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## **Nigeria AGIP BRASS TERMINAL oil spill response 11 27 2013 Report**



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## Nigeria AGIP Brass Terminal Oil Spill November 29, 2013

**Oil Spill Eater II** a true success story, was used on a major oil spill that occurred on November 27, 2013 at the AGIP Brass terminal.

The oil flowed from the Brass terminal into the Atlantic ocean, and proceeded to the Atlantic Coast shoreline, traveled up the main river, and subsequently spread into small creeks and inlets.

"The areas impacted were predominantly the Bayelsa Atlantic Ocean shoreline as well as the river shorelines and creeks. Witnesses in Odioama said that the waters along the Atlantic coastline were covered by a thick coat of oil which compelled them to suspend fishing. Another follow up visit on Dec. 6 showed that Okpoama, Ewoama and Odioama communities and fishing camps in Brass were all impacted."



This OSE II spill clean up demonstrates how oil companies can meet their governance policies, which generally state they will be good stewards of the environment and while maximizing profits for shareholders.

AGIP is a subsidiary of ENI of Italy who formed a partnership with NNPC to establish NAOC. AGIP/NOAC officials while determining the most appropriate clean up plan for the spill, were notified by the "Environmental Rights Action/Friends of

The Earth Nigeria “(ERA/FoEN) who decried the alleged use of dispersants in oil spill clean-up along the Atlantic coastline in Bayelsa, since” “Dispersants are unsafe for human and aquatic life.”

Giolee Global resources, performed a demonstration of OSE II’s capabilities on Saturday November 30 2013. AGIP officials then ordered OSE II and contracted with Giolee Global to handle the clean up. Giolee Global services managing Director Lesi Maol to discuss the use of Oil Spill Eater II ( OSE II ). After an aerial assessment of the spill area, Mr. Maol called the OSEI Corporation at 2:00 am on November 31, 2013 to get the freight costs to airship OSE II to Nigeria. By Tuesday December 2, 2013 UPS had picked up the drums of OSE II readied for AGIP/NAOC in Nigeria.



**AGIP/NAOC and Giolee Global managing director and his staff developed a clean up action plan, which included testing and monitoring plan before application of OSE II, as well as after the application of OSE II. The testing plan was set up (by coordinates), samples were extracted from various areas, and the samples were shipped to a laboratory in the US for analysis.**

#### **PREMOBILIZATION ACTIVITIES**

##### ***Equipment/Materials Assembling***

Equipment and materials gathering will be carried out by selecting type and number from own (GGRL) warehouse and stores. Only premobed equipment shall be arranged for mobilisation to the spill site. In conjunction with NAOC, the premobed equipment and materials for the work shall be mobilized to site. These include all the PPEs, Skimmers, Pumps, Environmental Barges, Booms, Rakes, Hoses, Recovery tanks, Waste Bags, Sorbent Materials, Plastic Bins, Shovels, etc.

##### ***Physical Survey of Impacted Areas***

Following the several over flights of the impacted areas a need also arose to carry out land and water borne assessment of the impacted areas to properly scope the required intervention. This will be carried out using watercrafts and complimented by walk around processes.

##### ***Selection, Induction and Training of Community Workforce***

Following engagements with the host community folks a selection process will ensure that physically fit and trainable youths will be engaged in line with NAOC's rules of engagement. The selected community workers will then be subjected to a combined induction and training process including site hazards appreciation and work site practices. In addition, the specifics of what work they will be carrying out was explained to the workers.

This was followed by medical assessment involving fitness to work (FTW) to provide assurance the fitness of the engaged workforce. Thereafter, all medically certified personnel shall be mobilized to site in accordance with an approved journey management plan.

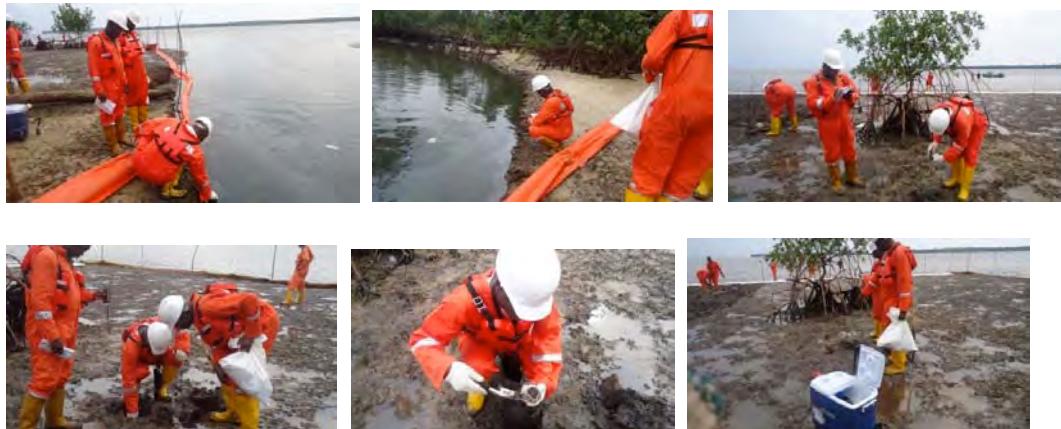
#### **1.3.0 SITE ACTIVITIES**

- ❖ Training of community hands and FTW assurance
- ❖ Mobilization to impacted coastline spill sites
- ❖ Safety briefing of all work team members
- ❖ Equipment deployment
- ❖ Determination of the initial baseline condition pre-work start.
- ❖ Coastline cleanup operations (Flushing and tilling with OSEII application).
- ❖ Oily waste/debris collection and disposal
- ❖ Demobilization.

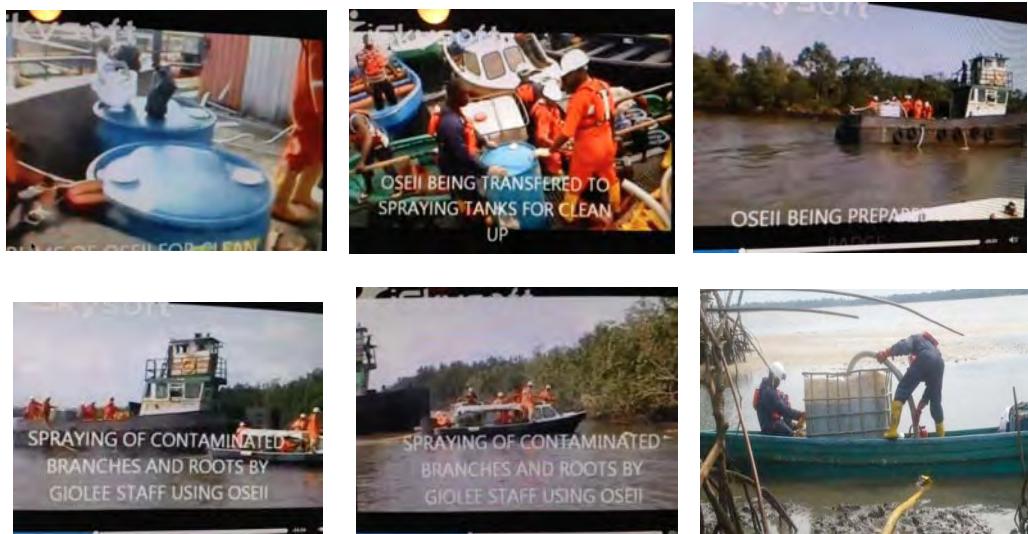
**Giolee Global resources, started application of OSE II on December 4, 2013 with existing stock of OSE II drums already in Nigeria.**

**These clean up personnel in the pictures below are performing sampling of the water prior to application of OSE II, you can also see personnel extracting samples from various areas on the shorelines as well. Soil samples from the**

shorelines were taken from the surface as well as a third of a meter below the surface to ensure the entire area of the shoreline was addressed and remediated.



Upon arrival of the air shipped OSE II drums to Nigeria they were transported immediately to the staging port and deployed onto the barge as well as shallow bottom vessels for application onto the shorelines, mangroves, rivers and creeks. There were numerous vessels set up to apply OSE II to the shorelines and mangroves that were staged along the shorelines. A large central barge was utilized to provide larger quantities of OSE II.



There was considerable oil floating on the open water near the shorelines where OSE II was directly applied, and in minutes this oil had been broken down and detoxified to the point it would no longer impact the environment.

**OSE II was applied to shorelines and mangroves along the shorelines over 29 days, the action plan was followed until complete coverage of all the contaminated shorelines mangroves and open water had been accomplished.**



The pictures above are before and during application of OSE II, the pictures below are after application of OSE II

The fisherman were able to return to harvest the fish from the oceans approximately 3 weeks after the spill started, since toxic dispersants were not used and OSE II causes broken down detoxified oil to float, the marine species were never adversely effected by the clean up operations. The fact the marine species can merely swim away without being covered in sunken oil with dispersants as this pill proved once again, is why there are no concerns for the harvesting of the seafood since it was never contaminated.



**The oil had been addressed and remediated therefore it was safe to fish at that point.**

**You can see the oil on the mangroves just before OSE II is applied on this stretch of shoreline that covers over 18 kilometers.**



**Above is before application of OSE II**

**Below is during application of OSE II**



**Below is after application of OSE II onto the mangroves, now free of oil, with no damage or distress to the mangroves.**



**There were areas ( see below) where the oil had seeped into the soil, therefore the soil was turned or tilled to insure all the oil was remediated from the shorelines. AGIP and NOSDRA officials would press there boots into the soil to determine if oil would be pushed out on the surface, if oil pushed out the entire area was then tilled and OSE II applied.**



**Above pictures are before and during OSE II application of OSE II**





Above are pictures of After OSE II application, testing showed non detect for oil on all the shorelines, mangroves, and open water.

The temperature (was warm) therefore in several of the shoreline areas and in the mangrove areas, fresh water was added to the shoreline to insure the soil remained moist to allow the conversion of the oil to a safe end point of CO<sub>2</sub> and water to complete.

Clean up also shows the effective use of booms to protect sensitive areas, OSE II's ability to break down oil and cause it to float, protects the 60% of marine species that live in the water column, this also keeps the oil on the surface while it is being converted to a safe end point of CO<sub>2</sub> and water, which enables boom's, to keep oil out of particular areas, and prevents re-oiling of areas. Dispersants render booming operations useless since they sink oil under the booms, with OSE II and booms you have a cooperative response system that ends up protecting the environment and reducing natural resource damages.



AGIP/NAOC personnel oversaw the operations and applications of OSE II along with NOSDRA officials. NOSDRA officials were able to monitor a large area of the spill each day with its new response vessel, which aided in the clean up.

**AGIP/NAOC and Giolee personnel on the shoreline , worked hand in hand to return the spill contaminated areas to pre spill conditions.**



**Lesi Maol managing Director of  
Giolee Global resources discussing  
the up of the shoreline and  
mangroves with AGIP/NAOC official**

**Nigerian regulator discussing the  
successful clean up of the  
shoreline with Lesi Maol the  
managing director of Giolee  
Global Resources**

**The man in the hat is a community/NOSDRA official who was apprised of the OSE II application and the rapid clean up of the shorelines.**

**This clean up also shows how safe OSE II makes oil spill clean up in regards to humans. You can see responders walking in the shoreline soil where OSE II had been applied barefooted, and they suffered no adverse health effects, since there is nothing in OSE II that would compromise human health, and OSE II immediately begins breaking down the molecular structure of the oil so it detoxifies and is rendered harmless to the environment and humans in a very short time. Community volunteers were utilized in this spill as well, and since OSE II contains no harmful chemicals, these volunteers health was never in jeopardy as is the case when toxic dispersants are utilized.**



The

pictures above shows these guys barefooted, and not one of them suffered any illness or compromised health!

This spill was approximately 150,000 gallons or 550,000 liters of oil that contaminated open water, sensitive mangroves, river shoreline, as well as ocean shorelines. OSE II was used in all these areas where over 21,000 hectares ( 52,000 acres) of shoreline and mangroves had become contaminated, without any natural resource damages, and no compromised health of the responders, which included professionals as well as community volunteers, no dead marine species, while only shutting down fishing and commerce in the area for less than 29 days.

On January 12, 2014 A walk through of the cleaned up formally contaminated areas was performed with AGIP/NAOC and Giolee personnel as well as NOSDRA, the AGIP associates could not believe there had ever been a spill in the areas where OSE II had been applied.

AGIP/NAOC's use of OSE II prevented natural resource damages, in regards to marine species, wildlife, and prevented the destruction of sensitive mangroves as

**well as shorelines, and the species that dwell there. Since OSE II prevented and removed the oil before it could create resource damages, AGIP/NAOC was not fined and was not prosecuted for any natural resource damages. This saved AGIP/NAOC potentially millions of dollars in costs.**

**The fact AGIP/NAOC had a major oil spill and greatly reduced natural resource damage due to the use of OSE II is in stark contrast to previous spills globally, where dispersants were used. Major oil spills that have deployed dispersants have destroyed countless numbers of marine species and wildlife/birds, and devastated industries that rely on harvesting marine species, compromised human health, and left oil behind to linger in the environment for years.**

**OSE II, when applied, it quickly broke down the molecular structure of the hydrocarbons detoxifying the oil limiting its impact to the environment, caused the oil to float when applied to oil on the water, caused oil to lift to the surface of the shoreline soil/rocks, reduced the adhesion properties of the oil lifting it off the mangroves and separating the oil from the shoreline soil and rocks, reduced the smell, and converted the oil to a safe end point of CO2 and water.**

**The sites were internally closed out by AGIP/NAOC on January 12, 2014, while the official close-out came up on January 17, 2014 after the visit of government regulators ( NOSDRA, DPR, and Bayelsa state Ministry of Environment). AGIP/NAOC spill proved how oil companies can meet their governance policies, which generally state they will be good stewards of the environment, and will maximize profit for shareholders. This major spill became a non, devastating event with the application of OSE II!**

**The Giolee Global Services company Nigeria, has additional information in regards to this spill. You can contact Giolee Global for reports and closure letters from NOSRDA. [gioleeglobal@yahoo.com](mailto:gioleeglobal@yahoo.com)**

**Steven Pedigo**

**CEO OSEI Corporation**





# GIOLEE GLOBAL RESOURCES NIG. LTD

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December 12, 2013

**BREAKDOWN /DETAILS OF WORK EXECUTED AT BRASS OIL SPILL SITE FOR  
NAOC AS OF 11/12/2013**

- 1) Mobilization of 4 OSE II was done on the 1<sup>st</sup> of December 2013.
- 2) Mobilization of equipment and personnel was done on the 2<sup>nd</sup> of December.
- 3) Recruitment / induction of community worker and site inspection was done on the 3<sup>rd</sup> of December
- 4) Clean up and Remediation work started on the 4<sup>th</sup> of December 2013.
- 5) Sampling equipment and personnel were mobilized on the 5<sup>th</sup> of December 2013.
- 6) Sample collection commenced on the 6<sup>th</sup> of December 2013.

**TOTAL PERSONNEL**

We have the following workers on site;

- 1) 12 Skilled Giolee Global Resources personnel.
- 2) 1 Project supervisor and 1 HSE officer.
- 3) 1 First Aider
- 4) 5 Boat operators
- 5) 29 Community workers

**TOTAL AREA CLEANED UP/ REMEDIATED**

- 1) 13 kilometer shoreline/beach and mangrove have been cleaned and flushed with OSE II application.
- 2) 8.155 square meter area have been tilled and OSE II applied
- 3) 800 liters of OSE II have been applied to the above area and body of water.



**Alex Akeni**  
*Project Manager*

## PROJECT EXECUTION PLAN

### (WORK METHOD STATEMENT)



**GIOLEE GLOBAL RESOURCES LIMITED**

TO

**Client: Nigerian Agip Oil Company Limited (NAOC)**

**Project: OIL SPILL RESPONSE, CLEAN-UP & REMEDIATION OF SBM SPILL**

**Contract Ref: PHC/CON/NG/3011/01**

	Name	Department/Position	Sign/date
Prepared by	Alex Akeni	Response/Remediation Coordinator	
Reviewed by	Celestine Dogalah	General Manager Technical	
Agreed by	Sophia Uchegbu	HSE Lead	
Approved by	Lesi Maol	Managing Director & Lead Consultant	

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## **1.0 Introduction:**

Giolee Global Resources Nigeria Limited (GGRL) was contracted by Nigerian Agip Oil Company Limited (NAOC) to carry out oil spill response, cleanup and remediation of oil spill impacts associated with NAOC's SBM spill of 27<sup>th</sup> November 2013. The essence of this project execution plan (PEP) is to highlight the specific plans, to be followed as to achieve the aim of the project. This shall include the details of all the teams involved and their interface with one another.

This document details the Health, Safety, Environment, Emergency Response, Communication, Security and Logistics plan for the oil spill, response, cleanup and remediation operations at various locations around the Brass River coastline. The purposes of this plan is to ensure that

- The cleanup/remediation activities are done without compromising the safety of the workforce, clean impacted areas to acceptable standards; minimize adverse environmental, biodiversity and socio-economic impact by managing all clean up and disposal activities in a timely and effective response manner.
- Secondary pollution from the incident is prevented all through the clean up period
- Ensure that the cleanup is carried out in line with NAOC HSE-MS procedure.

*Project Execution Plan For The Spill Response, Cleanup and Remediation of NAOC SBM Oil Spill Along The Coastline Around Brass River*

S/N	DESCRIPTION OF ITEMS	PROJECTED DURATION IN DAYS																																
		2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	
1	Mobilization of Equipment, Materials and Personnels to site	■																																
2	Selection, Induction and Training of Community workers		■																															
3	Physical Site Survey			■																														
4	Work set out and deployment of booms to shoreline				■																													
5	Flushing of Impacted Mangrove/ shoreline					■																												
6	Tilling of Impacted Soil						■																											
7	Application of OSEII on tilled soil and on sheen in body of water							■																										
8	Cutting of impacted vegetation, Raking & removal of stained debris into waste bags								■																									
9	Mobilization of Sampling Equipment & Crew to site									■																								
10	Set out and samples collection (with co-ordinates taken)										■																							
11	Handling/ Preservation of samples, Transportation of samples to Port Harcourt (Pre & Post Intervention) to designated labs. (maintaining the chain of custody and sample integrity - cold chains).											■																						
12	Demobilization of personnel and equipment from site												■																					
<b>Note:</b> Most activities as can be observed herein were run simultaneously and we hope to close site by week8 (Day 56/57) baring down-time occasioned by holidays or community issue.																																		

**1.1    Set-Up**

1. Two operational spreads are deployed for the purposes of the project execution working out rented hotel accommodation in Brass town. This will help reduce the travelling time to various work sites (coastline). The two operational locations will have dedicated First-Aider supported with MER Tier 2 competence and mini-Sick bay at Brass Terminal.
2. Several work location will run concurrently or sequentially during the cleanup and remediation operations

**2.0    Scope of Work:**

The scope of work shall cover flushing/ clean-up and remediation of impacted sites. The GGRL team shall carry out all site activities in line with the NAOC oil spill contingency plan (OSCP) and in line with Nigerian regulatory requirements as stated in the Department of Petroleum Resources (DPR), environmental guideline and standards for the petroleum industry in Nigeria (EGASPIN 2002) and the national oil spill response and detection agency (NOSDRA) Act 2006.

The key steps to be followed includes but not limited to the followings: -

- Mobilization to site
- Physical site survey
- Selection, Induction and Training of Community Workers
- Site preparation (Work set out and deployment of booms)
- Flushing of Impacted Mangrove /Shoreline
- Tilling of Impacted Soil
- Application of OSEII on Tilled Soil and on Sheen in Body of Water
- Mobilization of sampling equipment and personnel to site
- Cutting of Impacted Vegetation, Raking and removal of Stained Debris into Waste Bags
- Sampling (Collection, Handling, Preservation Transportation)
- Demobilization of Sampling Equipment /Personnel from Site
- Waste Management (Collection, Segregation, packaging, Transportation and Disposal)
- Demobilization of all equipments/materials and personnel from site/ Final Close-out

## PREMOBILIZATION ACTIVITIES

### *Equipment/Materials Assembling*

Equipment and materials gathering will be carried out by selecting type and number from own (GGRL) warehouse and stores. Only premobed equipment shall be arranged for mobilisation to the spill site. In conjunction with NAOC, the premobed equipment and materials for the work shall be mobilized to site. These include all the PPEs, Skimmers, Pumps, Environmental Barges, Booms, Rakes, Hoses, Recovery tanks, Waste Bags, Sorbent Materials, Plastic Bins, Shovels, etc.

### *Physical Survey of Impacted Areas*

Following the several over flights of the impacted areas a need also arose to carry out land and water borne assessment of the impacted areas to properly scope the required intervention. This will be carried out using watercrafts and complimented by walk around processes.

### *Selection, Induction and Training of Community Workforce*

Following engagements with the host community folks a selection process will ensure that physically fit and trainable youths will be engaged in line with NAOC's rules of engagement. The selected community workers will then be subjected to a combined induction and training process including site hazards appreciation and work site practices. In addition, the specifics of what work they will be carrying out was explained to the workers.

This was followed by medical assessment involving fitness to work (FTW) to provide assurance the fitness of the engaged workforce. Thereafter, all medically certified personnel shall be mobilized to site in accordance with an approved journey management plan.

### 1.3.0 SITE ACTIVITIES

- ❖ Training of community hands and FTW assurance
- ❖ Mobilization to impacted coastline spill sites
- ❖ Safety briefing of all work team members
- ❖ Equipment deployment
- ❖ Determination of the initial baseline condition pre-work start.
- ❖ Coastline cleanup operations (Flushing and tilling with OSEII application).
- ❖ Oily waste/debris collection and disposal
- ❖ Demobilization.

## 2.1 Work Method Statement

S/N	TASK STEPS	STEPS DESCRIPTION	REMARKS
1	Mobilize To Site Shoreline) by boat	<ul style="list-style-type: none"> <li>Mobilize personnel, equipment /materials to site by water using boats.</li> </ul>	<ul style="list-style-type: none"> <li>Adhere to the GGRL journey management procedures</li> <li>Ensure boat vessels are premobbed</li> </ul>
2	Physical Site Survey	<ul style="list-style-type: none"> <li>Carry out physical inspection of work site to ascertain that site is clear of all possible ignition sources, and other injurious substances before commencement of work</li> <li>Carry out gas test of the spill site to ensure that the gas emissions are below risk levels i.e. safe to work</li> <li>Classify site in accordance to hazardous area classification (HAC) and advise personnel on the site conditions</li> </ul>	<ul style="list-style-type: none"> <li>Ensure gas tester is calibrated</li> <li>Ensure the personnel using the gas tester is a certified gas tester</li> </ul>
3	Site Preparation (work set out and boom Deployment)	<p>This shall involve</p> <ul style="list-style-type: none"> <li>Preparation/Construction of site office, equipment/materials, and waste storage areas</li> <li>Debris gathering around the worksite</li> <li>Removal of hard cores and impacted debris to temporary designated storage areas</li> <li>Identification/preparation of equipment position areas in accordance to HAC zone</li> <li>Creation of access road and exit routes in an event of emergency</li> <li>Transfer of cut down oily vegetation to designated waste storage area</li> </ul>	Cell supervisor to ensure that equipment and tools to be used are inspected on daily bases before work commences
4	Lifting & Manual Handling (Materials & Equipments).	<ul style="list-style-type: none"> <li>This involves the lifting of equipment, working tools and materials from one point to another within the worksite</li> <li>It also involves the lifting of equipment and materials into boats to and fro site using manual lifting by personnel</li> </ul>	<ul style="list-style-type: none"> <li>Follow lifting procedure</li> </ul>

5a	<b>Flushing/Low pressure washing.</b>	<ul style="list-style-type: none"> <li>This involves the use of pumps with flushing accessories like nozzle to release residual trapped oil in sediment and coast shoreline sands</li> <li>Manually recover the released residual trapped oil using absorbent sheets/booms into plastic jerry cans before transferring to Waste bag</li> <li>In sensitive environment with mangrove, manual flushing or low pressure flushing shall be employed.</li> </ul>	<ul style="list-style-type: none"> <li>Only low pressure flushing is required for sensitive environment if necessary.</li> <li>Our supervisor shall inspect sensitive environment and recommend cleanup approach i.e natural attenuation, manual or low pressure flushing for the area</li> </ul>
5b	<b>Prop washing of mobile oil sheen</b>	<ul style="list-style-type: none"> <li>- This activity involves moving vessels (boats e.t.c) at 5 to 10 knots through patches of oil sheen by agitation, thereby generating waves that will naturally disperse the mobile oil sheen within the water column after application of OSEII,</li> </ul>	<ul style="list-style-type: none"> <li>Close supervision is required for this activity and the vessel must be GGRL premobbed with competent crew</li> </ul>
6	<b>Surf washing using manual and mechanical means (Sandy beaches only)</b>	<ul style="list-style-type: none"> <li>This activity involves manual and mechanical process</li> <li>Manually remove tar balls using rakes and plastic scooping plates into waste bags and transfer to designated waste storage facilities within the site for onward disposal in accordance to GGRL waste disposal methods</li> <li>Low pressure washing – using water pumps and absorbent boom.</li> </ul>	<ul style="list-style-type: none"> <li>Close supervision is required for this activity</li> </ul>
7	<b>Tilling of Impacted Soil (Mangrove – Chikoko muds)</b>	<ul style="list-style-type: none"> <li>Manually till the “Chikoko” soil impacted by the spill in the Mangrove areas to create better aeration and induce microbial activity using OSEII</li> <li>Breakdown the tilled soils and re-tilled as might be necessary to exhilarate the oil from penetrated depths.</li> </ul>	<ul style="list-style-type: none"> <li>Close supervision is required for this activity</li> </ul>
8	<b>OSEII Application</b>	<ul style="list-style-type: none"> <li>This activity involves the application of OSEII using our trained personnel along the shoreline to prevent secondary pollution and promote biodegradation of oil in the impacted area and in the water body where oil sheen are visible.</li> </ul>	<ul style="list-style-type: none"> <li>Execution of initial training on OSEII deployment, SHOC data and personal protection. Follow application procedure and closely monitor for effectiveness</li> </ul>

9	<b>Cutting of impacted vegetation , raking and removal of stained debris into waste bags</b>	<ul style="list-style-type: none"> <li>• This involves the selective cutting of heavily impacted and dying vegetations and the Flushing and cleaning of the lightly impacted ones</li> <li>• Raking of impacted and oil stained debris to prevent cross contamination</li> <li>• Segregation and bagging of generated waste plant materials and debris.</li> </ul>	<ul style="list-style-type: none"> <li>• Close supervision is required for this activity to ensure that only required vegetation is cut.</li> </ul>
10	<b>Restore Site /Manage Wastes</b>	<ul style="list-style-type: none"> <li>• Upon completion of the cleanup activity, the work site shall be tidied up accordingly,</li> <li>• Execute waste management process.</li> <li>• Waste generated shall be disposed off as specified in the contract HSSE plan</li> </ul>	<ul style="list-style-type: none"> <li>• Strict adherence to restoration processes and best in class waste management practices</li> </ul>
11	<b>Demobilize From Site</b>	<ul style="list-style-type: none"> <li>• This involves the demobilization of personnel, equipment and materials from the site to base (Brass Terminal) via same route as during mobilization.</li> <li>• This involves the demobilization of personnel, equipment and materials from the Brass Terminal to GGRL base via same route as during mobilization.</li> </ul>	
14	<b>Sampling (Collection, Handling and Preservation)</b>	<ul style="list-style-type: none"> <li>• Involves the entire suite of the sampling protocol including collection, handling and preservation.</li> <li>• Soil, Sediment and water samples will be collected both pre-intervention and post - intervention</li> </ul>	

### **3.0 Health**

This Plan is to ensure right and adequate medical emergency response in the events of injuries or ill-health of any worker. It stipulates the minimum medical resources in terms of equipment and personnel at remote work locations, the marine logistic support for evacuation to nearest helipad for medevac by helicopter to NAOC clinic and fitness to work for all local community & professional workers. All personnel to be deployed shall participate in Medical Emergency First Responder training pre-deployment (MER tier-0). Risk assessment shall be carried out to determine the distribution of the First Aider to ensure coverage for zones with supervisors that are not Tier-1 compliant.

### **3.1 Minimum Requirement**

#### **Remote Worksites**

1. All workers must show evidence of FTW
2. First Aiders to be located at the two operational spreads.
3. All work locations or parties shall have at least one DFA with First Aid equipment (Tier1)
4. All workers shall be trained on MER Tier 0
5. MER Tier 2 location will be at the Brass Terminal base and evacuation to NAOC Clinic for emergencies only.
6. Nearest Community health facilities at Brass to be identified and documented and if need be placed on standby.

## **4.0 SAFETY**

### **4.1 Induction and Training**

All workers must undergo Life Saving Rules induction and all activities will be executed in accordance with the Rules. Any new personnel that join the team after the commencement of work shall undergo same induction.

### **4.2 Equipment Premob**

All equipment to be deployed for the clean-up and remediation operations must be certified fit to work in hazardous zone with current premob certificates. The list of equipment to be used for the cleanup operations shall be attached to the job hazard analysis (JHA) for the activity.

### **4.3 JHA**

Job Hazard Analysis in line with GGRL HSE-MS must be carried out and all controls/recovery provided. This Analysis and subsequent controls/recoveries shall be discussed and understood by all workers at the site. The JHA shall be reviewed if the work scope or team members changes.

### **4.4 PPE**

All workers must be provided with the right personal protective equipment. These include – Coveralls (long sleeves), Personal Floatation Device, Hard hat, Goggle Safety rain boats, Hand gloves, Nose mask, etc.

Crude Oil SHOC cards/MSDS to be onsite and all controls as stated in the Card provided at site

### **4.5 Fire Cover**

Adequate fire cover and equipment (extinguishers, fire pumps, etc) shall be provided in work sites were required. Also, the workers should have basic fire fighting competence

## **5.0 Environment**

Strategy is to prioritize and protect all sensitive areas in the environmental; remove/collect oil sheen, tar balls and residual free phase oil from the environment and spill response, cleanup and remediation of impacted materials from the site. High sensitive areas like mangroves and animal breeding areas are to be given special attention. Only absorbent booms and pads shall be deployed around these areas to aid clean-up.

Adequate allowance should be made to accommodate the natural occurrences including tidal cycles that will impact the time available for effective work.

## **6.0 Waste Management**

Every effort shall be made to minimize volume of waste that will be generated in the course of the cleanup. Waste generation, handling and disposal shall be carried out in accordance with NAOC Waste Management procedure. Waste shall be segregated at source in line with GGRL and NAOC waste management procedure. NAOC/GGRL shall be responsible for the final disposal of all wastes generated at site. Waste bags and barges will be provided to aid handling. Expected wastes include:

- 1) Oily absorbent pads/sheets
- 2) Oily absorbent booms
- 3) Oil
- 4) Tar balls
- 5) Contaminated sands and beach debris
- 6) Oily stained booms and sheets

Waste Handling:

- 1) The oily absorbent pads/sheets/booms & contaminated sands/debris will be collected in handy leak proof waste bags and transferred into collection bags which will then be moved to the central collection point for onward delivery at Brass Terminal for transportation to a Contractor Thermal Disorption Unit (TDU) for final disposal.
- 2) The crude oil will be collected in either the jerry cans or fast tanks and then transferred into the environmental barge for discharge at FOT
- 3) The oil-stained harbor/ river booms will be washed for re-use.

## **7.0 Emergency Response**

Emergency response will form part of the site safety induction, this will include:

- 1) Emergency communication system
- 2) Medical Emergency Response
- 3) Emergency evacuation means
- 4) Pre-work start drills/routine drills to test preparedness
- 5) Designated muster points including alternate muster points
- 6) Effective means of raising alarms
- 7) Access control/POB records

## **8.0 Communication**

The supervisors comprising of GGRL or NAOC personnel shall be provided with Thuraya/Iridium satellite phones (if Required), VHF radios and GSM for communication in order to maintain constant communication with the project site manager, and the various operational spreads throughout the spill response, cleanup and remediation operations.

A two hourly communication protocols will be maintained, this implies that site supervisor calls the project site manager and various operational spreads atleast every 1hrs during the day.

## **9.0 Security**

Enroute the coastal shoreline areas and around the spill coastline is prone to armed attack, pirates, harassment by communities youths, communal protests due to legacy issues, militant attacks, kidnapping, etc. Therefore robust and functional security arrangement must be in place for the clean-up and remediation operations.

The following security set-up and controls will be strictly enforced throughout the period of operations:

- 1) Personal security awareness
- 2) Develop and deploy site specific security plan
- 3) Ensure adequate security personnel based on Security Risk Assessment (SRA)
- 4) Tracking of movement from Brass Terminal to Spill sites by NAOC Site representative
- 5) Use of only escorted GGRL Vessels / deployment of dedicated JTF MPV.
- 6) Ensure communication with NAOC Site representative and GGRL spill response and remediation team.

- 7) Intelligence report of spill areas and route to spill sites prior to departure from Brass Terminal.
- 8) Intensify contact/dialogue with community reps and ensure continuous engagement during work
- 9) Personnel movement restricted to protected areas (accommodation, office and worksites)
- 10) Journey management between Brass Terminal and spill sites.
- 11) NAOC Site representative conducts daily Security Risk assessment and reports status to GGRL.

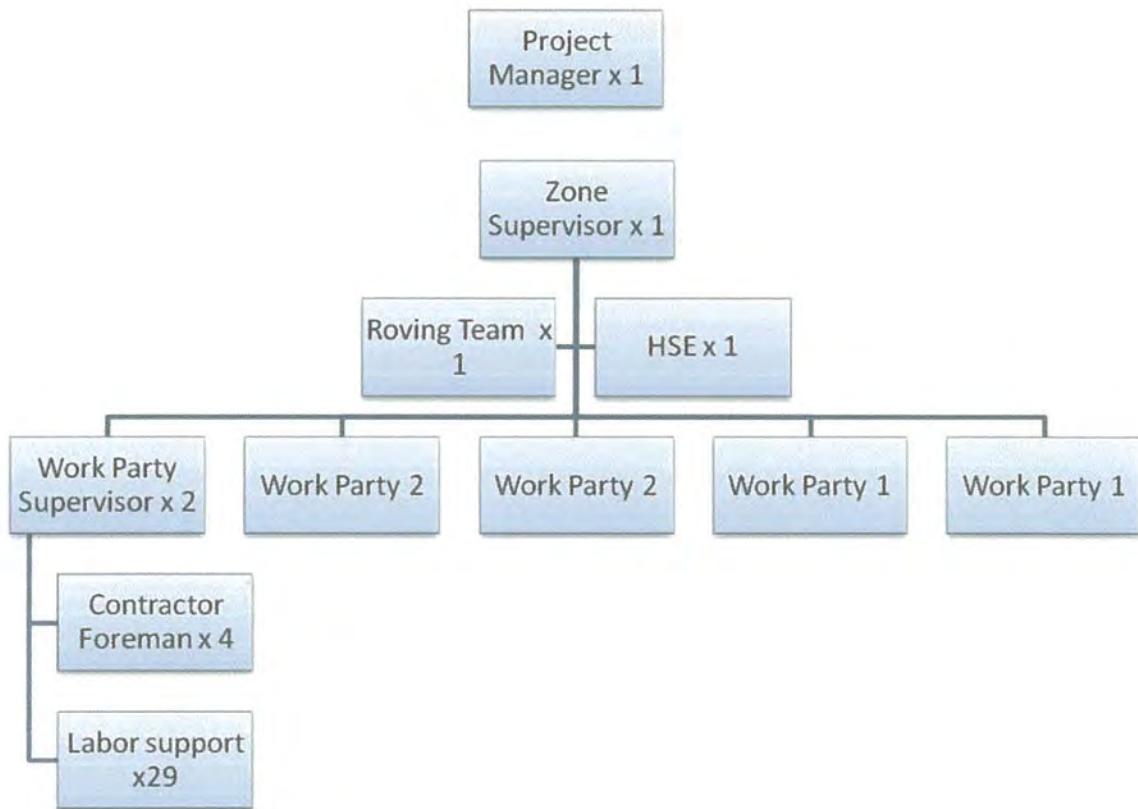
## 10.0 List of personnel

The site consisting of sandy beachfront and mangrove forests in three communities (Odioma, Twon-Brass and Okpoma).

Workers shall be deployed to cover each area in phases..

- For effective supervision and site management, area will be divided in work spreads.
- Following personnel shall be involved in the cleanup/ remediation operations:
  - 1 Project Manager
  - 2 Zone Supervisors
  - 1 First Aider/Occupational Health officer
  - 1 HSE
  - 7 Skilled cleanup and remediation personnel
  - 4 contractor Foremen
  - 29 local labour

- Site Management Organogram



Detail available in [Resource Plan Listing](#)

Addendum: **5 Boat operators.**

## **11.0 Pre-Start up Plan**

Listed below are the actions requiring completion before personnel can step on the beach to begin clean-up operations:

- Gain as much surveillance footage as possible to assess severity of Oiling
- Assess the beaches from video surveillance film to determine most oiled to those not needing clean-up and remediation.
- Rank order the locations in terms of the highest priority for the cleaning activity
- Engage the communities to obtain a sustainable FTW (Freedom to Work Permit)
- From provided materials, determine:
  - What methods will be used to clean the oil off this beach
  - What sensitivities does the beach/area have
  - What is the end point of cleaning
  - How will this end point be determined
- Outfit the clean-up / work barge with the required equipment and tools for the methods to be used for the beach cleaning

Arrange for proper security for work base and for workers on beach per the project execution plan for the **CLEAN UP OF NAOC SBM SPILL AROUND THE BRASS RIVER COASTLINE AREA**

- Communicate HSE plan to Supervisors identified with instructions to brief all the workforce prior to commencement of any cleanup activities.
- Move the Clean-up / Work Barge to the work base location
- Obtain waste disposal barge and again establish best position to cut down on transfer times.
- Obtain the necessary quantity of community workers
- Conduct a job scope and safety briefings / Training per the plan listed above
- Establish decontamination zone - near potential temporary waste storage site.
- Assess the beach and document its condition before the clean-up and remediation begins including pictures and size, locations and extent of oiling
- Record any wildlife casualties document with photos if possible.
- Begin the clean up and remediation of the selected beach
- Document as left condition video photos etc.

## **12.0 Close Out Report and Review**

All GGRL Supervisors shall prepare a detailed and comprehensive close out report of the clean-up operations.



GIOLEE GLOBAL RESOURCES LIMITED

## WATER SAMPLING LOG SHEET

Project:	OIL SPILL RESPONSE AND CLEAN-UP @ BRASS (NAOC)		
Site Incident No.:			
Site ID NO.:	BRASS-ODIOMA		
Date:	06/12/13		
Purging Method:			
Sampling Method:	SURFACE (DIP)		
For Existing Wells Secured	YES	NA	NO NA
Logged By:	NWITE KEN NWIFIITO		

## Sampling Details

Sampling ID	Time	Parameter		Sampling point geo referencing		Remarks: Visual Observation And HC smell	No. of Samples taken
		T (°C)	THC	EC (µS/cm)	E	N	
WS1	15:45hrs		TPH, BTEX & PAH		006° 24' 35.1"	04° 20' 08.1"	HC Sheen

Total number of samples taken = 2

General description of the environment: Mangrove swamp shoreline



GIOLEE GLOBAL RESOURCES LIMITED

## WATER SAMPLING LOG SHEET

Project:	OIL SPILL RESPONSE AND CLEAN-UP @ BRASS (NAOC)			
Site Incident No.:				
Site ID NO.:	BRASS-ODIOMA			
Date:	07/12/13			
Purging Method:				
Sampling Method:	SURFACE (DIP)			
For Existing Wells Secured	YES	NA	NO	NA
Logged By:	NWITE KEN NWIFIITO			

## Sampling Details

Sampling ID	Time	Parameter			Sampling point geo referencing	Remarks: Visual Observation And HC smell	No. of Samples taken
		T (°C)	THC	EC (µS/cm)			
WSC <sub>1</sub>	16:12hrs		TPH, BTEX & PAH		006° 24' 30.7"	04° 19' 01.5"	NIL

Total number of samples taken = 2

General description of the environment: Mangrove shoreline. Samples taken as control



GIOLEE GLOBAL RESOURCES LIMITED

## WATER SAMPLING LOG SHEET

Project:		OIL SPILL RESPONSE AND CLEAN-UP @ BRASS (NAOC)			
Site Incident No.:					
Site ID NO.:		BRASS LNG SEA SHORE			
Date:		09/12/13			
Purging Method:					
Sampling Method:		SURFACE (Dip)			
For Existing Wells Secured		YES	NA	NO	NA
Logged By:		NWITE KEN NWIFIITO			

## Sampling Details

Sampling ID	Time	Parameter		Sampling point geo referencing		Remarks: Visual Observation And HC smell	No. of Samples taken
		T (°C)	THC	EC (µS/cm)	E	N	
WS1	10:15hrs		TPH, BTEX & PAH		006° 14' 21.8"	04° 17' 42.6"	NIL

Total number of samples taken = 2

General description of the environment: Beach area (Seashore)



GIOLEE GLOBAL RESOURCES LIMITED

## WATER SAMPLING LOG SHEET

Project:	OIL SPILL RESPONSE AND CLEAN-UP @ BRASS (NAOC)		
Site Incident No.:			
Site ID NO.:	BRASS HELIPAD		
Date:	10/12/13		
Purging Method:			
Sampling Method:	SURFACE (Dip)		
For Existing Wells Secured	YES	NA	NO NA
Logged By:	NWITE KEN NWIFIITO		

## Sampling Details

Sampling ID	Time	Parameter		Sampling point geo referencing		Remarks: Visual Observation And HC smell	No. of Samples taken
		T (°C)	THC	EC (µS/cm)	E		
WS1	11:23hrs	TPH, BTEX & PAH		006° 14' 06.0"	04° 18' 09.3"	Sheen	2

Total number of samples taken = 2

General description of the environment: Beach area



## GIOLEE GLOBAL RESOURCES LIMITED

Project:	OIL SPILL RESPONSE AND CLEAN-UP @ BRASS (NAOC)		
Site Incident No.:			
Site ID NO.:	BRASS ODIOMA		
Date:	10/12/13		
Purging Method:			
Sampling Method:	SURFACE (Dip)		
For Existing Wells Secured	YES	NA	NO NA
Logged By:	NWITE KEN NWIFIITO		

## Sampling Details

Sampling ID	Time	Parameter		Sampling point geo referencing		Remarks: Visual Observation And HC smell	No. of Samples taken
		T (°C)	THC	EC (µS/cm)	E	N	
WS <sub>2</sub>	13:27hrs		TPH, BTEX & PAH		006° 24' 19.6"	04° 20' 06.0"	Sheen

Total number of samples taken = 2

General description of the environment: Beach area



## GIOLEE GLOBAL RESOURCES LIMITED

## SOIL SAMPLING LOG SHEET

Project:		OIL SPILL RESPONSE AND CLEAN-UP@ BRASS ( NAOC)				
Site Incident:						
Site ID NO.:		BRASS -ODIOMA				
Date:		06/12/13				
Sampling Method:		GRAP (Representative)				
Logged By:		NWITE KEN NWIFIITO				
Sampling Details (Vertical and Horizontal Delineation)						
From (mb gl)	To (mb gl)	Strata Description	Sampling ID	Sampling point geo referencing	Remarks: Visual Observation And HC smell	No. of Samples taken
0m	0m	Grap	SS <sub>1</sub>	N 04° 20' 07.1" E 006° 24' 35.6"	Visually impacted with odor	2
0m	0.3m	Grap	SS <sub>1</sub>	N 04° 20' 07.1" E 006° 24' 35.6"	No visual impact, No odour	2
Total number of samples taken = 4						



## GIOLEE GLOBAL RESOURCES LIMITED

## SOIL SAMPLING LOG SHEET

Project:		OIL SPILL RESPONSE AND CLEAN-UP @ BRASS(NAOC)				
Site Incident:						
Site ID NO.:		BRASS -ODIOMA				
Date:		07/12/13				
Sampling Method:		GRAP (Control Sample)				
Logged By:		NWITE KEN NWIFIITO				
Sampling Details (Vertical and Horizontal Delineation)						
From (mb gl)	To (mb gl)	Strata Description	Sampling ID	Sampling point geo referencing	Remarks: Visual Observation And HC smell	No. of Samples taken
0m	0.2m	Grap	Sediment	N 04° 20' 03.5" E 006° 24' 36.0"	No visual impact, No odour	2
0m	0m	Grap	SSC <sub>1</sub> (Soil)	N 04° 19' 006" E 006° 24' 30.3"	No visual impact, No odour (Uncontaminated area across the river as control)	2
0m	0.3m	Grap	SSC <sub>1</sub> (Soil)	N 04° 19' 006" E 006° 24' 30.3"	No visual impact, No odour (Uncontaminated area across the river as control)	2
Total number of samples taken = 6						

**SOIL SAMPLING LOG SHEET**

Project:	OIL SPILL RESPONSE AND CLEAN-UP @ BRASS( NAOC)
Site Incident:	
Site ID NO.:	BRASS -ODIOMA
Date:	08/12/13
Sampling Method:	GRAP (Representative)
Logged By:	NWITE KEN NWIFIITO

**Sampling Details (Vertical and Horizontal Delineation)**

From (mb gl)	To (mb gl)	Strata Description	Sampling ID	Sampling point geo referencing	Remarks: Visual Observation And HC smell	No. of Samples taken
0m	0m	Grap	SS <sub>2</sub> (Soil)	N 04° 20' 09.2" E 006° 24' 33.6"	Visually impacted on the surface	2
0m	0.3m	Grap	SS <sub>2</sub> (Soil)	N 04° 20' 09.2" E 006° 24' 33.6"	HC odour	2

Total number of samples taken = 4



## GIOLEE GLOBAL RESOURCES LIMITED

**SOIL SAMPLING LOG SHEET**

Project:		OIL SPILL RESPONSE AND CLEAN-UP @ BRASS( NAOC)				
Site Incident:						
Site ID NO.:		BRASS LNG SEA SHORE				
Date:		09/12/13				
Sampling Method:		GRAP (Representative)				
Logged By:		NWITE KEN NWIFIITO				
Sampling Details (Vertical and Horizontal Delineation)						
From (mb gl)	To (mb gl)	Strata Description	Sampling ID	Sampling point geo referencing	Remarks: Visual Observation And HC smell	No. of Samples taken
0m	0.0m	Grap	SS <sub>1</sub> (Soil)	N 04° 17' 32.1" E 006° 14' 33.1"	No visual impact, No odour	2
0m	0.3m	Grap	SS <sub>1</sub> (Soil)	N 04° 17' 32.1" E 006° 14' 33.1"	No visual impact, No odour	2
Total number of samples taken = 4						



GIOLEE GLOBAL RESOURCES LIMITED

## **SOIL SAMPLING LOG SHEET**

Project:	OIL SPILL RESPONSE AND CLEAN-UP @ BRASS(NAOC)
Site Incident:	
Site ID NO.:	BRASS HELI PAD
Date:	10/12/13
Sampling Method:	GRAP (Representative)
Logged By:	NWITE KEN NWIFIITO

#### Sampling Details (Vertical and Horizontal Delineation)

Total number of samples taken = 4



### GIOLEE GLOBAL RESOURCES LIMITED

#### SOIL SAMPLING LOG SHEET

Project:		OIL SPILL RESPONSE AND CLEAN-UP @ BRASS(NAOC)				
Site Incident:						
Site ID NO.:		BRASS ODIOMA				
Date:		10/12/13				
Sampling Method:		GRAP (Representative)				
Logged By:		NWITE KEN NWIFIITO				
Sampling Details (Vertical and Horizontal Delineation)						
From (mb gl)	To (mb gl)	Strata Description	Sampling ID	Sampling point geo referencing	Remarks: Visual Observation And HC smell	No. of Samples taken
0m	0.0m	Grap	SS <sub>3</sub> (Soil)	N 04° 20' 07.2" E 006° 24' 29.7"	Visually impacted	2
0m	0.3m	Grap	SS <sub>3</sub> (Soil)	N 04° 20' 072" E 006° 24' 29.7"	No visual impact, No odour	2
Total number of samples taken = 4						

## AGIP TECHNICALL TEAM Meeting ON OSE11 APPLICATIION

[Search Results > Message Detail](#)

[\*\*Print\*\*](#)

RE: MEETING WITH AGIP  
TECHNICALL TEAM ON OSE11  
APPLICATIION

**To:**"Giolee Global"  
<gioleeglobal@yahoo.com>  
**Bcc:**"Diane Wagenbrenner"  
<dianesue3@att.net>, "Barbara  
Wiseman"  
<barbara@TheEarthOrganization.org>

Dear Lesi,

See attached letter to answer Dr. Kingsley Opuene and Cislash Raffaella questions, I have also included two other documents that are equally important to review. The types of bioremediation shows why other bio products cannot compete with OSE II. I can contact the AGIP representatives if needed, let me know if you need anything else.

Steven Pedigo

PS. The Types of bioremediation and there modes of action has been published in the Russian Oil and Gas Journal.

----- Original Message -----

Subject: MEETING WITH AGIP TECHNICALL TEAM ON OSE11  
APPLYCATION

From: Giolee Global <[gioleeglobal@yahoo.com](mailto:gioleeglobal@yahoo.com)>

Date: Tue, December 10, 2013 12:01 pm

To: "Steven R. Pedigo" <[oseicorp@osei.us](mailto:oseicorp@osei.us)>, Steven Pedigo  
<[oseicorp@msn.com](mailto:oseicorp@msn.com)>

Cc: "kingsley.opuene@naoc.agip.it"

<[kingsley.opuene@naoc.agip.it](mailto:kingsley.opuene@naoc.agip.it)>,

"cislaghi.raffaella@naoc.agip.it" <[cislaghi.raffaella@naoc.agip.it](mailto:cislaghi.raffaella@naoc.agip.it)>

Dear Steve,

I had meeting with (NAOC) technical team today and they want to be sure that after we apply OSE11 it will not leave any surfactant or any other thing that may harm the Environment.

Based on this fact I am introducing Dr Kingsley Opuene and Cislash Raffaella who are technical staff of Agip to you so that you can clear them on any question they may ask or further information they may need on OSE11 from you.

I did promise to do this introduction to clear any thought they may have on your product from you directly as the manufacturer.

Kindly fell free to discuss with them on this subject matter as they are both copied in this email.

Regards

**Lesi Maol**

*Managing Director*

**Giolee Global Resources Limited**

**No.18 Uyo Street, Rumumasi. Port Harcourt.**

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Mob : +234 703 151 3161

Mob : +234 803 788 3720

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Website: [www.giolee.com](http://www.giolee.com)

Download	Attachments	Size	Action(s)	Send To
	<a href="#">OSE II 100% biodegradable, and causes hydrocarbons to become biodegraded LH docx.pdf</a>	64 k	<a href="#">Download</a>	
	<a href="#">Emulating mother nature env expert.pdf</a>	93 k	<a href="#">Download</a>	

CLOSE-OUT REPORT OF CLEAN-UP AND REMEDIATION ACTIVITIES  
FOR NAOC SBM SPILL AROUND BRASS RIVER COASTLINE AREA

@

ODIOMA AXIS

BY

**GIOLEE GLOBAL RESOURCES LIMITED**  
SUBMITTED TO

HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT (HSE)

OF

NIGERIAN AGIP OIL COMPANY (NAOC)

INCIDENT NO: 2013/SAR/393/690

INCIDENT DATES: 27/11/2013

MOBILIZATION DATE: 30/11/2013

CONTRACT END DATE: 12/01/2014

DATE OF KICK-OFF MEETING: 5/12/2013

POST CLEAN-UP INSPECTION DATE (PCI): 17/01/2014

CONTRACTOR : GIOLEE GLOBAL RESOURCES LIMITED.

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Page 6.....	Challenges, Suggestions for Improvement, Recommendation, and conclusion

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## SITE BASIC INFORMATION

Field Name	SBM FACILITY OFFSHORE
Site Name	ST. NICHOLAS RIVER SHORELINE ALONG ODIOMA AXIS
Exact Location	ODIOMA
Spill Incident No.	<i>2013/SAR/393/690</i>
Spill Incident Dates	<i>27/11/2013</i>
State	BAYELSA
Impacted Area	

## SITE HISTORY

Site Use (previous & Current)	CRUDE OIL PRODUCTION
Cause of Spill	EQUIPMENT FAILURE
Impacted Environment	COASTLINE & MANGROVE
Distance of Site From Human Habitation	250m
Water Characteristics	SALT WATER

## **INTRODUCTION**

The site coastline is located at Odioma in Brass LGA about 200m from the community. The spill incident was as a result of equipment failure which occurred on the 27<sup>th</sup> November, 2013 and JIV was conducted on the in the presence of NOAC HSE officer and Government Regulators (DPR, NOSDRA and BAYELSA STATE MINISTRY OF ENVIRONMENT).

Giolee Global Resources mobilized fully to the site for Clean-up / Remediation activities on the 30/11/2013.

**NAOC Management Assessment Visit/Site Close-out:** The activity of Giolee Global Resources Ltd was carried out under strict supervision of NAOC HSE personnel throughout the job duration. The Management of NAOC visited the site on December 20<sup>th</sup>, 2013 for proper scooping and re-assessment. The team was led by the Dept. Manager; Mr Amaechi and government regulators /community representatives. After the visit, the activities of the site continued with the supply of Labour by sunlyd. The site was internally closed out by NAOC on January 12<sup>th</sup>, 2014 while the official close-out came up on January 12<sup>th</sup>, 2014 after the visit of government regulators (NOSDRA,DPR and Bayelsa state Ministry of Environment).

## **PROJECT OBJECTIVES**

- ✓ To clean-up and remediate the crude oil impacted areas within the shoreline of ST. Nicholas River along Odioma axis.
- ✓ Collection of soil and water samples; before, during and After Remediation.

## **BRIEF DESCRIPTION OF SITE**

The site is located at Odioma community in Brass Local Government Area of Bayelsa State. The site has uneven surfaces on Natural water body, shoreline beaches and marshy terrain in the mangrove section.

## **WORK SCOPE**

The affected area of spill was scooped by NAOC personnel and the underlisted workscope was drawn to meet NAOC and international standard.

1. Clearing and raking of impacted vegetation.
2. Mopping of Stained Mangrove vegetation with absorbent pads soaked in OSE II.
3. Tilling of impacted soil trapped with crude oil along beaches/shorelines.
4. Tilling Of impacted Mangrove area (Critical) without destroying the breathing roots.
5. The application of OSE II on all areas worked.
6. Bagging and evacuation of generated waste.
7. Pre and Post Sample collection.

Giolee Global Resources worked within the confined mapped area.

The total area tilled along shorelines/Beaches = 7.0476Hectare

Total Area of mangrove mopped and OSE II applied = 9.5451 Hectare

Total Area of mangrove tilled, mopped and OSE II applied=4.6503 Hectare

The Grand total Area worked is 21.243 Hectare.

## **METHODOLOGY**

- Manual Tilling with shovel
- Cleaning/Mopping with absorbent pad soaked with OSE II
- The application of OSE II, and wash with water

DATES	ACTIVITIES
03/12/10	<ul style="list-style-type: none"> <li>➤ Site assessment and preparation.</li> <li>➤ Induction of community workers.</li> </ul>
04/12/13 - 05/12/13	<ul style="list-style-type: none"> <li>➤ Clean-up and Clearing of impacted vegetation</li> <li>➤ Mopping of stained vegetation with absorbent pad soaked with OSE II</li> <li>➤ Water mixed with OSE II on mangroves</li> <li>➤ Application of OSE II on the body of water/shoreline beaches</li> </ul>
06/12/13 - 10/12/13	<ul style="list-style-type: none"> <li>➤ Raking / packing of debris</li> <li>➤ Tilling / homogenization of soil</li> <li>➤ Mopping of stained vegetation with absorbent pad soaked with OSE II</li> <li>➤ Collection of soil/water samples</li> <li>➤ The application of OSE II</li> <li>➤ Housekeeping /waste management</li> <li>➤ Deployment of 5length of river boom and 7 bales of sorbent boom.</li> </ul>
11/12/13 – 13/12/13	<ul style="list-style-type: none"> <li>➤ Cleaning/ Raking.</li> <li>➤ Mopping of residual crude oil.</li> <li>➤ Tilling of soil along beaches and shoreline.</li> <li>➤ The application of OSE II.</li> <li>➤ Packing and evacuation of generated waste.</li> </ul>
14/12/13	<ul style="list-style-type: none"> <li>➤ Cleaning/ Raking.</li> <li>➤ Mopping of residual crude oil.</li> <li>➤ Tilling of soil along beaches and shoreline.</li> <li>➤ The application of OSE II.</li> <li>➤ Packing and evacuation of generated waste.</li> <li>➤ Deployment of 6 bales of sorbent boom.</li> </ul>
15/12/13 – 19/12/13	<ul style="list-style-type: none"> <li>➤ Cleaning/ Raking.</li> <li>➤ Mopping of residual crude oil.</li> <li>➤ Tilling of soil along beaches and shoreline.</li> <li>➤ The application of OSE II.</li> <li>➤ Packing and evacuation of generated waste.</li> </ul>
20/12/13	<ul style="list-style-type: none"> <li>➤ Cleaning/ Raking.</li> <li>➤ Mopping of residual crude oil.</li> <li>➤ Tilling of soil along beaches and shoreline.</li> <li>➤ The application of OSE II.</li> <li>➤ Packing and evacuation of generated waste.</li> <li>➤ <b>NAOC Management visit/re-assessment of site.</b></li> </ul>
21/12/13 – 24/12/13	<ul style="list-style-type: none"> <li>➤ Cleaning/ Raking.</li> <li>➤ Mopping of residual crude oil.</li> <li>➤ Tilling of soil along beaches and shoreline.</li> <li>➤ The application of OSE II.</li> </ul>

25/12/13 – 26/12/13	CHRISTMAS HOLIDAY - Odioma community Beach Days
27/12/13 – 28/12/13	<ul style="list-style-type: none"> <li>➤ Cleaning/ Raking.</li> <li>➤ Mopping of residual crude oil.</li> <li>➤ Tilling of soil along beaches and shoreline.</li> <li>➤ The application of OSE II.</li> <li>➤ Packing and evacuation of generated waste.</li> </ul>
29/12/13	NO ACTIVITY – Due to negotiation with community workers by sunlyd
30/12/13	<ul style="list-style-type: none"> <li>➤ Mopping of stained mangrove vegetation with absorbent pad soaked with OSE II.</li> <li>➤ Tilling of impacted soil</li> <li>➤ Community disruption (worked Half day)</li> </ul>
31/12/13 – 04/01/14	<ul style="list-style-type: none"> <li>➤ Mopping of stained mangrove vegetation with absorbent pad soaked with OSE II.</li> <li>➤ Tilling of impacted mangrove soil.</li> <li>➤ The application of OSE II.</li> <li>➤ Bagging and evacuation of generated waste.</li> </ul>
05/01/14 – 09/01/14	<ul style="list-style-type: none"> <li>➤ Mopping of stained mangrove vegetation with absorbent pad soaked with OSE II.</li> <li>➤ The application of OSE II onto the mangroves.</li> <li>➤ Bagging and evacuation of generated waste.</li> </ul>
10/01/14	<ul style="list-style-type: none"> <li>➤ Mopping of stained mangrove vegetation with absorbent pad soaked with OSE II.</li> <li>➤ The application of OSE II onto the mangroves.</li> <li>➤ Bagging and evacuation of generated waste.</li> <li>➤ Pre-close out site inspection by NAOC HSE.</li> </ul>
11/01/14	<ul style="list-style-type: none"> <li>➤ Mopping of stained mangrove vegetation with absorbent pad soaked with OSE II.</li> <li>➤ The application of OSE II onto the mangroves.</li> <li>➤ Bagging and evacuation of generated waste.</li> </ul>
12/01/14	<ul style="list-style-type: none"> <li>➤ Mopping of stained mangrove vegetation with absorbent pad soaked with OSE II.</li> <li>➤ The application of OSE II onto the mangroves.</li> <li>➤ Bagging and evacuation of generated waste.</li> <li>➤ SITE CLOSE OUT</li> </ul>
17/01/14	<b>POST CLEAN-UP INSPECTION</b> with government regulators

## CHALLENGES

- Uneven terrain.
- Tidal effect.
- Cost of living.
- Community issues.
- Timing.
- Delay in the release of security personnel.

## **SUGGESTIONS/ RECOMMENDATION FOR IMPROVEMENT**

- Enough time should be given to the workers to ensure effective work done.
- Security personnel should be released on time due to the tidal nature of the site.
- There should be regular routine check on facility to advert equipment failure.
- Proper Security patrol on water ways to check oil theft.

## **CONCLUSIONS**

- Clean-up and Remediation activities was completed successfully.

## **APPENDIX**

1. **Mobilization form.**
2. **Minutes of kick-off meeting.**
3. **P.C.I Form.**
4. **Daily site activities log sheet.**
5. **Site Pictures.**

**Figure 1: Showing before recovery activities at 20"Otumara-Escravos T/L spil site in**













## **Nigeria AGIP Oil Spill OSEI Corporation Summary of the test extractions from the soil and water spill date 11/27/2013**

The AGIP Oil Company suffered a release of oil on or about November 29, 2013 into the Niger Delta region, which ended up on the Nigeria Atlantic ocean coast line. AGIP contacted Giolee Global Resources to respond to the spill, Giolee Global managing director Lesi Maol immediately surveyed the spill area, a response/work plan was developed, as well as a sampling plan to determine the extent of the spill. The sampling plan encompassed shoreline, as well as open water, with extractions performed before, during and after the application of OSE II. The samples were extracted and air shipped to the same laboratory each time, ALS, address 9143 Philips Highway, Suite 200, Jacksonville, FL 32256 **ph:+1 904 739 2277 | fax+1 904 739 2011.**

The initial soil samples before application of OSE II showed a hydrocarbon level of 226 mg/kg, 444 mg/kg, 145mg/kg, 1300mg/kg, 83.8 mg/kg, 255 mg/kg, 571 mg/kg, 220 mg/kg, 17000 mg/kg, and final comparative results from the same areas after application of OSE II showed a hydrocarbon level of 6.57 mg/kg, 23 mg/kg, 37.5 mg/kg, 78.1 mg/kg, 16.6 mg/kg, 119 mg/kg, 13.8 mg/kg, 68.3 mg/kg, 51.0 mg/kg.

The average amount of oil before application of OSE II mg/kg was 2249.4 and the average amount of oil after application of OSE II or the remediation of the hydrocarbons by OSE II is 46.1 for a total of **97.9%** reduction within 29 days of the application of OSE II on the Nigeria AGIP/NAOC spill. The final test results showed the oil had been remediated well below the acceptable levels for soil/shorelines in Nigeria.

The PAH's the most persistent and lingering toxic components in oil were all in the low parts per billions ( ug/kg) so they were well below the acceptable limits for Nigeria.

### **SOIL TESTS**

Sample Extractions Before application of OSE II	Sample Extractions During Application of OSE II	Sample extractions After Application of OSE II
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Lab ID: J1307883-001 Solids, Total 84	Lab ID: J1400817-001 Solids, Total 37 Diesel Range Organics (C10 - C28) 93.9 mg/Kg Ethylbenzene 0.654ug/Kg Flag Toluene 1.37 ug/Kg Flag Naphthalene 101 ug/Kg	Lab ID: J1402115-001 Solids, Total 84 0 Diesel Range Organics (C10 - C28) <b>7.03 mg/Kg</b>
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Lab ID: J1307883-002 <b>Solids, Total 52</b> <b>Diesel Range Organics (C10 - C28) 226 mg/kg</b>	<b>Lab ID: J1400817-002</b> Solids, Total 86 Diesel Range Organics (C10 - C28) 14.3 mg/Kg Flag	<b>Lab ID: J1402115-002</b> Solids, Total 84 Diesel Range Organics (C10 - C28) 6.57 mg/Kg Benzo(a)pyrene 11.4 ug/Kg
Lab ID: J1307883-003 <b>Solids, Total 94</b>	<b>Lab ID: J1400817-003</b> Solids, Total 81 Diesel Range Organics (C10 - C28) 21.6 mg/Kg	<b>Lab ID: J1402115-003</b> Solids, Total 82 Diesel Range Organics (C10 - C28) 7.61 mg/Kg
Lab ID: J1307883-004 <b>Solids, Total 94</b>	<b>Lab ID: J1400817-004</b> Solids, Total 30 Diesel Range Organics (C10 - C28) 31.2 mg/Kg Flag	<b>Lab ID: J1402115-004</b> Solids, Total 77 Diesel Range Organics (C10 - C28) 7.96 mg/Kg
Lab ID: J1307883-005 <b>Solids, Total 58 0.</b> <b>Diesel Range Organics (C10 - C28) 444 mg/kg</b> 1-Methylnaphthalene 181 ug/kg 2-Methylnaphthalene 187 ug/kg Phenanthrene 139 ug/kg	<b>Lab ID: J1400817-005</b> Solids, Total 86 0. Diesel Range Organics (C10 - C28) 7.37 mg/Kg Flag	<b>Lab ID: J1402115-005</b> Solids, Total 42 Diesel Range Organics (C10 - C28) 23.4 mg/Kg
Lab ID: J1307883-006 <b>Solids, Total 28</b> <b>Diesel Range Organics (C10 - C28) 145 mg/kg</b>	<b>Lab ID: J1400817-006</b> Solids, Total 86 Diesel Range Organics (C10 - C28) 6.20 mg/Kg Flag	<b>Lab ID: J1402115-006</b> Solids, Total 48 Diesel Range Organics (C10 - C28) 37.5 mg/Kg Toluene 2.82 ug/Kg
Lab ID: J1307883-007 <b>Solids, Total 55</b> <b>Diesel Range Organics (C10 - C28) 1300 mg/kg</b> 1-Methylnaphthalene 923 ug/kg 2-Methylnaphthalene 1200 ug/kg	<b>Lab ID: J1400817-007</b> Solids, Total 85 Diesel Range Organics (C10 - C28) 11.2 mg/Kg Flag Fluoranthene 10.7 ug/Kg Phenanthrene 9.91ug/Kg Flag Pyrene 12.2 ug/Kg	<b>Lab ID: J1402115-007</b> Solids, Total 34 Diesel Range Organics (C10 - C28) 78.1 mg/Kg Toluene 4.64 ug/Kg
Lab ID: J1307883-008 <b>Solids, Total 83</b> <b>Diesel Range Organics (C10 - C28) 83.8 mg/kg</b>	<b>Lab ID: J1400817-008</b> Solids, Total 83 Diesel Range Organics (C10 - C28) 54.0 mg/Kg	<b>Lab ID: J1402115-008</b> Solids, Total 77 Diesel Range Organics (C10 - C28) 16.6 mg/Kg

Lab ID: J1307883-009 <b>Solids, Total 79</b>	Lab ID: J1400817-009 <b>Solids, Total 80</b> <b>Diesel Range Organics (C10 - C28) 46.2 mg/Kg</b>	Lab ID: J1402115-009 <b>Solids, Total 31</b> <b>Diesel Range Organics (C10 - C28) 22.7 mg/Kg</b>
Lab ID: J1307883-010 <b>Diesel Range Organics (C10 - C28) 255 mg/kg</b>		<b>Lab ID: J1402115-010</b> Solids, Total 38 Diesel Range Organics (C10 - C28) 119 mg/Kg
Lab ID: J1307883-011 <b>Diesel Range Organics (C10 - C28) 571 mg/kg</b>		<b>Lab ID: J1402115-011</b> Solids, Total 71 Diesel Range Organics (C10 - C28) 13.8 mg/Kg
Lab ID: J1307883-012 <b>Diesel Range Organics (C10 - C28) 220 mg/Kg</b> Benz(a)anthracene 147 ug/Kg Benzo(a)pyrene 190 ug/Kg Benzo(b)fluoranthene 266 ug/Kg Benzo(g,h,i)perylene 112 ug/Kg Benzo(k)fluoranthene 106 ug/Kg Chrysene 281 ug/Kg Fluoranthene 195 ug/kg Indeno(1,2,3-cd)pyrene 97.2 Phenanthrene 87.1 ug/kg Pyrene 173 ug/kg		<b>Lab ID: J1402115-012</b> Solids, Total 33 Diesel Range Organics (C10 - C28) 68.3 mg/Kg Ethylbenzene 3.64 ug/Kg m,p-Xylenes 4.85 ug/Kg o-Xylene 3.25 ug/Kg Toluene 3.42 ug/Kg
Lab ID: J1307883-013 <b>Solids, Total 59</b> <b>Diesel Range Organics (C10 - C28) 17000 mg/Kg</b> Benzene 95.1 ug/Kg Ethylbenzene 249 ug/Kg m,p-Xylenes 1780 ug/Kg o-Xylene 794 ug/Kg Toluene 490 ug/Kg 1-Methylnaphthalene 3900		<b>Lab ID: J1402115-013</b> Solids, Total 56 Diesel Range Organics (C10 - C28) 51.0 mg/Kg m,p-Xylenes 1.30 ug/Kg Toluene 4.78 ug/Kg

<b>ug/Kg</b> <b>2-Methylnaphthalene 4610 ug/Kg</b> <b>Naphthalene 727 ug/Kg</b>		
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## Water Tests

The initial water samples before application of OSE II showed a hydrocarbon level of 0.943 mg/kg, 41.3 mg/kg, 5.39mg/kg, 3.97mg/kg, 51.9 mg/kg, and final comparative results from the same areas after application of OSE II showed a hydrocarbon level of 0.699 mg/kg, 0.808 mg/kg, 0.747 mg/kg, 0.745 mg/kg, during test extraction 0.498 mg/kg.

The average before application of OSE II mg/kg of oil was 20.7 and the average amount of oil after application of OSE II or the remediation of the hydrocarbons by OSE II is 46.1 for a total of 99.9% reduction within 29 days of the application of OSE II on the Nigeria AGIP/NAOC spill. The final test results showed the oil had been remediated well below the acceptable levels for water level contaminants in Nigeria.

The PAH's the most persistent and lingering toxic components in oil were all in the low parts per billions ( ug/kg) so they were well below the acceptable limits for Nigeria.

Sample Extractions Before application of OSE II	Sample Extractions During Application of OSE II	Sample extractions After Application of OSE II
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Lab ID: J1400482-001  <b>Diesel Range Organics (C10 - C28) 0.943 mg/L</b> Benzene 0.36 ug/L	Lab ID: J1401327-001  <b>Diesel Range Organics (C10 - C28) 0.566 mg/L</b> Naphthalene 0.399 ug/L	Lab ID: J1402115-022  <b>Diesel Range Organics (C10 - C28) 0.699 mg/L</b>  Lab ID: J1402115-023 <b>Toluene 1.1 ug/L</b>
Lab ID: J1400482-002  <b>Diesel Range Organics (C10 - C28) 41.3 mg/L</b> Benzene 76 ug/L Ethylbenzene 69 ug/L m,p-Xylenes 220 ug/L o-Xylene 91 ug/L Toluene 80 ug/L 1-Methylnaphthalene 329	Lab ID: J1401327-002  Naphthalene 0.226 ug/L	Lab ID: J1402115-024  Diesel Range Organics (C10 - C28) 0.808 mg/L Ethylbenzene 0.21 ug/L m,p-Xylenes 0.35 ug/L o-Xylene 0.19 ug/L Toluene 0.25 ug/L Naphthalene 0.251 ug/L

ug/L 2-Methylnaphthalene 448 ug/L Naphthalene 118 ug/L Phenanthrene 108 ug/L		
Lab ID: J1400482-003 <b>Diesel Range Organics (C10 - C28) 5.39 mg/L</b> Benzene 1.8 ug/L Toluene 0.53 ug/L	<b>Lab ID: J1401327-003</b> Diesel Range Organics (C10 - C28) 1.25 mg/L Toluene 2.0 ug/L	<b>Lab ID: J1402115-025</b> Diesel Range Organics (C10 - C28) 0.747 mg/L <b>Lab ID: J1402115-025</b> Toluene 0.35 ug/L
Lab ID: J1400482-004 <b>Diesel Range Organics (C10 - C28) 3.97 mg/L</b> Benzene 2.2 ug/L o-Xylene 0.34 ug/L Toluene 1.9 ug/L	<b>Lab ID: J1401327-004</b> Diesel Range Organics (C10 - C28) 13.8 mg/L	<b>WS4 OD Lab ID: J1402115-026</b> Diesel Range Organics (C10 - C28) 0.745 mg/L
Lab ID: J1400482-005 <b>Diesel Range Organics (C10 - C28) 51.9 mg/L</b> Benzene 0.24 ug/L 1-Methylnaphthalene 72.2 ug/L 2-Methylnaphthalene 97.2 ug/L Acenaphthene 3.99 ug/L Fluorene 9.95 ug/L Naphthalene 7.01 ug/L Phenanthrene 20.9 ug/L	<b>Lab ID: J1401327-005</b> Diesel Range Organics (C10 - C28) 0.498 mg/L	
	<b>Lab ID: J1401327-006</b> Diesel Range Organics (C10 - C28) 0.336 mg/L	



January 09, 2014

Service Request No:J1307883

Lesi Maol  
Giolee Global Resources NIG Ltd  
18 UYO STREET RUMUMASI

### Laboratory Results for: SPILL RESPONSE@BRASS

Dear Lesi,

Enclosed are the results of the sample(s) submitted to our laboratory December 23, 2013  
For your reference, these analyses have been assigned our service request number **J1307883**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the NELAC 2003 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 4410. You may also contact me via email at [Jerry.Allen@alsglobal.com](mailto:Jerry.Allen@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

A handwritten signature in black ink, appearing to read "Jerry Allen".

