB51AMSD
Data file 2: /chem3/pid1.i/vpcc071211-2.b/0711a012.d Client ID:
Method: /chem3/pid1.i/vpcc071211-2.b/PIDB.m Injection Date: 11-JUL-2012 18:31
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.002	2964	41376	99.0	TFT(Surr)
15.406	0.002	1920	16468	99.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	308583	0.904
8015C 2MP-TMB	(4.20 to 16.22)	678311	636269	0.938
AK101 nC6-nC10	(4.70 to 15.12)	538315	508604	0.945
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	323621	0.900

JW 7/13/12

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	0.003	3593	96.9	TFT(Surr)
15.414	0.002	7846	96.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	0.002	821	3.29	Benzene
9.914	0.003	8030	36.78	Toluene
12.807	0.003	1967	10.17	Ethylbenzene
12.970	0.005	7963	37.08	M/P-Xylene
13.920	0.003	2901	17.27	O-Xylene
4.565	-0.010	158	1.88	MTBE

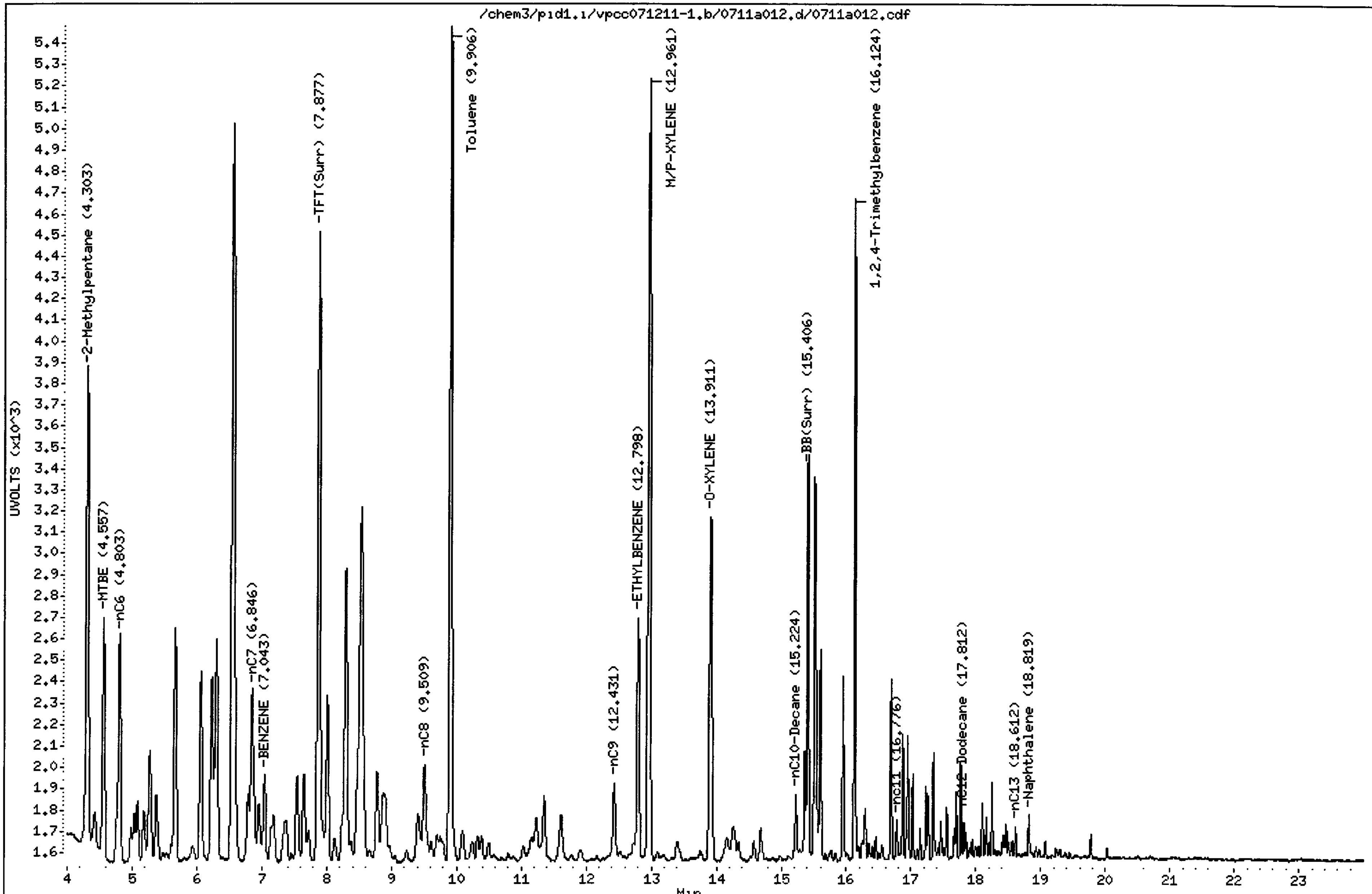
A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071211-1.b/0711a012.d
Date : 11-JUL-2012 18:31
Client ID:
Sample Info: VB51AMSD

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR
Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071211-1.b/0711a014.d ARI ID: GCAL#2
Data file 2: /chem3/pid1.i/vpcc071211-2.b/0711a014.d Client ID:
Method: /chem3/pid1.i/vpcc071211-2.b/PIDB.m Injection Date: 11-JUL-2012 19:29
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.876	0.002	3024	42751	101.0	TFT(Surr)
15.406	0.002	1914	16658	98.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	732247	2.146
8015C 2MP-TMB	(4.20 to 16.22)	678311	1449393	2.137
AK101 nC6-nC10	(4.70 to 15.12)	538315	1171708	2.177
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	764876	2.127

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	0.002	3601	97.1	TFT(Surr)
15.414	0.002	7779	95.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	0.002	1972	7.91	Benzene
9.914	0.003	19366	88.70	Toluene
12.807	0.003	4884	25.24	Ethylbenzene
12.972	0.007	19555	91.07	M/P-Xylene
13.920	0.004	7024	41.81	O-Xylene
4.564	-0.011	386	4.59	MTBE

A Indicates Peak Area was used for quantitation instead of Height
I Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071211-1.b/0711a014.d

Date : 11-JUL-2012 19:29

Client ID:

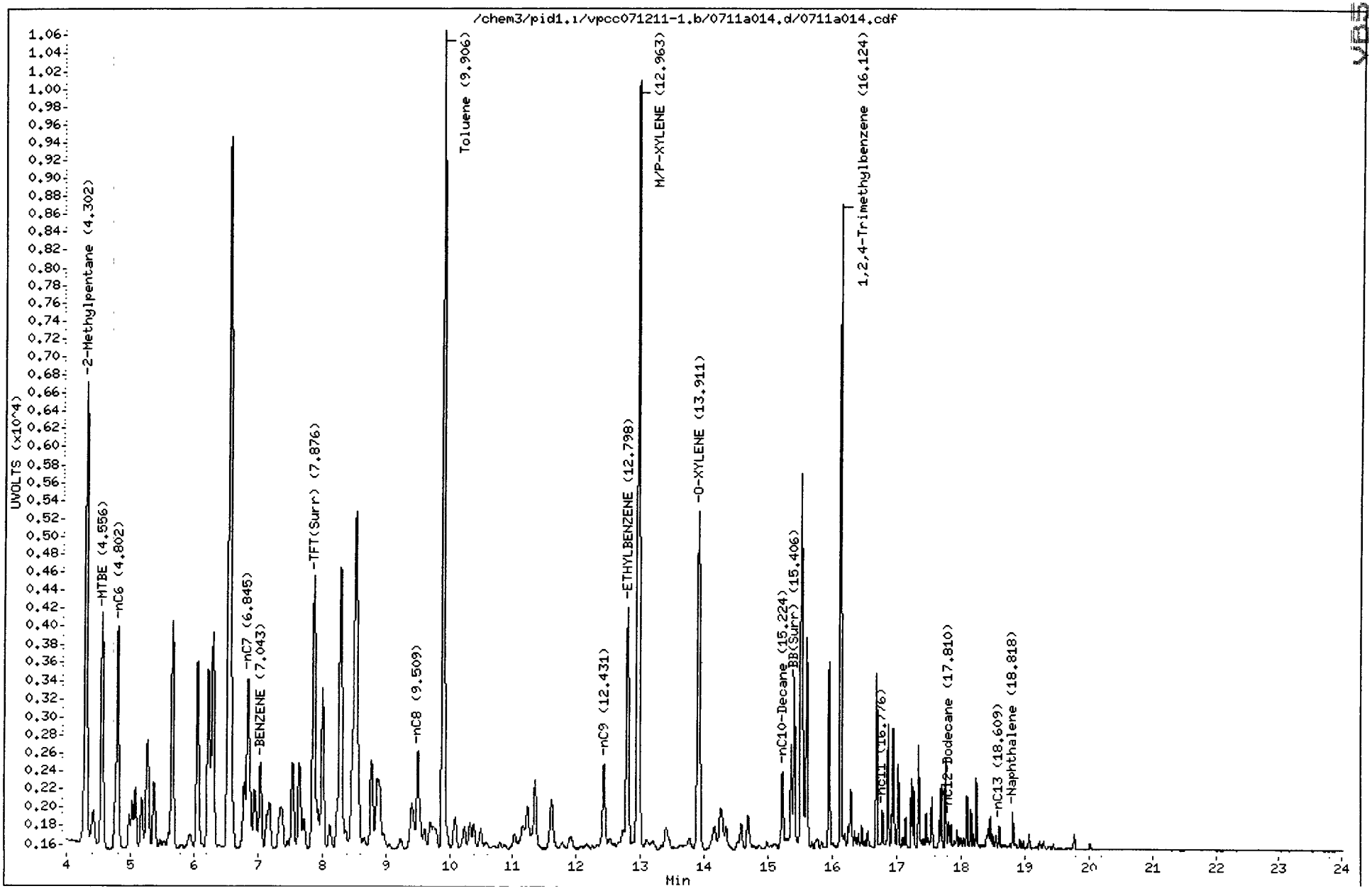
Sample Info: GCAL#2

Instrument: pid1.i

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a002.d ARI ID: RT+BCAL
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a002.d Client ID:
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 08:16
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.876	0.001	3175	39523	106.0	TFT(Surr)
15.405	0.001	2018	16729	104.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	402257	1.179
8015C 2MP-TMB	(4.20 to 16.22)	678311	475478	0.701
AK101 nC6-nC10	(4.70 to 15.12)	538315	328817	0.611
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	438454	1.220

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.884	0.001	3934	106.1	TFT(Surr)
15.413	0.001	8496	104.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	0.002	5289	21.21	Benzene
9.912	0.001	4759	21.80	Toluene
12.805	0.001	4263	22.03	Ethylbenzene
12.966	0.001	9299	43.31	M/P-Xylene
13.918	0.001	3660	21.78	O-Xylene
4.581	0.006	1710	20.33	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a002.d

Date : 12-JUL-2012 08:16

Client ID:

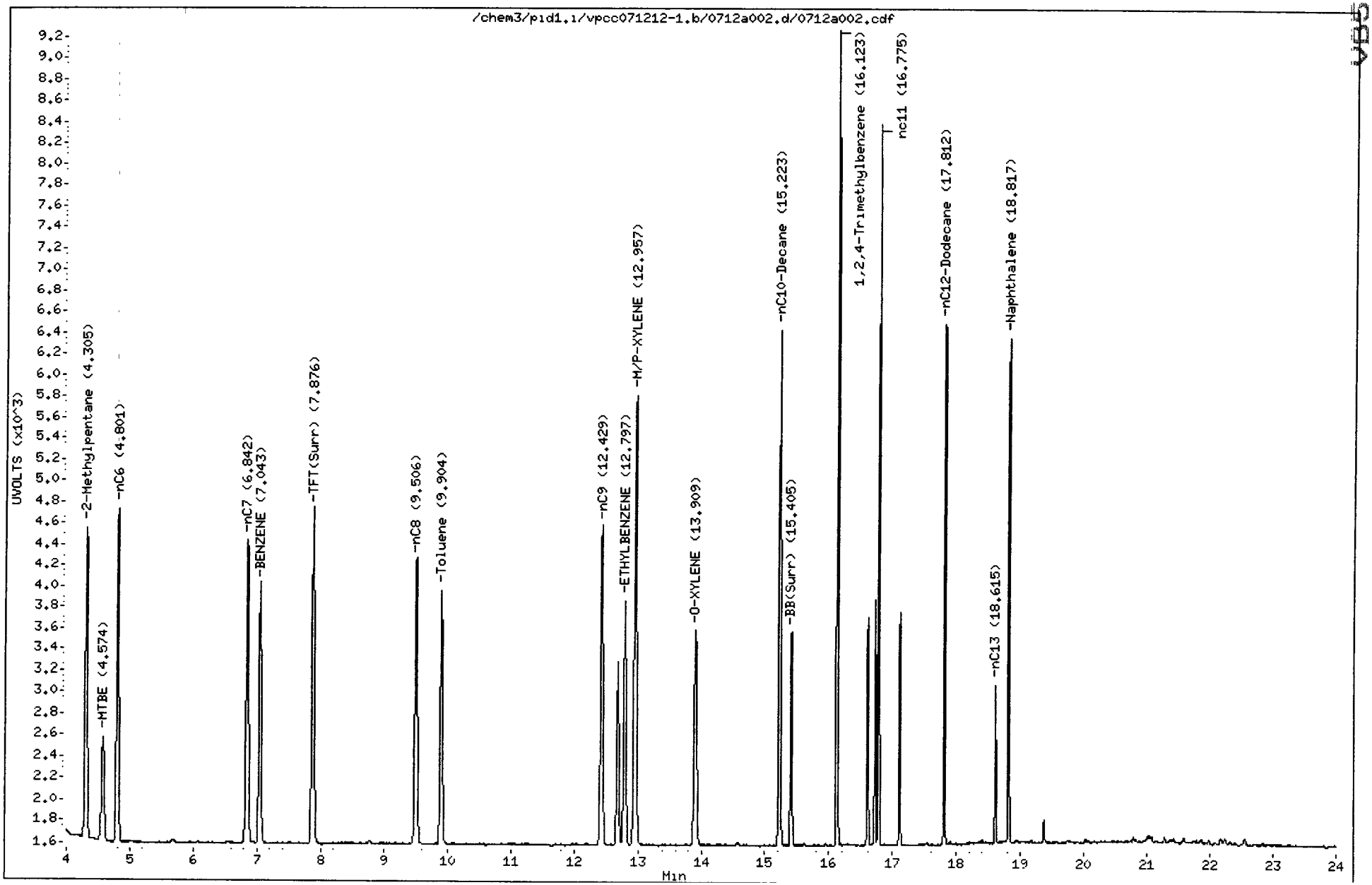
Sample Info: RT+BCAL

Instrument: pid1.i

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a003.d
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a003.d
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m
Instrument: pid1.i
Gas Ical Date: 15-MAY-2012
BETX Ical Date: 15-MAY-2012

ARI ID: GCAL
Client ID:
Injection Date: 12-JUL-2012 08:45
Matrix: WATER
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.876	0.001	3149	44630	105.1	TFT(Surr)
15.406	0.001	1925	17140	99.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	776351	2.275
8015C 2MP-TMB	(4.20 to 16.22)	678311	1540564	2.271
AK101 nC6-nC10	(4.70 to 15.12)	538315	1250666	2.323
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	815242	2.268

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.884	0.002	3740	100.9	TFT(Surr)
15.413	0.001	7933	97.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	0.002	2072	8.31	Benzene
9.914	0.003	19844	90.89	Toluene
12.806	0.002	5035	26.02	Ethylbenzene
12.970	0.005	20130	93.74	M/P-Xylene
13.919	0.002	7200	42.85	O-Xylene
4.567	-0.008	395	4.70	MTBE

Indicates Peak Area was used for quantitation instead of Height
Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a003.d

Date : 12-JUL-2012 08:45

Client ID:

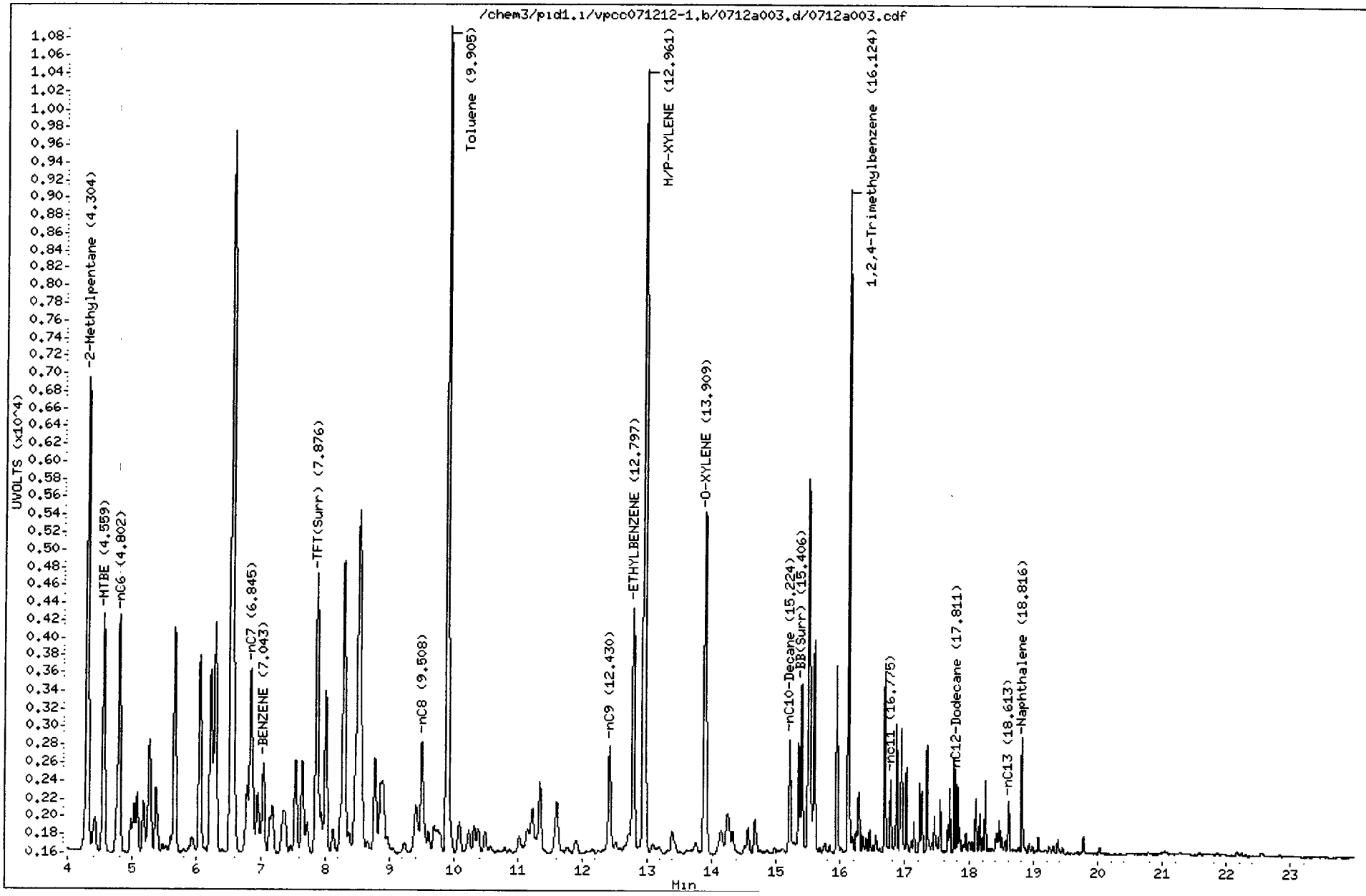
Sample Info: GCAL

Instrument: pid1.i

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a004.d ARI ID: 0712LCS1
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a004.d Client ID:
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 09:14
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.002	3060	42568	102.2	TFT(Surr)
15.407	0.002	1904	16525	98.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	331290	0.971
8015C 2MP-TMB	(4.20 to 16.22)	678311	670805	0.989
AK101 nC6-nC10	(4.70 to 15.12)	538315	542835	1.008
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	348026	0.968

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	0.003	3688	99.5	TFT(Surr)
15.413	0.001	7965	97.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.052	0.003	861	3.45	Benzene
9.914	0.003	8444	38.68	Toluene
12.806	0.002	2106	10.89	Ethylbenzene
12.969	0.004	8518	39.67	M/P-Xylene
13.919	0.002	3044	18.12	O-Xylene
4.567	-0.008	153	1.82	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a004.d

Date : 12-JUL-2012 09:14

Client ID:

Sample Info: 0712LCS1

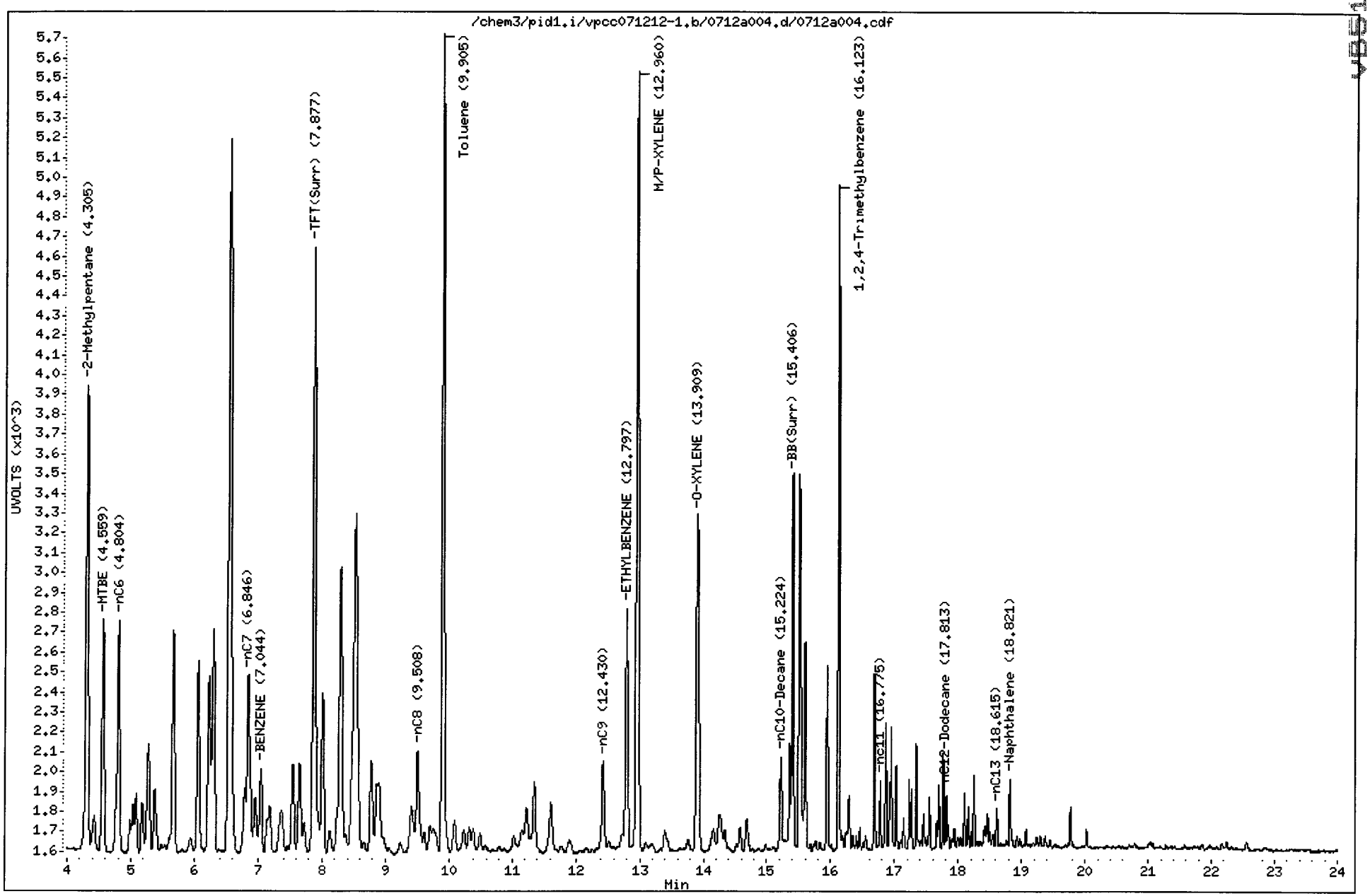
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB51 : 00952



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a005.d ARI ID: 0712LCSD1
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a005.d Client ID:
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 09:44
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.002	2942	40856	98.2	TFT(Surr)
15.407	0.002	1855	16041	95.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	307788	0.902
8015C 2MP-TMB	(4.20 to 16.22)	678311	627581	0.925
AK101 nC6-nC10	(4.70 to 15.12)	538315	508268	0.944
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	322351	0.897

JW 7/13/12

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	0.003	3563	96.1	TFT(Surr)
15.413	0.001	7751	95.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.051	0.003	820	3.29	Benzene
9.913	0.002	8100	37.10	Toluene
12.806	0.002	2018	10.43	Ethylbenzene
12.969	0.004	8184	38.11	M/P-Xylene
13.918	0.002	2945	17.53	O-Xylene
ND	---	---	---	MTBE

NR

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a005.d

Date : 12-JUL-2012 09:44

Client ID:

Sample Info: 0712LCSD1

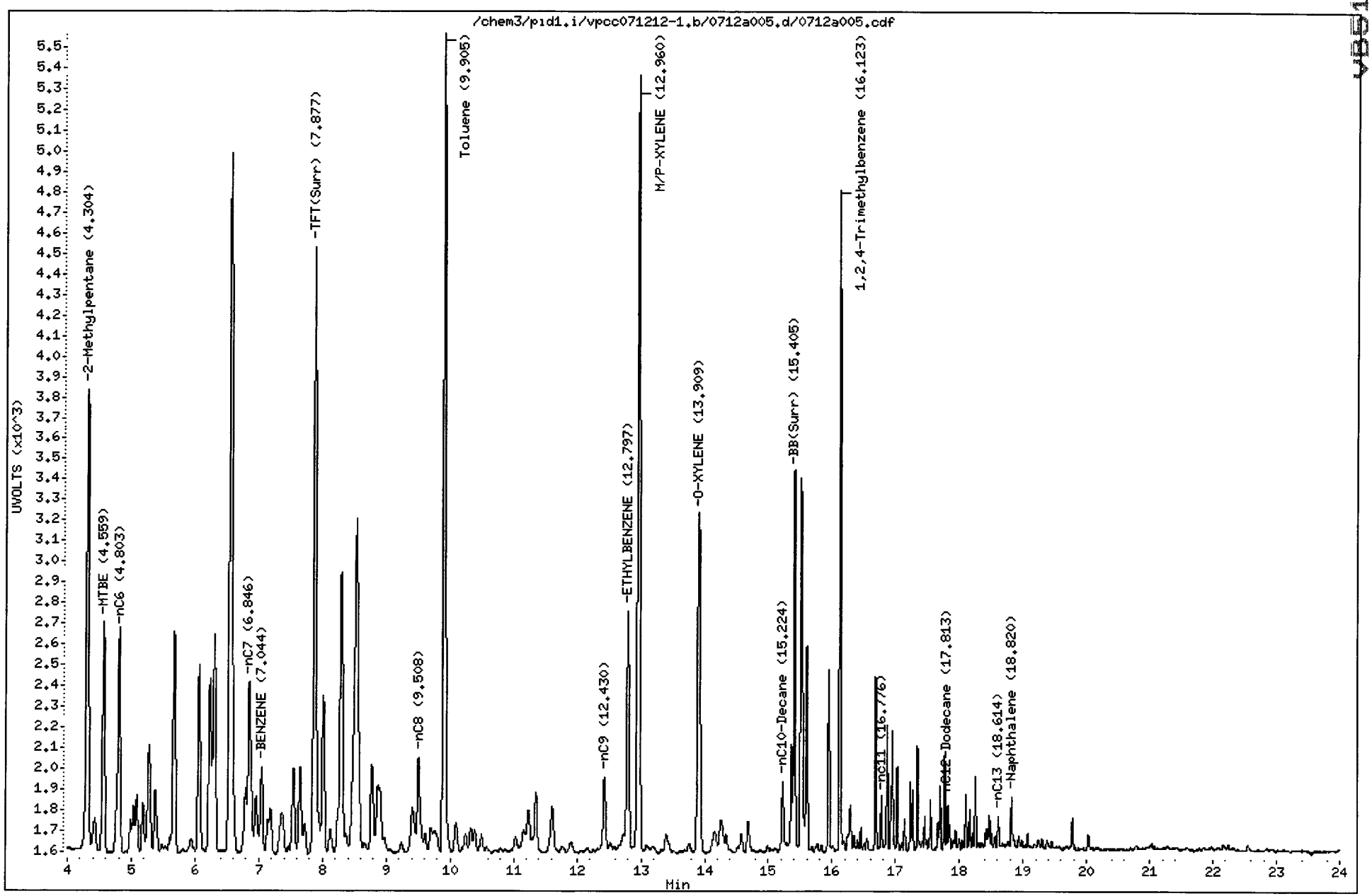
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB51 00951



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a006.d ARI ID: 0712MB1
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a006.d Client ID:
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 10:13
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.879	0.004	2902	35791	96.9	TFT(Surr)
15.406	0.002	1898	15637	98.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	2031	0.006
8015C 2MP-TMB	(4.20 to 16.22)	678311	1696	0.003
AK101 nC6-nC10	(4.70 to 15.12)	538315	1196	0.002
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	2031	0.006

JW 7/13/12

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	0.004	3541	95.5	TFT(Surr)
15.414	0.002	7891	96.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a006.d

Date : 12-JUL-2012 10:13

Client ID:

Instrument: pid1.i

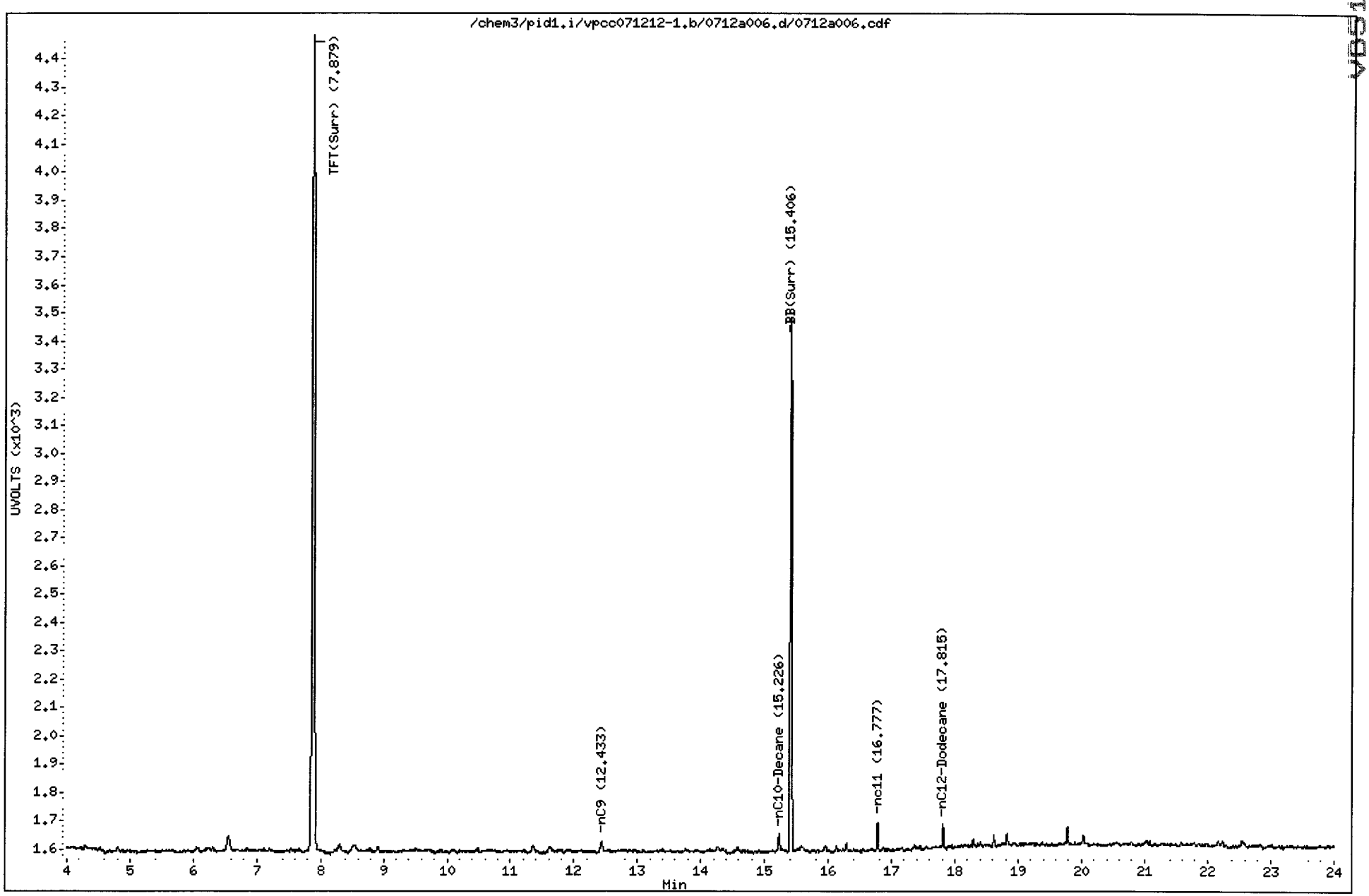
Sample Info: 0712MB1

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18

VBS1 00956



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a007.d
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a007.d
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m
Instrument: pid1.i
Gas Ical Date: 15-MAY-2012
BETX Ical Date: 15-MAY-2012

ARI ID: VB51F
Client ID: CW-TP-07-9-10
Injection Date: 12-JUL-2012 13:55
Matrix: SOIL
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.005	2744	34308	91.6	TFT(Surr)
15.407	0.002	2436	55575	125.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	1582117	4.637
8015C 2MP-TMB	(4.20 to 16.22)	678311	547404	0.807
AK101 nC6-nC10	(4.70 to 15.12)	538315	251912	0.468
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	2474772	6.883

M Indicates manual integration within range

JW 7/13/12

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.005	3404	91.8	TFT(Surr)
15.415	0.003	8315	102.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.784	-0.020	627	3.24	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

NR

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a007.d

Date : 12-JUL-2012 13:55

Client ID: CW-TP-07-9-10

Sample Info: VB51F

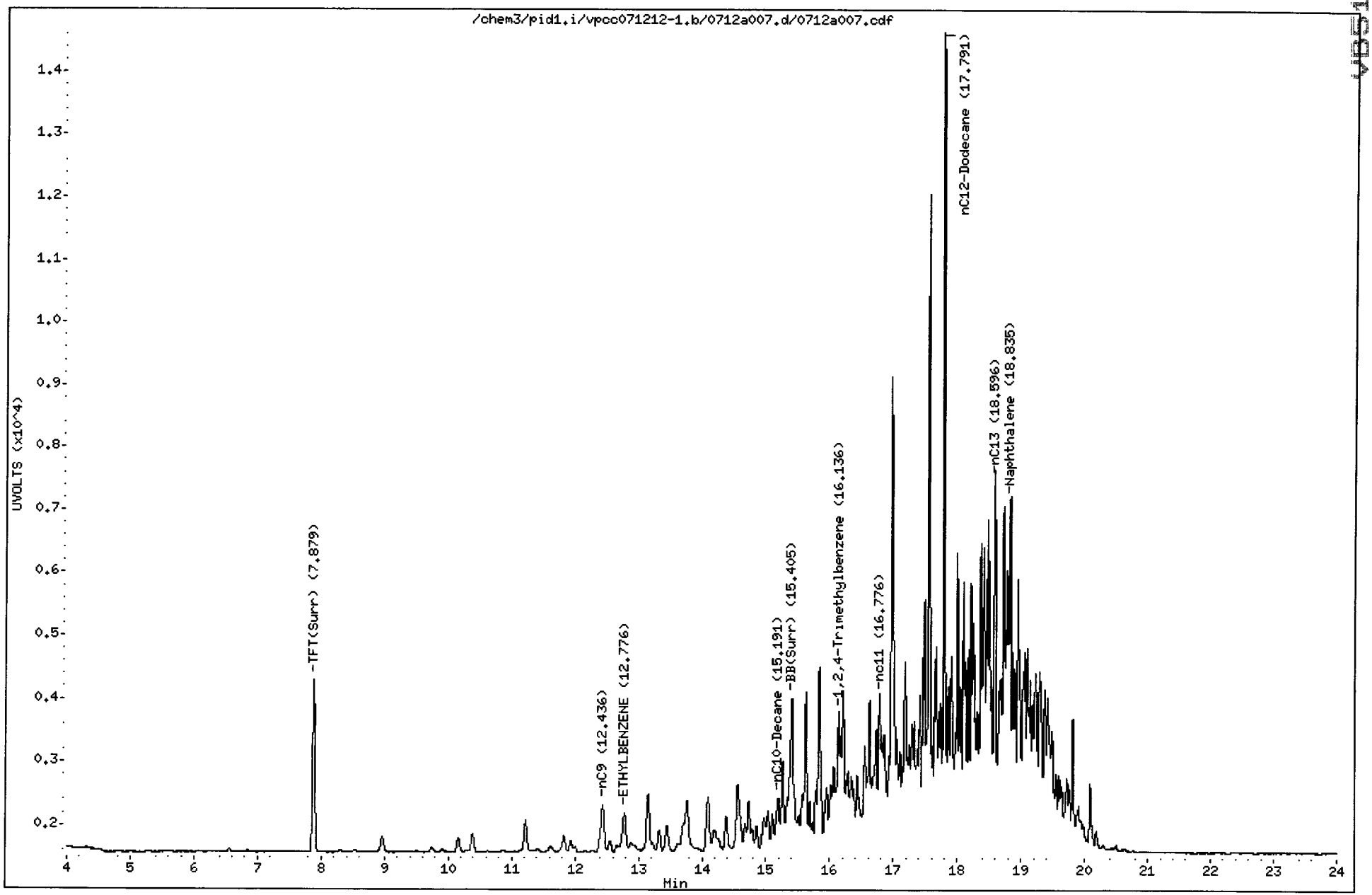
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB51 60958



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a008.d
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a008.d
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m
Instrument: pid1.i
Gas Ical Date: 15-MAY-2012
BETX Ical Date: 15-MAY-2012

ARI ID: VB51I
Client ID: CW-TP-09-6.3-7.3
Injection Date: 12-JUL-2012 14:24
Matrix: SOIL
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.002	2693	34381	89.9	TFT(Surr)
15.407	0.002	2421	43970	125.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	1095952	3.212
8015C 2MP-TMB	(4.20 to 16.22)	678311	511654	0.754
AK101 nC6-nC10	(4.70 to 15.12)	538315	331756	0.616
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	1663252	4.626

M Indicates manual integration within range

JW 7/13/12

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	0.003	3301	89.0	TFT(Surr)
15.414	0.002	7965	97.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.782	-0.022	746	3.86	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

NR

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a008.d

Date : 12-JUL-2012 14:24

Client ID: CW-TP-09-6.3-7.3

Sample Info: VB51I

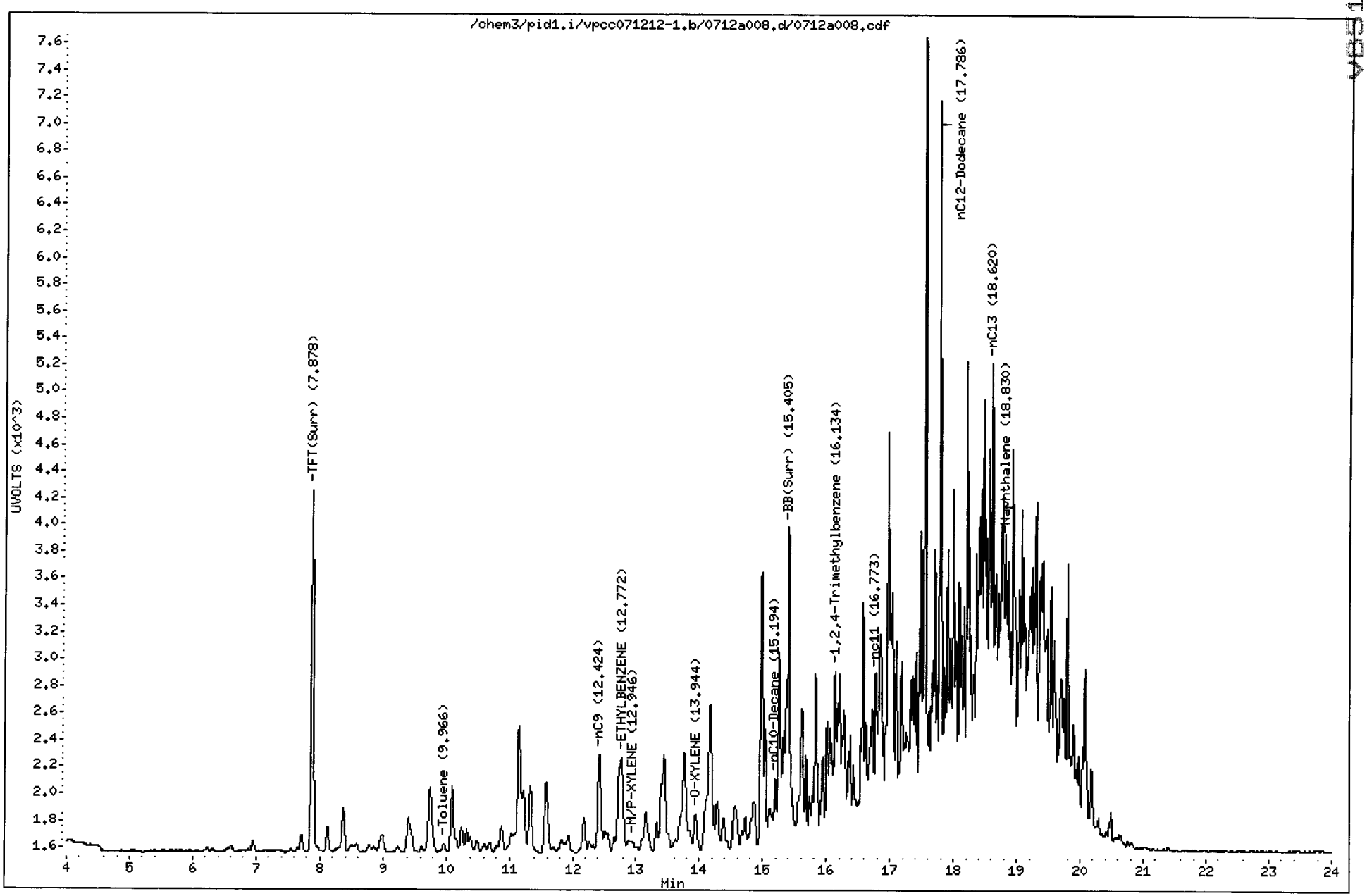
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB51 : 00960



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a009.d ARI ID: VB51L
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a009.d Client ID: CW-TP-09-10-11
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 14:54
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.005	2663	34587	88.9	TFT(Surr)
15.407	0.002	2066	30302	106.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	642010	1.882
8015C 2MP-TMB	(4.20 to 16.22)	678311	277821	0.410
AK101 nC6-nC10	(4.70 to 15.12)	538315	180948	0.336
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	1060830	2.951

M Indicates manual integration within range

JW 7/13/12

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.005	3261	88.0	TFT(Surr)
15.414	0.002	7650	93.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.783	-0.021	388	2.01	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

NR

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a009.d

Date : 12-JUL-2012 14:54

Client ID: CW-TP-09-10-11

Sample Info: VB51L

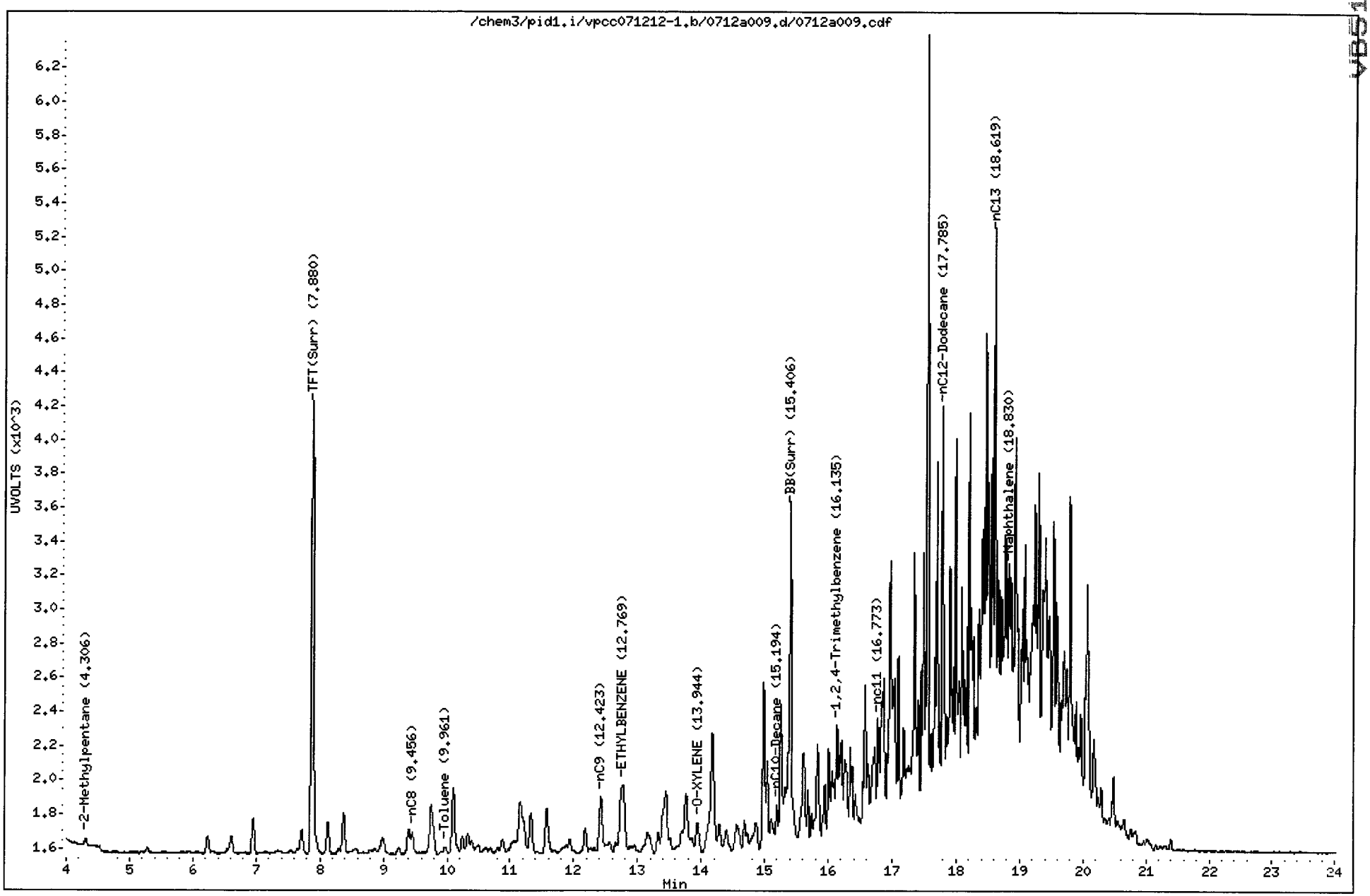
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB51 00962



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a010.d ARI ID: VB54A
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a010.d Client ID: CW-TP-05-7-8
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 15:23
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.005	2659	34280	88.8	TFT(Surr)
15.407	0.002	2001	23362	103.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	481746	1.412
8015C 2MP-TMB	(4.20 to 16.22)	678311	258464	0.381
AK101 nC6-nC10	(4.70 to 15.12)	538315	173134	0.322
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	740948	2.061

JW 7/13/12

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.004	3233	87.2	TFT(Surr)
15.414	0.002	7520	92.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.783	-0.021	360	1.86	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

NR

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a010.d

Date : 12-JUL-2012 15:23

Client ID: CW-TP-05-7-8

Sample Info: VB54A

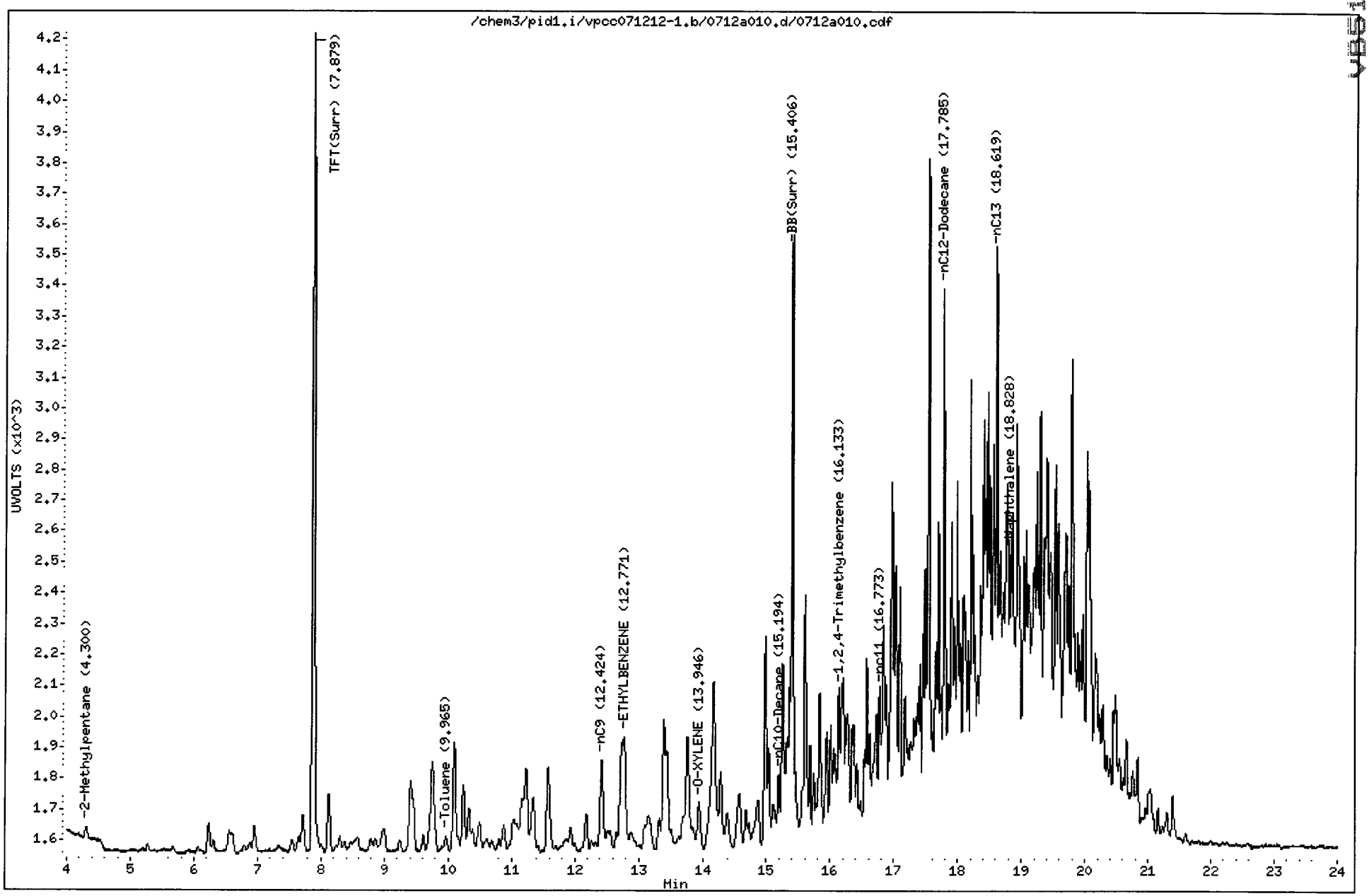
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB51 00951



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a011.d ARI ID: VB54D
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a011.d Client ID: CW-TP-03-7-8
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 15:52
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.005	2802	35005	93.5	TFT(Surr)
15.407	0.002	2119	26124	109.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	446362	1.308
8015C 2MP-TMB	(4.20 to 16.22)	678311	180838	0.267
AK101 nC6-nC10	(4.70 to 15.12)	538315	106232	0.197
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	706311	1.965

JW 7/13/12

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.005	3410	92.0	TFT(Surr)
15.414	0.002	8029	98.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.783	-0.021	231	1.19	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

NR

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a011.d

Date : 12-JUL-2012 15:52

Client ID: CW-TP-03-7-8

Sample Info: VB54D

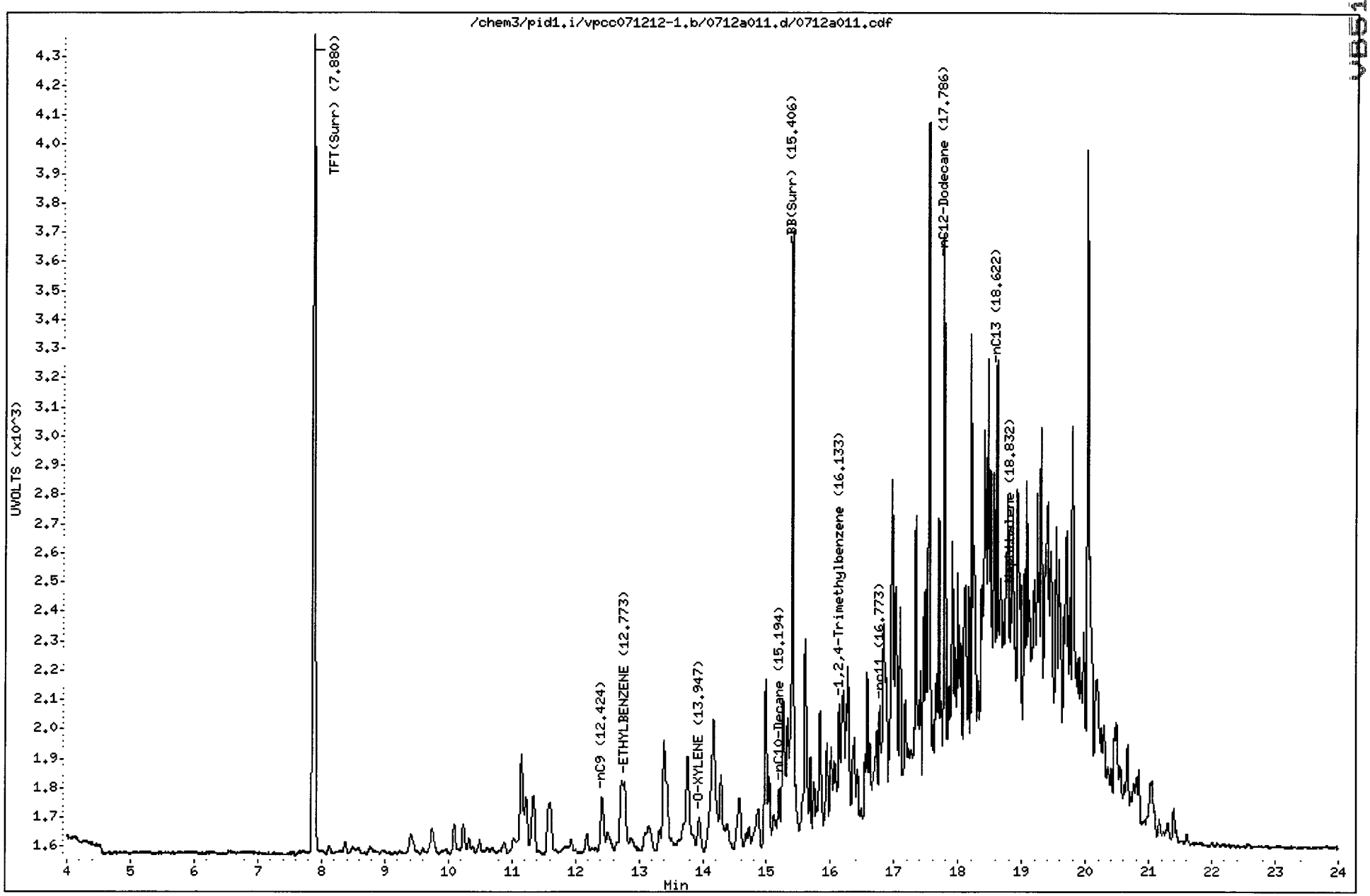
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB51 60966



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a012.d ARI ID: VB54G
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a012.d Client ID: CW-TP-02-8.2-9.2
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 16:22
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.005	2702	33804	90.2	TFT(Surr)
15.407	0.002	2066	22799	106.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	438552	1.285
8015C 2MP-TMB	(4.20 to 16.22)	678311	190292	0.281
AK101 nC6-nC10	(4.70 to 15.12)	538315	117836	0.219
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	700505	1.948

M Indicates manual integration within range

JW 7/13/12

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.004	3282	88.5	TFT(Surr)
15.414	0.002	7830	96.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.783	-0.021	253	1.31	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

N2

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a012.d

Date : 12-JUL-2012 16:22

Client ID: CW-TP-02-8.2-9.2

Sample Info: VB54G

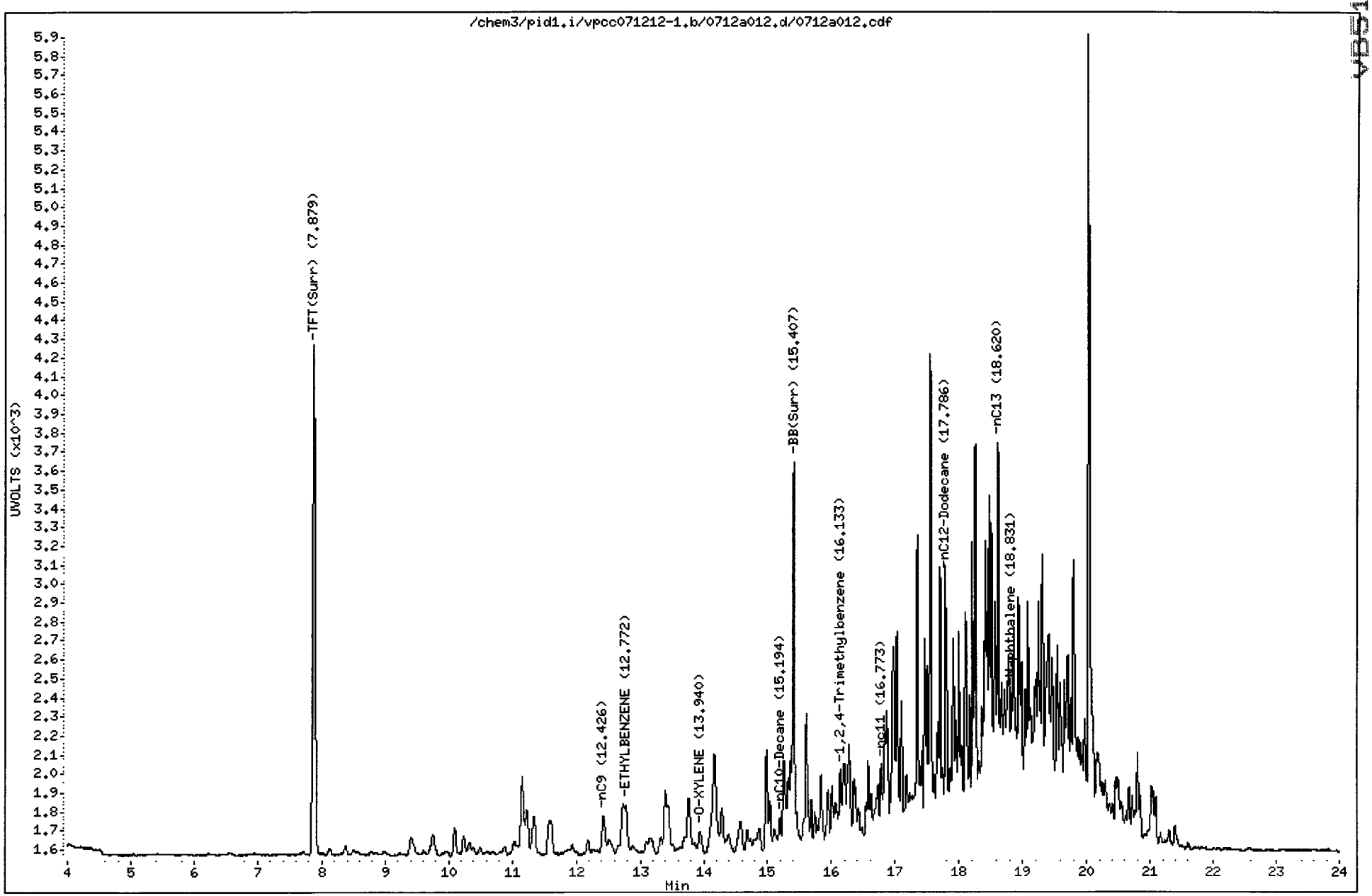
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB51 : 00968