Jerry Allen  
Project Manager

ADDRESS 9143 Philips Highway, Suite 200, Jacksonville, FL 32256

PHONE +1 904 739 2277 | FAX +1 904 739 2011

ALS Group USA, Corp.  
dba ALS Environmental



### SAMPLE DETECTION SUMMARY

CLIENT ID: SS1OD (0.0)m		Lab ID: J1307883-001					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		84		0.10	0.10	Percent	160.3
CLIENT ID: SS1OD (0-0.3)m		Lab ID: J1307883-002					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		52		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		226		7.00	19.1	mg/Kg	8015B
CLIENT ID: SSC1OD (0.0)m		Lab ID: J1307883-003					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		94		0.10	0.10	Percent	160.3
CLIENT ID: SSC1OD (0-0.3)m		Lab ID: J1307883-004					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		94		0.10	0.10	Percent	160.3
CLIENT ID: SS2OD (0.0)m		Lab ID: J1307883-005					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		58		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		444		6.19	16.9	mg/Kg	8015B
1-Methylnaphthalene		181		42.1	53.0	ug/Kg	8270C SIM
2-Methylnaphthalene		187		35.9	53.0	ug/Kg	8270C SIM
Phenanthrene		139		26.5	106	ug/Kg	8270C SIM
CLIENT ID: SS2OD (0.3)m		Lab ID: J1307883-006					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		28		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		145		13.8	37.5	mg/Kg	8015B
CLIENT ID: SS3OD (0.0)m		Lab ID: J1307883-007					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		55		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		1300		13.3	36.1	mg/Kg	8015B
1-Methylnaphthalene		923		47.9	60.2	ug/Kg	8270C SIM
2-Methylnaphthalene		1200		40.8	60.2	ug/Kg	8270C SIM
CLIENT ID: SS1HPD (0.0)m		Lab ID: J1307883-008					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		83		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		83.8		4.25	11.6	mg/Kg	8015B
CLIENT ID: SS1HPD (0-0.3)m		Lab ID: J1307883-009					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		79		0.10	0.10	Percent	160.3



### SAMPLE DETECTION SUMMARY

CLIENT ID: DSHP POINT A		Lab ID: J1307883-010					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		255		5.00	13.6	mg/Kg	8015B
CLIENT ID: DSTB POINT B		Lab ID: J1307883-011					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		571		8.20	22.4	mg/Kg	8015B
CLIENT ID: DSHP POINT C		Lab ID: J1307883-012					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		220		3.66	10.0	mg/Kg	8015B
Benz(a)anthracene		147		19.4	34.7	ug/Kg	8270C SIM
Benzo(a)pyrene		190		10.3	34.7	ug/Kg	8270C SIM
Benzo(b)fluoranthene		266		20.5	34.7	ug/Kg	8270C SIM
Benzo(g,h,i)perylene		112		22.5	34.7	ug/Kg	8270C SIM
Benzo(k)fluoranthene		106		24.5	34.7	ug/Kg	8270C SIM
Chrysene		281		19.4	34.7	ug/Kg	8270C SIM
Fluoranthene		195		20.5	34.7	ug/Kg	8270C SIM
Indeno(1,2,3-cd)pyrene		97.2		22.5	34.7	ug/Kg	8270C SIM
Phenanthrene		87.1		17.4	69.4	ug/Kg	8270C SIM
Pyrene		173		20.5	34.7	ug/Kg	8270C SIM
CLIENT ID: BOK		Lab ID: J1307883-013					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		59		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		17000		115	314	mg/Kg	8015B
Benzene		95.1	J	5.70	167	ug/Kg	8260B
Ethylbenzene		249		4.02	167	ug/Kg	8260B
m,p-Xylenes		1780		7.04	335	ug/Kg	8260B
o-Xylene		794		5.36	167	ug/Kg	8260B
Toluene		490		9.05	167	ug/Kg	8260B
1-Methylnaphthalene		3900		42.2	53.0	ug/Kg	8270C SIM
2-Methylnaphthalene		4610		35.9	53.0	ug/Kg	8270C SIM
Naphthalene		727		48.4	53.0	ug/Kg	8270C SIM



**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil

**Service Request:** J1307883  
**Date Received:** 12/23/13

## CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. When appropriate to the procedure, method blank results have been reported with each analytical test. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Parameters that are included in the NELAC Fields of Testing but are not included in the lab's NELAC accreditation are identified in the discussion of each analytical procedure.

### Sample Receipt

Thirteen soil samples were received for analysis at ALS Environmental on 12/23/2013. There was no discrepancy noted upon initial sample inspection. Samples arrived unbroken with identification attached. The cooler was within the required temperature, and only soil samples arrived.

The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at  $\leq 6^{\circ}\text{C}$  upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

### Volatile Organic Analyses:

Method 8260B: Samples were received within the holding time needed to complete the analysis within the recommended limit.

### Semi-Volatile Organic Analyses:

Method 8270 SIM: Samples were received within required holding time needed to complete the analysis within the recommended limit. The analysis was performed as soon as possible after receipt by the laboratory.

Method 8270 SIM: The reporting limit is elevated for analyte(s) in sample(s) J1307883-002, J1307883-005, J1307883-006, J1307883-007, J1307883-011, J1307883-012 and J1307883-013. The sample extract was diluted prior to instrumental analysis due to relatively high levels of non-target background components. The extract was highly colored and viscous, which indicated the need to perform a dilution prior to injection into the instrument.

Method 8270 SIM: The control criteria for all the surrogate(s) in sample J1307883-002, J1307883-005, J1307883-006, J1307883-007, J1307883-011, J1307883-012 and J1307883-013 are applicable. The analysis of the sample required a dilution, which resulted in a surrogate concentration below the Method Reporting Limit (MRL)..

Method 8015B DRO: Samples were received with sufficient holding time remaining to complete the analysis within the recommended limit. The analysis was performed as soon as possible after receipt by the laboratory.

Method 8015B DRO: The control criteria for the following surrogate(s) in sample J1307883-013 are applicable: o-Terphenyl. The analysis of the sample required a dilution, which resulted in a surrogate concentration within the Method Reporting Limit (MRL).

Method 8015B DRO: The reporting limit is elevated for analyte(s) in sample(s) J1307883-013. The sample extract was diluted

Approved by

Date 1/9/2014

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prior to instrumental analysis due to relatively high levels of non-target background components. The extract was highly colored and viscous, which indicated the need to perform a dilution prior to injection into the instrument. The result(s) is/are flagged to indicate the matrix interference.

**General Chemistry Analyses:**

No significant data anomalies were noted with this analysis.



## State Certifications, Accreditations, and Licenses

<b>Agency</b>	<b>Number</b>	<b>Expire Date</b>
Florida Department of Health	E82502	6/30/2014
North Carolina Department of Environment and Natural Resources	527	12/31/2014
Virginia Environmental Accreditation Program	460191	12/14/2014
Louisiana Department of Environmental Quality	02086	6/30/2014
Georgia Department of Natural Resources	958	6/30/2014
Kentucky Division of Waste Management	63	6/30/2014
South Carolina Department of Health and Environmental Control	96021001	6/30/2014
Texas Commission on Environmental Quality	T104704197-13-5	5/31/2014
Maine Department of Health and Human Services	2011006	2/3/2015
Department of Defense	66206	5/31/2014
Pennsylvania Department of Environmental Protection	68-04835	8/31/2014

## Data Qualifiers

### CAS Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section  $\geq 10\%$  front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte  $> 40\%$  difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

## **Data Qualifiers**

### **CAS Standard**

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
  - i The MRL/MDL has been elevated due to a matrix interference.

# ALS Laboratory Group

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS

**Service Request:**J1307883

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
J1307883-001	SS1OD (0.0)m	12/6/2013	1520
J1307883-002	SS1OD (0-0.3)m	12/6/2013	1522
J1307883-003	SSC1OD (0.0)m	12/7/2013	1612
J1307883-004	SSC1OD (0-0.3)m	12/7/2013	1612
J1307883-005	SS2OD (0.0)m	12/8/2013	1308
J1307883-006	SS2OD (0.3)m	12/8/2013	1308
J1307883-007	SS3OD (0.0)m	12/10/2013	1432
J1307883-008	SS1HPD (0.0)m	12/10/2013	0000
J1307883-009	SS1HPD (0-0.3)m	12/10/2013	0000
J1307883-010	DSHP POINT A	12/14/2013	0834
J1307883-011	DSTB POINT B	12/14/2013	0859
J1307883-012	DSHP POINT C	12/14/2013	0902
J1307883-013	BOK	12/14/2013	1359

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/06/13 15:20
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS1OD (0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-001	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.190 U	5.56	0.190	1	12/27/13 14:57	12/27/13	*
Ethylbenzene	0.134 U	5.56	0.134	1	12/27/13 14:57	12/27/13	*
m,p-Xylenes	0.234 U	11.1	0.234	1	12/27/13 14:57	12/27/13	*
o-Xylene	0.179 U	5.56	0.179	1	12/27/13 14:57	12/27/13	*
Toluene	0.301 U	5.56	0.301	1	12/27/13 14:57	12/27/13	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	98	80 - 120	12/27/13 14:57	
4-Bromofluorobenzene	99	64 - 135	12/27/13 14:57	
Dibromofluoromethane	106	74 - 125	12/27/13 14:57	
Toluene-d8	95	46 - 156	12/27/13 14:57	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
**Sample Name:** SS1OD (0.0)m  
**Lab Code:** J1307883-001

**Service Request:** J1307883  
**Date Collected:** 12/06/13 15:20  
**Date Received:** 12/23/13 13:00  
**Units:** ug/Kg  
**Basis:** Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	6.11 U	7.69	6.11	1	12/28/13 09:39	12/27/13	
2-Methylnaphthalene	5.20 U	7.69	5.20	1	12/28/13 09:39	12/27/13	
Acenaphthene	7.01 U	15.4	7.01	1	12/28/13 09:39	12/27/13	
Acenaphthylene	4.98 U	15.4	4.98	1	12/28/13 09:39	12/27/13	
Anthracene	3.62 U	7.69	3.62	1	12/28/13 09:39	12/27/13	
Benz(a)anthracene	4.30 U	7.69	4.30	1	12/28/13 09:39	12/27/13	
Benzo(a)pyrene	2.27 U	7.69	2.27	1	12/28/13 09:39	12/27/13	
Benzo(b)fluoranthene	4.53 U	7.69	4.53	1	12/28/13 09:39	12/27/13	
Benzo(g,h,i)perylene	4.98 U	7.69	4.98	1	12/28/13 09:39	12/27/13	
Benzo(k)fluoranthene	5.43 U	7.69	5.43	1	12/28/13 09:39	12/27/13	
Chrysene	4.30 U	7.69	4.30	1	12/28/13 09:39	12/27/13	
Dibenz(a,h)anthracene	6.11 U	7.69	6.11	1	12/28/13 09:39	12/27/13	
Fluoranthene	4.53 U	7.69	4.53	1	12/28/13 09:39	12/27/13	
Fluorene	4.98 U	7.69	4.98	1	12/28/13 09:39	12/27/13	
Indeno(1,2,3-cd)pyrene	4.98 U	7.69	4.98	1	12/28/13 09:39	12/27/13	
Naphthalene	7.01 U	7.69	7.01	1	12/28/13 09:39	12/27/13	
Phenanthrene	3.85 U	15.4	3.85	1	12/28/13 09:39	12/27/13	
Pyrene	4.53 U	7.69	4.53	1	12/28/13 09:39	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	69	30 - 118	12/28/13 09:39	
p-Terphenyl-d14	55	41 - 146	12/28/13 09:39	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1OD (0.0)m  
**Lab Code:** J1307883-001

**Service Request:** J1307883  
**Date Collected:** 12/06/13 15:20  
**Date Received:** 12/23/13 13:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	3.99 U	10.9	3.99	1	12/31/13 00:18	12/27/13	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	87	31 - 181	12/31/13 00:18	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1OD (0.0)m  
**Lab Code:** J1307883-001

**Service Request:** J1307883  
**Date Collected:** 12/06/13 15:20  
**Date Received:** 12/23/13 13:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	84	Percent	0.10	0.10	1	01/02/14 11:16	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/06/13 15:22
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS1OD (0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-002	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.322 U	9.45	0.322	1	12/27/13 15:22	12/27/13	*
Ethylbenzene	0.227 U	9.45	0.227	1	12/27/13 15:22	12/27/13	*
m,p-Xylenes	0.397 U	18.9	0.397	1	12/27/13 15:22	12/27/13	*
o-Xylene	0.303 U	9.45	0.303	1	12/27/13 15:22	12/27/13	*
Toluene	0.511 U	9.45	0.511	1	12/27/13 15:22	12/27/13	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	109	80 - 120	12/27/13 15:22	
4-Bromofluorobenzene	104	64 - 135	12/27/13 15:22	
Dibromofluoromethane	109	74 - 125	12/27/13 15:22	
Toluene-d8	97	46 - 156	12/27/13 15:22	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/06/13 15:22
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS1OD (0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-002	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	53.0 U	66.7	53.0	5	12/28/13 10:04	12/27/13	
2-Methylnaphthalene	45.2 U	66.7	45.2	5	12/28/13 10:04	12/27/13	
Acenaphthene	60.9 U	133	60.9	5	12/28/13 10:04	12/27/13	
Acenaphthylene	43.2 U	133	43.2	5	12/28/13 10:04	12/27/13	
Anthracene	31.4 U	66.7	31.4	5	12/28/13 10:04	12/27/13	
Benz(a)anthracene	37.3 U	66.7	37.3	5	12/28/13 10:04	12/27/13	
Benzo(a)pyrene	19.7 U	66.7	19.7	5	12/28/13 10:04	12/27/13	
Benzo(b)fluoranthene	39.3 U	66.7	39.3	5	12/28/13 10:04	12/27/13	
Benzo(g,h,i)perylene	43.2 U	66.7	43.2	5	12/28/13 10:04	12/27/13	
Benzo(k)fluoranthene	47.1 U	66.7	47.1	5	12/28/13 10:04	12/27/13	
Chrysene	37.3 U	66.7	37.3	5	12/28/13 10:04	12/27/13	
Dibenz(a,h)anthracene	53.0 U	66.7	53.0	5	12/28/13 10:04	12/27/13	
Fluoranthene	39.3 U	66.7	39.3	5	12/28/13 10:04	12/27/13	
Fluorene	43.2 U	66.7	43.2	5	12/28/13 10:04	12/27/13	
Indeno(1,2,3-cd)pyrene	43.2 U	66.7	43.2	5	12/28/13 10:04	12/27/13	
Naphthalene	60.9 U	66.7	60.9	5	12/28/13 10:04	12/27/13	
Phenanthrene	33.4 U	133	33.4	5	12/28/13 10:04	12/27/13	
Pyrene	39.3 U	66.7	39.3	5	12/28/13 10:04	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	73	30 - 118	12/28/13 10:04	
p-Terphenyl-d14	72	41 - 146	12/28/13 10:04	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1OD (0-0.3)m  
**Lab Code:** J1307883-002

**Service Request:** J1307883  
**Date Collected:** 12/06/13 15:22  
**Date Received:** 12/23/13 13:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	226	19.1	7.00	1	12/31/13 00:46	12/27/13	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	95	31 - 181	12/31/13 00:46	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1OD (0-0.3)m  
**Lab Code:** J1307883-002

**Service Request:** J1307883  
**Date Collected:** 12/06/13 15:22  
**Date Received:** 12/23/13 13:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	52	Percent	0.10	0.10	1	01/02/14 11:16	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/07/13 16:12
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SSC1OD (0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-003	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.172 U	5.06	0.172	1	12/27/13 15:48	12/27/13	*
Ethylbenzene	0.122 U	5.06	0.122	1	12/27/13 15:48	12/27/13	*
m,p-Xylenes	0.213 U	10.1	0.213	1	12/27/13 15:48	12/27/13	*
o-Xylene	0.162 U	5.06	0.162	1	12/27/13 15:48	12/27/13	*
Toluene	0.274 U	5.06	0.274	1	12/27/13 15:48	12/27/13	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	80 - 120	12/27/13 15:48	
4-Bromofluorobenzene	95	64 - 135	12/27/13 15:48	
Dibromofluoromethane	109	74 - 125	12/27/13 15:48	
Toluene-d8	96	46 - 156	12/27/13 15:48	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/07/13 16:12
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SSC1OD (0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-003	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	5.64 U	7.09	5.64	1	12/28/13 10:28	12/27/13	
2-Methylnaphthalene	4.80 U	7.09	4.80	1	12/28/13 10:28	12/27/13	
Acenaphthene	6.47 U	14.2	6.47	1	12/28/13 10:28	12/27/13	
Acenaphthylene	4.59 U	14.2	4.59	1	12/28/13 10:28	12/27/13	
Anthracene	3.34 U	7.09	3.34	1	12/28/13 10:28	12/27/13	
Benz(a)anthracene	3.97 U	7.09	3.97	1	12/28/13 10:28	12/27/13	
Benzo(a)pyrene	2.09 U	7.09	2.09	1	12/28/13 10:28	12/27/13	
Benzo(b)fluoranthene	4.18 U	7.09	4.18	1	12/28/13 10:28	12/27/13	
Benzo(g,h,i)perylene	4.59 U	7.09	4.59	1	12/28/13 10:28	12/27/13	
Benzo(k)fluoranthene	5.01 U	7.09	5.01	1	12/28/13 10:28	12/27/13	
Chrysene	3.97 U	7.09	3.97	1	12/28/13 10:28	12/27/13	
Dibenz(a,h)anthracene	5.64 U	7.09	5.64	1	12/28/13 10:28	12/27/13	
Fluoranthene	4.18 U	7.09	4.18	1	12/28/13 10:28	12/27/13	
Fluorene	4.59 U	7.09	4.59	1	12/28/13 10:28	12/27/13	
Indeno(1,2,3-cd)pyrene	4.59 U	7.09	4.59	1	12/28/13 10:28	12/27/13	
Naphthalene	6.47 U	7.09	6.47	1	12/28/13 10:28	12/27/13	
Phenanthrene	3.55 U	14.2	3.55	1	12/28/13 10:28	12/27/13	
Pyrene	4.18 U	7.09	4.18	1	12/28/13 10:28	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	75	30 - 118	12/28/13 10:28	
p-Terphenyl-d14	75	41 - 146	12/28/13 10:28	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SSC1OD (0.0)m  
**Lab Code:** J1307883-003

**Service Request:** J1307883  
**Date Collected:** 12/07/13 16:12  
**Date Received:** 12/23/13 13:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	3.85 U	10.5	3.85	1	12/31/13 01:13	12/27/13	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	96	31 - 181	12/31/13 01:13	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SSC1OD (0.0)m  
**Lab Code:** J1307883-003

**Service Request:** J1307883  
**Date Collected:** 12/07/13 16:12  
**Date Received:** 12/23/13 13:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	94	Percent	0.10	0.10	1	01/02/14 11:16	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1307883  
**Project:** SPILL RESPONSE@BRASS      **Date Collected:** 12/07/13 16:12  
**Sample Matrix:** Soil      **Date Received:** 12/23/13 13:00  
  
**Sample Name:** SSC1OD (0-0.3)m      **Units:** ug/Kg  
**Lab Code:** J1307883-004      **Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.170 U	4.77	0.170	1	12/27/13 16:13	12/27/13	*
Ethylbenzene	0.120 U	4.77	0.120	1	12/27/13 16:13	12/27/13	*
m,p-Xylenes	0.210 U	9.53	0.210	1	12/27/13 16:13	12/27/13	*
o-Xylene	0.160 U	4.77	0.160	1	12/27/13 16:13	12/27/13	*
Toluene	0.270 U	4.77	0.270	1	12/27/13 16:13	12/27/13	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	101	80 - 120	12/27/13 16:13	
4-Bromofluorobenzene	96	64 - 135	12/27/13 16:13	
Dibromofluoromethane	106	74 - 125	12/27/13 16:13	
Toluene-d8	95	46 - 156	12/27/13 16:13	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/07/13 16:12
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SSC1OD (0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-004	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	5.53 U	6.96	5.53	1	12/28/13 10:53	12/27/13	
2-Methylnaphthalene	4.71 U	6.96	4.71	1	12/28/13 10:53	12/27/13	
Acenaphthene	6.35 U	13.9	6.35	1	12/28/13 10:53	12/27/13	
Acenaphthylene	4.51 U	13.9	4.51	1	12/28/13 10:53	12/27/13	
Anthracene	3.28 U	6.96	3.28	1	12/28/13 10:53	12/27/13	
Benz(a)anthracene	3.89 U	6.96	3.89	1	12/28/13 10:53	12/27/13	
Benzo(a)pyrene	2.05 U	6.96	2.05	1	12/28/13 10:53	12/27/13	
Benzo(b)fluoranthene	4.10 U	6.96	4.10	1	12/28/13 10:53	12/27/13	
Benzo(g,h,i)perylene	4.51 U	6.96	4.51	1	12/28/13 10:53	12/27/13	
Benzo(k)fluoranthene	4.91 U	6.96	4.91	1	12/28/13 10:53	12/27/13	
Chrysene	3.89 U	6.96	3.89	1	12/28/13 10:53	12/27/13	
Dibenz(a,h)anthracene	5.53 U	6.96	5.53	1	12/28/13 10:53	12/27/13	
Fluoranthene	4.10 U	6.96	4.10	1	12/28/13 10:53	12/27/13	
Fluorene	4.51 U	6.96	4.51	1	12/28/13 10:53	12/27/13	
Indeno(1,2,3-cd)pyrene	4.51 U	6.96	4.51	1	12/28/13 10:53	12/27/13	
Naphthalene	6.35 U	6.96	6.35	1	12/28/13 10:53	12/27/13	
Phenanthrene	3.48 U	13.9	3.48	1	12/28/13 10:53	12/27/13	
Pyrene	4.10 U	6.96	4.10	1	12/28/13 10:53	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	82	30 - 118	12/28/13 10:53	
p-Terphenyl-d14	96	41 - 146	12/28/13 10:53	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SSC1OD (0-0.3)m  
**Lab Code:** J1307883-004

**Service Request:** J1307883  
**Date Collected:** 12/07/13 16:12  
**Date Received:** 12/23/13 13:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	3.92 U	10.7	3.92	1	12/31/13 01:40	12/27/13	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	90	31 - 181	12/31/13 01:40	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SSC1OD (0-0.3)m  
**Lab Code:** J1307883-004

**Service Request:** J1307883  
**Date Collected:** 12/07/13 16:12  
**Date Received:** 12/23/13 13:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	94	Percent	0.10	0.10	1	01/02/14 11:16	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/08/13 13:08
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS2OD (0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-005	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.281 U	8.26	0.281	1	12/27/13 16:39	12/27/13	*
Ethylbenzene	0.199 U	8.26	0.199	1	12/27/13 16:39	12/27/13	*
m,p-Xylenes	0.347 U	16.5	0.347	1	12/27/13 16:39	12/27/13	*
o-Xylene	0.265 U	8.26	0.265	1	12/27/13 16:39	12/27/13	*
Toluene	0.446 U	8.26	0.446	1	12/27/13 16:39	12/27/13	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	107	80 - 120	12/27/13 16:39	
4-Bromofluorobenzene	120	64 - 135	12/27/13 16:39	
Dibromofluoromethane	109	74 - 125	12/27/13 16:39	
Toluene-d8	99	46 - 156	12/27/13 16:39	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/08/13 13:08
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS2OD (0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-005	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	<b>181</b>	53.0	42.1	5	12/28/13 11:18	12/27/13	
2-Methylnaphthalene	<b>187</b>	53.0	35.9	5	12/28/13 11:18	12/27/13	
Acenaphthene	48.3 U	106	48.3	5	12/28/13 11:18	12/27/13	
Acenaphthylene	34.3 U	106	34.3	5	12/28/13 11:18	12/27/13	
Anthracene	25.0 U	53.0	25.0	5	12/28/13 11:18	12/27/13	
Benz(a)anthracene	29.7 U	53.0	29.7	5	12/28/13 11:18	12/27/13	
Benzo(a)pyrene	15.6 U	53.0	15.6	5	12/28/13 11:18	12/27/13	
Benzo(b)fluoranthene	31.2 U	53.0	31.2	5	12/28/13 11:18	12/27/13	
Benzo(g,h,i)perylene	34.3 U	53.0	34.3	5	12/28/13 11:18	12/27/13	
Benzo(k)fluoranthene	37.4 U	53.0	37.4	5	12/28/13 11:18	12/27/13	
Chrysene	29.7 U	53.0	29.7	5	12/28/13 11:18	12/27/13	
Dibenz(a,h)anthracene	42.1 U	53.0	42.1	5	12/28/13 11:18	12/27/13	
Fluoranthene	31.2 U	53.0	31.2	5	12/28/13 11:18	12/27/13	
Fluorene	34.3 U	53.0	34.3	5	12/28/13 11:18	12/27/13	
Indeno(1,2,3-cd)pyrene	34.3 U	53.0	34.3	5	12/28/13 11:18	12/27/13	
Naphthalene	48.3 U	53.0	48.3	5	12/28/13 11:18	12/27/13	
Phenanthrene	<b>139</b>	106	26.5	5	12/28/13 11:18	12/27/13	
Pyrene	31.2 U	53.0	31.2	5	12/28/13 11:18	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	85	30 - 118	12/28/13 11:18	
p-Terphenyl-d14	93	41 - 146	12/28/13 11:18	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS2OD (0.0)m  
**Lab Code:** J1307883-005

**Service Request:** J1307883  
**Date Collected:** 12/08/13 13:08  
**Date Received:** 12/23/13 13:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	444	16.9	6.19	1	12/31/13 02:08	12/27/13	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	104	31 - 181	12/31/13 02:08	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS2OD (0.0)m  
**Lab Code:** J1307883-005

**Service Request:** J1307883  
**Date Collected:** 12/08/13 13:08  
**Date Received:** 12/23/13 13:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	58	Percent	0.10	0.10	1	01/02/14 11:16	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/08/13 13:08
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS2OD (0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-006	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.605 U	17.8	0.605	1	12/27/13 17:04	12/27/13	*
Ethylbenzene	0.427 U	17.8	0.427	1	12/27/13 17:04	12/27/13	*
m,p-Xylenes	0.748 U	35.6	0.748	1	12/27/13 17:04	12/27/13	*
o-Xylene	0.570 U	17.8	0.570	1	12/27/13 17:04	12/27/13	*
Toluene	0.961 U	17.8	0.961	1	12/27/13 17:04	12/27/13	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	106	80 - 120	12/27/13 17:04	
4-Bromofluorobenzene	101	64 - 135	12/27/13 17:04	
Dibromofluoromethane	108	74 - 125	12/27/13 17:04	
Toluene-d8	98	46 - 156	12/27/13 17:04	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/08/13 13:08
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS2OD (0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-006	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	86.7 U	109	86.7	5	12/30/13 05:45	12/27/13	
2-Methylnaphthalene	73.8 U	109	73.8	5	12/30/13 05:45	12/27/13	
Acenaphthene	99.5 U	218	99.5	5	12/30/13 05:45	12/27/13	
Acenaphthylene	70.6 U	218	70.6	5	12/30/13 05:45	12/27/13	
Anthracene	51.4 U	109	51.4	5	12/30/13 05:45	12/27/13	
Benz(a)anthracene	61.0 U	109	61.0	5	12/30/13 05:45	12/27/13	
Benzo(a)pyrene	32.1 U	109	32.1	5	12/30/13 05:45	12/27/13	
Benzo(b)fluoranthene	64.2 U	109	64.2	5	12/30/13 05:45	12/27/13	
Benzo(g,h,i)perylene	70.6 U	109	70.6	5	12/30/13 05:45	12/27/13	
Benzo(k)fluoranthene	77.0 U	109	77.0	5	12/30/13 05:45	12/27/13	
Chrysene	61.0 U	109	61.0	5	12/30/13 05:45	12/27/13	
Dibenz(a,h)anthracene	86.7 U	109	86.7	5	12/30/13 05:45	12/27/13	
Fluoranthene	64.2 U	109	64.2	5	12/30/13 05:45	12/27/13	
Fluorene	70.6 U	109	70.6	5	12/30/13 05:45	12/27/13	
Indeno(1,2,3-cd)pyrene	70.6 U	109	70.6	5	12/30/13 05:45	12/27/13	
Naphthalene	99.5 U	109	99.5	5	12/30/13 05:45	12/27/13	
Phenanthrene	54.6 U	218	54.6	5	12/30/13 05:45	12/27/13	
Pyrene	64.2 U	109	64.2	5	12/30/13 05:45	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	77	30 - 118	12/30/13 05:45	
p-Terphenyl-d14	37	41 - 146	12/30/13 05:45	*

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS2OD (0.3)m  
**Lab Code:** J1307883-006

**Service Request:** J1307883  
**Date Collected:** 12/08/13 13:08  
**Date Received:** 12/23/13 13:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	145	37.5	13.8	1	12/31/13 02:35	12/27/13	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	86	31 - 181	12/31/13 02:35	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS2OD (0.3)m  
**Lab Code:** J1307883-006

**Service Request:** J1307883  
**Date Collected:** 12/08/13 13:08  
**Date Received:** 12/23/13 13:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	28	Percent	0.10	0.10	1	01/02/14 11:16	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/10/13 14:32
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS3OD (0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-007	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.307 U	9.02	0.307	1	12/27/13 17:30	12/27/13	*
Ethylbenzene	0.217 U	9.02	0.217	1	12/27/13 17:30	12/27/13	*
m,p-Xylenes	0.379 U	18.0	0.379	1	12/27/13 17:30	12/27/13	*
o-Xylene	0.289 U	9.02	0.289	1	12/27/13 17:30	12/27/13	*
Toluene	0.488 U	9.02	0.488	1	12/27/13 17:30	12/27/13	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	108	80 - 120	12/27/13 17:30	
4-Bromofluorobenzene	116	64 - 135	12/27/13 17:30	
Dibromofluoromethane	113	74 - 125	12/27/13 17:30	
Toluene-d8	99	46 - 156	12/27/13 17:30	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/10/13 14:32
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS3OD (0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-007	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	923	60.2	47.9	5	12/28/13 12:08	12/27/13	
2-Methylnaphthalene	1200	60.2	40.8	5	12/28/13 12:08	12/27/13	
Acenaphthene	54.9 U	120	54.9	5	12/28/13 12:08	12/27/13	
Acenaphthylene	39.0 U	120	39.0	5	12/28/13 12:08	12/27/13	
Anthracene	28.4 U	60.2	28.4	5	12/28/13 12:08	12/27/13	
Benz(a)anthracene	33.7 U	60.2	33.7	5	12/28/13 12:08	12/27/13	
Benzo(a)pyrene	17.8 U	60.2	17.8	5	12/28/13 12:08	12/27/13	
Benzo(b)fluoranthene	35.5 U	60.2	35.5	5	12/28/13 12:08	12/27/13	
Benzo(g,h,i)perylene	39.0 U	60.2	39.0	5	12/28/13 12:08	12/27/13	
Benzo(k)fluoranthene	42.6 U	60.2	42.6	5	12/28/13 12:08	12/27/13	
Chrysene	33.7 U	60.2	33.7	5	12/28/13 12:08	12/27/13	
Dibenz(a,h)anthracene	47.9 U	60.2	47.9	5	12/28/13 12:08	12/27/13	
Fluoranthene	35.5 U	60.2	35.5	5	12/28/13 12:08	12/27/13	
Fluorene	39.0 U	60.2	39.0	5	12/28/13 12:08	12/27/13	
Indeno(1,2,3-cd)pyrene	39.0 U	60.2	39.0	5	12/28/13 12:08	12/27/13	
Naphthalene	54.9 U	60.2	54.9	5	12/28/13 12:08	12/27/13	
Phenanthrene	30.2 U	120	30.2	5	12/28/13 12:08	12/27/13	
Pyrene	35.5 U	60.2	35.5	5	12/28/13 12:08	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	75	30 - 118	12/28/13 12:08	
p-Terphenyl-d14	59	41 - 146	12/28/13 12:08	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
**Sample Name:** SS3OD (0.0)m  
**Lab Code:** J1307883-007

**Service Request:** J1307883  
**Date Collected:** 12/10/13 14:32  
**Date Received:** 12/23/13 13:00  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	1300	36.1	13.3	2	12/31/13 18:22	12/27/13	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	119	31 - 181	12/31/13 18:22	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS3OD (0.0)m  
**Lab Code:** J1307883-007

**Service Request:** J1307883  
**Date Collected:** 12/10/13 14:32  
**Date Received:** 12/23/13 13:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	55	Percent	0.10	0.10	1	01/02/14 11:16	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/10/13 00:00
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS1HPD (0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-008	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.201 U	5.88	0.201	1	12/27/13 17:55	12/27/13	*
Ethylbenzene	0.142 U	5.88	0.142	1	12/27/13 17:55	12/27/13	*
m,p-Xylenes	0.248 U	11.8	0.248	1	12/27/13 17:55	12/27/13	*
o-Xylene	0.189 U	5.88	0.189	1	12/27/13 17:55	12/27/13	*
Toluene	0.318 U	5.88	0.318	1	12/27/13 17:55	12/27/13	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	99	80 - 120	12/27/13 17:55	
4-Bromofluorobenzene	96	64 - 135	12/27/13 17:55	
Dibromofluoromethane	104	74 - 125	12/27/13 17:55	
Toluene-d8	97	46 - 156	12/27/13 17:55	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/10/13 00:00
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS1HPD (0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-008	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	6.14 U	7.73	6.14	1	12/28/13 12:32	12/27/13	
2-Methylnaphthalene	5.23 U	7.73	5.23	1	12/28/13 12:32	12/27/13	
Acenaphthene	7.05 U	15.5	7.05	1	12/28/13 12:32	12/27/13	
Acenaphthylene	5.01 U	15.5	5.01	1	12/28/13 12:32	12/27/13	
Anthracene	3.64 U	7.73	3.64	1	12/28/13 12:32	12/27/13	
Benz(a)anthracene	4.32 U	7.73	4.32	1	12/28/13 12:32	12/27/13	
Benzo(a)pyrene	2.28 U	7.73	2.28	1	12/28/13 12:32	12/27/13	
Benzo(b)fluoranthene	4.55 U	7.73	4.55	1	12/28/13 12:32	12/27/13	
Benzo(g,h,i)perylene	5.01 U	7.73	5.01	1	12/28/13 12:32	12/27/13	
Benzo(k)fluoranthene	5.46 U	7.73	5.46	1	12/28/13 12:32	12/27/13	
Chrysene	4.32 U	7.73	4.32	1	12/28/13 12:32	12/27/13	
Dibenz(a,h)anthracene	6.14 U	7.73	6.14	1	12/28/13 12:32	12/27/13	
Fluoranthene	4.55 U	7.73	4.55	1	12/28/13 12:32	12/27/13	
Fluorene	5.01 U	7.73	5.01	1	12/28/13 12:32	12/27/13	
Indeno(1,2,3-cd)pyrene	5.01 U	7.73	5.01	1	12/28/13 12:32	12/27/13	
Naphthalene	7.05 U	7.73	7.05	1	12/28/13 12:32	12/27/13	
Phenanthrene	3.87 U	15.5	3.87	1	12/28/13 12:32	12/27/13	
Pyrene	4.55 U	7.73	4.55	1	12/28/13 12:32	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	68	30 - 118	12/28/13 12:32	
p-Terphenyl-d14	96	41 - 146	12/28/13 12:32	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1HPD (0.0)m  
**Lab Code:** J1307883-008

**Service Request:** J1307883  
**Date Collected:** 12/10/13 00:00  
**Date Received:** 12/23/13 13:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	83.8	11.6	4.25	1	12/31/13 04:25	12/27/13	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	92	31 - 181	12/31/13 04:25	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1HPD (0.0)m  
**Lab Code:** J1307883-008

**Service Request:** J1307883  
**Date Collected:** 12/10/13 00:00  
**Date Received:** 12/23/13 13:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	83	Percent	0.10	0.10	1	01/02/14 11:16	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/10/13 00:00
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS1HPD (0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-009	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.196 U	5.74	0.196	1	12/27/13 18:21	12/27/13	*
Ethylbenzene	0.138 U	5.74	0.138	1	12/27/13 18:21	12/27/13	*
m,p-Xylenes	0.242 U	11.5	0.242	1	12/27/13 18:21	12/27/13	*
o-Xylene	0.184 U	5.74	0.184	1	12/27/13 18:21	12/27/13	*
Toluene	0.311 U	5.74	0.311	1	12/27/13 18:21	12/27/13	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	101	80 - 120	12/27/13 18:21	
4-Bromofluorobenzene	96	64 - 135	12/27/13 18:21	
Dibromofluoromethane	108	74 - 125	12/27/13 18:21	
Toluene-d8	97	46 - 156	12/27/13 18:21	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/10/13 00:00
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	SS1HPD (0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-009	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	6.98 U	8.78	6.98	1	12/28/13 12:57	12/27/13	
2-Methylnaphthalene	5.95 U	8.78	5.95	1	12/28/13 12:57	12/27/13	
Acenaphthene	8.01 U	17.6	8.01	1	12/28/13 12:57	12/27/13	
Acenaphthylene	5.69 U	17.6	5.69	1	12/28/13 12:57	12/27/13	
Anthracene	4.14 U	8.78	4.14	1	12/28/13 12:57	12/27/13	
Benz(a)anthracene	4.91 U	8.78	4.91	1	12/28/13 12:57	12/27/13	
Benzo(a)pyrene	2.59 U	8.78	2.59	1	12/28/13 12:57	12/27/13	
Benzo(b)fluoranthene	5.17 U	8.78	5.17	1	12/28/13 12:57	12/27/13	
Benzo(g,h,i)perylene	5.69 U	8.78	5.69	1	12/28/13 12:57	12/27/13	
Benzo(k)fluoranthene	6.20 U	8.78	6.20	1	12/28/13 12:57	12/27/13	
Chrysene	4.91 U	8.78	4.91	1	12/28/13 12:57	12/27/13	
Dibenz(a,h)anthracene	6.98 U	8.78	6.98	1	12/28/13 12:57	12/27/13	
Fluoranthene	5.17 U	8.78	5.17	1	12/28/13 12:57	12/27/13	
Fluorene	5.69 U	8.78	5.69	1	12/28/13 12:57	12/27/13	
Indeno(1,2,3-cd)pyrene	5.69 U	8.78	5.69	1	12/28/13 12:57	12/27/13	
Naphthalene	8.01 U	8.78	8.01	1	12/28/13 12:57	12/27/13	
Phenanthrene	4.40 U	17.6	4.40	1	12/28/13 12:57	12/27/13	
Pyrene	5.17 U	8.78	5.17	1	12/28/13 12:57	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	77	30 - 118	12/28/13 12:57	
p-Terphenyl-d14	77	41 - 146	12/28/13 12:57	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1HPD (0-0.3)m  
**Lab Code:** J1307883-009

**Service Request:** J1307883  
**Date Collected:** 12/10/13 00:00  
**Date Received:** 12/23/13 13:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	4.38 U	11.9	4.38	1	12/31/13 04:52	12/27/13	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	96	31 - 181	12/31/13 04:52	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1HPD (0-0.3)m  
**Lab Code:** J1307883-009

**Service Request:** J1307883  
**Date Collected:** 12/10/13 00:00  
**Date Received:** 12/23/13 13:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	79	Percent	0.10	0.10	1	01/02/14 11:16	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** DSHP POINT A  
**Lab Code:** J1307883-010

**Service Request:** J1307883  
**Date Collected:** 12/14/13 08:34  
**Date Received:** 12/23/13 13:00  
  
**Units:** ug/Kg  
**Basis:** As Received

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	1.64 U	48.1	1.64	1	12/27/13 18:46	12/27/13	
Ethylbenzene	1.16 U	48.1	1.16	1	12/27/13 18:46	12/27/13	
m,p-Xylenes	2.02 U	96.2	2.02	1	12/27/13 18:46	12/27/13	
o-Xylene	1.54 U	48.1	1.54	1	12/27/13 18:46	12/27/13	
Toluene	2.60 U	48.1	2.60	1	12/27/13 18:46	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	104	80 - 120	12/27/13 18:46	
4-Bromofluorobenzene	95	64 - 135	12/27/13 18:46	
Dibromofluoromethane	110	74 - 125	12/27/13 18:46	
Toluene-d8	97	46 - 156	12/27/13 18:46	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/14/13 08:34
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	DSHP POINT A	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-010	<b>Basis:</b>	As Received

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	11.8 U	14.8	11.8	1	12/28/13 02:31	12/27/13	
2-Methylnaphthalene	10.0 U	14.8	10.0	1	12/28/13 02:31	12/27/13	
Acenaphthene	13.5 U	29.6	13.5	1	12/28/13 02:31	12/27/13	
Acenaphthylene	9.57 U	29.6	9.57	1	12/28/13 02:31	12/27/13	
Anthracene	6.96 U	14.8	6.96	1	12/28/13 02:31	12/27/13	
Benz(a)anthracene	8.27 U	14.8	8.27	1	12/28/13 02:31	12/27/13	
Benzo(a)pyrene	4.35 U	14.8	4.35	1	12/28/13 02:31	12/27/13	
Benzo(b)fluoranthene	8.70 U	14.8	8.70	1	12/28/13 02:31	12/27/13	
Benzo(g,h,i)perylene	9.57 U	14.8	9.57	1	12/28/13 02:31	12/27/13	
Benzo(k)fluoranthene	10.5 U	14.8	10.5	1	12/28/13 02:31	12/27/13	
Chrysene	8.27 U	14.8	8.27	1	12/28/13 02:31	12/27/13	
Dibenz(a,h)anthracene	11.8 U	14.8	11.8	1	12/28/13 02:31	12/27/13	
Fluoranthene	8.70 U	14.8	8.70	1	12/28/13 02:31	12/27/13	
Fluorene	9.57 U	14.8	9.57	1	12/28/13 02:31	12/27/13	
Indeno(1,2,3-cd)pyrene	9.57 U	14.8	9.57	1	12/28/13 02:31	12/27/13	
Naphthalene	13.5 U	14.8	13.5	1	12/28/13 02:31	12/27/13	
Phenanthrene	7.40 U	29.6	7.40	1	12/28/13 02:31	12/27/13	
Pyrene	8.70 U	14.8	8.70	1	12/28/13 02:31	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	74	30 - 118	12/28/13 02:31	
p-Terphenyl-d14	54	41 - 146	12/28/13 02:31	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1307883  
**Project:** SPILL RESPONSE@BRASS      **Date Collected:** 12/14/13 08:34  
**Sample Matrix:** Soil      **Date Received:** 12/23/13 13:00  
  
**Sample Name:** DSHP POINT A      **Units:** mg/Kg  
**Lab Code:** J1307883-010      **Basis:** As Received

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	255	13.6	5.00	1	12/31/13 05:19	12/27/13	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	87	31 - 181	12/31/13 05:19	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1307883  
**Project:** SPILL RESPONSE@BRASS      **Date Collected:** 12/14/13 08:59  
**Sample Matrix:** Soil      **Date Received:** 12/23/13 13:00  
  
**Sample Name:** DSTB POINT B      **Units:** ug/Kg  
**Lab Code:** J1307883-011      **Basis:** As Received

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.205 U	6.01	0.205	1	12/27/13 19:12	12/27/13	
Ethylbenzene	0.145 U	6.01	0.145	1	12/27/13 19:12	12/27/13	
m,p-Xylenes	0.253 U	12.0	0.253	1	12/27/13 19:12	12/27/13	
o-Xylene	0.193 U	6.01	0.193	1	12/27/13 19:12	12/27/13	
Toluene	0.325 U	6.01	0.325	1	12/27/13 19:12	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	100	80 - 120	12/27/13 19:12	
4-Bromofluorobenzene	96	64 - 135	12/27/13 19:12	
Dibromofluoromethane	105	74 - 125	12/27/13 19:12	
Toluene-d8	97	46 - 156	12/27/13 19:12	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/14/13 08:59
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	DSTB POINT B	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-011	<b>Basis:</b>	As Received

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	26.5 U	33.3	26.5	5	12/28/13 02:56	12/27/13	
2-Methylnaphthalene	22.6 U	33.3	22.6	5	12/28/13 02:56	12/27/13	
Acenaphthene	30.4 U	66.7	30.4	5	12/28/13 02:56	12/27/13	
Acenaphthylene	21.6 U	66.7	21.6	5	12/28/13 02:56	12/27/13	
Anthracene	15.7 U	33.3	15.7	5	12/28/13 02:56	12/27/13	
Benz(a)anthracene	18.7 U	33.3	18.7	5	12/28/13 02:56	12/27/13	
Benzo(a)pyrene	9.81 U	33.3	9.81	5	12/28/13 02:56	12/27/13	
Benzo(b)fluoranthene	19.7 U	33.3	19.7	5	12/28/13 02:56	12/27/13	
Benzo(g,h,i)perylene	21.6 U	33.3	21.6	5	12/28/13 02:56	12/27/13	
Benzo(k)fluoranthene	23.6 U	33.3	23.6	5	12/28/13 02:56	12/27/13	
Chrysene	18.7 U	33.3	18.7	5	12/28/13 02:56	12/27/13	
Dibenz(a,h)anthracene	26.5 U	33.3	26.5	5	12/28/13 02:56	12/27/13	
Fluoranthene	19.7 U	33.3	19.7	5	12/28/13 02:56	12/27/13	
Fluorene	21.6 U	33.3	21.6	5	12/28/13 02:56	12/27/13	
Indeno(1,2,3-cd)pyrene	21.6 U	33.3	21.6	5	12/28/13 02:56	12/27/13	
Naphthalene	30.4 U	33.3	30.4	5	12/28/13 02:56	12/27/13	
Phenanthrene	16.7 U	66.7	16.7	5	12/28/13 02:56	12/27/13	
Pyrene	19.7 U	33.3	19.7	5	12/28/13 02:56	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	57	30 - 118	12/28/13 02:56	
p-Terphenyl-d14	35	41 - 146	12/28/13 02:56	*

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
**Sample Name:** DSTB POINT B  
**Lab Code:** J1307883-011

**Service Request:** J1307883  
**Date Collected:** 12/14/13 08:59  
**Date Received:** 12/23/13 13:00  
**Units:** mg/Kg  
**Basis:** As Received

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	571	22.4	8.20	2	12/31/13 18:49	12/27/13	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	77	31 - 181	12/31/13 18:49	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
**Sample Name:** DSHP POINT C  
**Lab Code:** J1307883-012

**Service Request:** J1307883  
**Date Collected:** 12/14/13 09:02  
**Date Received:** 12/23/13 13:00  
**Units:** ug/Kg  
**Basis:** As Received

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.170 U	4.92	0.170	1	12/27/13 19:37	12/27/13	
Ethylbenzene	0.120 U	4.92	0.120	1	12/27/13 19:37	12/27/13	
m,p-Xylenes	0.210 U	9.84	0.210	1	12/27/13 19:37	12/27/13	
o-Xylene	0.160 U	4.92	0.160	1	12/27/13 19:37	12/27/13	
Toluene	0.270 U	4.92	0.270	1	12/27/13 19:37	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	99	80 - 120	12/27/13 19:37	
4-Bromofluorobenzene	97	64 - 135	12/27/13 19:37	
Dibromofluoromethane	104	74 - 125	12/27/13 19:37	
Toluene-d8	96	46 - 156	12/27/13 19:37	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/14/13 09:02
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	DSHP POINT C	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-012	<b>Basis:</b>	As Received

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	27.6 U	34.7	27.6	5	12/30/13 06:09	12/27/13	
2-Methylnaphthalene	23.5 U	34.7	23.5	5	12/30/13 06:09	12/27/13	
Acenaphthene	31.7 U	69.4	31.7	5	12/30/13 06:09	12/27/13	
Acenaphthylene	22.5 U	69.4	22.5	5	12/30/13 06:09	12/27/13	
Anthracene	16.4 U	34.7	16.4	5	12/30/13 06:09	12/27/13	
Benz(a)anthracene	<b>147</b>	34.7	19.4	5	12/30/13 06:09	12/27/13	
Benzo(a)pyrene	<b>190</b>	34.7	10.3	5	12/30/13 06:09	12/27/13	
Benzo(b)fluoranthene	<b>266</b>	34.7	20.5	5	12/30/13 06:09	12/27/13	
Benzo(g,h,i)perylene	<b>112</b>	34.7	22.5	5	12/30/13 06:09	12/27/13	
Benzo(k)fluoranthene	<b>106</b>	34.7	24.5	5	12/30/13 06:09	12/27/13	
Chrysene	<b>281</b>	34.7	19.4	5	12/30/13 06:09	12/27/13	
Dibenz(a,h)anthracene	27.6 U	34.7	27.6	5	12/30/13 06:09	12/27/13	
Fluoranthene	<b>195</b>	34.7	20.5	5	12/30/13 06:09	12/27/13	
Fluorene	22.5 U	34.7	22.5	5	12/30/13 06:09	12/27/13	
Indeno(1,2,3-cd)pyrene	<b>97.2</b>	34.7	22.5	5	12/30/13 06:09	12/27/13	
Naphthalene	31.7 U	34.7	31.7	5	12/30/13 06:09	12/27/13	
Phenanthrene	<b>87.1</b>	69.4	17.4	5	12/30/13 06:09	12/27/13	
Pyrene	<b>173</b>	34.7	20.5	5	12/30/13 06:09	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	48	30 - 118	12/30/13 06:09	
p-Terphenyl-d14	26	41 - 146	12/30/13 06:09	*

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
**Sample Name:** DSHP POINT C  
**Lab Code:** J1307883-012

**Service Request:** J1307883  
**Date Collected:** 12/14/13 09:02  
**Date Received:** 12/23/13 13:00  
**Units:** mg/Kg  
**Basis:** As Received

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	220	10.0	3.66	1	12/31/13 06:14	12/27/13	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	89	31 - 181	12/31/13 06:14	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/14/13 13:59
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	BOK	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-013	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	<b>95.1 J</b>	167	5.70	20	01/03/14 20:21	1/3/14	*
Ethylbenzene	<b>249</b>	167	4.02	20	01/03/14 20:21	1/3/14	*
m,p-Xylenes	<b>1780</b>	335	7.04	20	01/03/14 20:21	1/3/14	*
o-Xylene	<b>794</b>	167	5.36	20	01/03/14 20:21	1/3/14	*
Toluene	<b>490</b>	167	9.05	20	01/03/14 20:21	1/3/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	99	80 - 120	01/03/14 20:21	
4-Bromofluorobenzene	97	64 - 135	01/03/14 20:21	
Dibromofluoromethane	102	74 - 125	01/03/14 20:21	
Toluene-d8	93	46 - 156	01/03/14 20:21	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	12/14/13 13:59
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	12/23/13 13:00
<b>Sample Name:</b>	BOK	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1307883-013	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	<b>3900</b>	53.0	42.2	5	12/28/13 03:46	12/27/13	
2-Methylnaphthalene	<b>4610</b>	53.0	35.9	5	12/28/13 03:46	12/27/13	
Acenaphthene	48.4 U	106	48.4	5	12/28/13 03:46	12/27/13	
Acenaphthylene	34.4 U	106	34.4	5	12/28/13 03:46	12/27/13	
Anthracene	25.0 U	53.0	25.0	5	12/28/13 03:46	12/27/13	
Benz(a)anthracene	29.7 U	53.0	29.7	5	12/28/13 03:46	12/27/13	
Benzo(a)pyrene	15.6 U	53.0	15.6	5	12/28/13 03:46	12/27/13	
Benzo(b)fluoranthene	31.2 U	53.0	31.2	5	12/28/13 03:46	12/27/13	
Benzo(g,h,i)perylene	34.4 U	53.0	34.4	5	12/28/13 03:46	12/27/13	
Benzo(k)fluoranthene	37.5 U	53.0	37.5	5	12/28/13 03:46	12/27/13	
Chrysene	29.7 U	53.0	29.7	5	12/28/13 03:46	12/27/13	
Dibenz(a,h)anthracene	42.2 U	53.0	42.2	5	12/28/13 03:46	12/27/13	
Fluoranthene	31.2 U	53.0	31.2	5	12/28/13 03:46	12/27/13	
Fluorene	34.4 U	53.0	34.4	5	12/28/13 03:46	12/27/13	
Indeno(1,2,3-cd)pyrene	34.4 U	53.0	34.4	5	12/28/13 03:46	12/27/13	
Naphthalene	<b>727</b>	53.0	48.4	5	12/28/13 03:46	12/27/13	
Phenanthrene	26.6 U	106	26.6	5	12/28/13 03:46	12/27/13	
Pyrene	31.2 U	53.0	31.2	5	12/28/13 03:46	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	90	30 - 118	12/28/13 03:46	
p-Terphenyl-d14	102	41 - 146	12/28/13 03:46	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** BOK  
**Lab Code:** J1307883-013

**Service Request:** J1307883  
**Date Collected:** 12/14/13 13:59  
**Date Received:** 12/23/13 13:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	17000	314	115	20	12/31/13 06:42	12/27/13	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	360	31 - 181	12/31/13 06:42	*

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil  
  
**Sample Name:** BOK  
**Lab Code:** J1307883-013

**Service Request:** J1307883  
**Date Collected:** 12/14/13 13:59  
**Date Received:** 12/23/13 13:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	59	Percent	0.10	0.10	1	01/02/14 11:16	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Collected:</b>	NA
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	NA
<b>Sample Name:</b>	Method Blank	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	JQ1309342-01	<b>Basis:</b>	As Received

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.170 U	5.00	0.170	1	12/27/13 13:41	12/27/13	
Ethylbenzene	0.120 U	5.00	0.120	1	12/27/13 13:41	12/27/13	
m,p-Xylenes	0.210 U	10.0	0.210	1	12/27/13 13:41	12/27/13	
o-Xylene	0.160 U	5.00	0.160	1	12/27/13 13:41	12/27/13	
Toluene	0.270 U	5.00	0.270	1	12/27/13 13:41	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	101	80 - 120	12/27/13 13:41	
4-Bromofluorobenzene	96	64 - 135	12/27/13 13:41	
Dibromofluoromethane	105	74 - 125	12/27/13 13:41	
Toluene-d8	96	46 - 156	12/27/13 13:41	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1307883  
**Project:** SPILL RESPONSE@BRASS      **Date Collected:** NA  
**Sample Matrix:** Soil      **Date Received:** NA  
  
**Sample Name:** Method Blank      **Units:** ug/Kg  
**Lab Code:** JQ1400064-02      **Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.170 U	5.00	0.170	1	01/03/14 13:06		1/3/14
Ethylbenzene	0.120 U	5.00	0.120	1	01/03/14 13:06		1/3/14
m,p-Xylenes	0.210 U	10.0	0.210	1	01/03/14 13:06		1/3/14
o-Xylene	0.160 U	5.00	0.160	1	01/03/14 13:06		1/3/14
Toluene	0.270 U	5.00	0.270	1	01/03/14 13:06		1/3/14

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	100	80 - 120	01/03/14 13:06	
4-Bromofluorobenzene	98	64 - 135	01/03/14 13:06	
Dibromofluoromethane	108	74 - 125	01/03/14 13:06	
Toluene-d8	94	46 - 156	01/03/14 13:06	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1307883  
**Project:** SPILL RESPONSE@BRASS      **Date Collected:** NA  
**Sample Matrix:** Soil      **Date Received:** NA

**Sample Name:** Method Blank      **Units:** ug/Kg  
**Lab Code:** JQ1309325-01      **Basis:** Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	2.70 U	3.40	2.70	1	12/28/13 08:25	12/27/13	
2-Methylnaphthalene	2.30 U	3.40	2.30	1	12/28/13 08:25	12/27/13	
Acenaphthene	3.10 U	6.80	3.10	1	12/28/13 08:25	12/27/13	
Acenaphthylene	2.20 U	6.80	2.20	1	12/28/13 08:25	12/27/13	
Anthracene	1.60 U	3.40	1.60	1	12/28/13 08:25	12/27/13	
Benz(a)anthracene	1.90 U	3.40	1.90	1	12/28/13 08:25	12/27/13	
Benzo(a)pyrene	1.00 U	3.40	1.00	1	12/28/13 08:25	12/27/13	
Benzo(b)fluoranthene	2.00 U	3.40	2.00	1	12/28/13 08:25	12/27/13	
Benzo(g,h,i)perylene	2.20 U	3.40	2.20	1	12/28/13 08:25	12/27/13	
Benzo(k)fluoranthene	2.40 U	3.40	2.40	1	12/28/13 08:25	12/27/13	
Chrysene	1.90 U	3.40	1.90	1	12/28/13 08:25	12/27/13	
Dibenz(a,h)anthracene	2.70 U	3.40	2.70	1	12/28/13 08:25	12/27/13	
Fluoranthene	2.00 U	3.40	2.00	1	12/28/13 08:25	12/27/13	
Fluorene	2.20 U	3.40	2.20	1	12/28/13 08:25	12/27/13	
Indeno(1,2,3-cd)pyrene	2.20 U	3.40	2.20	1	12/28/13 08:25	12/27/13	
Naphthalene	3.10 U	3.40	3.10	1	12/28/13 08:25	12/27/13	
Phenanthrene	1.70 U	6.80	1.70	1	12/28/13 08:25	12/27/13	
Pyrene	2.00 U	3.40	2.00	1	12/28/13 08:25	12/27/13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	76	30 - 118	12/28/13 08:25	
p-Terphenyl-d14	87	41 - 146	12/28/13 08:25	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1307883  
**Project:** SPILL RESPONSE@BRASS      **Date Collected:** NA  
**Sample Matrix:** Soil      **Date Received:** NA  
  
**Sample Name:** Method Blank      **Units:** mg/Kg  
**Lab Code:** JQ1309323-01      **Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>1.88 J</b>	5.00	1.83	1	12/30/13 22:56	12/27/13	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	93	31 - 181	12/30/13 22:56	

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil

**Service Request:** J1307883

**SURROGATE RECOVERY SUMMARY**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

**Extraction Method:** EPA 5035

<b>Sample Name</b>	<b>Lab Code</b>	<b>1,2-Dichloroethane-d4</b>	<b>4-Bromofluorobenzene</b>	<b>Dibromofluoromethane</b>
SS1OD (0.0)m	J1307883-001	98	99	106
SS1OD (0-0.3)m	J1307883-002	109	104	109
SSC1OD (0.0)m	J1307883-003	102	95	109
SSC1OD (0-0.3)m	J1307883-004	101	96	106
SS2OD (0.0)m	J1307883-005	107	120	109
SS2OD (0.3)m	J1307883-006	106	101	108
SS3OD (0.0)m	J1307883-007	108	116	113
SS1HPD (0.0)m	J1307883-008	99	96	104
SS1HPD (0-0.3)m	J1307883-009	101	96	108
DSHP POINT A	J1307883-010	104	95	110
DSTB POINT B	J1307883-011	100	96	105
DSHP POINT C	J1307883-012	99	97	104
BOK	J1307883-013	99	97	102
Method Blank	JQ1309342-01	101	96	105
Lab Control Sample	JQ1309342-02	102	99	106
Lab Control Sample	JQ1400064-01	102	101	108
Method Blank	JQ1400064-02	100	98	108

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil

**Service Request:** J1307883

**SURROGATE RECOVERY SUMMARY**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

**Extraction Method:** EPA 5035

<b>Sample Name</b>	<b>Lab Code</b>	<b>Toluene-d8</b>
		<b>46 - 156</b>
SS1OD (0.0)m	J1307883-001	95
SS1OD (0-0.3)m	J1307883-002	97
SSC1OD (0.0)m	J1307883-003	96
SSC1OD (0-0.3)m	J1307883-004	95
SS2OD (0.0)m	J1307883-005	99
SS2OD (0.3)m	J1307883-006	98
SS3OD (0.0)m	J1307883-007	99
SS1HPD (0.0)m	J1307883-008	97
SS1HPD (0-0.3)m	J1307883-009	97
DSHP POINT A	J1307883-010	97
DSTB POINT B	J1307883-011	97
DSHP POINT C	J1307883-012	96
BOK	J1307883-013	93
Method Blank	JQ1309342-01	96
Lab Control Sample	JQ1309342-02	96
Lab Control Sample	JQ1400064-01	93
Method Blank	JQ1400064-02	94

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil

**Service Request:** J1307883  
**Date Analyzed:** 12/27/13  
**Date Extracted:** 12/27/13

**Lab Control Sample Summary**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B                           **Units:** ug/Kg  
**Prep Method:** EPA 5035                           **Basis:** As Received  
   **Analysis Lot:** 374660

**Lab Control Sample**  
**JQ1309342-02**

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Benzene	21.8	20.0	109	76-123
Ethylbenzene	20.4	20.0	102	71-122
m,p-Xylenes	40.2	40.0	100	71-122
o-Xylene	20.4	20.0	102	71-120
Toluene	20.2	20.0	101	72-118

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil

**Service Request:** J1307883  
**Date Analyzed:** 01/03/14  
**Date Extracted:** 01/03/14

**Lab Control Sample Summary**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B                           **Units:** ug/Kg  
**Prep Method:** EPA 5035                           **Basis:** Dry  
   **Analysis Lot:** 375401

**Lab Control Sample**  
**JQ1400064-01**

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Benzene	22.3	20.0	112	76-123
Ethylbenzene	20.1	20.0	100	71-122
m,p-Xylenes	40.5	40.0	101	71-122
o-Xylene	20.0	20.0	100	71-120
Toluene	20.0	20.0	100	72-118

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil

**Service Request:** J1307883

**SURROGATE RECOVERY SUMMARY**  
**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM

**Extraction Method:** EPA 3546

<b>Sample Name</b>	<b>Lab Code</b>	<b>2-Fluorobiphenyl</b>	<b>p-Terphenyl-d14</b>
		<b>30 - 118</b>	<b>41 - 146</b>
SS1OD (0.0)m	J1307883-001	69	55
SS1OD (0-0.3)m	J1307883-002	73	72
SSC1OD (0.0)m	J1307883-003	75	75
SSC1OD (0-0.3)m	J1307883-004	82	96
SS2OD (0.0)m	J1307883-005	85	93
SS2OD (0.3)m	J1307883-006	77	37 *
SS3OD (0.0)m	J1307883-007	75	59
SS1HPD (0.0)m	J1307883-008	68	96
SS1HPD (0-0.3)m	J1307883-009	77	77
DSHP POINT A	J1307883-010	74	54
DSTB POINT B	J1307883-011	57	35 *
DSHP POINT C	J1307883-012	48	26 *
BOK	J1307883-013	90	102
Method Blank	JQ1309325-01	76	87
Lab Control Sample	JQ1309325-02	73	82
Duplicate Lab Control Sample	JQ1309325-03	75	95

**ALS Group USA, Corp.**  
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QA/QC Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Analyzed:</b>	12/28/13
<b>Sample Matrix:</b>	Soil	<b>Date Extracted:</b>	12/27/13

**Duplicate Lab Control Sample Summary**  
**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

<b>Analysis Method:</b>	8270C SIM	<b>Units:</b>	ug/Kg
<b>Prep Method:</b>	EPA 3546	<b>Basis:</b>	Dry
		<b>Analysis Lot:</b>	374745

**Lab Control Sample**  
**JQ1309325-02**

**Duplicate Lab Control Sample**  
**JQ1309325-03**

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	44.8	66.7	67	46.3	66.7	70	32-101	3	30
2-Methylnaphthalene	45.0	66.7	68	46.7	66.7	70	32-103	4	30
Acenaphthene	46.5	66.7	70	47.2	66.7	71	29-122	2	30
Acenaphthylene	40.9	66.7	61	40.4	66.7	61	36-114	1	30
Anthracene	51.7	66.7	78	48.9	66.7	73	36-135	6	30
Benz(a)anthracene	57.7	66.7	87	55.1	66.7	83	43-139	5	30
Benzo(a)pyrene	57.5	66.7	86	53.7	66.7	81	43-127	7	30
Benzo(b)fluoranthene	57.7	66.7	87	60.8	66.7	91	49-139	5	30
Benzo(g,h,i)perylene	58.8	66.7	88	57.6	66.7	86	30-135	2	30
Benzo(k)fluoranthene	60.6	66.7	91	56.0	66.7	84	45-132	8	30
Chrysene	59.7	66.7	90	57.9	66.7	87	36-130	3	30
Dibenz(a,h)anthracene	59.7	66.7	90	56.0	66.7	84	32-139	6	30
Fluoranthene	52.4	66.7	79	44.2	66.7	66	42-127	17	30
Fluorene	48.4	66.7	73	47.3	66.7	71	41-118	2	30
Indeno(1,2,3-cd)pyrene	62.9	66.7	94	59.9	66.7	90	32-133	5	30
Naphthalene	43.4	66.7	65	45.0	66.7	68	29-107	4	30
Phenanthrene	51.9	66.7	78	49.6	66.7	74	34-130	5	30
Pyrene	51.6	66.7	77	60.4	66.7	91	45-118	16	30

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil

**Service Request:** J1307883

**SURROGATE RECOVERY SUMMARY**  
**Diesel Range Organics by GC**

**Analysis Method:** 8015B

**Extraction Method:** EPA 3550C

<b>Sample Name</b>	<b>Lab Code</b>	<b>o-Terphenyl</b>
		<b>31 - 181</b>
SS1OD (0.0)m	J1307883-001	87
SS1OD (0-0.3)m	J1307883-002	95
SSC1OD (0.0)m	J1307883-003	96
SSC1OD (0-0.3)m	J1307883-004	90
SS2OD (0.0)m	J1307883-005	104
SS2OD (0.3)m	J1307883-006	86
SS3OD (0.0)m	J1307883-007	119
SS1HPD (0.0)m	J1307883-008	92
SS1HPD (0-0.3)m	J1307883-009	96
DSHP POINT A	J1307883-010	87
DSTB POINT B	J1307883-011	77
DSHP POINT C	J1307883-012	89
BOK	J1307883-013	360 *
Method Blank	JQ1309323-01	93
Lab Control Sample	JQ1309323-02	95
Duplicate Lab Control Sample	JQ1309323-03	88

**ALS Group USA, Corp.**  
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QA/QC Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1307883
<b>Project:</b>	SPILL RESPONSE@BRASS	<b>Date Analyzed:</b>	12/30/13
<b>Sample Matrix:</b>	Soil	<b>Date Extracted:</b>	12/27/13

**Duplicate Lab Control Sample Summary**

**Diesel Range Organics by GC**

<b>Analysis Method:</b>	8015B	<b>Units:</b>	mg/Kg
<b>Prep Method:</b>	EPA 3550C	<b>Basis:</b>	Dry
		<b>Analysis Lot:</b>	374917

<b>Analyte Name</b>	<b>Lab Control Sample</b> <b>JQ1309323-02</b>			<b>Duplicate Lab Control Sample</b> <b>JQ1309323-03</b>					<b>RPD Limit</b>
	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>	<b>RPD</b>	
Diesel Range Organics (C10 - C28)	37.9	41.7	91	27.7	41.7	66	66-133	31 *	30

**ALS Group USA, Corp.**

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## QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil

**Service Request:** J1307883  
**Date Collected:** 12/06/13  
**Date Received:** 12/23/13  
**Date Analyzed:** 01/02/14

**Replicate Sample Summary**  
**General Chemistry Parameters**

<b>Sample Name:</b>	SS1OD (0-0.3)m	<b>Units:</b>	Percent
<b>Lab Code:</b>	J1307883-002	<b>Basis:</b>	As Received
<b>Analyte Name</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>MDL</b>
Solids, Total	160.3 Modified	0.10	0.10

	<b>Sample Result</b>	<b>Duplicate Sample</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>
		J1307883-002DUP			
	52	48	49.7	8	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp.**

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## QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** SPILL RESPONSE@BRASS  
**Sample Matrix:** Soil

**Service Request:** J1307883  
**Date Collected:** 12/10/13  
**Date Received:** 12/23/13  
**Date Analyzed:** 01/02/14

**Replicate Sample Summary**  
**General Chemistry Parameters**

**Sample Name:** SS1HPD (0-0.3)m  
**Lab Code:** J1307883-009

**Units:** Percent  
**Basis:** As Received

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Sample</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>
					J1307883-009DUP Result			
Solids, Total	160.3 Modified	0.10	0.10	79	80	79.4	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



## Cooler Receipt Form

Client: <u>Crooke</u>	Service Request #: <u>J1307883</u>			
Project: <u>SPDC</u>	Cooler received on <u>12/23/13</u> and opened on <u>12/23/13</u> by <u>Sc</u>			
COURIER: ALS <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FEDEX Client Other _____				
Airbill # <u>H9747004416</u>				
1 Were custody seals on outside of cooler?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
If yes, how many and where? _____				
2 Were seals intact and signature and date correct?	#:— on lid other Yes No <input checked="" type="checkbox"/> N/A			
3 Were custody papers properly filled out?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A			
4 Temperature of cooler(s) upon receipt (Should be > GoE and < 6°C)	<u>Ambient</u> _____			
5 Thermometer ID	Yes <input type="checkbox"/> <input checked="" type="checkbox"/> No			
6 Temperature Blank Present?	Ice Ice Packs No			
7 Were ice or Ice Packs present	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A			
8 Did all bottles arrive in good condition (unbroken, etc .. ,)?	Netting Vial Holder <input checked="" type="checkbox"/> Bubble Wrap			
9 Type of packing material present	Paper Styrofoam Other N/A			
10 Were all bottle labels complete (sample ID, preservation, etc .. ,)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A			
11 Did all bottle labels and tags agree with custody papers?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A			
12 Were the correct bottles used for the tests indicated?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A			
13 Were all of the preserved bottles received with the appropriate preservative? HN03 pH<2 H2S04 pJ-l<2 ZnAc2/NaOH pH>9 NaOH pH>12	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A HCl pH<2			
Preservative additions noted below				
14 Were all samples received within analysis holding times?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A			
15 Were all VOA vials free of air bubbles? If present, note below	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
16 Where did the bottles originate?	ALS Client			
Sample ID	Reagent	Lot #	ml added	Initials Date/Time
Additional comments and/or explanation of all discrepancies noted above: <u>All Samples arrived in good condition</u>				
Client approval to run samples if discrepancies noted:				Date:



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## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Environmental

#18 Uyo Street, Rumuomasi, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161

SR # **J1307883**  
CAS Contact  
Page **1** of **9**

Project Name <b>SPILL RESPONSE @ BRASS</b>		Project Number Report CC			ANALYSIS REQUESTED (Include Method No.)									
Report To					Z	Preservative	TPH	PAH	BTEX					
Company/Address GIOLEE GLOBAL RESOURCES LIMITED, . 18 UYO STREET RUMUOMASI, PORT HARCOURT														
Phone # 7031513161		FAX #												
Sampler's Signature 		Sampler's Printed Name <b>KEN NWIFIUTO</b>												
CLIENT SAMPLE ID		LAB ID		SAMPLING DATE	TIME	Matrix								
SS <sub>1</sub> OD (0.0)m				06/12/2013	15:20 hrs	SOIL								
SS <sub>1</sub> OD(0- 0.3)m				06/12/2013	15:22hrs	SOIL								
WS <sub>1</sub> OD (Surface)				06/12/2013	15:45hrs	H <sub>2</sub> O								
REMARKS														
Special Instructions/Comments:							TURNAROUND REQUIREMENTS		REPORT REQUIREMENTS			INVOICE INFORMATION		
							<input checked="" type="checkbox"/> RUSH (SURCHARGES APPLY) <input checked="" type="checkbox"/> STANDARD		<input checked="" type="checkbox"/> I. Results Only <input checked="" type="checkbox"/> II. Results + QC Summaries (LCS, DUP, MS/MSD as required) <input checked="" type="checkbox"/> III. Results + QC and Calibration Summaries <input checked="" type="checkbox"/> IV. Data Validation Report with Raw Data			P.O. # _____ Bill to: _____		
							REQUESTED FAX DATE		Requested Date <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
							REQUESTED REPORT DATE							
Relinquished By 		Received By 		Relinquished By Signature		Received By 		Relinquished By Signature		Received By Signature				
Printed Name <b>JCHEGBU SOPHIA</b>		Printed Name <b>JOE ENOROME</b>		Printed Name		Printed Name 		Printed Name		Printed Name				
Firm <b>GIOLEE GLOBAL RESOURCES LTD</b>		Firm <b>UPS</b>		Firm <b>UPS</b>		Firm 		Firm		Firm				
Date/Time <b>17/12/13</b>		Date/Time <b>17/12/13</b>		Date/Time		Date/Time <b>12/23/13 1200</b>		Date/Time		Date/Time				



## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Project Name: SPILL RESPONSE @ BRASS Project Number: Report To: Report CC

Company/Address:  
GIOLEE GLOBAL RESOURCES LIMITED,  
#18 UYO STREET RUMUOMASI, PORT HARCOURT

Phone #:

FAX #:

7031513161

Sampler's Signature: KN Sampler's Printed Name: NWITE KEN NWIFIUTO

				ANALYSIS REQUESTED (Include Method Number and Container Preservative)								
				Preservative	TPH	PAH	BTEX					
				Z								
CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	TIME	Matrix								
SD OD(0-0.2)m		07/12/2013	14:49 hrs	SOIL								
SSC <sub>1</sub> OD(0.0)m		07/12/2013	16:12 hrs	SOIL								
SSC <sub>1</sub> OD(0-0.3)m		07/12/2013	16:12 hrs	SOIL								
WSC <sub>1</sub> OD(Surface)		07/12/2013	16:12 hrs	H <sub>2</sub> O								
Special Instructions/Comments:				TURNAROUND REQUIREMENTS			REPORT REQUIREMENTS			INVOICE INFORMATION		
				<small>RUSH CHARGES APPLY</small> <input checked="" type="checkbox"/> STANDARD			<small>I. Results Only</small> <small>II. Results + QC Summaries</small> <small>(LCS, DMIP, MS-MSD as required)</small> <small>III. Results + QC and Calibration Summaries</small> <small>* IV. Data Validation Report with Raw Data</small>			<small>P.O. #</small> <small>Bill to</small> <small>Edata</small> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Signature:	Relinquished By:	Received By:	Signature:	Relinquished By:	Received By:	Signature:	Relinquished By:	Received By:	Signature:	Received By:	Signature:	
Printed Name: UCHEGBU SOPHIA	Printed Name: JOE ENWORONE	Printed Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name:	
Firm: GIOLEE GLOBAL Resources	Firm: U.P.S.	Date/Time: 17/12/13	Date/Time: 17/12/13	Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:	

SR # 3  
J1307883  
CAS Contact

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J1307883  
Giolee Global Resources NIG Ltd  
SPILL RESPONSE@BRASS



6. MeOH

7. NaHSO4

REMARKS

5



Environmental  
#18 Uyo Street, Rumuomasi, Port Harcourt. Email: gloleeglobal@yahoo.com, Tel: 07036931598, 07031513161  
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### CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

SR # **J1307883**  
CAS Contact \_\_\_\_\_  
Page **3** of **9**

Project Name <b>SPILL RESPONSE @ BRASS</b>		Project Number Report CC		ANALYSIS REQUESTED (Include Method Number and Container Preservative)												
				Preservative	TPH	PAH	BTEX									
Company/Address <b>GIOLEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMUOMASI, PORT HARCOURT</b>				Z												
Phone # 7031513161		FAX #														
Sampler's Signature <b>KN</b>		Sampler's Printed Name <b>NWITE KEN NWIFIITO</b>		7. NaHSO4	REMARKS											
CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	TIME	Matrix												
SS, OD(0.0m)		08/12/2013	13:08 hrs	SOIL												
SS, OD(0.3)m		08/12/2013	13:08 hrs	SOIL												
Special Instructions/Comments:					TURNAROUND REQUIREMENTS				REPORT REQUIREMENTS				INVOICE INFORMATION			
					REQUESTED FAX DATE				IV. Data Validation Report with Raw Data							
					REQUESTED REPORT DATE				Edata <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
Relinquished By Signature	Received By Signature	Relinquished By Signature	Received By Signature	Relinquished By Signature	Received By Signature	Relinquished By Signature	Received By Signature									
Printed Name <b>UCHEGBU SOPHIA</b>	Printed Name <b>JOE ENOBOSTU</b>	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name									
Firm <b>GIOLEE GLOBAL Resources</b>	Firm <b>U.P.S.</b>	Firm	Firm	Firm	Firm	Firm	Firm									
Date/Time <b>17/12/13</b>	Date/Time <b>17/12/13</b>	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time									



Environmental  
#18 Uyo Street, Rumuomasi, Port Harcourt, Email: gloleeglobal@yahoo.com, Tel: 07026931598, 07031513161

### CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

J1307883  
Glolee Global Resources NIG Ltd  
SPILL RESPONSE@BRASS  
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Page \_\_\_\_\_

5

**J1307883**

Glolee Global Resources NIG Ltd  
SPILL RESPONSE@BRASS



5 Zn. Acetate  
6. MeOH  
7. NaHSO4

REMARKS

Project Name <b>SPILL RESPONSE @ BRASS</b>		Project Number		ANALYSIS REQUESTED (Include Method Number and Co.)								
Report To		Report CC		Preservative <input checked="" type="checkbox"/> Z	TPH	PAH	BTEX					
Company Address <b>GIOLEE GLOBAL RESOURCES LIMITED., #18 UYO STREET RUMUOMASI, PORT HARCOURT</b>												
Phone # 7031513161		FAX #										
Sampler's Signature <i>KW</i>		Sampler's Printed Name <b>NWITE KEN NWIFIOTO</b>										
CLIENT SAMPLE ID	LAB ID	DATE	SAMPLING TIME	Matrix								
WS_BLNG (Surface)		09/12/2013	10:15 hrs	H <sub>2</sub> O								
SS <sub>1</sub> BLNG (0.0)m		09/12/2013	10:20hrs	SOIL								
SS <sub>1</sub> BLNG (0-0.3)m		06/12/2013	15:45hrs	SOIL								
Special Instructions/Comments:					TURNAROUND REQUIREMENTS		REPORT REQUIREMENTS		INVOICE INFORMATION			
<input type="checkbox"/> RUSH (SURCHARGES APPLY) <input checked="" type="checkbox"/> STANDARD					<small>REQUESTED FAX DATE</small> <small>REQUESTED REPORT DATE</small>		<small>I. Results Only</small> <small>II. Results + QC Summary</small> <small>(LCS, DLP, MS/MSI) if required</small> <small>III. Results + QC and Calibration Summary</small> <small>* IV. Data Validation Report with Raw Data</small>		<small>P.O. #</small> <small>Billing</small> <small>Address</small>			
Relinquished By 		Received By 		Relinquished By 		Received By 		Relinquished By 		Received By 		
Signature		Signature		Signature		Signature		Signature		Signature		
Printed Name <b>UCHEGBU SOPHIA</b>		Printed Name <b>JOE ENGBOWER</b>		Printed Name		Printed Name		Printed Name		Printed Name		
Firm <b>GIOLEE GLOBAL Resources</b>		Firm <b>JPS/SN</b>		Firm		Firm		Firm		Firm		
Date/Time <b>17/12/13</b>		Date/Time <b>17/12/13</b>		Date/Time		Date/Time		Date/Time		Date/Time		



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### CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

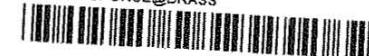
SR # J1307883  
CAS Contact

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Project Name <b>SPILL RESPONSE @ BRASS</b>		Project Number		ANALYSIS REQUESTED (Include Method Number and Container/Preservative)													
Report To Report OC				2 preservative													
Company/Address <b>GLOEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMUOJASI, PORT HARCOURT</b>				Preservative Key													
Phone # 7031513161		FAX #		TPH PAH BTEX 0. None 1. HCl * 2. HNO3 3. H2SO4 4. NaOH 5. Zn Acetate 6. MeOH 7. NaHSO4													
Sampler's Signature <i>KW</i>		Sampler's Printed Name NWTTE KEN NWETIITO		REMARKS													
CLIENT SAMPLE ID	LAB ID	SAMPLING		Matrix													
WS <sub>1</sub> OD (Surface)		10/12/2013 13.27 hrs		H <sub>2</sub> O													
SS <sub>1</sub> OD (0.0)m		10/12/2013 14.32hrs		SOIL													
SS <sub>2</sub> OD (0-0.3)m		10/12/2013 14.32hrs		SOIL													
Special Instructions/Comments:						TURNAROUND REQUIREMENTS		REPORT REQUIREMENTS		INVOICE INFORMATION							
				<b>GLOEE GLOBAL RESOURCES LTD LTD</b> <input checked="" type="checkbox"/> STANDARD		I. Results Only II. Results + QC Summaries (GLX, PTH, SRM, MHD as required) III. Results + QC and Alternative Summaries IV. Data Validation Report with Raw Data		P.O. #		Bill to							
Relinquished By 		Received By 		Relinquished By Signature		Received By Signature		Relinquished By Signature		Received By Signature							
Printed Name JOE ENOBONYI		Printed Name <i>JOE ENOBONYI</i>		Printed Name		Printed Name		Printed Name		Printed Name							
Firm GLOEE GLOBAL Resources		Firm JPS		Firm		Firm		Firm		Firm							
Date/Time 10/12/13	Date/Time 10/12/13	Date/Time		Date/Time		Date/Time		Date/Time		Date/Time							

J1307883  
Gloee Global Resources NIG Ltd  
SPILL RESPONSE@BRASS

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## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Street, Rumuekpu, Port Harcourt. Email: gioleeglobal@vivox.com.ng Tel: 07026931598, 0803121161

SR # **J1307883**

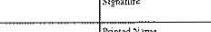
CAS Contact

Page

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of

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Project Name <b>SPILL RESPONSE @ BRASS</b>	Project Number 3	ANALYSIS REQUESTED (Include Method Number and Container Preservative)																
Report To Report CC		Zn	Preservative	PAH	HCl	BTEX												Preservative Key
Company/Address <b>GIOLEE GLOBAL RESOURCES LIMITED., #18 UYO STREET RUMUEKPU, PORT HARCOURT</b>																		0. None 1. HCl * 2. HNO3 3. H2SO4 4. NaOH 5. Zn Acetate 6. MoO4 7. NaHSO4
Phone # 7031513161	FAX #																	REMARKS
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>NWITE KEM NWEHITO</b>																
CLIENT SAMPLE ID	LAB ID	SAMPLING DATE																
SS <sub>1</sub> HPD(0.0)m		10/12/2013																
SS <sub>1</sub> HPD(0-0.5)m		10/12/2013																
SS <sub>1</sub> HPD(Surface)		10/12/2013																
Special Instructions/Comments:		SURVEYOR REQUIREMENTS			REPORT REQUIREMENTS			PAYMENT INFORMATION										
		<input checked="" type="checkbox"/> <b>NON-HAZARDOUS - HIGH V.</b> <input type="checkbox"/> <b>STANDARD</b>			<b>I. Results Date:</b> <input type="checkbox"/> <b>II. Results + QC Subsamples</b> <input type="checkbox"/> <b>III. PCP, P.D. &amp; MASTERS if required</b> <input type="checkbox"/> <b>IV. Results + QC and Calibration Parameters</b> <input type="checkbox"/> <b>V. Data Validation Report with Raw Data</b>			<b>P.O. #:</b> _____ <b>Bill To:</b> _____										
		APPROVED REPORT DATE			<b>Editor:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No													
<b>Requisitioned By:</b>  <b>Printed Name:</b> <i>[Signature]</i> <b>Firm:</b> <i>[Signature]</i>		<b>Received By:</b>  <b>Printed Name:</b> <i>[Signature]</i> <b>Firm:</b> <i>[Signature]</i>		<b>Requisitioned By:</b>  <b>Printed Name:</b> <i>[Signature]</i> <b>Firm:</b> <i>[Signature]</i>		<b>Received By:</b>  <b>Printed Name:</b> <i>[Signature]</i> <b>Firm:</b> <i>[Signature]</i>												
<b>Printed Name:</b> <i>[Signature]</i> <b>Firm:</b> <i>[Signature]</i> <b>Date/Time:</b> <i>[Signature]</i>		<b>Printed Name:</b> <i>[Signature]</i> <b>Firm:</b> <i>[Signature]</i> <b>Date/Time:</b> <i>[Signature]</i>		<b>Printed Name:</b> <i>[Signature]</i> <b>Firm:</b> <i>[Signature]</i> <b>Date/Time:</b> <i>[Signature]</i>		<b>Printed Name:</b> <i>[Signature]</i> <b>Firm:</b> <i>[Signature]</i> <b>Date/Time:</b> <i>[Signature]</i>												

**J1307883**  
Giolee Global Resources NIG Ltd  
SPILL RESPONSE@BRASS

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### CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Immortal  
No Street, Rumuekasi, Port Harcourt, Brazil gloleeglobal@yahoo.com Tel: 07026936598, 07031513161

SR # **J1307883**  
CAS Contact

Page **7** of **9**

Project Name <b>SPILL RESPONSE @ BRASS(Ustream)</b>		Project Number	ANALYSIS REQUESTED (Include Method Number and Container Preservative)												
Report To		Report CC	Preservation	TPH	PAH	BTEX							Preservative Key		
Comments/Address <b>GLOLEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMUEKASI, PORT HARCOURT</b>															
Phone # <b>7031513161</b>		FAX #	Sample's Printed Name <b>NWITE KEN NWEIUTO</b>	REMARKS											
Sampler's Signature <b>KN</b>															
CLIENT SAMPLE ID	LAB ID	SAMPLING	Matrix												
UPOD Point A		9:30hrs	SOIL												
UPOD Point B		9:35hrs	SOIL												
UPOD Point C		9:45hrs	SOIL												
Special Instructions/Comments:				TURNAROUND REQUIREMENTS			REPORT REQUIREMENTS			ENCLAVE INFORMATION					
				REQUEST TURNAROUND TIME			REPORT REQUIREMENTS								
				STANDARD			I. Results Only II. Results + QC Summary III. Data + QC and OPerative Remarks IV. Data Validation Report with Raw Data								
				REQUEST SAMPLE DATE			V. Data Validation Report with Raw Data								
Signature: <i>[Signature]</i> Relinquished By <i>[Signature]</i>	Received By <i>[Signature]</i> Signature	Relinquished By <i>[Signature]</i>	Received By <i>[Signature]</i>	Relinquished By <i>[Signature]</i>	Received By <i>[Signature]</i>	Relinquished By <i>[Signature]</i>	Received By <i>[Signature]</i>	Relinquished By <i>[Signature]</i>	Received By <i>[Signature]</i>	Relinquished By <i>[Signature]</i>	Received By <i>[Signature]</i>	Relinquished By <i>[Signature]</i>	Received By <i>[Signature]</i>		
Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>	Printed Name <i>[Signature]</i>		
Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>	Firm <i>[Signature]</i>		
Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>	Date/Time <i>9/12/13</i>		

**J1307883** 5  
Glolee Global Resources NIG Ltd  
SPILL RESPONSE@BRASS





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Street, Rumuomasi, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161

## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

SR # J1307883  
CAS Contact

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Project Name <b>SPILL RESPONSE @</b>	Project Number	ANALYSIS REQUESTED (Include Method Number and Container Preservative)												
Report To	Report CC	<b>J1307883</b> Giolee Global Resources NIG Ltd SPILL RESPONSE@BRASS												
Company/Address <b>GIOLEE GLOBAL RESOURCES LIMITED, . #18 UYO STREET RUMUOMASI, PORT HARCOURT</b>														
Phone #	FAX #													
7031513161														
Sampler's Signature 	Sampler's Printed Name <b>NWITE KEN NWIFIITO</b>													
SAMPLING														
ITEM SAMPLE	LAB ID	DATE	TIME	Matrix									REMARKS	
DSHP Point A		14/12/2013	8:34hrs	SOIL										
DSTB Point B		14/12/2013	8:59hrs	SOIL										
DSHP Point C		14/12/2013	9:02hrs	SOIL										
Special Instructions/Comments:					TURNAROUND REQUIREMENTS				REPORT REQUIREMENTS				INVOICE INFORMATION	
					<input checked="" type="checkbox"/> RUSH (SURCHARGES APPLY) <input type="checkbox"/> STANDARD				I. Results Only II. Results + QC Summaries: (LGS, DUP, MSMSD) as required III. Results + QC and Calibration Summaries				P.O. # _____ Bill to: _____	
Relinquished By 	Received By 	Relinquished By Signature			Received By Signature			Relinquished By Signature			Received By Signature			
Printed Name <b>UCHEGBU SOPHIA</b>	Printed Name <b>JOE ENOPONWE</b>	Printed Name			Printed Name			Printed Name			Printed Name			
Firm <b>GIOLEE GLOBAL Resource</b>	Firm <b>UPS.</b>	Firm			Firm			Firm			Firm			
Date/Time <b>17/12/13</b>	Date/Time <b>17/12/13</b>	Date/Time			Date/Time			Date/Time			Date/Time			

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**CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM**

**CHAIN OF CUSTODY / LABORATORY**

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J1307883



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January 30, 2014

Service Request No:J1400482

Lesi Maol  
Giolee Global Resources NIG Ltd  
18 UYO STREET RUMUMASI

### Laboratory Results for: Spill Response @ Brass

Dear Lesi,

Enclosed are the results of the sample(s) submitted to our laboratory January 07, 2014  
For your reference, these analyses have been assigned our service request number **J1400482**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the NELAC 2003 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 4410. You may also contact me via email at [Jerry.Allen@alsglobal.com](mailto:Jerry.Allen@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

A handwritten signature in black ink, appearing to read "Jerry Allen".

Jerry Allen  
Project Manager

ADDRESS 9143 Philips Highway, Suite 200, Jacksonville, FL 32256

PHONE +1 904 739 2277 | FAX +1 904 739 2011

ALS Group USA, Corp.  
dba ALS Environmental



### SAMPLE DETECTION SUMMARY

CLIENT ID: WSC1 OD(Surface)		Lab ID: J1400482-001					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		0.943	J	0.647	1.54	mg/L	8015B
Benzene		0.36	J	0.21	1.0	ug/L	8260B
CLIENT ID: WS1 BLNG(Surface)		Lab ID: J1400482-002					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		41.3		3.83	9.09	mg/L	8015B
Benzene		76		0.42	2.0	ug/L	8260B
Ethylbenzene		69		0.42	2.0	ug/L	8260B
m,p-Xylenes		220		0.62	4.0	ug/L	8260B
o-Xylene		91		0.28	2.0	ug/L	8260B
Toluene		80		0.38	2.0	ug/L	8260B
1-Methylnaphthalene		329		4.40	10.0	ug/L	8270C SIM
2-Methylnaphthalene		448		4.40	10.0	ug/L	8270C SIM
Naphthalene		118		3.91	10.0	ug/L	8270C SIM
Phenanthrene		108		3.51	10.0	ug/L	8270C SIM
CLIENT ID: WS3 OD(Surface)		Lab ID: J1400482-003					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		5.39		0.658	1.56	mg/L	8015B
Benzene		1.8		0.21	1.0	ug/L	8260B
Toluene		0.53	J	0.19	1.0	ug/L	8260B
CLIENT ID: SS1 HPD(Surface)		Lab ID: J1400482-004					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		3.97		0.725	1.72	mg/L	8015B
Benzene		2.2		0.21	1.0	ug/L	8260B
o-Xylene		0.34	J	0.14	1.0	ug/L	8260B
Toluene		1.9		0.19	1.0	ug/L	8260B
CLIENT ID: BOK(H2O)		Lab ID: J1400482-005					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		51.9		0.725	1.72	mg/L	8015B
Benzene		0.24	J	0.21	1.0	ug/L	8260B
1-Methylnaphthalene		72.2		1.70	3.85	ug/L	8270C SIM
2-Methylnaphthalene		97.2		1.70	3.85	ug/L	8270C SIM
Acenaphthene		3.99		1.58	3.85	ug/L	8270C SIM
Fluorene		9.95		1.81	3.85	ug/L	8270C SIM
Naphthalene		7.01		1.50	3.85	ug/L	8270C SIM
Phenanthrene		20.9		1.35	3.85	ug/L	8270C SIM



**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water

**Service Request:** J1400482  
**Date Received:** 1/7/14

## CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. When appropriate to the procedure, method blank results have been reported with each analytical test. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Parameters that are included in the NELAC Fields of Testing but are not included in the lab's NELAC accreditation are identified in the discussion of each analytical procedure.

### Sample Receipt

Five water samples were received for analysis at ALS Environmental on 01/07/2014. The samples were received within the temperature range. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at  $\leq 6^{\circ}\text{C}$  upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

### **Volatile Organic Analyses:**

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Method 8260B: All samples were received within the recommended holding time. The analysis was performed as soon as possible after receipt by the laboratory.

Method 8260B: Sample WS1 BLNG(Surface) required dilution due to the presence of elevated levels of target and non-target analytes. The reporting limits are adjusted to reflect the dilution.

### **Semi-Volatile Organic Analyses:**

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Method 8270 SIM: All samples were received within the recommended holding time. The analysis was performed as soon as possible after receipt by the laboratory.

Method 8015: All samples were received within the recommended holding time. The analysis was performed as soon as possible after receipt by the laboratory.

Method 8015: The control criteria for the following surrogate in sample J1400482-02 are not applicable: o-Terphenyl. The analysis of the sample required a dilution, which resulted in a surrogate concentration below the Method Reporting Limit (MRL).

Approved by

Date 1/30/2014

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A handwritten signature, appearing to read "John", is written over a solid horizontal line. Below this line is another shorter, dashed horizontal line.



## State Certifications, Accreditations, and Licenses

<b>Agency</b>	<b>Number</b>	<b>Expire Date</b>
Florida Department of Health	E82502	6/30/2014
North Carolina Department of Environment and Natural Resources	527	12/31/2014
Virginia Environmental Accreditation Program	460191	12/14/2014
Louisiana Department of Environmental Quality	02086	6/30/2014
Georgia Department of Natural Resources	958	6/30/2014
Kentucky Division of Waste Management	63	6/30/2014
South Carolina Department of Health and Environmental Control	96021001	6/30/2014
Texas Commission on Environmental Quality	T104704197-13-5	5/31/2014
Maine Department of Health and Human Services	2011006	2/3/2015
Department of Defense	66206	5/31/2014
Pennsylvania Department of Environmental Protection	68-04835	8/31/2014

## Data Qualifiers

### CAS Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section  $\geq 10\%$  front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte  $> 40\%$  difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

## **Data Qualifiers**

### **CAS Standard**

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
  - i The MRL/MDL has been elevated due to a matrix interference.

# ALS Laboratory Group

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass

**Service Request:** J1400482

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
J1400482-001	WSC1 OD(Surface)	12/7/2013	1612
J1400482-002	WS1 BLNG(Surface)	12/9/2013	1015
J1400482-003	WS3 OD(Surface)	12/10/2013	1327
J1400482-004	SS1 HPD(Surface)	12/10/2013	0000
J1400482-005	BOK(H2O)	12/14/2013	1359

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WSC1 OD(Surface)  
**Lab Code:** J1400482-001

**Service Request:** J1400482  
**Date Collected:** 12/07/13 16:12  
**Date Received:** 01/07/14 10:30

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	<b>0.36 J</b>	1.0	0.21	1	01/28/14 13:01	*
Ethylbenzene	0.21 U	1.0	0.21	1	01/28/14 13:01	*
m,p-Xylenes	0.31 U	2.0	0.31	1	01/28/14 13:01	*
o-Xylene	0.14 U	1.0	0.14	1	01/28/14 13:01	*
Toluene	0.19 U	1.0	0.19	1	01/28/14 13:01	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	108	72 - 121	01/28/14 13:01	
4-Bromofluorobenzene	101	86 - 113	01/28/14 13:01	
Dibromofluoromethane	106	86 - 112	01/28/14 13:01	
Toluene-d8	103	88 - 115	01/28/14 13:01	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400482
<b>Project:</b>	Spill Response @ Brass	<b>Date Collected:</b>	12/07/13 16:12
<b>Sample Matrix:</b>	Water	<b>Date Received:</b>	01/07/14 10:30
<b>Sample Name:</b>	WSC1 OD(Surface)	<b>Units:</b>	ug/L
<b>Lab Code:</b>	J1400482-001	<b>Basis:</b>	NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.331 U	0.752	0.331	1	01/27/14 10:10	1/27/14	
2-Methylnaphthalene	0.331 U	0.752	0.331	1	01/27/14 10:10	1/27/14	
Acenaphthene	0.309 U	0.752	0.309	1	01/27/14 10:10	1/27/14	
Acenaphthylene	0.188 U	0.752	0.188	1	01/27/14 10:10	1/27/14	
Anthracene	0.286 U	0.752	0.286	1	01/27/14 10:10	1/27/14	
Benz(a)anthracene	0.264 U	0.752	0.264	1	01/27/14 10:10	1/27/14	
Benzo(a)pyrene	0.234 U	0.752	0.234	1	01/27/14 10:10	1/27/14	
Benzo(b)fluoranthene	0.188 U	0.752	0.188	1	01/27/14 10:10	1/27/14	
Benzo(g,h,i)perylene	0.294 U	0.752	0.294	1	01/27/14 10:10	1/27/14	
Benzo(k)fluoranthene	0.264 U	0.752	0.264	1	01/27/14 10:10	1/27/14	
Chrysene	0.181 U	0.752	0.181	1	01/27/14 10:10	1/27/14	
Dibenz(a,h)anthracene	0.271 U	0.752	0.271	1	01/27/14 10:10	1/27/14	
Fluoranthene	0.294 U	0.752	0.294	1	01/27/14 10:10	1/27/14	
Fluorene	0.354 U	0.752	0.354	1	01/27/14 10:10	1/27/14	
Indeno(1,2,3-cd)pyrene	0.301 U	0.752	0.301	1	01/27/14 10:10	1/27/14	
Naphthalene	0.294 U	0.752	0.294	1	01/27/14 10:10	1/27/14	
Phenanthrene	0.264 U	0.752	0.264	1	01/27/14 10:10	1/27/14	
Pyrene	0.234 U	0.752	0.234	1	01/27/14 10:10	1/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	72	22 - 105	01/27/14 10:10	
p-Terphenyl-d14	97	25 - 127	01/27/14 10:10	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water  
**Sample Name:** WSC1 OD(Surface)  
**Lab Code:** J1400482-001

**Service Request:** J1400482  
**Date Collected:** 12/07/13 16:12  
**Date Received:** 01/07/14 10:30  
**Units:** mg/L  
**Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>0.943 J</b>	1.54	0.647	1	01/27/14 16:17	1/27/14	
<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>		<b>Date Analyzed</b>		<b>Q</b>	
o-Terphenyl	91	25 - 147		01/27/14 16:17			

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WS1 BLNG(Surface)  
**Lab Code:** J1400482-002

**Service Request:** J1400482  
**Date Collected:** 12/09/13 10:15  
**Date Received:** 01/07/14 10:30

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	76	2.0	0.42	2	01/28/14 15:09	*
Ethylbenzene	69	2.0	0.42	2	01/28/14 15:09	*
m,p-Xylenes	220	4.0	0.62	2	01/28/14 15:09	*
o-Xylene	91	2.0	0.28	2	01/28/14 15:09	*
Toluene	80	2.0	0.38	2	01/28/14 15:09	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	72 - 121	01/28/14 15:09	
4-Bromofluorobenzene	93	86 - 113	01/28/14 15:09	
Dibromofluoromethane	97	86 - 112	01/28/14 15:09	
Toluene-d8	93	88 - 115	01/28/14 15:09	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400482
<b>Project:</b>	Spill Response @ Brass	<b>Date Collected:</b>	12/09/13 10:15
<b>Sample Matrix:</b>	Water	<b>Date Received:</b>	01/07/14 10:30
<b>Sample Name:</b>	WS1 BLNG(Surface)	<b>Units:</b>	ug/L
<b>Lab Code:</b>	J1400482-002	<b>Basis:</b>	NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	<b>329</b>	10.0	4.40	10	01/27/14 10:34	1/27/14	
2-Methylnaphthalene	<b>448</b>	10.0	4.40	10	01/27/14 10:34	1/27/14	
Acenaphthene	4.11 U	10.0	4.11	10	01/27/14 10:34	1/27/14	
Acenaphthylene	2.50 U	10.0	2.50	10	01/27/14 10:34	1/27/14	
Anthracene	3.80 U	10.0	3.80	10	01/27/14 10:34	1/27/14	
Benz(a)anthracene	3.51 U	10.0	3.51	10	01/27/14 10:34	1/27/14	
Benzo(a)pyrene	3.10 U	10.0	3.10	10	01/27/14 10:34	1/27/14	
Benzo(b)fluoranthene	2.50 U	10.0	2.50	10	01/27/14 10:34	1/27/14	
Benzo(g,h,i)perylene	3.91 U	10.0	3.91	10	01/27/14 10:34	1/27/14	
Benzo(k)fluoranthene	3.51 U	10.0	3.51	10	01/27/14 10:34	1/27/14	
Chrysene	2.40 U	10.0	2.40	10	01/27/14 10:34	1/27/14	
Dibenz(a,h)anthracene	3.60 U	10.0	3.60	10	01/27/14 10:34	1/27/14	
Fluoranthene	3.91 U	10.0	3.91	10	01/27/14 10:34	1/27/14	
Fluorene	4.70 U	10.0	4.70	10	01/27/14 10:34	1/27/14	
Indeno(1,2,3-cd)pyrene	4.00 U	10.0	4.00	10	01/27/14 10:34	1/27/14	
Naphthalene	<b>118</b>	10.0	3.91	10	01/27/14 10:34	1/27/14	
Phenanthrene	<b>108</b>	10.0	3.51	10	01/27/14 10:34	1/27/14	
Pyrene	3.10 U	10.0	3.10	10	01/27/14 10:34	1/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	86	22 - 105	01/27/14 10:34	
p-Terphenyl-d14	103	25 - 127	01/27/14 10:34	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1400482  
**Project:** Spill Response @ Brass      **Date Collected:** 12/09/13 10:15  
**Sample Matrix:** Water      **Date Received:** 01/07/14 10:30  
  
**Sample Name:** WS1 BLNG(Surface)      **Units:** mg/L  
**Lab Code:** J1400482-002      **Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	41.3	9.09	3.83	20	01/28/14 14:31	1/27/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	151	25 - 147	01/28/14 14:31	*

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WS3 OD(Surface)  
**Lab Code:** J1400482-003

**Service Request:** J1400482  
**Date Collected:** 12/10/13 13:27  
**Date Received:** 01/07/14 10:30

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	<b>1.8</b>	1.0	0.21	1	01/28/14 13:52	*
Ethylbenzene	0.21 U	1.0	0.21	1	01/28/14 13:52	*
m,p-Xylenes	0.31 U	2.0	0.31	1	01/28/14 13:52	*
o-Xylene	0.14 U	1.0	0.14	1	01/28/14 13:52	*
Toluene	<b>0.53 J</b>	1.0	0.19	1	01/28/14 13:52	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	108	72 - 121	01/28/14 13:52	
4-Bromofluorobenzene	98	86 - 113	01/28/14 13:52	
Dibromofluoromethane	102	86 - 112	01/28/14 13:52	
Toluene-d8	102	88 - 115	01/28/14 13:52	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400482
<b>Project:</b>	Spill Response @ Brass	<b>Date Collected:</b>	12/10/13 13:27
<b>Sample Matrix:</b>	Water	<b>Date Received:</b>	01/07/14 10:30
<b>Sample Name:</b>	WS3 OD(Surface)	<b>Units:</b>	ug/L
<b>Lab Code:</b>	J1400482-003	<b>Basis:</b>	NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.428 U	0.971	0.428	1	01/27/14 10:59	1/27/14	
2-Methylnaphthalene	0.428 U	0.971	0.428	1	01/27/14 10:59	1/27/14	
Acenaphthene	0.399 U	0.971	0.399	1	01/27/14 10:59	1/27/14	
Acenaphthylene	0.243 U	0.971	0.243	1	01/27/14 10:59	1/27/14	
Anthracene	0.369 U	0.971	0.369	1	01/27/14 10:59	1/27/14	
Benz(a)anthracene	0.340 U	0.971	0.340	1	01/27/14 10:59	1/27/14	
Benzo(a)pyrene	0.301 U	0.971	0.301	1	01/27/14 10:59	1/27/14	
Benzo(b)fluoranthene	0.243 U	0.971	0.243	1	01/27/14 10:59	1/27/14	
Benzo(g,h,i)perylene	0.379 U	0.971	0.379	1	01/27/14 10:59	1/27/14	
Benzo(k)fluoranthene	0.340 U	0.971	0.340	1	01/27/14 10:59	1/27/14	
Chrysene	0.234 U	0.971	0.234	1	01/27/14 10:59	1/27/14	
Dibenz(a,h)anthracene	0.350 U	0.971	0.350	1	01/27/14 10:59	1/27/14	
Fluoranthene	0.379 U	0.971	0.379	1	01/27/14 10:59	1/27/14	
Fluorene	0.457 U	0.971	0.457	1	01/27/14 10:59	1/27/14	
Indeno(1,2,3-cd)pyrene	0.389 U	0.971	0.389	1	01/27/14 10:59	1/27/14	
Naphthalene	0.379 U	0.971	0.379	1	01/27/14 10:59	1/27/14	
Phenanthrene	0.340 U	0.971	0.340	1	01/27/14 10:59	1/27/14	
Pyrene	0.301 U	0.971	0.301	1	01/27/14 10:59	1/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	60	22 - 105	01/27/14 10:59	
p-Terphenyl-d14	86	25 - 127	01/27/14 10:59	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water  
**Sample Name:** WS3 OD(Surface)  
**Lab Code:** J1400482-003

**Service Request:** J1400482  
**Date Collected:** 12/10/13 13:27  
**Date Received:** 01/07/14 10:30

**Units:** mg/L  
**Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>5.39</b>	1.56	0.658	1	01/27/14 17:13	1/27/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	103	25 - 147	01/27/14 17:13	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1400482  
**Project:** Spill Response @ Brass      **Date Collected:** 12/10/13 00:00  
**Sample Matrix:** Water      **Date Received:** 01/07/14 10:30  
  
**Sample Name:** SS1 HPD(Surface)      **Units:** ug/L  
**Lab Code:** J1400482-004      **Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	<b>2.2</b>	1.0	0.21	1	01/28/14 14:18	*
Ethylbenzene	0.21 U	1.0	0.21	1	01/28/14 14:18	*
m,p-Xylenes	0.31 U	2.0	0.31	1	01/28/14 14:18	*
o-Xylene	<b>0.34 J</b>	1.0	0.14	1	01/28/14 14:18	*
Toluene	<b>1.9</b>	1.0	0.19	1	01/28/14 14:18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	104	72 - 121	01/28/14 14:18	
4-Bromofluorobenzene	99	86 - 113	01/28/14 14:18	
Dibromofluoromethane	102	86 - 112	01/28/14 14:18	
Toluene-d8	104	88 - 115	01/28/14 14:18	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400482
<b>Project:</b>	Spill Response @ Brass	<b>Date Collected:</b>	12/10/13 00:00
<b>Sample Matrix:</b>	Water	<b>Date Received:</b>	01/07/14 10:30
<b>Sample Name:</b>	SS1 HPD(Surface)	<b>Units:</b>	ug/L
<b>Lab Code:</b>	J1400482-004	<b>Basis:</b>	NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.306 U	0.694	0.306	1	01/27/14 11:24	1/27/14	
2-Methylnaphthalene	0.306 U	0.694	0.306	1	01/27/14 11:24	1/27/14	
Acenaphthene	0.285 U	0.694	0.285	1	01/27/14 11:24	1/27/14	
Acenaphthylene	0.174 U	0.694	0.174	1	01/27/14 11:24	1/27/14	
Anthracene	0.264 U	0.694	0.264	1	01/27/14 11:24	1/27/14	
Benz(a)anthracene	0.244 U	0.694	0.244	1	01/27/14 11:24	1/27/14	
Benzo(a)pyrene	0.216 U	0.694	0.216	1	01/27/14 11:24	1/27/14	
Benzo(b)fluoranthene	0.174 U	0.694	0.174	1	01/27/14 11:24	1/27/14	
Benzo(g,h,i)perylene	0.271 U	0.694	0.271	1	01/27/14 11:24	1/27/14	
Benzo(k)fluoranthene	0.244 U	0.694	0.244	1	01/27/14 11:24	1/27/14	
Chrysene	0.167 U	0.694	0.167	1	01/27/14 11:24	1/27/14	
Dibenz(a,h)anthracene	0.250 U	0.694	0.250	1	01/27/14 11:24	1/27/14	
Fluoranthene	0.271 U	0.694	0.271	1	01/27/14 11:24	1/27/14	
Fluorene	0.327 U	0.694	0.327	1	01/27/14 11:24	1/27/14	
Indeno(1,2,3-cd)pyrene	0.278 U	0.694	0.278	1	01/27/14 11:24	1/27/14	
Naphthalene	0.271 U	0.694	0.271	1	01/27/14 11:24	1/27/14	
Phenanthrene	0.244 U	0.694	0.244	1	01/27/14 11:24	1/27/14	
Pyrene	0.216 U	0.694	0.216	1	01/27/14 11:24	1/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	56	22 - 105	01/27/14 11:24	
p-Terphenyl-d14	88	25 - 127	01/27/14 11:24	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water  
  
**Sample Name:** SS1 HPD(Surface)  
**Lab Code:** J1400482-004

**Service Request:** J1400482  
**Date Collected:** 12/10/13 00:00  
**Date Received:** 01/07/14 10:30

**Units:** mg/L  
**Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	3.97	1.72	0.725	1	01/27/14 17:40	1/27/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	93	25 - 147	01/27/14 17:40	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water  
  
**Sample Name:** BOK(H<sub>2</sub>O)  
**Lab Code:** J1400482-005

**Service Request:** J1400482  
**Date Collected:** 12/14/13 13:59  
**Date Received:** 01/07/14 10:30

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Benzene	<b>0.24 J</b>	1.0	0.21	1	01/28/14 14:43	*
Ethylbenzene	0.21 U	1.0	0.21	1	01/28/14 14:43	*
m,p-Xylenes	0.31 U	2.0	0.31	1	01/28/14 14:43	*
o-Xylene	0.14 U	1.0	0.14	1	01/28/14 14:43	*
Toluene	0.19 U	1.0	0.19	1	01/28/14 14:43	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
1,2-Dichloroethane-d4	107	72 - 121	01/28/14 14:43	
4-Bromofluorobenzene	95	86 - 113	01/28/14 14:43	
Dibromofluoromethane	102	86 - 112	01/28/14 14:43	
Toluene-d8	101	88 - 115	01/28/14 14:43	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400482
<b>Project:</b>	Spill Response @ Brass	<b>Date Collected:</b>	12/14/13 13:59
<b>Sample Matrix:</b>	Water	<b>Date Received:</b>	01/07/14 10:30
<b>Sample Name:</b>	BOK(H <sub>2</sub> O)	<b>Units:</b>	ug/L
<b>Lab Code:</b>	J1400482-005	<b>Basis:</b>	NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	<b>72.2</b>	3.85	1.70	5	01/27/14 11:49	1/27/14	
2-Methylnaphthalene	<b>97.2</b>	3.85	1.70	5	01/27/14 11:49	1/27/14	
Acenaphthene	<b>3.99</b>	3.85	1.58	5	01/27/14 11:49	1/27/14	
Acenaphthylene	0.962 U	3.85	0.962	5	01/27/14 11:49	1/27/14	
Anthracene	1.47 U	3.85	1.47	5	01/27/14 11:49	1/27/14	
Benz(a)anthracene	1.35 U	3.85	1.35	5	01/27/14 11:49	1/27/14	
Benzo(a)pyrene	1.20 U	3.85	1.20	5	01/27/14 11:49	1/27/14	
Benzo(b)fluoranthene	0.962 U	3.85	0.962	5	01/27/14 11:49	1/27/14	
Benzo(g,h,i)perylene	1.50 U	3.85	1.50	5	01/27/14 11:49	1/27/14	
Benzo(k)fluoranthene	1.35 U	3.85	1.35	5	01/27/14 11:49	1/27/14	
Chrysene	0.924 U	3.85	0.924	5	01/27/14 11:49	1/27/14	
Dibenz(a,h)anthracene	1.39 U	3.85	1.39	5	01/27/14 11:49	1/27/14	
Fluoranthene	1.50 U	3.85	1.50	5	01/27/14 11:49	1/27/14	
Fluorene	<b>9.95</b>	3.85	1.81	5	01/27/14 11:49	1/27/14	
Indeno(1,2,3-cd)pyrene	1.54 U	3.85	1.54	5	01/27/14 11:49	1/27/14	
Naphthalene	<b>7.01</b>	3.85	1.50	5	01/27/14 11:49	1/27/14	
Phenanthrene	<b>20.9</b>	3.85	1.35	5	01/27/14 11:49	1/27/14	
Pyrene	1.20 U	3.85	1.20	5	01/27/14 11:49	1/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	83	22 - 105	01/27/14 11:49	
p-Terphenyl-d14	98	25 - 127	01/27/14 11:49	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water  
**Sample Name:** BOK(H<sub>2</sub>O)  
**Lab Code:** J1400482-005

**Service Request:** J1400482  
**Date Collected:** 12/14/13 13:59  
**Date Received:** 01/07/14 10:30

**Units:** mg/L  
**Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>51.9</b>	1.72	0.725	1	01/27/14 18:08	1/27/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	110	25 - 147	01/27/14 18:08	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1400482  
**Project:** Spill Response @ Brass      **Date Collected:** NA  
**Sample Matrix:** Water      **Date Received:** NA  
  
**Sample Name:** Method Blank      **Units:** ug/L  
**Lab Code:** JQ1400695-02      **Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Benzene	0.21 U	1.0	0.21	1	01/28/14 12:36	
Ethylbenzene	0.21 U	1.0	0.21	1	01/28/14 12:36	
m,p-Xylenes	0.31 U	2.0	0.31	1	01/28/14 12:36	
o-Xylene	0.14 U	1.0	0.14	1	01/28/14 12:36	
Toluene	0.19 U	1.0	0.19	1	01/28/14 12:36	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
1,2-Dichloroethane-d4	107	72 - 121	01/28/14 12:36	
4-Bromofluorobenzene	99	86 - 113	01/28/14 12:36	
Dibromofluoromethane	100	86 - 112	01/28/14 12:36	
Toluene-d8	102	88 - 115	01/28/14 12:36	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400482
<b>Project:</b>	Spill Response @ Brass	<b>Date Collected:</b>	NA
<b>Sample Matrix:</b>	Water	<b>Date Received:</b>	NA
<b>Sample Name:</b>	Method Blank	<b>Units:</b>	ug/L
<b>Lab Code:</b>	JQ1400608-01	<b>Basis:</b>	NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.0440 U	0.100	0.0440	1	01/27/14 08:55	1/27/14	
2-Methylnaphthalene	0.0440 U	0.100	0.0440	1	01/27/14 08:55	1/27/14	
Acenaphthene	0.0410 U	0.100	0.0410	1	01/27/14 08:55	1/27/14	
Acenaphthylene	0.0250 U	0.100	0.0250	1	01/27/14 08:55	1/27/14	
Anthracene	0.0380 U	0.100	0.0380	1	01/27/14 08:55	1/27/14	
Benz(a)anthracene	0.0350 U	0.100	0.0350	1	01/27/14 08:55	1/27/14	
Benzo(a)pyrene	0.0310 U	0.100	0.0310	1	01/27/14 08:55	1/27/14	
Benzo(b)fluoranthene	0.0250 U	0.100	0.0250	1	01/27/14 08:55	1/27/14	
Benzo(g,h,i)perylene	0.0390 U	0.100	0.0390	1	01/27/14 08:55	1/27/14	
Benzo(k)fluoranthene	0.0350 U	0.100	0.0350	1	01/27/14 08:55	1/27/14	
Chrysene	0.0240 U	0.100	0.0240	1	01/27/14 08:55	1/27/14	
Dibenz(a,h)anthracene	0.0360 U	0.100	0.0360	1	01/27/14 08:55	1/27/14	
Fluoranthene	0.0390 U	0.100	0.0390	1	01/27/14 08:55	1/27/14	
Fluorene	0.0470 U	0.100	0.0470	1	01/27/14 08:55	1/27/14	
Indeno(1,2,3-cd)pyrene	0.0400 U	0.100	0.0400	1	01/27/14 08:55	1/27/14	
Naphthalene	0.0390 U	0.100	0.0390	1	01/27/14 08:55	1/27/14	
Phenanthrene	0.0350 U	0.100	0.0350	1	01/27/14 08:55	1/27/14	
Pyrene	0.0310 U	0.100	0.0310	1	01/27/14 08:55	1/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	79	22 - 105	01/27/14 08:55	
p-Terphenyl-d14	101	25 - 127	01/27/14 08:55	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1400482  
**Project:** Spill Response @ Brass      **Date Collected:** NA  
**Sample Matrix:** Water      **Date Received:** NA  
  
**Sample Name:** Method Blank      **Units:** mg/L  
**Lab Code:** JQ1400609-01      **Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	0.0841 U	0.200	0.0841	1	01/27/14 14:54	1/27/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	95	25 - 147	01/27/14 14:54	

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water

**Service Request:** J1400482

**SURROGATE RECOVERY SUMMARY**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

<b>Sample Name</b>	<b>Lab Code</b>	<b>1,2-Dichloroethane-d4</b>	<b>4-Bromofluorobenzene</b>	<b>Dibromofluoromethane</b>
WSC1 OD(Surface)	J1400482-001	108	101	106
WS1 BLNG(Surface)	J1400482-002	102	93	97
WS3 OD(Surface)	J1400482-003	108	98	102
SS1 HPD(Surface)	J1400482-004	104	99	102
BOK(H2O)	J1400482-005	107	95	102
Lab Control Sample	JQ1400695-01	103	96	102
Method Blank	JQ1400695-02	107	99	100

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water

**Service Request:** J1400482

**SURROGATE RECOVERY SUMMARY**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

<b>Sample Name</b>	<b>Lab Code</b>	<b>Toluene-d8</b>
		<b>88 - 115</b>
WSC1 OD(Surface)	J1400482-001	103
WS1 BLNG(Surface)	J1400482-002	93
WS3 OD(Surface)	J1400482-003	102
SS1 HPD(Surface)	J1400482-004	104
BOK(H2O)	J1400482-005	101
Lab Control Sample	JQ1400695-01	98
Method Blank	JQ1400695-02	102

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water

**Service Request:** J1400482  
**Date Analyzed:** 01/28/14

**Lab Control Sample Summary**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B      **Units:** ug/L  
   **Basis:** NA  
   **Analysis Lot:** 378049

**Lab Control Sample**  
**JQ1400695-01**

<b>Analyte Name</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Benzene	18.9	20.0	95	80-117
Ethylbenzene	18.4	20.0	92	82-119
m,p-Xylenes	37.1	40.0	93	79-122
o-Xylene	19.7	20.0	99	80-119
Toluene	18.4	20.0	92	52-152

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water

**Service Request:** J1400482

**SURROGATE RECOVERY SUMMARY**  
**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM

**Extraction Method:** EPA 3510C

<b>Sample Name</b>	<b>Lab Code</b>	<b>2-Fluorobiphenyl</b>	<b>p-Terphenyl-d14</b>
WSC1 OD(Surface)	J1400482-001	72	97
WS1 BLNG(Surface)	J1400482-002	86	103
WS3 OD(Surface)	J1400482-003	60	86
SS1 HPD(Surface)	J1400482-004	56	88
BOK(H2O)	J1400482-005	83	98
Method Blank	JQ1400608-01	79	101
Lab Control Sample	JQ1400608-02	79	102
Duplicate Lab Control Sample	JQ1400608-03	77	98

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400482
<b>Project:</b>	Spill Response @ Brass	<b>Date Analyzed:</b>	01/27/14
<b>Sample Matrix:</b>	Water	<b>Date Extracted:</b>	01/27/14

**Duplicate Lab Control Sample Summary**  
**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

<b>Analysis Method:</b>	8270C SIM	<b>Units:</b>	ug/L
<b>Prep Method:</b>	EPA 3510C	<b>Basis:</b>	NA
		<b>Analysis Lot:</b>	378032

**Lab Control Sample**  
**JQ1400608-02**

**Duplicate Lab Control Sample**  
**JQ1400608-03**

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.72	2.00	86	1.65	2.00	82	34-107	4	30
2-Methylnaphthalene	1.74	2.00	87	1.67	2.00	83	41-107	4	30
Acenaphthene	1.68	2.00	84	1.62	2.00	81	41-109	4	30
Acenaphthylene	1.72	2.00	86	1.66	2.00	83	44-120	4	30
Anthracene	1.71	2.00	85	1.60	2.00	80	50-115	6	30
Benz(a)anthracene	1.81	2.00	90	1.74	2.00	87	46-133	4	30
Benzo(a)pyrene	1.65	2.00	83	1.60	2.00	80	49-122	3	30
Benzo(b)fluoranthene	2.10	2.00	105	2.03	2.00	102	48-122	3	30
Benzo(g,h,i)perylene	1.12	2.00	56	1.05	2.00	52	49-114	7	30
Benzo(k)fluoranthene	1.85	2.00	92	1.83	2.00	91	51-119	1	30
Chrysene	1.81	2.00	91	1.71	2.00	85	51-117	6	30
Dibenz(a,h)anthracene	1.25	2.00	62	1.21	2.00	60	48-121	3	30
Fluoranthene	1.95	2.00	98	1.74	2.00	87	52-122	11	30
Fluorene	1.78	2.00	89	1.70	2.00	85	46-113	5	30
Indeno(1,2,3-cd)pyrene	1.18	2.00	59	1.09	2.00	55	45-121	7	30
Naphthalene	1.70	2.00	85	1.59	2.00	80	42-104	6	30
Phenanthrene	1.79	2.00	89	1.69	2.00	84	49-107	6	30
Pyrene	2.13	2.00	106	2.06	2.00	103	49-128	3	30

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water

**Service Request:** J1400482

**SURROGATE RECOVERY SUMMARY**  
**Diesel Range Organics by GC**

**Analysis Method:** 8015B

**Extraction Method:** EPA 3510C

<b>Sample Name</b>	<b>Lab Code</b>	<b>o-Terphenyl</b>
		<b>25 - 147</b>
WSC1 OD(Surface)	J1400482-001	91
WS1 BLNG(Surface)	J1400482-002	151 *
WS3 OD(Surface)	J1400482-003	103
SS1 HPD(Surface)	J1400482-004	93
BOK(H <sub>2</sub> O)	J1400482-005	110
Method Blank	JQ1400609-01	95
Lab Control Sample	JQ1400609-02	102
Duplicate Lab Control Sample	JQ1400609-03	95

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @ Brass  
**Sample Matrix:** Water

**Service Request:** J1400482  
**Date Analyzed:** 01/27/14  
**Date Extracted:** 01/27/14

**Duplicate Lab Control Sample Summary**  
**Diesel Range Organics by GC**

**Analysis Method:** 8015B                                   **Units:** mg/L  
**Prep Method:** EPA 3510C                           **Basis:** NA  
   **Analysis Lot:** 378001

<b>Analyte Name</b>	<b>Lab Control Sample</b> <b>JQ1400609-02</b>				<b>Duplicate Lab Control Sample</b> <b>JQ1400609-03</b>				
	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
Diesel Range Organics (C10 - C28)	1.18	1.25	95	1.11	1.25	89	43-124	6	30



J1400482

J1400482

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Giolee Global Resources NIG Ltd

Spill Response @ Brass

## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

1, Imo Road  
Street, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161

Page

Giolee Global Resources NIG Ltd

Spill Response @ Brass

Project Name <b>SPILL RESPONSE @ BRASS</b>		Project Number Report To Report CC		ANALYSIS REQUESTED (Include Method Number and % Preservative TPH PAH BTEX)										REMARKS					
Company Address <b>GIOLEE GLOBAL RESOURCES LIMITED, . #18 UYO STREET RUMUOMASI, PORT HARCOURT</b>																			
Phone # 7031513161		FAX #																	
Sampler's Signature <i>KN</i>		Sampler's Printed Name NWTIE KEN NWITIITO																	
CLIENT SAMPLE ID	LAB ID	SAMPLING		Matrix															
SD OD(0-0.2)m		DATE 07/12/2013	TIME 14:49 hrs	SOIL															
SSC <sub>1</sub> OD(0.0)m		07/12/2013	16:12 hrs	SOIL															
SSC <sub>1</sub> OD(0-0.3)m		07/12/2013	16:12 hrs	SOIL															
WSC <sub>1</sub> OD(Surface)		07/12/2013	16:12 hrs	H <sub>2</sub> O															
Special Instructions/Comments:					TURNAROUND REQUIREMENTS					REPORT REQUIREMENTS					INVOICE INFORMATION				
					PRESERVE/CHARGE APPLICABLE STANDARD					I. Results Only II. Results + QC Summary (GLC, DUE, XRF/SSO as required) III. Results + QC and Calibration Parameters IV. Data Validation Report with Raw Data					D.O.R. Bill to: Date: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Refugee/Signature <i>Abasi</i>	Received By <i>Soso</i>	Refugee/Signature <i>Soso</i>	Received By <i>Soso</i>	Refugee/Signature <i>Abasi</i>	Received By <i>Soso</i>	Refugee/Signature <i>Abasi</i>	Received By <i>Soso</i>	Refugee/Signature <i>Abasi</i>	Received By <i>Soso</i>	Refugee/Signature <i>Abasi</i>	Received By <i>Soso</i>	Refugee/Signature <i>Abasi</i>	Received By <i>Soso</i>	Refugee/Signature <i>Abasi</i>	Received By <i>Soso</i>	Refugee/Signature <i>Abasi</i>	Received By <i>Soso</i>	Refugee/Signature <i>Abasi</i>	
Printed Name ECHIEGBU SOWHIA	Printed Name JOSE EMBONIE	Printed Name Firm GIOLEE GLOBAL Resources	Printed Name U.P.S.	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm	
Date/Time 19/12/13	Date/Time 17/12/13	Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time	

water Samples

J1400482

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Environmental  
639 Uyo Street, Rumuodasi, Port Harcourt. Email: gloeeglobal@yahoo.com. Tel: 07026931598, 07031513167

## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

J1400482  
Gloee Global Resources NIG Ltd  
Spill Response @ Brass

Page

Project Name <b>SPILL RESPONSE @ BRASS</b>	Project Number	2	Preanalytical	TPH	PAH	BTEX	ANALYSIS REQUESTED (Include Method Number and C)			REMARKS	
Report To GLOEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMUODASI PORT HARCOURT	Report CC	Z									
Company Address Phone # 7031513161	FAX #										
Sampler's Signature <i>KW</i>	Sampler's Printed Name NWTTE KEN NWIFITO										
CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	TIME	Matrix							
WS1 BLNG (Surfer)		09/12/2013	10:15 hrs	H <sub>2</sub> O							
SS1 BLNG (0.0)m		09/12/2013	10:20hrs	SOIL							
SSI BLNG (0-0.3)m		08/12/2013	15:45hrs.	SOIL							
Special Instructions/Comments:											
<input type="checkbox"/> RUSH/URGENT CHARGES APPLIED <input type="checkbox"/> STANDARD					REQUESTED FAX DATE	REQUESTED REPORT IS IN:	TURNAROUND REQUIREMENTS I. Results Only II. Results + QC Remarks (GLC, DOP, LIBS/MS) as required III. Results + QC and Calibration Summary IV. Data Validation Report with Raw Data			REPORT REQUIREMENTS Edata <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	INVOICE INFORMATION MOU # Bill to Bill to Bill to
Received By <i>[Signature]</i>	Received By <i>[Signature]</i>	Received By <i>[Signature]</i>	Received By <i>[Signature]</i>	Received By <i>[Signature]</i>	Received By <i>[Signature]</i>	Received By <i>[Signature]</i>	Received By <i>[Signature]</i>	Received By <i>[Signature]</i>	Received By <i>[Signature]</i>		
Printed Name UCHEGBU SOPHIA	Printed Name <i>JOSE ENOBONG</i>	Printed Name	Printed Name	Printed Name							
Firm GLOEE GLOBAL Resources	Firm <i>ACS</i>	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm		
Date/Time 17/12/13	Date/Time 17/12/13	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time 17/14 1030		

Water Samples





## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Street, P.O. Box Number, Town, State/Province/Region, Tel: 070-22017798, Email: gloee@globalresources.com

J1400482

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Gloee Global Resources NIG Ltd  
Spill Response @ Brass

J1400482

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Sample Name	Project Number	ANALYSIS REQUESTED (Include Method Number and Container Preservative)										Preservative Key		
SPILL RESPONSE @ BRASS		3	Preservative											
Report To	Project PG		Reactive											
Comments/Messages														
GLOEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMYOMASI, PORT HARCOURT														
Phone #	FAX #		TPH											
7031513161			PPH											
Sampled By Signature	Sampled By Printed Name													
	WHITE KEN MEFUTU													
CLIENT SAMPLE ID	LAB ID	SAMPLING DATE												
		10/12/2013												
SS-IPO(0.10)ml		10/12/2013												
SS-IPO(0.5ml)		10/12/2013												
SS-IPO(Surface)		10/12/2013												
Special Environmental Requirements														
TEST AND REPORT REQUIREMENTS					REPORT REQUIREMENTS					INVOICING INFORMATION				
<input checked="" type="checkbox"/> RECOMMENDED TESTS <input type="checkbox"/> STANDARD <input type="checkbox"/> ACID/ALKALI TEST <input type="checkbox"/> CONCENTRATION TEST					1. Test Date 2. Sample & QC Subsamples 3. Type of Laboratory Requested 4. Results - AC and Standard Required 5. Any Reference Points with Specified					PO# DO# Description				
Received By Signature: Printed Name: JOSE ENGRICO					Received By Signature: Printed Name: JOSE ENGRICO					Received By Signature: Printed Name: SHAW LIGHTING				
Received By Signature: Printed Name: UPS					Received By Signature: Printed Name: UPS					Received By Signature: Printed Name: AKS				
Date: 17/12/13 Date/Time: 17/12/13					Date: 17/12/13 Date/Time: 17/12/13					Date: 17/12/13 Date/Time: 17/12/13				

Water Samples

J1400482  
Globee Global Resource

Globee Global Resources NIG Ltd  
Spill Response @ Brass

**CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM**



514004882

Water Synops



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## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM J1400482

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Environmental

#18 Uyo Street, Rumuomasi, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161

Giolee Global Resources NIG Ltd  
Spill Response @ Brass

Page



Project Name <b>SPILL RESPONSE @ BRASS</b>		Project Number		ANALYSIS REQUESTED (Include Method No.)										
Report To		Report CC		Preservative	TPH	PAH	BTEX							
Company/Address <b>GIOLEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMUOMASI, PORT HARCOURT</b>														
Phone # 7031513161		FAX #		N							REMARKS			
Sampler's Signature <i>RN</i>		Sampler's Printed Name NWITE KEN NWIFITFO												
CLIENT SAMPLE ID	LAB ID	SAMPLING DATE		Matrix										
		TIME												
SS,OD (0.0)m		06/12/2013	15:20 hrs	SOIL										
SS, OD(0- 0.3)m		06/12/2013	15:22hrs	SOIL										
VS,OD (Surface) <i>Broken</i>		06/12/2013	15:45hrs	H <sub>2</sub> O										
Special Instructions/Comments:					TURNAROUND REQUIREMENTS				REPORT REQUIREMENTS				INVOICE INFORMATION	
					<input checked="" type="checkbox"/> RUSH (SURCHARGES APPLY) <input checked="" type="checkbox"/> STANDARD				<input checked="" type="checkbox"/> I. Results Only <input checked="" type="checkbox"/> II. Results + QC Summaries <small>(LCS, DUP, MS/MSD as required)</small> <input checked="" type="checkbox"/> III. Results + QC and Calibration Summaries <input checked="" type="checkbox"/> IV. Data Validation Report with Raw Data				P.O. # _____ Bill to _____	
					REQUESTED FAX DATE				REQUESTED REPORT DATE				Edata <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Relinquished By <i>Sophia</i>	Received By <i>Joe Enobong</i>	Relinquished By		Received By <i>John Lytby</i>	Relinquished By		Received By <i>John Lytby</i>		Relinquished By		Received By <i>John Lytby</i>			
Signature <i>Sophia</i>	Signature <i>Joe Enobong</i>	Signature		Signature <i>John Lytby</i>	Signature		Signature <i>John Lytby</i>		Signature		Signature <i>John Lytby</i>			
Printed Name <b>JCHEGBU SOPHIA</b>	Printed Name <b>JOE ENOBONG</b>	Printed Name		Printed Name <i>John Lytby</i>	Printed Name		Printed Name <i>John Lytby</i>		Printed Name		Printed Name <i>John Lytby</i>			
Firm <b>GOLLE GLOBAL RESOURCES LTD</b>	Firm <b>UPS</b>	Firm		Firm <i>ACG</i>	Firm		Firm <i>ACG</i>		Firm		Firm <i>ACG</i>			
Date/Time <b>17/12/13</b>	Date/Time <b>17/12/13</b>	Date/Time		Date/Time <b>12/23/13 1200</b>	Date/Time		Date/Time <b>12/23/13 1200</b>		Date/Time		Date/Time <b>11/14/13 1030</b>			

Water Samples



February 17, 2014

Service Request No:J1400817

Lesi Maol  
Giolee Global Resources NIG Ltd  
18 UYO STREET RUMUMASI

### Laboratory Results for: During Clean-Up@Brass

Dear Lesi,

Enclosed are the results of the sample(s) submitted to our laboratory February 03, 2014  
For your reference, these analyses have been assigned our service request number **J1400817**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the NELAC 2003 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 4410. You may also contact me via email at [Jerry.Allen@alsglobal.com](mailto:Jerry.Allen@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Jerry Allen  
Project Manager

ADDRESS 9143 Philips Highway, Suite 200, Jacksonville, FL 32256

PHONE +1 904 739 2277 | FAX +1 904 739 2011

ALS Group USA, Corp.

dba ALS Environmental



### SAMPLE DETECTION SUMMARY

CLIENT ID: SS1 OD(0-0.3)m		Lab ID: J1400817-001					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		37		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		93.9		9.40	25.7	mg/Kg	8015B
Ethylbenzene		0.654	J	0.342	14.2	ug/Kg	8260B
Toluene		1.37	J	0.769	14.2	ug/Kg	8260B
Naphthalene		101		81.1	88.9	ug/Kg	8270C SIM

CLIENT ID: SSC1 OD(0.0)m		Lab ID: J1400817-002					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		86		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		14.3	BJ	8.30	22.7	mg/Kg	8015B

CLIENT ID: SS2 OD(0.0)m		Lab ID: J1400817-003					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		81		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		21.6	B	4.46	12.2	mg/Kg	8015B

CLIENT ID: SS2 OD(0.3)m		Lab ID: J1400817-004					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		30		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		31.2	J	11.7	31.8	mg/Kg	8015B

CLIENT ID: SS3 OD(0.0)m		Lab ID: J1400817-005					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		86		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		7.37	BJ	4.20	11.5	mg/Kg	8015B

CLIENT ID: SS3 OD(0.3)m		Lab ID: J1400817-006					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		86		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		6.20	BJ	4.05	11.0	mg/Kg	8015B

CLIENT ID: UPOD Point A		Lab ID: J1400817-007					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		85		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		11.2	BJ	4.23	11.5	mg/Kg	8015B
Fluoranthene		10.7		4.56	7.74	ug/Kg	8270C SIM
Phenanthrene		9.91	J	3.88	15.5	ug/Kg	8270C SIM
Pyrene		12.2		4.56	7.74	ug/Kg	8270C SIM

CLIENT ID: UPOD Point B		Lab ID: J1400817-008					
Analyte		Results	Flag	MDL	PQL	Units	Method
Solids, Total		83		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)		54.0		8.17	22.3	mg/Kg	8015B



### SAMPLE DETECTION SUMMARY

CLIENT ID: UPOD Point C	Lab ID: J1400817-009					
Analyte	Results	Flag	MDL	PQL	Units	Method
Solids, Total	80		0.10	0.10	Percent	160.3
Diesel Range Organics (C10 - C28)	46.2		8.69	23.7	mg/Kg	8015B



**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil

**Service Request:** J1400817  
**Date Received:** 2/3/14

## CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. When appropriate to the procedure, method blank results have been reported with each analytical test. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Parameters that are included in the NELAC Fields of Testing but are not included in the lab's NELAC accreditation are identified in the discussion of each analytical procedure.

### Sample Receipt

Nine soil samples were received for analysis at ALS Environmental on 02/03/2014.

The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at  $\leq 6^{\circ}\text{C}$  upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

### Volatile Organic Analyses

Method 8260B: Samples were received within the recommended holding time. The analysis was performed as soon as possible after receipt by the laboratory.

### Semi-Volatile Organic Analyses:

Method 8270 SIM: Samples were received within the recommended holding time. The analysis was performed as soon as possible after receipt by the laboratory.

Method 8270 SIM: The Method Reporting Limit (MRL) is ok for all target analytes in samples J1400817-01, J1400817-03, J1400817-04, J1400817-05, J1400817-06 and J1400817-07. The sample was extracted using approximately 30g of samples.

The Method Reporting Limit (MRL) is ok for all target analytes in sample J1400817-02, J1400817-08, and J1400817-09. The sample was extracted using approximately 30g of sample.

Method 8270 SIM: The reporting limit is elevated for analyte(s) in sample(s) J1400817-001 and J1400817-009. The sample extract was diluted prior to instrumental analysis due to relatively high levels of non-target background components. The extract was dark colored and viscous, which indicated the need to perform a dilution prior to injection into the instrument. The result(s) is/are flagged to indicate the matrix interference.

8270 SIM: The control criteria for all the surrogate(s) in sample J1400817-001 and J1400817-009 are applicable. The analysis of the sample required no dilution.

Method 8015C: Samples were received within the recommended holding time. The analysis was performed as soon as possible after receipt by the laboratory.

### General Chemistry Analyses:

Approved by

A handwritten signature in black ink is placed over a horizontal line, which is part of a larger line that includes the date and page number.

Date 2/17/2014

4 of 62



No significant data anomalies were noted with this analysis.

Approved by

A handwritten signature in black ink, appearing to read "John".

Date 2/17/2014

5 of 62



## State Certifications, Accreditations, and Licenses

<b>Agency</b>	<b>Number</b>	<b>Expire Date</b>
Florida Department of Health	E82502	6/30/2014
North Carolina Department of Environment and Natural Resources	527	12/31/2014
Virginia Environmental Accreditation Program	460191	12/14/2014
Louisiana Department of Environmental Quality	02086	6/30/2014
Georgia Department of Natural Resources	958	6/30/2014
Kentucky Division of Waste Management	63	6/30/2014
South Carolina Department of Health and Environmental Control	96021001	6/30/2014
Texas Commission on Environmental Quality	T104704197-13-5	5/31/2014
Maine Department of Health and Human Services	2011006	2/3/2015
Department of Defense	66206	5/31/2014
Pennsylvania Department of Environmental Protection	68-04835	8/31/2014

## Data Qualifiers

### CAS Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section  $\geq 10\%$  front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
- I Internal standard not within the specified limits. See case narrative.
- J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte  $> 40\%$  difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

## **Data Qualifiers**

### **CAS Standard**

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
  - i The MRL/MDL has been elevated due to a matrix interference.

# ALS Laboratory Group

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass

**Service Request:** J1400817

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
J1400817-001	SS1 OD(0-0.3)m	1/13/2014	1315
J1400817-002	SSC1 OD(0.0)m	1/13/2014	1548
J1400817-003	SS2 OD(0.0)m	1/13/2014	1333
J1400817-004	SS2 OD(0.3)m	1/13/2014	1333
J1400817-005	SS3 OD(0.0)m	1/13/2014	1357
J1400817-006	SS3 OD(0.3)m	1/13/2014	1357
J1400817-007	UPOD Point A	1/13/2014	1105
J1400817-008	UPOD Point B	1/13/2014	1105
J1400817-009	UPOD Point C	1/14/2014	1241

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
**Sample Name:** SS1 OD(0-0.3)m  
**Lab Code:** J1400817-001

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:15  
**Date Received:** 02/03/14 12:40  
**Units:** ug/Kg  
**Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.484 U	14.2	0.484	1	02/10/14 16:38	2/10/14	*
Ethylbenzene	<b>0.654 J</b>	14.2	0.342	1	02/10/14 16:38	2/10/14	*
m,p-Xylenes	0.598 U	28.5	0.598	1	02/10/14 16:38	2/10/14	*
o-Xylene	0.456 U	14.2	0.456	1	02/10/14 16:38	2/10/14	*
Toluene	<b>1.37 J</b>	14.2	0.769	1	02/10/14 16:38	2/10/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	86	80 - 120	02/10/14 16:38	
4-Bromofluorobenzene	95	64 - 135	02/10/14 16:38	
Dibromofluoromethane	100	74 - 125	02/10/14 16:38	
Toluene-d8	101	46 - 156	02/10/14 16:38	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Collected:</b>	01/13/14 13:15
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	02/03/14 12:40
<b>Sample Name:</b>	SS1 OD(0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1400817-001	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	70.7 U	88.9	70.7	5	02/12/14 09:39	2/10/14	
2-Methylnaphthalene	60.2 U	88.9	60.2	5	02/12/14 09:39	2/10/14	
Acenaphthene	81.1 U	178	81.1	5	02/12/14 09:39	2/10/14	
Acenaphthylene	57.6 U	178	57.6	5	02/12/14 09:39	2/10/14	
Anthracene	41.9 U	88.9	41.9	5	02/12/14 09:39	2/10/14	
Benz(a)anthracene	49.7 U	88.9	49.7	5	02/12/14 09:39	2/10/14	
Benzo(a)pyrene	26.2 U	88.9	26.2	5	02/12/14 09:39	2/10/14	
Benzo(b)fluoranthene	52.4 U	88.9	52.4	5	02/12/14 09:39	2/10/14	*
Benzo(g,h,i)perylene	57.6 U	88.9	57.6	5	02/12/14 09:39	2/10/14	*
Benzo(k)fluoranthene	62.8 U	88.9	62.8	5	02/12/14 09:39	2/10/14	*
Chrysene	49.7 U	88.9	49.7	5	02/12/14 09:39	2/10/14	
Dibenz(a,h)anthracene	70.7 U	88.9	70.7	5	02/12/14 09:39	2/10/14	*
Fluoranthene	52.4 U	88.9	52.4	5	02/12/14 09:39	2/10/14	
Fluorene	57.6 U	88.9	57.6	5	02/12/14 09:39	2/10/14	
Indeno(1,2,3-cd)pyrene	57.6 U	88.9	57.6	5	02/12/14 09:39	2/10/14	*
Naphthalene	<b>101</b>	88.9	81.1	5	02/12/14 09:39	2/10/14	
Phenanthrene	44.5 U	178	44.5	5	02/12/14 09:39	2/10/14	
Pyrene	52.4 U	88.9	52.4	5	02/12/14 09:39	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	84	30 - 118	02/12/14 09:39	
p-Terphenyl-d14	78	41 - 146	02/12/14 09:39	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1 OD(0-0.3)m  
**Lab Code:** J1400817-001

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:15  
**Date Received:** 02/03/14 12:40  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Diesel Range Organics (C10 - C28)	93.9	25.7	9.40	1	02/10/14 18:45	2/10/14	
Surrogate Name	% Rec	Control Limits		Date Analyzed		Q	
o-Terphenyl	81	31 - 181		02/10/14 18:45			

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1 OD(0-0.3)m  
**Lab Code:** J1400817-001

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:15  
**Date Received:** 02/03/14 12:40

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	37	Percent	0.10	0.10	1	02/13/14 17:15	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
**Sample Name:** SSC1 OD(0.0)m  
**Lab Code:** J1400817-002

**Service Request:** J1400817  
**Date Collected:** 01/13/14 15:48  
**Date Received:** 02/03/14 12:40  
**Units:** ug/Kg  
**Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.170 U	4.72	0.170	1	02/10/14 17:08	2/10/14	*
Ethylbenzene	0.120 U	4.72	0.120	1	02/10/14 17:08	2/10/14	*
m,p-Xylenes	0.210 U	9.43	0.210	1	02/10/14 17:08	2/10/14	*
o-Xylene	0.160 U	4.72	0.160	1	02/10/14 17:08	2/10/14	*
Toluene	0.270 U	4.72	0.270	1	02/10/14 17:08	2/10/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	83	80 - 120	02/10/14 17:08	
4-Bromofluorobenzene	91	64 - 135	02/10/14 17:08	
Dibromofluoromethane	103	74 - 125	02/10/14 17:08	
Toluene-d8	100	46 - 156	02/10/14 17:08	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Collected:</b>	01/13/14 15:48
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	02/03/14 12:40
<b>Sample Name:</b>	SSC1 OD(0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1400817-002	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	12.0 U	15.0	12.0	1	02/12/14 01:50	2/10/14	
2-Methylnaphthalene	10.2 U	15.0	10.2	1	02/12/14 01:50	2/10/14	
Acenaphthene	13.7 U	30.0	13.7	1	02/12/14 01:50	2/10/14	
Acenaphthylene	9.72 U	30.0	9.72	1	02/12/14 01:50	2/10/14	
Anthracene	7.07 U	15.0	7.07	1	02/12/14 01:50	2/10/14	
Benz(a)anthracene	8.39 U	15.0	8.39	1	02/12/14 01:50	2/10/14	
Benzo(a)pyrene	4.42 U	15.0	4.42	1	02/12/14 01:50	2/10/14	
Benzo(b)fluoranthene	8.84 U	15.0	8.84	1	02/12/14 01:50	2/10/14	*
Benzo(g,h,i)perylene	9.72 U	15.0	9.72	1	02/12/14 01:50	2/10/14	*
Benzo(k)fluoranthene	10.6 U	15.0	10.6	1	02/12/14 01:50	2/10/14	*
Chrysene	8.39 U	15.0	8.39	1	02/12/14 01:50	2/10/14	
Dibenz(a,h)anthracene	12.0 U	15.0	12.0	1	02/12/14 01:50	2/10/14	*
Fluoranthene	8.84 U	15.0	8.84	1	02/12/14 01:50	2/10/14	
Fluorene	9.72 U	15.0	9.72	1	02/12/14 01:50	2/10/14	
Indeno(1,2,3-cd)pyrene	9.72 U	15.0	9.72	1	02/12/14 01:50	2/10/14	*
Naphthalene	13.7 U	15.0	13.7	1	02/12/14 01:50	2/10/14	
Phenanthrene	7.51 U	30.0	7.51	1	02/12/14 01:50	2/10/14	
Pyrene	8.84 U	15.0	8.84	1	02/12/14 01:50	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	72	30 - 118	02/12/14 01:50	
p-Terphenyl-d14	88	41 - 146	02/12/14 01:50	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SSC1 OD(0.0)m  
**Lab Code:** J1400817-002

**Service Request:** J1400817  
**Date Collected:** 01/13/14 15:48  
**Date Received:** 02/03/14 12:40  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Diesel Range Organics (C10 - C28)	14.3 BJ	22.7	8.30	1	02/10/14 19:12	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	91	31 - 181	02/10/14 19:12	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SSC1 OD(0.0)m  
**Lab Code:** J1400817-002

**Service Request:** J1400817  
**Date Collected:** 01/13/14 15:48  
**Date Received:** 02/03/14 12:40

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	86	Percent	0.10	0.10	1	02/13/14 17:15	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
**Sample Name:** SS2 OD(0.0)m  
**Lab Code:** J1400817-003

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:33  
**Date Received:** 02/03/14 12:40  
**Units:** ug/Kg  
**Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.280 U	8.22	0.280	1	02/10/14 17:38	2/10/14	*
Ethylbenzene	0.198 U	8.22	0.198	1	02/10/14 17:38	2/10/14	*
m,p-Xylenes	0.346 U	16.4	0.346	1	02/10/14 17:38	2/10/14	*
o-Xylene	0.264 U	8.22	0.264	1	02/10/14 17:38	2/10/14	*
Toluene	0.444 U	8.22	0.444	1	02/10/14 17:38	2/10/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	81	80 - 120	02/10/14 17:38	
4-Bromofluorobenzene	92	64 - 135	02/10/14 17:38	
Dibromofluoromethane	100	74 - 125	02/10/14 17:38	
Toluene-d8	100	46 - 156	02/10/14 17:38	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Collected:</b>	01/13/14 13:33
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	02/03/14 12:40
<b>Sample Name:</b>	SS2 OD(0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1400817-003	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	6.63 U	8.34	6.63	1	02/12/14 02:14	2/10/14	
2-Methylnaphthalene	5.65 U	8.34	5.65	1	02/12/14 02:14	2/10/14	
Acenaphthene	7.61 U	16.7	7.61	1	02/12/14 02:14	2/10/14	
Acenaphthylene	5.40 U	16.7	5.40	1	02/12/14 02:14	2/10/14	
Anthracene	3.93 U	8.34	3.93	1	02/12/14 02:14	2/10/14	
Benz(a)anthracene	4.67 U	8.34	4.67	1	02/12/14 02:14	2/10/14	
Benzo(a)pyrene	2.46 U	8.34	2.46	1	02/12/14 02:14	2/10/14	
Benzo(b)fluoranthene	4.91 U	8.34	4.91	1	02/12/14 02:14	2/10/14	*
Benzo(g,h,i)perylene	5.40 U	8.34	5.40	1	02/12/14 02:14	2/10/14	*
Benzo(k)fluoranthene	5.89 U	8.34	5.89	1	02/12/14 02:14	2/10/14	*
Chrysene	4.67 U	8.34	4.67	1	02/12/14 02:14	2/10/14	
Dibenz(a,h)anthracene	6.63 U	8.34	6.63	1	02/12/14 02:14	2/10/14	*
Fluoranthene	4.91 U	8.34	4.91	1	02/12/14 02:14	2/10/14	
Fluorene	5.40 U	8.34	5.40	1	02/12/14 02:14	2/10/14	
Indeno(1,2,3-cd)pyrene	5.40 U	8.34	5.40	1	02/12/14 02:14	2/10/14	*
Naphthalene	7.61 U	8.34	7.61	1	02/12/14 02:14	2/10/14	
Phenanthrene	4.17 U	16.7	4.17	1	02/12/14 02:14	2/10/14	
Pyrene	4.91 U	8.34	4.91	1	02/12/14 02:14	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	65	30 - 118	02/12/14 02:14	
p-Terphenyl-d14	68	41 - 146	02/12/14 02:14	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS2 OD(0.0)m  
**Lab Code:** J1400817-003

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:33  
**Date Received:** 02/03/14 12:40  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>21.6 B</b>	12.2	4.46	1	02/10/14 19:40	2/10/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	94	31 - 181	02/10/14 19:40	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS2 OD(0.0)m  
**Lab Code:** J1400817-003

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:33  
**Date Received:** 02/03/14 12:40

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	81	Percent	0.10	0.10	1	02/13/14 17:15	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
**Sample Name:** SS2 OD(0.3)m  
**Lab Code:** J1400817-004

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:33  
**Date Received:** 02/03/14 12:40  
**Units:** ug/Kg  
**Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.709 U	20.8	0.709	1	02/10/14 18:08	2/10/14	*
Ethylbenzene	0.501 U	20.8	0.501	1	02/10/14 18:08	2/10/14	*
m,p-Xylenes	0.876 U	41.7	0.876	1	02/10/14 18:08	2/10/14	*
o-Xylene	0.667 U	20.8	0.667	1	02/10/14 18:08	2/10/14	*
Toluene	1.13 U	20.8	1.13	1	02/10/14 18:08	2/10/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	89	80 - 120	02/10/14 18:08	
4-Bromofluorobenzene	94	64 - 135	02/10/14 18:08	
Dibromofluoromethane	104	74 - 125	02/10/14 18:08	
Toluene-d8	99	46 - 156	02/10/14 18:08	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Collected:</b>	01/13/14 13:33
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	02/03/14 12:40
<b>Sample Name:</b>	SS2 OD(0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1400817-004	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	18.5 U	23.3	18.5	1	02/12/14 02:39	2/10/14	
2-Methylnaphthalene	15.8 U	23.3	15.8	1	02/12/14 02:39	2/10/14	
Acenaphthene	21.3 U	46.6	21.3	1	02/12/14 02:39	2/10/14	
Acenaphthylene	15.1 U	46.6	15.1	1	02/12/14 02:39	2/10/14	
Anthracene	11.0 U	23.3	11.0	1	02/12/14 02:39	2/10/14	
Benz(a)anthracene	13.1 U	23.3	13.1	1	02/12/14 02:39	2/10/14	
Benzo(a)pyrene	6.85 U	23.3	6.85	1	02/12/14 02:39	2/10/14	
Benzo(b)fluoranthene	13.7 U	23.3	13.7	1	02/12/14 02:39	2/10/14	*
Benzo(g,h,i)perylene	15.1 U	23.3	15.1	1	02/12/14 02:39	2/10/14	*
Benzo(k)fluoranthene	16.5 U	23.3	16.5	1	02/12/14 02:39	2/10/14	*
Chrysene	13.1 U	23.3	13.1	1	02/12/14 02:39	2/10/14	
Dibenz(a,h)anthracene	18.5 U	23.3	18.5	1	02/12/14 02:39	2/10/14	*
Fluoranthene	13.7 U	23.3	13.7	1	02/12/14 02:39	2/10/14	
Fluorene	15.1 U	23.3	15.1	1	02/12/14 02:39	2/10/14	
Indeno(1,2,3-cd)pyrene	15.1 U	23.3	15.1	1	02/12/14 02:39	2/10/14	*
Naphthalene	21.3 U	23.3	21.3	1	02/12/14 02:39	2/10/14	
Phenanthrene	11.7 U	46.6	11.7	1	02/12/14 02:39	2/10/14	
Pyrene	13.7 U	23.3	13.7	1	02/12/14 02:39	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	69	30 - 118	02/12/14 02:39	
p-Terphenyl-d14	56	41 - 146	02/12/14 02:39	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS2 OD(0.3)m  
**Lab Code:** J1400817-004

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:33  
**Date Received:** 02/03/14 12:40  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Diesel Range Organics (C10 - C28)	31.2 J	31.8	11.7	1	02/10/14 20:08	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	74	31 - 181	02/10/14 20:08	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS2 OD(0.3)m  
**Lab Code:** J1400817-004

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:33  
**Date Received:** 02/03/14 12:40

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	30	Percent	0.10	0.10	1	02/13/14 17:15	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Collected:</b>	01/13/14 13:57
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	02/03/14 12:40
<b>Sample Name:</b>	SS3 OD(0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1400817-005	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.225 U	6.62	0.225	1	02/10/14 18:38	2/10/14	*
Ethylbenzene	0.159 U	6.62	0.159	1	02/10/14 18:38	2/10/14	*
m,p-Xylenes	0.278 U	13.2	0.278	1	02/10/14 18:38	2/10/14	*
o-Xylene	0.212 U	6.62	0.212	1	02/10/14 18:38	2/10/14	*
Toluene	0.358 U	6.62	0.358	1	02/10/14 18:38	2/10/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	83	80 - 120	02/10/14 18:38	
4-Bromofluorobenzene	91	64 - 135	02/10/14 18:38	
Dibromofluoromethane	98	74 - 125	02/10/14 18:38	
Toluene-d8	100	46 - 156	02/10/14 18:38	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Collected:</b>	01/13/14 13:57
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	02/03/14 12:40
<b>Sample Name:</b>	SS3 OD(0.0)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1400817-005	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	6.20 U	7.80	6.20	1	02/12/14 03:03	2/10/14	
2-Methylnaphthalene	5.28 U	7.80	5.28	1	02/12/14 03:03	2/10/14	
Acenaphthene	7.12 U	15.6	7.12	1	02/12/14 03:03	2/10/14	
Acenaphthylene	5.05 U	15.6	5.05	1	02/12/14 03:03	2/10/14	
Anthracene	3.68 U	7.80	3.68	1	02/12/14 03:03	2/10/14	
Benz(a)anthracene	4.37 U	7.80	4.37	1	02/12/14 03:03	2/10/14	
Benzo(a)pyrene	2.30 U	7.80	2.30	1	02/12/14 03:03	2/10/14	
Benzo(b)fluoranthene	4.59 U	7.80	4.59	1	02/12/14 03:03	2/10/14	*
Benzo(g,h,i)perylene	5.05 U	7.80	5.05	1	02/12/14 03:03	2/10/14	*
Benzo(k)fluoranthene	5.51 U	7.80	5.51	1	02/12/14 03:03	2/10/14	*
Chrysene	4.37 U	7.80	4.37	1	02/12/14 03:03	2/10/14	
Dibenz(a,h)anthracene	6.20 U	7.80	6.20	1	02/12/14 03:03	2/10/14	*
Fluoranthene	4.59 U	7.80	4.59	1	02/12/14 03:03	2/10/14	
Fluorene	5.05 U	7.80	5.05	1	02/12/14 03:03	2/10/14	
Indeno(1,2,3-cd)pyrene	5.05 U	7.80	5.05	1	02/12/14 03:03	2/10/14	*
Naphthalene	7.12 U	7.80	7.12	1	02/12/14 03:03	2/10/14	
Phenanthrene	3.91 U	15.6	3.91	1	02/12/14 03:03	2/10/14	
Pyrene	4.59 U	7.80	4.59	1	02/12/14 03:03	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	59	30 - 118	02/12/14 03:03	
p-Terphenyl-d14	78	41 - 146	02/12/14 03:03	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS3 OD(0.0)m  
**Lab Code:** J1400817-005

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:57  
**Date Received:** 02/03/14 12:40  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Diesel Range Organics (C10 - C28)	7.37 BJ	11.5	4.20	1	02/10/14 20:35	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	88	31 - 181	02/10/14 20:35	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS3 OD(0.0)m  
**Lab Code:** J1400817-005

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:57  
**Date Received:** 02/03/14 12:40

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	86	Percent	0.10	0.10	1	02/13/14 17:15	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS3 OD(0.3)m  
**Lab Code:** J1400817-006

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:57  
**Date Received:** 02/03/14 12:40  
  
**Units:** ug/Kg  
**Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.184 U	5.39	0.184	1	02/10/14 19:08	2/10/14	*
Ethylbenzene	0.130 U	5.39	0.130	1	02/10/14 19:08	2/10/14	*
m,p-Xylenes	0.227 U	10.8	0.227	1	02/10/14 19:08	2/10/14	*
o-Xylene	0.173 U	5.39	0.173	1	02/10/14 19:08	2/10/14	*
Toluene	0.291 U	5.39	0.291	1	02/10/14 19:08	2/10/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	84	80 - 120	02/10/14 19:08	
4-Bromofluorobenzene	91	64 - 135	02/10/14 19:08	
Dibromofluoromethane	99	74 - 125	02/10/14 19:08	
Toluene-d8	100	46 - 156	02/10/14 19:08	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Collected:</b>	01/13/14 13:57
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	02/03/14 12:40
<b>Sample Name:</b>	SS3 OD(0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1400817-006	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	6.28 U	7.91	6.28	1	02/12/14 03:28	2/10/14	
2-Methylnaphthalene	5.35 U	7.91	5.35	1	02/12/14 03:28	2/10/14	
Acenaphthene	7.21 U	15.8	7.21	1	02/12/14 03:28	2/10/14	
Acenaphthylene	5.12 U	15.8	5.12	1	02/12/14 03:28	2/10/14	
Anthracene	3.73 U	7.91	3.73	1	02/12/14 03:28	2/10/14	
Benz(a)anthracene	4.42 U	7.91	4.42	1	02/12/14 03:28	2/10/14	
Benzo(a)pyrene	2.33 U	7.91	2.33	1	02/12/14 03:28	2/10/14	
Benzo(b)fluoranthene	4.66 U	7.91	4.66	1	02/12/14 03:28	2/10/14	*
Benzo(g,h,i)perylene	5.12 U	7.91	5.12	1	02/12/14 03:28	2/10/14	*
Benzo(k)fluoranthene	5.59 U	7.91	5.59	1	02/12/14 03:28	2/10/14	*
Chrysene	4.42 U	7.91	4.42	1	02/12/14 03:28	2/10/14	
Dibenz(a,h)anthracene	6.28 U	7.91	6.28	1	02/12/14 03:28	2/10/14	*
Fluoranthene	4.66 U	7.91	4.66	1	02/12/14 03:28	2/10/14	
Fluorene	5.12 U	7.91	5.12	1	02/12/14 03:28	2/10/14	
Indeno(1,2,3-cd)pyrene	5.12 U	7.91	5.12	1	02/12/14 03:28	2/10/14	*
Naphthalene	7.21 U	7.91	7.21	1	02/12/14 03:28	2/10/14	
Phenanthrene	3.96 U	15.8	3.96	1	02/12/14 03:28	2/10/14	
Pyrene	4.66 U	7.91	4.66	1	02/12/14 03:28	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	72	30 - 118	02/12/14 03:28	
p-Terphenyl-d14	87	41 - 146	02/12/14 03:28	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS3 OD(0.3)m  
**Lab Code:** J1400817-006

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:57  
**Date Received:** 02/03/14 12:40  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Diesel Range Organics (C10 - C28)	6.20 BJ	11.0	4.05	1	02/10/14 21:02	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	91	31 - 181	02/10/14 21:02	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS3 OD(0.3)m  
**Lab Code:** J1400817-006

**Service Request:** J1400817  
**Date Collected:** 01/13/14 13:57  
**Date Received:** 02/03/14 12:40

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	86	Percent	0.10	0.10	1	02/13/14 17:15	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Collected:</b>	01/13/14 11:05
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	02/03/14 12:40
<b>Sample Name:</b>	UPOD Point A	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1400817-007	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.235 U	6.89	0.235	1	02/10/14 19:38	2/10/14	*
Ethylbenzene	0.166 U	6.89	0.166	1	02/10/14 19:38	2/10/14	*
m,p-Xylenes	0.290 U	13.8	0.290	1	02/10/14 19:38	2/10/14	*
o-Xylene	0.221 U	6.89	0.221	1	02/10/14 19:38	2/10/14	*
Toluene	0.373 U	6.89	0.373	1	02/10/14 19:38	2/10/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	83	80 - 120	02/10/14 19:38	
4-Bromofluorobenzene	94	64 - 135	02/10/14 19:38	
Dibromofluoromethane	98	74 - 125	02/10/14 19:38	
Toluene-d8	101	46 - 156	02/10/14 19:38	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Collected:</b>	01/13/14 11:05
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	02/03/14 12:40
<b>Sample Name:</b>	UPOD Point A	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1400817-007	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	6.15 U	7.74	6.15	1	02/12/14 03:53	2/10/14	
2-Methylnaphthalene	5.24 U	7.74	5.24	1	02/12/14 03:53	2/10/14	
Acenaphthene	7.06 U	15.5	7.06	1	02/12/14 03:53	2/10/14	
Acenaphthylene	5.01 U	15.5	5.01	1	02/12/14 03:53	2/10/14	
Anthracene	3.65 U	7.74	3.65	1	02/12/14 03:53	2/10/14	
Benz(a)anthracene	4.33 U	7.74	4.33	1	02/12/14 03:53	2/10/14	
Benzo(a)pyrene	2.28 U	7.74	2.28	1	02/12/14 03:53	2/10/14	
Benzo(b)fluoranthene	4.56 U	7.74	4.56	1	02/12/14 03:53	2/10/14	*
Benzo(g,h,i)perylene	5.01 U	7.74	5.01	1	02/12/14 03:53	2/10/14	*
Benzo(k)fluoranthene	5.47 U	7.74	5.47	1	02/12/14 03:53	2/10/14	*
Chrysene	4.33 U	7.74	4.33	1	02/12/14 03:53	2/10/14	
Dibenz(a,h)anthracene	6.15 U	7.74	6.15	1	02/12/14 03:53	2/10/14	*
Fluoranthene	10.7	7.74	4.56	1	02/12/14 03:53	2/10/14	
Fluorene	5.01 U	7.74	5.01	1	02/12/14 03:53	2/10/14	
Indeno(1,2,3-cd)pyrene	5.01 U	7.74	5.01	1	02/12/14 03:53	2/10/14	*
Naphthalene	7.06 U	7.74	7.06	1	02/12/14 03:53	2/10/14	
Phenanthrene	9.91 J	15.5	3.88	1	02/12/14 03:53	2/10/14	
Pyrene	12.2	7.74	4.56	1	02/12/14 03:53	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	74	30 - 118	02/12/14 03:53	
p-Terphenyl-d14	75	41 - 146	02/12/14 03:53	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** UPOD Point A  
**Lab Code:** J1400817-007

**Service Request:** J1400817  
**Date Collected:** 01/13/14 11:05  
**Date Received:** 02/03/14 12:40  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	11.2 BJ	11.5	4.23	1	02/10/14 21:30	2/10/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	91	31 - 181	02/10/14 21:30	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** UPOD Point A  
**Lab Code:** J1400817-007

**Service Request:** J1400817  
**Date Collected:** 01/13/14 11:05  
**Date Received:** 02/03/14 12:40

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	85	Percent	0.10	0.10	1	02/13/14 17:15	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
**Sample Name:** UPOD Point B  
**Lab Code:** J1400817-008

**Service Request:** J1400817  
**Date Collected:** 01/13/14 11:05  
**Date Received:** 02/03/14 12:40

**Units:** ug/Kg  
**Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.173 U	5.06	0.173	1	02/10/14 20:08	2/10/14	*
Ethylbenzene	0.122 U	5.06	0.122	1	02/10/14 20:08	2/10/14	*
m,p-Xylenes	0.213 U	10.1	0.213	1	02/10/14 20:08	2/10/14	*
o-Xylene	0.162 U	5.06	0.162	1	02/10/14 20:08	2/10/14	*
Toluene	0.274 U	5.06	0.274	1	02/10/14 20:08	2/10/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	84	80 - 120	02/10/14 20:08	
4-Bromofluorobenzene	91	64 - 135	02/10/14 20:08	
Dibromofluoromethane	99	74 - 125	02/10/14 20:08	
Toluene-d8	99	46 - 156	02/10/14 20:08	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Collected:</b>	01/13/14 11:05
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	02/03/14 12:40
<b>Sample Name:</b>	UPOD Point B	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1400817-008	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	11.5 U	14.5	11.5	1	02/12/14 04:17	2/10/14	
2-Methylnaphthalene	9.79 U	14.5	9.79	1	02/12/14 04:17	2/10/14	
Acenaphthene	13.2 U	28.9	13.2	1	02/12/14 04:17	2/10/14	
Acenaphthylene	9.36 U	28.9	9.36	1	02/12/14 04:17	2/10/14	
Anthracene	6.81 U	14.5	6.81	1	02/12/14 04:17	2/10/14	
Benz(a)anthracene	8.08 U	14.5	8.08	1	02/12/14 04:17	2/10/14	
Benzo(a)pyrene	4.26 U	14.5	4.26	1	02/12/14 04:17	2/10/14	
Benzo(b)fluoranthene	8.51 U	14.5	8.51	1	02/12/14 04:17	2/10/14	*
Benzo(g,h,i)perylene	9.36 U	14.5	9.36	1	02/12/14 04:17	2/10/14	*
Benzo(k)fluoranthene	10.3 U	14.5	10.3	1	02/12/14 04:17	2/10/14	*
Chrysene	8.08 U	14.5	8.08	1	02/12/14 04:17	2/10/14	
Dibenz(a,h)anthracene	11.5 U	14.5	11.5	1	02/12/14 04:17	2/10/14	*
Fluoranthene	8.51 U	14.5	8.51	1	02/12/14 04:17	2/10/14	
Fluorene	9.36 U	14.5	9.36	1	02/12/14 04:17	2/10/14	
Indeno(1,2,3-cd)pyrene	9.36 U	14.5	9.36	1	02/12/14 04:17	2/10/14	*
Naphthalene	13.2 U	14.5	13.2	1	02/12/14 04:17	2/10/14	
Phenanthrene	7.23 U	28.9	7.23	1	02/12/14 04:17	2/10/14	
Pyrene	8.51 U	14.5	8.51	1	02/12/14 04:17	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	74	30 - 118	02/12/14 04:17	
p-Terphenyl-d14	88	41 - 146	02/12/14 04:17	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** UPOD Point B  
**Lab Code:** J1400817-008

**Service Request:** J1400817  
**Date Collected:** 01/13/14 11:05  
**Date Received:** 02/03/14 12:40  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>54.0</b>	22.3	8.17	1	02/10/14 22:53	2/10/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	93	31 - 181	02/10/14 22:53	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** UPOD Point B  
**Lab Code:** J1400817-008

**Service Request:** J1400817  
**Date Collected:** 01/13/14 11:05  
**Date Received:** 02/03/14 12:40

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	83	Percent	0.10	0.10	1	02/13/14 17:15	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
**Sample Name:** UPOD Point C  
**Lab Code:** J1400817-009

**Service Request:** J1400817  
**Date Collected:** 01/14/14 12:41  
**Date Received:** 02/03/14 12:40  
**Units:** ug/Kg  
**Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.198 U	5.82	0.198	1	02/10/14 20:38	2/10/14	*
Ethylbenzene	0.140 U	5.82	0.140	1	02/10/14 20:38	2/10/14	*
m,p-Xylenes	0.245 U	11.6	0.245	1	02/10/14 20:38	2/10/14	*
o-Xylene	0.187 U	5.82	0.187	1	02/10/14 20:38	2/10/14	*
Toluene	0.315 U	5.82	0.315	1	02/10/14 20:38	2/10/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	83	80 - 120	02/10/14 20:38	
4-Bromofluorobenzene	93	64 - 135	02/10/14 20:38	
Dibromofluoromethane	99	74 - 125	02/10/14 20:38	
Toluene-d8	99	46 - 156	02/10/14 20:38	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Collected:</b>	01/14/14 12:41
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	02/03/14 12:40
<b>Sample Name:</b>	UPOD Point C	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1400817-009	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	64.1 U	80.7	64.1	5	02/12/14 09:14	2/10/14	
2-Methylnaphthalene	54.6 U	80.7	54.6	5	02/12/14 09:14	2/10/14	
Acenaphthene	73.6 U	161	73.6	5	02/12/14 09:14	2/10/14	
Acenaphthylene	52.3 U	161	52.3	5	02/12/14 09:14	2/10/14	
Anthracene	38.0 U	80.7	38.0	5	02/12/14 09:14	2/10/14	
Benz(a)anthracene	45.1 U	80.7	45.1	5	02/12/14 09:14	2/10/14	
Benzo(a)pyrene	23.8 U	80.7	23.8	5	02/12/14 09:14	2/10/14	
Benzo(b)fluoranthene	47.5 U	80.7	47.5	5	02/12/14 09:14	2/10/14	*
Benzo(g,h,i)perylene	52.3 U	80.7	52.3	5	02/12/14 09:14	2/10/14	*
Benzo(k)fluoranthene	57.0 U	80.7	57.0	5	02/12/14 09:14	2/10/14	*
Chrysene	45.1 U	80.7	45.1	5	02/12/14 09:14	2/10/14	
Dibenz(a,h)anthracene	64.1 U	80.7	64.1	5	02/12/14 09:14	2/10/14	*
Fluoranthene	47.5 U	80.7	47.5	5	02/12/14 09:14	2/10/14	
Fluorene	52.3 U	80.7	52.3	5	02/12/14 09:14	2/10/14	
Indeno(1,2,3-cd)pyrene	52.3 U	80.7	52.3	5	02/12/14 09:14	2/10/14	*
Naphthalene	73.6 U	80.7	73.6	5	02/12/14 09:14	2/10/14	
Phenanthrene	40.4 U	161	40.4	5	02/12/14 09:14	2/10/14	
Pyrene	47.5 U	80.7	47.5	5	02/12/14 09:14	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	76	30 - 118	02/12/14 09:14	
p-Terphenyl-d14	82	41 - 146	02/12/14 09:14	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** UPOD Point C  
**Lab Code:** J1400817-009

**Service Request:** J1400817  
**Date Collected:** 01/14/14 12:41  
**Date Received:** 02/03/14 12:40  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>46.2</b>	23.7	8.69	1	02/10/14 23:20	2/10/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	93	31 - 181	02/10/14 23:20	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** UPOD Point C  
**Lab Code:** J1400817-009

**Service Request:** J1400817  
**Date Collected:** 01/14/14 12:41  
**Date Received:** 02/03/14 12:40

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	80	Percent	0.10	0.10	1	02/13/14 17:15	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1400817  
**Project:** During Clean-Up@Brass      **Date Collected:** NA  
**Sample Matrix:** Soil      **Date Received:** NA

**Sample Name:** Method Blank      **Units:** ug/Kg  
**Lab Code:** JQ1400989-03      **Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.170 U	5.00	0.170	1	02/10/14 14:35	2/10/14	
Ethylbenzene	0.120 U	5.00	0.120	1	02/10/14 14:35	2/10/14	
m,p-Xylenes	0.210 U	10.0	0.210	1	02/10/14 14:35	2/10/14	
o-Xylene	0.160 U	5.00	0.160	1	02/10/14 14:35	2/10/14	
Toluene	0.270 U	5.00	0.270	1	02/10/14 14:35	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	81	80 - 120	02/10/14 14:35	
4-Bromofluorobenzene	86	64 - 135	02/10/14 14:35	
Dibromofluoromethane	98	74 - 125	02/10/14 14:35	
Toluene-d8	100	46 - 156	02/10/14 14:35	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1400817  
**Project:** During Clean-Up@Brass      **Date Collected:** NA  
**Sample Matrix:** Soil      **Date Received:** NA

**Sample Name:** Method Blank      **Units:** ug/Kg  
**Lab Code:** JQ1400974-01      **Basis:** Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	2.70 U	3.40	2.70	1	02/12/14 12:36	2/10/14	
2-Methylnaphthalene	2.30 U	3.40	2.30	1	02/12/14 12:36	2/10/14	
Acenaphthene	3.10 U	6.80	3.10	1	02/12/14 12:36	2/10/14	
Acenaphthylene	2.20 U	6.80	2.20	1	02/12/14 12:36	2/10/14	
Anthracene	1.60 U	3.40	1.60	1	02/12/14 12:36	2/10/14	
Benz(a)anthracene	1.90 U	3.40	1.90	1	02/12/14 12:36	2/10/14	
Benzo(a)pyrene	1.00 U	3.40	1.00	1	02/12/14 12:36	2/10/14	
Benzo(b)fluoranthene	2.00 U	3.40	2.00	1	02/12/14 12:36	2/10/14	
Benzo(g,h,i)perylene	2.20 U	3.40	2.20	1	02/12/14 12:36	2/10/14	
Benzo(k)fluoranthene	2.40 U	3.40	2.40	1	02/12/14 12:36	2/10/14	
Chrysene	1.90 U	3.40	1.90	1	02/12/14 12:36	2/10/14	
Dibenz(a,h)anthracene	2.70 U	3.40	2.70	1	02/12/14 12:36	2/10/14	
Fluoranthene	2.00 U	3.40	2.00	1	02/12/14 12:36	2/10/14	
Fluorene	2.20 U	3.40	2.20	1	02/12/14 12:36	2/10/14	
Indeno(1,2,3-cd)pyrene	2.20 U	3.40	2.20	1	02/12/14 12:36	2/10/14	
Naphthalene	3.10 U	3.40	3.10	1	02/12/14 12:36	2/10/14	
Phenanthrene	1.70 U	6.80	1.70	1	02/12/14 12:36	2/10/14	
Pyrene	2.00 U	3.40	2.00	1	02/12/14 12:36	2/10/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	71	30 - 118	02/12/14 12:36	
p-Terphenyl-d14	90	41 - 146	02/12/14 12:36	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1400817  
**Project:** During Clean-Up@Brass      **Date Collected:** NA  
**Sample Matrix:** Soil      **Date Received:** NA

**Sample Name:** Method Blank      **Units:** mg/Kg  
**Lab Code:** JQ1400972-01      **Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>2.44 J</b>	5.00	1.83	1	02/10/14 17:22	2/10/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	82	31 - 181	02/10/14 17:22	

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil

**Service Request:** J1400817

**SURROGATE RECOVERY SUMMARY**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

**Extraction Method:** EPA 5035

<b>Sample Name</b>	<b>Lab Code</b>	<b>1,2-Dichloroethane-d4</b>	<b>4-Bromofluorobenzene</b>	<b>Dibromofluoromethane</b>
SS1 OD(0-0.3)m	J1400817-001	86	95	100
SSC1 OD(0.0)m	J1400817-002	83	91	103
SS2 OD(0.0)m	J1400817-003	81	92	100
SS2 OD(0.3)m	J1400817-004	89	94	104
SS3 OD(0.0)m	J1400817-005	83	91	98
SS3 OD(0.3)m	J1400817-006	84	91	99
UPOD Point A	J1400817-007	83	94	98
UPOD Point B	J1400817-008	84	91	99
UPOD Point C	J1400817-009	83	93	99
Lab Control Sample	JQ1400989-01	84	94	98
Duplicate Lab Control Sample	JQ1400989-02	84	92	99
Method Blank	JQ1400989-03	81	86	98

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil

**Service Request:** J1400817

**SURROGATE RECOVERY SUMMARY**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

**Extraction Method:** EPA 5035

<b>Sample Name</b>	<b>Lab Code</b>	Toluene-d8
		46 - 156
SS1 OD(0-0.3)m	J1400817-001	101
SSC1 OD(0.0)m	J1400817-002	100
SS2 OD(0.0)m	J1400817-003	100
SS2 OD(0.3)m	J1400817-004	99
SS3 OD(0.0)m	J1400817-005	100
SS3 OD(0.3)m	J1400817-006	100
UPOD Point A	J1400817-007	101
UPOD Point B	J1400817-008	99
UPOD Point C	J1400817-009	99
Lab Control Sample	JQ1400989-01	102
Duplicate Lab Control Sample	JQ1400989-02	100
Method Blank	JQ1400989-03	100

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1400817  
**Project:** During Clean-Up@Brass      **Date Analyzed:** 02/10/14  
**Sample Matrix:** Soil      **Date Extracted:** 02/10/14

**Duplicate Lab Control Sample Summary**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B      **Units:** ug/Kg  
**Prep Method:** EPA 5035      **Basis:** Dry  
                                        **Analysis Lot:** 379533

Analyte Name	Lab Control Sample JQ1400989-01			Duplicate Lab Control Sample JQ1400989-02					RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits			
Benzene	52.5	50.0	105	53.2	50.0	106	76-123	1	30	
Ethylbenzene	53.1	50.0	106	54.2	50.0	108	71-122	2	30	
m,p-Xylenes	106	100	106	107	100	107	71-122	1	30	
o-Xylene	54.3	50.0	109	54.5	50.0	109	71-120	<1	30	
Toluene	53.7	50.0	107	54.3	50.0	108	72-118	1	30	

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil

**Service Request:** J1400817

**SURROGATE RECOVERY SUMMARY**  
**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM

**Extraction Method:** EPA 3546

<b>Sample Name</b>	<b>Lab Code</b>	<b>2-Fluorobiphenyl</b>	<b>p-Terphenyl-d14</b>
		<b>30 - 118</b>	<b>41 - 146</b>
SS1 OD(0-0.3)m	J1400817-001	84	78
SSC1 OD(0.0)m	J1400817-002	72	88
SS2 OD(0.0)m	J1400817-003	65	68
SS2 OD(0.3)m	J1400817-004	69	56
SS3 OD(0.0)m	J1400817-005	59	78
SS3 OD(0.3)m	J1400817-006	72	87
UPOD Point A	J1400817-007	74	75
UPOD Point B	J1400817-008	74	88
UPOD Point C	J1400817-009	76	82
Method Blank	JQ1400974-01	71	90
Lab Control Sample	JQ1400974-02	57	76
Duplicate Lab Control Sample	JQ1400974-03	66	73

**ALS Group USA, Corp.**  
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QA/QC Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1400817
<b>Project:</b>	During Clean-Up@Brass	<b>Date Analyzed:</b>	02/12/14
<b>Sample Matrix:</b>	Soil	<b>Date Extracted:</b>	02/10/14

**Duplicate Lab Control Sample Summary**  
**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

<b>Analysis Method:</b>	8270C SIM	<b>Units:</b>	ug/Kg
<b>Prep Method:</b>	EPA 3546	<b>Basis:</b>	Dry
		<b>Analysis Lot:</b>	379812

**Lab Control Sample**  
**JQ1400974-02**

**Duplicate Lab Control Sample**  
**JQ1400974-03**

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	37.7	66.7	57	43.1	66.7	65	32-101	13	30
2-Methylnaphthalene	37.3	66.7	56	42.9	66.7	64	32-103	14	30
Acenaphthene	39.2	66.7	59	44.6	66.7	67	29-122	13	30
Acenaphthylene	35.7	66.7	53	29.2	66.7	44	36-114	20	30
Anthracene	41.1	66.7	62	42.9	66.7	64	36-135	4	30
Benz(a)anthracene	47.2	66.7	71	45.7	66.7	69	43-139	3	30
Benzo(a)pyrene	47.3	66.7	71	54.9	66.7	82	43-127	15	30
Benzo(b)fluoranthene	53.4	66.7	80	76.2	66.7	114	49-139	35 *	30
Benzo(g,h,i)perylene	48.6	66.7	73	68.6	66.7	103	30-135	34 *	30
Benzo(k)fluoranthene	51.4	66.7	77	71.1	66.7	107	45-132	32 *	30
Chrysene	48.9	66.7	73	49.6	66.7	74	36-130	1	30
Dibenz(a,h)anthracene	46.5	66.7	70	63.7	66.7	95	32-139	31 *	30
Fluoranthene	47.2	66.7	71	46.6	66.7	70	42-127	1	30
Fluorene	42.4	66.7	64	47.1	66.7	71	41-118	10	30
Indeno(1,2,3-cd)pyrene	51.2	66.7	77	72.9	66.7	109	32-133	35 *	30
Naphthalene	36.9	66.7	55	42.2	66.7	63	29-107	13	30
Phenanthrene	43.4	66.7	65	44.3	66.7	66	34-130	2	30
Pyrene	49.7	66.7	75	51.6	66.7	77	45-118	4	30

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** During Clean-Up@Brass  
**Sample Matrix:** Soil

**Service Request:** J1400817

**SURROGATE RECOVERY SUMMARY**  
**Diesel Range Organics by GC**

**Analysis Method:** 8015B

**Extraction Method:** EPA 3550C

<b>Sample Name</b>	<b>Lab Code</b>	<b>o-Terphenyl</b>
		<b>31 - 181</b>
SS1 OD(0-0.3)m	J1400817-001	81
SSC1 OD(0.0)m	J1400817-002	91
SS2 OD(0.0)m	J1400817-003	94
SS2 OD(0.3)m	J1400817-004	74
SS3 OD(0.0)m	J1400817-005	88
SS3 OD(0.3)m	J1400817-006	91
UPOD Point A	J1400817-007	91
UPOD Point B	J1400817-008	93
UPOD Point C	J1400817-009	93
Method Blank	JQ1400972-01	82
Lab Control Sample	JQ1400972-02	92
Duplicate Lab Control Sample	JQ1400972-03	96

**ALS Group USA, Corp.**  
dba ALS Environmental

## QA/QC Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1400817  
**Project:** During Clean-Up@Brass      **Date Analyzed:** 02/10/14  
**Sample Matrix:** Soil      **Date Extracted:** 02/10/14

## Duplicate Lab Control Sample Summary

### Diesel Range Organics by GC

Analyte Name	Lab Control Sample JQ1400972-02			Duplicate Lab Control Sample JQ1400972-03					
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Diesel Range Organics (C10 - C28)	37.5	41.7	90	38.5	41.7	92	66-133	3	30





# CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Environmental

#18 Uyo Street, Rumuomasi, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161  
com

SR # **J1400817**  
CAS Contact

Page **1** of **5**

Project Name <b>DURING CLEAN-UP @ BRASS</b>		Project Number		ANALYSIS REQUESTED (Include Method Number)										Container Preservative						
Report To		Report CC		1 Preservative											<b>J1400817</b>	<b>5</b>				
Glolee Global Resources NIG Ltd During Clean-Up @ Brass														 3. H2SO4 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO4						
Company/Address <b>GIOLEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMUOMASI, PORT HARCOURT</b>		Phone # <b>7031513161</b>		FAX #	N	TPH	PAH	BTEX												
Sampler's Signature		Sampler's Printed Name												REMARKS						
CLIENT SAMPLE ID		LAB ID		SAMPLING		DATE	TIME	Matrix												
SS1OD (0.0)m				13/01/2014	13:15 hrs	SOIL														
SS1OD(0- 0.3)m				13/01/2014	13:15hrs	SOIL														
Special Instructions/Comments:														TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) STANDARD REQUESTED FAX DATE REQUESTED REPORT DATE		REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries * IV. Data Validation Report with Raw Data		INVOICE INFORMATION P.O. # _____ Bill to: _____		
Relinquished By 	Received By 	Relinquished By Signature	Received By 	Relinquished By Signature	Received By 	Received By Signature														
Printed Name <b>UCHEGBU SOPHIA</b>	Printed Name <b>JOE EMEGBE</b>	Printed Name	Printed Name <b>Shan Lefley</b>	Printed Name	Printed Name	Printed Name														
Firm <b>GIOLEE GLOBAL RESOUR</b>	Firm <b>UPS</b>	Firm	Firm <b>ACS</b>	Firm	Firm	Firm														
Date/Time <b>28/01/14 09:46am</b>	Date/Time <b>28/01/14</b>	Date/Time	Date/Time <b>28/01/14 12:46pm</b>	Date/Time	Date/Time	Date/Time														



## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Environmental

#18 Uyo Street, Rumuomas, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161

SR #

CAS Contact

87400817

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J1400817

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Project Name DURING CLEAN-UP @ BRASS	Project Number Report To Report CC	1	ANALYSIS REQUESTED (Include Method Number) Preservative N	1. HNO3 2. HNO3 3. H2SO4 4. NaOH 5. Zn Acetate 6. MeOH 7. NaHSO4	Giolee Global Resources NiG Ltd During Clean-Up@Brass
Company/Address GIOLEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMUOMASI, PORT HARCOURT			THI PAH BTEX		REMARKS
Phone # 7031513161	FAX #				
Sampler's Signature	Sampler's Printed Name NWITE KEN NWIFIUTO				
CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	TIME	Matrix	
SSC_1 OD(0.0)m		13/01/2014	15:48 hrs	SOIL	
SSC_1 OD(0-0.3)m		13/01/2014	15:48 hrs	SOIL	
Special Instructions/Comments:				TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) STANDARD	REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data
				REQUESTED FAX DATE REQUESTED REPORT DATE	P.O. # BB# Data Yes No
Relinquished By Signature 	Received By Signature 	Relinquished By Signature	Received By Signature 	Relinquished By Signature	Received By Signature
Printed Name UCHEGBU SOPHIA	Printed Name S. E. Entwistle	Printed Name UDS	Printed Name Shawn Lightfoot	Printed Name	Printed Name
Firm GIOLEE GLOBAL Resources	Firm U.P.S.	Firm	Firm AIS	Firm	Firm
Date/Time 28/01/14 09:45am	Date/Time 28/01/14	Date/Time	Date/Time 2/3/14 12:40	Date/Time	Date/Time



# CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Environmental  
Uyo Street, Rumuomasi, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161  
www.gioleeglobal.com

SR # **J1400817**  
CAS Contact

Page 3 of 5

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Project Name <b>DURING CLEAN-UP @ BRASS</b>		Project Number		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																		
Report To	Report CC			N	TPH	PAH	BTEX															
Company/Address <b>GIOLEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMUOMASI, PORT HARCOURT</b>																						
Phone # <b>7031513161</b>	FAX #																					
Sampler's Signature		Sampler's Printed Name <b>NWITE KEN NWIFIITO</b>																				
CLIENT SAMPLE	LAB ID	SAMPLING DATE	TIME	Matrix													REMARKS					
SS <sub>2</sub> OD(0.0)nd		13/01/2014	13:33 hrs	SOIL																		
SS <sub>2</sub> OD(0.3)m		13/01/2014	13:33 hrs	SOIL																		
Special Instructions/Comments:					TURNAROUND REQUIREMENTS				REPORT REQUIREMENTS				INVOICE INFORMATION									
					<input type="checkbox"/> RUSH (SURCHARGES APPLY) <input checked="" type="checkbox"/> STANDARD				I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries * IV. Data Validation Report with Raw Data				P.O. # _____ Bill to: _____ _____ _____									
					REQUESTED FAX DATE				REQUESTED REPORT DATE				Edata <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Relinquished By 	Received By 	Relinquished By		Received By 	Relinquished By		Received By		Received By													
Printed Name <b>UCHEGBU SOPHIA</b>	Printed Name <b>JOSE ENEGBE</b>	Printed Name <b>UPS</b>		Printed Name <b>sheva Lightsey</b>	Printed Name <b>UPS</b>		Printed Name <b>AGS</b>		Printed Name <b>UPS</b>													
Date/Time <b>28/1/14 / 09:45am</b>	Date/Time <b>28/1/14</b>	Date/Time		Date/Time <b>28/1/14 1240</b>	Date/Time		Date/Time		Date/Time													



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# CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

#18 Uyo Street, Rumuomasi, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161

SR # **J1400817**  
CAS Contact

Page **4** of **5**

Project Name <b>DURING CLEAN-UP @ BRASS</b>		Project Number		ANALYSIS REQUESTED (Include Method Number and Preservative)							<b>J1400817</b> Giolee Global Resources NIG Ltd During Clean-Up @ Brass	5					
Report To		Report CC		N	Preservative	TPH	PAH	BTEX									
Company/Address <b>GIOLEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMUOMASI, PORT HARCOURT</b>												3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub>					
Phone #	7031513161	FAX #											REMARKS				
Sampler's Signature		Sampler's Printed Name <b>NWITE KEN NWIFIITO</b>															
CLIENT SAMPLE ID	LAB ID	SAMPLING DATE		Matrix													
		TIME															
SS <sub>3</sub> OD (0.0)m		13/01/2014	13:57 hrs	SOIL													
SS <sub>3</sub> OD (0-0.3)m		13/01/2014	13:57 hrs	SOIL													
Special Instructions/Comments:												TURNAROUND REQUIREMENTS		REPORT REQUIREMENTS		INVOICE INFORMATION	
												RUSH (SURCHARGES APPLY) STANDARD		I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data		P.O. # _____ Bill to: _____	
Relinquished By 		Received By 		Relinquished By 		Received By 		Relinquished By 		Received By 							
Printed Name <b>UCHEGBU SOPHIA</b>		Printed Name <b>JOE E.</b>		Printed Name		Printed Name <b>Sham L. Igboezie</b>		Printed Name		Printed Name <b>Printed Name</b>							
Firm <b>GIOLEE GLOBAL Resources</b>		Firm <b>JP8.1</b>		Firm <b>EPS</b>		Firm <b>AOS</b>		Firm		Firm							
Date/Time <b>28/01/14 09:45 am</b>	Date/Time <b>28/01/14</b>	Date/Time		Date/Time		Date/Time <b>2/3/14 12:46</b>		Date/Time		Date/Time							



Environmental

#18 Uyo Street, Rumuomasi, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161

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## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

SR # **J1400817**  
 CAS Contact

Page

**J1400817****5**

Project Name <b>DURING CLEAN-UP @ BRASS(Upstream)</b>		Project Number		ANALYSIS REQUESTED (Include Method Number a During Clean-Up@Brass)																									
Report To	Report CC		3 reserved																										
Company/Address <b>GIOLEE GLOBAL RESOURCES LIMITED, . #18 UYO STREET RUMUOMASI, PORT HARCOURT</b>				N	TPE	PAAH	BTEX																						
Phone #	7031513161	FAX #																											
Sampler's Signature		Sampler's Printed Name																											
CLIENT SAMPLE ID	LAB ID	SAMPLING DATE TIME		Matrix																									
UPOD Point A		13/01/2014	11:05 hrs	SOIL																									
UPOD Point B		13/01/2014	11:05hrs	SOIL																									
UPOD Point C		14/01/2014	12:41hrs	SOIL																									
Special Instructions/Comments:					TURNAROUND REQUIREMENTS				REPORT REQUIREMENTS				INVOICE INFORMATION																
					<input type="checkbox"/> RUSH (SURCHARGES APPLY) <input checked="" type="checkbox"/> STANDARD				I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries				P.O. # _____ Bill to: _____																
Relinquished By 	Received By 	Relinquished By 	Received By 	Relinquished By 	Received By 	Relinquished By 	Received By 																						
Signature 	Signature 	Signature 	Signature 	Signature 	Signature 	Signature 	Signature 																						
Printed Name <b>UCHEGBU SOPHIA</b>	Printed Name <b>Joe - E.</b>	Printed Name	Printed Name <b>Shaw Lally</b>	Printed Name	Printed Name	Printed Name	Printed Name																						
Firm <b>GIOLEE GLOBAL Resources</b>	Firm <b>UPS</b>	Firm <b>UPS</b>	Firm <b>UPS</b>	Firm <b>UPS</b>	Firm	Firm	Firm																						
Date/Time <b>28/01/14 / 09:45 AM</b>	Date/Time <b>28/01/14</b>	Date/Time	Date/Time <b>28/01/14 12:40</b>	Date/Time	Date/Time	Date/Time	Date/Time																						



March 10, 2014

Service Request No:J1401327

Lesi Maol  
Giolee Global Resources NIG Ltd  
18 UYO STREET RUMUMASI

### Laboratory Results for: Spill Response @Brass

Dear Lesi,

Enclosed are the results of the sample(s) submitted to our laboratory February 19, 2014  
For your reference, these analyses have been assigned our service request number **J1401327**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the NELAC 2003 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 4410. You may also contact me via email at Jerry.Allen@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

A handwritten signature in black ink, appearing to read "Jerry Allen".

Jerry Allen  
Project Manager

ADDRESS 9143 Philips Highway, Suite 200, Jacksonville, FL 32256

PHONE +1 904 739 2277 | FAX +1 904 739 2011

ALS Group USA, Corp.  
dba ALS Environmental



### SAMPLE DETECTION SUMMARY

CLIENT ID: Point 1 (PCI)		Lab ID: J1401327-001					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		0.566	BJ	0.495	1.18	mg/L	8015B
Naphthalene		0.399	J	0.186	0.476	ug/L	8270C SIM
CLIENT ID: TW WS (PCI)		Lab ID: J1401327-002					
Analyte		Results	Flag	MDL	PQL	Units	Method
Naphthalene		0.226	J	0.130	0.333	ug/L	8270C SIM
CLIENT ID: BJ WS (TCI)		Lab ID: J1401327-003					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		1.25		0.330	0.784	mg/L	8015B
Toluene		2.0		0.19	1.0	ug/L	8260B
CLIENT ID: IMB WS (PCI)		Lab ID: J1401327-004					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		13.8		0.290	0.690	mg/L	8015B
CLIENT ID: OKPC WS (PCI)		Lab ID: J1401327-005					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		0.498	BJ	0.324	0.769	mg/L	8015B
CLIENT ID: Point 6 WS (PCI)		Lab ID: J1401327-006					
Analyte		Results	Flag	MDL	PQL	Units	Method
Diesel Range Organics (C10 - C28)		0.336	BJ	0.301	0.714	mg/L	8015B



**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water

**Service Request:** J1401327  
**Date Received:** 2/19/14

## CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. When appropriate to the procedure, method blank results have been reported with each analytical test. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Parameters that are included in the NELAC Fields of Testing but are not included in the lab's NELAC accreditation are identified in the discussion of each analytical procedure.

### Sample Receipt

Six water samples were received for analysis at ALS Environmental on 2/19/2014. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at  $\leq 6^{\circ}\text{C}$  upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

### Volatile Organic Analyses:

Method 8260B: Samples were received , ~~at~~ the recommended holding time. The analysis was performed as soon as possible after receipt by the laboratory.

### Semi-Volatile Organic Analyses:

Method 8270C SIM: Samples were received , ~~at~~ the recommended holding time. The analysis was performed as soon as possible after receipt by the laboratory.

Method 8270 SIM: The Method Reporting Limit (MRL) is elevated for all target analytes in sample J1401327-001 – J1401327-006. The samples were extracted using 1L  $\times \text{~}^{\circ}\text{~}^{\circ}$   $\text{~}^{\circ}\text{~}^{\circ}$   $\text{~}^{\circ}\text{~}^{\circ}$  Laboratory.

Method 8270 SIM: The control criteria for all the surrogate(s) in sample J1401327-006 are not applicable. The analysis of the sample required a dilution, which resulted in a surrogate concentration below the Method Reporting Limit (MRL). No further corrective action was appropriate.

Method 8015B: Samples were received , ~~at~~ the recommended holding time. The analysis was performed as soon as possible after receipt by the laboratory. .

Approved by

Date 3/10/2014



## State Certifications, Accreditations, and Licenses

<b>Agency</b>	<b>Number</b>	<b>Expire Date</b>
Florida Department of Health	E82502	6/30/2014
North Carolina Department of Environment and Natural Resources	527	12/31/2014
Virginia Environmental Accreditation Program	460191	12/14/2014
Louisiana Department of Environmental Quality	02086	6/30/2014
Georgia Department of Natural Resources	958	6/30/2014
Kentucky Division of Waste Management	63	6/30/2014
South Carolina Department of Health and Environmental Control	96021001	6/30/2014
Texas Commission on Environmental Quality	T104704197-13-5	5/31/2014
Maine Department of Health and Human Services	2011006	2/3/2015
Department of Defense	66206	5/31/2014
Pennsylvania Department of Environmental Protection	68-04835	8/31/2014

## Data Qualifiers

### CAS Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section  $\geq 10\%$  front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
  - I Internal standard not within the specified limits. See case narrative.
  - J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte  $> 40\%$  difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

## **Data Qualifiers**

### **CAS Standard**

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
  - i The MRL/MDL has been elevated due to a matrix interference.

# ALS Laboratory Group

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass

**Service Request:**J1401327

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
J1401327-001	Point 1 (PCI)	1/17/2014	1100
J1401327-002	TW WS (PCI)	1/17/2014	1105
J1401327-003	BJ WS (TCI)	1/17/2014	1115
J1401327-004	IMB WS (PCI)	1/17/2014	1125
J1401327-005	OKPC WS (PCI)	1/17/2014	1135
J1401327-006	Point 6 WS (PCI)	1/18/2014	1150

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water  
  
**Sample Name:** Point 1 (PCI)  
**Lab Code:** J1401327-001

**Service Request:** J1401327  
**Date Collected:** 01/17/14 11:00  
**Date Received:** 02/19/14 12:25

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.21 U	1.0	0.21	1	03/06/14 18:33	*
Ethylbenzene	0.21 U	1.0	0.21	1	03/06/14 18:33	*
m,p-Xylenes	0.31 U	2.0	0.31	1	03/06/14 18:33	*
o-Xylene	0.14 U	1.0	0.14	1	03/06/14 18:33	*
Toluene	0.19 U	1.0	0.19	1	03/06/14 18:33	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	103	72 - 121	03/06/14 18:33	
4-Bromofluorobenzene	98	86 - 113	03/06/14 18:33	
Dibromofluoromethane	95	86 - 112	03/06/14 18:33	
Toluene-d8	102	88 - 115	03/06/14 18:33	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1401327
<b>Project:</b>	Spill Response @Brass	<b>Date Collected:</b> 01/17/14 11:00
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> 02/19/14 12:25
<b>Sample Name:</b>	Point 1 (PCI)	<b>Units:</b> ug/L
<b>Lab Code:</b>	J1401327-001	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.210 U	0.476	0.210	1	02/28/14 07:29	2/27/14	
2-Methylnaphthalene	0.210 U	0.476	0.210	1	02/28/14 07:29	2/27/14	
Acenaphthene	0.196 U	0.476	0.196	1	02/28/14 07:29	2/27/14	
Acenaphthylene	0.120 U	0.476	0.120	1	02/28/14 07:29	2/27/14	
Anthracene	0.181 U	0.476	0.181	1	02/28/14 07:29	2/27/14	
Benz(a)anthracene	0.167 U	0.476	0.167	1	02/28/14 07:29	2/27/14	
Benzo(a)pyrene	0.148 U	0.476	0.148	1	02/28/14 07:29	2/27/14	
Benzo(b)fluoranthene	0.120 U	0.476	0.120	1	02/28/14 07:29	2/27/14	
Benzo(g,h,i)perylene	0.186 U	0.476	0.186	1	02/28/14 07:29	2/27/14	
Benzo(k)fluoranthene	0.167 U	0.476	0.167	1	02/28/14 07:29	2/27/14	
Chrysene	0.115 U	0.476	0.115	1	02/28/14 07:29	2/27/14	
Dibenz(a,h)anthracene	0.172 U	0.476	0.172	1	02/28/14 07:29	2/27/14	
Fluoranthene	0.186 U	0.476	0.186	1	02/28/14 07:29	2/27/14	
Fluorene	0.224 U	0.476	0.224	1	02/28/14 07:29	2/27/14	
Indeno(1,2,3-cd)pyrene	0.191 U	0.476	0.191	1	02/28/14 07:29	2/27/14	
Naphthalene	<b>0.399 J</b>	0.476	0.186	1	02/28/14 07:29	2/27/14	
Phenanthrene	0.167 U	0.476	0.167	1	02/28/14 07:29	2/27/14	
Pyrene	0.148 U	0.476	0.148	1	02/28/14 07:29	2/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	77	22 - 105	02/28/14 07:29	
p-Terphenyl-d14	80	25 - 127	02/28/14 07:29	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1401327  
**Project:** Spill Response @Brass      **Date Collected:** 01/17/14 11:00  
**Sample Matrix:** Water      **Date Received:** 02/19/14 12:25  
  
**Sample Name:** Point 1 (PCI)      **Units:** mg/L  
**Lab Code:** J1401327-001      **Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>0.566 BJ</b>	1.18	0.495	1	02/28/14 14:42	2/28/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	106	25 - 147	02/28/14 14:42	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water  
  
**Sample Name:** TW WS (PCI)  
**Lab Code:** J1401327-002

**Service Request:** J1401327  
**Date Collected:** 01/17/14 11:05  
**Date Received:** 02/19/14 12:25

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.21 U	1.0	0.21	1	03/06/14 18:55	*
Ethylbenzene	0.21 U	1.0	0.21	1	03/06/14 18:55	*
m,p-Xylenes	0.31 U	2.0	0.31	1	03/06/14 18:55	*
o-Xylene	0.14 U	1.0	0.14	1	03/06/14 18:55	*
Toluene	0.19 U	1.0	0.19	1	03/06/14 18:55	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	72 - 121	03/06/14 18:55	
4-Bromofluorobenzene	97	86 - 113	03/06/14 18:55	
Dibromofluoromethane	95	86 - 112	03/06/14 18:55	
Toluene-d8	101	88 - 115	03/06/14 18:55	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1401327
<b>Project:</b>	Spill Response @Brass	<b>Date Collected:</b> 01/17/14 11:05
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> 02/19/14 12:25
<b>Sample Name:</b>	TW WS (PCI)	<b>Units:</b> ug/L
<b>Lab Code:</b>	J1401327-002	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.147 U	0.333	0.147	1	02/28/14 07:54	2/27/14	
2-Methylnaphthalene	0.147 U	0.333	0.147	1	02/28/14 07:54	2/27/14	
Acenaphthene	0.137 U	0.333	0.137	1	02/28/14 07:54	2/27/14	
Acenaphthylene	0.0834 U	0.333	0.0834	1	02/28/14 07:54	2/27/14	
Anthracene	0.127 U	0.333	0.127	1	02/28/14 07:54	2/27/14	
Benz(a)anthracene	0.117 U	0.333	0.117	1	02/28/14 07:54	2/27/14	
Benzo(a)pyrene	0.104 U	0.333	0.104	1	02/28/14 07:54	2/27/14	
Benzo(b)fluoranthene	0.0834 U	0.333	0.0834	1	02/28/14 07:54	2/27/14	
Benzo(g,h,i)perylene	0.130 U	0.333	0.130	1	02/28/14 07:54	2/27/14	
Benzo(k)fluoranthene	0.117 U	0.333	0.117	1	02/28/14 07:54	2/27/14	
Chrysene	0.0800 U	0.333	0.0800	1	02/28/14 07:54	2/27/14	
Dibenz(a,h)anthracene	0.120 U	0.333	0.120	1	02/28/14 07:54	2/27/14	
Fluoranthene	0.130 U	0.333	0.130	1	02/28/14 07:54	2/27/14	
Fluorene	0.157 U	0.333	0.157	1	02/28/14 07:54	2/27/14	
Indeno(1,2,3-cd)pyrene	0.134 U	0.333	0.134	1	02/28/14 07:54	2/27/14	
Naphthalene	<b>0.226 J</b>	0.333	0.130	1	02/28/14 07:54	2/27/14	
Phenanthrene	0.117 U	0.333	0.117	1	02/28/14 07:54	2/27/14	
Pyrene	0.104 U	0.333	0.104	1	02/28/14 07:54	2/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	66	22 - 105	02/28/14 07:54	
p-Terphenyl-d14	83	25 - 127	02/28/14 07:54	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1401327  
**Project:** Spill Response @Brass      **Date Collected:** 01/17/14 11:05  
**Sample Matrix:** Water      **Date Received:** 02/19/14 12:25  
  
**Sample Name:** TW WS (PCI)      **Units:** mg/L  
**Lab Code:** J1401327-002      **Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	0.306 U	0.727	0.306	1	02/28/14 15:09	2/28/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	105	25 - 147	02/28/14 15:09	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water  
  
**Sample Name:** BJ WS (TCI)  
**Lab Code:** J1401327-003

**Service Request:** J1401327  
**Date Collected:** 01/17/14 11:15  
**Date Received:** 02/19/14 12:25

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.21 U	1.0	0.21	1	03/06/14 19:16	*
Ethylbenzene	0.21 U	1.0	0.21	1	03/06/14 19:16	*
m,p-Xylenes	0.31 U	2.0	0.31	1	03/06/14 19:16	*
o-Xylene	0.14 U	1.0	0.14	1	03/06/14 19:16	*
Toluene	<b>2.0</b>	1.0	0.19	1	03/06/14 19:16	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	72 - 121	03/06/14 19:16	
4-Bromofluorobenzene	98	86 - 113	03/06/14 19:16	
Dibromofluoromethane	91	86 - 112	03/06/14 19:16	
Toluene-d8	103	88 - 115	03/06/14 19:16	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1401327
<b>Project:</b>	Spill Response @Brass	<b>Date Collected:</b> 01/17/14 11:15
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> 02/19/14 12:25
<b>Sample Name:</b>	BJ WS (TCI)	<b>Units:</b> ug/L
<b>Lab Code:</b>	J1401327-003	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.142 U	0.323	0.142	1	02/28/14 08:19	2/27/14	
2-Methylnaphthalene	0.142 U	0.323	0.142	1	02/28/14 08:19	2/27/14	
Acenaphthene	0.133 U	0.323	0.133	1	02/28/14 08:19	2/27/14	
Acenaphthylene	0.0807 U	0.323	0.0807	1	02/28/14 08:19	2/27/14	
Anthracene	0.123 U	0.323	0.123	1	02/28/14 08:19	2/27/14	
Benz(a)anthracene	0.113 U	0.323	0.113	1	02/28/14 08:19	2/27/14	
Benzo(a)pyrene	0.100 U	0.323	0.100	1	02/28/14 08:19	2/27/14	
Benzo(b)fluoranthene	0.0807 U	0.323	0.0807	1	02/28/14 08:19	2/27/14	
Benzo(g,h,i)perylene	0.126 U	0.323	0.126	1	02/28/14 08:19	2/27/14	
Benzo(k)fluoranthene	0.113 U	0.323	0.113	1	02/28/14 08:19	2/27/14	
Chrysene	0.0775 U	0.323	0.0775	1	02/28/14 08:19	2/27/14	
Dibenz(a,h)anthracene	0.117 U	0.323	0.117	1	02/28/14 08:19	2/27/14	
Fluoranthene	0.126 U	0.323	0.126	1	02/28/14 08:19	2/27/14	
Fluorene	0.152 U	0.323	0.152	1	02/28/14 08:19	2/27/14	
Indeno(1,2,3-cd)pyrene	0.130 U	0.323	0.130	1	02/28/14 08:19	2/27/14	
Naphthalene	0.126 U	0.323	0.126	1	02/28/14 08:19	2/27/14	
Phenanthrene	0.113 U	0.323	0.113	1	02/28/14 08:19	2/27/14	
Pyrene	0.100 U	0.323	0.100	1	02/28/14 08:19	2/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	84	22 - 105	02/28/14 08:19	
p-Terphenyl-d14	99	25 - 127	02/28/14 08:19	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1401327  
**Project:** Spill Response @Brass      **Date Collected:** 01/17/14 11:15  
**Sample Matrix:** Water      **Date Received:** 02/19/14 12:25  
  
**Sample Name:** BJ WS (TCI)      **Units:** mg/L  
**Lab Code:** J1401327-003      **Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>1.25</b>	0.784	0.330	1	02/28/14 16:25	2/28/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	93	25 - 147	02/28/14 16:25	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water  
  
**Sample Name:** IMB WS (PCI)  
**Lab Code:** J1401327-004

**Service Request:** J1401327  
**Date Collected:** 01/17/14 11:25  
**Date Received:** 02/19/14 12:25

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.21 U	1.0	0.21	1	03/06/14 19:38	*
Ethylbenzene	0.21 U	1.0	0.21	1	03/06/14 19:38	*
m,p-Xylenes	0.31 U	2.0	0.31	1	03/06/14 19:38	*
o-Xylene	0.14 U	1.0	0.14	1	03/06/14 19:38	*
Toluene	0.19 U	1.0	0.19	1	03/06/14 19:38	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	102	72 - 121	03/06/14 19:38	
4-Bromofluorobenzene	98	86 - 113	03/06/14 19:38	
Dibromofluoromethane	95	86 - 112	03/06/14 19:38	
Toluene-d8	102	88 - 115	03/06/14 19:38	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1401327
<b>Project:</b>	Spill Response @Brass	<b>Date Collected:</b> 01/17/14 11:25
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> 02/19/14 12:25
<b>Sample Name:</b>	IMB WS (PCI)	<b>Units:</b> ug/L
<b>Lab Code:</b>	J1401327-004	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.163 U	0.370	0.163	1	02/28/14 08:44	2/27/14	
2-Methylnaphthalene	0.163 U	0.370	0.163	1	02/28/14 08:44	2/27/14	
Acenaphthene	0.152 U	0.370	0.152	1	02/28/14 08:44	2/27/14	
Acenaphthylene	0.0926 U	0.370	0.0926	1	02/28/14 08:44	2/27/14	
Anthracene	0.141 U	0.370	0.141	1	02/28/14 08:44	2/27/14	
Benz(a)anthracene	0.130 U	0.370	0.130	1	02/28/14 08:44	2/27/14	
Benzo(a)pyrene	0.115 U	0.370	0.115	1	02/28/14 08:44	2/27/14	
Benzo(b)fluoranthene	0.0926 U	0.370	0.0926	1	02/28/14 08:44	2/27/14	
Benzo(g,h,i)perylene	0.145 U	0.370	0.145	1	02/28/14 08:44	2/27/14	
Benzo(k)fluoranthene	0.130 U	0.370	0.130	1	02/28/14 08:44	2/27/14	
Chrysene	0.0889 U	0.370	0.0889	1	02/28/14 08:44	2/27/14	
Dibenz(a,h)anthracene	0.134 U	0.370	0.134	1	02/28/14 08:44	2/27/14	
Fluoranthene	0.145 U	0.370	0.145	1	02/28/14 08:44	2/27/14	
Fluorene	0.175 U	0.370	0.175	1	02/28/14 08:44	2/27/14	
Indeno(1,2,3-cd)pyrene	0.149 U	0.370	0.149	1	02/28/14 08:44	2/27/14	
Naphthalene	0.145 U	0.370	0.145	1	02/28/14 08:44	2/27/14	
Phenanthrene	0.130 U	0.370	0.130	1	02/28/14 08:44	2/27/14	
Pyrene	0.115 U	0.370	0.115	1	02/28/14 08:44	2/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	80	22 - 105	02/28/14 08:44	
p-Terphenyl-d14	92	25 - 127	02/28/14 08:44	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1401327  
**Project:** Spill Response @Brass      **Date Collected:** 01/17/14 11:25  
**Sample Matrix:** Water      **Date Received:** 02/19/14 12:25  
  
**Sample Name:** IMB WS (PCI)      **Units:** mg/L  
**Lab Code:** J1401327-004      **Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	13.8	0.690	0.290	1	02/28/14 16:53	2/28/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	121	25 - 147	02/28/14 16:53	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water  
  
**Sample Name:** OKPC WS (PCI)  
**Lab Code:** J1401327-005

**Service Request:** J1401327  
**Date Collected:** 01/17/14 11:35  
**Date Received:** 02/19/14 12:25

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.21 U	1.0	0.21	1	03/06/14 19:59	*
Ethylbenzene	0.21 U	1.0	0.21	1	03/06/14 19:59	*
m,p-Xylenes	0.31 U	2.0	0.31	1	03/06/14 19:59	*
o-Xylene	0.14 U	1.0	0.14	1	03/06/14 19:59	*
Toluene	0.19 U	1.0	0.19	1	03/06/14 19:59	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	103	72 - 121	03/06/14 19:59	
4-Bromofluorobenzene	98	86 - 113	03/06/14 19:59	
Dibromofluoromethane	97	86 - 112	03/06/14 19:59	
Toluene-d8	101	88 - 115	03/06/14 19:59	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1401327
<b>Project:</b>	Spill Response @Brass	<b>Date Collected:</b> 01/17/14 11:35
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> 02/19/14 12:25
<b>Sample Name:</b>	OKPC WS (PCI)	<b>Units:</b> ug/L
<b>Lab Code:</b>	J1401327-005	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.158 U	0.357	0.158	1	02/28/14 09:08	2/27/14	
2-Methylnaphthalene	0.158 U	0.357	0.158	1	02/28/14 09:08	2/27/14	
Acenaphthene	0.147 U	0.357	0.147	1	02/28/14 09:08	2/27/14	
Acenaphthylene	0.0893 U	0.357	0.0893	1	02/28/14 09:08	2/27/14	
Anthracene	0.136 U	0.357	0.136	1	02/28/14 09:08	2/27/14	
Benz(a)anthracene	0.125 U	0.357	0.125	1	02/28/14 09:08	2/27/14	
Benzo(a)pyrene	0.111 U	0.357	0.111	1	02/28/14 09:08	2/27/14	
Benzo(b)fluoranthene	0.0893 U	0.357	0.0893	1	02/28/14 09:08	2/27/14	
Benzo(g,h,i)perylene	0.140 U	0.357	0.140	1	02/28/14 09:08	2/27/14	
Benzo(k)fluoranthene	0.125 U	0.357	0.125	1	02/28/14 09:08	2/27/14	
Chrysene	0.0858 U	0.357	0.0858	1	02/28/14 09:08	2/27/14	
Dibenz(a,h)anthracene	0.129 U	0.357	0.129	1	02/28/14 09:08	2/27/14	
Fluoranthene	0.140 U	0.357	0.140	1	02/28/14 09:08	2/27/14	
Fluorene	0.168 U	0.357	0.168	1	02/28/14 09:08	2/27/14	
Indeno(1,2,3-cd)pyrene	0.143 U	0.357	0.143	1	02/28/14 09:08	2/27/14	
Naphthalene	0.140 U	0.357	0.140	1	02/28/14 09:08	2/27/14	
Phenanthrene	0.125 U	0.357	0.125	1	02/28/14 09:08	2/27/14	
Pyrene	0.111 U	0.357	0.111	1	02/28/14 09:08	2/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	82	22 - 105	02/28/14 09:08	
p-Terphenyl-d14	88	25 - 127	02/28/14 09:08	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd                    **Service Request:** J1401327  
**Project:** Spill Response @Brass                    **Date Collected:** 01/17/14 11:35  
**Sample Matrix:** Water                                    **Date Received:** 02/19/14 12:25  
  
**Sample Name:** OKPC WS (PCI)                            **Units:** mg/L  
**Lab Code:** J1401327-005                                **Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>0.498 BJ</b>	0.769	0.324	1	02/28/14 17:20	2/28/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	104	25 - 147	02/28/14 17:20	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water  
  