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a014.d ARI ID: GCAL#2
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a014.d Client ID:
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 17:20
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	0.003	3054	42948	102.0	TFT(Surr)
15.407	0.003	1889	16958	97.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	764737	2.241
8015C 2MP-TMB	(4.20 to 16.22)	678311	1521175	2.243
AK101 nC6-nC10	(4.70 to 15.12)	538315	1225272	2.276
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	811973	2.258

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	0.004	3591	96.9	TFT(Surr)
15.414	0.003	7785	95.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.054	0.005	2043	8.19	Benzene
9.916	0.005	20028	91.74	Toluene
12.808	0.004	5002	25.85	Ethylbenzene
12.972	0.007	20105	93.63	M/P-Xylene
13.921	0.004	7231	43.04	O-Xylene
4.569	-0.006	388	4.61	MTBE

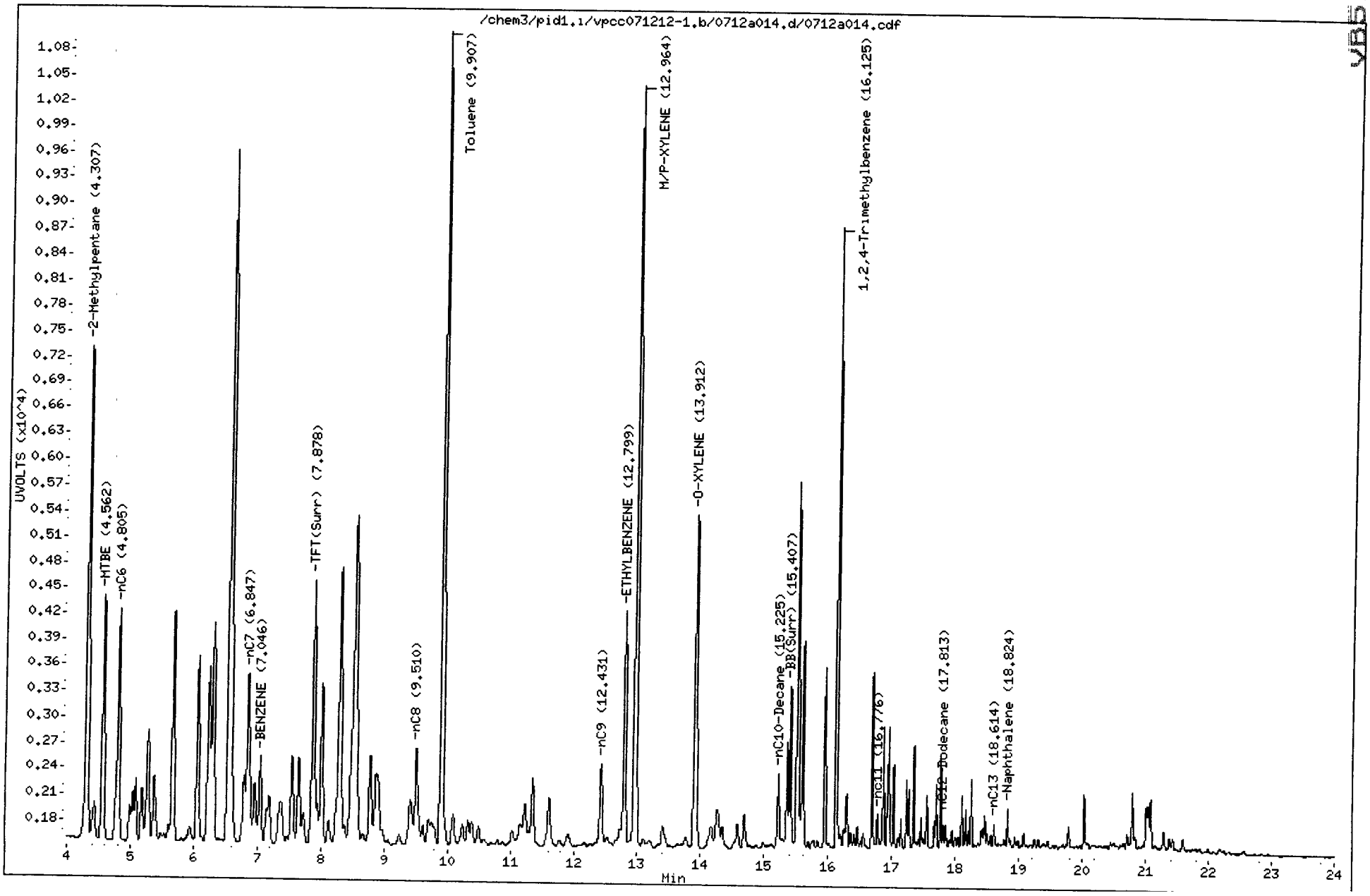
A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.1/vpcc071212-1.b/0712a014.d
Date : 12-JUL-2012 17:20
Client ID:
Sample Info: GCAL#2

Column phase: RTX 502-2 FID

Instrument: pid1.1

Operator: JR
Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a015.d ARI ID: VB54J
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a015.d Client ID: CW-TP-01-8-9
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 17:49
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.005	2745	34853	91.6	TFT(Surr)
15.407	0.002	2233	28885	115.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	716404	2.100
8015C 2MP-TMB	(4.20 to 16.22)	678311	399736	0.589
AK101 nC6-nC10	(4.70 to 15.12)	538315	281318	0.523
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	1042608	2.900

JW 7/13/12

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.004	3321	89.6	TFT(Surr)
15.414	0.002	7959	97.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.782	-0.022	485	2.51	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

NR

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a015.d

Date : 12-JUL-2012 17:49

Client ID: CW-TP-01-8-9

Sample Info: VB54J

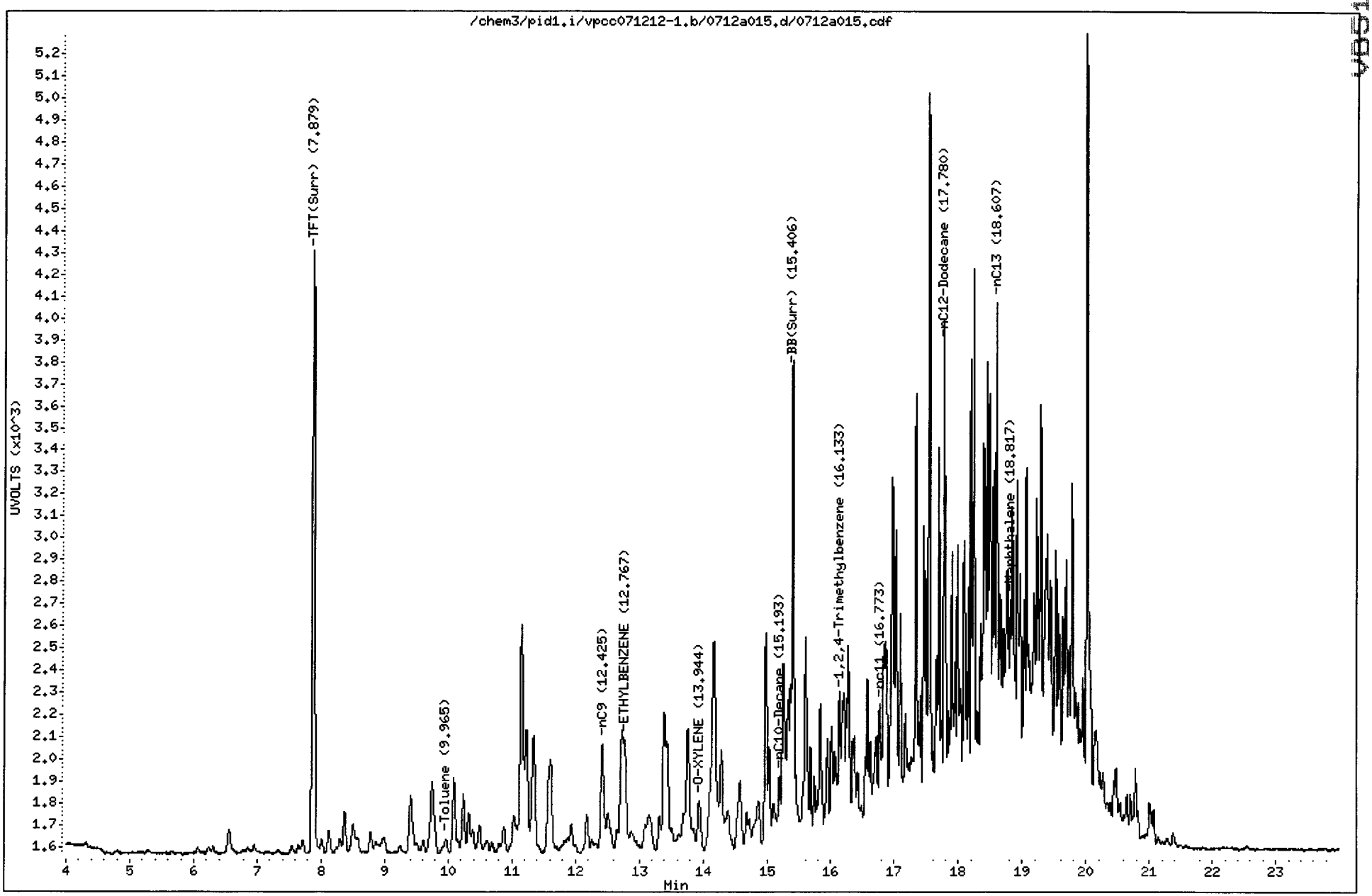
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB54 : 00972



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a016.d ARI ID: VB54N
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a016.d Client ID: CW-TP-08-7-8
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 18:18
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.005	2705	34000	90.3	TFT(Surr)
15.407	0.002	1790	15643	92.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	71550	0.210 M
8015C 2MP-TMB	(4.20 to 16.22)	678311	23760	0.035 M
AK101 nC6-nC10	(4.70 to 15.12)	538315	13191	0.025 M
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	160688	0.447 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.004	3276	88.4	TFT(Surr)
15.414	0.002	7324	89.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a016.d

Date : 12-JUL-2012 18:18

Client ID: CW-TP-08-7-8

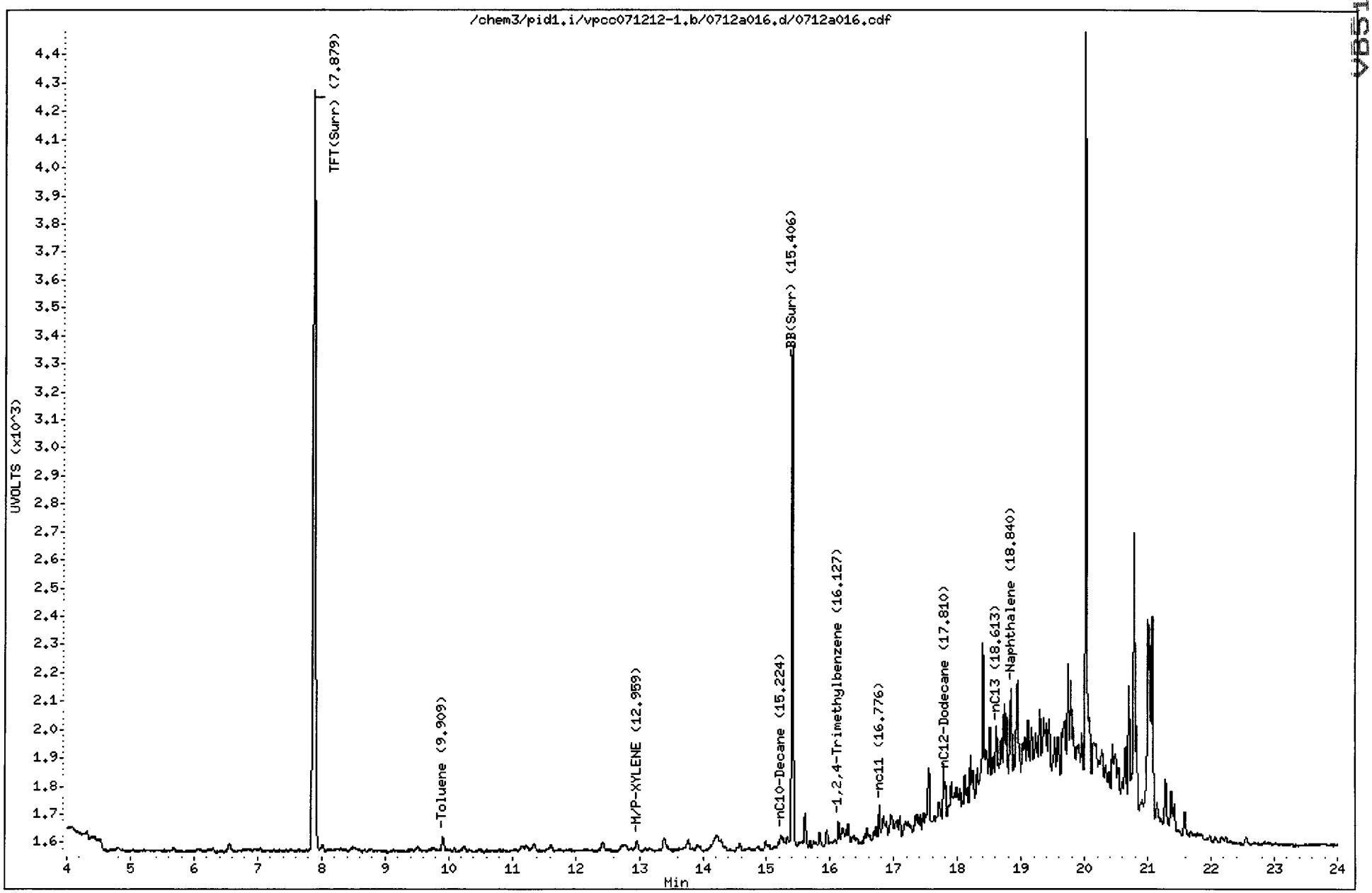
Sample Info: VB54N

Column phase: RTX 502-2 FID

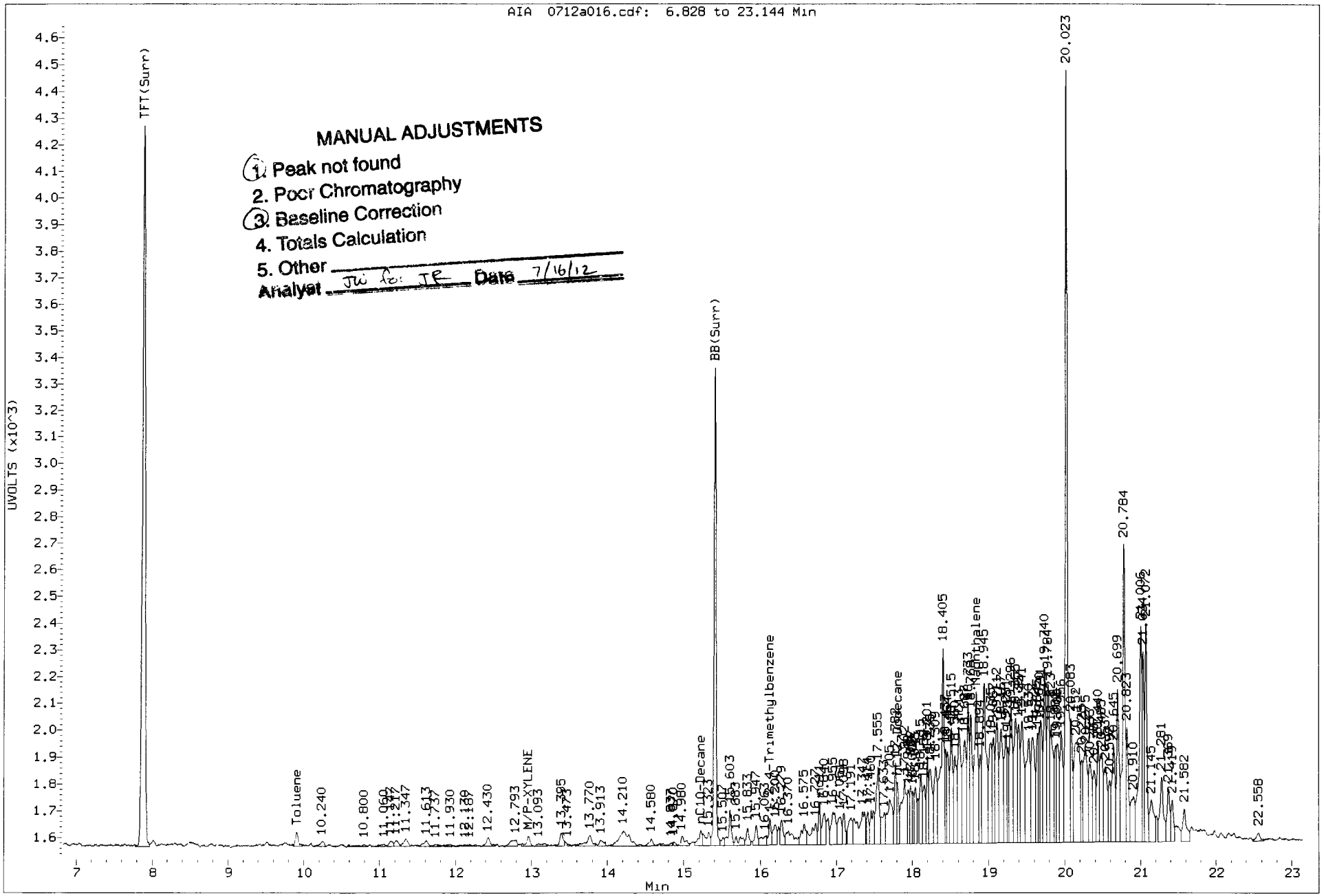
Instrument: pid1.i

Operator: JR

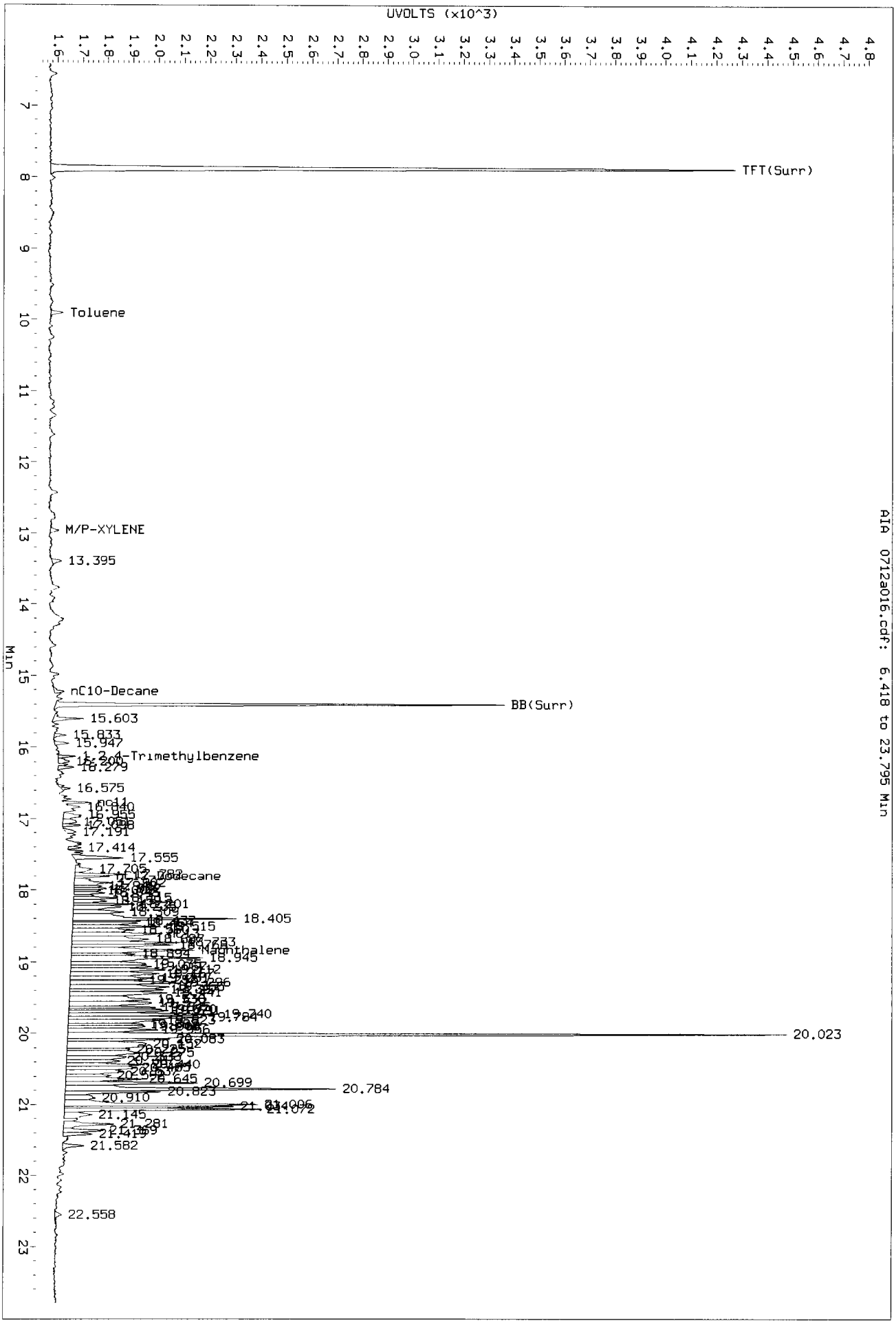
Column diameter: 0.18



Data File: /chem3/pid1.i/vpcc071212-1.b/0712a016.d/0712a016.cdf
Injection Date: 12-JUL-2012 18:18
Instrument: pid1.i
Client Sample ID: CW-TP-08-7-8



VB51 : 00975


Data File: /chem3/pid1.i/vpcc071212-1.b/0712a016.d/0712a016.cdf
Injection Date: 12-JUL-2012 18:18
Instrument: pid1.i
Client Sample ID: CW-TP-08-7-8
UVOLTS (x10^3)
AIA 0712a016.cdf: 6.418 to 23.795 Min
Min
TFT(Surr)
Toluene
M/P-XYLENE
13.395
nC10-Decane
BB(Surr)
15.603
15.833
15.947
1,2,4-Trimethylbenzene
16.575
17.191
17.414
17.555
18.405
Naphthalene
18.945
19.740
20.023
20.645
20.699
20.784
20.823
20.910
21.145
21.281
21.582
22.558

VB51 : 00976

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a017.d ARI ID: VB54Q
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a017.d Client ID: CW-TP-04-8-9
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 18:48
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.005	2804	34670	93.6	TFT(Surr)
15.407	0.002	1844	17886	95.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	82930	0.243
8015C 2MP-TMB	(4.20 to 16.22)	678311	15465	0.023
AK101 nC6-nC10	(4.70 to 15.12)	538315	4447	0.008
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	175297	0.488

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.888	0.005	3403	91.8	TFT(Surr)
15.414	0.002	7588	93.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.055	0.006	231	0.93	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a017.d

Date : 12-JUL-2012 18:48

Client ID: CW-TP-04-8-9

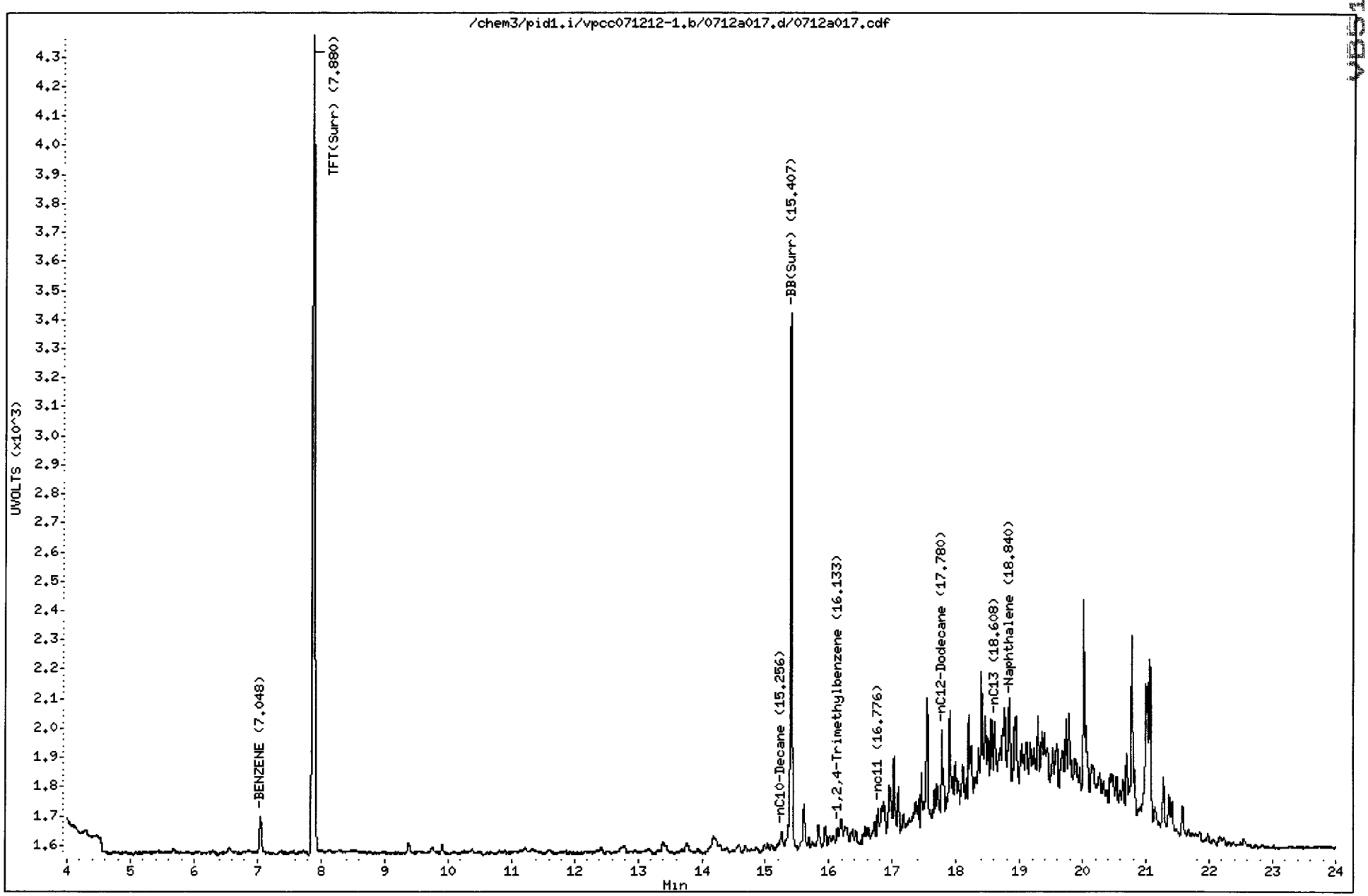
Sample Info: VB54Q

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a018.d
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a018.d
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m
Instrument: pid1.i
Gas Ical Date: 15-MAY-2012
BETX Ical Date: 15-MAY-2012

ARI ID: VB54T
Client ID: CW-TP-54-8-9
Injection Date: 12-JUL-2012 19:17
Matrix: SOIL
Dilution Factor: 1.000

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	0.005	2594	32974	86.6	TFT(Surr)
15.407	0.002	1887	22740	97.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	325073	0.953
8015C 2MP-TMB	(4.20 to 16.22)	678311	139664	0.206
AK101 nC6-nC10	(4.70 to 15.12)	538315	84812	0.158
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	530500	1.476

M Indicates manual integration within range

JW 7/13/12

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.004	3147	84.9	TFT(Surr)
15.414	0.002	7290	89.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

NR

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a018.d

Date : 12-JUL-2012 19:17

Client ID: CW-TP-54-8-9

Sample Info: VB54T

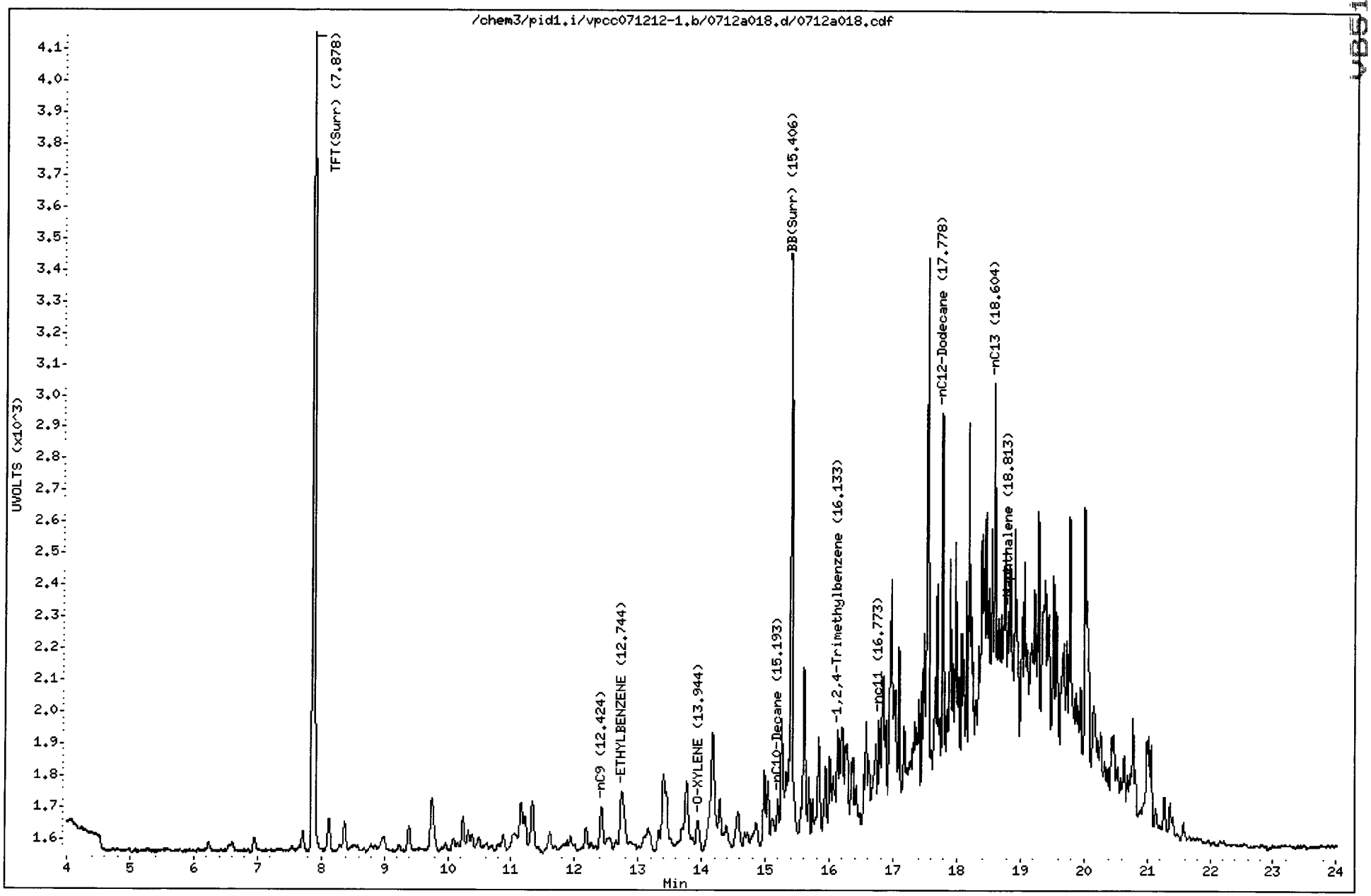
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JR