**Sample Name:** Point 6 WS (PCI)  
**Lab Code:** J1401327-006

**Service Request:** J1401327  
**Date Collected:** 01/18/14 11:50  
**Date Received:** 02/19/14 12:25

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.21 U	1.0	0.21	1	03/06/14 20:21	*
Ethylbenzene	0.21 U	1.0	0.21	1	03/06/14 20:21	*
m,p-Xylenes	0.31 U	2.0	0.31	1	03/06/14 20:21	*
o-Xylene	0.14 U	1.0	0.14	1	03/06/14 20:21	*
Toluene	0.19 U	1.0	0.19	1	03/06/14 20:21	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	103	72 - 121	03/06/14 20:21	
4-Bromofluorobenzene	98	86 - 113	03/06/14 20:21	
Dibromofluoromethane	95	86 - 112	03/06/14 20:21	
Toluene-d8	103	88 - 115	03/06/14 20:21	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1401327
<b>Project:</b>	Spill Response @Brass	<b>Date Collected:</b> 01/18/14 11:50
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> 02/19/14 12:25
<b>Sample Name:</b>	Point 6 WS (PCI)	<b>Units:</b> ug/L
<b>Lab Code:</b>	J1401327-006	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.847 U	1.92	0.847	5	02/28/14 09:33	2/27/14	
2-Methylnaphthalene	0.847 U	1.92	0.847	5	02/28/14 09:33	2/27/14	
Acenaphthene	0.789 U	1.92	0.789	5	02/28/14 09:33	2/27/14	
Acenaphthylene	0.481 U	1.92	0.481	5	02/28/14 09:33	2/27/14	
Anthracene	0.731 U	1.92	0.731	5	02/28/14 09:33	2/27/14	
Benz(a)anthracene	0.674 U	1.92	0.674	5	02/28/14 09:33	2/27/14	
Benzo(a)pyrene	0.597 U	1.92	0.597	5	02/28/14 09:33	2/27/14	
Benzo(b)fluoranthene	0.481 U	1.92	0.481	5	02/28/14 09:33	2/27/14	
Benzo(g,h,i)perylene	0.750 U	1.92	0.750	5	02/28/14 09:33	2/27/14	
Benzo(k)fluoranthene	0.674 U	1.92	0.674	5	02/28/14 09:33	2/27/14	
Chrysene	0.462 U	1.92	0.462	5	02/28/14 09:33	2/27/14	
Dibenz(a,h)anthracene	0.693 U	1.92	0.693	5	02/28/14 09:33	2/27/14	
Fluoranthene	0.750 U	1.92	0.750	5	02/28/14 09:33	2/27/14	
Fluorene	0.904 U	1.92	0.904	5	02/28/14 09:33	2/27/14	
Indeno(1,2,3-cd)pyrene	0.770 U	1.92	0.770	5	02/28/14 09:33	2/27/14	
Naphthalene	0.750 U	1.92	0.750	5	02/28/14 09:33	2/27/14	
Phenanthrene	0.674 U	1.92	0.674	5	02/28/14 09:33	2/27/14	
Pyrene	0.597 U	1.92	0.597	5	02/28/14 09:33	2/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	89	22 - 105	02/28/14 09:33	
p-Terphenyl-d14	95	25 - 127	02/28/14 09:33	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1401327  
**Project:** Spill Response @Brass      **Date Collected:** 01/18/14 11:50  
**Sample Matrix:** Water      **Date Received:** 02/19/14 12:25  
  
**Sample Name:** Point 6 WS (PCI)      **Units:** mg/L  
**Lab Code:** J1401327-006      **Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>0.336 BJ</b>	0.714	0.301	1	02/28/14 17:48	2/28/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	109	25 - 147	02/28/14 17:48	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1401327  
**Project:** Spill Response @Brass      **Date Collected:** NA  
**Sample Matrix:** Water      **Date Received:** NA  
  
**Sample Name:** Method Blank      **Units:** ug/L  
**Lab Code:** JQ1401695-03      **Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.21 U	1.0	0.21	1	03/06/14 17:08	
Ethylbenzene	0.21 U	1.0	0.21	1	03/06/14 17:08	
m,p-Xylenes	0.31 U	2.0	0.31	1	03/06/14 17:08	
o-Xylene	0.14 U	1.0	0.14	1	03/06/14 17:08	
Toluene	0.19 U	1.0	0.19	1	03/06/14 17:08	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	101	72 - 121	03/06/14 17:08	
4-Bromofluorobenzene	98	86 - 113	03/06/14 17:08	
Dibromofluoromethane	95	86 - 112	03/06/14 17:08	
Toluene-d8	101	88 - 115	03/06/14 17:08	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1401327
<b>Project:</b>	Spill Response @Brass	<b>Date Collected:</b> NA
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> NA
<b>Sample Name:</b>	Method Blank	<b>Units:</b> ug/L
<b>Lab Code:</b>	JQ1401482-01	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.0440 U	0.100	0.0440	1	02/28/14 05:26	2/27/14	
2-Methylnaphthalene	0.0440 U	0.100	0.0440	1	02/28/14 05:26	2/27/14	
Acenaphthene	0.0410 U	0.100	0.0410	1	02/28/14 05:26	2/27/14	
Acenaphthylene	0.0250 U	0.100	0.0250	1	02/28/14 05:26	2/27/14	
Anthracene	0.0380 U	0.100	0.0380	1	02/28/14 05:26	2/27/14	
Benz(a)anthracene	0.0350 U	0.100	0.0350	1	02/28/14 05:26	2/27/14	
Benzo(a)pyrene	0.0310 U	0.100	0.0310	1	02/28/14 05:26	2/27/14	
Benzo(b)fluoranthene	0.0250 U	0.100	0.0250	1	02/28/14 05:26	2/27/14	
Benzo(g,h,i)perylene	0.0390 U	0.100	0.0390	1	02/28/14 05:26	2/27/14	
Benzo(k)fluoranthene	0.0350 U	0.100	0.0350	1	02/28/14 05:26	2/27/14	
Chrysene	0.0240 U	0.100	0.0240	1	02/28/14 05:26	2/27/14	
Dibenz(a,h)anthracene	0.0360 U	0.100	0.0360	1	02/28/14 05:26	2/27/14	
Fluoranthene	0.0390 U	0.100	0.0390	1	02/28/14 05:26	2/27/14	
Fluorene	0.0470 U	0.100	0.0470	1	02/28/14 05:26	2/27/14	
Indeno(1,2,3-cd)pyrene	0.0400 U	0.100	0.0400	1	02/28/14 05:26	2/27/14	
Naphthalene	0.0390 U	0.100	0.0390	1	02/28/14 05:26	2/27/14	
Phenanthrene	0.0350 U	0.100	0.0350	1	02/28/14 05:26	2/27/14	
Pyrene	0.0310 U	0.100	0.0310	1	02/28/14 05:26	2/27/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	66	22 - 105	02/28/14 05:26	
p-Terphenyl-d14	89	25 - 127	02/28/14 05:26	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1401327  
**Project:** Spill Response @Brass      **Date Collected:** NA  
**Sample Matrix:** Water      **Date Received:** NA  
  
**Sample Name:** Method Blank      **Units:** mg/L  
**Lab Code:** JQ1401502-01      **Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>0.0909 J</b>	0.200	0.0841	1	02/28/14 12:50	2/28/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	117	25 - 147	02/28/14 12:50	

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water

**Service Request:** J1401327

**SURROGATE RECOVERY SUMMARY**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

<b>Sample Name</b>	<b>Lab Code</b>	<b>1,2-Dichloroethane-d4</b>	<b>4-Bromofluorobenzene</b>	<b>Dibromofluoromethane</b>
Point 1 (PCI)	J1401327-001	103	98	95
TW WS (PCI)	J1401327-002	102	97	95
BJ WS (TCI)	J1401327-003	102	98	91
IMB WS (PCI)	J1401327-004	102	98	95
OKPC WS (PCI)	J1401327-005	103	98	97
Point 6 WS (PCI)	J1401327-006	103	98	95
Lab Control Sample	JQ1401695-01	101	95	101
Duplicate Lab Control Sample	JQ1401695-02	100	95	101
Method Blank	JQ1401695-03	101	98	95

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water

**Service Request:** J1401327

**SURROGATE RECOVERY SUMMARY**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

<b>Sample Name</b>	<b>Lab Code</b>	<b>Toluene-d8</b>
		<b>88 - 115</b>
Point 1 (PCI)	J1401327-001	102
TW WS (PCI)	J1401327-002	101
BJ WS (TCI)	J1401327-003	103
IMB WS (PCI)	J1401327-004	102
OKPC WS (PCI)	J1401327-005	101
Point 6 WS (PCI)	J1401327-006	103
Lab Control Sample	JQ1401695-01	101
Duplicate Lab Control Sample	JQ1401695-02	100
Method Blank	JQ1401695-03	101

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water

**Service Request:** J1401327  
**Date Analyzed:** 03/06/14

**Duplicate Lab Control Sample Summary**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B      **Units:** ug/L  
    **Basis:** NA  
    **Analysis Lot:** 382680

**Lab Control Sample**  
**JQ1401695-01**

**Duplicate Lab Control Sample**  
**JQ1401695-02**

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Benzene	47.4	50.0	95	47.1	50.0	94	80-117	<1	30
Ethylbenzene	48.9	50.0	98	48.1	50.0	96	82-119	2	30
m,p-Xylenes	93.0	100	93	91.2	100	91	79-122	2	30
o-Xylene	47.1	50.0	94	46.1	50.0	92	80-119	2	30
Toluene	47.8	50.0	96	47.1	50.0	94	52-152	1	30

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water

**Service Request:** J1401327

**SURROGATE RECOVERY SUMMARY**  
**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM

**Extraction Method:** EPA 3510C

<b>Sample Name</b>	<b>Lab Code</b>	<b>2-Fluorobiphenyl</b>	<b>p-Terphenyl-d14</b>
Point 1 (PCI)	J1401327-001	77	80
TW WS (PCI)	J1401327-002	66	83
BJ WS (TCI)	J1401327-003	84	99
IMB WS (PCI)	J1401327-004	80	92
OKPC WS (PCI)	J1401327-005	82	88
Point 6 WS (PCI)	J1401327-006	89	95
Method Blank	JQ1401482-01	66	89
Lab Control Sample	JQ1401482-02	74	89

**ALS Group USA, Corp.**  
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## QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water

**Service Request:** J1401327  
**Date Analyzed:** 02/28/14  
**Date Extracted:** 02/27/14

# Lab Control Sample Summary

## Base Neutral Semivolatile Organic Compounds by GC/MS SIM

**Lab Control Sample  
JQ1401482-02**

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1-Methylnaphthalene	1.57	2.00	79	34-107
2-Methylnaphthalene	1.58	2.00	79	41-107
Acenaphthene	1.60	2.00	80	41-109
Acenaphthylene	1.67	2.00	83	44-120
<u>Anthracene</u>	<u>1.77</u>	<u>2.00</u>	<u>88</u>	<u>50-115</u>
Benz(a)anthracene	1.83	2.00	92	46-133
Benzo(a)pyrene	1.73	2.00	86	49-122
Benzo(b)fluoranthene	1.58	2.00	79	48-122
Benzo(g,h,i)perylene	1.63	2.00	81	49-114
Benzo(k)fluoranthene	1.70	2.00	85	51-119
Chrysene	1.76	2.00	88	51-117
Dibenz(a,h)anthracene	1.51	2.00	76	48-121
Fluoranthene	2.02	2.00	101	52-122
Fluorene	1.70	2.00	85	46-113
Indeno(1,2,3-cd)pyrene	1.56	2.00	78	45-121
Naphthalene	1.56	2.00	78	42-104
Phenanthrene	1.73	2.00	87	49-107
Pyrene	1.99	2.00	100	49-128

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** Spill Response @Brass  
**Sample Matrix:** Water

**Service Request:** J1401327

**SURROGATE RECOVERY SUMMARY**  
**Diesel Range Organics by GC**

**Analysis Method:** 8015B

**Extraction Method:** EPA 3510C

<b>Sample Name</b>	<b>Lab Code</b>	<b>o-Terphenyl</b>
		<b>25 - 147</b>
Point 1 (PCI)	J1401327-001	106
TW WS (PCI)	J1401327-002	105
BJ WS (TCI)	J1401327-003	93
IMB WS (PCI)	J1401327-004	121
OKPC WS (PCI)	J1401327-005	104
Point 6 WS (PCI)	J1401327-006	109
Method Blank	JQ1401502-01	117
Lab Control Sample	JQ1401502-02	112
Duplicate Lab Control Sample	JQ1401502-03	121

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1401327  
**Project:** Spill Response @Brass      **Date Analyzed:** 02/28/14  
**Sample Matrix:** Water      **Date Extracted:** 02/28/14

**Duplicate Lab Control Sample Summary**

**Diesel Range Organics by GC**

**Analysis Method:** 8015B      **Units:** mg/L  
**Prep Method:** EPA 3510C      **Basis:** NA  
    **Analysis Lot:** 382040

<b>Analyte Name</b>	<b>Lab Control Sample</b> <b>JQ1401502-02</b>				<b>Duplicate Lab Control Sample</b> <b>JQ1401502-03</b>				
	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
Diesel Range Organics (C10 - C28)	1.24	1.25	99	1.26	1.25	101	43-124	1	30



# CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM



Environmental

#18 Uyo Street, Rumuomasi, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161

SR #  
J1401327  
CAS Contact

Page 12 of 12

Project Name <b>SPILL RESPONSE @ BRASS (P)</b>		Project Number		ANALYSIS REQUESTED (Include Method)																
Report To		Report CC		3 Preservative      Z      BTEX      PAH      TPH																
Company Address <b>GIOLEE GLOBAL RESOURCES LIMITED, .</b> <b>#18 UYO STREET RUMUOMASI, PORT HARCOURT</b>																				
Phone # <b>7031513161</b>		FAX #																		
Sampler's Signature		Sampler's Printed Name <b>KEN NWIFIITO</b>																		
CLIENT SAMPLE ID	LAB ID	SAMPLING		Matrix																
		DATE	TIME																	
POINT 1 (PCI)		17/01/2014	11:00am	H <sub>2</sub> O	X	X	X													
TW WS (PCI)		17/01/2014	11:05am	H <sub>2</sub> O	X	X	X													
BJ WS (PCI)		17/01/2014	11:15am	H <sub>2</sub> O	X	X	X													
JMB WS (PCI)		17/01/2014	11:25am	H <sub>2</sub> O	X	X	X													
OKPC WS (PCI)		17/01/2014	11:35am	H <sub>2</sub> O	X	X	X													
POINT 6 WS (PCI)		18/01/2014	11:50am	H <sub>2</sub> O	X	X	X													
Special Instructions/Comments:												TURNAROUND REQUIREMENTS			REPORT REQUIREMENTS			INVOICE INFO		
												<input type="checkbox"/> RUSH (SURCHARGES APPLY) <input checked="" type="checkbox"/> STANDARD			I. Result Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries * IV. Data Validation Report with Raw Data			P.O. # _____ Bill to: _____		
												REQUESTED FAX DATE			Edata			* Yes    No		
Relinquished By Signature		Received By 		Relinquished By Signature		Received By 		Relinquished By Signature		Received By Signature		Relinquished By Signature		Received By Signature						
Printed Name UCHERGBU SOPHIA		Printed Name <b>SOPHIA</b>		Printed Name		Printed Name <b>Sophia Lytton</b>		Printed Name		Printed Name <b>Sophia Lytton</b>		Printed Name		Printed Name						
Firm GIOLEE GLOBAL Resources		Firm <b>UPS</b>		Firm		Firm <b>UPS</b>		Firm		Firm <b>ACS</b>		Firm		Firm						
Date/Time		Date/Time <b>3/2/14</b>		Date/Time		Date/Time <b>2/19/14 1225</b>		Date/Time		Date/Time		Date/Time		Date/Time						



April 14, 2014

Service Request No:J1402115

Lesi Maol  
Giolee Global Resources NIG Ltd  
18 UYO STREET RUMUMASI

**Laboratory Results for: After Clean-Up@Brass**

Dear Lesi,

Enclosed are the results of the sample(s) submitted to our laboratory March 06, 2014  
For your reference, these analyses have been assigned our service request number **J1402115**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the NELAC 2003 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 4410. You may also contact me via email at Jerry.Allen@alsglobal.com.

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

A handwritten signature in black ink, appearing to read "Jerry Allen".

Jerry Allen  
Project Manager

ADDRESS 9143 Philips Highway, Suite 200, Jacksonville, FL 32256

PHONE +1 904 739 2277 | FAX +1 904 739 2011

ALS Group USA, Corp.

dba ALS Environmental



## State Certifications, Accreditations, and Licenses

<b>Agency</b>	<b>Number</b>	<b>Expire Date</b>
Florida Department of Health	E82502	6/30/2014
North Carolina Department of Environment and Natural Resources	527	12/31/2014
Virginia Environmental Accreditation Program	460191	12/14/2014
Louisiana Department of Environmental Quality	02086	6/30/2014
Georgia Department of Natural Resources	958	6/30/2014
Kentucky Division of Waste Management	63	6/30/2014
South Carolina Department of Health and Environmental Control	96021001	6/30/2014
Texas Commission on Environmental Quality	T104704197-13-5	5/31/2014
Maine Department of Health and Human Services	2011006	2/3/2015
Department of Defense	66206	5/31/2014
Pennsylvania Department of Environmental Protection	68-04835	8/31/2014

## Data Qualifiers

### CAS Standard

- + Possible Tedlar bag artifact.
- A TIC is a suspected aldol-condensation product
- B Analyte found in the associated method blank as well as in the sample.
- BC Reported results are not blank corrected.
- BH The back section of the tube yielded higher results than the front.
- BT Results indicated possible breakthrough; back section  $\geq 10\%$  front section.
- C Result identification confirmed.
- D Compound identified in an analysis at a secondary dilution factor
- D Spike was diluted out
- DE Reported results are corrected for desorption efficiency.
- E Estimated value. Concentration above calibration range
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- H1 Sample analysis performed past holding time. See case narrative.
- H2 Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
- H3 Sample was received and analyzed past holding time.
- H4 Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
  - I Internal standard not within the specified limits. See case narrative.
  - J Estimated Value. Concentration found below MRL.
- K A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
- K Analyte was detected above the method reporting limit prior to normalization.
- L1 Laboratory control sample recovery outside the specified limits; results may be biased high.
- L2 Laboratory control sample recovery outside the specified limits; results may be biased low.
- L3 Laboratory control sample recovery outside the specified limits.
- M Matrix interference; results may be biased high.
- M The duplicate injection precision not met.
- M1 Matrix interference due to coelution with a non-target compound; results may be biased high.
- N Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- P Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
- P Pesticide/Aroclor target analyte  $> 40\%$  difference for detected concentrations between GC columns
- Q Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
- R Duplicate Precision not met.
- R1 Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
- S Surrogate recovery not within specified limits.

## **Data Qualifiers**

### **CAS Standard**

- S The reported value was determined by the Method of Standard Additions (MSA).
- T Analyte is a tentatively identified compound, result is estimated.
- U Compound was analyzed for, but was not detected (ND).
- V1 The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
- V2 The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
- W Result quantified, but the corresponding peak was detected outside the generated retention time window.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- X See case narrative.
- Y Recovery outside limits
- Y The chromatogram resembles a petroleum product but does not match the calibration standard.
- Z The chromatogram does not resemble a petroleum product.
  - i The MRL/MDL has been elevated due to a matrix interference.

# ALS Laboratory Group

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 09:26
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SSC1 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-001	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.226 U	6.62	0.226	1	03/28/14 22:13	3/28/14	*
Ethylbenzene	0.159 U	6.62	0.159	1	03/28/14 22:13	3/28/14	*
m,p-Xylenes	0.279 U	13.2	0.279	1	03/28/14 22:13	3/28/14	*
o-Xylene	0.212 U	6.62	0.212	1	03/28/14 22:13	3/28/14	*
Toluene	0.358 U	6.62	0.358	1	03/28/14 22:13	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	93	80 - 120	03/28/14 22:13	
4-Bromofluorobenzene	94	64 - 135	03/28/14 22:13	
Dibromofluoromethane	99	74 - 125	03/28/14 22:13	
Toluene-d8	101	46 - 156	03/28/14 22:13	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> 02/21/14 09:26
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b> 03/06/14 14:00
<b>Sample Name:</b>	SSC1 OD (0.0-0.3)m	<b>Units:</b> ug/Kg
<b>Lab Code:</b>	J1402115-001	<b>Basis:</b> Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	3.28 U	4.13	3.28	1	03/28/14 03:15	3/25/14	
2-Methylnaphthalene	2.80 U	4.13	2.80	1	03/28/14 03:15	3/25/14	
Acenaphthene	3.77 U	8.26	3.77	1	03/28/14 03:15	3/25/14	
Acenaphthylene	2.68 U	8.26	2.68	1	03/28/14 03:15	3/25/14	
Anthracene	1.95 U	4.13	1.95	1	03/28/14 03:15	3/25/14	
Benz(a)anthracene	2.31 U	4.13	2.31	1	03/28/14 03:15	3/25/14	
Benzo(a)pyrene	1.22 U	4.13	1.22	1	03/28/14 03:15	3/25/14	
Benzo(b)fluoranthene	2.43 U	4.13	2.43	1	03/28/14 03:15	3/25/14	
Benzo(g,h,i)perylene	2.68 U	4.13	2.68	1	03/28/14 03:15	3/25/14	
Benzo(k)fluoranthene	2.92 U	4.13	2.92	1	03/28/14 03:15	3/25/14	
Chrysene	2.31 U	4.13	2.31	1	03/28/14 03:15	3/25/14	
Dibenz(a,h)anthracene	3.28 U	4.13	3.28	1	03/28/14 03:15	3/25/14	
Fluoranthene	2.43 U	4.13	2.43	1	03/28/14 03:15	3/25/14	
Fluorene	2.68 U	4.13	2.68	1	03/28/14 03:15	3/25/14	
Indeno(1,2,3-cd)pyrene	2.68 U	4.13	2.68	1	03/28/14 03:15	3/25/14	
Naphthalene	3.77 U	4.13	3.77	1	03/28/14 03:15	3/25/14	
Phenanthrene	2.07 U	8.26	2.07	1	03/28/14 03:15	3/25/14	*
Pyrene	2.43 U	4.13	2.43	1	03/28/14 03:15	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	56	30 - 118	03/28/14 03:15	
p-Terphenyl-d14	84	41 - 146	03/28/14 03:15	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** 02/21/14 09:26  
**Sample Matrix:** Soil      **Date Received:** 03/06/14 14:00  
  
**Sample Name:** SSC1 OD (0.0-0.3)m      **Units:** mg/Kg  
**Lab Code:** J1402115-001      **Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>7.03</b> BJ	13.1	4.81	1	03/28/14 16:45	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	78	31 - 181	03/28/14 16:45	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SSC1 OD (0.0-0.3)m  
**Lab Code:** J1402115-001

**Service Request:** J1402115  
**Date Collected:** 02/21/14 09:26  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	84	Percent	0.10	0.10	1	03/27/14 16:23	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 13:03
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SSC2 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-002	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.170 U	4.53	0.170	1	03/28/14 22:38	3/28/14	*
Ethylbenzene	0.120 U	4.53	0.120	1	03/28/14 22:38	3/28/14	*
m,p-Xylenes	0.210 U	9.07	0.210	1	03/28/14 22:38	3/28/14	*
o-Xylene	0.160 U	4.53	0.160	1	03/28/14 22:38	3/28/14	*
Toluene	0.270 U	4.53	0.270	1	03/28/14 22:38	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	97	80 - 120	03/28/14 22:38	
4-Bromofluorobenzene	93	64 - 135	03/28/14 22:38	
Dibromofluoromethane	102	74 - 125	03/28/14 22:38	
Toluene-d8	100	46 - 156	03/28/14 22:38	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 13:03
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SSC2 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-002	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	3.19 U	4.01	3.19	1	03/28/14 03:38	3/25/14	
2-Methylnaphthalene	2.72 U	4.01	2.72	1	03/28/14 03:38	3/25/14	
Acenaphthene	3.66 U	8.02	3.66	1	03/28/14 03:38	3/25/14	
Acenaphthylene	2.60 U	8.02	2.60	1	03/28/14 03:38	3/25/14	
Anthracene	1.89 U	4.01	1.89	1	03/28/14 03:38	3/25/14	
Benz(a)anthracene	2.24 U	4.01	2.24	1	03/28/14 03:38	3/25/14	
Benzo(a)pyrene	<b>11.4</b>	4.01	1.18	1	03/28/14 03:38	3/25/14	
Benzo(b)fluoranthene	2.36 U	4.01	2.36	1	03/28/14 03:38	3/25/14	
Benzo(g,h,i)perylene	2.60 U	4.01	2.60	1	03/28/14 03:38	3/25/14	
Benzo(k)fluoranthene	2.83 U	4.01	2.83	1	03/28/14 03:38	3/25/14	
Chrysene	2.24 U	4.01	2.24	1	03/28/14 03:38	3/25/14	
Dibenz(a,h)anthracene	3.19 U	4.01	3.19	1	03/28/14 03:38	3/25/14	
Fluoranthene	2.36 U	4.01	2.36	1	03/28/14 03:38	3/25/14	
Fluorene	2.60 U	4.01	2.60	1	03/28/14 03:38	3/25/14	
Indeno(1,2,3-cd)pyrene	2.60 U	4.01	2.60	1	03/28/14 03:38	3/25/14	
Naphthalene	3.66 U	4.01	3.66	1	03/28/14 03:38	3/25/14	
Phenanthrene	2.01 U	8.02	2.01	1	03/28/14 03:38	3/25/14	*
Pyrene	2.36 U	4.01	2.36	1	03/28/14 03:38	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	75	30 - 118	03/28/14 03:38	
p-Terphenyl-d14	92	41 - 146	03/28/14 03:38	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** 02/21/14 13:03  
**Sample Matrix:** Soil      **Date Received:** 03/06/14 14:00  
  
**Sample Name:** SSC2 OD (0.0-0.3)m      **Units:** mg/Kg  
**Lab Code:** J1402115-002      **Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>6.57</b> BJ	12.4	4.54	1	03/28/14 17:13	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	77	31 - 181	03/28/14 17:13	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SSC2 OD (0.0-0.3)m  
**Lab Code:** J1402115-002

**Service Request:** J1402115  
**Date Collected:** 02/21/14 13:03  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	84	Percent	0.10	0.10	1	03/27/14 16:23	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 08:26
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS1 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-003	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.181 U	5.31	0.181	1	03/28/14 23:03	3/28/14	*
Ethylbenzene	0.128 U	5.31	0.128	1	03/28/14 23:03	3/28/14	*
m,p-Xylenes	0.224 U	10.6	0.224	1	03/28/14 23:03	3/28/14	*
o-Xylene	0.170 U	5.31	0.170	1	03/28/14 23:03	3/28/14	*
Toluene	0.287 U	5.31	0.287	1	03/28/14 23:03	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	96	80 - 120	03/28/14 23:03	
4-Bromofluorobenzene	98	64 - 135	03/28/14 23:03	
Dibromofluoromethane	100	74 - 125	03/28/14 23:03	
Toluene-d8	98	46 - 156	03/28/14 23:03	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> 02/21/14 08:26
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b> 03/06/14 14:00
<b>Sample Name:</b>	SS1 OD (0.0-0.3)m	<b>Units:</b> ug/Kg
<b>Lab Code:</b>	J1402115-003	<b>Basis:</b> Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	3.32 U	4.17	3.32	1	03/28/14 04:01	3/25/14	
2-Methylnaphthalene	2.83 U	4.17	2.83	1	03/28/14 04:01	3/25/14	
Acenaphthene	3.81 U	8.35	3.81	1	03/28/14 04:01	3/25/14	
Acenaphthylene	2.71 U	8.35	2.71	1	03/28/14 04:01	3/25/14	
Anthracene	1.97 U	4.17	1.97	1	03/28/14 04:01	3/25/14	
Benz(a)anthracene	2.34 U	4.17	2.34	1	03/28/14 04:01	3/25/14	
Benzo(a)pyrene	1.23 U	4.17	1.23	1	03/28/14 04:01	3/25/14	
Benzo(b)fluoranthene	2.46 U	4.17	2.46	1	03/28/14 04:01	3/25/14	
Benzo(g,h,i)perylene	2.71 U	4.17	2.71	1	03/28/14 04:01	3/25/14	
Benzo(k)fluoranthene	2.95 U	4.17	2.95	1	03/28/14 04:01	3/25/14	
Chrysene	2.34 U	4.17	2.34	1	03/28/14 04:01	3/25/14	
Dibenz(a,h)anthracene	3.32 U	4.17	3.32	1	03/28/14 04:01	3/25/14	
Fluoranthene	2.46 U	4.17	2.46	1	03/28/14 04:01	3/25/14	
Fluorene	2.71 U	4.17	2.71	1	03/28/14 04:01	3/25/14	
Indeno(1,2,3-cd)pyrene	2.71 U	4.17	2.71	1	03/28/14 04:01	3/25/14	
Naphthalene	3.81 U	4.17	3.81	1	03/28/14 04:01	3/25/14	
Phenanthrene	2.09 U	8.35	2.09	1	03/28/14 04:01	3/25/14	*
Pyrene	2.46 U	4.17	2.46	1	03/28/14 04:01	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	74	30 - 118	03/28/14 04:01	
p-Terphenyl-d14	68	41 - 146	03/28/14 04:01	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1 OD (0.0-0.3)m  
**Lab Code:** J1402115-003

**Service Request:** J1402115  
**Date Collected:** 02/21/14 08:26  
**Date Received:** 03/06/14 14:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>7.61 BJ</b>	12.7	4.65	1	03/28/14 17:40	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	76	31 - 181	03/28/14 17:40	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS1 OD (0.0-0.3)m  
**Lab Code:** J1402115-003

**Service Request:** J1402115  
**Date Collected:** 02/21/14 08:26  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	82	Percent	0.10	0.10	1	03/27/14 16:23	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS2 OD (0.0-0.3)m  
**Lab Code:** J1402115-004

**Service Request:** J1402115  
**Date Collected:** 02/21/14 09:54  
**Date Received:** 03/06/14 14:00  
  
**Units:** ug/Kg  
**Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.324 U	9.52	0.324	1	03/28/14 23:28	3/28/14	*
Ethylbenzene	0.229 U	9.52	0.229	1	03/28/14 23:28	3/28/14	*
m,p-Xylenes	0.400 U	19.0	0.400	1	03/28/14 23:28	3/28/14	*
o-Xylene	0.305 U	9.52	0.305	1	03/28/14 23:28	3/28/14	*
Toluene	0.515 U	9.52	0.515	1	03/28/14 23:28	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	94	80 - 120	03/28/14 23:28	
4-Bromofluorobenzene	103	64 - 135	03/28/14 23:28	
Dibromofluoromethane	99	74 - 125	03/28/14 23:28	
Toluene-d8	100	46 - 156	03/28/14 23:28	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 09:54
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS2 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-004	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	3.68 U	4.63	3.68	1	03/28/14 04:24	3/25/14	
2-Methylnaphthalene	3.14 U	4.63	3.14	1	03/28/14 04:24	3/25/14	
Acenaphthene	4.23 U	9.26	4.23	1	03/28/14 04:24	3/25/14	
Acenaphthylene	3.00 U	9.26	3.00	1	03/28/14 04:24	3/25/14	
Anthracene	2.18 U	4.63	2.18	1	03/28/14 04:24	3/25/14	
Benz(a)anthracene	2.59 U	4.63	2.59	1	03/28/14 04:24	3/25/14	
Benzo(a)pyrene	1.37 U	4.63	1.37	1	03/28/14 04:24	3/25/14	
Benzo(b)fluoranthene	2.73 U	4.63	2.73	1	03/28/14 04:24	3/25/14	
Benzo(g,h,i)perylene	3.00 U	4.63	3.00	1	03/28/14 04:24	3/25/14	
Benzo(k)fluoranthene	3.27 U	4.63	3.27	1	03/28/14 04:24	3/25/14	
Chrysene	2.59 U	4.63	2.59	1	03/28/14 04:24	3/25/14	
Dibenz(a,h)anthracene	3.68 U	4.63	3.68	1	03/28/14 04:24	3/25/14	
Fluoranthene	2.73 U	4.63	2.73	1	03/28/14 04:24	3/25/14	
Fluorene	3.00 U	4.63	3.00	1	03/28/14 04:24	3/25/14	
Indeno(1,2,3-cd)pyrene	3.00 U	4.63	3.00	1	03/28/14 04:24	3/25/14	
Naphthalene	4.23 U	4.63	4.23	1	03/28/14 04:24	3/25/14	
Phenanthrene	2.32 U	9.26	2.32	1	03/28/14 04:24	3/25/14	*
Pyrene	2.73 U	4.63	2.73	1	03/28/14 04:24	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	57	30 - 118	03/28/14 04:24	
p-Terphenyl-d14	21	41 - 146	03/28/14 04:24	*

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** 02/21/14 09:54  
**Sample Matrix:** Soil      **Date Received:** 03/06/14 14:00  
  
**Sample Name:** SS2 OD (0.0-0.3)m      **Units:** mg/Kg  
**Lab Code:** J1402115-004      **Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>7.96 BJ</b>	13.9	5.10	1	03/28/14 18:08	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	76	31 - 181	03/28/14 18:08	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS2 OD (0.0-0.3)m  
**Lab Code:** J1402115-004

**Service Request:** J1402115  
**Date Collected:** 02/21/14 09:54  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	77	Percent	0.10	0.10	1	03/27/14 16:23	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 10:07
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS3 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-005	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.600 U	17.6	0.600	1	03/28/14 23:52	3/28/14	*
Ethylbenzene	0.424 U	17.6	0.424	1	03/28/14 23:52	3/28/14	*
m,p-Xylenes	0.742 U	35.3	0.742	1	03/28/14 23:52	3/28/14	*
o-Xylene	0.565 U	17.6	0.565	1	03/28/14 23:52	3/28/14	*
Toluene	0.953 U	17.6	0.953	1	03/28/14 23:52	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	93	80 - 120	03/28/14 23:52	
4-Bromofluorobenzene	118	64 - 135	03/28/14 23:52	
Dibromofluoromethane	100	74 - 125	03/28/14 23:52	
Toluene-d8	112	46 - 156	03/28/14 23:52	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 10:07
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS3 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-005	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	9.10 U	11.5	9.10	1	03/28/14 04:46	3/25/14	
2-Methylnaphthalene	7.75 U	11.5	7.75	1	03/28/14 04:46	3/25/14	
Acenaphthene	10.5 U	22.9	10.5	1	03/28/14 04:46	3/25/14	
Acenaphthylene	7.42 U	22.9	7.42	1	03/28/14 04:46	3/25/14	
Anthracene	5.40 U	11.5	5.40	1	03/28/14 04:46	3/25/14	
Benz(a)anthracene	6.41 U	11.5	6.41	1	03/28/14 04:46	3/25/14	
Benzo(a)pyrene	3.37 U	11.5	3.37	1	03/28/14 04:46	3/25/14	
Benzo(b)fluoranthene	6.74 U	11.5	6.74	1	03/28/14 04:46	3/25/14	
Benzo(g,h,i)perylene	7.42 U	11.5	7.42	1	03/28/14 04:46	3/25/14	
Benzo(k)fluoranthene	8.09 U	11.5	8.09	1	03/28/14 04:46	3/25/14	
Chrysene	6.41 U	11.5	6.41	1	03/28/14 04:46	3/25/14	
Dibenz(a,h)anthracene	9.10 U	11.5	9.10	1	03/28/14 04:46	3/25/14	
Fluoranthene	6.74 U	11.5	6.74	1	03/28/14 04:46	3/25/14	
Fluorene	7.42 U	11.5	7.42	1	03/28/14 04:46	3/25/14	
Indeno(1,2,3-cd)pyrene	7.42 U	11.5	7.42	1	03/28/14 04:46	3/25/14	
Naphthalene	10.5 U	11.5	10.5	1	03/28/14 04:46	3/25/14	
Phenanthrene	5.73 U	22.9	5.73	1	03/28/14 04:46	3/25/14	*
Pyrene	6.74 U	11.5	6.74	1	03/28/14 04:46	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	77	30 - 118	03/28/14 04:46	
p-Terphenyl-d14	67	41 - 146	03/28/14 04:46	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** 02/21/14 10:07  
**Sample Matrix:** Soil      **Date Received:** 03/06/14 14:00  
  
**Sample Name:** SS3 OD (0.0-0.3)m      **Units:** mg/Kg  
**Lab Code:** J1402115-005      **Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>23.4 BJ</b>	26.7	9.76	1	03/28/14 18:35	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	70	31 - 181	03/28/14 18:35	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS3 OD (0.0-0.3)m  
**Lab Code:** J1402115-005

**Service Request:** J1402115  
**Date Collected:** 02/21/14 10:07  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	42	Percent	0.10	0.10	1	03/27/14 16:23	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 10:21
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS4 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-006	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.534 U	15.7	0.534	1	03/29/14 00:17	3/28/14	*
Ethylbenzene	0.377 U	15.7	0.377	1	03/29/14 00:17	3/28/14	*
m,p-Xylenes	0.659 U	31.4	0.659	1	03/29/14 00:17	3/28/14	*
o-Xylene	0.503 U	15.7	0.503	1	03/29/14 00:17	3/28/14	*
Toluene	<b>2.82 J</b>	15.7	0.848	1	03/29/14 00:17	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	91	80 - 120	03/29/14 00:17	
4-Bromofluorobenzene	120	64 - 135	03/29/14 00:17	
Dibromofluoromethane	99	74 - 125	03/29/14 00:17	
Toluene-d8	112	46 - 156	03/29/14 00:17	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 10:21
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS4 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-006	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	46.2 U	58.1	46.2	5	03/28/14 05:09	3/25/14	
2-Methylnaphthalene	39.3 U	58.1	39.3	5	03/28/14 05:09	3/25/14	
Acenaphthene	53.0 U	116	53.0	5	03/28/14 05:09	3/25/14	
Acenaphthylene	37.6 U	116	37.6	5	03/28/14 05:09	3/25/14	
Anthracene	27.4 U	58.1	27.4	5	03/28/14 05:09	3/25/14	
Benz(a)anthracene	32.5 U	58.1	32.5	5	03/28/14 05:09	3/25/14	
Benzo(a)pyrene	17.1 U	58.1	17.1	5	03/28/14 05:09	3/25/14	
Benzo(b)fluoranthene	34.2 U	58.1	34.2	5	03/28/14 05:09	3/25/14	
Benzo(g,h,i)perylene	37.6 U	58.1	37.6	5	03/28/14 05:09	3/25/14	
Benzo(k)fluoranthene	41.0 U	58.1	41.0	5	03/28/14 05:09	3/25/14	
Chrysene	32.5 U	58.1	32.5	5	03/28/14 05:09	3/25/14	
Dibenz(a,h)anthracene	46.2 U	58.1	46.2	5	03/28/14 05:09	3/25/14	
Fluoranthene	34.2 U	58.1	34.2	5	03/28/14 05:09	3/25/14	
Fluorene	37.6 U	58.1	37.6	5	03/28/14 05:09	3/25/14	
Indeno(1,2,3-cd)pyrene	37.6 U	58.1	37.6	5	03/28/14 05:09	3/25/14	
Naphthalene	53.0 U	58.1	53.0	5	03/28/14 05:09	3/25/14	
Phenanthrene	29.1 U	116	29.1	5	03/28/14 05:09	3/25/14	*
Pyrene	34.2 U	58.1	34.2	5	03/28/14 05:09	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	68	30 - 118	03/28/14 05:09	
p-Terphenyl-d14	46	41 - 146	03/28/14 05:09	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS4 OD (0.0-0.3)m  
**Lab Code:** J1402115-006

**Service Request:** J1402115  
**Date Collected:** 02/21/14 10:21  
**Date Received:** 03/06/14 14:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>37.5</b>	23.7	8.67	1	03/28/14 19:03	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	76	31 - 181	03/28/14 19:03	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS4 OD (0.0-0.3)m  
**Lab Code:** J1402115-006

**Service Request:** J1402115  
**Date Collected:** 02/21/14 10:21  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	48	Percent	0.10	0.10	1	03/27/14 16:23	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS5 OD (0.0-0.3)m  
**Lab Code:** J1402115-007

**Service Request:** J1402115  
**Date Collected:** 02/21/14 10:41  
**Date Received:** 03/06/14 14:00  
  
**Units:** ug/Kg  
**Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.717 U	21.1	0.717	1	03/29/14 00:42	3/28/14	*
Ethylbenzene	0.506 U	21.1	0.506	1	03/29/14 00:42	3/28/14	*
m,p-Xylenes	0.886 U	42.2	0.886	1	03/29/14 00:42	3/28/14	*
o-Xylene	0.675 U	21.1	0.675	1	03/29/14 00:42	3/28/14	*
Toluene	<b>4.64 J</b>	21.1	1.14	1	03/29/14 00:42	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	98	80 - 120	03/29/14 00:42	
4-Bromofluorobenzene	114	64 - 135	03/29/14 00:42	
Dibromofluoromethane	100	74 - 125	03/29/14 00:42	
Toluene-d8	111	46 - 156	03/29/14 00:42	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> 02/21/14 10:41
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b> 03/06/14 14:00
<b>Sample Name:</b>	SS5 OD (0.0-0.3)m	<b>Units:</b> ug/Kg
<b>Lab Code:</b>	J1402115-007	<b>Basis:</b> Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	13.0 U	16.3	13.0	1	03/28/14 05:32	3/25/14	
2-Methylnaphthalene	11.1 U	16.3	11.1	1	03/28/14 05:32	3/25/14	
Acenaphthene	14.9 U	32.6	14.9	1	03/28/14 05:32	3/25/14	
Acenaphthylene	10.6 U	32.6	10.6	1	03/28/14 05:32	3/25/14	
Anthracene	7.68 U	16.3	7.68	1	03/28/14 05:32	3/25/14	
Benz(a)anthracene	9.12 U	16.3	9.12	1	03/28/14 05:32	3/25/14	
Benzo(a)pyrene	4.80 U	16.3	4.80	1	03/28/14 05:32	3/25/14	
Benzo(b)fluoranthene	9.60 U	16.3	9.60	1	03/28/14 05:32	3/25/14	
Benzo(g,h,i)perylene	10.6 U	16.3	10.6	1	03/28/14 05:32	3/25/14	
Benzo(k)fluoranthene	11.6 U	16.3	11.6	1	03/28/14 05:32	3/25/14	
Chrysene	9.12 U	16.3	9.12	1	03/28/14 05:32	3/25/14	
Dibenz(a,h)anthracene	13.0 U	16.3	13.0	1	03/28/14 05:32	3/25/14	
Fluoranthene	9.60 U	16.3	9.60	1	03/28/14 05:32	3/25/14	
Fluorene	10.6 U	16.3	10.6	1	03/28/14 05:32	3/25/14	
Indeno(1,2,3-cd)pyrene	10.6 U	16.3	10.6	1	03/28/14 05:32	3/25/14	
Naphthalene	14.9 U	16.3	14.9	1	03/28/14 05:32	3/25/14	
Phenanthrene	8.16 U	32.6	8.16	1	03/28/14 05:32	3/25/14	*
Pyrene	9.60 U	16.3	9.60	1	03/28/14 05:32	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	66	30 - 118	03/28/14 05:32	
p-Terphenyl-d14	61	41 - 146	03/28/14 05:32	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS5 OD (0.0-0.3)m  
**Lab Code:** J1402115-007

**Service Request:** J1402115  
**Date Collected:** 02/21/14 10:41  
**Date Received:** 03/06/14 14:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>78.1</b>	32.9	12.1	1	03/28/14 19:30	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	86	31 - 181	03/28/14 19:30	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS5 OD (0.0-0.3)m  
**Lab Code:** J1402115-007

**Service Request:** J1402115  
**Date Collected:** 02/21/14 10:41  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	34	Percent	0.10	0.10	1	03/27/14 16:23	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS6 OD (0.0-0.3)m  
**Lab Code:** J1402115-008

**Service Request:** J1402115  
**Date Collected:** 02/21/14 11:03  
**Date Received:** 03/06/14 14:00  
  
**Units:** ug/Kg  
**Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.183 U	5.36	0.183	1	03/29/14 01:07	3/28/14	*
Ethylbenzene	0.129 U	5.36	0.129	1	03/29/14 01:07	3/28/14	*
m,p-Xylenes	0.226 U	10.7	0.226	1	03/29/14 01:07	3/28/14	*
o-Xylene	0.172 U	5.36	0.172	1	03/29/14 01:07	3/28/14	*
Toluene	0.290 U	5.36	0.290	1	03/29/14 01:07	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	96	80 - 120	03/29/14 01:07	
4-Bromofluorobenzene	99	64 - 135	03/29/14 01:07	
Dibromofluoromethane	104	74 - 125	03/29/14 01:07	
Toluene-d8	101	46 - 156	03/29/14 01:07	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> 02/21/14 11:03
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b> 03/06/14 14:00
<b>Sample Name:</b>	SS6 OD (0.0-0.3)m	<b>Units:</b> ug/Kg
<b>Lab Code:</b>	J1402115-008	<b>Basis:</b> Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	4.94 U	6.22	4.94	1	03/28/14 05:55	3/25/14	
2-Methylnaphthalene	4.21 U	6.22	4.21	1	03/28/14 05:55	3/25/14	
Acenaphthene	5.68 U	12.4	5.68	1	03/28/14 05:55	3/25/14	
Acenaphthylene	4.03 U	12.4	4.03	1	03/28/14 05:55	3/25/14	
Anthracene	2.93 U	6.22	2.93	1	03/28/14 05:55	3/25/14	
Benz(a)anthracene	3.48 U	6.22	3.48	1	03/28/14 05:55	3/25/14	
Benzo(a)pyrene	1.83 U	6.22	1.83	1	03/28/14 05:55	3/25/14	
Benzo(b)fluoranthene	3.66 U	6.22	3.66	1	03/28/14 05:55	3/25/14	
Benzo(g,h,i)perylene	4.03 U	6.22	4.03	1	03/28/14 05:55	3/25/14	
Benzo(k)fluoranthene	4.39 U	6.22	4.39	1	03/28/14 05:55	3/25/14	
Chrysene	3.48 U	6.22	3.48	1	03/28/14 05:55	3/25/14	
Dibenz(a,h)anthracene	4.94 U	6.22	4.94	1	03/28/14 05:55	3/25/14	
Fluoranthene	3.66 U	6.22	3.66	1	03/28/14 05:55	3/25/14	
Fluorene	4.03 U	6.22	4.03	1	03/28/14 05:55	3/25/14	
Indeno(1,2,3-cd)pyrene	4.03 U	6.22	4.03	1	03/28/14 05:55	3/25/14	
Naphthalene	5.68 U	6.22	5.68	1	03/28/14 05:55	3/25/14	
Phenanthrene	3.11 U	12.4	3.11	1	03/28/14 05:55	3/25/14	*
Pyrene	3.66 U	6.22	3.66	1	03/28/14 05:55	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	58	30 - 118	03/28/14 05:55	
p-Terphenyl-d14	42	41 - 146	03/28/14 05:55	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS6 OD (0.0-0.3)m  
**Lab Code:** J1402115-008

**Service Request:** J1402115  
**Date Collected:** 02/21/14 11:03  
**Date Received:** 03/06/14 14:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Diesel Range Organics (C10 - C28)	<b>16.6 B</b>	13.7	5.03	1	03/28/14 20:53	3/26/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	75	31 - 181	03/28/14 20:53	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS6 OD (0.0-0.3)m  
**Lab Code:** J1402115-008

**Service Request:** J1402115  
**Date Collected:** 02/21/14 11:03  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	77	Percent	0.10	0.10	1	03/27/14 16:23	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> 02/21/14 11:40
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b> 03/06/14 14:00
<b>Sample Name:</b>	SS7 OD (0.0-0.3)m	<b>Units:</b> ug/Kg
<b>Lab Code:</b>	J1402115-009	<b>Basis:</b> Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.817 U	24.0	0.817	1	03/29/14 01:31	3/28/14	*
Ethylbenzene	0.577 U	24.0	0.577	1	03/29/14 01:31	3/28/14	*
m,p-Xylenes	1.01 U	48.1	1.01	1	03/29/14 01:31	3/28/14	*
o-Xylene	0.769 U	24.0	0.769	1	03/29/14 01:31	3/28/14	*
Toluene	1.30 U	24.0	1.30	1	03/29/14 01:31	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	95	80 - 120	03/29/14 01:31	
4-Bromofluorobenzene	113	64 - 135	03/29/14 01:31	
Dibromofluoromethane	101	74 - 125	03/29/14 01:31	
Toluene-d8	110	46 - 156	03/29/14 01:31	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 11:40
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS7 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-009	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	17.7 U	22.2	17.7	1	03/28/14 06:18	3/25/14	
2-Methylnaphthalene	15.1 U	22.2	15.1	1	03/28/14 06:18	3/25/14	
Acenaphthene	20.3 U	44.5	20.3	1	03/28/14 06:18	3/25/14	
Acenaphthylene	14.4 U	44.5	14.4	1	03/28/14 06:18	3/25/14	
Anthracene	10.5 U	22.2	10.5	1	03/28/14 06:18	3/25/14	
Benz(a)anthracene	12.5 U	22.2	12.5	1	03/28/14 06:18	3/25/14	
Benzo(a)pyrene	6.54 U	22.2	6.54	1	03/28/14 06:18	3/25/14	
Benzo(b)fluoranthene	13.1 U	22.2	13.1	1	03/28/14 06:18	3/25/14	
Benzo(g,h,i)perylene	14.4 U	22.2	14.4	1	03/28/14 06:18	3/25/14	
Benzo(k)fluoranthene	15.7 U	22.2	15.7	1	03/28/14 06:18	3/25/14	
Chrysene	12.5 U	22.2	12.5	1	03/28/14 06:18	3/25/14	
Dibenz(a,h)anthracene	17.7 U	22.2	17.7	1	03/28/14 06:18	3/25/14	
Fluoranthene	13.1 U	22.2	13.1	1	03/28/14 06:18	3/25/14	
Fluorene	14.4 U	22.2	14.4	1	03/28/14 06:18	3/25/14	
Indeno(1,2,3-cd)pyrene	14.4 U	22.2	14.4	1	03/28/14 06:18	3/25/14	
Naphthalene	20.3 U	22.2	20.3	1	03/28/14 06:18	3/25/14	
Phenanthrene	11.2 U	44.5	11.2	1	03/28/14 06:18	3/25/14	*
Pyrene	13.1 U	22.2	13.1	1	03/28/14 06:18	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	66	30 - 118	03/28/14 06:18	
p-Terphenyl-d14	59	41 - 146	03/28/14 06:18	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** 02/21/14 11:40  
**Sample Matrix:** Soil      **Date Received:** 03/06/14 14:00  
  
**Sample Name:** SS7 OD (0.0-0.3)m      **Units:** mg/Kg  
**Lab Code:** J1402115-009      **Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	22.7 BJ	33.8	12.4	1	03/28/14 21:20	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	69	31 - 181	03/28/14 21:20	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS7 OD (0.0-0.3)m  
**Lab Code:** J1402115-009

**Service Request:** J1402115  
**Date Collected:** 02/21/14 11:40  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	31	Percent	0.10	0.10	1	03/27/14 16:23	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS8 OD (0.0-0.3)m  
**Lab Code:** J1402115-010

**Service Request:** J1402115  
**Date Collected:** 02/21/14 12:02  
**Date Received:** 03/06/14 14:00  
  
**Units:** ug/Kg  
**Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.854 U	25.1	0.854	1	03/29/14 01:56	3/28/14	*
Ethylbenzene	0.603 U	25.1	0.603	1	03/29/14 01:56	3/28/14	*
m,p-Xylenes	1.06 U	50.2	1.06	1	03/29/14 01:56	3/28/14	*
o-Xylene	0.804 U	25.1	0.804	1	03/29/14 01:56	3/28/14	*
Toluene	1.36 U	25.1	1.36	1	03/29/14 01:56	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	93	80 - 120	03/29/14 01:56	
4-Bromofluorobenzene	128	64 - 135	03/29/14 01:56	
Dibromofluoromethane	99	74 - 125	03/29/14 01:56	
Toluene-d8	115	46 - 156	03/29/14 01:56	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> 02/21/14 12:02
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b> 03/06/14 14:00
<b>Sample Name:</b>	SS8 OD (0.0-0.3)m	<b>Units:</b> ug/Kg
<b>Lab Code:</b>	J1402115-010	<b>Basis:</b> Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	64.6 U	81.3	64.6	5	03/28/14 06:41	3/25/14	
2-Methylnaphthalene	55.1 U	81.3	55.1	5	03/28/14 06:41	3/25/14	
Acenaphthene	74.2 U	163	74.2	5	03/28/14 06:41	3/25/14	
Acenaphthylene	52.7 U	163	52.7	5	03/28/14 06:41	3/25/14	
Anthracene	38.3 U	81.3	38.3	5	03/28/14 06:41	3/25/14	
Benz(a)anthracene	45.5 U	81.3	45.5	5	03/28/14 06:41	3/25/14	
Benzo(a)pyrene	24.0 U	81.3	24.0	5	03/28/14 06:41	3/25/14	
Benzo(b)fluoranthene	47.9 U	81.3	47.9	5	03/28/14 06:41	3/25/14	
Benzo(g,h,i)perylene	52.7 U	81.3	52.7	5	03/28/14 06:41	3/25/14	
Benzo(k)fluoranthene	57.5 U	81.3	57.5	5	03/28/14 06:41	3/25/14	
Chrysene	45.5 U	81.3	45.5	5	03/28/14 06:41	3/25/14	
Dibenz(a,h)anthracene	64.6 U	81.3	64.6	5	03/28/14 06:41	3/25/14	
Fluoranthene	47.9 U	81.3	47.9	5	03/28/14 06:41	3/25/14	
Fluorene	52.7 U	81.3	52.7	5	03/28/14 06:41	3/25/14	
Indeno(1,2,3-cd)pyrene	52.7 U	81.3	52.7	5	03/28/14 06:41	3/25/14	
Naphthalene	74.2 U	81.3	74.2	5	03/28/14 06:41	3/25/14	
Phenanthrene	40.7 U	163	40.7	5	03/28/14 06:41	3/25/14	*
Pyrene	47.9 U	81.3	47.9	5	03/28/14 06:41	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	74	30 - 118	03/28/14 06:41	
p-Terphenyl-d14	64	41 - 146	03/28/14 06:41	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS8 OD (0.0-0.3)m  
**Lab Code:** J1402115-010

**Service Request:** J1402115  
**Date Collected:** 02/21/14 12:02  
**Date Received:** 03/06/14 14:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	119	28.8	10.6	1	03/28/14 21:47	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	74	31 - 181	03/28/14 21:47	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS8 OD (0.0-0.3)m  
**Lab Code:** J1402115-010

**Service Request:** J1402115  
**Date Collected:** 02/21/14 12:02  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	38	Percent	0.10	0.10	1	03/27/14 16:23	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 12:23
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS9 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-011	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.263 U	7.73	0.263	1	03/29/14 02:21	3/28/14	*
Ethylbenzene	0.186 U	7.73	0.186	1	03/29/14 02:21	3/28/14	*
m,p-Xylenes	0.325 U	15.5	0.325	1	03/29/14 02:21	3/28/14	*
o-Xylene	0.248 U	7.73	0.248	1	03/29/14 02:21	3/28/14	*
Toluene	0.418 U	7.73	0.418	1	03/29/14 02:21	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	98	80 - 120	03/29/14 02:21	
4-Bromofluorobenzene	102	64 - 135	03/29/14 02:21	
Dibromofluoromethane	100	74 - 125	03/29/14 02:21	
Toluene-d8	103	46 - 156	03/29/14 02:21	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 12:23
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS9 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-011	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	6.64 U	8.35	6.64	1	03/28/14 07:04	3/25/14	
2-Methylnaphthalene	5.66 U	8.35	5.66	1	03/28/14 07:04	3/25/14	
Acenaphthene	7.62 U	16.7	7.62	1	03/28/14 07:04	3/25/14	
Acenaphthylene	5.41 U	16.7	5.41	1	03/28/14 07:04	3/25/14	
Anthracene	3.94 U	8.35	3.94	1	03/28/14 07:04	3/25/14	
Benz(a)anthracene	4.67 U	8.35	4.67	1	03/28/14 07:04	3/25/14	
Benzo(a)pyrene	2.46 U	8.35	2.46	1	03/28/14 07:04	3/25/14	
Benzo(b)fluoranthene	4.92 U	8.35	4.92	1	03/28/14 07:04	3/25/14	
Benzo(g,h,i)perylene	5.41 U	8.35	5.41	1	03/28/14 07:04	3/25/14	
Benzo(k)fluoranthene	5.90 U	8.35	5.90	1	03/28/14 07:04	3/25/14	
Chrysene	4.67 U	8.35	4.67	1	03/28/14 07:04	3/25/14	
Dibenz(a,h)anthracene	6.64 U	8.35	6.64	1	03/28/14 07:04	3/25/14	
Fluoranthene	4.92 U	8.35	4.92	1	03/28/14 07:04	3/25/14	
Fluorene	5.41 U	8.35	5.41	1	03/28/14 07:04	3/25/14	
Indeno(1,2,3-cd)pyrene	5.41 U	8.35	5.41	1	03/28/14 07:04	3/25/14	
Naphthalene	7.62 U	8.35	7.62	1	03/28/14 07:04	3/25/14	
Phenanthrene	4.18 U	16.7	4.18	1	03/28/14 07:04	3/25/14	*
Pyrene	4.92 U	8.35	4.92	1	03/28/14 07:04	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	46	30 - 118	03/28/14 07:04	
p-Terphenyl-d14	43	41 - 146	03/28/14 07:04	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** 02/21/14 12:23  
**Sample Matrix:** Soil      **Date Received:** 03/06/14 14:00  
  
**Sample Name:** SS9 OD (0.0-0.3)m      **Units:** mg/Kg  
**Lab Code:** J1402115-011      **Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	13.8 BJ	15.8	5.78	1	03/28/14 22:15	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	74	31 - 181	03/28/14 22:15	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS9 OD (0.0-0.3)m  
**Lab Code:** J1402115-011

**Service Request:** J1402115  
**Date Collected:** 02/21/14 12:23  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	71	Percent	0.10	0.10	1	03/27/14 16:23	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 13:25
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS10 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-012	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.737 U	21.7	0.737	1	03/29/14 02:46	3/28/14	*
Ethylbenzene	<b>3.64 J</b>	21.7	0.520	1	03/29/14 02:46	3/28/14	*
m,p-Xylenes	<b>4.85 J</b>	43.3	0.910	1	03/29/14 02:46	3/28/14	*
o-Xylene	<b>3.25 J</b>	21.7	0.694	1	03/29/14 02:46	3/28/14	*
Toluene	<b>3.42 J</b>	21.7	1.17	1	03/29/14 02:46	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	95	80 - 120	03/29/14 02:46	
4-Bromofluorobenzene	119	64 - 135	03/29/14 02:46	
Dibromofluoromethane	100	74 - 125	03/29/14 02:46	
Toluene-d8	115	46 - 156	03/29/14 02:46	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 13:25
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS10 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-012	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	15.2 U	19.1	15.2	1	03/28/14 07:27	3/25/14	
2-Methylnaphthalene	13.0 U	19.1	13.0	1	03/28/14 07:27	3/25/14	
Acenaphthene	17.4 U	38.2	17.4	1	03/28/14 07:27	3/25/14	
Acenaphthylene	12.4 U	38.2	12.4	1	03/28/14 07:27	3/25/14	
Anthracene	8.98 U	19.1	8.98	1	03/28/14 07:27	3/25/14	
Benz(a)anthracene	10.7 U	19.1	10.7	1	03/28/14 07:27	3/25/14	
Benzo(a)pyrene	5.62 U	19.1	5.62	1	03/28/14 07:27	3/25/14	
Benzo(b)fluoranthene	11.3 U	19.1	11.3	1	03/28/14 07:27	3/25/14	
Benzo(g,h,i)perylene	12.4 U	19.1	12.4	1	03/28/14 07:27	3/25/14	
Benzo(k)fluoranthene	13.5 U	19.1	13.5	1	03/28/14 07:27	3/25/14	
Chrysene	10.7 U	19.1	10.7	1	03/28/14 07:27	3/25/14	
Dibenz(a,h)anthracene	15.2 U	19.1	15.2	1	03/28/14 07:27	3/25/14	
Fluoranthene	11.3 U	19.1	11.3	1	03/28/14 07:27	3/25/14	
Fluorene	12.4 U	19.1	12.4	1	03/28/14 07:27	3/25/14	
Indeno(1,2,3-cd)pyrene	12.4 U	19.1	12.4	1	03/28/14 07:27	3/25/14	
Naphthalene	17.4 U	19.1	17.4	1	03/28/14 07:27	3/25/14	
Phenanthrene	9.54 U	38.2	9.54	1	03/28/14 07:27	3/25/14	*
Pyrene	11.3 U	19.1	11.3	1	03/28/14 07:27	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	69	30 - 118	03/28/14 07:27	
p-Terphenyl-d14	86	41 - 146	03/28/14 07:27	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** 02/21/14 13:25  
**Sample Matrix:** Soil      **Date Received:** 03/06/14 14:00  
  
**Sample Name:** SS10 OD (0.0-0.3)m      **Units:** mg/Kg  
**Lab Code:** J1402115-012      **Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>68.3</b>	33.9	12.5	1	03/28/14 22:42	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	72	31 - 181	03/28/14 22:42	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS10 OD (0.0-0.3)m  
**Lab Code:** J1402115-012

**Service Request:** J1402115  
**Date Collected:** 02/21/14 13:25  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	33	Percent	0.10	0.10	1	03/27/14 16:23	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 13:46
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS11 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-013	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.387 U	11.4	0.387	1	03/29/14 03:11	3/28/14	*
Ethylbenzene	0.273 U	11.4	0.273	1	03/29/14 03:11	3/28/14	*
m,p-Xylenes	<b>1.30 J</b>	22.7	0.478	1	03/29/14 03:11	3/28/14	*
o-Xylene	0.364 U	11.4	0.364	1	03/29/14 03:11	3/28/14	*
Toluene	<b>4.78 J</b>	11.4	0.614	1	03/29/14 03:11	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	97	80 - 120	03/29/14 03:11	
4-Bromofluorobenzene	118	64 - 135	03/29/14 03:11	
Dibromofluoromethane	102	74 - 125	03/29/14 03:11	
Toluene-d8	108	46 - 156	03/29/14 03:11	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 13:46
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SS11 OD (0.0-0.3)m	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-013	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	43.6 U	54.9	43.6	5	03/28/14 07:50	3/25/14	
2-Methylnaphthalene	37.2 U	54.9	37.2	5	03/28/14 07:50	3/25/14	
Acenaphthene	50.1 U	110	50.1	5	03/28/14 07:50	3/25/14	
Acenaphthylene	35.5 U	110	35.5	5	03/28/14 07:50	3/25/14	
Anthracene	25.9 U	54.9	25.9	5	03/28/14 07:50	3/25/14	
Benz(a)anthracene	30.7 U	54.9	30.7	5	03/28/14 07:50	3/25/14	
Benzo(a)pyrene	16.2 U	54.9	16.2	5	03/28/14 07:50	3/25/14	
Benzo(b)fluoranthene	32.3 U	54.9	32.3	5	03/28/14 07:50	3/25/14	
Benzo(g,h,i)perylene	35.5 U	54.9	35.5	5	03/28/14 07:50	3/25/14	
Benzo(k)fluoranthene	38.8 U	54.9	38.8	5	03/28/14 07:50	3/25/14	
Chrysene	30.7 U	54.9	30.7	5	03/28/14 07:50	3/25/14	
Dibenz(a,h)anthracene	43.6 U	54.9	43.6	5	03/28/14 07:50	3/25/14	
Fluoranthene	32.3 U	54.9	32.3	5	03/28/14 07:50	3/25/14	
Fluorene	35.5 U	54.9	35.5	5	03/28/14 07:50	3/25/14	
Indeno(1,2,3-cd)pyrene	35.5 U	54.9	35.5	5	03/28/14 07:50	3/25/14	
Naphthalene	50.1 U	54.9	50.1	5	03/28/14 07:50	3/25/14	
Phenanthrene	27.5 U	110	27.5	5	03/28/14 07:50	3/25/14	*
Pyrene	32.3 U	54.9	32.3	5	03/28/14 07:50	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	70	30 - 118	03/28/14 07:50	
p-Terphenyl-d14	77	41 - 146	03/28/14 07:50	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS11 OD (0.0-0.3)m  
**Lab Code:** J1402115-013

**Service Request:** J1402115  
**Date Collected:** 02/21/14 13:46  
**Date Received:** 03/06/14 14:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>51.0</b>	18.6	6.81	1	03/28/14 23:10	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	74	31 - 181	03/28/14 23:10	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SS11 OD (0.0-0.3)m  
**Lab Code:** J1402115-013

**Service Request:** J1402115  
**Date Collected:** 02/21/14 13:46  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	56	Percent	0.10	0.10	1	03/27/14 16:23	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 14:26
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SD8 OD	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-021	<b>Basis:</b>	Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.266 U	7.81	0.266	1	03/29/14 10:13	3/28/14	*
Ethylbenzene	0.188 U	7.81	0.188	1	03/29/14 10:13	3/28/14	*
m,p-Xylenes	0.328 U	15.6	0.328	1	03/29/14 10:13	3/28/14	*
o-Xylene	0.250 U	7.81	0.250	1	03/29/14 10:13	3/28/14	*
Toluene	0.422 U	7.81	0.422	1	03/29/14 10:13	3/28/14	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	94	80 - 120	03/29/14 10:13	
4-Bromofluorobenzene	99	64 - 135	03/29/14 10:13	
Dibromofluoromethane	101	74 - 125	03/29/14 10:13	
Toluene-d8	105	46 - 156	03/29/14 10:13	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 14:26
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	SD8 OD	<b>Units:</b>	ug/Kg
<b>Lab Code:</b>	J1402115-021	<b>Basis:</b>	Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	8.54 U	10.7	8.54	1	03/28/14 09:04	3/26/14	
2-Methylnaphthalene	7.28 U	10.7	7.28	1	03/28/14 09:04	3/26/14	
Acenaphthene	9.80 U	21.5	9.80	1	03/28/14 09:04	3/26/14	
Acenaphthylene	6.96 U	21.5	6.96	1	03/28/14 09:04	3/26/14	
Anthracene	5.06 U	10.7	5.06	1	03/28/14 09:04	3/26/14	
Benz(a)anthracene	6.01 U	10.7	6.01	1	03/28/14 09:04	3/26/14	
Benzo(a)pyrene	3.17 U	10.7	3.17	1	03/28/14 09:04	3/26/14	
Benzo(b)fluoranthene	6.33 U	10.7	6.33	1	03/28/14 09:04	3/26/14	
Benzo(g,h,i)perylene	6.96 U	10.7	6.96	1	03/28/14 09:04	3/26/14	
Benzo(k)fluoranthene	7.59 U	10.7	7.59	1	03/28/14 09:04	3/26/14	
Chrysene	6.01 U	10.7	6.01	1	03/28/14 09:04	3/26/14	
Dibenz(a,h)anthracene	8.54 U	10.7	8.54	1	03/28/14 09:04	3/26/14	
Fluoranthene	6.33 U	10.7	6.33	1	03/28/14 09:04	3/26/14	
Fluorene	6.96 U	10.7	6.96	1	03/28/14 09:04	3/26/14	
Indeno(1,2,3-cd)pyrene	6.96 U	10.7	6.96	1	03/28/14 09:04	3/26/14	
Naphthalene	9.80 U	10.7	9.80	1	03/28/14 09:04	3/26/14	
Phenanthrene	5.38 U	21.5	5.38	1	03/28/14 09:04	3/26/14	
Pyrene	6.33 U	10.7	6.33	1	03/28/14 09:04	3/26/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	84	30 - 118	03/28/14 09:04	
p-Terphenyl-d14	106	41 - 146	03/28/14 09:04	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SD8 OD  
**Lab Code:** J1402115-021

**Service Request:** J1402115  
**Date Collected:** 02/21/14 14:26  
**Date Received:** 03/06/14 14:00  
  
**Units:** mg/Kg  
**Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	9.37 BJ	15.1	5.53	1	03/29/14 05:08	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	67	31 - 181	03/29/14 05:08	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
  
**Sample Name:** SD8 OD  
**Lab Code:** J1402115-021

**Service Request:** J1402115  
**Date Collected:** 02/21/14 14:26  
**Date Received:** 03/06/14 14:00

**Basis:** As Received

**General Chemistry Parameters**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Solids, Total	160.3 Modified	73	Percent	0.10	0.10	1	03/28/14 14:03	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WCS1 OD  
**Lab Code:** J1402115-022

**Service Request:** J1402115  
**Date Collected:** 02/21/14 08:33  
**Date Received:** 03/06/14 14:00  
  
**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Benzene	0.21 U	1.0	0.21	1	03/28/14 17:03	*
Ethylbenzene	0.21 U	1.0	0.21	1	03/28/14 17:03	*
m,p-Xylenes	0.31 U	2.0	0.31	1	03/28/14 17:03	*
o-Xylene	0.14 U	1.0	0.14	1	03/28/14 17:03	*
Toluene	0.19 U	1.0	0.19	1	03/28/14 17:03	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
1,2-Dichloroethane-d4	114	72 - 121	03/28/14 17:03	
4-Bromofluorobenzene	100	86 - 113	03/28/14 17:03	
Dibromofluoromethane	101	86 - 112	03/28/14 17:03	
Toluene-d8	90	88 - 115	03/28/14 17:03	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> 02/21/14 08:33
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> 03/06/14 14:00
<b>Sample Name:</b>	WCS1 OD	<b>Units:</b> ug/L
<b>Lab Code:</b>	J1402115-022	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.275 U	0.625	0.275	1	03/27/14 10:46	3/26/14	
2-Methylnaphthalene	0.275 U	0.625	0.275	1	03/27/14 10:46	3/26/14	
Acenaphthene	0.257 U	0.625	0.257	1	03/27/14 10:46	3/26/14	
Acenaphthylene	0.157 U	0.625	0.157	1	03/27/14 10:46	3/26/14	
Anthracene	0.238 U	0.625	0.238	1	03/27/14 10:46	3/26/14	
Benz(a)anthracene	0.219 U	0.625	0.219	1	03/27/14 10:46	3/26/14	
Benzo(a)pyrene	0.194 U	0.625	0.194	1	03/27/14 10:46	3/26/14	
Benzo(b)fluoranthene	0.157 U	0.625	0.157	1	03/27/14 10:46	3/26/14	
Benzo(g,h,i)perylene	0.244 U	0.625	0.244	1	03/27/14 10:46	3/26/14	
Benzo(k)fluoranthene	0.219 U	0.625	0.219	1	03/27/14 10:46	3/26/14	
Chrysene	0.150 U	0.625	0.150	1	03/27/14 10:46	3/26/14	
Dibenz(a,h)anthracene	0.225 U	0.625	0.225	1	03/27/14 10:46	3/26/14	
Fluoranthene	0.244 U	0.625	0.244	1	03/27/14 10:46	3/26/14	
Fluorene	0.294 U	0.625	0.294	1	03/27/14 10:46	3/26/14	
Indeno(1,2,3-cd)pyrene	0.250 U	0.625	0.250	1	03/27/14 10:46	3/26/14	
Naphthalene	0.244 U	0.625	0.244	1	03/27/14 10:46	3/26/14	
Phenanthrene	0.219 U	0.625	0.219	1	03/27/14 10:46	3/26/14	
Pyrene	0.194 U	0.625	0.194	1	03/27/14 10:46	3/26/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	77	22 - 105	03/27/14 10:46	
p-Terphenyl-d14	103	25 - 127	03/27/14 10:46	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WCS1 OD  
**Lab Code:** J1402115-022

**Service Request:** J1402115  
**Date Collected:** 02/21/14 08:33  
**Date Received:** 03/06/14 14:00

**Units:** mg/L  
**Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Diesel Range Organics (C10 - C28)	<b>0.699 BJ</b>	1.60	0.673	1	03/29/14 07:54	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	75	25 - 147	03/29/14 07:54	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WS1 OD  
**Lab Code:** J1402115-023