Column diameter: 0.18

VB51 00980



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc071212-1.b/0712a020.d ARI ID: GCAL#3
Data file 2: /chem3/pid1.i/vpcc071212-2.b/0712a020.d Client ID:
Method: /chem3/pid1.i/vpcc071212-2.b/PIDB.m Injection Date: 12-JUL-2012 20:15
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 15-MAY-2012 Dilution Factor: 1.000
BETX Ical Date: 15-MAY-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	0.004	2935	41362	98.0	TFT(Surr)
15.407	0.002	1837	16453	94.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range		RF	Total Area*	Amount
WAGas Tol-C12	(9.80 to 17.91)	341191	716394	2.100
8015C 2MP-TMB	(4.20 to 16.22)	678311	1432995	2.113
AK101 nC6-nC10	(4.70 to 15.12)	538315	1149077	2.135
NWTPHG Tol-Nap	(9.80 to 18.92)	359529	750664	2.088

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.887	0.004	3431	92.5	TFT(Surr)
15.414	0.003	7606	93.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.054	0.005	1982	7.95	Benzene
9.916	0.005	19588	89.72	Toluene
12.808	0.004	4855	25.09	Ethylbenzene
12.972	0.007	19398	90.34	M/P-Xylene
13.921	0.005	6985	41.57	O-Xylene
4.569	-0.006	351	4.17	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc071212-1.b/0712a020.d

Date : 12-JUL-2012 20:15

Client ID:

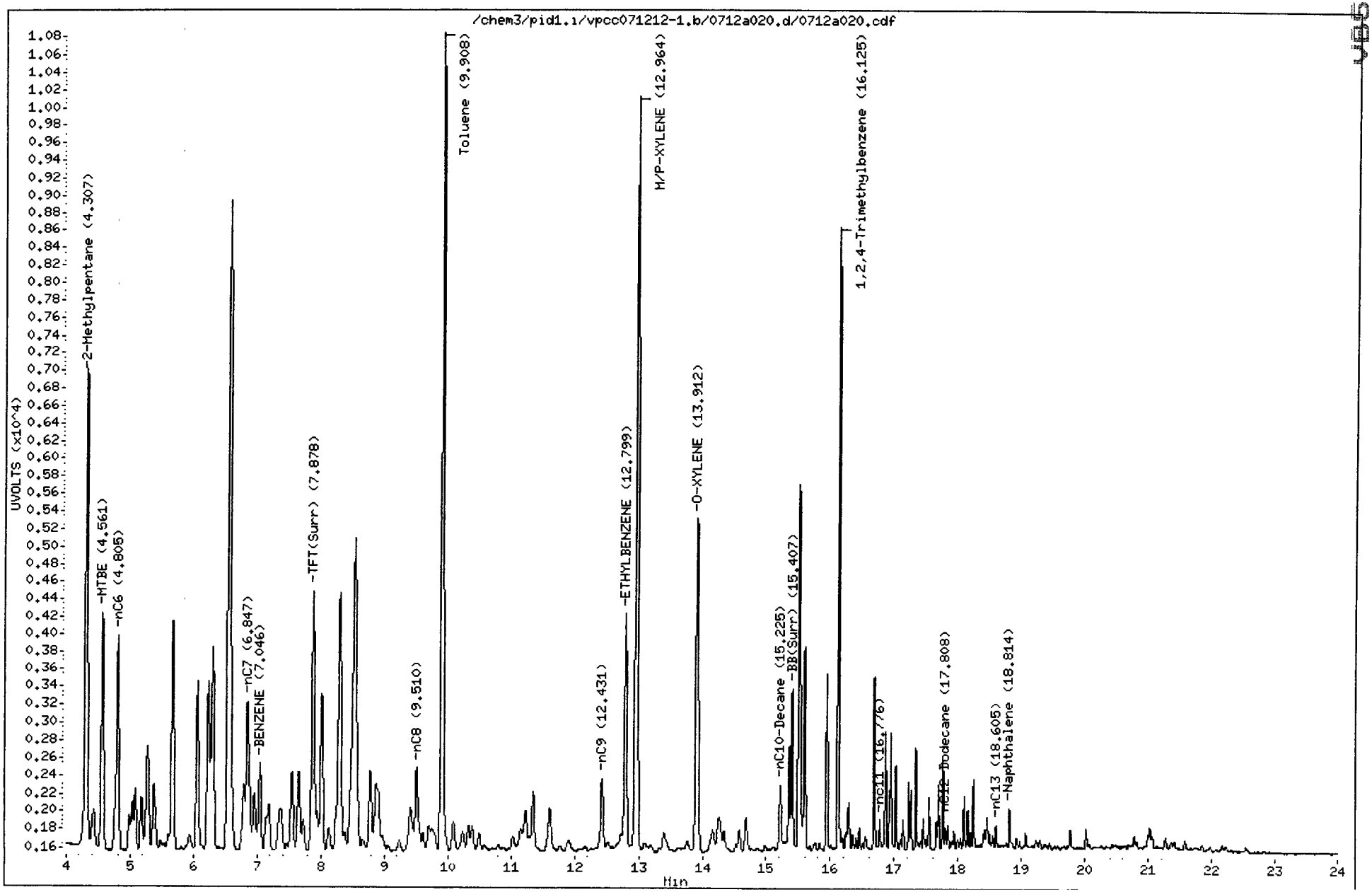
Sample Info: GCAL#3

Instrument: pid1.i

Operator: JR

Column phase: RTX 502-2 FID

Column diameter: 0.18



ATTACHMENT 3
DATA VALIDATION SHEETS

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor QEA, LLC
720 Olive Way, Suite 900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

August 20, 2012

SUBJECT: Central Waterfront, Data Validation

Dear Ms. Fields,

Enclosed is the final validation report for the fractions listed below. This SDG was received on July 27, 2012. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 28090:

SDG #	Fraction
VB50	Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Aromatic Volatile Organics,

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

Attachment 1

LDC #28090 (Anchor Environmental-Seattle WA /Central Waterfront)

EDD																																			
LDC	SDG#	DATE REC'D	(3) DATE DUE	TPH-D (NWTPH -Dx)		TPH-G (NWTPH -Gx)		BTEX (8021B)																											
Matrix:	Water/Sediment			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	VB50	07/27/12	08/17/12	30	0	18	0	18	0																										
Total	A/MH			30	0	18	0	18	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	66

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Central Waterfront

Collection Date: July 2 through July 6, 2012

LDC Report Date: August 13, 2012

Matrix: Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): VB50

Sample Identification

CW-PW-01-070412
CW-PW-02-070412
CW-PW-03-070512
CW-PW-53-07051
CW-PW-04-070512
CW-PW-05-070412
CW-PW-06-070612
CW-TB-20120704
CWMW-2-070612
CWMW-18-070612
CWMW-65C-070612
MW-1B-070612
MW-1B-070612DL
CW-SP-01-070512
CW-SP-02-070412
CW-W-RB-070212
CW-TP-RB-070212
CW-TB-20120702

Introduction

This data review covers 18 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per NWTPH-Gx for Total Petroleum Hydrocarbons as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XII. Field Duplicates

Samples CW-PW-03-070512 and CW-PW-53-07051 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples.

XIII. Field Blanks

Samples CW-TB-20120704 and CW-TB-20120702 were identified as trip blanks. No total petroleum hydrocarbons as gasoline were found.

Samples CW-W-RB-070212 and CW-TP-RB-070212 were identified as rinsate blanks. No total petroleum hydrocarbons as gasoline were found.

Central Waterfront
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG VB50

No Sample Data Qualified in this SDG

Central Waterfront
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG VB50

No Sample Data Qualified in this SDG

LDC #: 28090A7 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/10/12

SDG #: VB50 Level III Page: 1 of 1

Laboratory: Analytical Resources, Inc. Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: ~~Gasoline Range Organics~~ (NWTPH-Gx)
TPH as Gasoline

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/2 – 7/6/12
II	Initial calibration	A	% RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data		
XII.	Field duplicates	ND	D = 3, 4
XIII.	Field blanks	ND	TB = 8, 18 RB = 16, 17

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
Water

1	CW-PW-01-070412	11	CWMW-65C-070612	21	~~MB-071551~~	31	
2	CW-PW-02-070412	12	MW-1B-070612	22	MB-071512	32	
3	CW-PW-03-070512	13	MW-1B-070612DL	23	MB-071612	33	
4	CW-PW-53-07051	14	CW-SP-01-070512	24		34	
5	CW-PW-04-070512	15	CW-SP-02-070412	25		35	
6	CW-PW-05-070412	16	CW-W-RB-070212	26		36	
7	CW-PW-06-070612	17	CW-TP-RB-070212	27		37	
8	CW-~~RB~~ TB (7/4/12)	18	CW-TB (7/2/12)	28		38	
9	CWMW-2-070612	19		29		39	
10	CWMW-18-070612	20		30		40	

Notes: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Central Waterfront

Collection Date: July 4 through July 6, 2012

LDC Report Date: August 13, 2012

Matrix: Water

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): VB50

Sample Identification

CW-PW-01-070412 SG
CW-PW-02-070412 SG
CW-PW-03-070512 SG
CW-PW-53-07051 SG
CW-PW-04-070512 SG
CW-PW-05-070412 SG
CW-PW-06-070612 SG
CWMW-2-070612 SG
CWMW-18-070612 SG
CWMW-65C-070612 SG
MW-1B-070612 SG
CW-SP-01-070512 SG
CW-SP-02-070412 SG
CW-W-RB-070212 SG
CW-TP-RB-070212 SG
CW-PW-01-070412
CW-PW-02-070412
CW-PW-03-070512
CW-PW-53-070512
CW-PW-04-070512
CW-PW-05-070412
CW-PW-06-070612
CWMW-2-070612
CWMW-18-070612
CWMW-65C-070612
MB-1B-070612
CW-SP-01-070512
CW-SP-02-070412
CW-W-RB-070212
CW-TP-RB-070212

Sample IDs ending in "SG" underwent silica gel cleanup

Introduction

This data review covers 30 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per NWTPH-Dx for Total Petroleum Hydrocarbons as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Affected Compound	Associated Samples	Flag	A or P
6/22/12	Diesel range organics	21.51	Diesel range organics	CW-PW-01-070412 SG CW-PW-02-070412 SG CW-PW-03-070512 SG CW-PW-53-07051 SG CW-PW-04-070512 SG CW-PW-05-070412 SG CW-PW-06-070612 SG CWMW-2-070612 SG CWMW-18-070612 SG CWMW-65C-070612 SG MW-1B-070612 SG CW-SP-01-070512 SG CW-SP-02-070412 SG CW-W-RB-070212 SG CW-TP-RB-070212 SG MB-070912 SG	J (all detects) UJ (all non-detects)	A

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractables were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D problems, data were qualified as estimated in fifteen samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples CW-PW-03-070512 and CW-PW-53-070512 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)
	CW-PW-03-070512	CW-PW-53-070512	
Diesel range organics	0.44	0.45	2 (≤50)

Compound	Concentration (mg/L)		RPD (Limits)
	CW-PW-03-070512	CW-PW-53-070512	
Motor oil range organics	0.25	0.24	4 (≤50)

XIII. Field Blanks

No field blanks were identified in this SDG.

Central Waterfront
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG VB50

SDG	Sample	Compound	Flag	A or P	Reason
VB50	CW-PW-01-070412 SG CW-PW-02-070412 SG CW-PW-03-070512 SG CW-PW-53-07051 SG CW-PW-04-070512 SG CW-PW-05-070412 SG CW-PW-06-070612 SG CWMW-2-070612 SG CWMW-18-070612 SG CWMW-65C-070612 SG MW-1B-070612 SG CW-SP-01-070512 SG CW-SP-02-070412 SG CW-W-RB-070212 SG CW-TP-RB-070212 SG	Diesel range organics	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)

Central Waterfront
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG VB50

No Sample Data Qualified in this SDG

LDC #: 28090A8 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/10/12

SDG #: VB50 Level III Page: 1 of 1

Laboratory: Analytical Resources, Inc. Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: ~~Diesel Range Organics~~(NWTPH-Dx)
TPH Extractables

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/4 - 7/6/12
II	Initial calibration	A	% RSD ≤ 20
III.	Calibration verification/ICV	SW	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	D = 3, 4 19, 20
XIII.	Field blanks	ND	RB = 15, 16, 30, 31

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ~~Waters~~ SG - silica Gel Clean-up

1	CW-PW-01-070412 SG	11	CWMW-65C-070612 SG	21	CW-PW-04-070512	31	CW-TP-RB-070212
2	CW-PW-02-070412 SG	12	MW-1B-070612 SG	22	CW-PW-05-070412	32	
3	CW-PW-03-070512 SG	13	CW-SP-01-070512 SG	23	CW-PW-06-070612	33	MB-070912 SG
4	CW-PW-53-070512 SG	14	CW-SP-02-070412 SG	24	CWMW-2-070612	34	MB-070912
5	CW-PW-04-070512 SG	15	CW-W-RB-070212 SG	25	CWMW-18-070612	35	
6	CW-PW-05-070412 SG	16	CW-TP-RB-070212 SG	26	CWMW-65C-070612	36	
7	CW-PW-06-070612 SG	17	CW-PW-01-070412 ✓	27	MB-1B-070612	37	
8	~~CW-RB~~	18	CW-PW-02-070412 ✓	28	CW-SP-01-070512	38	
9	CWMW-2-070612 SG	19	CW-PW-03-070512 ✓	29	CW-SP-02-070412	39	
10	CWMW-18-070612 SG	20	CW-PW-53-070512 ✓	30	CW-W-RB-070212	40	

Notes: _____

LDC #: 25090A8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: EP
2nd Reviewer: 1

METHOD: V GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___RPD
Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ~~≤15.0%~~? W
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ ~~15.0~~)	W RT (limit)	Associated Samples	Qualifications
	6/22/12	ICV	NS	Diesel Range J	21.51	( )	MB-070912SG,	J/UJ/A
						( )	1→7, 9→16	
						( )		
						( )		
						( )		
	~~6/12/12~~	~~ICV~~				( )		
						( )		
						( )		
						( )		
						( )		
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LDC #: 28090A3

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: FT
2nd reviewer:

METHOD: ___ **GC** ___ **HPLC**

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (mg/L)		%RPD Limit (50)	Qualification Parent only / All Samples
	19	20		
Diesel Range	~~0.48~~ 0.44	0.45	2	
Motor Oil Range	~~0.24~~ 0.25	0.24	4	

Compound	Concentration ( )		%RPD Limit _____	Qualification Parent only / All Samples

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Central Waterfront

Collection Date: July 2 through July 16, 2012

LDC Report Date: August 13, 2012

Matrix: Water

Parameters: Aromatic Volatile Organics

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): VB50

Sample Identification

CW-PW-01-070412
CW-PW-02-070412
CW-PW-03-070512
CW-PW-53-07051
CW-PW-04-070512
CW-PW-05-070412
CW-PW-06-070612
CW-TB-20120704
CWMW-2-070612
CWMW-18-070612
CWMW-65C-070612
MW-1B-070612
MW-1B-070612DL
CW-SP-01-070512
CW-SP-02-070412
CW-W-RB-070212
CW-TP-RB-070212
CW-TB-20120702

Introduction

This data review covers 18 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8021B for Aromatic Volatile Organics which are Benzene, Toluene, Ethylbenzene and Xylenes (BTEX).

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for all compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No aromatic volatile organic contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
MW-1B-070612	Benzene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
MW-1B-070612	Benzene	R	A
MW-1B-070612DL	All TCL compounds except Benzene	R	A

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples CW-PW-03-070512 and CW-PW-53-07051 were identified as field duplicates. No aromatic volatile organics were detected in any of the samples.

XIII. Field Blanks

Samples CW-TB-20120704 and CW-TB-20120702 were identified as trip blanks. No aromatic volatile organic contaminants were found.

Samples CW-W-RB-070212 and CW-TP-RB-070212 were identified as rinsate blanks. No aromatic volatile organic contaminants were found.

Central Waterfront
Aromatic Volatile Organics - Data Qualification Summary - SDG VB50

SDG	Sample	Compound	Flag	A or P	Reason
VB50	MW-1B-070612	Benzene	J (all detects)	A	Compound quantitation and RLs (exceeded range)
VB50	MW-1B-070612	Benzene	R	A	Overall assessment of data
VB50	MW-1B-070612DL	All TCL compounds except Benzene	R	A	Overall assessment of data

Central Waterfront
Aromatic Volatile Organics - Laboratory Blank Data Qualification Summary - SDG VB50

No Sample Data Qualified in this SDG

Central Waterfront
Aromatic Volatile Organics - Field Blank Data Qualification Summary - SDG VB50

No Sample Data Qualified in this SDG

LDC #: 28090A32 32 — **VALIDATION COMPLETENESS WORKSHEET** — Date: 8/10/12

SDG #: VB50 — Level III — Page: 1 of 1

Laboratory: Analytical Resources, Inc. — Reviewer: FJ

2nd Reviewer: W

METHOD: ~~Aromatic Volatile Organics~~ (EPA SW 846 Method 8021B) keep BTEX

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/2 - 7/16/12
II	Initial calibration	A	% RSD ≤ 20
III.	Calibration verification/ICV	A	ICV / CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	SW ~~N~~	
X.	System Performance	N	
XI.	Overall assessment of data	SW ~~A~~	
XII.	Field duplicates	ND	D = 3, 4
XIII.	Field blanks	ND	TB = 8, 18 RB = 16, 17

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1	CW-PW-01-070412	11	CWMW-65C-070612	21		31	
2	CW-PW-02-070412	12	MW-1B-070612	22		32	
3	CW-PW-03-070512	13	MW-1B-070612DL	23		33	
4	CW-PW-53-07051	14	CW-SP-01-070512	24		34	
5	CW-PW-04-070512	15	CW-SP-02-070412	25		35	
6	CW-PW-05-070412	16	CW-W-RB-070212	26		36	
7	CW-PW-06-070612	17	CW-TP-RB-070212	27		37	
8	CW-~~RB~~ TB (7/4/12)	18	CW-TB (7/2/12)	28		38	
9	CWMW-2-070612	19		29		39	
10	CWMW-18-070612	20		30		40	

Notes: _____

LDC #: 28090A32

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	Benzene	x'd cal Range	12	J / A det

Comments: See sample calculation verification worksheet for recalculations

LDC #: 28090A32

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: FT
2nd Reviewer:

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	Benzene	x'd cal Range	12	R/A
	all except Benzene	diluted	13	R/A

Comments: _____

Central Waterfront - LDC 28090

SDG: VB50

Analytical Method	NWTPHD											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CWMW-18-070612	12-12931-VB50Z	Motor Oil Range	7/10/2012	0.22		Yes	Y				0.20	0.04	mg/L
CWMW-18-070612	12-12931-VB50Z	Diesel Range Hydrocarbons	7/10/2012	1.4		Yes	Y				0.10	0.02	mg/L
CWMW-2-070612	12-12930-VB50Y	Diesel Range Hydrocarbons	7/10/2012	1.3		Yes	Y				0.10	0.02	mg/L
CWMW-2-070612	12-12930-VB50Y	Motor Oil Range	7/10/2012	0.27		Yes	Y				0.20	0.04	mg/L
CWMW-65C-070612	12-12932-VB50AA	Motor Oil Range	7/10/2012	0.35		Yes	Y				0.20	0.04	mg/L
CWMW-65C-070612	12-12932-VB50AA	Diesel Range Hydrocarbons	7/10/2012	0.69		Yes	Y				0.10	0.02	mg/L
CW-PW-01-070412	12-12923-VB50R	Diesel Range Hydrocarbons	7/10/2012	0.1		Yes	N	U			0.10	0.02	mg/L
CW-PW-01-070412	12-12923-VB50R	Motor Oil Range	7/10/2012	0.2		Yes	N	U			0.20	0.04	mg/L
CW-PW-02-070412	12-12924-VB50S	Diesel Range Hydrocarbons	7/10/2012	0.47		Yes	Y				0.10	0.02	mg/L
CW-PW-02-070412	12-12924-VB50S	Motor Oil Range	7/10/2012	0.57		Yes	Y				0.20	0.04	mg/L
CW-PW-03-070512	12-12925-VB50T	Motor Oil Range	7/10/2012	0.25		Yes	Y				0.20	0.04	mg/L
CW-PW-03-070512	12-12925-VB50T	Diesel Range Hydrocarbons	7/10/2012	0.44		Yes	Y				0.10	0.02	mg/L
CW-PW-04-070512	12-12927-VB50V	Motor Oil Range	7/10/2012	0.25		Yes	Y				0.20	0.04	mg/L
CW-PW-04-070512	12-12927-VB50V	Diesel Range Hydrocarbons	7/10/2012	0.74		Yes	Y				0.10	0.02	mg/L
CW-PW-05-070412	12-12928-VB50W	Motor Oil Range	7/10/2012	1.6		Yes	Y				0.40	0.09	mg/L
CW-PW-05-070412	12-12928-VB50W	Diesel Range Hydrocarbons	7/10/2012	1.4		Yes	Y				0.20	0.04	mg/L
CW-PW-06-070612	12-12929-VB50X	Motor Oil Range	7/10/2012	0.61		Yes	Y				0.40	0.09	mg/L
CW-PW-06-070612	12-12929-VB50X	Diesel Range Hydrocarbons	7/10/2012	0.44		Yes	Y				0.20	0.04	mg/L
CW-PW-53-070512	12-12926-VB50U	Diesel Range Hydrocarbons	7/10/2012	0.45		Yes	Y				0.10	0.02	mg/L
CW-PW-53-070512	12-12926-VB50U	Motor Oil Range	7/10/2012	0.24		Yes	Y				0.20	0.04	mg/L
CW-SP-01-070512	12-12934-VB50AC	Motor Oil Range	7/10/2012	0.25		Yes	Y				0.20	0.04	mg/L
CW-SP-01-070512	12-12934-VB50AC	Diesel Range Hydrocarbons	7/10/2012	0.96		Yes	Y				0.10	0.02	mg/L
CW-SP-02-070412	12-12935-VB50AD	Diesel Range Hydrocarbons	7/10/2012	0.2		Yes	N	Y			0.20	0.04	mg/L
CW-SP-02-070412	12-12935-VB50AD	Motor Oil Range	7/10/2012	0.63		Yes	N	Y			0.63	0.09	mg/L

SDG: VB50

Analytical Method NWTPHD

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-TP-RB-070212	12-12937-VB50AF	Motor Oil Range	7/10/2012	0.2	Yes	N	U			0.20	0.04	mg/L
CW-TP-RB-070212	12-12937-VB50AF	Diesel Range Hydrocarbons	7/10/2012	0.1	Yes	N	U			0.10	0.02	mg/L
CW-W-RB-070212	12-12936-VB50AE	Motor Oil Range	7/10/2012	0.2	Yes	N	U			0.20	0.04	mg/L
CW-W-RB-070212	12-12936-VB50AE	Diesel Range Hydrocarbons	7/10/2012	0.1	Yes	N	U			0.10	0.02	mg/L

Analytical Method NWTPHDx

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CWMW-18-070612	12-12898-VB50J	Diesel Range Hydrocarbons	7/11/2012	0.1	Yes	N	U	UJ	5	0.10	0.04	mg/L
CWMW-18-070612	12-12898-VB50J	Motor Oil Range	7/11/2012	0.2	Yes	N	U			0.20	0.01	mg/L
CWMW-2-070612	12-12897-VB50I	Motor Oil Range	7/11/2012	0.2	Yes	N	U			0.20	0.01	mg/L
CWMW-2-070612	12-12897-VB50I	Diesel Range Hydrocarbons	7/11/2012	0.1	Yes	N	U	UJ	5	0.10	0.04	mg/L
CWMW-65C-070612	12-12899-VB50K	Diesel Range Hydrocarbons	7/11/2012	0.1	Yes	N	U	UJ	5	0.10	0.04	mg/L
CWMW-65C-070612	12-12899-VB50K	Motor Oil Range	7/11/2012	0.2	Yes	N	U			0.20	0.01	mg/L
CW-PW-01-070412	12-12889-VB50A	Motor Oil Range	7/11/2012	0.2	Yes	N	U			0.20	0.01	mg/L
CW-PW-01-070412	12-12889-VB50A	Diesel Range Hydrocarbons	7/11/2012	0.1	Yes	N	U	UJ	5	0.10	0.04	mg/L
CW-PW-02-070412	12-12890-VB50B	Diesel Range Hydrocarbons	7/11/2012	0.1	Yes	N	U	UJ	5	0.10	0.04	mg/L
CW-PW-02-070412	12-12890-VB50B	Motor Oil Range	7/11/2012	0.33	Yes	Y				0.20	0.01	mg/L
CW-PW-03-070512	12-12891-VB50C	Diesel Range Hydrocarbons	7/11/2012	0.1	Yes	N	U	UJ	5	0.10	0.04	mg/L
CW-PW-03-070512	12-12891-VB50C	Motor Oil Range	7/11/2012	0.2	Yes	N	U			0.20	0.01	mg/L
CW-PW-04-070512	12-12893-VB50E	Motor Oil Range	7/11/2012	0.2	Yes	N	U			0.20	0.01	mg/L
CW-PW-04-070512	12-12893-VB50E	Diesel Range Hydrocarbons	7/11/2012	0.1	Yes	N	U	UJ	5	0.10	0.04	mg/L
CW-PW-05-070412	12-12894-VB50F	Diesel Range Hydrocarbons	7/11/2012	0.2	Yes	N	U	UJ	5	0.20	0.08	mg/L
CW-PW-05-070412	12-12894-VB50F	Motor Oil Range	7/11/2012	1.1	Yes	Y				0.40	0.02	mg/L
CW-PW-06-070612	12-12895-VB50G	Motor Oil Range	7/11/2012	0.4	Yes	N	U			0.40	0.02	mg/L
CW-PW-06-070612	12-12895-VB50G	Diesel Range Hydrocarbons	7/11/2012	0.2	Yes	N	U	UJ	5	0.20	0.08	mg/L
CW-PW-53-070512	12-12892-VB50D	Diesel Range Hydrocarbons	7/11/2012	0.1	Yes	N	U	UJ	5	0.10	0.04	mg/L

SDG: VB50

Analytical Method NWTPHDx

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-PW-53-070512	12-12892-VB50D	Motor Oil Range	7/11/2012	0.2	Yes	N	U			0.20	0.01	mg/L
CW-SP-01-070512	12-12901-VB50M	Diesel Range Hydrocarbons	7/11/2012	0.1	Yes	N	U	UJ	5	0.10	0.04	mg/L
CW-SP-01-070512	12-12901-VB50M	Motor Oil Range	7/11/2012	0.2	Yes	N	U			0.20	0.01	mg/L
CW-SP-02-070412	12-12902-VB50N	Motor Oil Range	7/11/2012	0.4	Yes	N	U			0.40	0.02	mg/L
CW-SP-02-070412	12-12902-VB50N	Diesel Range Hydrocarbons	7/11/2012	0.2	Yes	N	U	UJ	5	0.20	0.08	mg/L
CW-TP-RB-070212	12-12904-VB50P	Diesel Range Hydrocarbons	7/11/2012	0.1	Yes	N	U	UJ	5	0.10	0.04	mg/L
CW-TP-RB-070212	12-12904-VB50P	Motor Oil Range	7/11/2012	0.2	Yes	N	U			0.20	0.01	mg/L
CW-W-RB-070212	12-12903-VB50O	Diesel Range Hydrocarbons	7/11/2012	0.1	Yes	N	U	UJ	5	0.10	0.04	mg/L
CW-W-RB-070212	12-12903-VB50O	Motor Oil Range	7/11/2012	0.2	Yes	N	U			0.20	0.01	mg/L
MW-1B-070612	12-12900-VB50L	Motor Oil Range	7/11/2012	0.2	Yes	N	U			0.20	0.01	mg/L
MW-1B-070612	12-12900-VB50L	Diesel Range Hydrocarbons	7/11/2012	0.18	Yes	Y		J	5	0.10	0.04	mg/L

Analytical Method NWTPHG

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CWMW-18-070612	12-12898-VB50J	Gasoline Range Hydrocarbons	7/15/2012	0.36	Yes	Y				0.03	0.011	mg/L
CWMW-2-070612	12-12897-VB50I	Gasoline Range Hydrocarbons	7/15/2012	0.46	Yes	Y				0.03	0.011	mg/L
CWMW-65C-070612	12-12899-VB50K	Gasoline Range Hydrocarbons	7/16/2012	0.03	Yes	N	U			0.03	0.011	mg/L
CW-PW-01-070412	12-12889-VB50A	Gasoline Range Hydrocarbons	7/15/2012	0.03	Yes	N	U			0.03	0.011	mg/L
CW-PW-02-070412	12-12890-VB50B	Gasoline Range Hydrocarbons	7/15/2012	0.03	Yes	N	U			0.03	0.011	mg/L
CW-PW-03-070512	12-12891-VB50C	Gasoline Range Hydrocarbons	7/15/2012	0.03	Yes	N	U			0.03	0.011	mg/L
CW-PW-04-070512	12-12893-VB50E	Gasoline Range Hydrocarbons	7/15/2012	0.06	Yes	Y				0.03	0.011	mg/L
CW-PW-05-070412	12-12894-VB50F	Gasoline Range Hydrocarbons	7/15/2012	0.18	Yes	Y				0.03	0.011	mg/L
CW-PW-06-070612	12-12895-VB50G	Gasoline Range Hydrocarbons	7/15/2012	0.03	Yes	N	U			0.03	0.011	mg/L
CW-PW-53-070512	12-12892-VB50D	Gasoline Range Hydrocarbons	7/15/2012	0.03	Yes	N	U			0.03	0.011	mg/L
CW-SP-01-070512	12-12901-VB50M	Gasoline Range Hydrocarbons	7/16/2012	0.07	Yes	Y				0.03	0.011	mg/L
CW-SP-02-070412	12-12902-VB50N	Gasoline Range Hydrocarbons	7/15/2012	0.03	Yes	N	U			0.03	0.011	mg/L

SDG: VB50

Analytical Method	NWTPHG											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
CW-TB-20120704	12-12896-VB50H	Gasoline Range Hydrocarbons	7/15/2012	0.03		Yes	N	U			0.03	0.011	mg/L
CW-TB-20120704	12-12905-VB50Q	Gasoline Range Hydrocarbons	7/15/2012	0.03		Yes	N	U			0.03	0.011	mg/L
CW-TP-RB-070212	12-12904-VB50P	Gasoline Range Hydrocarbons	7/16/2012	0.03		Yes	N	U			0.03	0.011	mg/L
CW-W-RB-070212	12-12903-VB50O	Gasoline Range Hydrocarbons	7/16/2012	0.03		Yes	N	U			0.03	0.011	mg/L
MW-1B-070612	12-12900-VB50L	Gasoline Range Hydrocarbons	7/16/2012	1.3		Yes	Y				0.03	0.011	mg/L
MW-1B-070612	12-12900-VB50LD	Gasoline Range Hydrocarbons	7/16/2012	1.1		Yes	Y				0.15	0.011	mg/L

Analytical Method	SW8021BM											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
CWMW-18-070612	12-12898-VB50J	Ethylbenzene	7/15/2012	0.55		Yes	Y				0.05	0.05	ug/L
CWMW-18-070612	12-12898-VB50J	Toluene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CWMW-18-070612	12-12898-VB50J	m,p-Xylene	7/15/2012	0.2		Yes	Y				0.10	0.10	ug/L
CWMW-18-070612	12-12898-VB50J	Benzene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CWMW-18-070612	12-12898-VB50J	o-Xylene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CWMW-2-070612	12-12897-VB50I	Benzene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CWMW-2-070612	12-12897-VB50I	Ethylbenzene	7/15/2012	0.74		Yes	Y				0.05	0.05	ug/L
CWMW-2-070612	12-12897-VB50I	Toluene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CWMW-2-070612	12-12897-VB50I	m,p-Xylene	7/15/2012	0.1		Yes	N	U			0.10	0.10	ug/L
CWMW-2-070612	12-12897-VB50I	o-Xylene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CWMW-65C-070612	12-12899-VB50K	Benzene	7/16/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CWMW-65C-070612	12-12899-VB50K	Ethylbenzene	7/16/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CWMW-65C-070612	12-12899-VB50K	m,p-Xylene	7/16/2012	0.1		Yes	N	U			0.10	0.10	ug/L
CWMW-65C-070612	12-12899-VB50K	o-Xylene	7/16/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CWMW-65C-070612	12-12899-VB50K	Toluene	7/16/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-01-070412	12-12889-VB50A	Benzene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-01-070412	12-12889-VB50A	m,p-Xylene	7/15/2012	0.1		Yes	N	U			0.10	0.10	ug/L

SDG: VB50

Analytical Method SW8021BM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-PW-01-070412	12-12889-VB50A	o-Xylene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-01-070412	12-12889-VB50A	Ethylbenzene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-01-070412	12-12889-VB50A	Toluene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-02-070412	12-12890-VB50B	o-Xylene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-02-070412	12-12890-VB50B	Benzene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-02-070412	12-12890-VB50B	m,p-Xylene	7/15/2012	0.1		Yes	N	U			0.10	0.10	ug/L
CW-PW-02-070412	12-12890-VB50B	Toluene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-02-070412	12-12890-VB50B	Ethylbenzene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-03-070512	12-12891-VB50C	Benzene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-03-070512	12-12891-VB50C	m,p-Xylene	7/15/2012	0.1		Yes	N	U			0.10	0.10	ug/L
CW-PW-03-070512	12-12891-VB50C	Ethylbenzene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-03-070512	12-12891-VB50C	o-Xylene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-03-070512	12-12891-VB50C	Toluene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-04-070512	12-12893-VB50E	o-Xylene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-04-070512	12-12893-VB50E	Toluene	7/15/2012	0.25		Yes	Y				0.05	0.05	ug/L
CW-PW-04-070512	12-12893-VB50E	m,p-Xylene	7/15/2012	0.1		Yes	N	U			0.10	0.10	ug/L
CW-PW-04-070512	12-12893-VB50E	Benzene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-04-070512	12-12893-VB50E	Ethylbenzene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-05-070412	12-12894-VB50F	Ethylbenzene	7/15/2012	0.32		Yes	Y				0.05	0.05	ug/L
CW-PW-05-070412	12-12894-VB50F	Toluene	7/15/2012	1.9		Yes	Y				0.05	0.05	ug/L
CW-PW-05-070412	12-12894-VB50F	m,p-Xylene	7/15/2012	1.5		Yes	Y				0.10	0.10	ug/L
CW-PW-05-070412	12-12894-VB50F	Benzene	7/15/2012	66		Yes	Y				0.05	0.05	ug/L
CW-PW-05-070412	12-12894-VB50F	o-Xylene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-06-070612	12-12895-VB50G	Benzene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L
CW-PW-06-070612	12-12895-VB50G	o-Xylene	7/15/2012	0.05		Yes	N	U			0.05	0.05	ug/L

SDG: VB50

Analytical Method SW8021BM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-PW-06-070612	12-12895-VB50G	m,p-Xylene	7/15/2012	0.1	Yes	N	U			0.10	0.10	ug/L
CW-PW-06-070612	12-12895-VB50G	Toluene	7/15/2012	0.23	Yes	Y				0.05	0.05	ug/L
CW-PW-06-070612	12-12895-VB50G	Ethylbenzene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-PW-53-070512	12-12892-VB50D	Toluene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-PW-53-070512	12-12892-VB50D	o-Xylene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-PW-53-070512	12-12892-VB50D	m,p-Xylene	7/15/2012	0.1	Yes	N	U			0.10	0.10	ug/L
CW-PW-53-070512	12-12892-VB50D	Ethylbenzene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-PW-53-070512	12-12892-VB50D	Benzene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-SP-01-070512	12-12901-VB50M	o-Xylene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-SP-01-070512	12-12901-VB50M	Benzene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-SP-01-070512	12-12901-VB50M	m,p-Xylene	7/16/2012	0.1	Yes	N	U			0.10	0.10	ug/L
CW-SP-01-070512	12-12901-VB50M	Toluene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-SP-01-070512	12-12901-VB50M	Ethylbenzene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-SP-02-070412	12-12902-VB50N	Benzene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-SP-02-070412	12-12902-VB50N	m,p-Xylene	7/15/2012	0.1	Yes	N	U			0.10	0.10	ug/L
CW-SP-02-070412	12-12902-VB50N	Toluene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-SP-02-070412	12-12902-VB50N	o-Xylene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-SP-02-070412	12-12902-VB50N	Ethylbenzene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TB-20120704	12-12896-VB50H	o-Xylene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TB-20120704	12-12896-VB50H	Ethylbenzene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TB-20120704	12-12896-VB50H	Toluene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TB-20120704	12-12896-VB50H	m,p-Xylene	7/15/2012	0.1	Yes	N	U			0.10	0.10	ug/L
CW-TB-20120704	12-12896-VB50H	Benzene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TB-20120704	12-12905-VB50Q	m,p-Xylene	7/15/2012	0.1	Yes	N	U			0.10	0.10	ug/L
CW-TB-20120704	12-12905-VB50Q	Ethylbenzene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L

SDG: VB50

Analytical Method SW8021BM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-TB-20120704	12-12905-VB50Q	Benzene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TB-20120704	12-12905-VB50Q	o-Xylene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TB-20120704	12-12905-VB50Q	Toluene	7/15/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TP-RB-070212	12-12904-VB50P	o-Xylene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TP-RB-070212	12-12904-VB50P	Ethylbenzene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TP-RB-070212	12-12904-VB50P	Toluene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TP-RB-070212	12-12904-VB50P	Benzene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-TP-RB-070212	12-12904-VB50P	m,p-Xylene	7/16/2012	0.1	Yes	N	U			0.10	0.10	ug/L
CW-W-RB-070212	12-12903-VB50O	Ethylbenzene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-W-RB-070212	12-12903-VB50O	Toluene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-W-RB-070212	12-12903-VB50O	m,p-Xylene	7/16/2012	0.1	Yes	N	U			0.10	0.10	ug/L
CW-W-RB-070212	12-12903-VB50O	Benzene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
CW-W-RB-070212	12-12903-VB50O	o-Xylene	7/16/2012	0.05	Yes	N	U			0.05	0.05	ug/L
MW-1B-070612	12-12900-VB50L	m,p-Xylene	7/16/2012	2.8	Yes	Y				0.10	0.10	ug/L
MW-1B-070612	12-12900-VB50L	Benzene	7/16/2012	200	No	Y	E	R	22	0.05	0.05	ug/L
MW-1B-070612	12-12900-VB50L	o-Xylene	7/16/2012	0.36	Yes	Y				0.05	0.05	ug/L
MW-1B-070612	12-12900-VB50L	Toluene	7/16/2012	3	Yes	Y				0.05	0.05	ug/L
MW-1B-070612	12-12900-VB50L	Ethylbenzene	7/16/2012	2.9	Yes	Y				0.05	0.05	ug/L
MW-1B-070612	12-12900-VB50LD	o-Xylene	7/16/2012	0.25	No	N	U	R	22	0.25	0.25	ug/L
MW-1B-070612	12-12900-VB50LD	Toluene	7/16/2012	3	No	Y		R	22	0.25	0.25	ug/L
MW-1B-070612	12-12900-VB50LD	m,p-Xylene	7/16/2012	2.4	No	Y		R	22	0.50	0.50	ug/L
MW-1B-070612	12-12900-VB50LD	Benzene	7/16/2012	200	Yes	Y				0.25	0.25	ug/L
MW-1B-070612	12-12900-VB50LD	Ethylbenzene	7/16/2012	2.6	No	Y		R	22	0.25	0.25	ug/L

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor QEA, LLC
720 Olive Way, Suite 900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

August 20, 2012

SUBJECT: Central Waterfront, Data Validation

Dear Ms. Fields,

Enclosed is the final validation report for the fractions listed below. This SDG was received on July 31, 2012. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 28100:

SDG #	Fraction
VB51/VB54	Volatiles, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

Attachment 1

LDC #28100 (Anchor Environmental-Seattle WA / Central Waterfront)

EDD

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260C)		VOA (8260C-SIM)		TPH-D (NWTPH-Dx)		TPH-G (NWTPH-Gx)																											
Matrix:	Water/Sediment			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	VB51/VB54	07/31/12	08/21/12	1	11	0	1	0	24	1	11																										
Total	A/MH			1	11	0	1	0	24	1	11	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	49

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Central Waterfront

Collection Date: July 2 through July 6, 2012

LDC Report Date: August 13, 2012

Matrix: Soil

Parameters: Volatiles

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): VB51/VB54

Sample Identification

CW-TP-06-5.5-6.5
CW-TP-07-9-10
CW-TP-09-6.3-7.3
CW-TP-09-10-11
CW-TP-05-7-8
CW-TP-03-7-8
CW-TP-02-8.2-9.2
CW-TP-01-8-9
CW-TB-20120706
CW-TP-08-7-8
CW-TP-04-8-9
CW-TP-54-8-9
CW-TP-02-8.2-9.2MS
CW-TP-02-8.2-9.2MSD

Introduction

This data review covers 13 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260C for Volatiles which are Benzene, Toluene, Ethylbenzene and Xylenes (BTEX).

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XVI. Field Duplicates

Samples CW-TP-04-8-9 and CW-TP-54-8-9 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)
	CW-TP-04-8-9	CW-TP-54-8-9	
Benzene	11	1.9	141 (≤50)

XVII. Field Blanks

Sample CW-TB-20120706 was identified as a trip blank. No volatiles were found.

Central Waterfront
Volatiles - Data Qualification Summary - SDG VB51/VB54

No Sample Data Qualified in this SDG

Central Waterfront
Volatiles - Laboratory Blank Data Qualification Summary - SDG VB51/VB54

No Sample Data Qualified in this SDG

LDC #: 28100A1a **VALIDATION COMPLETENESS WORKSHEET** Date: 8/9/12
SDG #: VB51/VB54 Level III Page: 1 of 1
Laboratory: Analytical Resources, Inc. Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C)
BTEX only
The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/2/12 - 7/6/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 20?
IV.	Continuing calibration/~~ICV~~ ICV	A	~~ICV ≤ 30?~~ CCV ≤ 20? ICV ≤ 30?
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	FD = 11 + 12
XVII.	Field blanks	ND	TB = 9

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil + Water

1 1	CW-TP-06-5.5-6.5	+ 11 2	CW-TP-04-8-9	21		31 1	~~MB-071112A~~ MB071112
2 1	CW-TP-07-9-10	+ 12 2	CW-TP-54-8-9	22		32 2	MB0712
3 1	CW-TP-09-6.3-7.3	13 2	CW-TP-02-8.2-9.2MS	23		33	
4 1	CW-TP-09-10-11	14 2	CW-TP-02-8.2-9.2MSD	24		34	
5 2	CW-TP-05-7-8	15		25		35	
6 2	CW-TP-03-7-8	16		26		36	
7 2	CW-TP-02-8.2-9.2	17		27		37	
8 2	CW-TP-01-8-9	18		28		38	
9 2	CW-TB-20120706 ~~TB~~	19		29		39	
+ 10 2	CW-TP-08-7-8	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC#: 28100A1a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: KK
2nd Reviewer: M

METHOD: GC MS Volatiles (EPA SW 846 Method 8260C)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/kg)		RPD (< 50)
	11	12	
V	11	1.9	141

V:\FIELD DUPLICATES\28100A1a.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Central Waterfront
Collection Date:	July 6, 2012
LDC Report Date:	August 13, 2012
Matrix:	Soil
Parameters:	Volatiles
Validation Level:	Stage 2B
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	VB51/VB54

Sample Identification

CW-TP-01-8-9

Introduction

This data review covers one soil sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260C for Volatiles which are Benzene, Toluene, Ethylbenzene and Xylenes (BTEX).

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Central Waterfront
Volatiles - Data Qualification Summary - SDG VB51/VB54

No Sample Data Qualified in this SDG

Central Waterfront
Volatiles - Laboratory Blank Data Qualification Summary - SDG VB51/VB54

No Sample Data Qualified in this SDG

LDC #: 28100A1b **VALIDATION COMPLETENESS WORKSHEET** Date: 8/9/12

SDG #: VB51/VB54 Level III Page: 1 of 1

Laboratory: Analytical Resources, Inc. Reviewer: BR

2nd Reviewer: TT

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C-SIM)

BTEX only

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/6/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 20%
IV.	Continuing calibration/ICV	A	CCV ≤ 20? ICV ≤ 30?
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client spec.
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	CW-TP-01-8-9	11		21		31	MB0720
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Central Waterfront

Collection Date: July 2 through July 6, 2012

LDC Report Date: August 13, 2012

Matrix: Water

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): VB51/VB54

Sample Identification

CW-TP-06-5.5-6.5
CW-TP-07-9-10
CW-TP-09-10-11
CW-TB-20120702
CW-TP-05-7-8
CW-TP-03-7-8
CW-TP-02-8.2-9.2
CW-TP-01-8-9
CW-TP-08-7-8
CW-TP-54-8-9
CW-TP-06-5.5-6.5MS
CW-TP-06-5.5-6.5MSD
CW-TP-09-6.3-7.3
CW-TP-04-8-9

Introduction

This data review covers 13 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per NWTPH-Gx for Total Petroleum Hydrocarbons as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XII. Field Duplicates

Samples CW-TP-04-8-9 and CW-TP-54-8-9 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	CW-TP-04-8-9	CW-TP-54-8-9	
TPH as gasoline	26	900	189 (≤50)

XIII. Field Blanks

Sample CW-TB-20120702 was identified as a trip blank. No total petroleum hydrocarbons as gasoline were found.

Central Waterfront
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG VB51/VB54

No Sample Data Qualified in this SDG

Central Waterfront
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG VB51/VB54

No Sample Data Qualified in this SDG

LDC #: 28100A7 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/9/12

SDG #: VB51/VB54 Level III Page: 1 of 1

Laboratory: Analytical Resources, Inc. Reviewer: BR

2nd Reviewer: [illegible]

METHOD: ~~Gasoline Range Organics (~~NWTPH-Gx) TPH as Gasoline

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/2/12 - 7/6/12
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/~~ICV~~ ICV	A	~~ICV~~ CCV ≤ 20%
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	FD = 14 + 10
XIII.	Field blanks	ND	TB = 4

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil + Water

1 1	CW-TP-06-5.5-6.5	11 1	CW-TP-06-5.5-6.5MS	21		31 1	12-12906-MB
2 2	CW-TP-07-9-10	12 1	CW-TP-06-5.5-6.5MSD	22		32 2	12-12911-MB
3 2	CW-TP-09-10-11	13 2	CW-TP-09-6.3-7.3	23		33 3	12-12940-MB
4 4	CW-TB-20120702 W	14 3	CW-TP-04-8-9	24		34 4	12-12920-MB
5 3	CW-TP-05-7-8	15		25		35	
6 3	CW-TP-03-7-8	16		26		36	
7 3	CW-TP-02-8.2-9.2	17		27		37	
8 3	CW-TP-01-8-9	18		28		38	
9 3	CW-TP-08-7-8	19		29		39	
10 3	CW-TP-54-8-9	20		30		40	

Notes: _____

LDC#: 28100A7

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: BK
2nd Reviewer: JS

METHOD: TPH as Gasoline (NWTPH-Gx)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/kg)		RPD (<50)
	14	10	
Gasoline	26	900	189

V:\FIELD DUPLICATES\28100A7.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Central Waterfront

Collection Date: July 2 through July 6, 2012

LDC Report Date: August 17, 2012

Matrix: Soil

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): VB51/VB54

Sample Identification

CW-TP-06-5.5-6.5SG
CW-TP-07-9-10SG
CW-TP-09-6.3-7.3SG
CW-TP-09-10-11SG
CW-TP-05-7-8SG
CW-TP-05-7-8DLSG
CW-TP-03-7-8SG
CW-TP-03-7-8DLSG
CW-TP-02-8.2-9.2SG
CW-TP-01-8-9SG
CW-TP-08-7-8SG
CW-TP-04-8-9SG
CW-TP-54-8-9SG
CW-TP-06-5.5-6.5MSSG
CW-TP-06-5.5-6.5MSDSG
CW-TP-06-5.5-6.5
CW-TP-07-9-10
CW-TP-09-6.3-7.3
CW-TP-09-10-11
CW-TP-05-7-8
CW-TP-03-7-8
CW-TP-02-8.2-9.2
CW-TP-01-8-9
CW-TP-08-7-8
CW-TP-04-8-9
CW-TP-54-8-9
CW-TP-06-5.5-6.5MS
CW-TP-06-5.5-6.5MSD

Introduction

This data review covers 28 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per NWTPH-Dx for Total Petroleum Hydrocarbons as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractables were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for several samples. Since the samples were diluted out, no data were qualified.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
CW-TP-05-7-8SG CW-TP-03-7-8SG	Diesel range organics	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
CW-TP-05-7-8SG CW-TP-03-7-8SG	Diesel range organics	R	A
CW-TP-05-7-8DLSG CW-TP-03-7-8DLSG	TPH as extractables except Diesel range organics	R	A

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples CW-TP-04-8-9SG and CW-TP-54-8-9SG and samples CW-TP-04-8-9 and CW-TP-54-8-9 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD (Limits)
	CW-TP-04-8-9SG	CW-TP-54-8-9SG	
Diesel range organics	32	32	0 (≤50)
Motor oil range organics	65	63	3 (≤50)

Compound	Concentration (mg/Kg)		RPD (Limits)
	CW-TP-04-8-9	CW-TP-54-8-9	
Diesel range organics	670	760	13 (≤50)
Motor oil range organics	120	140	15 (≤50)

XIII. Field Blanks

No field blanks were identified in this SDG.

Central Waterfront
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG VB51/VB54

SDG	Sample	Compound	Flag	A or P	Reason
VB51/VB54	CW-TP-05-7-8SG CW-TP-03-7-8SG	Diesel range organics	J (all detects)	A	Compound quantitation and RLs (exceeded range)
VB51/VB54	CW-TP-05-7-8SG CW-TP-03-7-8SG	Diesel range organics	R	A	Overall assessment of data
VB51/VB54	CW-TP-05-7-8DLSG CW-TP-03-7-8DLSG	TPH as extractables except Diesel range organics	R	A	Overall assessment of data

Central Waterfront
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG VB51/VB54

No Sample Data Qualified in this SDG

LDC #: 28100A8 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/9/12

SDG #: VB51/VB54 Level III Page: 1 of 1

Laboratory: Analytical Resources, Inc. Reviewer: KK

TPH as Extractables 2nd Reviewer: JT

METHOD: ~~Diesel Range Organics~~ (NWTPH-Dx)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 07/02/12 - 07/06/12
II	Initial calibration	A	RSD ≤20%
III.	Calibration verification/ICV	A	ICV/CCV ≤20%
IV.	Blanks	A	
V	Surrogate recovery	SW	
VI.	Matrix spike/Matrix spike duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	SW	FD = 12+13 25+26
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: 56; 1

1	1	CW-TP-06-5.5-6.5 SG	11	2	CW-TP-08-7-8 SG	21	4	#7 ✓	31 1	12-12908-07112MB1
2	1	CW-TP-07-9-10 SG	12	2	CW-TP-04-8-9 SG	22	4	#9 ✓	32 2	12-12942-07112MB1
3	1	CW-TP-09-6.3-7.3 SG	13	2	CW-TP-54-8-9 SG	23	4	#10 ✓	33 3	12-12907-07112MB1
4	1	CW-TP-09-10-11 SG	14	1	CW-TP-06-5.5-6.5MS SG	24	4	#11	34 4	12-12941-07112MB1
5	2	CW-TP-05-7-8 SG	15	1	CW-TP-06-5.5-6.5MSD SG	25	4	#12	35	
6	2	CW-TP-05-7-8DL SG	16	3	#1	26	4	#13	36	
7	2	CW-TP-03-7-8 SG	17	3	#2	27	4	#14	37	
8	2	CW-TP-03-7-8DL SG	18	3	#3 ✓	28	4	#15	38	
9	2	CW-TP-02-8.2-9.2 SG	19	3	#4 ✓	29			39	
10	2	CW-TP-01-8-9 SG	20	4	#5 ✓	30			40	

Notes: _____

LDC #: 28100A8

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: BK
2nd Reviewer: [illegible]

METHOD: X GC __ HPLC

Are surrogates required by the method? Yes X or No____.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were surrogates spiked into all samples and blanks?

Y (N) N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	3, 4, 6,	NS	H	%o Recoveries were outside (	No qual. DIL 5X
	8, 9, 10			acceptable criteria. (	
	~~11~~ 18 - 24			(	
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	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene	Z	2-Bromonaphthalene
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin	AA	1-Chlorooctadecane
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin	BB	2,4-DCAA
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate		
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

LDC #: 28100A8

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: BR
2nd Reviewer: JS

METHOD: X GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	Diesel Range	x'd calibration range	~~5~~, 7	J (all A)

Comments: See sample calculation verification worksheet for recalculations

LDC #: 28100A8

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BR
2nd Reviewer: JP

METHOD: X GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	Diesel Range	x'd calibration rang	~~5~~ 5,7	R/A
	All except Diesel Rang	dilution	6,8	R/A

Comments: _____

OVRNew.wpd

LDC#: 281008A8

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: BN
2nd Reviewer: [illegible]

METHOD: Total Diesel Range Hydrocarbons (NWTPHD)

(Y) N NA Were field duplicate pairs identified in this SDG?
(Y) N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/kg)		RPD (≤ 50)
	12 SG	13 SG	
Diesel Range	32	32	0
Motor Oil Range	65	63	3

V:\FIELD DUPLICATES\28100A8.wpd

LDC #: 28100A8
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: 1 GC __ HPLC

Y N N/A Were field duplicate pairs identified in this SDG?
Y/N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (mg/kg)		%RPD Limit ≤ 50	Qualification Parent only / All Samples
	25	26		
Diesel Range	670	760	13	
Motor Oil Range	120	140	15	

Compound	Concentration ( )		%RPD Limit _____	Qualification Parent only / All Samples

FLDUPNew.wpd

Central Waterfront - LDC 28100

SDG: VB51

Analytical Method	NWTPHD											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-TP-06-5.5-6.5	12-12907-VB51B	Motor Oil Range	7/17/2012	12	Yes	N	U			12	3.0	mg/kg
CW-TP-06-5.5-6.5	12-12907-VB51B	Diesel Range Hydrocarbons	7/17/2012	6.1	Yes	N	U			6.1	1.6	mg/kg
CW-TP-07-9-10	12-12912-VB51G	Diesel Range Hydrocarbons	7/18/2012	1200	Yes	Y				60	16	mg/kg
CW-TP-07-9-10	12-12912-VB51G	Motor Oil Range	7/18/2012	240	Yes	Y				120	30	mg/kg
CW-TP-09-10-11	12-12918-VB51M	Motor Oil Range	7/18/2012	2900	Yes	Y				1200	290	mg/kg
CW-TP-09-10-11	12-12918-VB51M	Diesel Range Hydrocarbons	7/18/2012	18000	Yes	Y				590	160	mg/kg
CW-TP-09-6.3-7.3	12-12915-VB51J	Motor Oil Range	7/18/2012	5200	Yes	Y				2800	690	mg/kg
CW-TP-09-6.3-7.3	12-12915-VB51J	Diesel Range Hydrocarbons	7/18/2012	34000	Yes	Y				1400	380	mg/kg

Analytical Method	NWTPHDx											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-TP-06-5.5-6.5	12-12908-VB51C	Diesel Range Hydrocarbons	7/17/2012	6.1	Yes	N	U			6.1	1.6	mg/kg
CW-TP-06-5.5-6.5	12-12908-VB51C	Motor Oil Range	7/17/2012	12	Yes	N	U			12	1.9	mg/kg
CW-TP-07-9-10	12-12913-VB51H	Motor Oil Range	7/18/2012	140	Yes	Y				120	19	mg/kg
CW-TP-07-9-10	12-12913-VB51H	Diesel Range Hydrocarbons	7/18/2012	840	Yes	Y				60	15	mg/kg
CW-TP-09-10-11	12-12919-VB51N	Diesel Range Hydrocarbons	7/18/2012	14000	Yes	Y				590	150	mg/kg
CW-TP-09-10-11	12-12919-VB51N	Motor Oil Range	7/18/2012	1700	Yes	Y				1200	190	mg/kg
CW-TP-09-6.3-7.3	12-12916-VB51K	Diesel Range Hydrocarbons	7/18/2012	27000	Yes	Y				1100	290	mg/kg
CW-TP-09-6.3-7.3	12-12916-VB51K	Motor Oil Range	7/18/2012	3200	Yes	Y				2200	350	mg/kg

Analytical Method	NWTPHG											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-TP-06-5.5-6.5	12-12906-VB51A	Gasoline Range Hydrocarbons	7/11/2012	6.1	Yes	N	U			6.1	2.9	mg/kg
CW-TP-07-9-10	12-12911-VB51F	Gasoline Range Hydrocarbons	7/12/2012	380	Yes	Y				5.5	2.6	mg/kg
CW-TP-09-10-11	12-12917-VB51L	Gasoline Range Hydrocarbons	7/12/2012	330	Yes	Y				11	5.3	mg/kg
CW-TP-09-6.3-7.3	12-12914-VB51I	Gasoline Range Hydrocarbons	7/12/2012	1800	Yes	Y				40	19	mg/kg