**Service Request:** J1402115  
**Date Collected:** 02/21/14 09:12  
**Date Received:** 03/06/14 14:00

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.21 U	1.0	0.21	1	03/28/14 17:29	*
Ethylbenzene	0.21 U	1.0	0.21	1	03/28/14 17:29	*
m,p-Xylenes	0.31 U	2.0	0.31	1	03/28/14 17:29	*
o-Xylene	0.14 U	1.0	0.14	1	03/28/14 17:29	*
Toluene	<b>1.1</b>	1.0	0.19	1	03/28/14 17:29	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	116	72 - 121	03/28/14 17:29	
4-Bromofluorobenzene	102	86 - 113	03/28/14 17:29	
Dibromofluoromethane	104	86 - 112	03/28/14 17:29	
Toluene-d8	89	88 - 115	03/28/14 17:29	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> 02/21/14 09:12
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> 03/06/14 14:00
<b>Sample Name:</b>	WS1 OD	<b>Units:</b> ug/L
<b>Lab Code:</b>	J1402115-023	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.259 U	0.588	0.259	1	03/27/14 11:09	3/26/14	
2-Methylnaphthalene	0.259 U	0.588	0.259	1	03/27/14 11:09	3/26/14	
Acenaphthene	0.242 U	0.588	0.242	1	03/27/14 11:09	3/26/14	
Acenaphthylene	0.148 U	0.588	0.148	1	03/27/14 11:09	3/26/14	
Anthracene	0.224 U	0.588	0.224	1	03/27/14 11:09	3/26/14	
Benz(a)anthracene	0.206 U	0.588	0.206	1	03/27/14 11:09	3/26/14	
Benzo(a)pyrene	0.183 U	0.588	0.183	1	03/27/14 11:09	3/26/14	
Benzo(b)fluoranthene	0.148 U	0.588	0.148	1	03/27/14 11:09	3/26/14	
Benzo(g,h,i)perylene	0.230 U	0.588	0.230	1	03/27/14 11:09	3/26/14	
Benzo(k)fluoranthene	0.206 U	0.588	0.206	1	03/27/14 11:09	3/26/14	
Chrysene	0.142 U	0.588	0.142	1	03/27/14 11:09	3/26/14	
Dibenz(a,h)anthracene	0.212 U	0.588	0.212	1	03/27/14 11:09	3/26/14	
Fluoranthene	0.230 U	0.588	0.230	1	03/27/14 11:09	3/26/14	
Fluorene	0.277 U	0.588	0.277	1	03/27/14 11:09	3/26/14	
Indeno(1,2,3-cd)pyrene	0.236 U	0.588	0.236	1	03/27/14 11:09	3/26/14	
Naphthalene	0.230 U	0.588	0.230	1	03/27/14 11:09	3/26/14	
Phenanthrene	0.206 U	0.588	0.206	1	03/27/14 11:09	3/26/14	
Pyrene	0.183 U	0.588	0.183	1	03/27/14 11:09	3/26/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	70	22 - 105	03/27/14 11:09	
p-Terphenyl-d14	98	25 - 127	03/27/14 11:09	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WS1 OD  
**Lab Code:** J1402115-023

**Service Request:** J1402115  
**Date Collected:** 02/21/14 09:12  
**Date Received:** 03/06/14 14:00

**Units:** mg/L  
**Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	0.673 U	1.60	0.673	1	03/29/14 08:22	3/25/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	73	25 - 147	03/29/14 08:22	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 09:23
<b>Sample Matrix:</b>	Water	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	WS2 OD	<b>Units:</b>	ug/L
<b>Lab Code:</b>	J1402115-024	<b>Basis:</b>	NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.21 U	1.0	0.21	1	03/28/14 17:55	*
Ethylbenzene	<b>0.21 J</b>	1.0	0.21	1	03/28/14 17:55	*
m,p-Xylenes	<b>0.35 J</b>	2.0	0.31	1	03/28/14 17:55	*
o-Xylene	<b>0.19 J</b>	1.0	0.14	1	03/28/14 17:55	*
Toluene	<b>0.25 J</b>	1.0	0.19	1	03/28/14 17:55	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	116	72 - 121	03/28/14 17:55	
4-Bromofluorobenzene	102	86 - 113	03/28/14 17:55	
Dibromofluoromethane	104	86 - 112	03/28/14 17:55	
Toluene-d8	89	88 - 115	03/28/14 17:55	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b>	02/21/14 09:23
<b>Sample Matrix:</b>	Water	<b>Date Received:</b>	03/06/14 14:00
<b>Sample Name:</b>	WS2 OD	<b>Units:</b>	ug/L
<b>Lab Code:</b>	J1402115-024	<b>Basis:</b>	NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.259 U	0.588	0.259	1	03/28/14 04:29	3/26/14	
2-Methylnaphthalene	0.259 U	0.588	0.259	1	03/28/14 04:29	3/26/14	
Acenaphthene	0.242 U	0.588	0.242	1	03/28/14 04:29	3/26/14	
Acenaphthylene	0.148 U	0.588	0.148	1	03/28/14 04:29	3/26/14	
Anthracene	0.224 U	0.588	0.224	1	03/28/14 04:29	3/26/14	
Benz(a)anthracene	0.206 U	0.588	0.206	1	03/28/14 04:29	3/26/14	
Benzo(a)pyrene	0.183 U	0.588	0.183	1	03/28/14 04:29	3/26/14	
Benzo(b)fluoranthene	0.148 U	0.588	0.148	1	03/28/14 04:29	3/26/14	
Benzo(g,h,i)perylene	0.230 U	0.588	0.230	1	03/28/14 04:29	3/26/14	
Benzo(k)fluoranthene	0.206 U	0.588	0.206	1	03/28/14 04:29	3/26/14	
Chrysene	0.142 U	0.588	0.142	1	03/28/14 04:29	3/26/14	
Dibenz(a,h)anthracene	0.212 U	0.588	0.212	1	03/28/14 04:29	3/26/14	
Fluoranthene	0.230 U	0.588	0.230	1	03/28/14 04:29	3/26/14	
Fluorene	0.277 U	0.588	0.277	1	03/28/14 04:29	3/26/14	
Indeno(1,2,3-cd)pyrene	0.236 U	0.588	0.236	1	03/28/14 04:29	3/26/14	
Naphthalene	<b>0.251 J</b>	0.588	0.230	1	03/28/14 04:29	3/26/14	
Phenanthrene	0.206 U	0.588	0.206	1	03/28/14 04:29	3/26/14	
Pyrene	0.183 U	0.588	0.183	1	03/28/14 04:29	3/26/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	81	22 - 105	03/28/14 04:29	
p-Terphenyl-d14	100	25 - 127	03/28/14 04:29	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WS2 OD  
**Lab Code:** J1402115-024

**Service Request:** J1402115  
**Date Collected:** 02/21/14 09:23  
**Date Received:** 03/06/14 14:00

**Units:** mg/L  
**Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>0.808 BJ</b>	1.67	0.701	1	03/29/14 08:50	3/25/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	76	25 - 147	03/29/14 08:50	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WS3 OD  
**Lab Code:** J1402115-025

**Service Request:** J1402115  
**Date Collected:** 02/21/14 10:48  
**Date Received:** 03/06/14 14:00

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.21 U	1.0	0.21	1	03/28/14 18:20	*
Ethylbenzene	0.21 U	1.0	0.21	1	03/28/14 18:20	*
m,p-Xylenes	0.31 U	2.0	0.31	1	03/28/14 18:20	*
o-Xylene	0.14 U	1.0	0.14	1	03/28/14 18:20	*
Toluene	<b>0.35 J</b>	1.0	0.19	1	03/28/14 18:20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	116	72 - 121	03/28/14 18:20	
4-Bromofluorobenzene	101	86 - 113	03/28/14 18:20	
Dibromofluoromethane	105	86 - 112	03/28/14 18:20	
Toluene-d8	89	88 - 115	03/28/14 18:20	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> 02/21/14 10:48
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> 03/06/14 14:00
<b>Sample Name:</b>	WS3 OD	<b>Units:</b> ug/L
<b>Lab Code:</b>	J1402115-025	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.294 U	0.667	0.294	1	03/27/14 11:55	3/26/14	
2-Methylnaphthalene	0.294 U	0.667	0.294	1	03/27/14 11:55	3/26/14	
Acenaphthene	0.274 U	0.667	0.274	1	03/27/14 11:55	3/26/14	
Acenaphthylene	0.167 U	0.667	0.167	1	03/27/14 11:55	3/26/14	
Anthracene	0.254 U	0.667	0.254	1	03/27/14 11:55	3/26/14	
Benz(a)anthracene	0.234 U	0.667	0.234	1	03/27/14 11:55	3/26/14	
Benzo(a)pyrene	0.207 U	0.667	0.207	1	03/27/14 11:55	3/26/14	
Benzo(b)fluoranthene	0.167 U	0.667	0.167	1	03/27/14 11:55	3/26/14	
Benzo(g,h,i)perylene	0.260 U	0.667	0.260	1	03/27/14 11:55	3/26/14	
Benzo(k)fluoranthene	0.234 U	0.667	0.234	1	03/27/14 11:55	3/26/14	
Chrysene	0.160 U	0.667	0.160	1	03/27/14 11:55	3/26/14	
Dibenz(a,h)anthracene	0.240 U	0.667	0.240	1	03/27/14 11:55	3/26/14	
Fluoranthene	0.260 U	0.667	0.260	1	03/27/14 11:55	3/26/14	
Fluorene	0.314 U	0.667	0.314	1	03/27/14 11:55	3/26/14	
Indeno(1,2,3-cd)pyrene	0.267 U	0.667	0.267	1	03/27/14 11:55	3/26/14	
Naphthalene	0.260 U	0.667	0.260	1	03/27/14 11:55	3/26/14	
Phenanthrene	0.234 U	0.667	0.234	1	03/27/14 11:55	3/26/14	
Pyrene	0.207 U	0.667	0.207	1	03/27/14 11:55	3/26/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	82	22 - 105	03/27/14 11:55	
p-Terphenyl-d14	99	25 - 127	03/27/14 11:55	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WS3 OD  
**Lab Code:** J1402115-025

**Service Request:** J1402115  
**Date Collected:** 02/21/14 10:48  
**Date Received:** 03/06/14 14:00

**Units:** mg/L  
**Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	0.747 BJ	1.60	0.673	1	03/29/14 09:17	3/25/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	70	25 - 147	03/29/14 09:17	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WS4 OD  
**Lab Code:** J1402115-026

**Service Request:** J1402115  
**Date Collected:** 02/21/14 13:18  
**Date Received:** 03/06/14 14:00

**Units:** ug/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Benzene	<b>1.1</b>	1.0	0.21	1	03/28/14 18:46	*
Ethylbenzene	<b>0.82 J</b>	1.0	0.21	1	03/28/14 18:46	*
m,p-Xylenes	<b>1.0 J</b>	2.0	0.31	1	03/28/14 18:46	*
o-Xylene	<b>0.57 J</b>	1.0	0.14	1	03/28/14 18:46	*
Toluene	<b>3.0</b>	1.0	0.19	1	03/28/14 18:46	*

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
1,2-Dichloroethane-d4	118	72 - 121	03/28/14 18:46	
4-Bromofluorobenzene	104	86 - 113	03/28/14 18:46	
Dibromofluoromethane	105	86 - 112	03/28/14 18:46	
Toluene-d8	89	88 - 115	03/28/14 18:46	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> 02/21/14 13:18
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> 03/06/14 14:00
<b>Sample Name:</b>	WS4 OD	<b>Units:</b> ug/L
<b>Lab Code:</b>	J1402115-026	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.259 U	0.588	0.259	1	03/27/14 12:18	3/26/14	
2-Methylnaphthalene	0.259 U	0.588	0.259	1	03/27/14 12:18	3/26/14	
Acenaphthene	0.242 U	0.588	0.242	1	03/27/14 12:18	3/26/14	
Acenaphthylene	0.148 U	0.588	0.148	1	03/27/14 12:18	3/26/14	
Anthracene	0.224 U	0.588	0.224	1	03/27/14 12:18	3/26/14	
Benz(a)anthracene	0.206 U	0.588	0.206	1	03/27/14 12:18	3/26/14	
Benzo(a)pyrene	0.183 U	0.588	0.183	1	03/27/14 12:18	3/26/14	
Benzo(b)fluoranthene	0.148 U	0.588	0.148	1	03/27/14 12:18	3/26/14	
Benzo(g,h,i)perylene	0.230 U	0.588	0.230	1	03/27/14 12:18	3/26/14	
Benzo(k)fluoranthene	0.206 U	0.588	0.206	1	03/27/14 12:18	3/26/14	
Chrysene	0.142 U	0.588	0.142	1	03/27/14 12:18	3/26/14	
Dibenz(a,h)anthracene	0.212 U	0.588	0.212	1	03/27/14 12:18	3/26/14	
Fluoranthene	0.230 U	0.588	0.230	1	03/27/14 12:18	3/26/14	
Fluorene	0.277 U	0.588	0.277	1	03/27/14 12:18	3/26/14	
Indeno(1,2,3-cd)pyrene	0.236 U	0.588	0.236	1	03/27/14 12:18	3/26/14	
Naphthalene	0.230 U	0.588	0.230	1	03/27/14 12:18	3/26/14	
Phenanthrene	0.206 U	0.588	0.206	1	03/27/14 12:18	3/26/14	
Pyrene	0.183 U	0.588	0.183	1	03/27/14 12:18	3/26/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	66	22 - 105	03/27/14 12:18	
p-Terphenyl-d14	93	25 - 127	03/27/14 12:18	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Water  
  
**Sample Name:** WS4 OD  
**Lab Code:** J1402115-026

**Service Request:** J1402115  
**Date Collected:** 02/21/14 13:18  
**Date Received:** 03/06/14 14:00

**Units:** mg/L  
**Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>0.745</b> BJ	1.60	0.673	1	03/29/14 09:45	3/25/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	76	25 - 147	03/29/14 09:45	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** NA  
**Sample Matrix:** Water      **Date Received:** NA  
  
**Sample Name:** Method Blank      **Units:** ug/L  
**Lab Code:** JQ1402352-03      **Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Benzene	0.21 U	1.0	0.21	1	03/28/14 13:07	
Ethylbenzene	0.21 U	1.0	0.21	1	03/28/14 13:07	
m,p-Xylenes	0.31 U	2.0	0.31	1	03/28/14 13:07	
o-Xylene	0.14 U	1.0	0.14	1	03/28/14 13:07	
Toluene	0.19 U	1.0	0.19	1	03/28/14 13:07	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
1,2-Dichloroethane-d4	114	72 - 121	03/28/14 13:07	
4-Bromofluorobenzene	99	86 - 113	03/28/14 13:07	
Dibromofluoromethane	104	86 - 112	03/28/14 13:07	
Toluene-d8	91	88 - 115	03/28/14 13:07	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** NA  
**Sample Matrix:** Soil      **Date Received:** NA  
  
**Sample Name:** Method Blank      **Units:** ug/Kg  
**Lab Code:** JQ1402356-03      **Basis:** Dry

**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.170 U	5.00	0.170	1	03/28/14 21:49	3/28/14	
Ethylbenzene	0.120 U	5.00	0.120	1	03/28/14 21:49	3/28/14	
m,p-Xylenes	0.210 U	10.0	0.210	1	03/28/14 21:49	3/28/14	
o-Xylene	0.160 U	5.00	0.160	1	03/28/14 21:49	3/28/14	
Toluene	0.270 U	5.00	0.270	1	03/28/14 21:49	3/28/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	92	80 - 120	03/28/14 21:49	
4-Bromofluorobenzene	93	64 - 135	03/28/14 21:49	
Dibromofluoromethane	99	74 - 125	03/28/14 21:49	
Toluene-d8	101	46 - 156	03/28/14 21:49	

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## Analytical Report

**Client:** Giolee Global Resources NIG Ltd **Service Request:** J1402115  
**Project:** After Clean-Up@Brass **Date Collected:** NA  
**Sample Matrix:** Soil **Date Received:** NA  
  
**Sample Name:** Method Blank **Units:** ug/Kg  
**Lab Code:** JQ1402357-03 **Basis:** Dry

## **Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B  
**Prep Method:** EPA 5035

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benzene	0.170 U	5.00	0.170	1	03/29/14 08:09	3/28/14	
Ethylbenzene	0.120 U	5.00	0.120	1	03/29/14 08:09	3/28/14	
m,p-Xylenes	0.210 U	10.0	0.210	1	03/29/14 08:09	3/28/14	
o-Xylene	0.160 U	5.00	0.160	1	03/29/14 08:09	3/28/14	
Toluene	0.270 U	5.00	0.270	1	03/29/14 08:09	3/28/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	83	80 - 120	03/29/14 08:09	
4-Bromofluorobenzene	95	64 - 135	03/29/14 08:09	
Dibromofluoromethane	95	74 - 125	03/29/14 08:09	
Toluene-d8	105	46 - 156	03/29/14 08:09	

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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> NA
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b> NA
<b>Sample Name:</b>	Method Blank	<b>Units:</b> ug/Kg
<b>Lab Code:</b>	JQ1402222-01	<b>Basis:</b> Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	2.70 U	3.40	2.70	1	03/28/14 02:06	3/25/14	
2-Methylnaphthalene	2.30 U	3.40	2.30	1	03/28/14 02:06	3/25/14	
Acenaphthene	3.10 U	6.80	3.10	1	03/28/14 02:06	3/25/14	
Acenaphthylene	2.20 U	6.80	2.20	1	03/28/14 02:06	3/25/14	
Anthracene	1.60 U	3.40	1.60	1	03/28/14 02:06	3/25/14	
Benz(a)anthracene	1.90 U	3.40	1.90	1	03/28/14 02:06	3/25/14	
Benzo(a)pyrene	1.00 U	3.40	1.00	1	03/28/14 02:06	3/25/14	
Benzo(b)fluoranthene	2.00 U	3.40	2.00	1	03/28/14 02:06	3/25/14	
Benzo(g,h,i)perylene	2.20 U	3.40	2.20	1	03/28/14 02:06	3/25/14	
Benzo(k)fluoranthene	2.40 U	3.40	2.40	1	03/28/14 02:06	3/25/14	
Chrysene	1.90 U	3.40	1.90	1	03/28/14 02:06	3/25/14	
Dibenz(a,h)anthracene	2.70 U	3.40	2.70	1	03/28/14 02:06	3/25/14	
Fluoranthene	2.00 U	3.40	2.00	1	03/28/14 02:06	3/25/14	
Fluorene	2.20 U	3.40	2.20	1	03/28/14 02:06	3/25/14	
Indeno(1,2,3-cd)pyrene	2.20 U	3.40	2.20	1	03/28/14 02:06	3/25/14	
Naphthalene	3.10 U	3.40	3.10	1	03/28/14 02:06	3/25/14	
Phenanthrene	1.70 U	6.80	1.70	1	03/28/14 02:06	3/25/14	
Pyrene	2.00 U	3.40	2.00	1	03/28/14 02:06	3/25/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	82	30 - 118	03/28/14 02:06	
p-Terphenyl-d14	104	41 - 146	03/28/14 02:06	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> NA
<b>Sample Matrix:</b>	Water	<b>Date Received:</b> NA
<b>Sample Name:</b>	Method Blank	<b>Units:</b> ug/L
<b>Lab Code:</b>	JQ1402260-01	<b>Basis:</b> NA

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3510C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	0.0440 U	0.100	0.0440	1	03/27/14 10:01	3/26/14	
2-Methylnaphthalene	0.0440 U	0.100	0.0440	1	03/27/14 10:01	3/26/14	
Acenaphthene	0.0410 U	0.100	0.0410	1	03/27/14 10:01	3/26/14	
Acenaphthylene	0.0250 U	0.100	0.0250	1	03/27/14 10:01	3/26/14	
Anthracene	0.0380 U	0.100	0.0380	1	03/27/14 10:01	3/26/14	
Benz(a)anthracene	0.0350 U	0.100	0.0350	1	03/27/14 10:01	3/26/14	
Benzo(a)pyrene	0.0310 U	0.100	0.0310	1	03/27/14 10:01	3/26/14	
Benzo(b)fluoranthene	0.0250 U	0.100	0.0250	1	03/27/14 10:01	3/26/14	
Benzo(g,h,i)perylene	0.0390 U	0.100	0.0390	1	03/27/14 10:01	3/26/14	
Benzo(k)fluoranthene	0.0350 U	0.100	0.0350	1	03/27/14 10:01	3/26/14	
Chrysene	0.0240 U	0.100	0.0240	1	03/27/14 10:01	3/26/14	
Dibenz(a,h)anthracene	0.0360 U	0.100	0.0360	1	03/27/14 10:01	3/26/14	
Fluoranthene	0.0390 U	0.100	0.0390	1	03/27/14 10:01	3/26/14	
Fluorene	0.0470 U	0.100	0.0470	1	03/27/14 10:01	3/26/14	
Indeno(1,2,3-cd)pyrene	0.0400 U	0.100	0.0400	1	03/27/14 10:01	3/26/14	
Naphthalene	0.0390 U	0.100	0.0390	1	03/27/14 10:01	3/26/14	
Phenanthrene	0.0350 U	0.100	0.0350	1	03/27/14 10:01	3/26/14	
Pyrene	0.0310 U	0.100	0.0310	1	03/27/14 10:01	3/26/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	82	22 - 105	03/27/14 10:01	
p-Terphenyl-d14	96	25 - 127	03/27/14 10:01	

**ALS Group USA, Corp.**  
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Analytical Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b> J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Collected:</b> NA
<b>Sample Matrix:</b>	Soil	<b>Date Received:</b> NA
<b>Sample Name:</b>	Method Blank	<b>Units:</b> ug/Kg
<b>Lab Code:</b>	JQ1402264-01	<b>Basis:</b> Dry

**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM  
**Prep Method:** EPA 3546

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1-Methylnaphthalene	2.70 U	3.40	2.70	1	03/28/14 07:55	3/26/14	
2-Methylnaphthalene	2.30 U	3.40	2.30	1	03/28/14 07:55	3/26/14	
Acenaphthene	3.10 U	6.80	3.10	1	03/28/14 07:55	3/26/14	
Acenaphthylene	2.20 U	6.80	2.20	1	03/28/14 07:55	3/26/14	
Anthracene	1.60 U	3.40	1.60	1	03/28/14 07:55	3/26/14	
Benz(a)anthracene	1.90 U	3.40	1.90	1	03/28/14 07:55	3/26/14	
Benzo(a)pyrene	1.00 U	3.40	1.00	1	03/28/14 07:55	3/26/14	
Benzo(b)fluoranthene	2.00 U	3.40	2.00	1	03/28/14 07:55	3/26/14	
Benzo(g,h,i)perylene	2.20 U	3.40	2.20	1	03/28/14 07:55	3/26/14	
Benzo(k)fluoranthene	2.40 U	3.40	2.40	1	03/28/14 07:55	3/26/14	
Chrysene	1.90 U	3.40	1.90	1	03/28/14 07:55	3/26/14	
Dibenz(a,h)anthracene	2.70 U	3.40	2.70	1	03/28/14 07:55	3/26/14	
Fluoranthene	2.00 U	3.40	2.00	1	03/28/14 07:55	3/26/14	
Fluorene	2.20 U	3.40	2.20	1	03/28/14 07:55	3/26/14	
Indeno(1,2,3-cd)pyrene	2.20 U	3.40	2.20	1	03/28/14 07:55	3/26/14	
Naphthalene	3.10 U	3.40	3.10	1	03/28/14 07:55	3/26/14	
Phenanthrene	1.70 U	6.80	1.70	1	03/28/14 07:55	3/26/14	
Pyrene	2.00 U	3.40	2.00	1	03/28/14 07:55	3/26/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	89	30 - 118	03/28/14 07:55	
p-Terphenyl-d14	111	41 - 146	03/28/14 07:55	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** NA  
**Sample Matrix:** Water      **Date Received:** NA  
  
**Sample Name:** Method Blank      **Units:** mg/L  
**Lab Code:** JQ1402217-01      **Basis:** NA

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3510C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>0.0868 J</b>	0.200	0.0841	1	03/29/14 05:36	3/25/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	78	25 - 147	03/29/14 05:36	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** NA  
**Sample Matrix:** Soil      **Date Received:** NA

**Sample Name:** Method Blank      **Units:** mg/Kg  
**Lab Code:** JQ1402261-01      **Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>2.50 J</b>	5.00	1.83	1	03/28/14 15:23	3/26/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	76	31 - 181	03/28/14 15:23	

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## Analytical Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil  
**Sample Name:** Method Blank  
**Lab Code:** JQ1402263-01

**Service Request:** J1402115  
**Date Collected:** NA  
**Date Received:** NA

## Diesel Range Organics by GC

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Diesel Range Organics (C10 - C28)	3.06 J	5.00	1.83	1	03/29/14 03:46	3/26/14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	81	31 - 181	03/29/14 03:46	

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Analytical Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Collected:** NA  
**Sample Matrix:** Soil      **Date Received:** NA  
  
**Sample Name:** Method Blank      **Units:** mg/Kg  
**Lab Code:** JQ1402358-01      **Basis:** Dry

**Diesel Range Organics by GC**

**Analysis Method:** 8015B  
**Prep Method:** EPA 3550C

<b>Analyte Name</b>	<b>Result</b>	<b>PQL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Diesel Range Organics (C10 - C28)	<b>3.50 J</b>	5.00	1.83	1	03/29/14 12:39	3/29/14	

<b>Surrogate Name</b>	<b>% Rec</b>	<b>Control Limits</b>	<b>Date Analyzed</b>	<b>Q</b>
o-Terphenyl	70	31 - 181	03/29/14 12:39	

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QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil

**Service Request:** J1402115

**SURROGATE RECOVERY SUMMARY**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

**Extraction Method:** EPA 5035

Sample Name	Lab Code	1,2-Dichloroethane-d4	4-Bromofluorobenzene	Dibromofluoromethane
SSC1 OD (0.0-0.3)m	J1402115-001	93	94	99
SSC2 OD (0.0-0.3)m	J1402115-002	97	93	102
SS1 OD (0.0-0.3)m	J1402115-003	96	98	100
SS2 OD (0.0-0.3)m	J1402115-004	94	103	99
SS3 OD (0.0-0.3)m	J1402115-005	93	118	100
SS4 OD (0.0-0.3)m	J1402115-006	91	120	99
SS5 OD (0.0-0.3)m	J1402115-007	98	114	100
SS6 OD (0.0-0.3)m	J1402115-008	96	99	104
SS7 OD (0.0-0.3)m	J1402115-009	95	113	101
SS8 OD (0.0-0.3)m	J1402115-010	93	128	99
SS9 OD (0.0-0.3)m	J1402115-011	98	102	100
SS10 OD (0.0-0.3)m	J1402115-012	95	119	100
SS11 OD (0.0-0.3)m	J1402115-013	97	118	102
SD8 OD	J1402115-021	94	99	101
WCS1 OD	J1402115-022	114	100	101
WS1 OD	J1402115-023	116	102	104
WS2 OD	J1402115-024	116	102	104
WS3 OD	J1402115-025	116	101	105
WS4 OD	J1402115-026	118	104	105
Lab Control Sample	JQ1402352-01	110	100	104
Duplicate Lab Control Sample	JQ1402352-02	111	100	103
Method Blank	JQ1402352-03	114	99	104
Lab Control Sample	JQ1402356-01	97	96	100
Duplicate Lab Control Sample	JQ1402356-02	98	95	102
Method Blank	JQ1402356-03	92	93	99
Lab Control Sample	JQ1402357-01	94	96	97
Duplicate Lab Control Sample	JQ1402357-02	95	94	100
Method Blank	JQ1402357-03	83	95	95

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil

**Service Request:** J1402115

**SURROGATE RECOVERY SUMMARY**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B

**Extraction Method:** EPA 5035

<b>Sample Name</b>	<b>Lab Code</b>	Toluene-d8
		46 - 156
SSC1 OD (0.0-0.3)m	J1402115-001	101
SSC2 OD (0.0-0.3)m	J1402115-002	100
SS1 OD (0.0-0.3)m	J1402115-003	98
SS2 OD (0.0-0.3)m	J1402115-004	100
SS3 OD (0.0-0.3)m	J1402115-005	112
SS4 OD (0.0-0.3)m	J1402115-006	112
SS5 OD (0.0-0.3)m	J1402115-007	111
SS6 OD (0.0-0.3)m	J1402115-008	101
SS7 OD (0.0-0.3)m	J1402115-009	110
SS8 OD (0.0-0.3)m	J1402115-010	115
SS9 OD (0.0-0.3)m	J1402115-011	103
SS10 OD (0.0-0.3)m	J1402115-012	115
SS11 OD (0.0-0.3)m	J1402115-013	108
SD8 OD	J1402115-021	105
WCS1 OD	J1402115-022	90
WS1 OD	J1402115-023	89
WS2 OD	J1402115-024	89
WS3 OD	J1402115-025	89
WS4 OD	J1402115-026	89
Lab Control Sample	JQ1402352-01	91
Duplicate Lab Control Sample	JQ1402352-02	91
Method Blank	JQ1402352-03	91
Lab Control Sample	JQ1402356-01	101
Duplicate Lab Control Sample	JQ1402356-02	100
Method Blank	JQ1402356-03	101
Lab Control Sample	JQ1402357-01	101
Duplicate Lab Control Sample	JQ1402357-02	101
Method Blank	JQ1402357-03	105

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Water

**Service Request:** J1402115  
**Date Analyzed:** 03/28/14

**Duplicate Lab Control Sample Summary**  
**Volatile Organic Compounds by GC/MS**

**Analysis Method:** 8260B      **Units:** ug/L  
   **Basis:** NA  
   **Analysis Lot:** 385917

**Lab Control Sample**  
**JQ1402352-01**

**Duplicate Lab Control Sample**  
**JQ1402352-02**

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Benzene	52.3	50.0	105	53.8	50.0	108	80-117	3	30
Ethylbenzene	50.7	50.0	101	51.1	50.0	102	82-119	<1	30
m,p-Xylenes	101	100	101	103	100	103	79-122	2	30
o-Xylene	50.9	50.0	102	50.8	50.0	102	80-119	<1	30
Toluene	48.2	50.0	96	48.6	50.0	97	52-152	<1	30

**ALS Group USA, Corp.**  
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## QA/QC Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Analyzed:** 03/28/14  
**Sample Matrix:** Soil      **Date Extracted:** 03/28/14

## Duplicate Lab Control Sample Summary Volatile Organic Compounds by GC/MS

Lab Control Sample JQ1402356-01				Duplicate Lab Control Sample JQ1402356-02					
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Benzene	53.5	50.0	107	53.6	50.0	107	76-123	<1	30
Ethylbenzene	55.5	50.0	111	57.1	50.0	114	71-122	3	30
m,p-Xylenes	113	100	113	113	100	113	71-122	<1	30
o-Xylene	53.8	50.0	108	54.0	50.0	108	71-120	<1	30
Toluene	54.4	50.0	109	54.6	50.0	109	72-118	<1	30

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Analyzed:** 03/29/14  
**Sample Matrix:** Soil      **Date Extracted:** 03/28/14

## Duplicate Lab Control Sample Summary Volatile Organic Compounds by GC/MS

Lab Control Sample JQ1402357-01				Duplicate Lab Control Sample JQ1402357-02					
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Benzene	49.8	50.0	100	49.6	50.0	99	76-123	<1	30
Ethylbenzene	50.1	50.0	100	49.3	50.0	99	71-122	2	30
m,p-Xylenes	99.6	100	100	98.1	100	98	71-122	1	30
o-Xylene	50.2	50.0	100	50.0	50.0	100	71-120	<1	30
Toluene	50.5	50.0	101	50.1	50.0	100	72-118	<1	30

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil

**Service Request:** J1402115

**SURROGATE RECOVERY SUMMARY**  
**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

**Analysis Method:** 8270C SIM

**Extraction Method:** EPA 3546

<b>Sample Name</b>	<b>Lab Code</b>	<b>2-Fluorobiphenyl</b>	<b>p-Terphenyl-d14</b>
		<b>30 - 118</b>	<b>41 - 146</b>
SSC1 OD (0.0-0.3)m	J1402115-001	56	84
SSC2 OD (0.0-0.3)m	J1402115-002	75	92
SS1 OD (0.0-0.3)m	J1402115-003	74	68
SS2 OD (0.0-0.3)m	J1402115-004	57	21 *
SS3 OD (0.0-0.3)m	J1402115-005	77	67
SS4 OD (0.0-0.3)m	J1402115-006	68	46
SS5 OD (0.0-0.3)m	J1402115-007	66	61
SS6 OD (0.0-0.3)m	J1402115-008	58	42
SS7 OD (0.0-0.3)m	J1402115-009	66	59
SS8 OD (0.0-0.3)m	J1402115-010	74	64
SS9 OD (0.0-0.3)m	J1402115-011	46	43
SS10 OD (0.0-0.3)m	J1402115-012	69	86
SS11 OD (0.0-0.3)m	J1402115-013	70	77
SD8 OD	J1402115-021	84	106
WCS1 OD	J1402115-022	77	103
WS1 OD	J1402115-023	70	98
WS2 OD	J1402115-024	81	100
WS3 OD	J1402115-025	82	99
WS4 OD	J1402115-026	66	93
Method Blank	JQ1402222-01	82	104
Lab Control Sample	JQ1402222-02	76	106
Duplicate Lab Control Sample	JQ1402222-03	73	91
Method Blank	JQ1402260-01	82	96
Lab Control Sample	JQ1402260-02	83	108
Method Blank	JQ1402264-01	89	111
Lab Control Sample	JQ1402264-02	83	103
Duplicate Lab Control Sample	JQ1402264-03	88	114

**ALS Group USA, Corp.**  
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QA/QC Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Analyzed:</b>	03/28/14
<b>Sample Matrix:</b>	Soil	<b>Date Extracted:</b>	03/25/14

**Duplicate Lab Control Sample Summary**  
**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

<b>Analysis Method:</b>	8270C SIM	<b>Units:</b>	ug/Kg
<b>Prep Method:</b>	EPA 3546	<b>Basis:</b>	Dry
		<b>Analysis Lot:</b>	386038

**Lab Control Sample**  
**JQ1402222-02**

**Duplicate Lab Control Sample**  
**JQ1402222-03**

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	49.2	66.7	74	46.1	66.7	69	32-101	6	30
2-Methylnaphthalene	53.4	66.7	80	48.9	66.7	73	32-103	9	30
Acenaphthene	50.1	66.7	75	48.0	66.7	72	29-122	4	30
Acenaphthylene	52.4	66.7	79	46.2	66.7	69	36-114	13	30
Anthracene	58.4	66.7	88	46.6	66.7	70	36-135	22	30
Benz(a)anthracene	63.4	66.7	95	60.9	66.7	91	43-139	4	30
Benzo(a)pyrene	55.6	66.7	83	53.6	66.7	80	43-127	4	30
Benzo(b)fluoranthene	59.2	66.7	89	59.6	66.7	89	49-139	<1	30
Benzo(g,h,i)perylene	78.3	66.7	118	66.9	66.7	100	30-135	16	30
Benzo(k)fluoranthene	53.0	66.7	79	49.4	66.7	74	45-132	7	30
Chrysene	61.4	66.7	92	57.5	66.7	86	36-130	7	30
Dibenz(a,h)anthracene	75.3	66.7	113	64.2	66.7	96	32-139	16	30
Fluoranthene	57.4	66.7	86	47.9	66.7	72	42-127	18	30
Fluorene	55.3	66.7	83	49.5	66.7	74	41-118	11	30
Indeno(1,2,3-cd)pyrene	76.5	66.7	115	66.1	66.7	99	32-133	15	30
Naphthalene	45.4	66.7	68	44.0	66.7	66	29-107	3	30
Phenanthrene	90.5	66.7	136 *	77.9	66.7	117	34-130	15	30
Pyrene	65.8	66.7	99	54.5	66.7	82	45-118	19	30

**ALS Group USA, Corp.**  
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QA/QC Report

<b>Client:</b>	Giolee Global Resources NIG Ltd	<b>Service Request:</b>	J1402115
<b>Project:</b>	After Clean-Up@Brass	<b>Date Analyzed:</b>	03/28/14
<b>Sample Matrix:</b>	Soil	<b>Date Extracted:</b>	03/26/14

**Duplicate Lab Control Sample Summary**  
**Base Neutral Semivolatile Organic Compounds by GC/MS SIM**

<b>Analysis Method:</b>	8270C SIM	<b>Units:</b>	ug/Kg
<b>Prep Method:</b>	EPA 3546	<b>Basis:</b>	Dry
		<b>Analysis Lot:</b>	385758

**Lab Control Sample**  
**JQ1402264-02**

**Duplicate Lab Control Sample**  
**JQ1402264-03**

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	45.8	66.7	69	50.3	66.7	75	32-101	9	30
2-Methylnaphthalene	46.3	66.7	69	51.8	66.7	78	32-103	11	30
Acenaphthene	52.2	66.7	78	55.9	66.7	84	29-122	7	30
Acenaphthylene	52.3	66.7	78	56.6	66.7	85	36-114	8	30
Anthracene	62.0	66.7	93	58.4	66.7	88	36-135	6	30
Benz(a)anthracene	60.8	66.7	91	62.8	66.7	94	43-139	3	30
Benzo(a)pyrene	56.7	66.7	85	57.8	66.7	87	43-127	2	30
Benzo(b)fluoranthene	59.2	66.7	89	61.9	66.7	93	49-139	4	30
Benzo(g,h,i)perylene	68.7	66.7	103	66.6	66.7	100	30-135	3	30
Benzo(k)fluoranthene	58.1	66.7	87	62.8	66.7	94	45-132	8	30
Chrysene	60.1	66.7	90	61.3	66.7	92	36-130	2	30
Dibenz(a,h)anthracene	66.7	66.7	100	64.8	66.7	97	32-139	3	30
Fluoranthene	68.6	66.7	103	69.7	66.7	104	42-127	1	30
Fluorene	54.8	66.7	82	59.4	66.7	89	41-118	8	30
Indeno(1,2,3-cd)pyrene	68.2	66.7	102	66.2	66.7	99	32-133	3	30
Naphthalene	45.5	66.7	68	49.8	66.7	75	29-107	9	30
Phenanthrene	55.9	66.7	84	53.7	66.7	81	34-130	4	30
Pyrene	63.0	66.7	94	72.3	66.7	108	45-118	14	30

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil

**Service Request:** J1402115

**SURROGATE RECOVERY SUMMARY**  
**Diesel Range Organics by GC**

**Analysis Method:** 8015B

**Extraction Method:** EPA 3550C

<b>Sample Name</b>	<b>Lab Code</b>	<b>o-Terphenyl</b> 31 - 181
SSC1 OD (0.0-0.3)m	J1402115-001	78
SSC2 OD (0.0-0.3)m	J1402115-002	77
SS1 OD (0.0-0.3)m	J1402115-003	76
SS2 OD (0.0-0.3)m	J1402115-004	76
SS3 OD (0.0-0.3)m	J1402115-005	70
SS4 OD (0.0-0.3)m	J1402115-006	76
SS5 OD (0.0-0.3)m	J1402115-007	86
SS6 OD (0.0-0.3)m	J1402115-008	75
SS7 OD (0.0-0.3)m	J1402115-009	69
SS8 OD (0.0-0.3)m	J1402115-010	74
SS9 OD (0.0-0.3)m	J1402115-011	74
SS10 OD (0.0-0.3)m	J1402115-012	72
SS11 OD (0.0-0.3)m	J1402115-013	74
SD8 OD	J1402115-021	67
WCS1 OD	J1402115-022	75
WS1 OD	J1402115-023	73
WS2 OD	J1402115-024	76
WS3 OD	J1402115-025	70
WS4 OD	J1402115-026	76
Method Blank	JQ1402217-01	78
Lab Control Sample	JQ1402217-02	77
Duplicate Lab Control Sample	JQ1402217-03	75
Method Blank	JQ1402261-01	76
Lab Control Sample	JQ1402261-02	77
Duplicate Lab Control Sample	JQ1402261-03	84
Method Blank	JQ1402263-01	81
Lab Control Sample	JQ1402263-02	81
Duplicate Lab Control Sample	JQ1402263-03	77
Method Blank	JQ1402358-01	70
Lab Control Sample	JQ1402358-02	78
Duplicate Lab Control Sample	JQ1402358-03	74

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Water

**Service Request:** J1402115  
**Date Analyzed:** 03/29/14  
**Date Extracted:** 03/25/14

**Duplicate Lab Control Sample Summary**  
**Diesel Range Organics by GC**

**Analysis Method:** 8015B                           **Units:** mg/L  
**Prep Method:** EPA 3510C                           **Basis:** NA  
   **Analysis Lot:** 385934

<b>Analyte Name</b>	<b>Lab Control Sample</b> <b>JQ1402217-02</b>				<b>Duplicate Lab Control Sample</b> <b>JQ1402217-03</b>				
	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
Diesel Range Organics (C10 - C28)	1.02	1.25	82	1.00	1.25	80	43-124	2	30

**ALS Group USA, Corp.**  
dba ALS Environmental

## QA/QC Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Analyzed:** 03/28/14  
**Sample Matrix:** Soil      **Date Extracted:** 03/26/14

## Duplicate Lab Control Sample Summary

## **Diesel Range Organics by GC**

Lab Control Sample JQ1402261-02				Duplicate Lab Control Sample JQ1402261-03					
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Diesel Range Organics (C10 - C28)	32.9	41.7	79	34.6	41.7	83	66-133	5	30

**ALS Group USA, Corp.**  
dba ALS Environmental

## QA/QC Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Analyzed:** 03/29/14  
**Sample Matrix:** Soil      **Date Extracted:** 03/26/14

## Duplicate Lab Control Sample Summary

### Diesel Range Organics by GC

Lab Control Sample JQ1402263-02				Duplicate Lab Control Sample JQ1402263-03					
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Diesel Range Organics (C10 - C28)	36.0	41.7	86	33.1	41.7	79	66-133	8	30

**ALS Group USA, Corp.**  
dba ALS Environmental

## QA/QC Report

**Client:** Giolee Global Resources NIG Ltd      **Service Request:** J1402115  
**Project:** After Clean-Up@Brass      **Date Analyzed:** 03/29/14  
**Sample Matrix:** Soil      **Date Extracted:** 03/29/14

## Duplicate Lab Control Sample Summary

## **Diesel Range Organics by GC**

Lab Control Sample JQ1402358-02				Duplicate Lab Control Sample JQ1402358-03					
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Diesel Range Organics (C10 - C28)	34.7	41.7	83	32.4	41.7	78	66-133	7	30

**ALS Group USA, Corp.**

dba ALS Environmental

## QA/QC Report

**Client:** Giolee Global Resources NIG Ltd  
**Project:** After Clean-Up@Brass  
**Sample Matrix:** Soil

**Service Request:** J1402115  
**Date Collected:** 02/21/14  
**Date Received:** 03/06/14  
**Date Analyzed:** 03/27/14

**Replicate Sample Summary**  
**General Chemistry Parameters**

**Sample Name:** SSC1 OD (0.0-0.3)m  
**Lab Code:** J1402115-001

**Units:** Percent  
**Basis:** As Received

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>PQL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Sample</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>
					J1402115-001DUP Result			
Solids, Total	160.3 Modified	0.10	0.10	84	84	83.8	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



## Cooler Receipt Form

Client: Giolee  
Project: After Clean Up DrainsService Request #: J140215Cooler received on 3/6/14and opened on 3/6/14 by SCCOURIER: ALS UPS FEDEX Client Other \_\_\_\_\_ Airbill # 894979120

- 1 Were custody seals on outside of cooler? Yes  No   
If yes, how many and where? #: \_\_\_ on lid other \_\_\_
- 2 Were seals intact and signature and date correct? Yes  No  N/A
- 3 Were custody papers properly filled out? Yes  No  N/A
- 4 Temperature of cooler(s) upon receipt (Should be > 0°C and < 6°C) Ambient
- 5 Thermometer ID
- 6 Temperature Blank Present? Yes  No
- 7 Were Ice or Ice Packs present Ice  Ice Packs  No
- 8 Did all bottles arrive in good condition (unbroken, etc....)? Yes  No  N/A
- 9 Type of packing material present Netting  Vial Holder  Bubble Wrap  
Paper  Styrofoam  Other  N/A
- 10 Were all bottle labels complete (sample ID, preservation, etc....)? Yes  No  N/A
- 11 Did all bottle labels and tags agree with custody papers? Yes  No  N/A
- 12 Were the correct bottles used for the tests indicated? Yes  No  N/A
- 13 Were all of the preserved bottles received with the appropriate preservative?  
HNO<sub>3</sub> pH<2    H<sub>2</sub>SO<sub>4</sub> pH<2    ZnAc<sub>2</sub>/NaOH pH>9    NaOH pH>12  
Preservative additions noted below: HCl pH<2
- 14 Were all samples received within analysis holding times? Yes  No  N/A
- 15 Were all VOA vials free of air bubbles? If present, note below Yes  No  N/A
- 16 Where did the bottles originate? ALS  Client

Sample ID	Reagent	Lot #	ml added	Initials Date/Time

Additional comments and/or explanation of all discrepancies noted above:

Client approval to run samples if discrepancies noted:

Date:



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**CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM**

Environmental

#18 Uyo Street, Rumueması, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161

SR #	J140215
CAS Contact	

Page              of     5



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## CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Environmental

SR #  
CAS Contact

51402115

Page 2 of 5

Project Name: AFTER CLEAN-UP @ BRASS Project Number: Report CC Company/Address: GIOLEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMUOMASI, PORT HARCOURT Phone #: FAX #: 7031513161 Sampler's Signature: Sampler's Printed Name: VICTOR OKORIE				ANALYSIS REQUESTED (Include Method Number and Container Preservative) Preservative: N Container: BOX TPH PAH 6. MeOH 7. NaHSO4 8. ICE * REMARKS											
CLIENT SAMPLE ID SS <sub>1</sub> OD (0.0 - 0.3)m SS <sub>2</sub> OD (0.0 - 0.3)m SS <sub>3</sub> OD (0.0 - 0.3)m SS <sub>4</sub> OD (0.0 - 0.3)m SS <sub>5</sub> OD (0.0 - 0.3)m				SAMPLING LAB ID: DATE: 2/21/2014 TIME: 08:26am Matrix: SOIL											
Special Instructions/Comments:				TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) STANDARD		REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MS-MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data		INVOICE INFORMATION P.O. # Bill to:							
				REQUESTED FAX DATE REQUESTED REPORT DATE Edata * Yes No											
Relinquished By Signature:		Received By Signature:		Relinquished By Signature:		Received By Signature:		Relinquished By Signature:		Received By Signature:					
Printed Name: UCHEGBU SOPHIA Firm: GIOLEE GLOBAL Resources		Printed Name: Sean Liggett		Printed Name: ACS		Printed Name: ACS		Printed Name: ACS		Printed Name: ACS					
Date/Time: 3/6/14 1400				Date/Time: 3/6/14 1400		Date/Time: 3/6/14 1400		Date/Time: 3/6/14 1400		Date/Time: 3/6/14 1400					



Environmental  
#18 Uyo Street, Rumuomasi, Port Harcourt. Email: gioleecglobal@yahoo.com, Tel: 07026931598, 07031513161  
www.gioleecglobal.com

### CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

SR# 51402115  
CAS Contact

Page 3 of 5

Project Name AFTER CLEAN-UP @ BRASS		Project Number Report To Report CC		ANALYSIS REQUESTED (Include Method Number and Container Preservative)										
				1. Preservative										
				N		TPH	PAH	BTEX	SURFACTANT					
Company/Address GIOLEE GLOBAL RESOURCES LIMITED, #18 UYO STREET RUMUOMASI, PORT HARCOURT														
Phone # 7031513161		FAX #												
Sampler's Signature VICTOR OKORIE		Sampler's Printed Name VICTOR OKORIE												
CLIENT SAMPLE ID		LAB ID	SAMPLING	DATE	TIME	Matrix								
SS-OD (0.0 - 0.3)m				2/21/2014	11:03am	SOIL								
SS-OD (0.0 - 0.3)m				2/21/2014	11:40am	SOIL								
SS-OD (0.0 - 0.3)m				2/21/2014	12:02am	SOIL								
SS-OD (0.0 - 0.3)m				2/21/2014	12:23pm	SOIL								
Special Instructions/Comments:							TURNAROUND REQUIREMENTS		REPORT REQUIREMENTS		INVOICE INFORMATION			
							RUSH (SURCHARGES APPLY) * STANDARD		I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summary * IV. Data Validation Report with Raw Data		P.O. # _____ Bill to: _____			
							REQUESTED FAX DATE		Edata <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
							REQUESTED REPORT DATE							
Relinquished By Signature		Received By Signature	Relinquished By Signature			Received By Signature		Relinquished By Signature		Received By Signature				
Printed Name UCHEGBU SOPHIA		Printed Name Sharon Ligbag	Printed Name			Printed Name		Printed Name		Printed Name				
Firm GIOLEE GLOBAL Resources		Firm ACS	Firm			Firm		Firm		Firm				
Date/Time		Date/Time 3/19/14 1400	Date/Time			Date/Time		Date/Time		Date/Time				



# CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Environmental

#18 Uyo Street, Rumuomasi, Port Harcourt. Email: gioleeglobal@yahoo.com, Tel: 07026931598, 07031513161

SR #  
CAS Contact

5140215

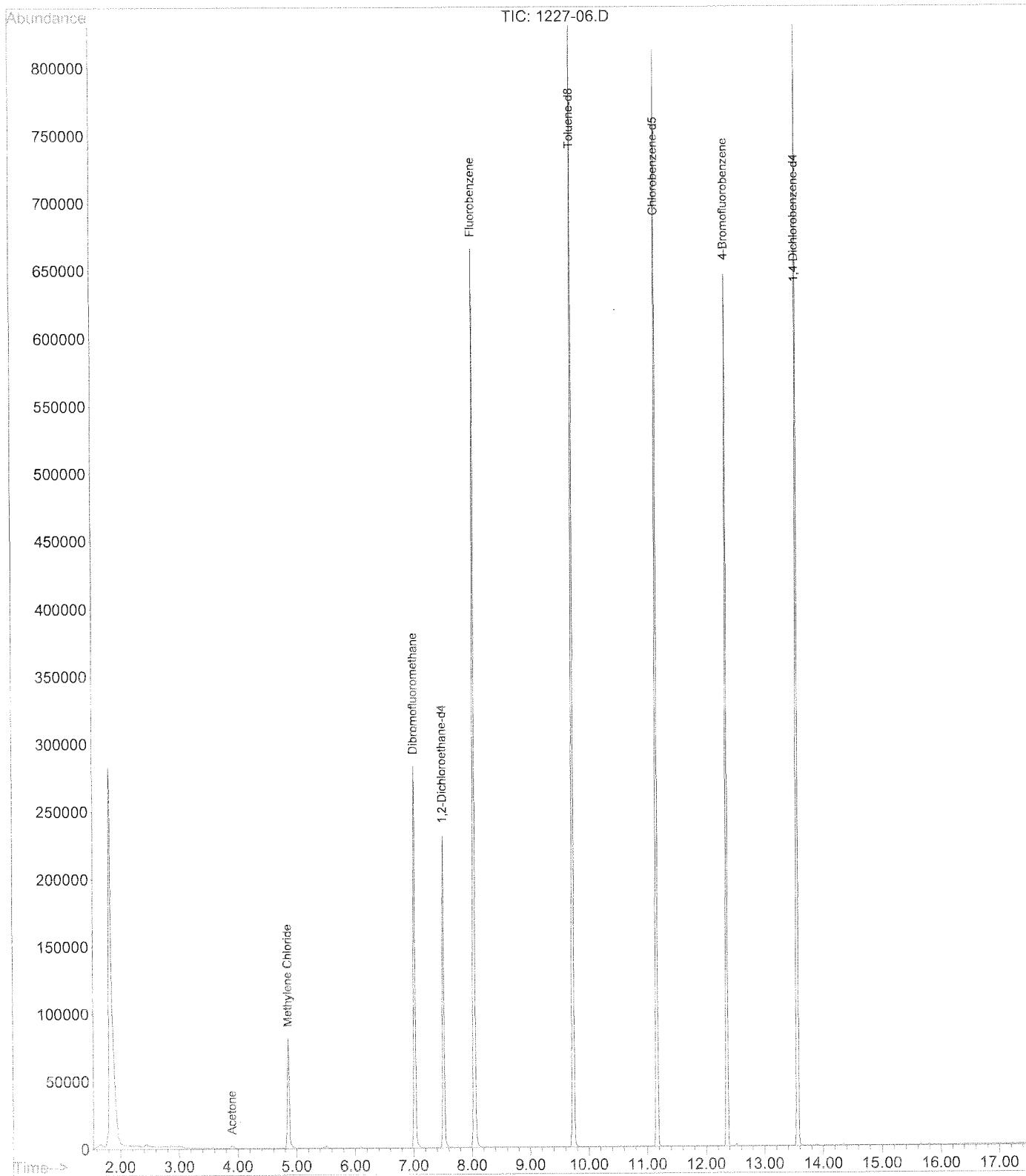
Page 5 of 5

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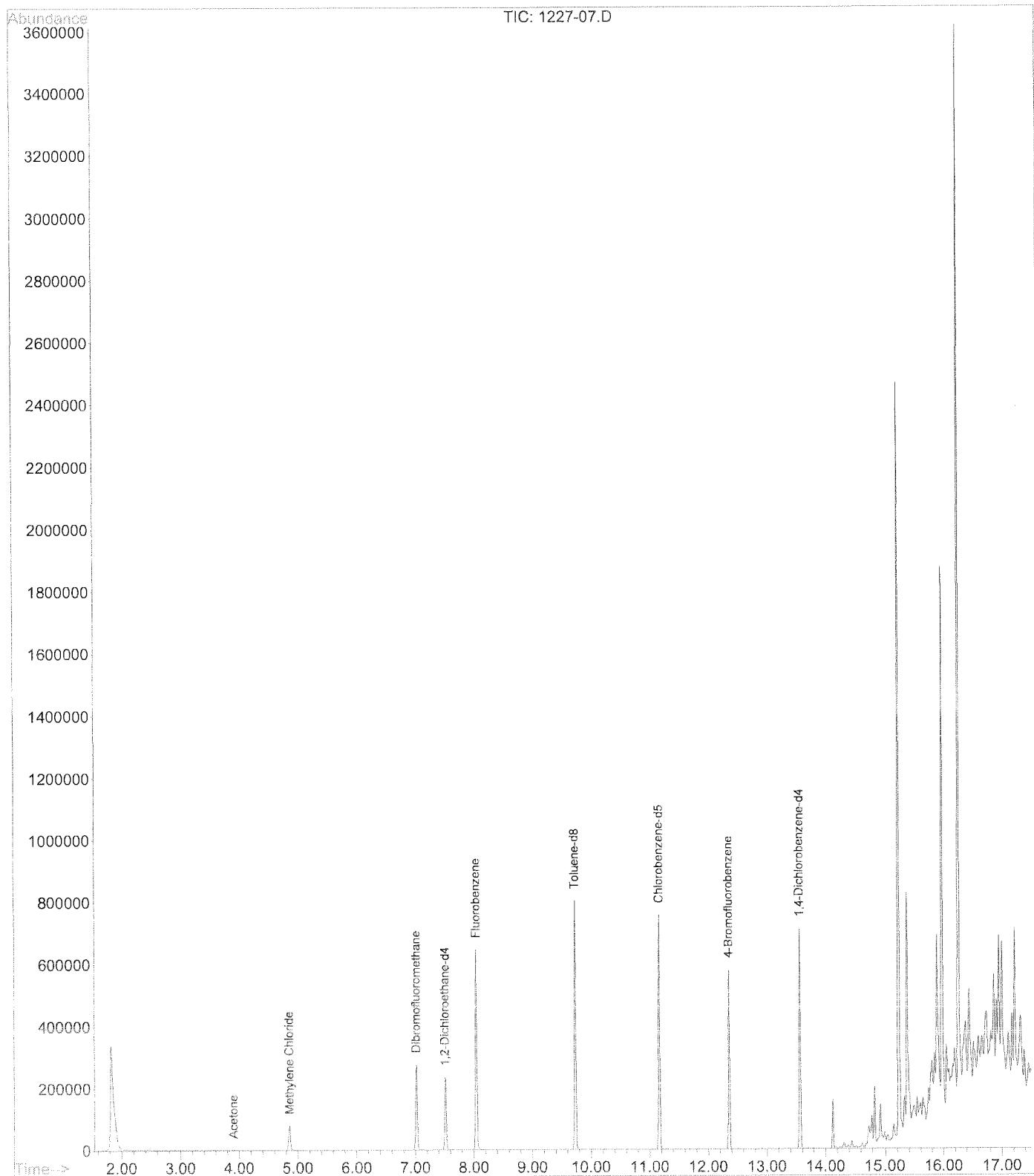
Project Name <b>AFTER CLEAN-UP @ BRASS(Upstream)</b>		Project Number 3		ANALYSIS REQUESTED (Include Method No.)								
Report To		Report CC		N	Preservative	TPH	PAH	BTEX	SURFACTANT			
Company/Address <b>GIOLEE GLOBAL RESOURCES LIMITED, .</b> <b>#18 UYO STREET RUMUOMASI, PORT HARCOURT</b>												
Phone # 7031513161		FAX #										
Sampler's Signature		Sampler's Printed Name <b>VICTOR OKORIE</b>										
CLIENT SAMPLE ID	LAB ID	SAMPLING TIME	Matrix									
WCS <sub>1</sub> OD		2/21/2014 08:33am	H <sub>2</sub> O									
WS <sub>1</sub> OD		2/21/2014 09:12am	H <sub>2</sub> O									
WS <sub>2</sub> OD		2/21/2014 09:23am	H <sub>2</sub> O									
WS <sub>3</sub> OD		2/21/2014 10:48am	H <sub>2</sub> O									
WS <sub>4</sub> OD		2/21/2014 01:18pm	H <sub>2</sub> O									
Special Instructions/Comments:				TURNAROUND REQUIREMENTS			REPORT REQUIREMENTS			INVOICE INFORMATION		
				<input type="checkbox"/> RUSH (SURCHARGES APPLY) <input checked="" type="checkbox"/> STANDARD			I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries * IV. Data Validation Report with Raw Data Edata <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			P.O. # _____ Bill to: _____		
Relinquished By Signature	Received By Signature	Relinquished By Signature	Received By Signature	Relinquished By Signature	Received By Signature							
Printed Name UCHEGBU SOPHIA	Printed Name Shay Lightsey	Printed Name	Printed Name	Printed Name	Printed Name							
Firm GIOLEE GLOBAL Resources	Firm AIS	Firm	Firm	Firm	Firm							
Date/Time	Date/Time 3/6/14 1400	Date/Time	Date/Time	Date/Time	Date/Time							



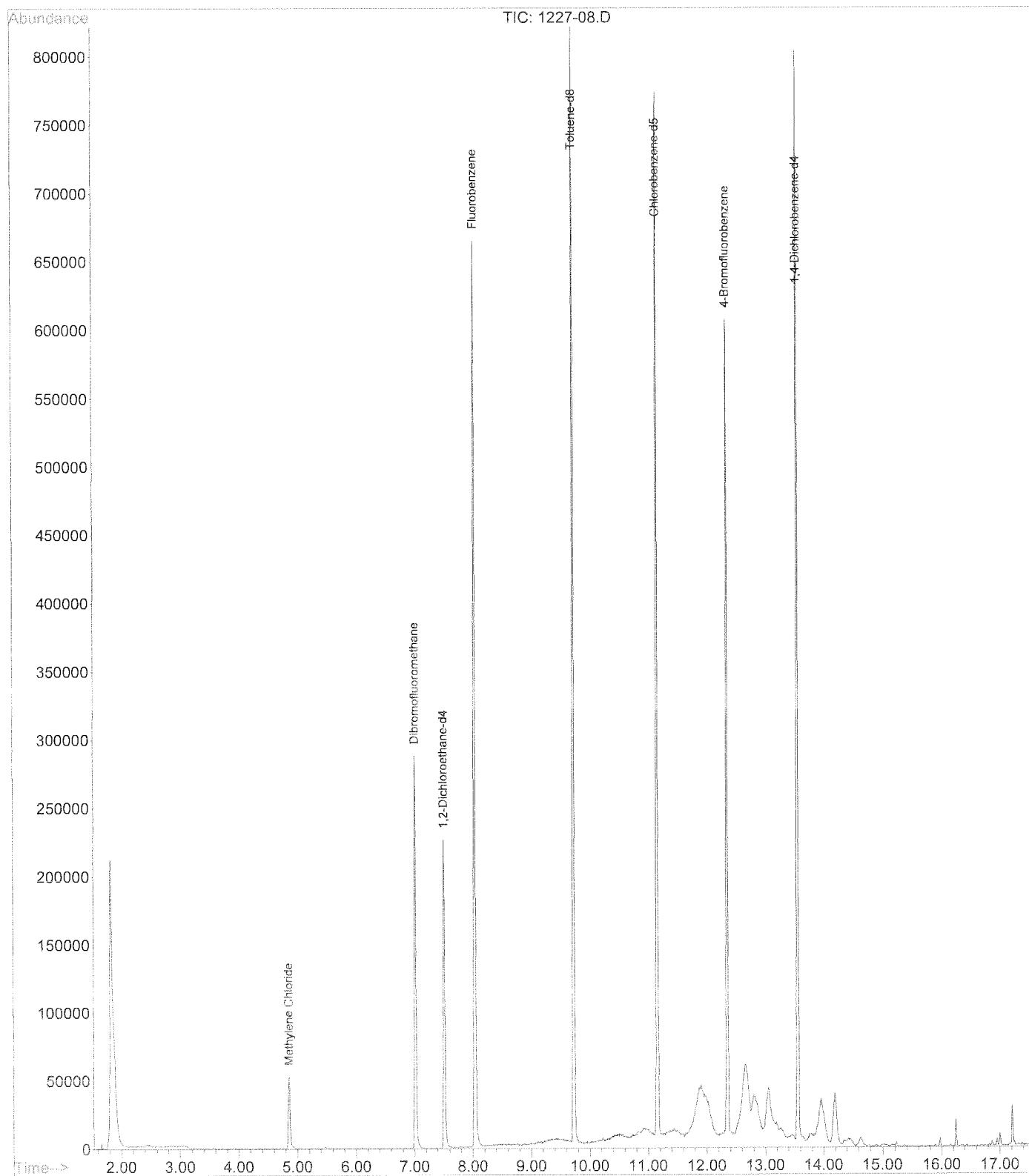
File : I:\MS54\DATA\MS54-131227\1227-06.D  
Operator : SGA  
Acquired : 27 Dec 2013 2:57 pm using AcqMethod ZVOL  
Instrument : ms54  
Sample Name: J1307883-001 SAMP  
Misc Info : 8260B  
Vial Number: 6



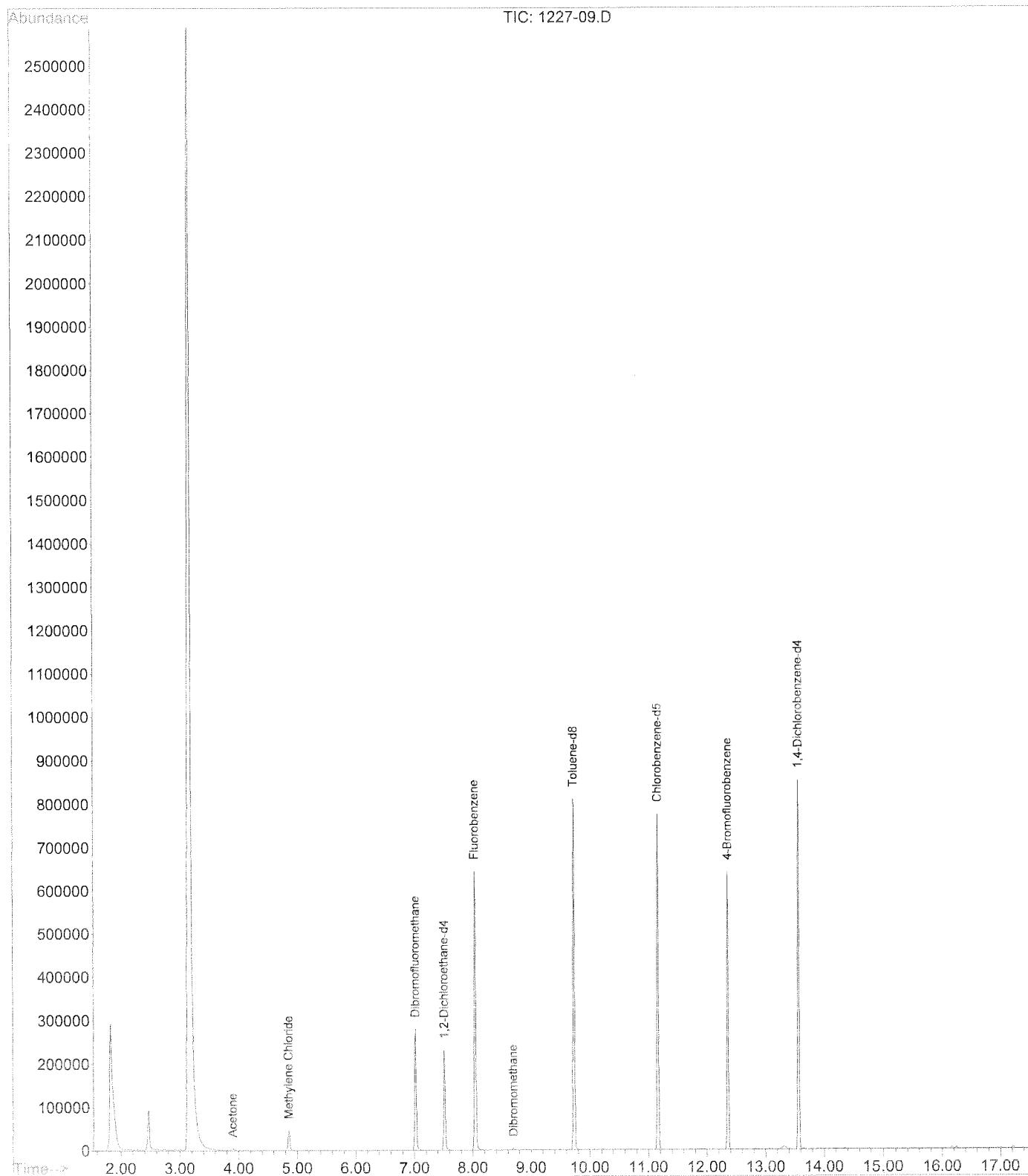
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Operator : SGA  
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Instrument : ms54  
Sample Name: J1307883-002 SAMP  
Misc Info : 8260B  
Vial Number: 7



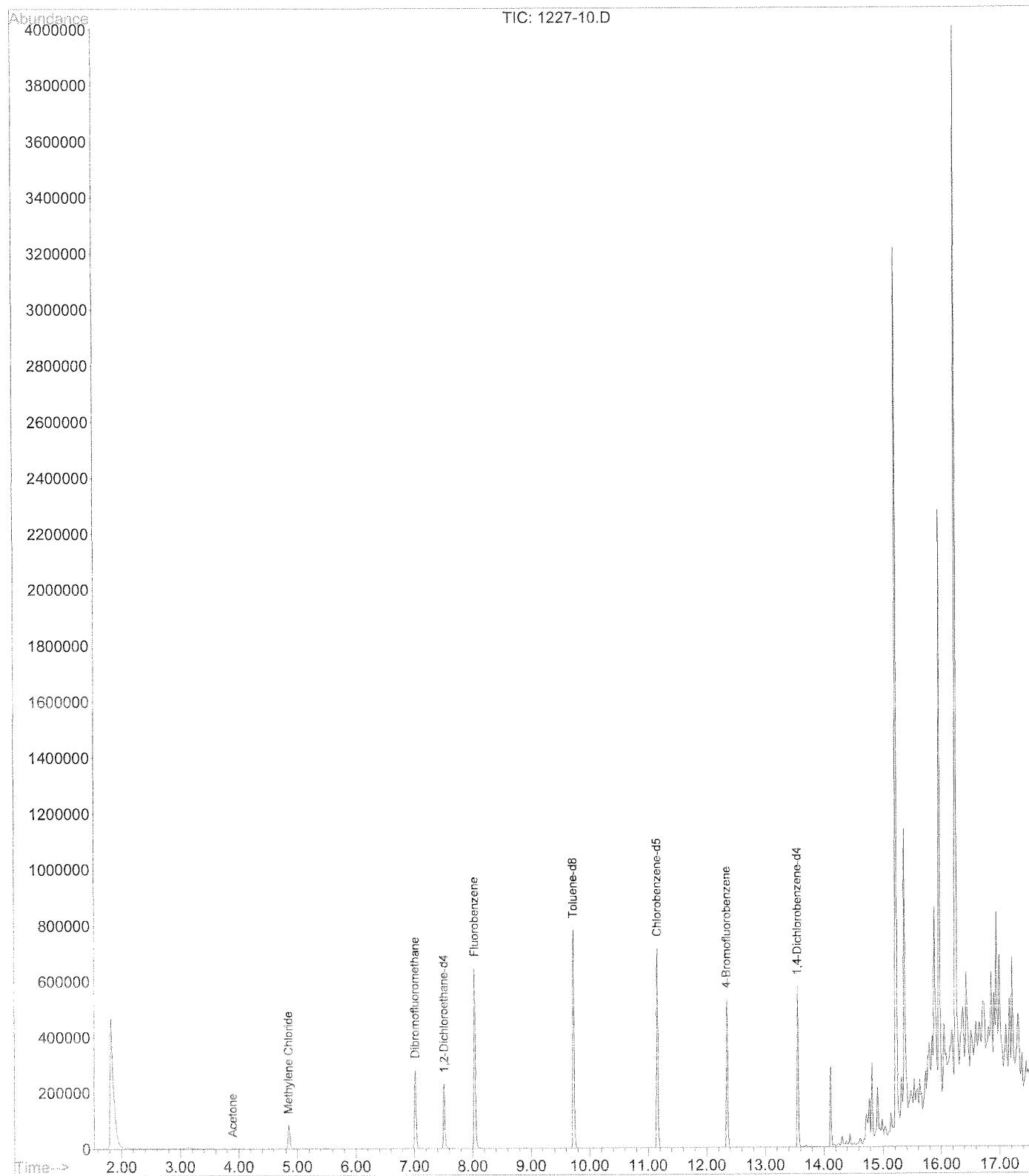
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Instrument : ms54  
Sample Name: J1307883-003 SAMP  
Misc Info : 8260B  
Vial Number: 8



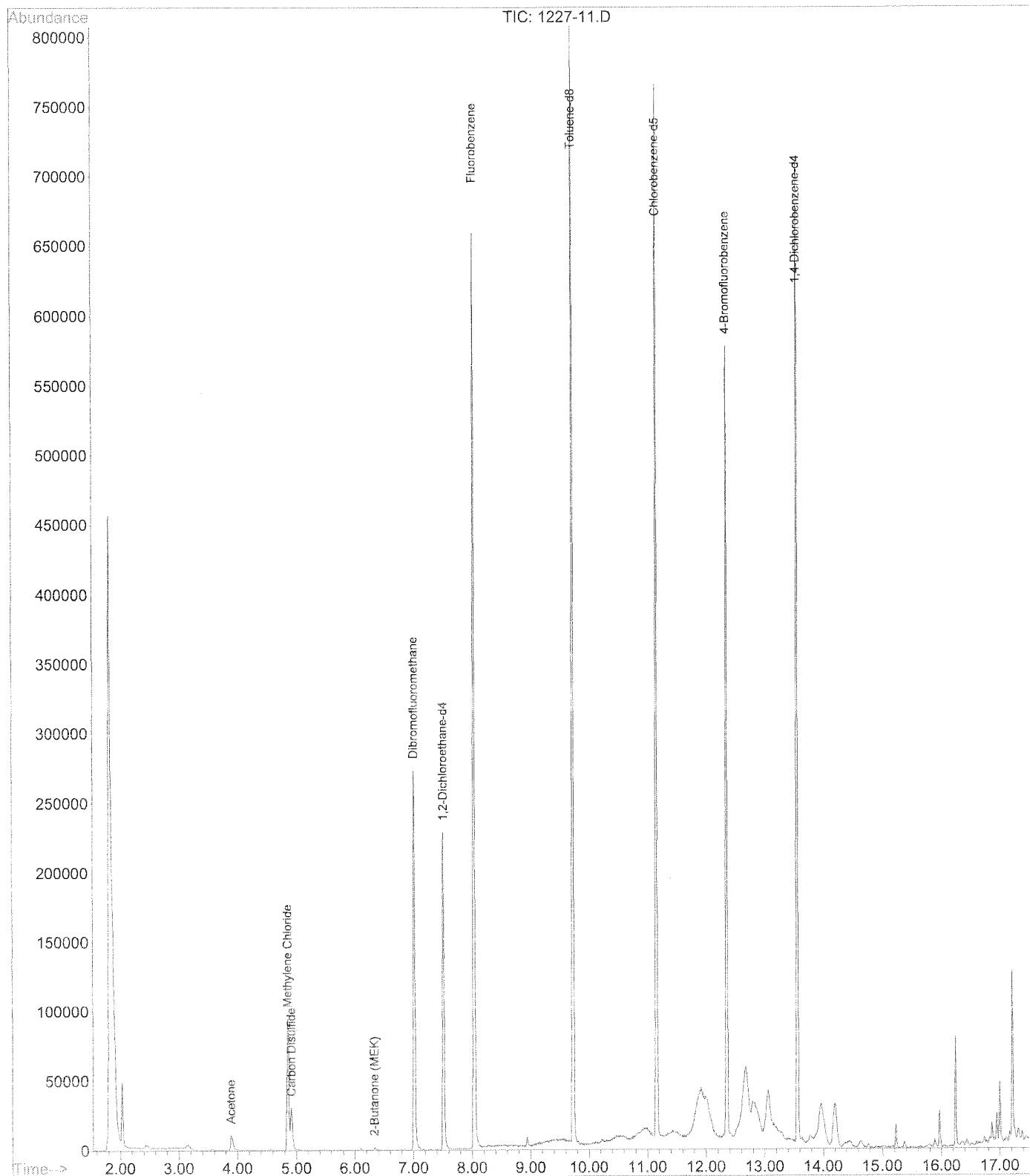
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Instrument : ms54  
Sample Name: J1307883-004 SAMP  
Misc Info : 8260B  
Vial Number: 9