SDG: VB51

Analytical Method	SW8260C											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-TP-06-5.5-6.5	12-12906-VB51A	Benzene	7/11/2012	0.9	Yes	N	U			0.9	0.26	ug/kg
CW-TP-06-5.5-6.5	12-12906-VB51A	Toluene	7/11/2012	0.9	Yes	N	U			0.9	0.14	ug/kg
CW-TP-06-5.5-6.5	12-12906-VB51A	o-Xylene	7/11/2012	0.9	Yes	N	U			0.9	0.20	ug/kg
CW-TP-06-5.5-6.5	12-12906-VB51A	Ethylbenzene	7/11/2012	0.9	Yes	N	U			0.9	0.18	ug/kg
CW-TP-06-5.5-6.5	12-12906-VB51A	m,p-Xylene	7/11/2012	0.9	Yes	N	U			0.9	0.35	ug/kg
CW-TP-07-9-10	12-12911-VB51F	o-Xylene	7/11/2012	0.7	Yes	N	U			0.7	0.16	ug/kg
CW-TP-07-9-10	12-12911-VB51F	Benzene	7/11/2012	0.7	Yes	N	U			0.7	0.21	ug/kg
CW-TP-07-9-10	12-12911-VB51F	m,p-Xylene	7/11/2012	0.7	Yes	N	U			0.7	0.28	ug/kg
CW-TP-07-9-10	12-12911-VB51F	Toluene	7/11/2012	0.7	Yes	N	U			0.7	0.11	ug/kg
CW-TP-07-9-10	12-12911-VB51F	Ethylbenzene	7/11/2012	0.7	Yes	N	U			0.7	0.15	ug/kg
CW-TP-09-10-11	12-12917-VB51L	m,p-Xylene	7/11/2012	0.6	Yes	N	U			0.6	0.25	ug/kg
CW-TP-09-10-11	12-12917-VB51L	Benzene	7/11/2012	0.6	Yes	N	U			0.6	0.19	ug/kg
CW-TP-09-10-11	12-12917-VB51L	Toluene	7/11/2012	0.6	Yes	N	U			0.6	0.10	ug/kg
CW-TP-09-10-11	12-12917-VB51L	Ethylbenzene	7/11/2012	0.6	Yes	N	U			0.6	0.13	ug/kg
CW-TP-09-10-11	12-12917-VB51L	o-Xylene	7/11/2012	0.6	Yes	N	U			0.6	0.14	ug/kg
CW-TP-09-6.3-7.3	12-12914-VB51I	Ethylbenzene	7/11/2012	0.6	Yes	N	U			0.6	0.11	ug/kg
CW-TP-09-6.3-7.3	12-12914-VB51I	Toluene	7/11/2012	0.6	Yes	N	U			0.6	0.080	ug/kg
CW-TP-09-6.3-7.3	12-12914-VB51I	m,p-Xylene	7/11/2012	0.6	Yes	N	U			0.6	0.22	ug/kg
CW-TP-09-6.3-7.3	12-12914-VB51I	Benzene	7/11/2012	0.6	Yes	N	U			0.6	0.16	ug/kg
CW-TP-09-6.3-7.3	12-12914-VB51I	o-Xylene	7/11/2012	0.6	Yes	N	U			0.6	0.12	ug/kg

SDG: VB54

Analytical Method NWTPHD

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-TP-01-8-9	12-12950-VB54K	Diesel Range Hydrocarbons	7/18/2012	12000		Yes	Y				560	150	mg/kg
CW-TP-01-8-9	12-12950-VB54K	Motor Oil Range	7/18/2012	1400		Yes	Y				1100	280	mg/kg
CW-TP-02-8.2-9.2	12-12947-VB54H	Diesel Range Hydrocarbons	7/18/2012	6600		Yes	Y				280	77	mg/kg
CW-TP-02-8.2-9.2	12-12947-VB54H	Motor Oil Range	7/18/2012	880		Yes	Y				570	140	mg/kg
CW-TP-03-7-8	12-12944-VB54E	Motor Oil Range	7/18/2012	840		Yes	Y				590	150	mg/kg
CW-TP-03-7-8	12-12944-VB54E	Diesel Range Hydrocarbons	7/18/2012	5300		Yes	Y				300	80	mg/kg
CW-TP-04-8-9	12-12957-VB54R	Motor Oil Range	7/18/2012	120		Yes	Y				65	16	mg/kg
CW-TP-04-8-9	12-12957-VB54R	Diesel Range Hydrocarbons	7/18/2012	670		Yes	Y				32	8.8	mg/kg
CW-TP-05-7-8	12-12941-VB54B	Motor Oil Range	7/18/2012	800		Yes	Y				630	160	mg/kg
CW-TP-05-7-8	12-12941-VB54B	Diesel Range Hydrocarbons	7/18/2012	5000		Yes	Y				320	85	mg/kg
CW-TP-08-7-8	12-12954-VB54O	Diesel Range Hydrocarbons	7/18/2012	230		Yes	Y				29	7.8	mg/kg
CW-TP-08-7-8	12-12954-VB54O	Motor Oil Range	7/18/2012	210		Yes	Y				58	14	mg/kg
CW-TP-54-8-9	12-12960-VB54U	Motor Oil Range	7/18/2012	140		Yes	Y				63	16	mg/kg
CW-TP-54-8-9	12-12960-VB54U	Diesel Range Hydrocarbons	7/18/2012	760		Yes	Y				32	8.5	mg/kg

Analytical Method NWTPHDx

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-TP-01-8-9	12-12951-VB54L	Diesel Range Hydrocarbons	7/18/2012	11000		Yes	Y				280	71	mg/kg
CW-TP-01-8-9	12-12951-VB54L	Motor Oil Range	7/18/2012	940		Yes	Y				560	88	mg/kg
CW-TP-02-8.2-9.2	12-12948-VB54I	Motor Oil Range	7/18/2012	570		Yes	Y				570	89	mg/kg
CW-TP-02-8.2-9.2	12-12948-VB54I	Diesel Range Hydrocarbons	7/18/2012	5700		Yes	Y				280	73	mg/kg
CW-TP-03-7-8	12-12945-VB54F	Diesel Range Hydrocarbons	7/17/2012	3900		No	Y	E	R	22	30	7.6	mg/kg
CW-TP-03-7-8	12-12945-VB54F	Motor Oil Range	7/17/2012	450		Yes	Y				59	9.3	mg/kg
CW-TP-03-7-8	12-12945-VB54FD	Diesel Range Hydrocarbons	7/18/2012	4100		Yes	Y				300	76	mg/kg
CW-TP-03-7-8	12-12945-VB54FD	Motor Oil Range	7/18/2012	590		No	N	U	R	22	590	93	mg/kg
CW-TP-04-8-9	12-12958-VB54S	Motor Oil Range	7/18/2012	70		Yes	Y				65	10	mg/kg

SDG: VB54

Analytical Method	NWTPHDx											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
CW-TP-04-8-9	12-12958-VB54S	Diesel Range Hydrocarbons	7/18/2012	530		Yes	Y				32	8.3	mg/kg
CW-TP-05-7-8	12-12942-VB54C	Diesel Range Hydrocarbons	7/17/2012	3900		No	Y	E	R	22	32	8.1	mg/kg
CW-TP-05-7-8	12-12942-VB54C	Motor Oil Range	7/17/2012	490		Yes	Y				63	9.9	mg/kg
CW-TP-05-7-8	12-12942-VB54CD	Diesel Range Hydrocarbons	7/18/2012	4200		Yes	Y				320	81	mg/kg
CW-TP-05-7-8	12-12942-VB54CD	Motor Oil Range	7/18/2012	630		No	N	U	R	22	630	99	mg/kg
CW-TP-08-7-8	12-12955-VB54P	Diesel Range Hydrocarbons	7/17/2012	140		Yes	Y				5.6	1.4	mg/kg
CW-TP-08-7-8	12-12955-VB54P	Motor Oil Range	7/17/2012	85		Yes	Y				11	1.8	mg/kg
CW-TP-54-8-9	12-12961-VB54V	Diesel Range Hydrocarbons	7/18/2012	580		Yes	Y				32	8.1	mg/kg
CW-TP-54-8-9	12-12961-VB54V	Motor Oil Range	7/18/2012	82		Yes	Y				63	9.9	mg/kg

Analytical Method	NWTPHG											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
CW-TB-20120702	12-12920-VB54W	Gasoline Range Hydrocarbons	7/11/2012	0.25		Yes	N	U			0.25	0.060	mg/L
CW-TP-01-8-9	12-12949-VB54J	Gasoline Range Hydrocarbons	7/12/2012	1400		Yes	Y				47	22	mg/kg
CW-TP-02-8.2-9.2	12-12946-VB54G	Gasoline Range Hydrocarbons	7/12/2012	800		Yes	Y				41	20	mg/kg
CW-TP-03-7-8	12-12943-VB54D	Gasoline Range Hydrocarbons	7/12/2012	750		Yes	Y				38	18	mg/kg
CW-TP-04-8-9	12-12956-VB54Q	Gasoline Range Hydrocarbons	7/12/2012	26		Yes	Y				5.4	2.6	mg/kg
CW-TP-05-7-8	12-12940-VB54A	Gasoline Range Hydrocarbons	7/12/2012	980		Yes	Y				48	23	mg/kg
CW-TP-08-7-8	12-12953-VB54N	Gasoline Range Hydrocarbons	7/12/2012	23		Yes	Y				5.2	2.5	mg/kg
CW-TP-54-8-9	12-12959-VB54T	Gasoline Range Hydrocarbons	7/12/2012	900		Yes	Y				61	29	mg/kg

Analytical Method	SW8260C											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
CW-TB-20120702	12-12952-VB54M	Toluene	7/12/2012	1		Yes	N	U			1.0	0.18	ug/L
CW-TB-20120702	12-12952-VB54M	Ethylbenzene	7/12/2012	1		Yes	N	U			1.0	0.18	ug/L
CW-TB-20120702	12-12952-VB54M	Benzene	7/12/2012	1		Yes	N	U			1.0	0.25	ug/L
CW-TB-20120702	12-12952-VB54M	o-Xylene	7/12/2012	1		Yes	N	U			1.0	0.22	ug/L

SDG: VB54

Analytical Method SW8260C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-TB-20120702	12-12952-VB54M	m,p-Xylene	7/12/2012	2	Yes	N	U			2.0	0.36	ug/L
CW-TP-01-8-9	12-12949-VB54J	Ethylbenzene	7/12/2012	850	Yes	N	U			850	390	ug/kg
CW-TP-01-8-9	12-12949-VB54J	Toluene	7/12/2012	850	Yes	N	U			850	780	ug/kg
CW-TP-01-8-9	12-12949-VB54J	m,p-Xylene	7/12/2012	850	Yes	N	U			850	850	ug/kg
CW-TP-01-8-9	12-12949-VB54J	Benzene	7/12/2012	850	Yes	N	U			850	300	ug/kg
CW-TP-01-8-9	12-12949-VB54J	o-Xylene	7/12/2012	850	Yes	N	U			850	480	ug/kg
CW-TP-02-8.2-9.2	12-12946-VB54G	Toluene	7/12/2012	340	Yes	N	U			340	310	ug/kg
CW-TP-02-8.2-9.2	12-12946-VB54G	m,p-Xylene	7/12/2012	340	Yes	N	U			340	340	ug/kg
CW-TP-02-8.2-9.2	12-12946-VB54G	Benzene	7/12/2012	340	Yes	N	U			340	120	ug/kg
CW-TP-02-8.2-9.2	12-12946-VB54G	o-Xylene	7/12/2012	340	Yes	N	U			340	190	ug/kg
CW-TP-02-8.2-9.2	12-12946-VB54G	Ethylbenzene	7/12/2012	340	Yes	N	U			340	160	ug/kg
CW-TP-03-7-8	12-12943-VB54D	Benzene	7/12/2012	410	Yes	N	U			410	150	ug/kg
CW-TP-03-7-8	12-12943-VB54D	Toluene	7/12/2012	410	Yes	N	U			410	380	ug/kg
CW-TP-03-7-8	12-12943-VB54D	Ethylbenzene	7/12/2012	410	Yes	N	U			410	190	ug/kg
CW-TP-03-7-8	12-12943-VB54D	m,p-Xylene	7/12/2012	410	Yes	N	U			410	410	ug/kg
CW-TP-03-7-8	12-12943-VB54D	o-Xylene	7/12/2012	410	Yes	N	U			410	240	ug/kg
CW-TP-04-8-9	12-12956-VB54Q	Toluene	7/12/2012	1.3	Yes	N	U			1.3	0.20	ug/kg
CW-TP-04-8-9	12-12956-VB54Q	o-Xylene	7/12/2012	1.3	Yes	N	U			1.3	0.30	ug/kg
CW-TP-04-8-9	12-12956-VB54Q	m,p-Xylene	7/12/2012	1.3	Yes	N	U			1.3	0.53	ug/kg
CW-TP-04-8-9	12-12956-VB54Q	Benzene	7/12/2012	11	Yes	Y				1.3	0.40	ug/kg
CW-TP-04-8-9	12-12956-VB54Q	Ethylbenzene	7/12/2012	1.3	Yes	N	U			1.3	0.27	ug/kg
CW-TP-05-7-8	12-12940-VB54A	Toluene	7/12/2012	300	Yes	N	U			300	280	ug/kg
CW-TP-05-7-8	12-12940-VB54A	o-Xylene	7/12/2012	300	Yes	N	U			300	170	ug/kg
CW-TP-05-7-8	12-12940-VB54A	m,p-Xylene	7/12/2012	300	Yes	N	U			300	300	ug/kg
CW-TP-05-7-8	12-12940-VB54A	Ethylbenzene	7/12/2012	300	Yes	N	U			300	140	ug/kg

SDG: VB54

Analytical Method SW8260C

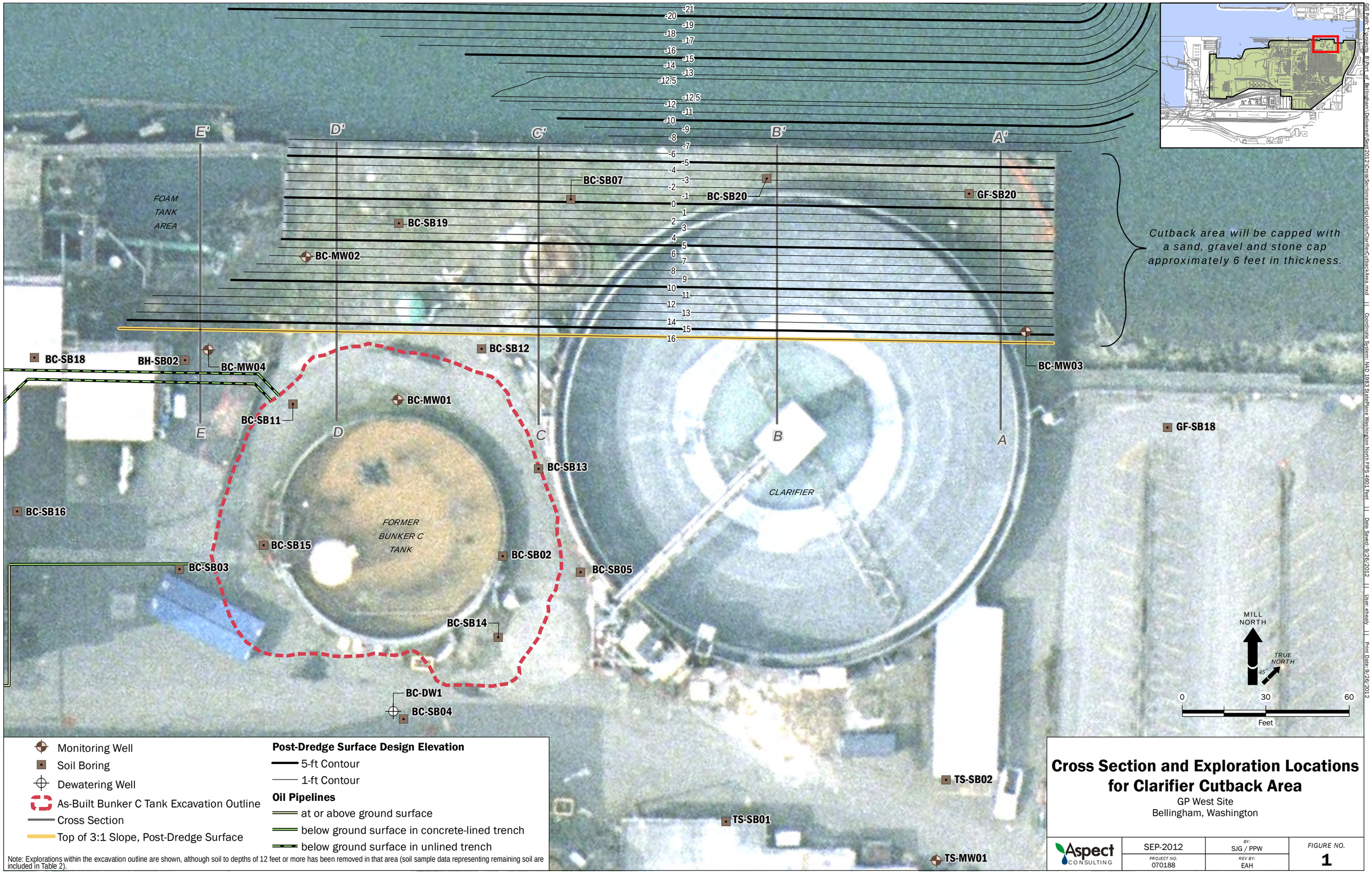
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-TP-05-7-8	12-12940-VB54A	Benzene	7/12/2012	300	Yes	N	U			300	110	ug/kg
CW-TP-08-7-8	12-12953-VB54N	o-Xylene	7/12/2012	0.6	Yes	N	U			0.6	0.15	ug/kg
CW-TP-08-7-8	12-12953-VB54N	Benzene	7/12/2012	1.1	Yes	Y				0.6	0.19	ug/kg
CW-TP-08-7-8	12-12953-VB54N	m,p-Xylene	7/12/2012	1.4	Yes	Y				0.6	0.25	ug/kg
CW-TP-08-7-8	12-12953-VB54N	Toluene	7/12/2012	1.7	Yes	Y				0.6	0.10	ug/kg
CW-TP-08-7-8	12-12953-VB54N	Ethylbenzene	7/12/2012	0.6	Yes	N	U			0.6	0.13	ug/kg
CW-TP-54-8-9	12-12959-VB54T	Ethylbenzene	7/12/2012	1.1	Yes	N	U			1.1	0.23	ug/kg
CW-TP-54-8-9	12-12959-VB54T	Toluene	7/12/2012	1.1	Yes	N	U			1.1	0.17	ug/kg
CW-TP-54-8-9	12-12959-VB54T	m,p-Xylene	7/12/2012	1.1	Yes	N	U			1.1	0.44	ug/kg
CW-TP-54-8-9	12-12959-VB54T	Benzene	7/12/2012	1.9	Yes	Y				1.1	0.33	ug/kg
CW-TP-54-8-9	12-12959-VB54T	o-Xylene	7/12/2012	1.1	Yes	N	U			1.1	0.25	ug/kg

Analytical Method SW8260CSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
CW-TP-01-8-9	12-12949-VB54J	Benzene	7/20/2012	8.6	Yes	N	U			8.6	1.4	ug/kg
CW-TP-01-8-9	12-12949-VB54J	m,p-Xylene	7/20/2012	30	Yes	Y				17	5.0	ug/kg
CW-TP-01-8-9	12-12949-VB54J	Toluene	7/20/2012	30	Yes	Y				8.6	2.4	ug/kg
CW-TP-01-8-9	12-12949-VB54J	Ethylbenzene	7/20/2012	10	Yes	Y				8.6	1.8	ug/kg
CW-TP-01-8-9	12-12949-VB54J	o-Xylene	7/20/2012	32	Yes	Y				8.6	1.4	ug/kg

APPENDIX I

SOIL AND GROUNDWATER DATA IN SOUTH SHORELINE CUTBACK AREA



- Monitoring Well
- Soil Boring
- Dewatering Well
- As-Built Bunker C Tank Excavation Outline
- Cross Section
- Top of 3:1 Slope, Post-Dredge Surface

Post-Dredge Surface Design Elevation

- 5-ft Contour
- 1-ft Contour

Oil Pipelines

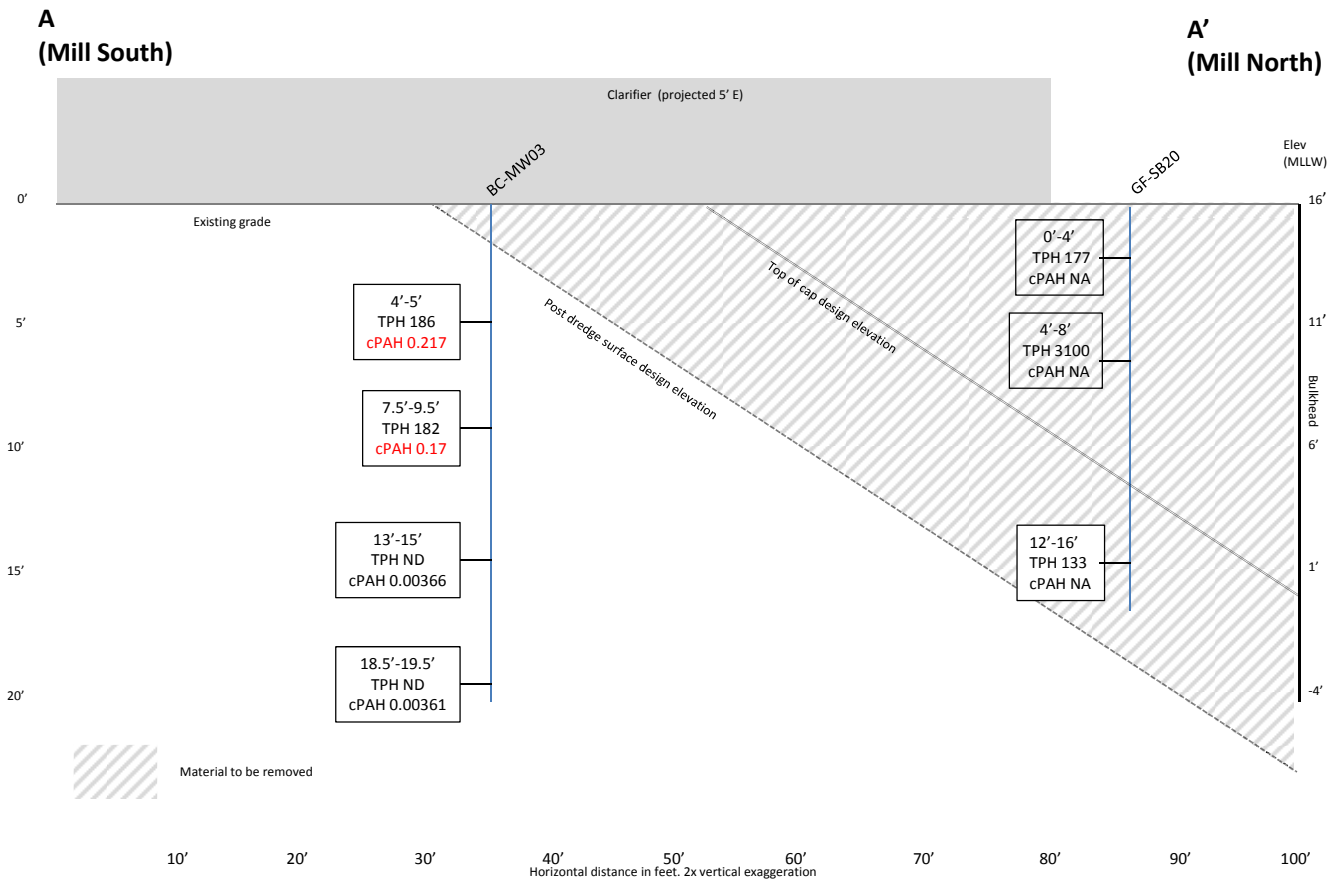
- at or above ground surface
- below ground surface in concrete-lined trench
- below ground surface in unlined trench

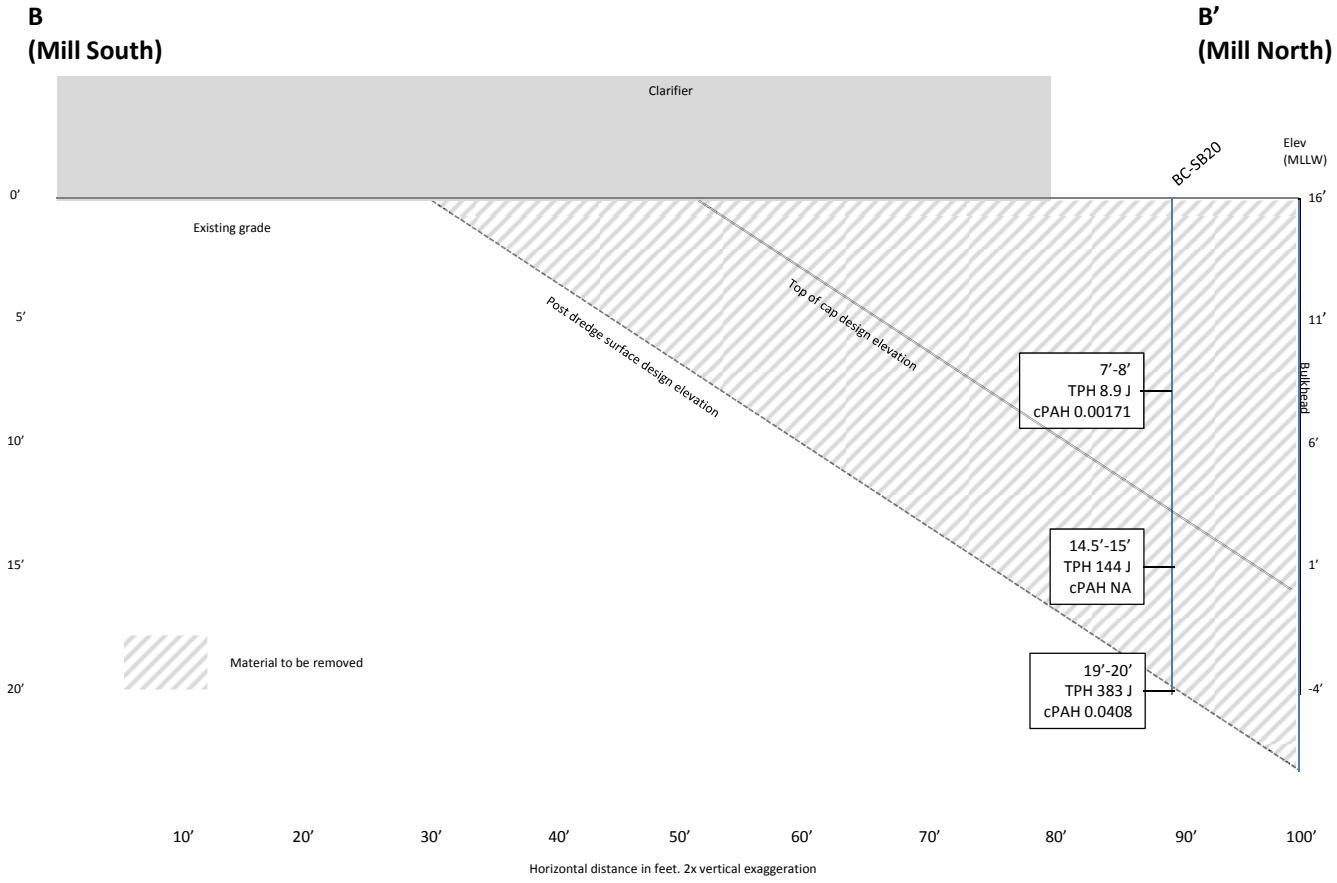
Note: Explorations within the excavation outline are shown, although soil to depths of 12 feet or more has been removed in that area (soil sample data representing remaining soil are included in Table 2).

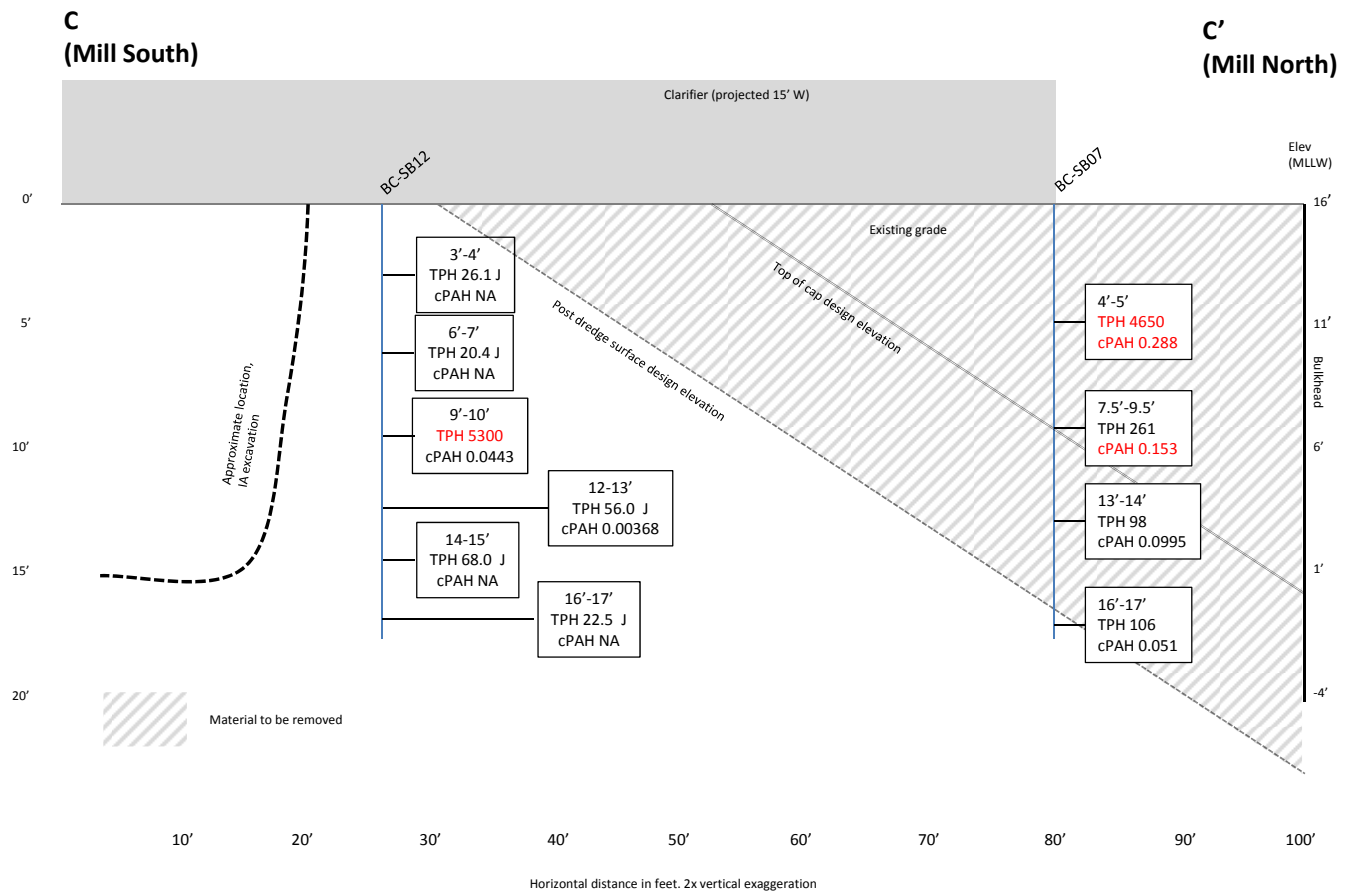
Cross Section and Exploration Locations for Clarifier Cutback Area

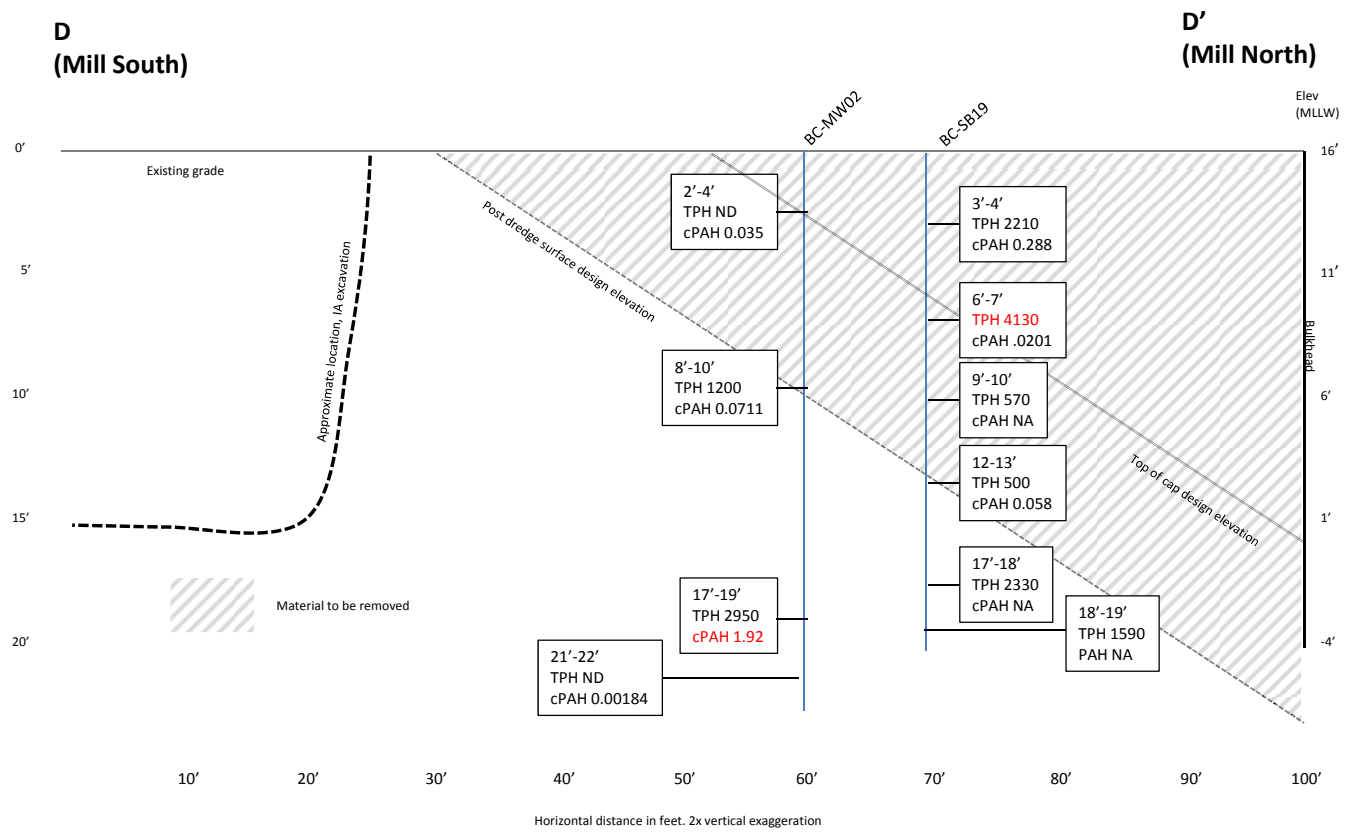
GP West Site
Bellingham, Washington

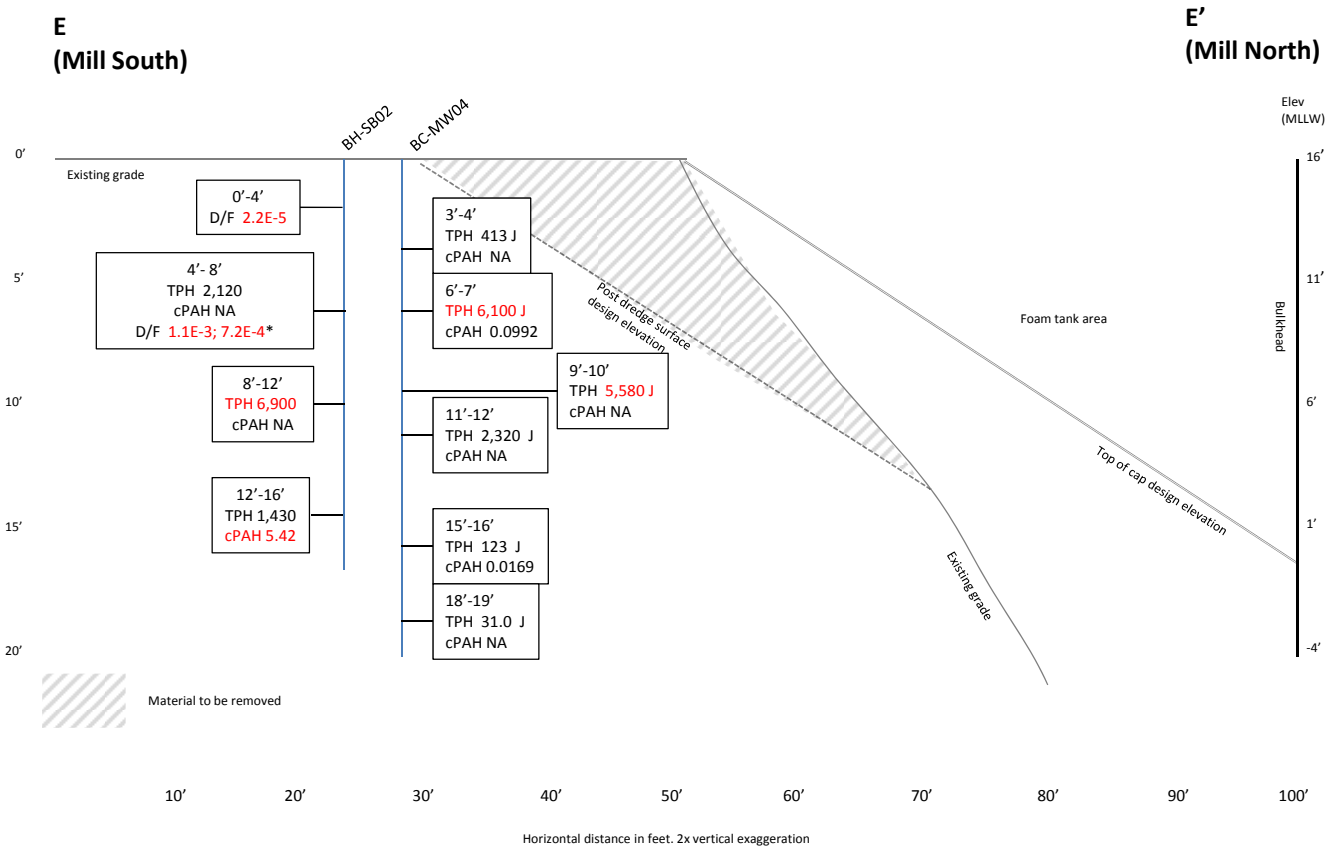
Aspect Consulting	SEP-2012	BY: SJG / PPW	FIGURE NO. 1
	PROJECT NO. 070188	REV BY: EAH	


A
(Mill South)
A'
(Mill North)
Clarifier (projected 5' E)
BC-MW03
GF-SB20
Elev
(MLLW)
0'
Existing grade
5'
10'
15'
20'
16'
11'
6'
1'
-4'
Bulkhead
Top of cap design elevation
Post dredge surface design elevation
4'-5'
TPH 186
cPAH 0.217
7.5'-9.5'
TPH 182
cPAH 0.17
13'-15'
TPH ND
cPAH 0.00366
18.5'-19.5'
TPH ND
cPAH 0.00361
0'-4'
TPH 177
cPAH NA
4'-8'
TPH 3100
cPAH NA
12'-16'
TPH 133
cPAH NA
Material to be removed
10'
20'
30'
40'
50'
60'
70'
80'
90'
100'
Horizontal distance in feet. 2x vertical exaggeration


B
(Mill South)
B'
(Mill North)
Clarifier
BC-SB20
Elev
(MLLW)
0'
Existing grade
5'
10'
15'
20'
16'
11'
6'
1'
-4'
Bulkhead
Top of cap design elevation
Post dredge surface design elevation
7'-8'
TPH 8.9 J
cPAH 0.00171
14.5'-15'
TPH 144 J
cPAH NA
19'-20'
TPH 383 J
cPAH 0.0408
Material to be removed
10'
20'
30'
40'
50'
60'
70'
80'
90'
100'
Horizontal distance in feet. 2x vertical exaggeration


C
(Mill South)
C'
(Mill North)
Clarifier (projected 15' W)
BC-SB12
BC-SB07
Elev
(MLLW)
0'
5'
10'
15'
20'
16'
11'
6'
1'
-4'
Bulkhead
Existing grade
Top of cap design elevation
Post dredge surface design elevation
Approximate location, IA excavation
3'-4'
TPH 26.1 J
cPAH NA
6'-7'
TPH 20.4 J
cPAH NA
9'-10'
TPH 5300
cPAH 0.0443
12-13'
TPH 56.0 J
cPAH 0.00368
14-15'
TPH 68.0 J
cPAH NA
16'-17'
TPH 22.5 J
cPAH NA
4'-5'
TPH 4650
cPAH 0.288
7.5'-9.5'
TPH 261
cPAH 0.153
13'-14'
TPH 98
cPAH 0.0995
16'-17'
TPH 106
cPAH 0.051
Material to be removed
10'
20'
30'
40'
50'
60'
70'
80'
90'
100'
Horizontal distance in feet. 2x vertical exaggeration


D
(Mill South)
D'
(Mill North)
Elev
(MLLW)
BC-MW02
BC-SB19
0'
5'
10'
15'
20'
16'
11'
6'
1'
-4'
Bulkhead
Existing grade
Post dredge surface design elevation
Approximate location, IA excavation
Top of cap design elevation
2'-4'
TPH ND
cPAH 0.035
8'-10'
TPH 1200
cPAH 0.0711
17'-19'
TPH 2950
cPAH 1.92
21'-22'
TPH ND
cPAH 0.00184
3'-4'
TPH 2210
cPAH 0.288
6'-7'
TPH 4130
cPAH .0201
9'-10'
TPH 570
cPAH NA
12-13'
TPH 500
cPAH 0.058
17'-18'
TPH 2330
cPAH NA
18'-19'
TPH 1590
PAH NA
Material to be removed
10'
20'
30'
40'
50'
60'
70'
80'
90'
100'
Horizontal distance in feet. 2x vertical exaggeration



Legend for Cross Sections

8'-12': Soil sample depth interval in ft below grade
TPH: TPH concentration in mg/kg
cPAH: Total cPAH(TEQ) concentration in mg/kg
D/F: Total 2,3,7,8-TCDD(TEQ) concentration in mg/kg
*: field duplicate results.
Values in red exceed unrestricted soil screening levels.

Table 1 - Soil Chemistry Data Within Clarifier Cutback

GP West Site

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	BC-MW02 (2-4 ft) 09/22/2009 RI	BC-MW02 (8-10 ft) 09/22/2009 RI	BC-MW03 (4-5 ft) 09/22/2009 RI	BC-MW03 (7.5-9.5 ft) 09/22/2009 RI	BC-MW03 (13-15 ft) 09/22/2009 RI	BC-MW03 (18.5-19.5 ft) 09/22/2009 RI	BC-SB07 (7.5-9.5 ft) 09/22/2009 RI	BC-SB07 (13-14 ft) 09/22/2009 RI	BC-SB07 (16-17 ft) 09/22/2009 RI	BC-SB19 (3-4 ft) 12/22/2010 RI	BC-SB19 (6-7 ft) 12/22/2010 RI	BC-SB19 FD (9-10 ft) 12/22/2010 RI	BC-SB19 (9-10 ft) 12/22/2010 RI	BC-SB19 (12-13 ft) 12/22/2010 RI	BC-SB19 (17-18 ft) 12/22/2010 RI	BC-SB19 (18-19 ft) 12/22/2010 RI
Total Petroleum Hydrocarbons																		
Gasoline Range Hydrocarbons in mg/kg																		
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	27 U	360	46	42	30 U	31 U	71	33	41	210	530	190	130	130	430	390
Oil (C25-C36) in mg/kg	3,100	10,000	110 U	840	140	140	120 U	130 U	190	130 U	130 U	2,000	3,600	970 J	440 J	370	1,900 J	1,200
Bunker C in mg/kg	3,100	10,000																
Total TPHs in mg/kg	3,100	10,000	ND	1,200	186	182	ND	ND	261	98	106	2,210 J	4,130 J	1,160 J	570 J	500 J	2,330 J	1,590 J
Metals																		
Arsenic in mg/kg	7	7																
Cadmium in mg/kg	1.2	1.2																
Chromium in mg/kg	5200	5200																
Copper in mg/kg	36	36																
Lead in mg/kg	250	1000																
Mercury in mg/kg	2	2																
Nickel in mg/kg	48	48																
Zinc in mg/kg	100	100																
Polycyclic Aromatic Hydrocarbons (PAHs)																		
Acenaphthene in mg/kg	5.2	5.2	0.003 J	0.0086	0.036	0.023 J	0.062	0.008	0.25	1.2	0.39		0.14			0.018		
Acenaphthylene in mg/kg			0.0039 J	0.0058	0.042	0.034 J	0.005 U	0.0048 U	0.029	0.0097	0.0089		0.019 J			0.0075		
Anthracene in mg/kg	71	71	0.0092	0.018	0.06	0.045 J	0.0082	0.00064 J	0.29	0.14	0.11		0.12			0.018		
Benzo(g,h,i)perylene in mg/kg			0.035	0.061	0.17	0.11	0.00098 J	0.0016 J	0.062 J	0.034	0.03		0.11			0.05		
Fluoranthene in mg/kg	52	52	0.07	0.14	0.37	0.27 J	0.026	0.0015 J	0.99	0.4	0.36		0.85			0.084		
Fluorene in mg/kg	7.4	7.4	0.0029 J	0.013	0.062	0.073 J	0.039	0.0018 J	0.24	0.87	0.27		0.17			0.02		
Phenanthrene in mg/kg			0.061	0.096	0.41	0.39 J	0.021	0.0032 J	1.1	0.87	0.33		0.68			0.11		
Pyrene in mg/kg	330	330	0.043 J	0.12 J	0.34	0.3 J	0.015 J	0.0015 J	0.7 J	0.26 J	0.23 J		0.7			0.089		
2-Methylnaphthalene in mg/kg	320	14000	0.014	0.061	0.11	0.1 J	0.0022 J	0.0021 J	0.21	0.78	0.12		0.19			0.11		
Naphthalene in mg/kg	32	32	0.017	0.029	0.41	0.2	0.0036 J	0.0048 U	0.38	0.92	0.37		2.1			0.058		
Total Naphthalenes in mg/kg			0.031	0.09	0.52	0.3 J	0.0058 J	0.0045 J	0.59	1.7	0.49		2.29			0.168		
Benz(a)anthracene in mg/kg	1.4	2.1	0.023	0.052	0.12	0.092 J	0.0025 J	0.0048 U	0.2	0.15	0.063		0.21			0.038		
Benzo(a)pyrene in mg/kg	0.14	5.6	0.023	0.049	0.16	0.13 J	0.005 U	0.0048 U	0.1 J	0.062	0.033		0.14			0.042		
Benzo(b)fluoranthene in mg/kg	1.4	6.9	0.044	0.084	0.21	0.14 J	0.0014 J	0.0048 U	0.17	0.11	0.057		0.2			0.052		
Benzo(k)fluoranthene in mg/kg	6.9	6.9	0.012	0.016	0.065	0.042 J	0.005 U	0.0048 U	0.056 J	0.047	0.017		0.055			0.017		
Chrysene in mg/kg	2.3	2.3	0.043	0.1	0.2	0.15 J	0.0024 J	0.00092 J	0.23	0.2	0.08		0.23			0.054		
Dibenzo(a,h)anthracene in mg/kg	0.14	3.9	0.0083	0.018	0.021	0.017	0.005 U	0.0048 U	0.019	0.01	0.0061		0.04			0.0086		
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	11	0.028	0.041	0.13	0.096 J	0.005 U	0.0048 U	0.064 J	0.038	0.029		0.077			0.039		
Total cPAHs TEF in mg/kg	0.14	18	0.035	0.0711	0.217	0.17	0.00366	0.00361	0.153	0.0995	0.051		0.201			0.058		
Other Semivolatiles																		
Dibenzofuran in mg/kg	80	3500	0.0098	0.012	0.06	0.038 J	0.007	0.00077 J	0.22	0.69	0.16		0.12			0.016		
Conventional Chemistry Parameters (including other metals)																		
pH in pH units	<2.5 or >11	<2.5 or >11																

Notes

Concentrations in gray-shaded cells exceed Unrestricted Soil Screening Level

Concentrations in blue-shaded cells exceed Industrial Soil Screening Level

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the indicated reporting limit.

UJ - Analyte was not detected at or above the indicated estimated reporting limit.

Table 1 - Soil Chemistry Data Within Clarifier Cutback

GP West Site

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	BC-SB20 (7-8 ft) 12/22/2010 RI	BC-SB20 (14.5-15 ft) 12/22/2010 RI	BC-SB20 (19-20 ft) 12/22/2010 RI	GF-SB20 (0-4 ft) 07/22/2004 Pre-RI	GF-SB20 (4-8 ft) 07/22/2004 Pre-RI	GF-SB20 (12-16 ft) 07/22/2004 Pre-RI
Total Petroleum Hydrocarbons								
Gasoline Range Hydrocarbons in mg/kg								6.1 U
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	2.7 UJ	34	63	67		35
Oil (C25-C36) in mg/kg	3,100	10,000	6.2 UJ	110 UJ	320	110		98
Bunker C in mg/kg	3,100	10,000					3,100	
Total TPHs in mg/kg	3,100	10,000	8.9 J	144 J	383 J	177	3,100	133
Metals								
Arsenic in mg/kg	7	7				6 U	6 U	
Cadmium in mg/kg	1.2	1.2				0.3	0.3	
Chromium in mg/kg	5200	5200				37.5	41.6	
Copper in mg/kg	36	36				53.5	65.2	
Lead in mg/kg	250	1000				55	42	
Mercury in mg/kg	2	2				0.21	0.70	
Nickel in mg/kg	48	48				28	38	
Zinc in mg/kg	100	100				72.9	71.7	
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene in mg/kg	5.2	5.2	0.0011 J		0.018			
Acenaphthylene in mg/kg			0.003 U		0.0029 J			
Anthracene in mg/kg	71	71	0.00087 J		0.017			
Benzo(g,h,i)perylene in mg/kg			0.0011 J		0.021			
Fluoranthene in mg/kg	52	52	0.002 J		0.1			
Fluorene in mg/kg	7.4	7.4	0.0009 J		0.018			
Phenanthrene in mg/kg			0.0023 J		0.057 J			
Pyrene in mg/kg	330	330	0.0019 J		0.14			
2-Methylnaphthalene in mg/kg	320	14000	0.039		0.025			
Naphthalene in mg/kg	32	32	0.011		0.057			
Total Naphthalenes in mg/kg			0.05		0.082			
Benz(a)anthracene in mg/kg	1.4	2.1	0.001 J		0.031			
Benzo(a)pyrene in mg/kg	0.14	5.6	0.00094 J		0.029			
Benzo(b)fluoranthene in mg/kg	1.4	6.9	0.0021 J		0.049			
Benzo(k)fluoranthene in mg/kg	6.9	6.9	0.003 U		0.013			
Chrysene in mg/kg	2.3	2.3	0.0012 J		0.031			
Dibenzo(a,h)anthracene in mg/kg	0.14	3.9	0.003 U		0.0071			
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	11	0.003 U		0.015			
Total cPAHs TEF in mg/kg	0.14	18	0.00171 J		0.0408			
Other Semivolatiles								
Dibenzofuran in mg/kg	80	3500	0.003 U		0.018			
Conventional Chemistry Parameters (including other metals)								
pH in pH units	<2.5 or >11	<2.5 or >11				7.58	7.72	7.35

Notes

Concentrations in gray-shaded cells exceed Unrestricted Soil Screening Level

Concentrations in blue-shaded cells exceed Industrial Soil Screening Level

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the indicated reporting limit.

UJ - Analyte was not detected at or above the indicated estimated reporting limit.

Table 2 - Soil Chemistry Data Outside and Surrounding Clarifier Cutback

GP West Site

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	BC-MW01 (15-16.5 ft) 07/14/2004 Pre-RI	BC-MW04 (3-4 ft) 12/17/2010 RI	BC-MW04 FD (6-7 ft) 12/17/2010 RI	BC-MW04 (6-7 ft) 12/17/2010 RI	BC-MW04 (9-10 ft) 12/17/2010 RI	BC-MW04 (11-12 ft) 12/17/2010 RI	BC-MW04 (15-16 ft) 12/17/2010 RI	BC-MW04 (18-19 ft) 12/17/2010 RI	BC-SB02 (12-16 ft) 07/21/2004 Pre-RI	BC-SB03 (4-5 ft) 09/22/2009 RI	BC-SB03 (8.5-9.5 ft) 09/22/2009 RI	BC-SB03 (11.5-12.5 ft) 09/22/2009 RI	BC-SB03 (14-15 ft) 09/22/2009 RI	BC-SB04 (1-2 ft) 09/22/2009 RI	BC-SB04 (7.5-8.5 ft) 09/22/2009 RI	BC-SB04 (10.5-11.5 ft) 09/22/2009 RI	BC-SB04 (14-15 ft) 09/22/2009 RI	BC-SB05 (7.5-8.5 ft) 09/22/2009 RI	BC-SB05 (10.5-11.5 ft) 09/22/2009 RI
Total Petroleum Hydrocarbons																					
Gasoline Range Hydrocarbons in mg/kg																					
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	6.3	53	710	800	380	420	38 UJ	7.0 UJ		210	64	32 U	35 U	26 U	32 U	30 U	33 U	32 U	33 U
Oil (C25-C36) in mg/kg	3,100	10,000		360	4,600	5,300	5,200	1,900	85 UJ	24 UJ		2,100	220	11 J	47 J	6.3 J	14 J	5.3 J	39 J	87 J	9.1 J
Bunker C in mg/kg	3,100	10,000	36								310										
Total TPHs in mg/kg	3,100	10,000	36	413 J	5,310 J	6,100 J	5,580 J	2,320 J	123 J	31.0 J	310	2,310	284	27 J	64.5 J	19.3 J	30 J	20.3 J	55.5 J	103 J	25.6 J
Metals																					
Arsenic in mg/kg	7	7																			
Cadmium in mg/kg	1.2	1.2																			
Chromium in mg/kg	5200	5200																			
Copper in mg/kg	36	36																			
Lead in mg/kg	250	1000																			
Mercury in mg/kg	2	2																			
Nickel in mg/kg	48	48																			
Zinc in mg/kg	100	100																			
Polycyclic Aromatic Hydrocarbons (PAHs)																					
Acenaphthene in mg/kg	5.2	5.2			0.06	0.061			0.016			0.02	0.036	0.0029 J	0.017	0.00075 J	0.0032 J	0.11	0.0048 J	0.015	0.0045 J
Acenaphthylene in mg/kg					0.061	0.059			0.0051			0.016	0.019	0.003 J	0.016	0.005 U	0.0025 J	0.00083 J	0.0077	0.072	0.0049 U
Anthracene in mg/kg	71	71			0.11	0.14			0.018			0.029	0.022	0.0038 J	0.027	0.005 U	0.0024 J	0.00057 J	0.0091	0.056	0.0049 U
Benzo(g,h,i)perylene in mg/kg					0.11	0.11			0.012			0.14	0.027	0.0048 J	0.028	0.005 U	0.022	0.0016 J	0.012	0.52	0.0029 J
Fluoranthene in mg/kg	52	52			0.29	0.34			0.062			0.14	0.14	0.026	0.084	0.0011 J	0.039	0.0035 J	0.033	0.93	0.0029 J
Fluorene in mg/kg	7.4	7.4			0.11	0.13			0.016			0.028	0.032	0.0049 J	0.026	0.005 U	0.0018 J	0.0025 J	0.008	0.048	0.0022 J
Phenanthrene in mg/kg					1	1.2			0.058			0.18	0.16	0.017	0.1	5 U	0.028	5 U	0.038	0.57	6.6 U
Pyrene in mg/kg	330	330			0.36	0.42			0.065			0.14 J	0.13	0.025	0.085	5 U	0.03	5 U	0.032	0.91	4.9 U
1-Methylnaphthalene in mg/kg																					
2-Methylnaphthalene in mg/kg	320	14000			0.48	0.52			0.014			0.13	0.035	0.0079	0.043	5 U	5 U	5 U	0.012	0.032	5 U
Naphthalene in mg/kg	32	32			0.54	0.51			0.066			0.08	0.15	0.022	0.12	5 U	0.0082 U	0.014	0.045	0.053	0.0093
Total Naphthalenes in mg/kg					1.02	1.03			0.08			0.21	0.185	0.0299	0.163	ND	ND	2.51	0.057	0.085	2.5093
Benz(a)anthracene in mg/kg	1.4	2.1			0.074	0.091			0.015			0.15	0.022	0.0074	0.026	0.005 U	0.011	0.0017 J	0.0087	0.39	0.0011 J
Benzo(a)pyrene in mg/kg	0.14	5.6			0.067	0.066			0.012			0.16	0.022	0.0041 J	0.03	0.005 U	0.017	0.0013 J	0.0096	0.63	0.001 J
Benzo(b)fluoranthene in mg/kg	1.4	6.9			0.094	0.1			0.015			0.19 J	0.033	0.0058	0.034	0.005 U	0.027	0.0017 J	0.013	0.77	0.0019 J
Benzo(k)fluoranthene in mg/kg	6.9	6.9			0.024 J	0.019 J			0.0069			0.0048 UJ	0.012	0.0021 J	0.014	0.005 U	0.0093	0.005 U	0.0044 J	0.27	0.0049 U
Chrysene in mg/kg	2.3	2.3			0.15	0.16			0.015			0.38	0.035	0.0072	0.029	0.005 U	0.021	0.0017 J	0.012	0.59	0.0027 J
Dibenzo(a,h)anthracene in mg/kg	0.14	3.9			0.051	0.053			0.0017 UJ			0.065	0.0021 J	0.005 U	0.0036 J	0.005 U	0.0024 J	0.005 U	0.0012 J	0.089	0.0049 U
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	11			0.058	0.053			0.0088			0.07	0.017	0.0027 J	0.022	0.005 U	0.018	0.0011 J	0.0088	0.51	0.001 J
Total cPAHs TEF in mg/kg	0.14	18			0.0986	0.0992			0.0169			0.212	0.031	0.00622	0.0403	ND	0.024	0.00227	0.0133	0.839	0.00192
Other Semivolatiles																					
Dibenzofuran in mg/kg	80	3500			0.11	0.11			0.0097			0.015	0.039	5 U	0.034	5 U	5 U	0.005 U	5.9 U	0.019	4.9 U
Conventional Chemistry Parameters (including other metals)																					
pH in pH units	<2.5 or >11	<2.5 or >11	8.61								8.66										
Dioxins/Furans																					
2,3,7,8-TCDD in mg/kg	1.1E-05	1.5E-03																			
1,2,3,7,8-PeCDD in mg/kg																					
1,2,3,4,7,8-HxCDD in mg/kg																					
1,2,3,6,7,8-HxCDD in mg/kg																					
1,2,3,7,8,9-HxCDD in mg/kg	1.6E-04	2.1E-02																			
1,2,3,4,6,7,8-HpCDD in mg/kg																					
OCDD in mg/kg																					
2,3,7,8-TCDF in mg/kg																					
1,2,3,7,8-PeCDF in mg/kg																					
2,3,4,7,8-PeCDF in mg/kg																					
1,2,3,4,7,8-HxCDF in mg/kg																					
1,2,3,6,7,8-HxCDF in mg/kg																					
1,2,3,7,8,9-HxCDF in mg/kg																					
2,3,4,6,7,8-HxCDF in mg/kg																					
1,2,3,4,6,7,8-HpCDF in mg/kg																					
1,2,3,4,7,8,9-HpCDF in mg/kg																					
OCDF in mg/kg																					
Total 2,3,7,8 TCDD (TEQ) in mg/kg	1.1E-05	1.5E-03																			

Notes

Concentrations in gray-shaded cells exceed Unrestricted Soil Screening Level

Concentrations in blue-shaded cells exceed Industrial Soil Screening Level

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the indicated reporting limit.

UJ - Analyte was not detected at or above the indicated estimated reporting limit.