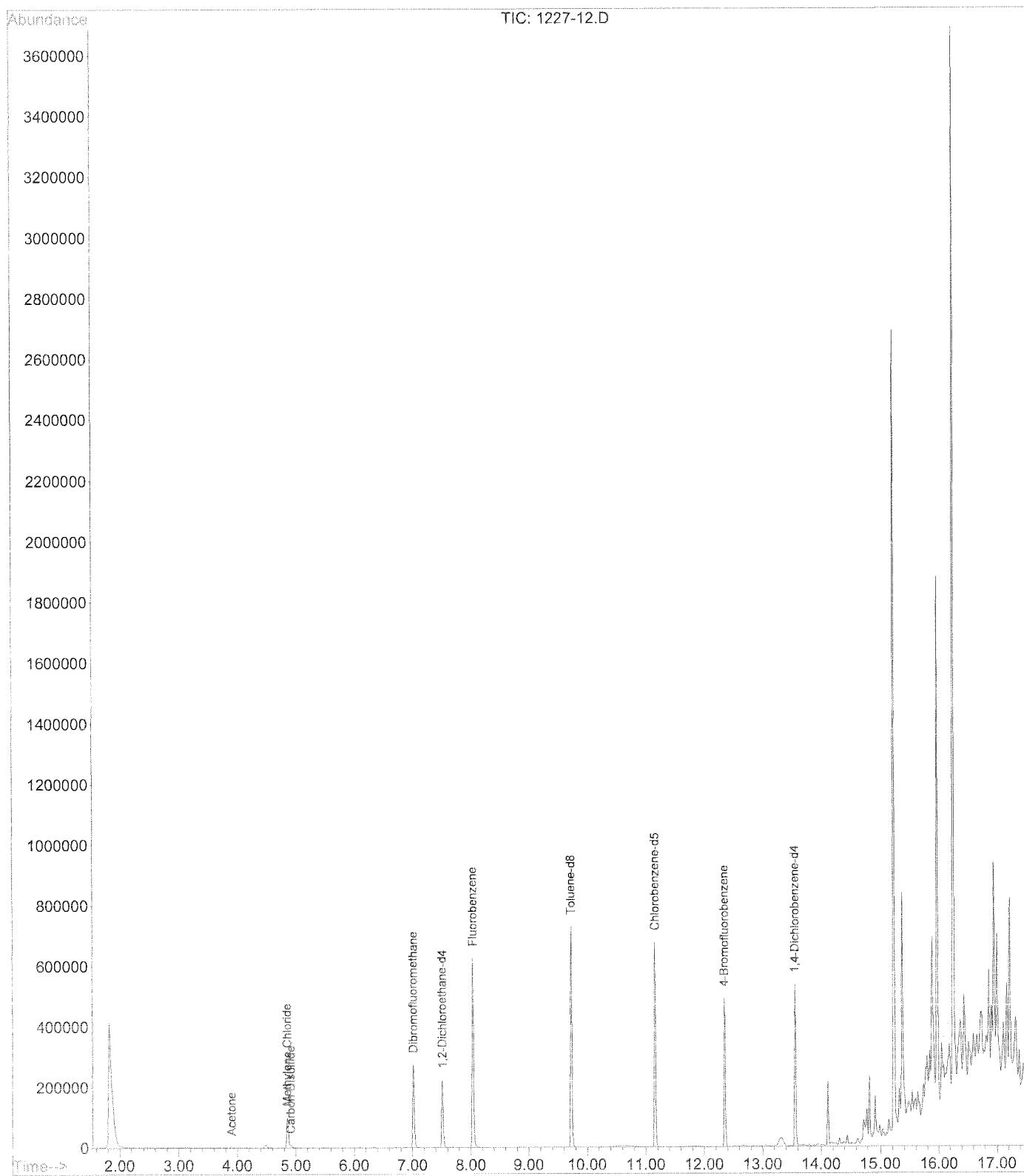
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Operator : SGA  
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Instrument : ms54  
Sample Name: J1307883-005 SAMP  
Misc Info : 8260B  
Vial Number: 10



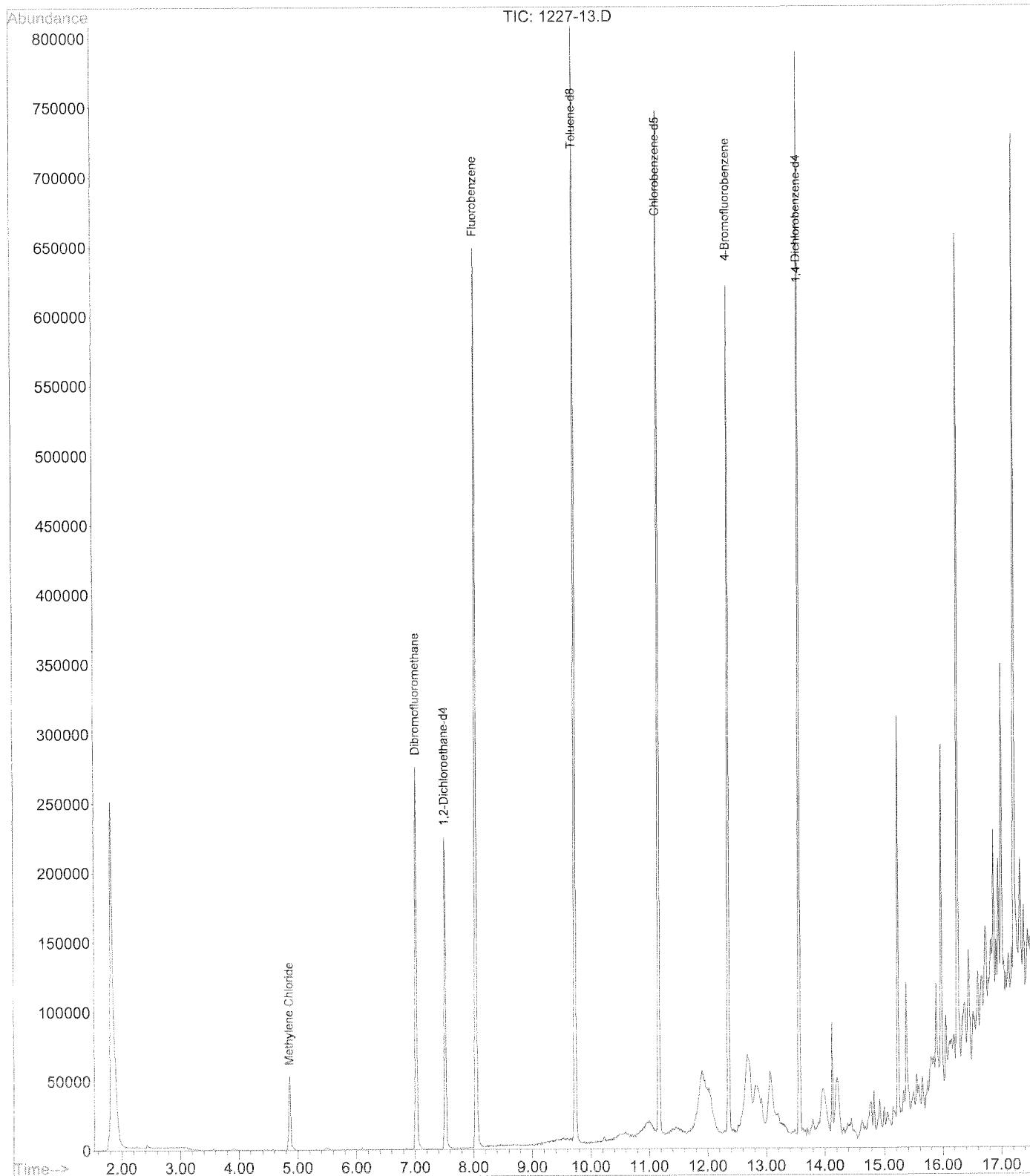
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Instrument : ms54  
Sample Name: J1307883-006 SAMP  
Misc Info : 8260B  
Vial Number: 11



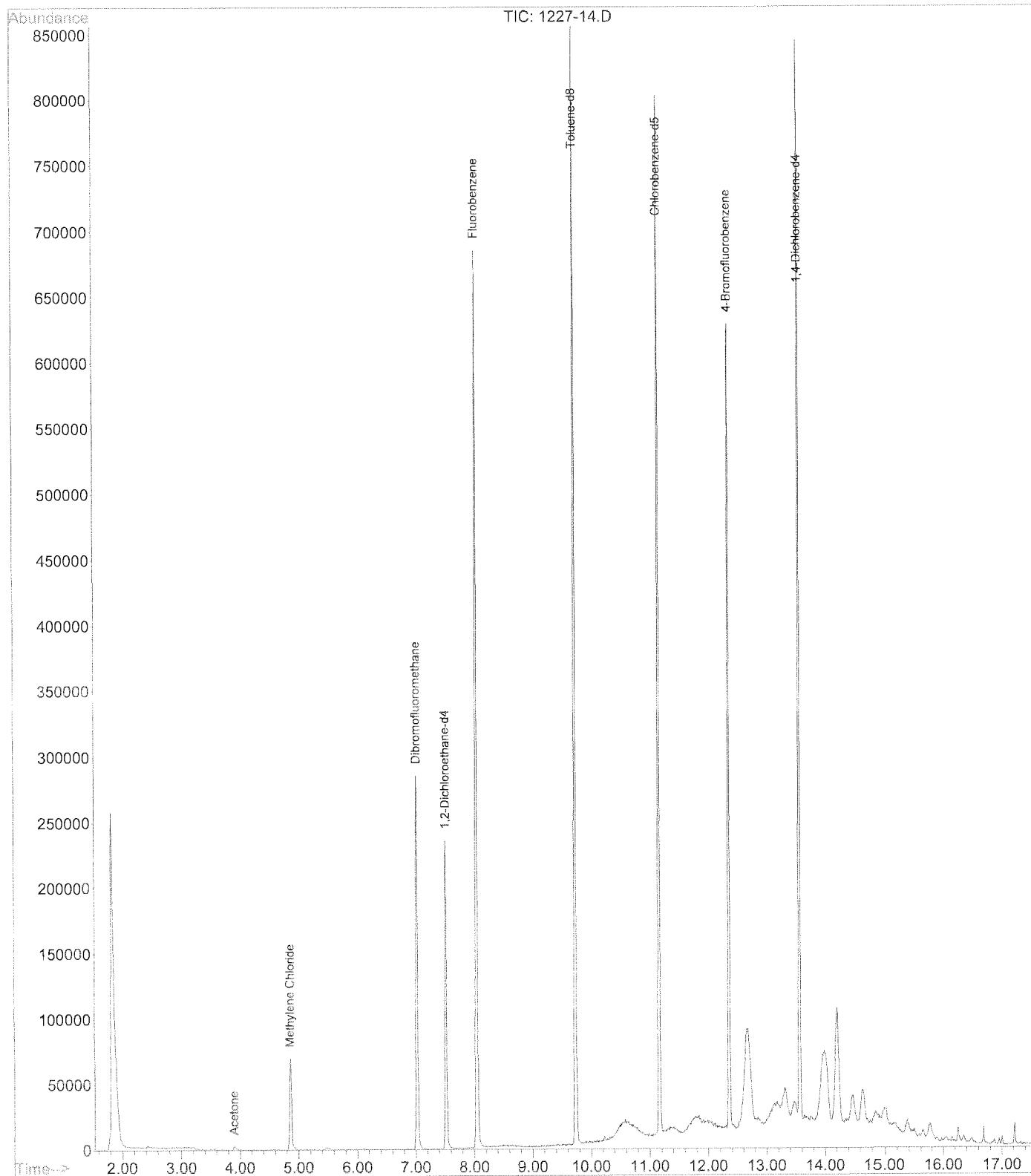
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Operator : SGA  
Acquired : 27 Dec 2013 5:30 pm using AcqMethod ZVOL  
Instrument : ms54  
Sample Name: J1307883-007 SAMP  
Misc Info : 8260B  
Vial Number: 12



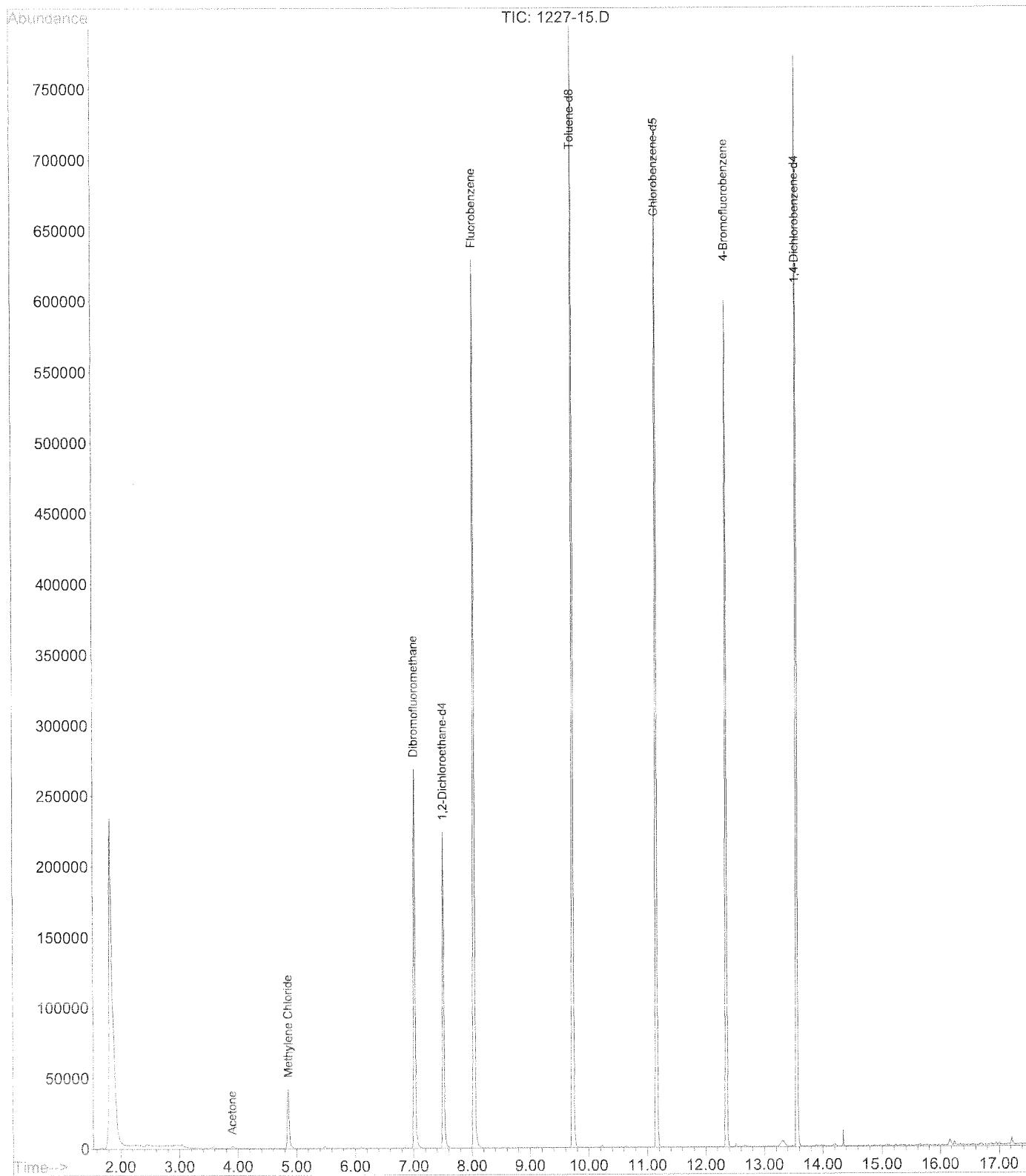
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Operator : SGA  
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Instrument : ms54  
Sample Name: J1307883-008 SAMP  
Misc Info : 8260B  
Vial Number: 13



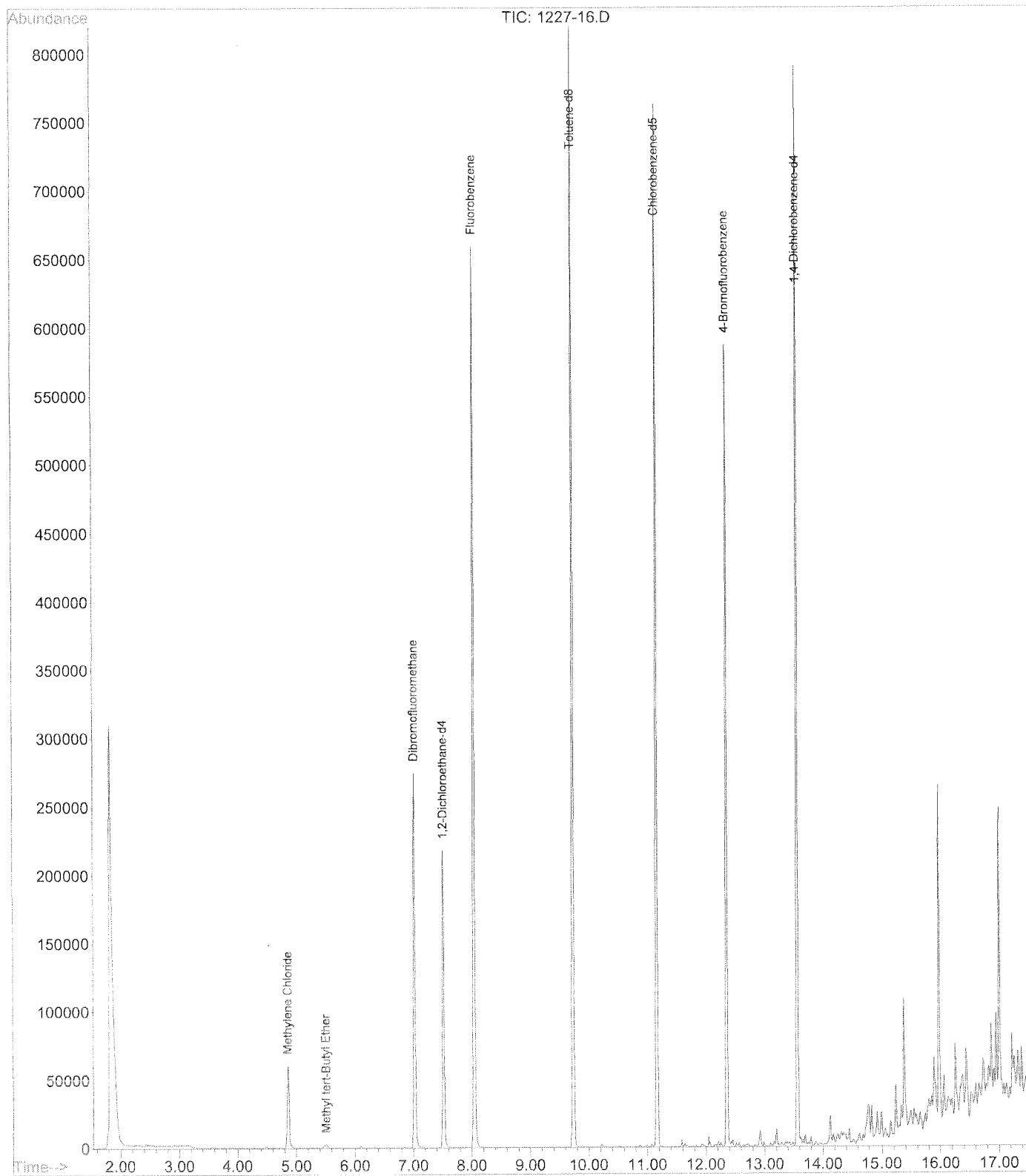
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Operator : SGA  
Acquired : 27 Dec 2013 6:21 pm using AcqMethod ZVOL  
Instrument : ms54  
Sample Name: J1307883-009 SAMP  
Misc Info : 8260B  
Vial Number: 14



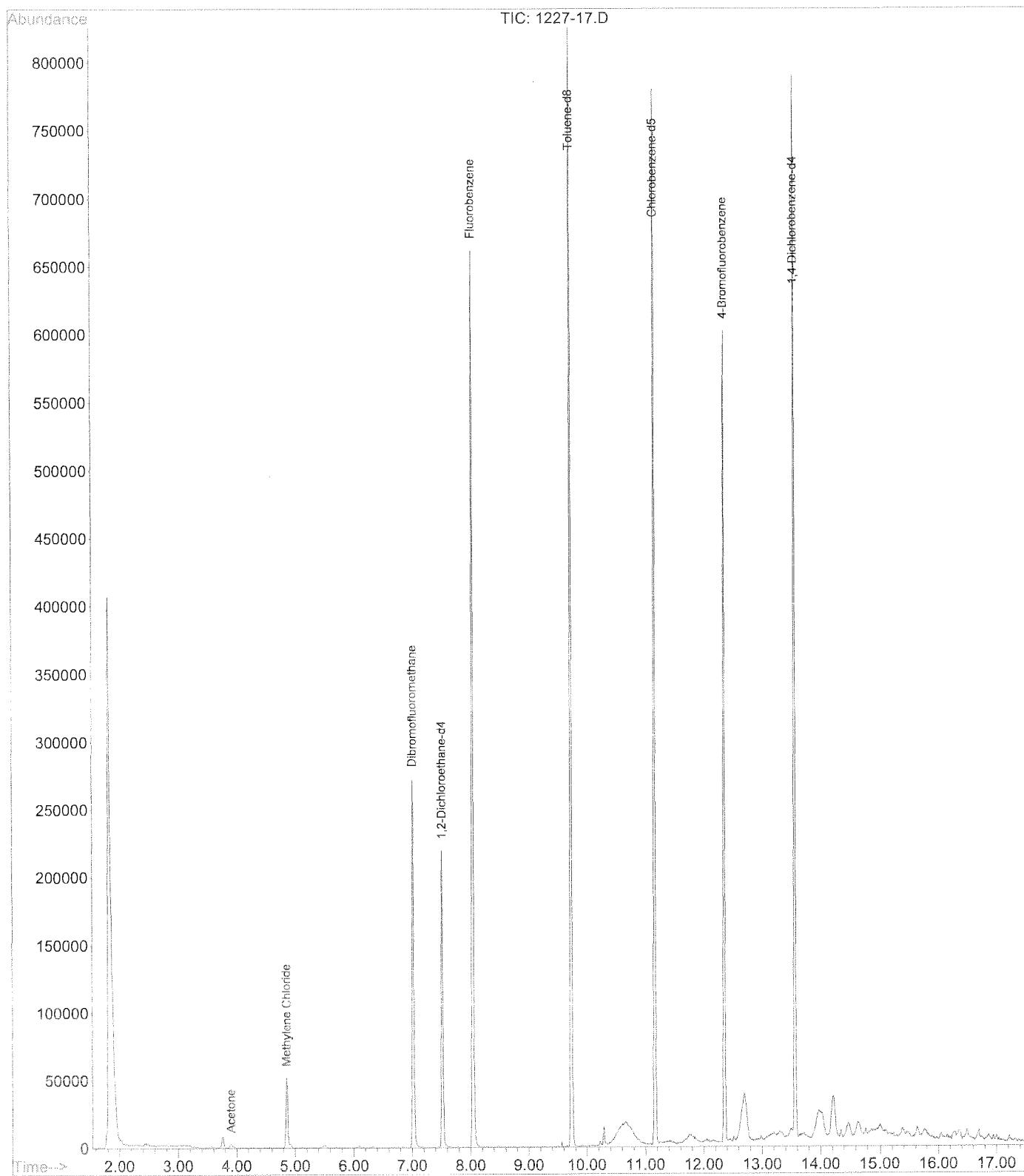
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Operator : SGA  
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Instrument : ms54  
Sample Name: J1307883-010 SAMP  
Misc Info : 8260B  
Vial Number: 15



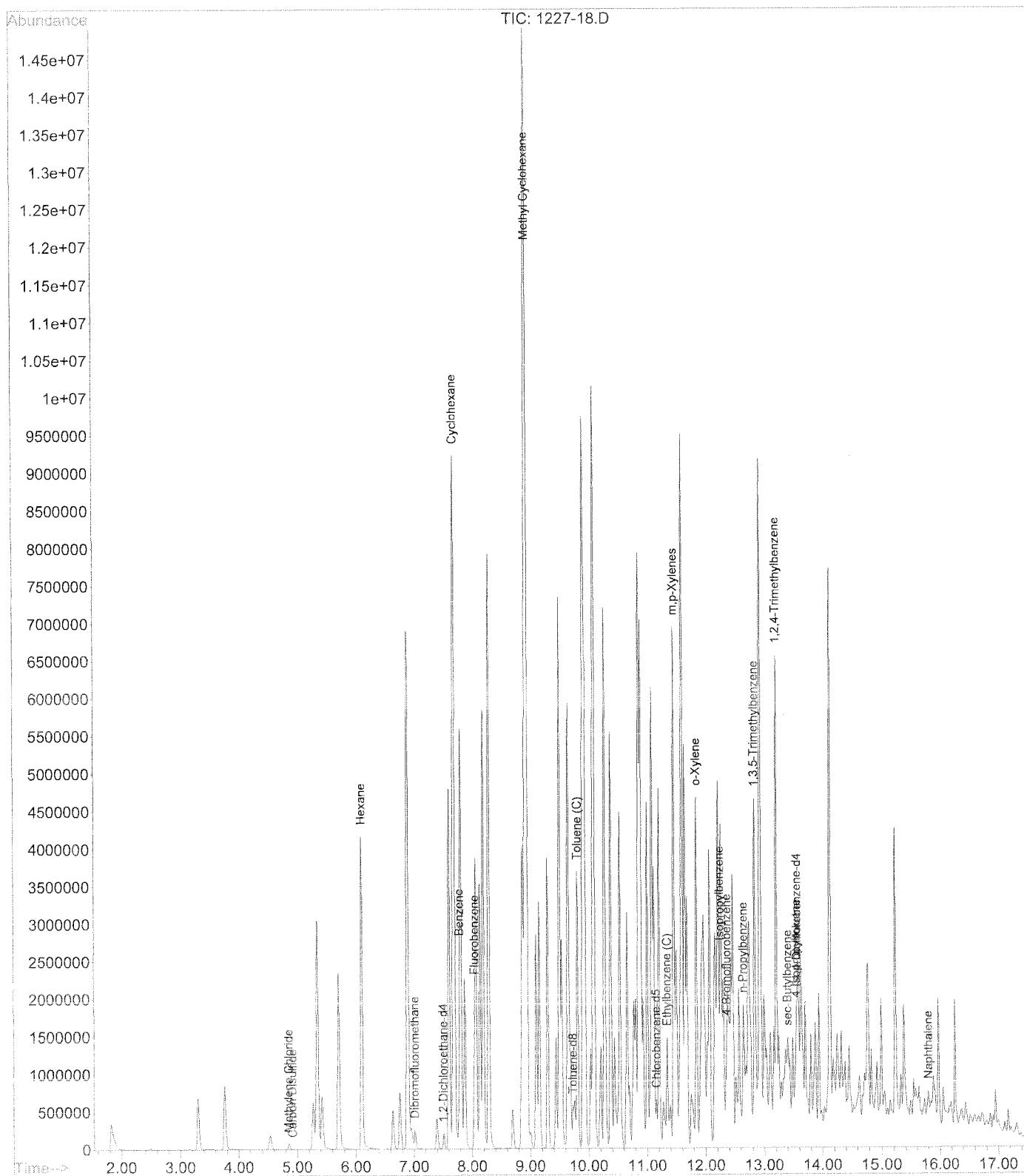
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Operator : SGA  
Acquired : 27 Dec 2013 7:12 pm using AcqMethod ZVOL  
Instrument : ms54  
Sample Name: J1307883-011 SAMP  
Misc Info : 8260B  
Vial Number: 16



File : I:\MS54\DATA\MS54-131227\1227-17.D  
Operator : SGA  
Acquired : 27 Dec 2013 7:37 pm using AcqMethod ZVOL  
Instrument : ms54  
Sample Name: J1307883-012 SAMP  
Misc Info : 8260B  
Vial Number: 17



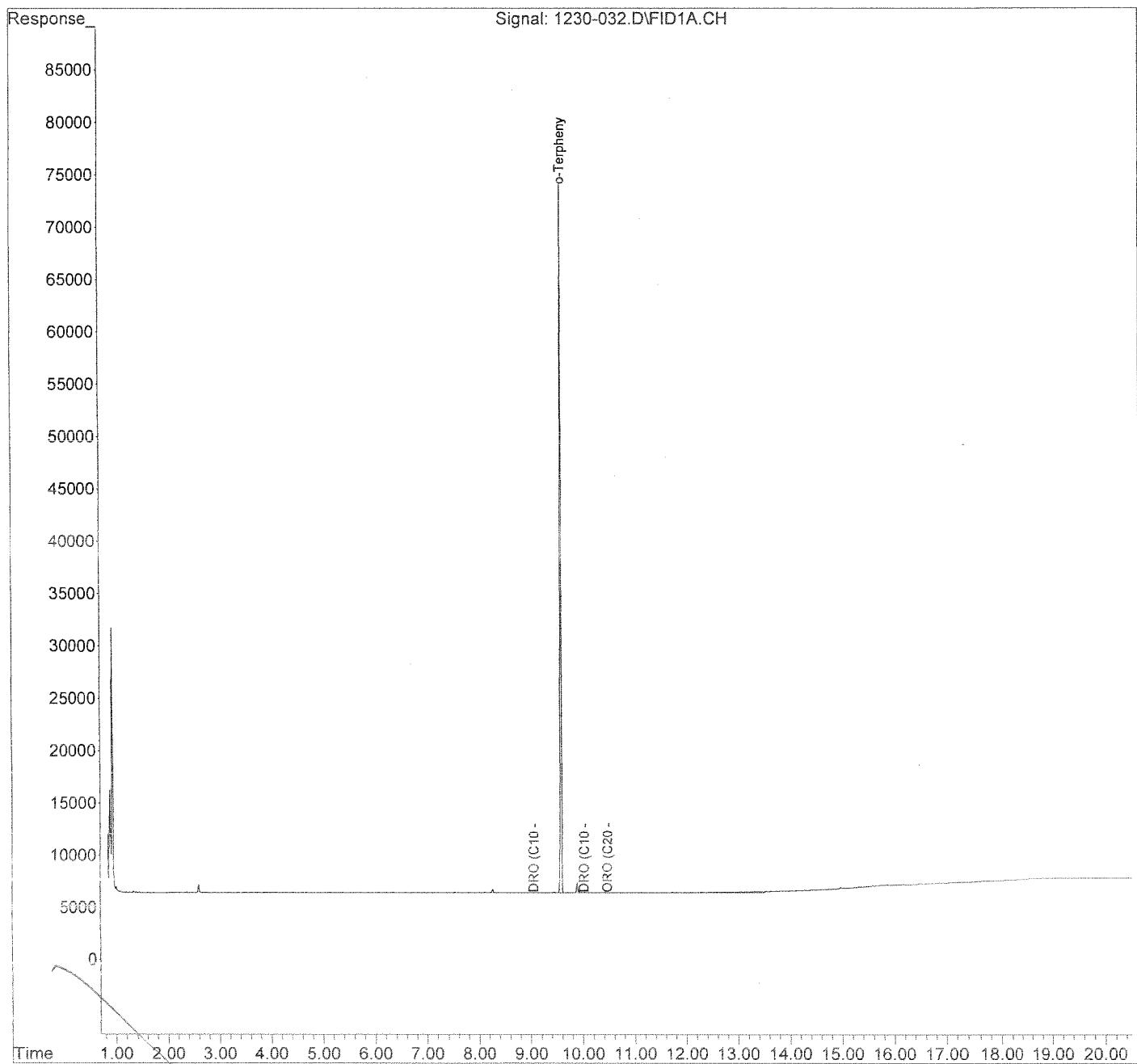
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Instrument : ms54  
Sample Name: J1307883-013 SAMP  
Misc Info : 8260B  
Vial Number: 18



Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-032.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 12:18 am  
Operator : KF  
Sample : J1307883-001 SAMP  
Misc : DRO 8015B  
ALS Vial : 16 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 12:53:25 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

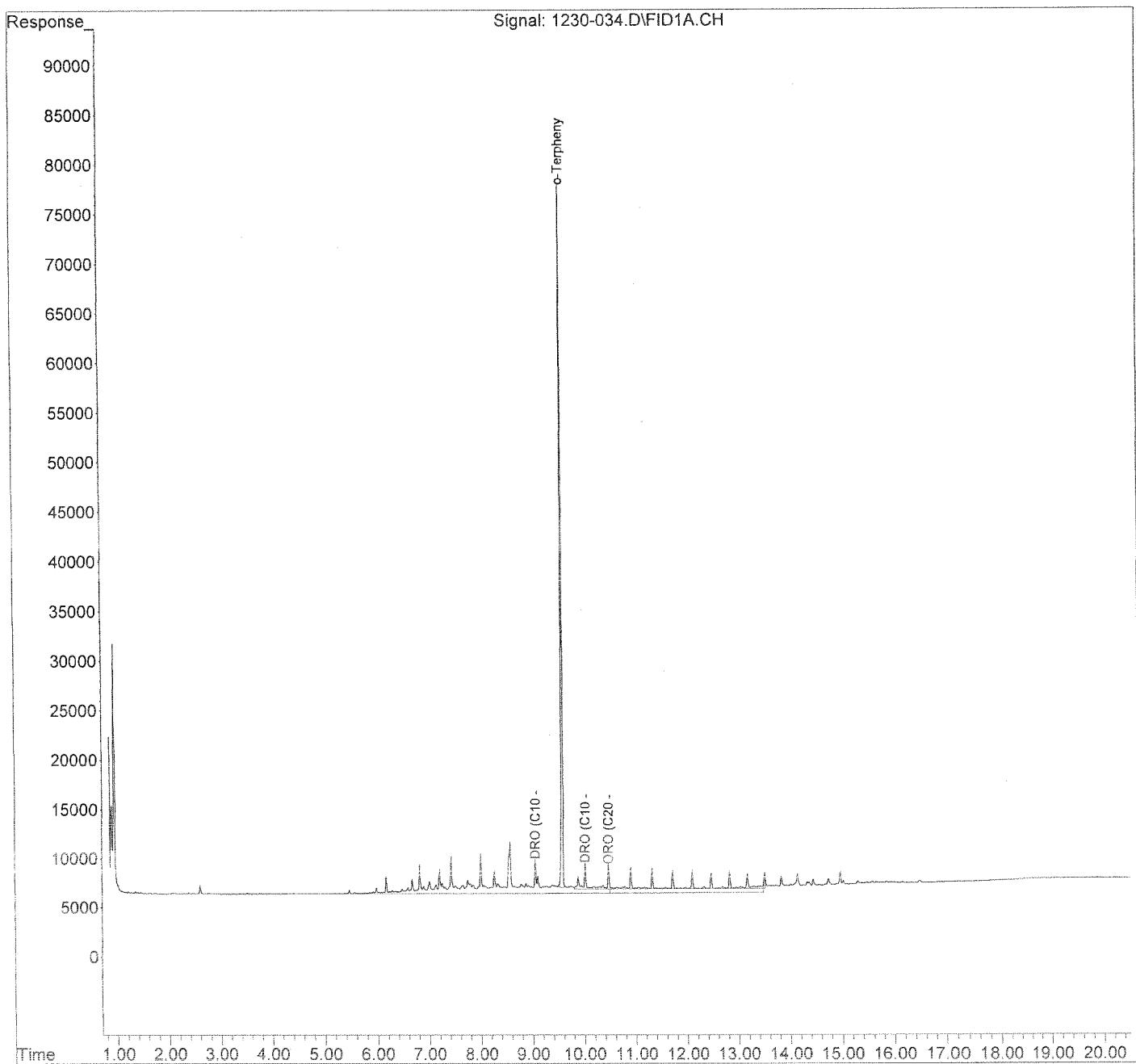
Volume Inj. :  
Signal Phase :  
Signal Info :  
.



Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-034.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 12:46 am  
Operator : KF  
Sample : J1307883-002 SAMP  
Misc : DRO 8015B  
ALS Vial : 17 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 12:58:02 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :  
Signal Phase :  
Signal Info :

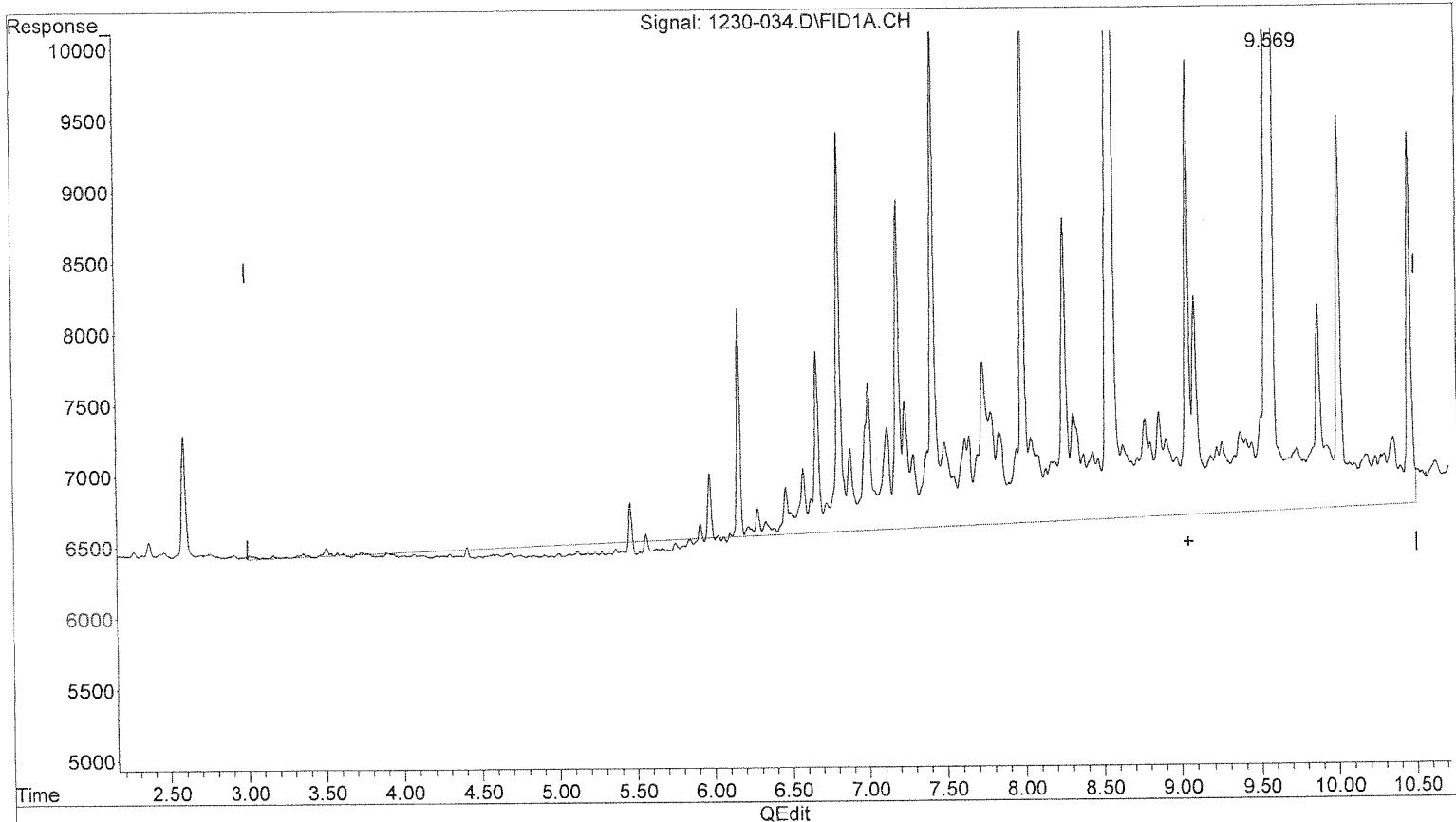


## Quantitation Report (Qedit)

Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-034.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 12:46 am  
Operator : KF  
Sample : J1307883-002 SAMP  
Misc : DRO 8015B  
ALS Vial : 17 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 12:53:28 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :  
Signal Phase :  
Signal Info :



(1) DRO (C10 - C20) (H)

9.051min 37.226 mg/L m

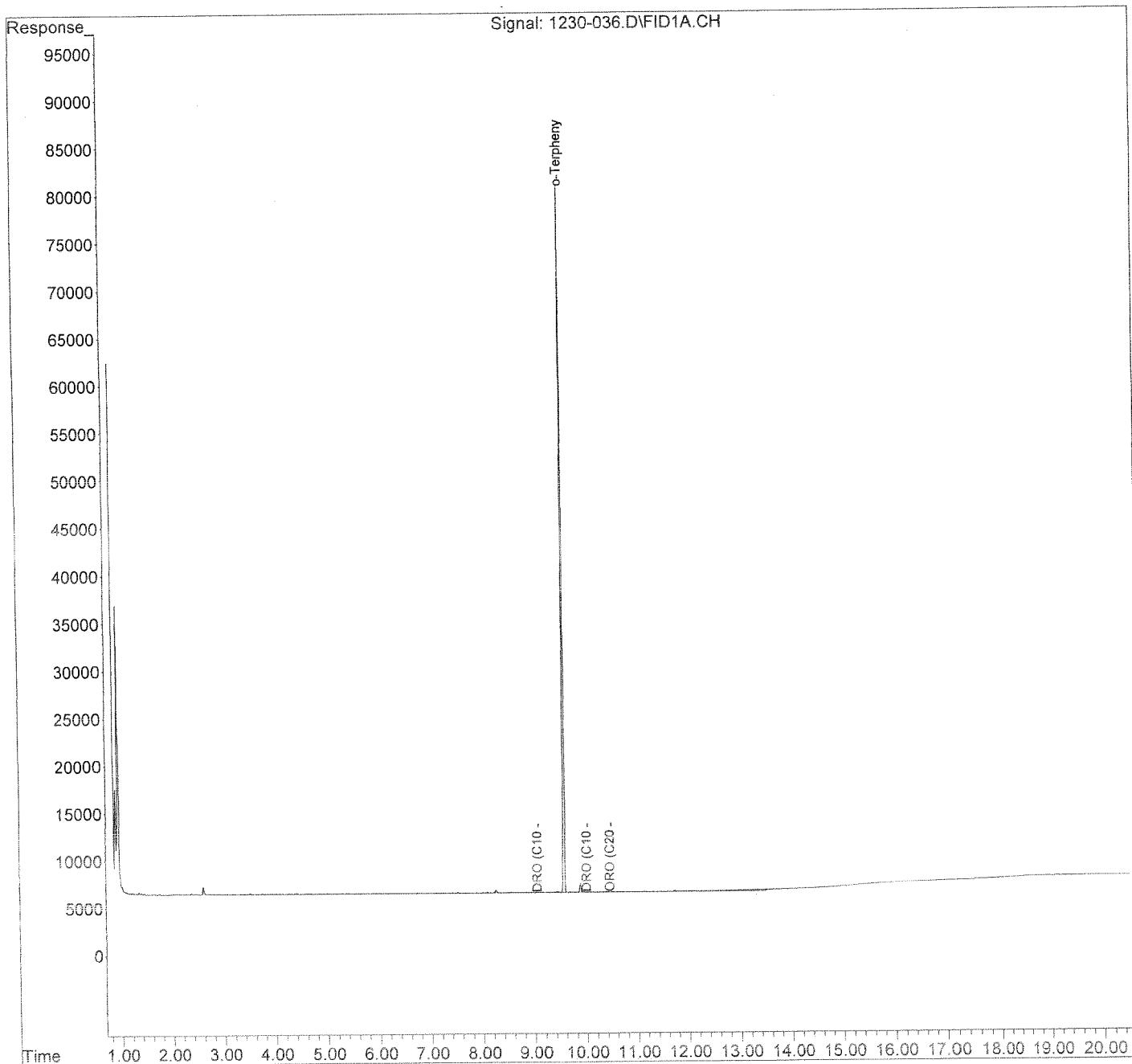
response 145858

4  
5

Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-036.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 1:13 am  
Operator : KF  
Sample : J1307883-003 SAMP  
Misc : DRO 8015B  
ALS Vial : 18 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 12:53:31 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

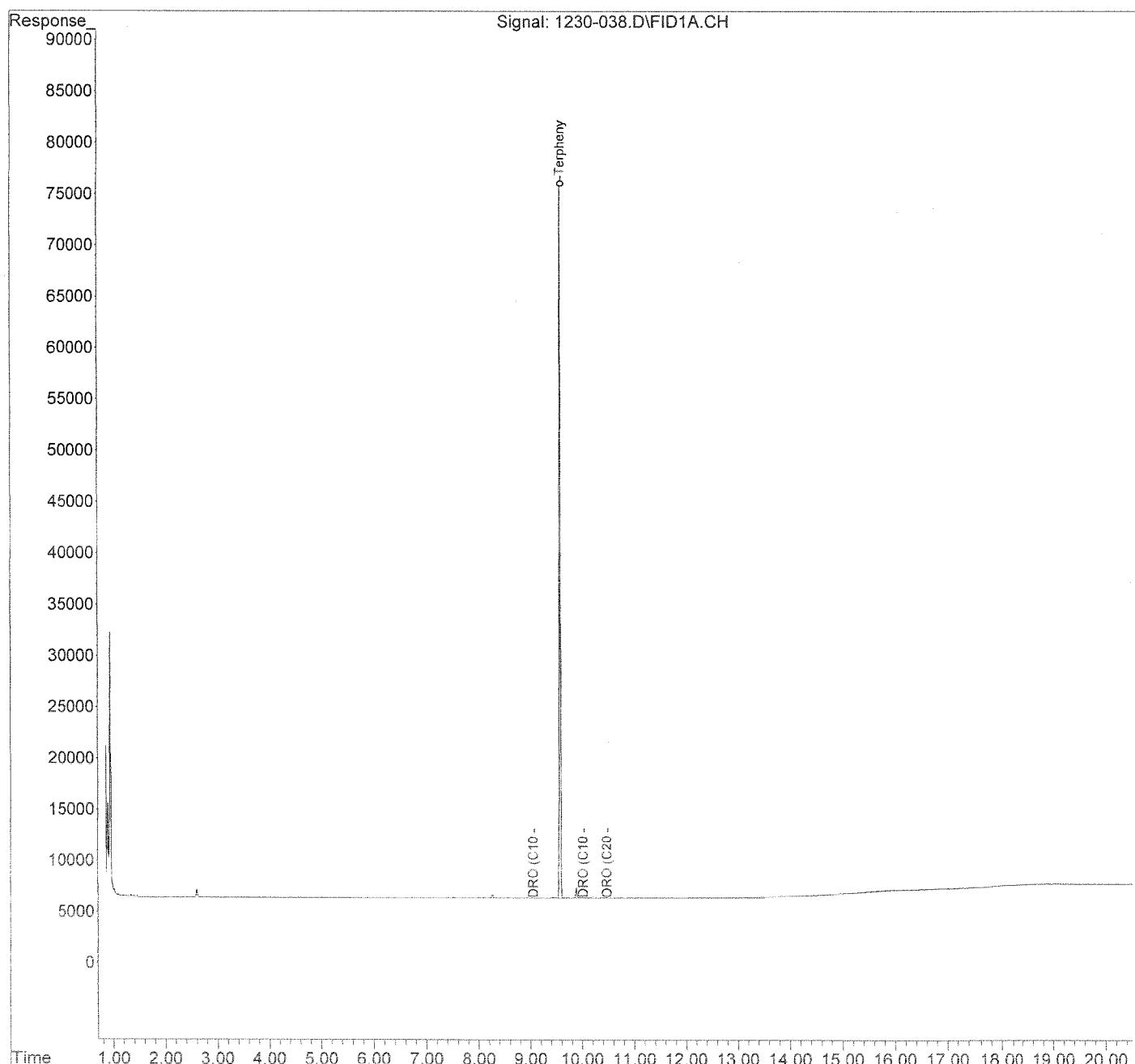
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-038.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 1:40 am  
Operator : KF  
Sample : J1307883-004 SAMP  
Misc : DRO 8015B  
ALS Vial : 19 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 12:53:34 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

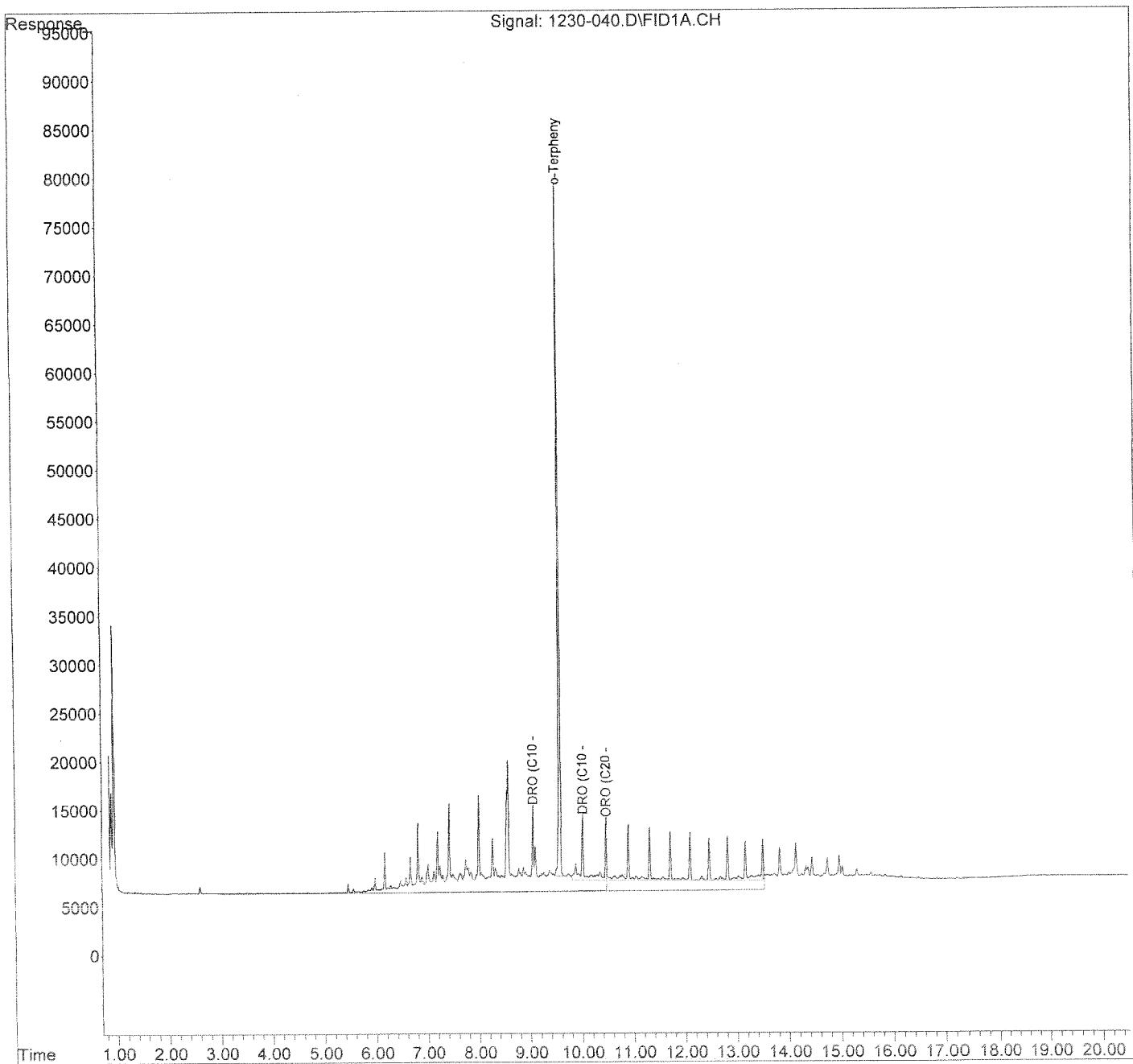
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-040.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 2:08 am  
Operator : KF  
Sample : J1307883-005 SAMP  
Misc : DRO 8015B  
ALS Vial : 20 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 12:59:49 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

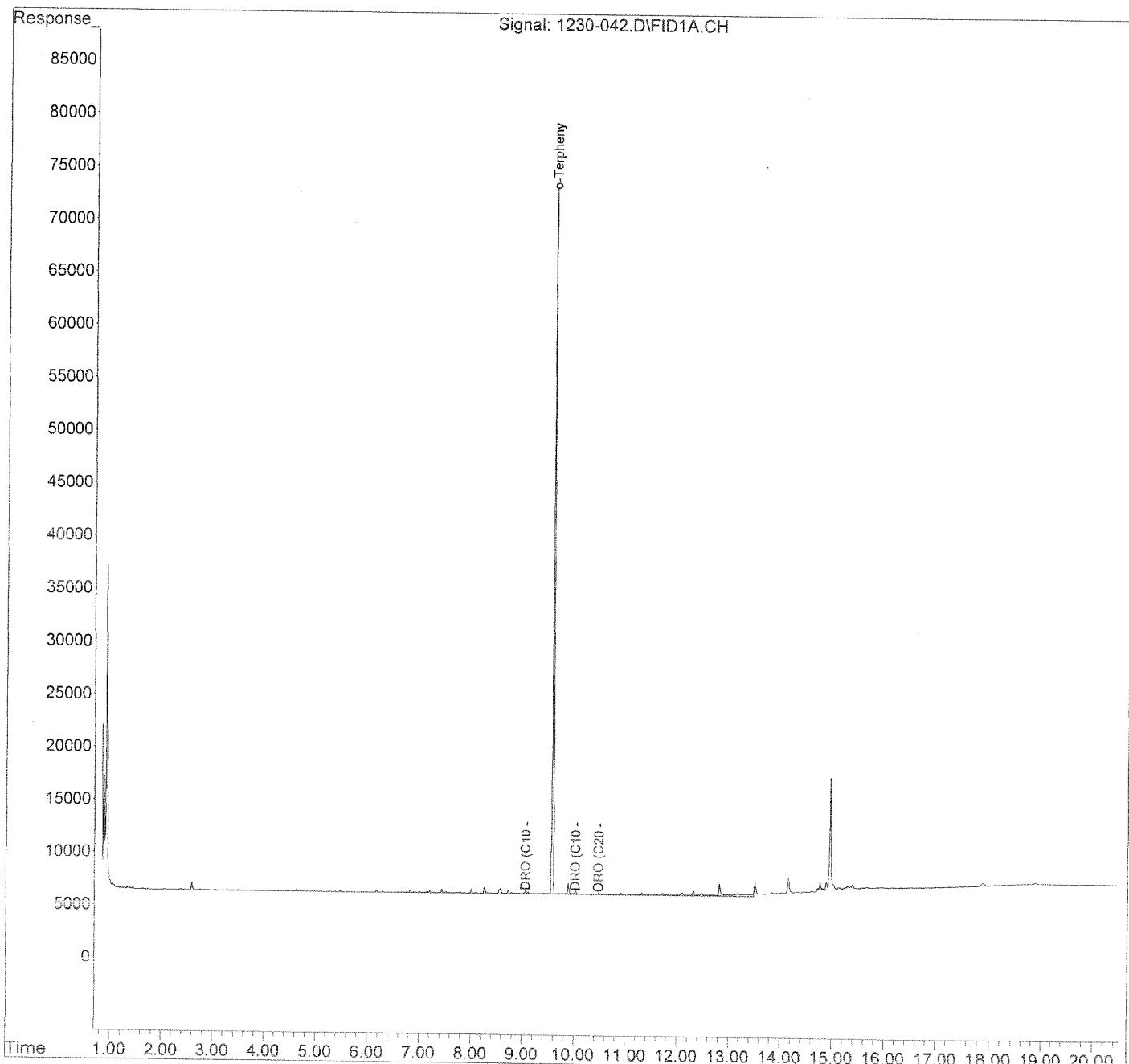
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-042.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 2:35 am  
Operator : KF  
Sample : J1307883-006 SAMP  
Misc : DRO 8015B  
ALS Vial : 21 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 13:00:14 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

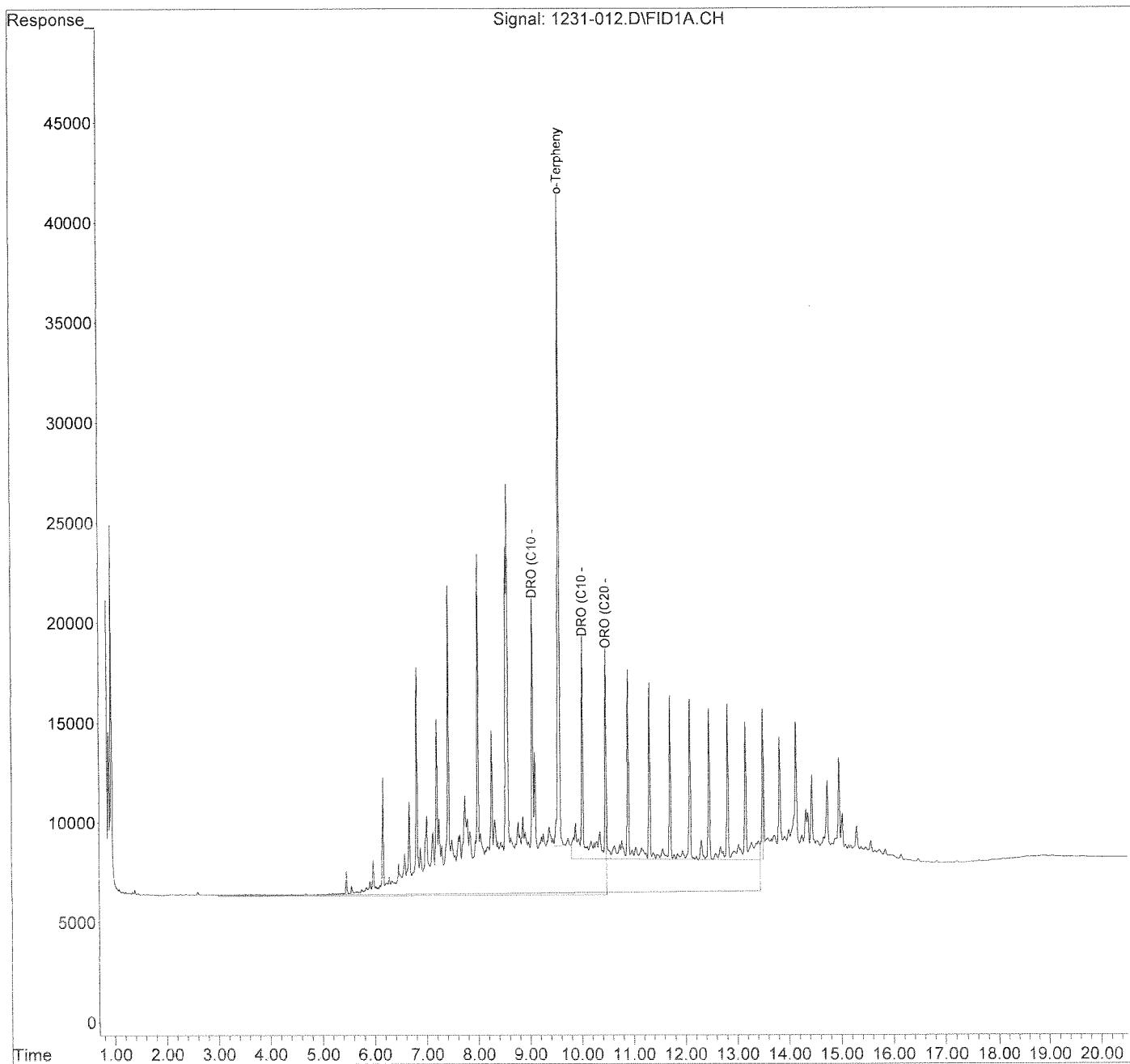
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-131231\  
Data File : 1231-012.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 6:22 pm  
Operator : KF  
Sample : J1307883-007 SAMP; 2X  
Misc : DRO 8015B  
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Jan 02 10:15:30 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

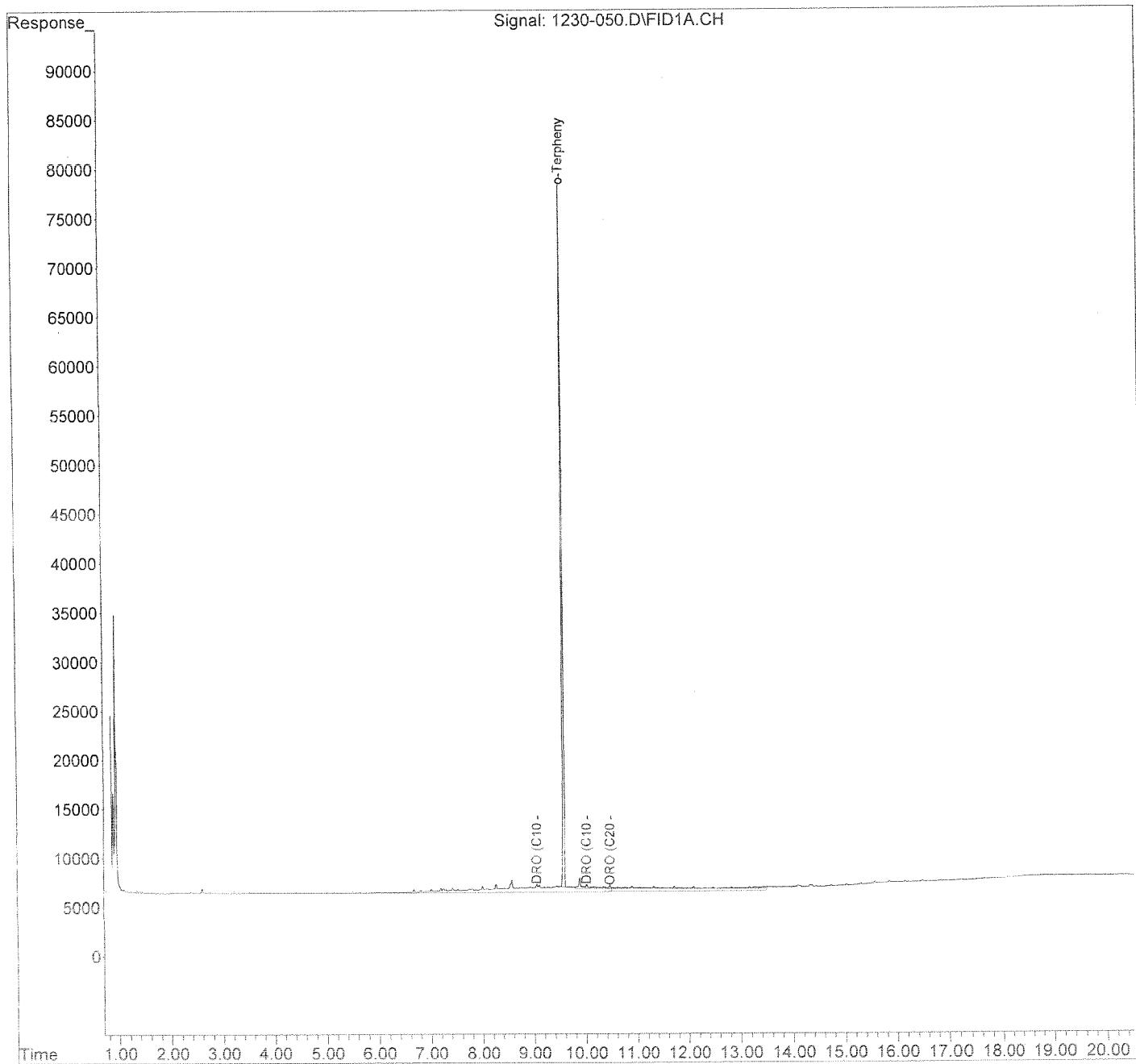
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-050.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 4:25 am  
Operator : KF  
Sample : J1307883-008 SAMP  
Misc : DRO 8015B  
ALS Vial : 25 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 13:02:31 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

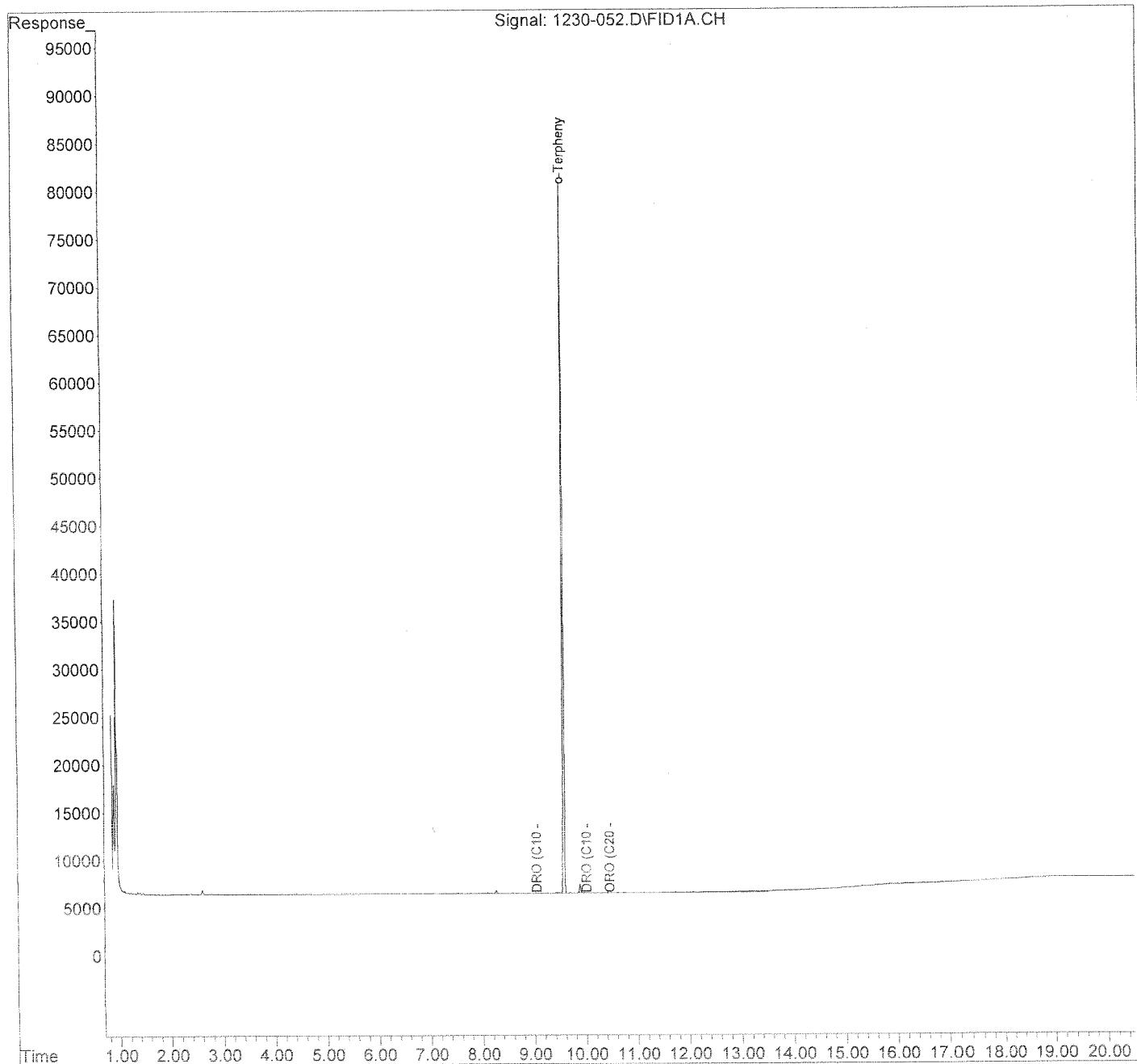
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-052.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 4:52 am  
Operator : KF  
Sample : J1307883-009 SAMP  
Misc : DRO 8015B  
ALS Vial : 26 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 12:53:55 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

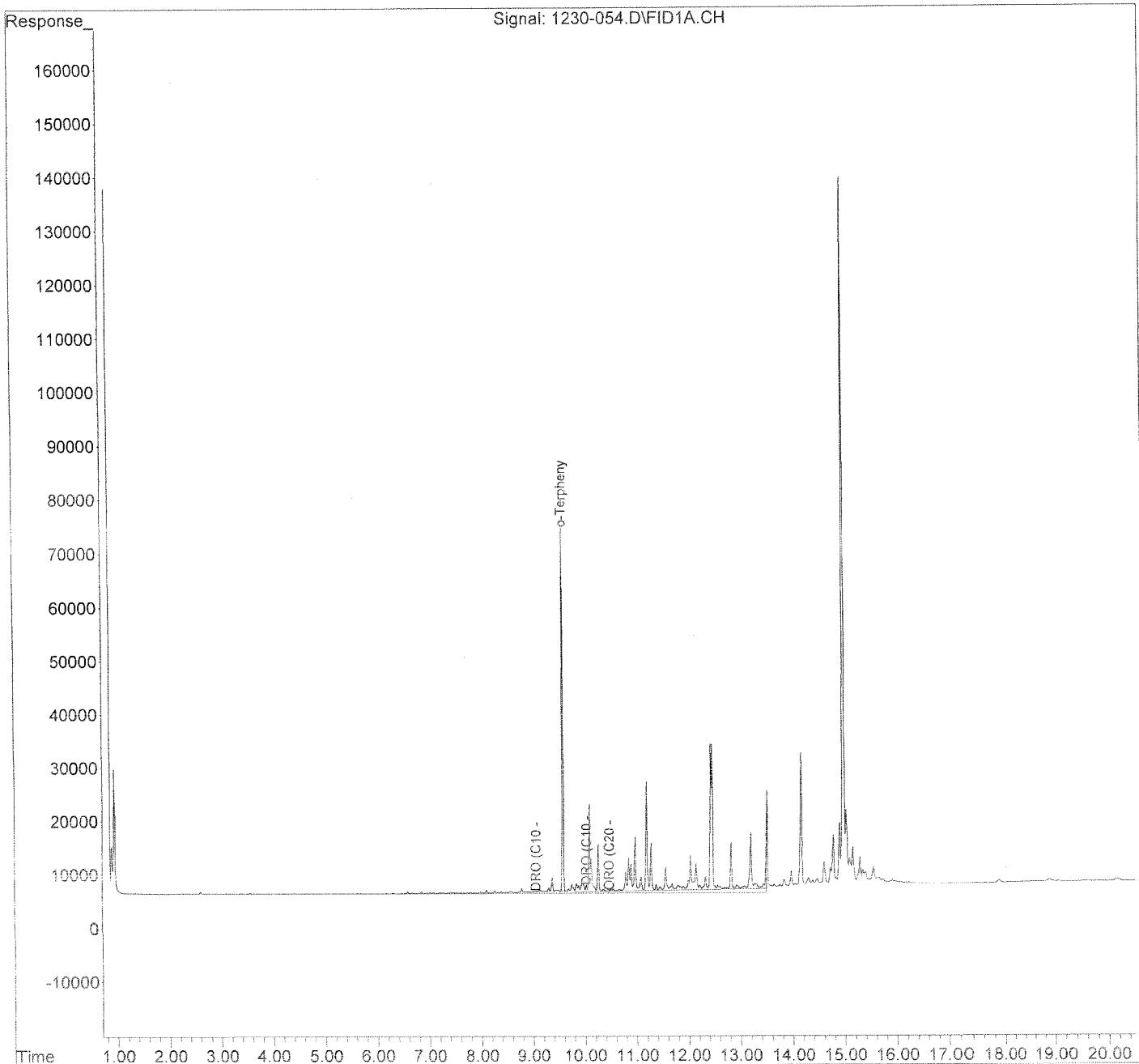
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-054.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 5:19 am  
Operator : KF  
Sample : J1307883-010 SAMP  
Misc : DRO 8015B  
ALS Vial : 27 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 13:03:28 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