Table 2 - Soil Chemistry Data Outside and Surrounding Clarifier Cutback

GP West Site

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	BC-SB05 (14-15 ft) 09/22/2009 RI	BC-SB11 (15-16 ft) 12/22/2010 RI	BC-SB11 (18-19 ft) 12/22/2010 RI	BC-SB12 (3-4 ft) 12/21/2010 RI	BC-SB12 FD (6-7 ft) 12/21/2010 RI	BC-SB12 (6-7 ft) 12/21/2010 RI	BC-SB12 (9-10 ft) 12/21/2010 RI	BC-SB12 (12-13 ft) 12/21/2010 RI	BC-SB12 (14-15 ft) 12/21/2010 RI	BC-SB12 (16-17 ft) 12/21/2010 RI	BC-SB13 (12-13 ft) 12/21/2010 RI	BC-SB13 (14-15 ft) 12/21/2010 RI	BC-SB13 (16-17 ft) 12/21/2010 RI	BC-SB14 (15-16 ft) 12/22/2010 RI	BC-SB14 (18-19 ft) 12/22/2010 RI	BC-SB15 (15-16 ft) 12/23/2010 RI	BC-SB15 (18-19 ft) 12/23/2010 RI	BC-SB16 (3-4 ft) 12/22/2010 RI	BC-SB16 FD (6-7 ft) 12/22/2010 RI
Total Petroleum Hydrocarbons																					
Gasoline Range Hydrocarbons in mg/kg																					
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	35 U	2.4 UJ	2.1 UJ	4.1 UJ	4.1 UJ	5.4 UJ	3,800	17 UJ	19 UJ	5.5 UJ	5.4 UJ	39	5.3 UJ	5.2 UJ	2.2 UJ	12 UJ	3.2 UJ	200 J	96
Oil (C25-C36) in mg/kg	3,100	10,000	41 J	6.0 UJ	120 U	22 UJ	13 UJ	15 UJ	1,500	39 UJ	49 UJ	17 UJ	11 UJ	88 UJ	16 UJ	6.0 UJ	120 U	28 UJ	5.3 UJ	2,200	270
Bunker C in mg/kg	3,100	10,000																			
Total TPHs in mg/kg	3,100	10,000	58.5 J	8.4 J	62.1 J	26.1 J	17.1 J	20.4 J	5,300 J	56.0 J	68.0 J	22.5 J	16.4 J	127 J	21.3 J	11.2 J	62.2 J	40.0 J	8.5 J	2,400 J	366 J
Metals																					
Arsenic in mg/kg	7	7																			
Cadmium in mg/kg	1.2	1.2																			
Chromium in mg/kg	5200	5200																			
Copper in mg/kg	36	36																			
Lead in mg/kg	250	1000																			
Mercury in mg/kg	2	2																			
Nickel in mg/kg	48	48																			
Zinc in mg/kg	100	100																			
Polycyclic Aromatic Hydrocarbons (PAHs)																					
Acenaphthene in mg/kg	5.2	5.2	0.0069						0.17	0.019											
Acenaphthylene in mg/kg			0.012						0.027 U	0.0031 U											
Anthracene in mg/kg	71	71	0.017						0.085	0.0047											
Benzo(g,h,i)perylene in mg/kg			0.029						0.023	0.0049											
Fluoranthene in mg/kg	52	52	0.089						0.25	0.017											
Fluorene in mg/kg	7.4	7.4	0.015						0.12	0.012											
Phenanthrene in mg/kg			0.078						0.17	0.018											
Pyrene in mg/kg	330	330	0.075						0.23	0.015											
1-Methylnaphthalene in mg/kg																					
2-Methylnaphthalene in mg/kg	320	14000	0.016						0.022	0.027											
Naphthalene in mg/kg	32	32	0.081						0.041	0.048											
Total Naphthalenes in mg/kg			0.097						0.063	0.075											
Benz(a)anthracene in mg/kg	1.4	2.1	0.03						0.045	0.0033											
Benzo(a)pyrene in mg/kg	0.14	5.6	0.032						0.031	0.0024 J											
Benzo(b)fluoranthene in mg/kg	1.4	6.9	0.038						0.044	0.0041											
Benzo(k)fluoranthene in mg/kg	6.9	6.9	0.014						0.015	0.003 U											
Chrysene in mg/kg	2.3	2.3	0.031						0.067	0.0032											
Dibenzo(a,h)anthracene in mg/kg	0.14	3.9	0.0043 J						0.0065	0.003 U											
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	11	0.023						0.016	0.0021 J											
Total cPAHs TEF in mg/kg	0.14	18	0.0432						0.0443	0.00368											
Other Semivolatiles																					
Dibenzofuran in mg/kg	80	3500	0.013						0.08 U	0.0043											
Conventional Chemistry Parameters (including other metals)																					
pH in pH units	<2.5 or >11	<2.5 or >11																			
Dioxins/Furans																					
2,3,7,8-TCDD in mg/kg	1.1E-05	1.5E-03																			
1,2,3,7,8-PeCDD in mg/kg																					
1,2,3,4,7,8-HxCDD in mg/kg																					
1,2,3,6,7,8-HxCDD in mg/kg																					
1,2,3,7,8,9-HxCDD in mg/kg	1.6E-04	2.1E-02																			
1,2,3,4,6,7,8-HpCDD in mg/kg																					
OCDD in mg/kg																					
2,3,7,8-TCDF in mg/kg																					
1,2,3,7,8-PeCDF in mg/kg																					
2,3,4,7,8-PeCDF in mg/kg																					
1,2,3,4,7,8-HxCDF in mg/kg																					
1,2,3,6,7,8-HxCDF in mg/kg																					
1,2,3,7,8,9-HxCDF in mg/kg																					
2,3,4,6,7,8-HxCDF in mg/kg																					
1,2,3,4,6,7,8-HpCDF in mg/kg																					
1,2,3,4,7,8,9-HpCDF in mg/kg																					
OCDF in mg/kg																					
Total 2,3,7,8 TCDD (TEQ) in mg/kg	1.1E-05	1.5E-03																			

Notes

Concentrations in gray-shaded cells exceed Unrestricted Soil Screening Level

Concentrations in blue-shaded cells exceed Industrial Soil Screening Level

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the indicated reporting limit.

UJ - Analyte was not detected at or above the indicated estimated reporting l

Table 2 - Soil Chemistry Data Outside and Surrounding Clarifier Cutback

GP West Site

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	BC-SB16 (6-7 ft) 12/22/2010 RI	BC-SB16 (9-10 ft) 12/22/2010 RI	BC-SB16 (10-11 ft) 12/22/2010 RI	BC-SB16 (12-13 ft) 12/22/2010 RI	BC-SB16 (14-15 ft) 12/22/2010 RI	BC-SB18 (3-4 ft) 12/22/2010 RI	BC-SB18 (6-7 ft) 12/22/2010 RI	BC-SB18 FD (9-10 ft) 12/22/2010 RI	BC-SB18 (9-10 ft) 12/22/2010 RI	BC-SB18 (12-13 ft) 12/22/2010 RI	BC-SB18 (14-15 ft) 12/22/2010 RI	BC-SB18 (18-19 ft) 12/22/2010 RI	BH-SB02 (0-4 ft) 07/21/2004 Pre-RI	BH-SB02 FD (4-8 ft) 07/21/2004 Pre-RI	BH-SB02 (4-8 ft) 07/21/2004 Pre-RI	BH-SB02 (8-12 ft) 07/21/2004 Pre-RI	BH-SB02 (12-16 ft) 07/21/2004 Pre-RI	GF-SB18 (0-4 ft) 07/21/2004 Pre-RI	GF-SB18 (4-8 ft) 07/21/2004 Pre-RI
Total Petroleum Hydrocarbons																					
Gasoline Range Hydrocarbons in mg/kg																		42	36		
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	87	5.6 UJ	41 UJ	4.7 UJ	3.4 UJ	6.0 UJ	12 UJ	15,000	16,000	10,000	6.9 UJ	3.6 UJ		320	290	5,400	1,000	52	12 U
Oil (C25-C36) in mg/kg	3,100	10,000	250	9.9 UJ	380	9.4 UJ	5.6 UJ	6.7 UJ	44 UJ	15,000	17,000	14,000	5.2 UJ	7.1 UJ		1,800	1,600	1,500	430	220	37
Bunker C in mg/kg	3,100	10,000																			
Total TPHs in mg/kg	3,100	10,000	337 J	15.5 J	421 J	14.1 J	9.00 J	12.7 J	56.0 J	30,000 J	33,000 J	24,000 J	12.1 J	10.7 J		2,120	1,890	6,900	1,430	272	43
Metals																					
Arsenic in mg/kg	7	7													5 U	7 U	6 U			10 U	6 U
Cadmium in mg/kg	1.2	1.2													0.3	0.7	0.7			0.5 U	0.2 U
Chromium in mg/kg	5200	5200													21.6	33.9	30.7			44	34.8
Copper in mg/kg	36	36													31.4	52.0	53.0			33.1	44.5
Lead in mg/kg	250	1000													31 J	54 J	46 J			16	29
Mercury in mg/kg	2	2													0.08	0.53	0.45			0.08	0.08 J
Nickel in mg/kg	48	48													24	30	31			42	38
Zinc in mg/kg	100	100													67.6	147	123			59	61.2 J
Polycyclic Aromatic Hydrocarbons (PAHs)																					
Acenaphthene in mg/kg	5.2	5.2	0.0035	0.0015 J							4		0.053						57		
Acenaphthylene in mg/kg			0.0036	0.0068							0.99 U		0.0031 U						1		
Anthracene in mg/kg	71	71	0.0047	0.021							2.2		0.0043						15		
Benzo(g,h,i)perylene in mg/kg			0.03	0.019							4.2		0.0063						0.37 U		
Fluoranthene in mg/kg	52	52	0.019	0.083							4		0.012						90		
Fluorene in mg/kg	7.4	7.4	0.0039	0.0073							5.5		0.018						48		
Phenanthrene in mg/kg			0.03	0.062							28		0.03						160		
Pyrene in mg/kg	330	330	0.021	0.059							11		0.015						52		
1-Methylnaphthalene in mg/kg																			14		
2-Methylnaphthalene in mg/kg	320	14000	0.018	0.019							3.1		0.091						26		
Naphthalene in mg/kg	32	32	0.021	0.008							1.5		0.38						68		
Total Naphthalenes in mg/kg			0.039	0.027							4.6		0.471						108		
Benz(a)anthracene in mg/kg	1.4	2.1	0.0067	0.037							5.6		0.0031 J						12		
Benzo(a)pyrene in mg/kg	0.14	5.6	0.0084	0.029							5.4		0.002 J						3		
Benzo(b)fluoranthene in mg/kg	1.4	6.9	0.013	0.037							3.1		0.0038						4.6		
Benzo(k)fluoranthene in mg/kg	6.9	6.9	0.0032	0.016							0.5		0.0031 U						6.2		
Chrysene in mg/kg	2.3	2.3	0.014	0.046							9.1		0.0054						10		
Dibenzo(a,h)anthracene in mg/kg	0.14	3.9	0.0027 J	0.0043							1.4		0.0031 U						0.37 U		
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	11	0.011	0.017							1.5		0.0014 J						0.37 U		
Total cPAHs TEF in mg/kg	0.14	18	0.0122	0.0406							6.7		0.00319						5.42		
Other Semivolatiles																					
Dibenzofuran in mg/kg	80	3500	0.0071	0.0029 J							1.3 U		0.0076								
Conventional Chemistry Parameters (including other metals)																					
pH in pH units	<2.5 or >11	<2.5 or >11																		8.14	9.78
Dioxins/Furans																					
2,3,7,8-TCDD in mg/kg	1.1E-05	1.5E-03													9.30E-07	2.30E-06	2.20E-06				
1,2,3,7,8-PeCDD in mg/kg															2.40E-06	3.30E-04	2.50E-04				
1,2,3,4,7,8-HxCDD in mg/kg															9.30E-06	2.50E-03	1.60E-03				
1,2,3,6,7,8-HxCDD in mg/kg															3.40E-05	1.90E-03	1.10E-03				
1,2,3,7,8,9-HxCDD in mg/kg	1.6E-04	2.1E-02													1.20E-05	1.80E-03	8.30E-04				
1,2,3,4,6,7,8-HpCDD in mg/kg															8.30E-04	1.30E-02	7.50E-03				
OCDD in mg/kg															1.10E-02	8.60E-03	6.60E-03				
2,3,7,8-TCDF in mg/kg															1.30E-06	6.40E-05	5.20E-05				
1,2,3,7,8-PeCDF in mg/kg															1.20E-06	5.70E-05	4.60E-05				
2,3,4,7,8-PeCDF in mg/kg															1.30E-06	6.00E-05	5.20E-05				
1,2,3,4,7,8-HxCDF in mg/kg															8.30E-06	8.90E-05	7.20E-05				
1,2,3,6,7,8-HxCDF in mg/kg															3.70E-06 J	4.00E-05	3.80E-05				
1,2,3,7,8,9-HxCDF in mg/kg															1.00E-06	1.00E-06 J	2.90E-06				
2,3,4,6,7,8-HxCDF in mg/kg															2.80E-06 J	2.90E-05	2.30E-05				
1,2,3,4,6,7,8-HpCDF in mg/kg															1.40E-04	1.40E-04	1.70E-04				
1,2,3,4,7,8,9-HpCDF in mg/kg															8.10E-06	1.60E-05	1.90E-05				
OCDF in mg/kg															8.30E-04	3.70E-04	4.10E-04				
Total 2,3,7,8 TCDD (TEQ) in mg/kg	1.1E-05	1.5E-03													2.24E-05	1.13E-03	7.20E-04				

Notes

Concentrations in gray-shaded cells exceed Unrestricted Soil Screening Level

Concentrations in blue-shaded cells exceed Industrial Soil Screening Level

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the indicated reporting limit.

UJ - Analyte was not detected at or above the indicated estimated reporting l

Table 2 - Soil Chemistry Data Outside and Surrounding Clarifier Cutback

GP West Site

Chemical Name	Unrestricted Soil Screening Level	Industrial Soil Screening Level	TS-MW01 (2.5-4 ft) 07/14/2004 Pre-RI	TS-MW01 (5-6.5 ft) 07/14/2004 Pre-RI	TS-SB01 (0-4 ft) 07/21/2004 Pre-RI	TS-SB01 (4-8 ft) 07/21/2004 Pre-RI	TS-SB02 (0-4 ft) 07/21/2004 Pre-RI	TS-SB02 (4-8 ft) 07/21/2004 Pre-RI
Total Petroleum Hydrocarbons								
Gasoline Range Hydrocarbons in mg/kg								
Diesel Range Hydrocarbons in mg/kg	2,000	2,000	21	5.1	79	8.2	37	11
Oil (C25-C36) in mg/kg	3,100	10,000	130	21	980	80	220	68
Bunker C in mg/kg	3,100	10,000						
Total TPHs in mg/kg	3,100	10,000	151	26.1	1,059	88.2	257	79
Metals								
Arsenic in mg/kg	7	7	5 U	6 U	5 U	6 U	5 U	6 U
Cadmium in mg/kg	1.2	1.2	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.2 U
Chromium in mg/kg	5200	5200	21.1	28.1	18.1	26.5	33.2	31.9
Copper in mg/kg	36	36	12.8 J	20.2 J	12.1	19.0	47.8	27.8
Lead in mg/kg	250	1000	4	4	4	4	168	5
Mercury in mg/kg	2	2	0.05 U	0.05 U	0.04 J	0.05 J	0.10 J	0.06 J
Nickel in mg/kg	48	48	21	29	13	27	31	33
Zinc in mg/kg	100	100	30.5	39.5	24.0 J	40.1 J	85.2 J	55.4 J
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene in mg/kg	5.2	5.2		0.0079 U	0.017 U		0.0075 U	
Acenaphthylene in mg/kg				0.0079 U	0.017 U		0.0075 U	
Anthracene in mg/kg	71	71		0.0079 U	0.017 U		0.0075 U	
Benzo(g,h,i)perylene in mg/kg				0.0079 U	0.017 U		0.0085	
Fluoranthene in mg/kg	52	52		0.011	0.026		0.028	
Fluorene in mg/kg	7.4	7.4		0.0079 U	0.017 U		0.0075 U	
Phenanthrene in mg/kg				0.017	0.021		0.022	
Pyrene in mg/kg	330	330		0.0079 U	0.034		0.028	
1-Methylnaphthalene in mg/kg					0.017 U		0.0073 J	
2-Methylnaphthalene in mg/kg	320	14000		0.0079 U	0.017 U		0.011	
Naphthalene in mg/kg	32	32		0.0079 U	0.017 U		0.046	
Total Naphthalenes in mg/kg				ND	ND		0.0643	
Benz(a)anthracene in mg/kg	1.4	2.1		0.0079 U	0.017 U		0.0079	
Benzo(a)pyrene in mg/kg	0.14	5.6		0.0079 U	0.017 U		0.014	
Benzo(b)fluoranthene in mg/kg	1.4	6.9		0.0079 U	0.037		0.017	
Benzo(k)fluoranthene in mg/kg	6.9	6.9		0.0079 U	0.024		0.017	
Chrysene in mg/kg	2.3	2.3		0.01	0.036		0.016	
Dibenzo(a,h)anthracene in mg/kg	0.14	3.9		0.0079 U	0.017 U		0.0075 U	
Indeno(1,2,3-cd)pyrene in mg/kg	1.4	11		0.0079 U	0.017 U		0.0075 U	
Total cPAHs TEF in mg/kg	0.14	18		0.00603	0.0175		0.0191	
Other Semivolatiles								
Dibenzofuran in mg/kg	80	3500		0.0079 U				
Conventional Chemistry Parameters (including other metals)								
pH in pH units	<2.5 or >11	<2.5 or >11						
Dioxins/Furans								
2,3,7,8-TCDD in mg/kg	1.1E-05	1.5E-03						
1,2,3,7,8-PeCDD in mg/kg								
1,2,3,4,7,8-HxCDD in mg/kg								
1,2,3,6,7,8-HxCDD in mg/kg								
1,2,3,7,8,9-HxCDD in mg/kg	1.6E-04	2.1E-02						
1,2,3,4,6,7,8-HpCDD in mg/kg								
OCDD in mg/kg								
2,3,7,8-TCDF in mg/kg								
1,2,3,7,8-PeCDF in mg/kg								
2,3,4,7,8-PeCDF in mg/kg								
1,2,3,4,7,8-HxCDF in mg/kg								
1,2,3,6,7,8-HxCDF in mg/kg								
1,2,3,7,8,9-HxCDF in mg/kg								
2,3,4,6,7,8-HxCDF in mg/kg								
1,2,3,4,6,7,8-HpCDF in mg/kg								
1,2,3,4,7,8,9-HpCDF in mg/kg								
OCDF in mg/kg								
Total 2,3,7,8 TCDD (TEQ) in mg/kg	1.1E-05	1.5E-03						

Notes

Concentrations in gray-shaded cells exceed Unrestricted Soil Screening Level

Concentrations in blue-shaded cells exceed Industrial Soil Screening Level

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the indicated reporting limit.

UJ - Analyte was not detected at or above the indicated estimated reporting l

Groundwater Chemistry Data, Clarifier Cutback Area

GP West Site 070188

Chemical Name	Preliminary Groundwater Screening Level for Unrestricted Land Use	Preliminary Groundwater Screening Level for Industrial Land Use	BC-DW1 06/27/11 RI	BC-MW02 10/01/09 RI	BC-MW02 10/01/09 Field Dup RI	BC-MW02 04/01/10 RI	BC-MW02 04/01/10 Field Dup RI	BC-MW02 12/15/10 RI	BC-MW03 09/28/09 RI	BC-MW03 04/01/10 RI	BC-MW03 12/16/10 RI	BC-MW04 12/21/10 RI	TS-MW01 07/25/04 Pre-RI	TS-MW01 10/01/09 RI	TS-MW01 04/01/10 RI
Total Petroleum Hydrocarbons															
Gasoline Range Hydrocarbons in ug/L													250 U		
Diesel Range Hydrocarbons in ug/L			260 U	280 U	280 U	28 J	30 J	14 J	270 U	26 J	260 UJ	77 UJ	320 J		
Oil (C25-C36) in ug/L			520 U	560 U	560 U	21 J	32 J	530 UJ	530 U	28 J	520 UJ	84 UJ	500 U		
Bunker C in ug/L															
Total TPHs in ug/L				ND	ND	49 J	62 J	279 J	ND	54 J	ND	161 J	570 J		
Mercury															
Dissolved Mercury in ug/L	0.06	0.06	0.0025	0.001 U	0.00044 J	0.00058 J	0.00036 J			0.00021 J			0.1 U	0.00108	0.0009 J
Other Metals															
Dissolved Arsenic in ug/L	0.5	0.5	4.0 U	10 UR	5.2 R	0.66 U	0.61 U			0.15 U			0.5	0.69	0.5 U
Dissolved Cadmium in ug/L	8.8	8.8	0.3 U	1.5 R	1.4 R	0.012 U	0.016 U			0.014 U			0.2 U	0.005 J	0.02 U
Dissolved Chromium (VI) in ug/L	50	50	50 U	50 UR	50 UR	50 U	50 U			50 U			11 U	50 U	50 U
Dissolved Chromium in ug/L	260	260	3.7	1.1 R	0.6 R	3.03	2.3			1.66			1 U	1.98	0.78
Dissolved Copper in ug/L	2.4	2.4	1.6 J	12.7 R	11 R	0.232 J	0.121 J			0.14 J			0.5	0.42	0.57
Dissolved Lead in ug/L	8.1	8.1	4.0 U	412 R	334 R	0.045 U	0.1 U			0.1 U			1 U	0.02 U	0.028
Dissolved Nickel in ug/L	8.2	8.2	0.7 U	32.4 R	30.1 R	0.1 J	0.47 J			1.67 U			0.6	0.5	2.37
Dissolved Zinc in ug/L	81	81	6.5	208 R	195 R	1.18 U	0.69 U			0.47 U			4 U	0.25 J	0.3 U
Polycyclic Aromatic Hydrocarbons (PAHs)															
Acenaphthene in ug/L	3.3	3.3		0.045	0.037	10	11	4.5	0.29	0.044	0.017 J	0.040	0.10 U		
Acenaphthylene in ug/L				0.022 U	0.023 U	0.029 U	0.033 U	0.025 U	0.012 J	0.0055 J	0.0041 J	0.0037 J	0.10 U		
Anthracene in ug/L	9.6	9.6		0.0058 J	0.0053 J	0.05 U	0.043 U	0.04 U	0.042	0.02 J	0.018 J	0.0060 J	0.10 U		
Benzo(g,h,i)perylene in ug/L				0.022 U	0.023 U	0.02 U	0.0075 J	0.016 J	0.02 U	0.0066 J	0.02 U	0.020 U	0.10 U		
Fluoranthene in ug/L	3.3	3.3		0.028	0.027	0.068	0.077	0.074	0.31	0.32	0.22	0.0086 J	0.10 U		
Fluorene in ug/L	3	3		0.018 J	0.018 J	0.035 U	0.033 U	0.03	0.085	0.016 J	0.0086 J	0.020 U	0.10 U		
Phenanthrene in ug/L				0.022 U	0.023 U	0.021 U	0.022 U	0.027 U	0.12	0.04	0.019 J	0.012 J	0.10 U		
Pyrene in ug/L	15	15		0.021 J	0.025	0.1	0.11	0.13	0.21	0.28	0.2	0.0070 J	0.10 U		
1-Methylnaphthalene in ug/L													0.10 U		
2-Methylnaphthalene in ug/L				0.022 U	0.023 J	0.02 U	0.019 U	0.027 U	0.02 J	0.0045 J	0.007 J	0.010 J	0.10 U		
Naphthalene in ug/L	83	83		0.017 J	0.014 J	0.032	0.028	0.29	0.014 J	0.093	0.026 U	0.072	0.10 U		
Total Naphthalenes in ug/L				0.028 J	0.037 J	0.042	0.0375	0.3035	0.034 J	0.0975	0.033 J	0.082 J	ND		
Benz(a)anthracene in ug/L	0.018	0.018		0.022 U	0.0061 J	0.011 J	0.013 J	0.021	0.011 J	0.017 J	0.011 J	0.0037 J	0.10 U		
Benzo(a)pyrene in ug/L	0.018	0.018		0.022 U	0.023 U	0.02 U	0.019 U	0.013 J	0.02 U	0.02 U	0.02 U	0.020 U	0.10 U		
Benzo(b)fluoranthene in ug/L	0.018	0.018		0.022 U	0.023 U	0.02 U	0.014 J	0.017 J	0.0037 J	0.0068 J	0.02 U	0.020 U	0.10 U		
Benzo(k)fluoranthene in ug/L	0.018	0.018		0.022 U	0.023 U	0.02 U	0.019 U	0.016 J	0.02 U	0.02 U	0.02 U	0.020 U	0.10 U		
Chrysene in ug/L	0.018	0.018		0.022 U	0.023 U	0.0065 J	0.0069 J	0.021	0.011 J	0.012 J	0.013 J	0.020 U	0.10 U		
Dibenzo(a,h)anthracene in ug/L	0.007	0.007		0.022 U	0.023 U	0.02 U	0.019 U	0.01 J	0.02 U	0.02 U	0.02 U	0.020 U	0.10 U		
Indeno(1,2,3-cd)pyrene in ug/L	0.10	0.10		0.022 U	0.023 U	0.02 U	0.006 J	0.013 J	0.02 U	0.0055 J	0.02 U	0.020 U	0.10 U		
Total cPAHs TEF in ug/L	0.018	0.018		ND	0.0168	0.0152 J	0.0148 J	0.0209	0.0146	0.0151 J	0.0152 J	0.0145 J	ND		
Other Semivolatiles															
1,2,4-Trichlorobenzene in ug/L	0.48	0.48											1.0 U		
1,2-Dichlorobenzene in ug/L	6.1	6.1											1.0 U		
1,3-Dichlorobenzene in ug/L	960	960											1.0 U		
1,4-Dichlorobenzene in ug/L	5	5											1.0 U		
2,4,5-Trichlorophenol in ug/L	3600	3600											5.0 U		
2,4,6-Trichlorophenol in ug/L	2.4	2.4											5.0 U		
2,4-Dichlorophenol in ug/L	59	59											3.0 U		
2,4-Dimethylphenol in ug/L	200	200											3.0 U		
2,4-Dinitrophenol in ug/L	1100	1100											25 U		
2-Chloronaphthalene in ug/L	310	310											1.0 U		
2-Chlorophenol in ug/L	30	30											1.0 U		
2-Methylphenol in ug/L													1.0 U		
2-Nitroaniline in ug/L													5.0 U		
2-Nitrophenol in ug/L													5.0 U		
3,3'-Dichlorobenzidine in ug/L	2	2											5.0 U		
3-Nitroaniline in ug/L													6.0 U		
4,6-Dinitro-2-methylphenol in ug/L													10 U		
4-Bromophenyl phenyl ether in ug/L													1.0 U		
4-Chloro-3-methylphenol in ug/L													2.0 U		
4-Chloroaniline in ug/L													3.0 U		

Groundwater Chemistry Data, Clarifier Cutback Area

GP West Site 070188

Chemical Name	Preliminary Groundwater Screening Level for Unrestricted Land Use	Preliminary Groundwater Screening Level for Industrial Land Use	BC-DW1 06/27/11 RI	BC-MW02 10/01/09 RI	BC-MW02 10/01/09 Field Dup RI	BC-MW02 04/01/10 RI	BC-MW02 04/01/10 Field Dup RI	BC-MW02 12/15/10 RI	BC-MW03 09/28/09 RI	BC-MW03 04/01/10 RI	BC-MW03 12/16/10 RI	BC-MW04 12/21/10 RI	TS-MW01 07/25/04 Pre-RI	TS-MW01 10/01/09 RI	TS-MW01 04/01/10 RI
4-Chlorophenyl phenyl ether in ug/L													1.0 U		
4-Methylphenol in ug/L													1.0 U		
4-Nitroaniline in ug/L													5.0 U		
4-Nitrophenol in ug/L													5.0 U		
Benzoic acid in ug/L													10 U		
Benzyl alcohol in ug/L													5.0 U		
Benzyl butyl phthalate in ug/L	0.35	0.35											1.0 U		
Bis(2-chloro-1-methylethyl) ether in ug/L	12	12											1.0 U		
Bis(2-chloroethoxy)methane in ug/L													1.0 U		
Bis(2-chloroethyl) ether in ug/L	0.53	0.53											2.0 U		
Bis(2-ethylhexyl) phthalate in ug/L	1	1											1.0 U		
Carbazole in ug/L													1.0 U		
Dibenzofuran in ug/L				0.0068 J	0.0079 J	0.017 J	0.019 J	0.017 J	0.01 J	0.0073 J	0.005 J	0.020 U	1.0 U		
Diethyl phthalate in ug/L	740	740											1.0 U		
Dimethyl phthalate in ug/L	1100000	1100000											1.0 U		
Di-n-butyl phthalate in ug/L	140	140											1.0 U		
Di-n-octyl phthalate in ug/L	0.2												1.0 U		
Hexachlorobenzene in ug/L	0.2	0.2											1.0 U		
Hexachlorobutadiene in ug/L	0.2	0.2											2.0 U		
Hexachlorocyclopentadiene in ug/L	1100	1100											5.0 U		
Hexachloroethane in ug/L	3.3	3.3											2.0 U		
Isophorone in ug/L	600	600											1.0 U		
Nitrobenzene in ug/L	560	560											1.0 U		
N-Nitroso-di-n-propylamine in ug/L	0.26	0.26											2.0 U		
N-Nitrosodiphenylamine in ug/L	3	3											1.0 U		
Pentachlorophenol in ug/L	3	3											5.0 U		
Phenol in ug/L	175000	175000											2.0 U		
2,4-Dinitrotoluene in ug/L	3.4	3.4											5.0 U		
2,6-Dinitrotoluene in ug/L													5.0 U		
1-Methylnaphthalene in ug/L													0.10 U		
Total Naphthalenes in ug/L													ND		
Conventional Chemistry Parameters (including other metals)															
Dissolved Calcium in mg/L				241 R	236 R									108	
Dissolved Iron in mg/L				0.554 R	0.566 R	0.099 J				0.116			2.24	1.35	2.14
Dissolved Magnesium in mg/L				999 R	995 R									17	
Dissolved Manganese in mg/L				0.204 R	0.201 R	0.884				0.49			0.392	0.362	0.498
Dissolved Potassium in mg/L				291 R	288 R									18.6	
Dissolved Sodium in mg/L				8,590 R	8,550 R									75.1	
Formaldehyde in ug/L	1,600	1,600											19 U		
Nitrate + Nitrite in mg/L													0.010 U		
Nitrate as Nitrogen in mg/L													0.010 U		
Nitrite as Nitrogen in mg/L													0.010 U		
Sulfate in mg/L													3.6		
Total Suspended Solids in mg/L				11.5	16.5	14	11.5	5 U	12.5	30	5 U	5.0	3.3		
Field Parameters															
pH in pH units	6.2 - 8.5	6.2 - 8.5	7.2	6.6		6.7		6.8	7.8	8.0	8.0	7.2	7.2	7.4	7.3

Notes

Concentrations in shaded cells indicate value exceeds Preliminary Groundwater Screening Level for Unrestricted Land Use

Concentrations within bold border indicate value exceeds Preliminary Groundwater Screening Level for Industrial Land Use

R - Data rejected. Dissolved metals data by ICP analytical method not representative of groundwater quality due to salinity interferences in lab method (refer to Aspect, 2010).

J - Analyte was positively identified. The reported result is an estimate.

U - Analyte was not detected at or above the indicated reporting limit.

UJ - Analyte was not detected at or above the indicated estimated reporting limit.