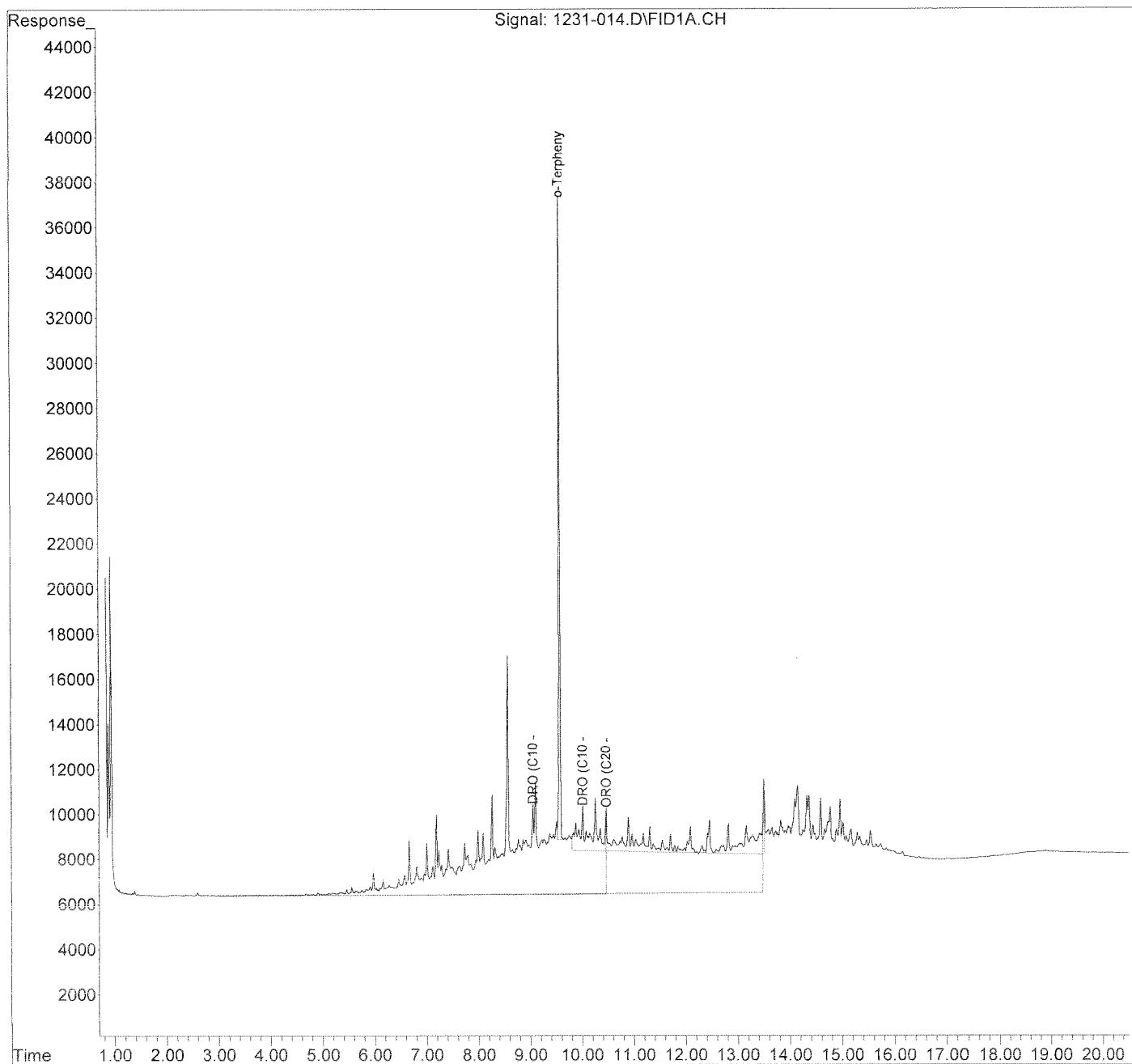
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-131231\  
Data File : 1231-014.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 6:49 pm  
Operator : KF  
Sample : J1307883-011 SAMP; 2X  
Misc : DRO 8015B  
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Jan 02 10:16:12 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

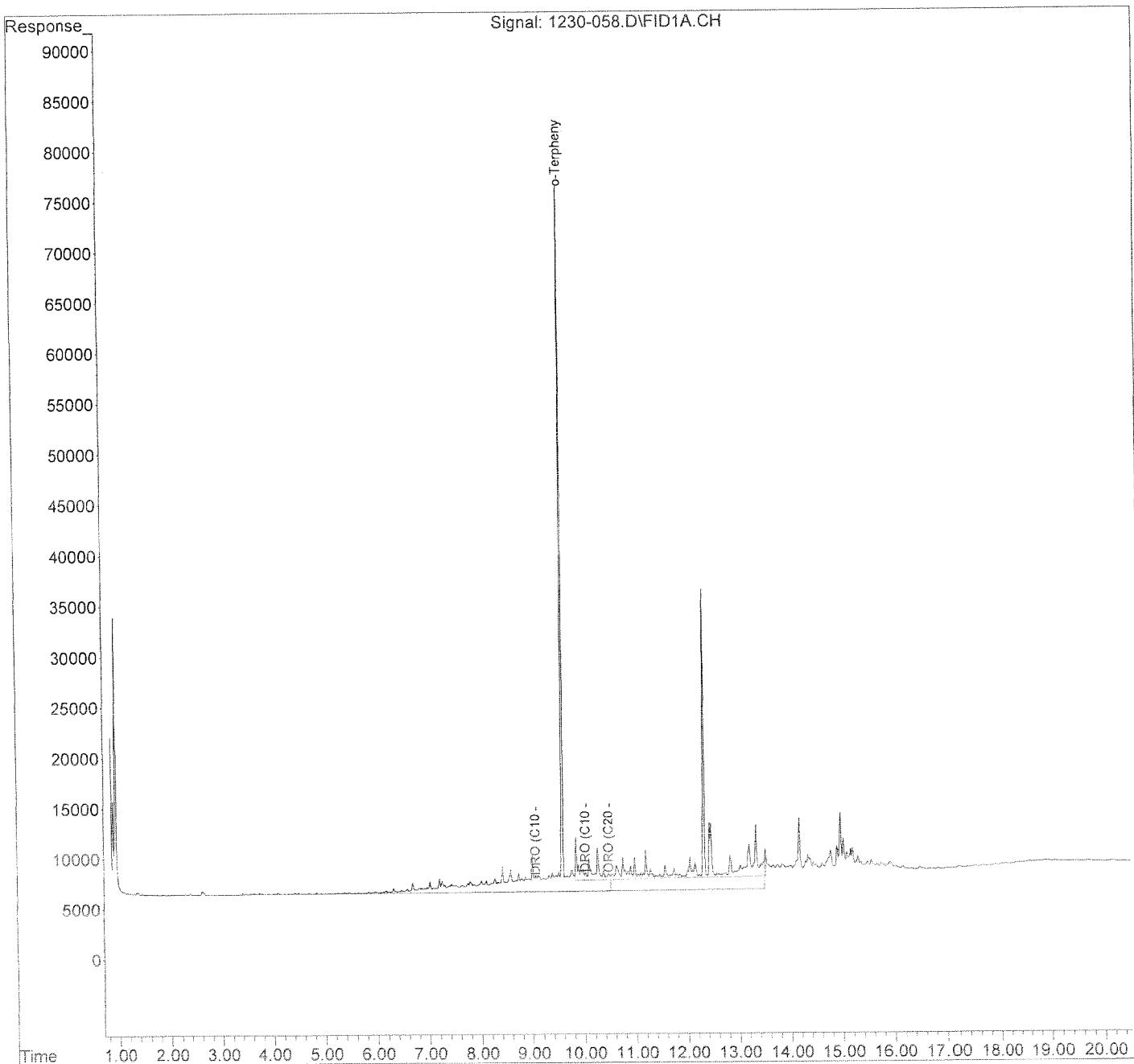
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-058.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 6:14 am  
Operator : KF  
Sample : J1307883-012 SAMP  
Misc : DRO 8015B  
ALS Vial : 29 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 13:04:41 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

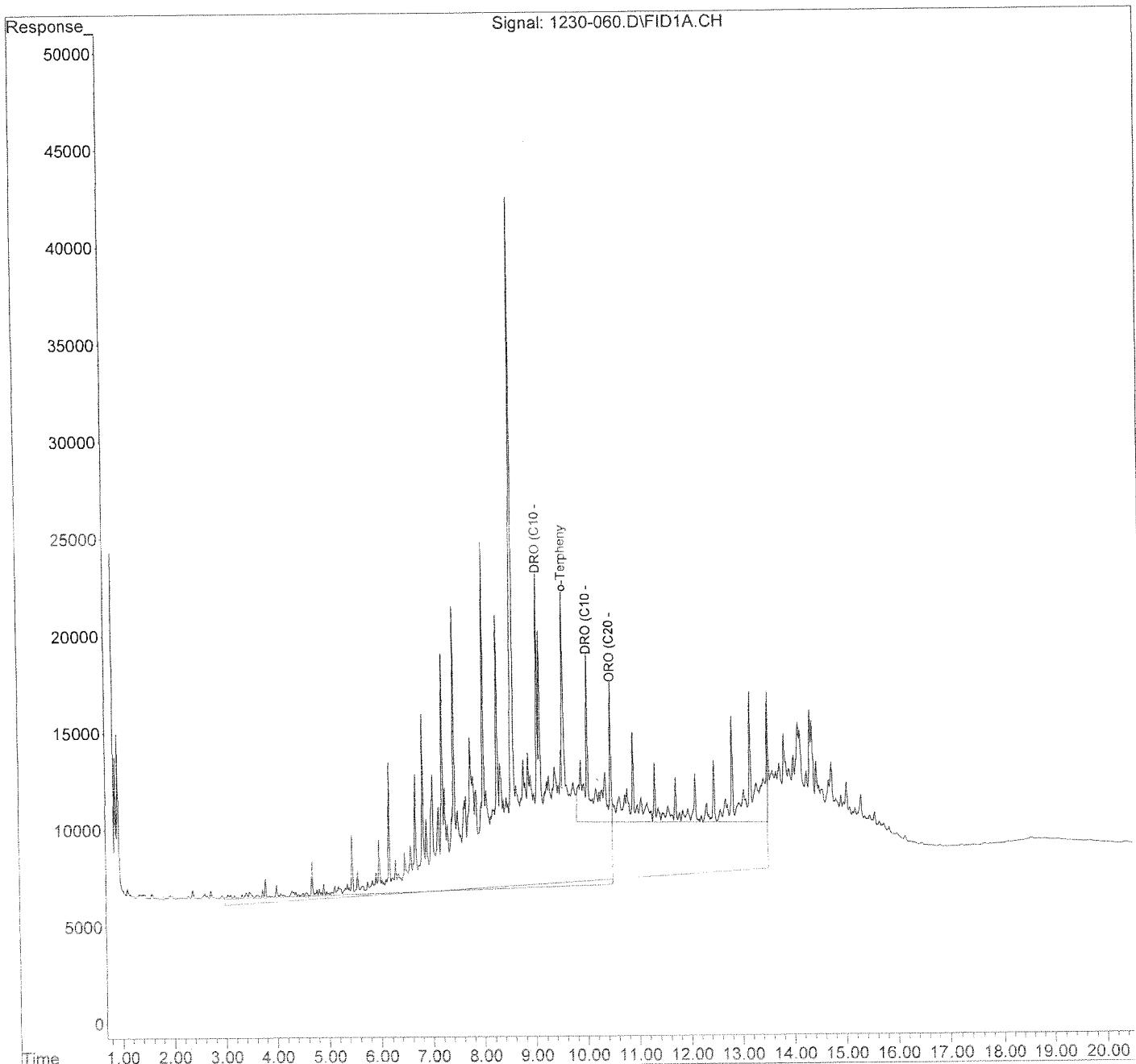
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-131230\  
Data File : 1230-060.D  
Signal(s) : FID1A.CH  
Acq On : 31 Dec 2013 6:42 am  
Operator : KF  
Sample : J1307883-013 SAMP; 20X  
Misc : DRO 8015B  
ALS Vial : 30 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Dec 31 13:05:23 2013  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-131230F.M  
Quant Title : 8015B DRO  
QLast Update : Tue Dec 31 12:52:05 2013  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

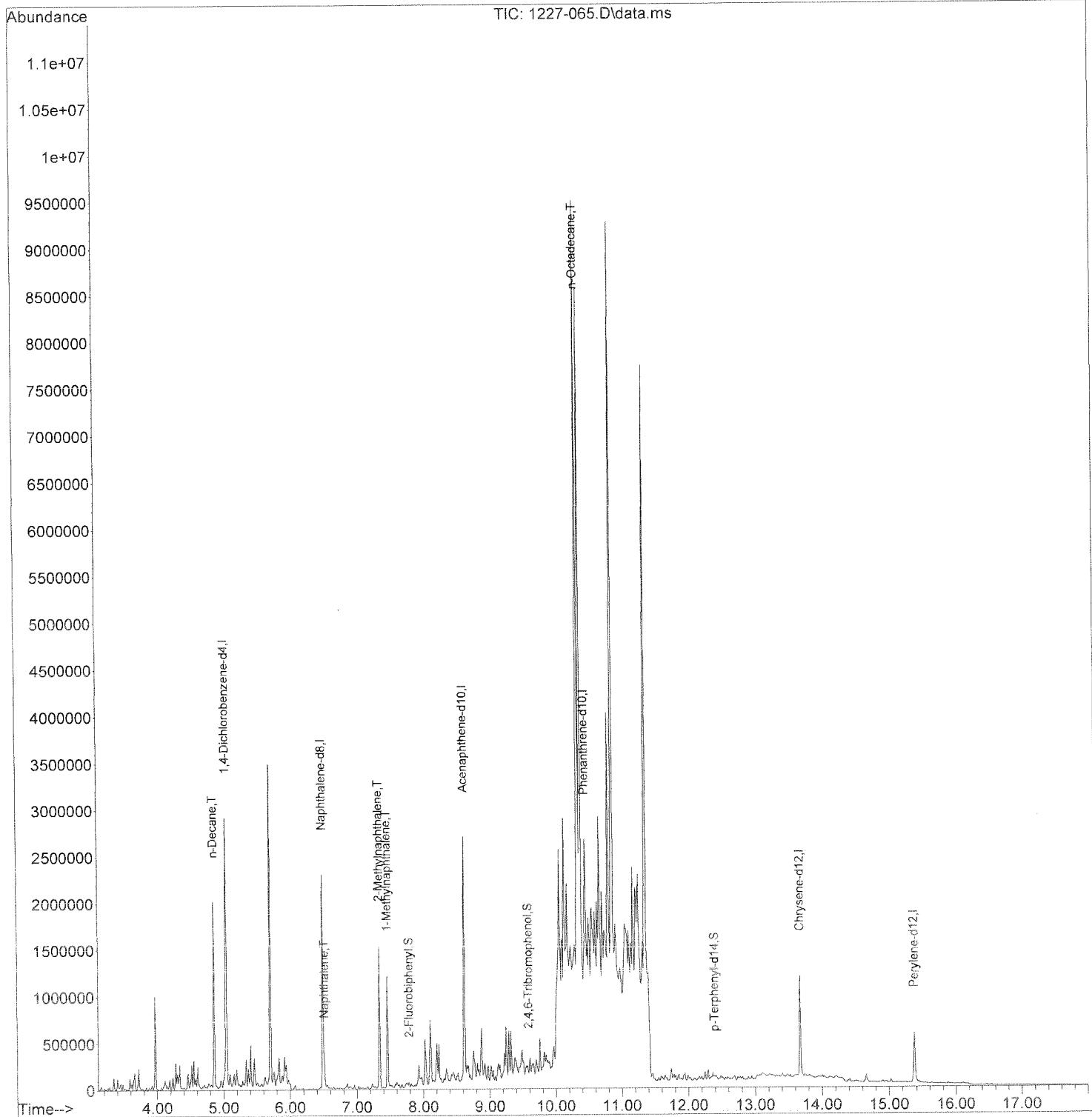
Volume Inj. :  
Signal Phase :  
Signal Info :



## Quantitation Report (QT Reviewed)

Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-065.D  
Acq On : 28 Dec 2013 3:46 pm  
Operator : KF  
Sample : J1307883-013 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 65 Sample Multiplier: 1

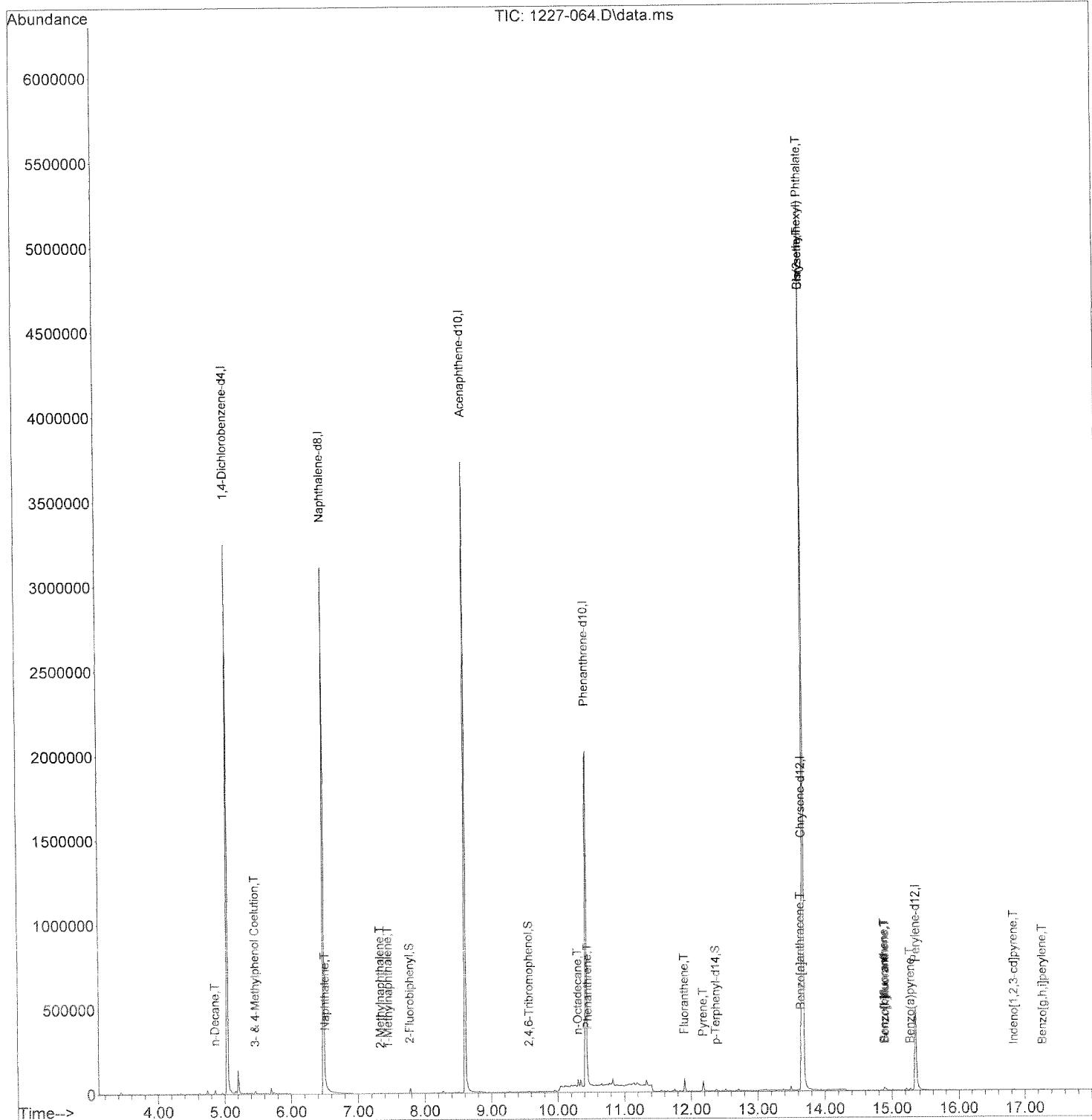
Quant Time: Dec 30 16:17:05 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-064.D  
Acq On : 28 Dec 2013 3:21 pm  
Operator : KF  
Sample : J1307883-012 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 64 Sample Multiplier: 1

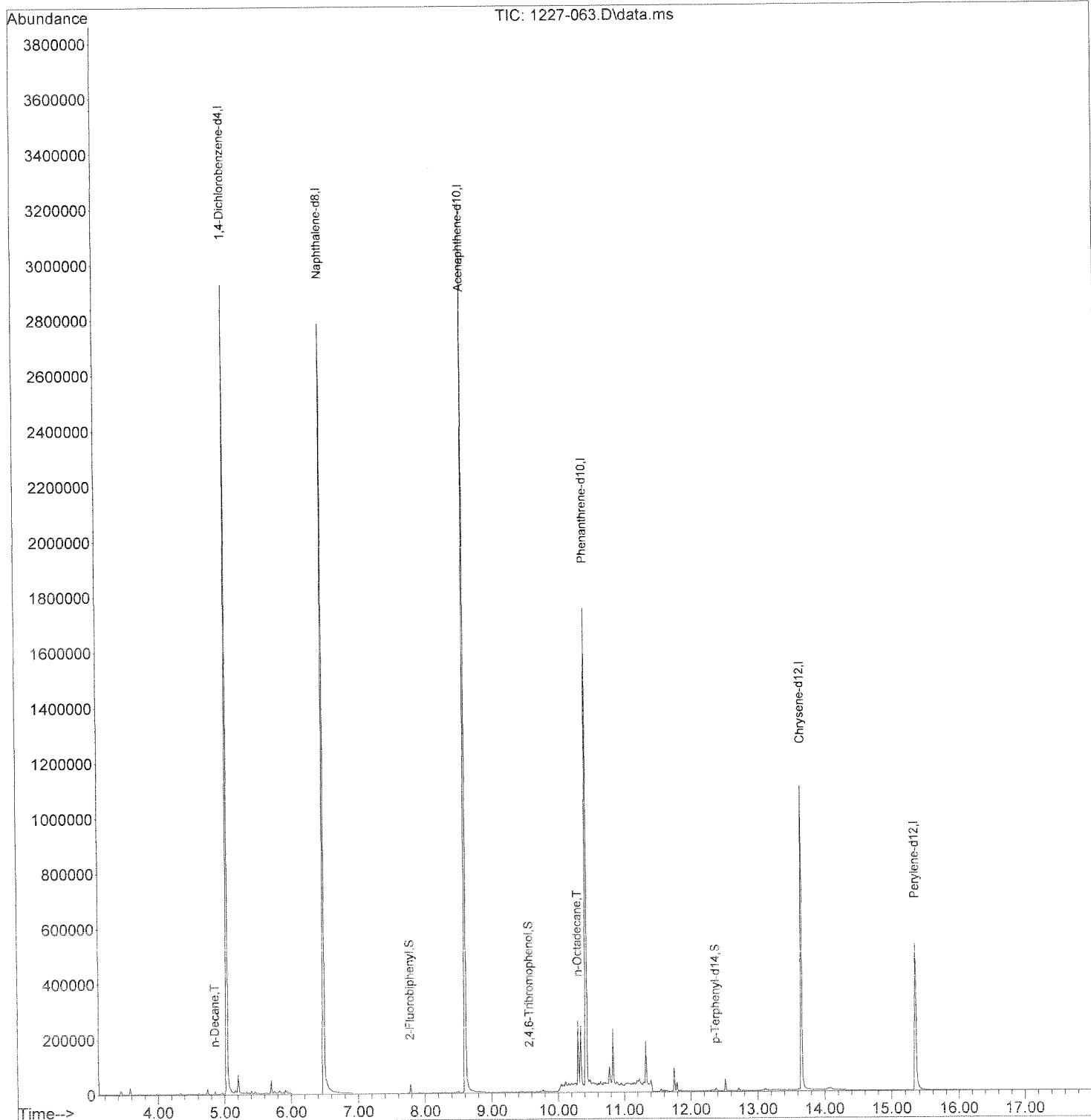
Quant Time: Dec 30 16:15:47 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-063.D  
Acq On : 28 Dec 2013 2:56 pm  
Operator : KF  
Sample : J1307883-011 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 63 Sample Multiplier: 1

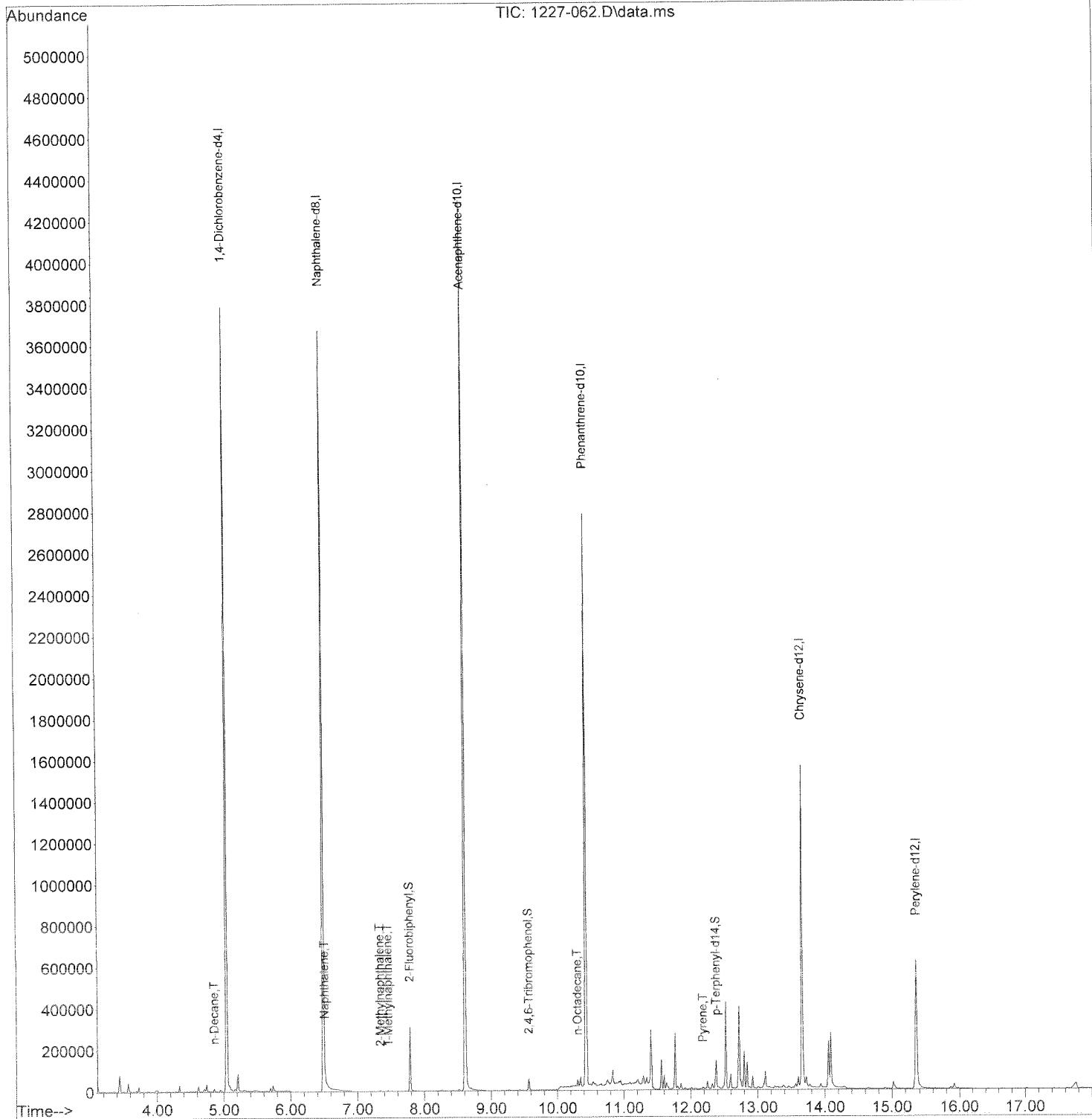
Quant Time: Dec 30 16:14:39 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-062.D  
Acq On : 28 Dec 2013 2:31 pm  
Operator : KF  
Sample : J1307883-010 SAMP  
Misc : 8270C SIM  
ALS Vial : 62 Sample Multiplier: 1

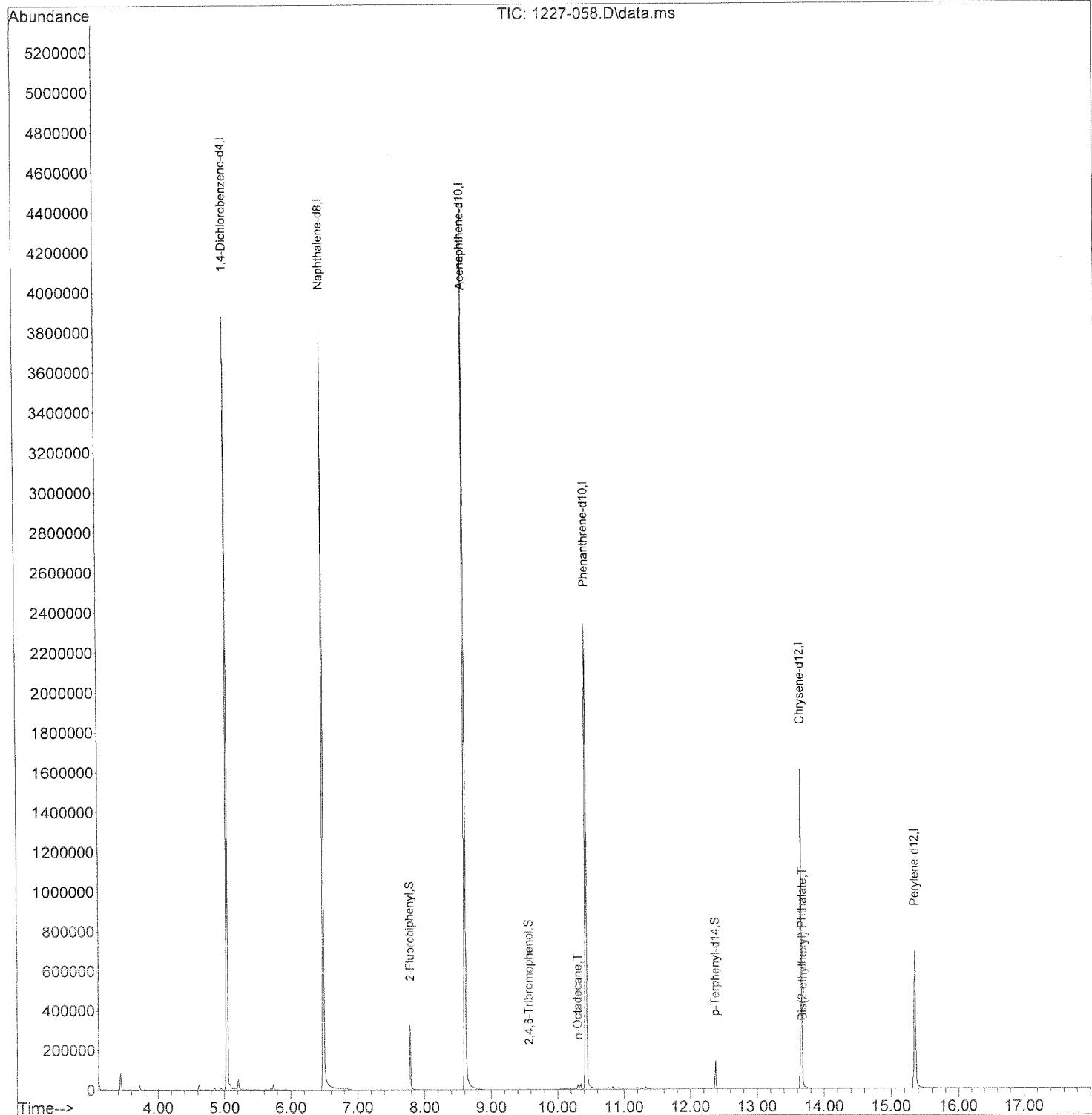
Quant Time: Dec 30 16:13:49 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-058.D  
Acq On : 28 Dec 2013 12:57 pm  
Operator : KF  
Sample : J1307883-009 SAMP  
Misc : 8270C SIM  
ALS Vial : 58 Sample Multiplier: 1

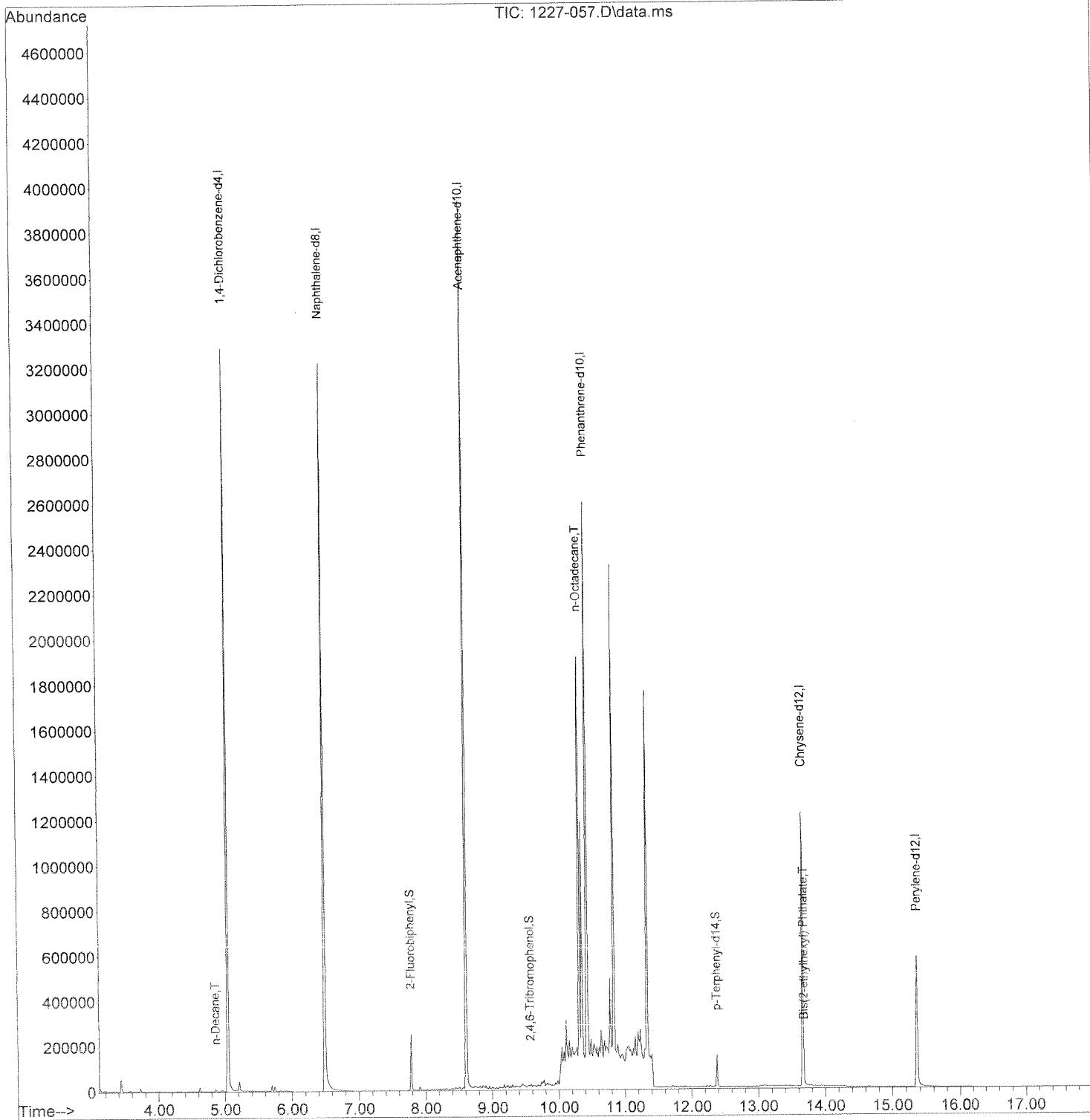
Quant Time: Dec 30 13:44:07 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-057.D  
Acq On : 28 Dec 2013 12:32 pm  
Operator : KF  
Sample : J1307883-008 SAMP  
Misc : 8270C SIM  
ALS Vial : 57 Sample Multiplier: 1

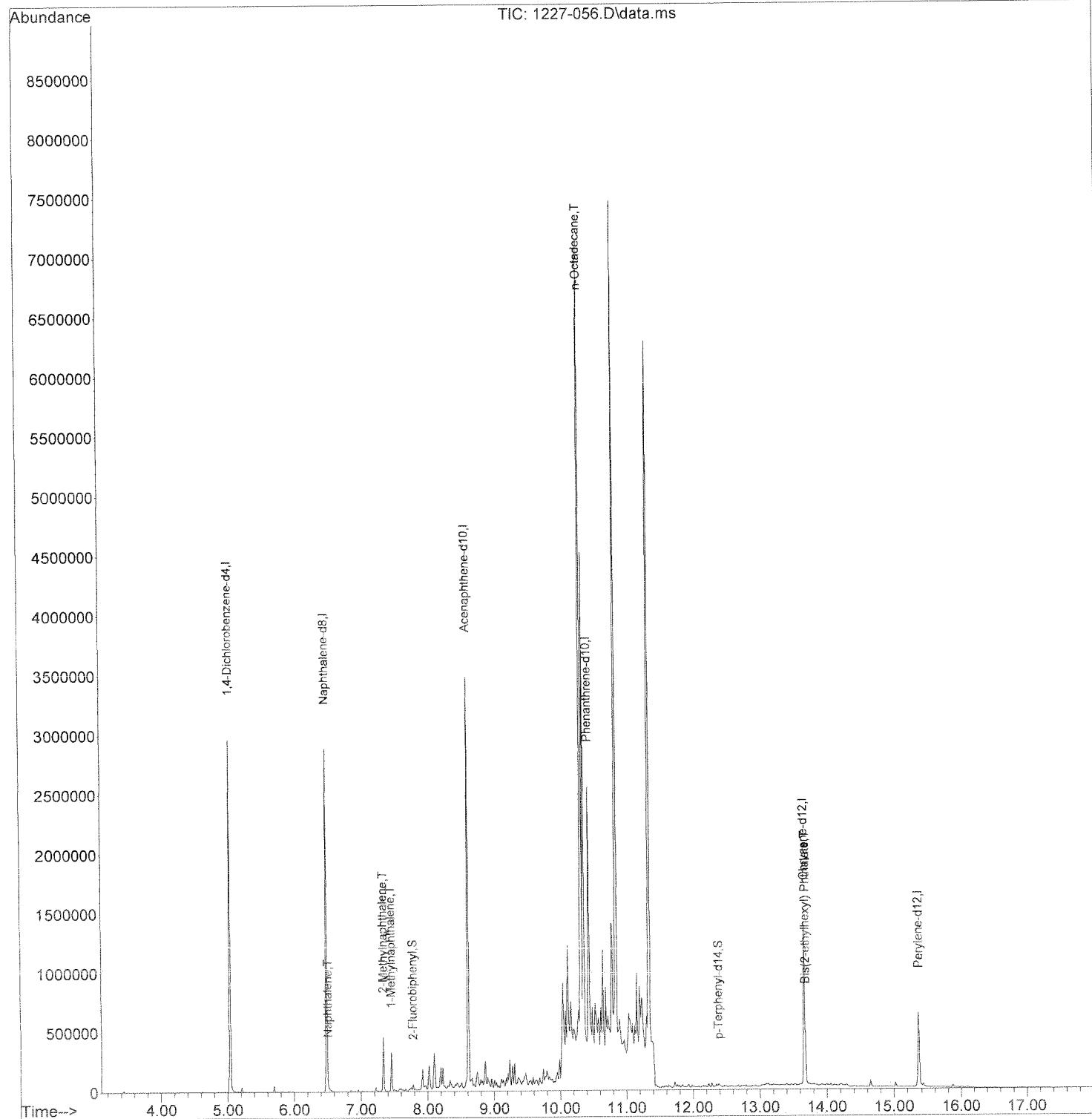
Quant Time: Dec 30 13:43:20 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-056.D  
Acq On : 28 Dec 2013 12:08 pm  
Operator : KF  
Sample : J1307883-007 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 56 Sample Multiplier: 1

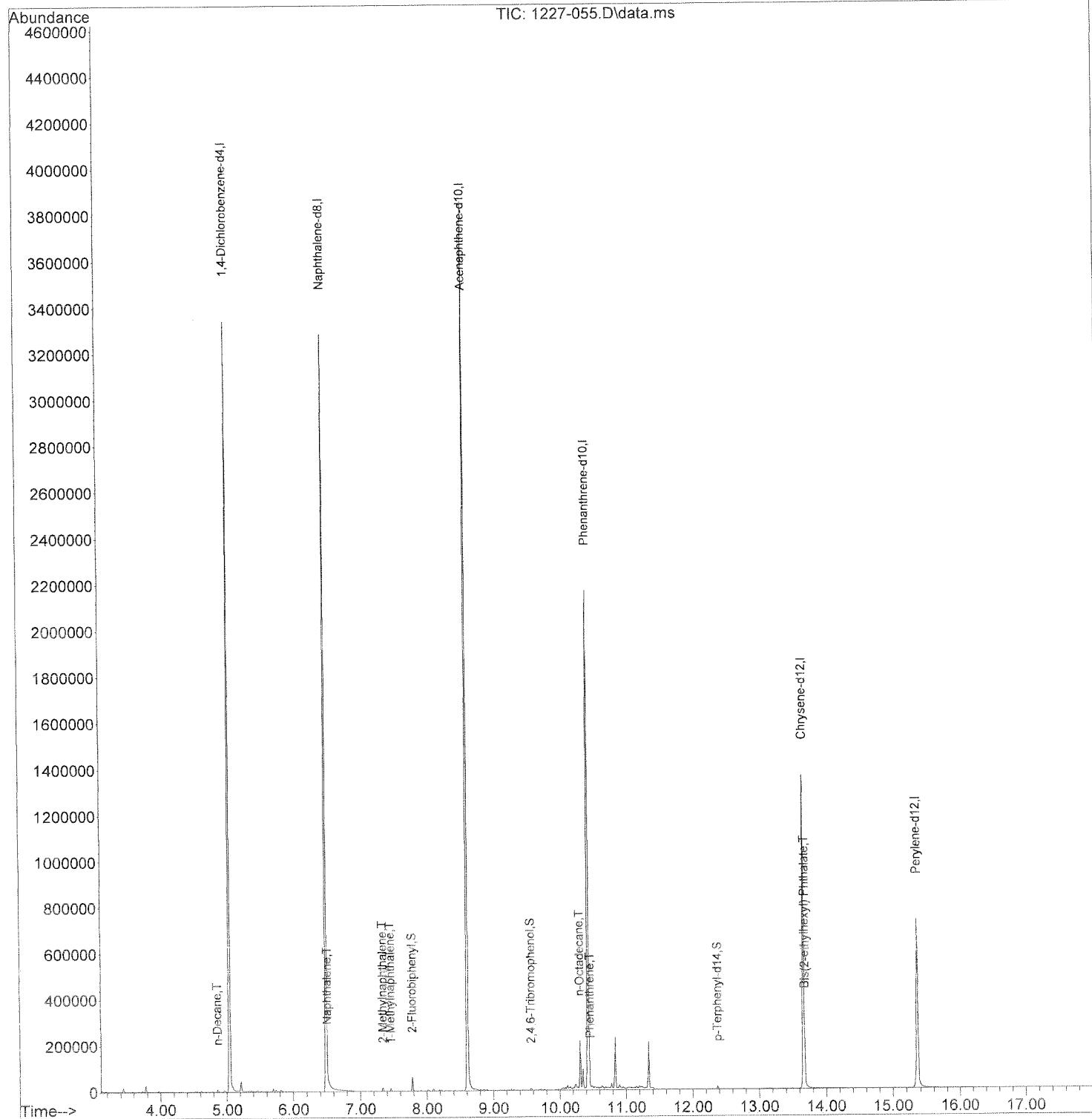
Quant Time: Dec 30 13:42:16 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-055.D  
Acq On : 28 Dec 2013 11:43 am  
Operator : KF  
Sample : J1307883-006 SAMP  
Misc : 8270C SIM  
ALS Vial : 55 Sample Multiplier: 1

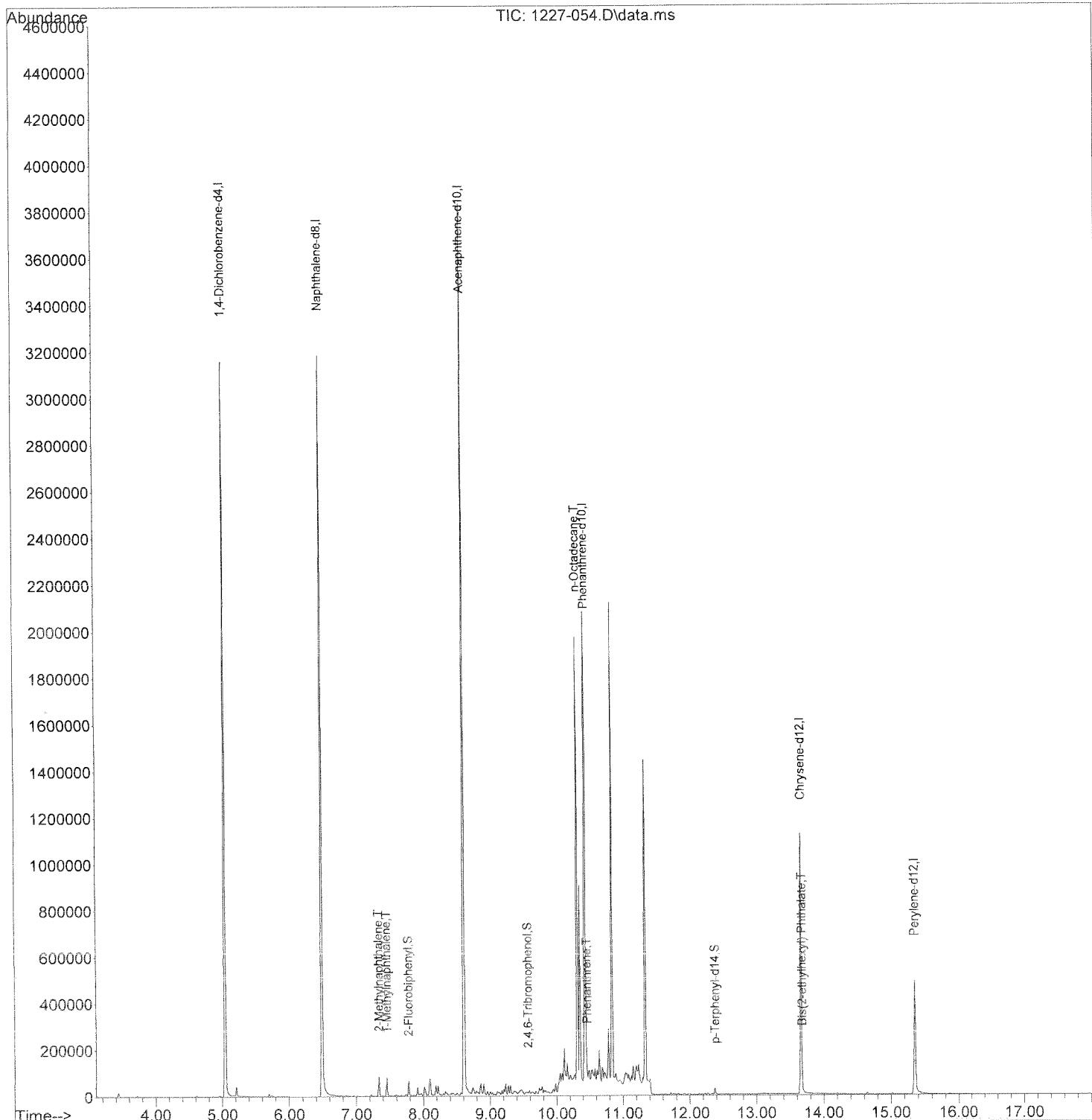
Quant Time: Dec 30 13:41:10 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

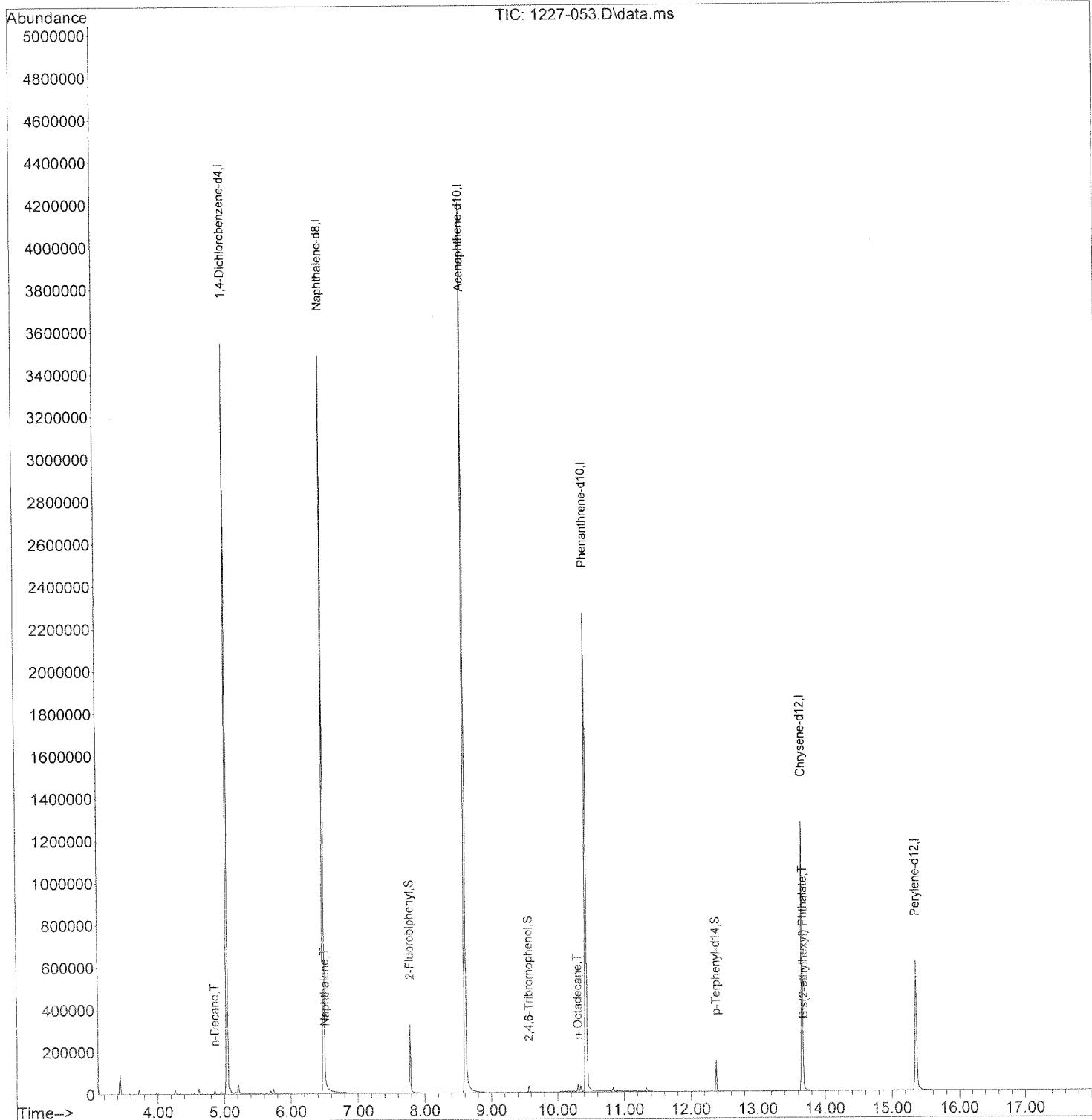
Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-054.D  
Acq On : 28 Dec 2013 11:18 am  
Operator : KF  
Sample : J1307883-005 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 54 Sample Multiplier: 1

Quant Time: Dec 30 13:40:18 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-053.D  
Acq On : 28 Dec 2013 10:53 am  
Operator : KF  
Sample : J1307883-004 SAMP  
Misc : 8270C SIM  
ALS Vial : 53 Sample Multiplier: 1

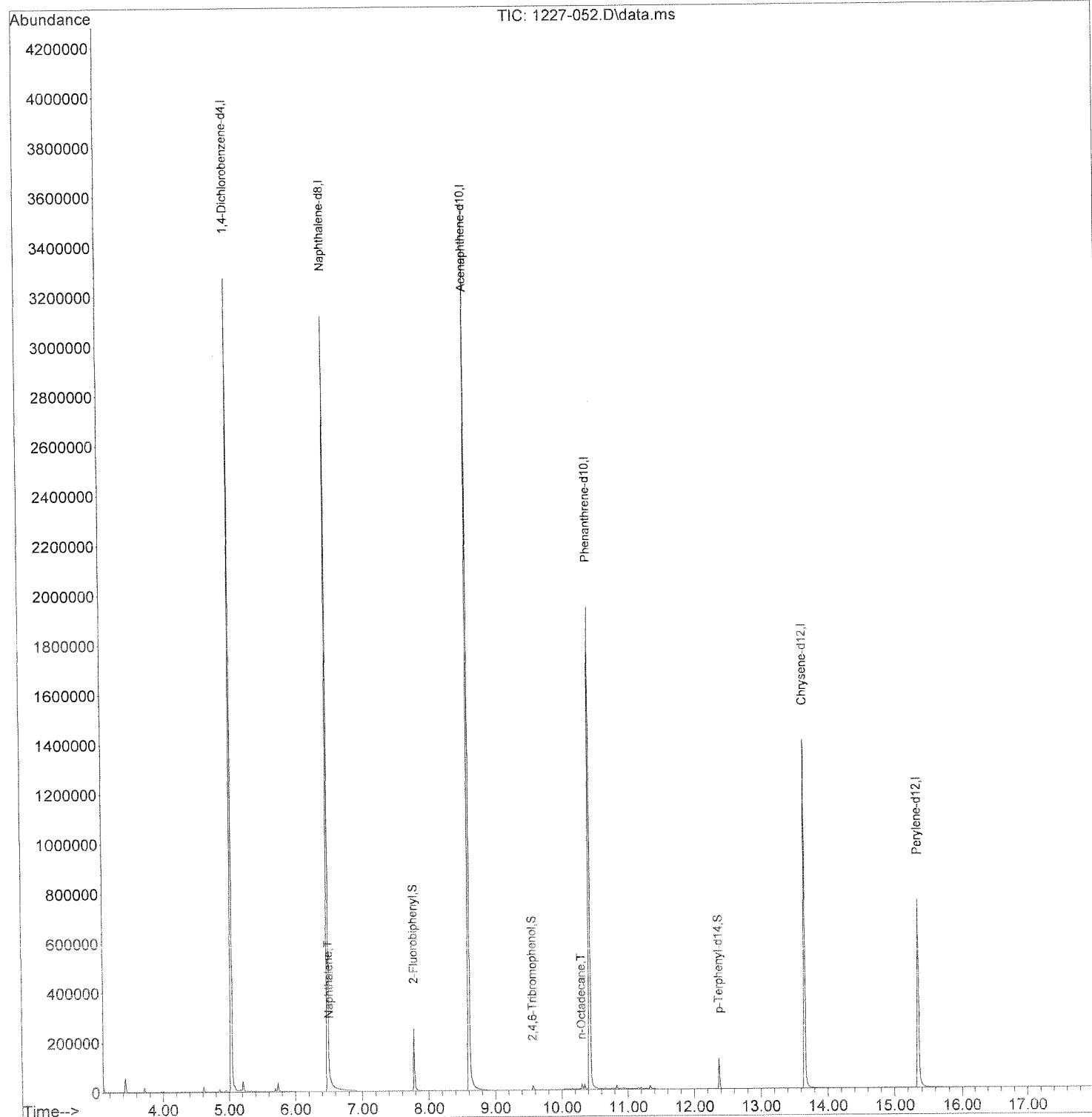
Quant Time: Dec 30 13:39:17 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

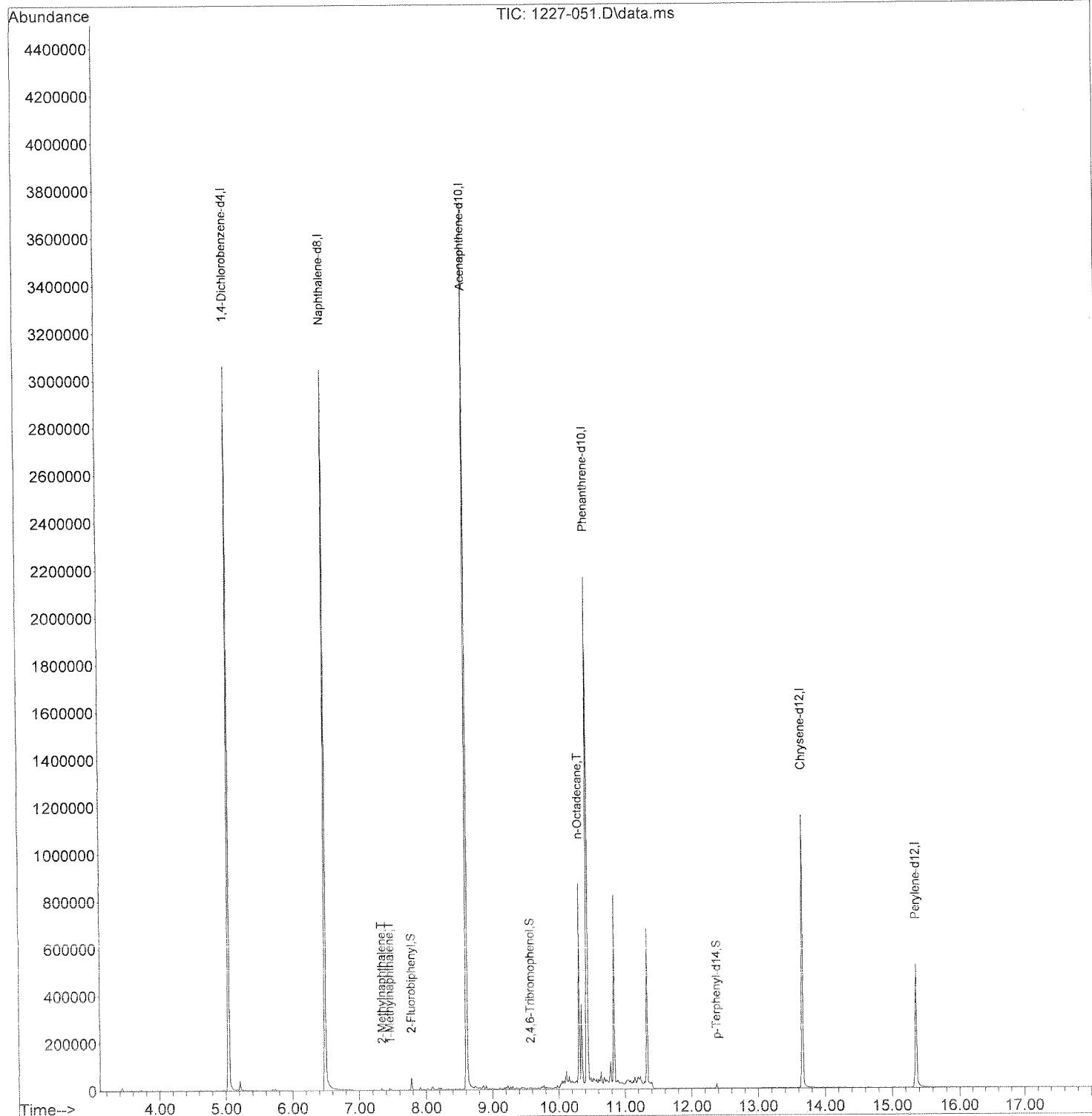
Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-052.D  
Acq On : 28 Dec 2013 10:28 am  
Operator : KF  
Sample : J1307883-003 SAMP  
Misc : 8270C SIM  
ALS Vial : 52 Sample Multiplier: 1

Quant Time: Dec 30 13:38:29 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-051.D  
Acq On : 28 Dec 2013 10:04 am  
Operator : KF  
Sample : J1307883-002 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 51 Sample Multiplier: 1

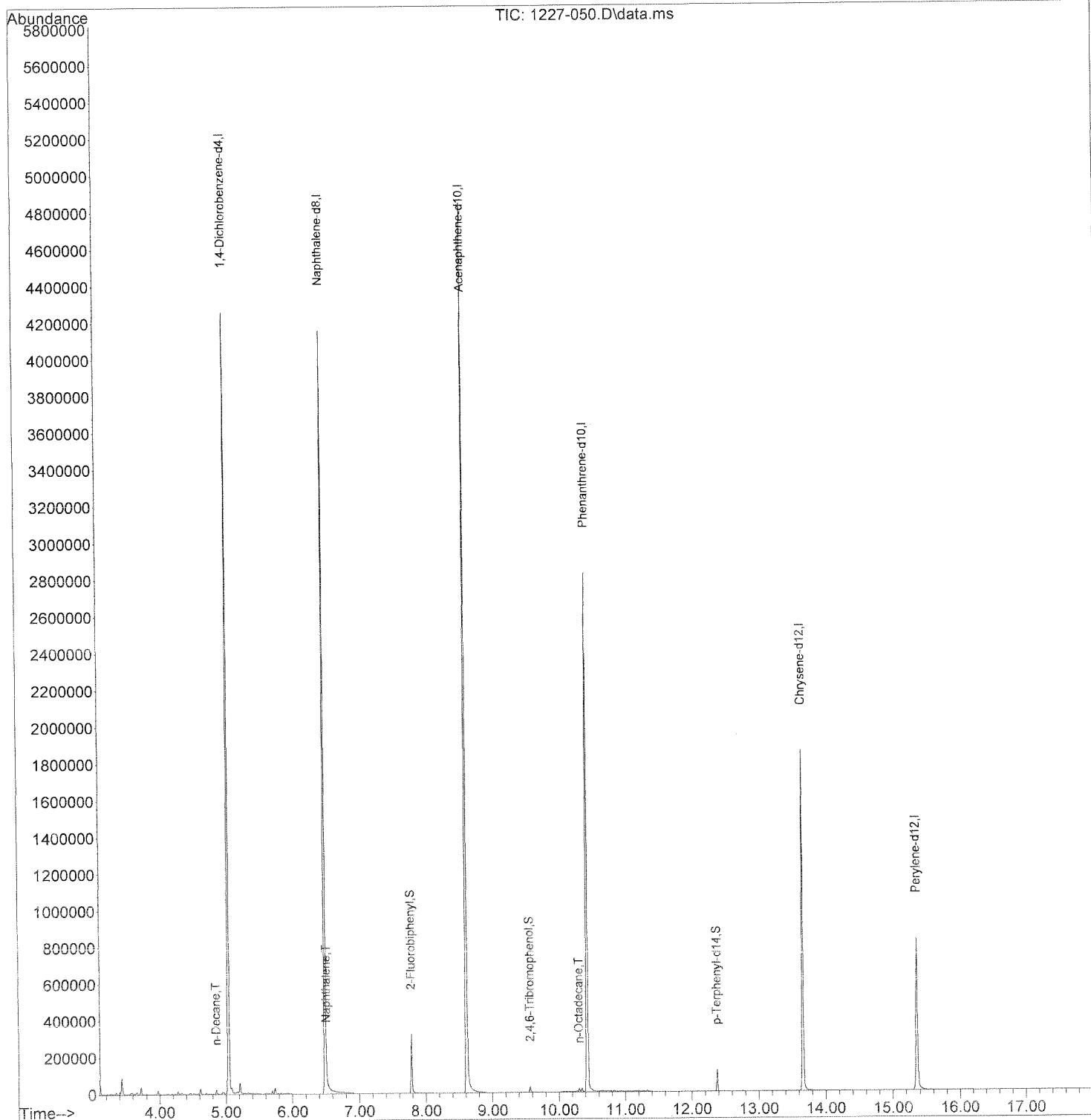
Quant Time: Dec 30 13:37:33 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131227\  
Data File : 1227-050.D  
Acq On : 28 Dec 2013 9:39 am  
Operator : KF  
Sample : J1307883-001 SAMP  
Misc : 8270C SIM  
ALS Vial : 50 Sample Multiplier: 1

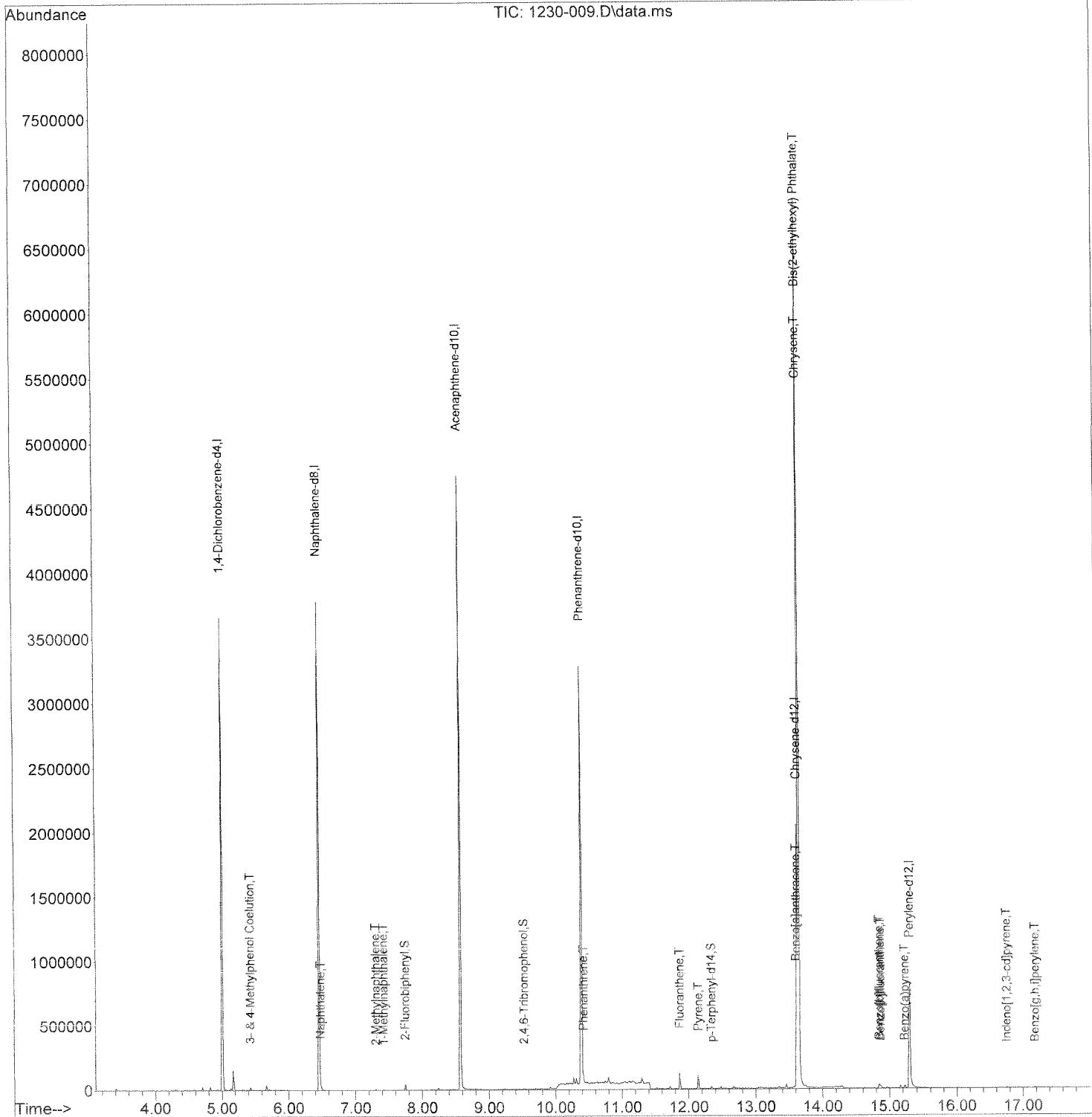
Quant Time: Dec 30 13:36:34 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131230\  
Data File : 1230-009.D  
Acq On : 30 Dec 2013 6:09 pm  
Operator : KF  
Sample : J1307883-012 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 9 Sample Multiplier: 1

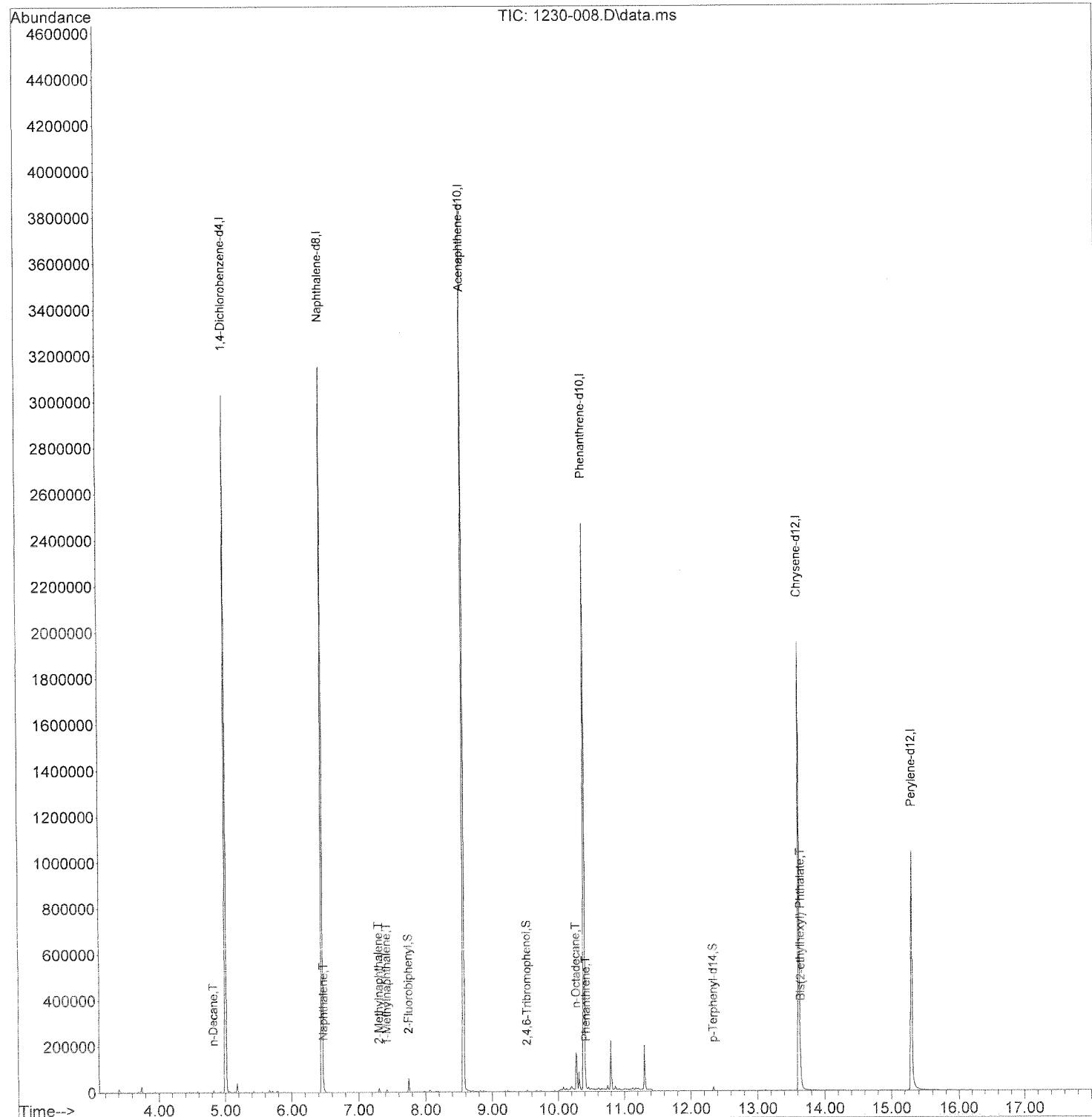
Quant Time: Dec 31 09:33:41 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



## Quantitation Report (QT Reviewed)

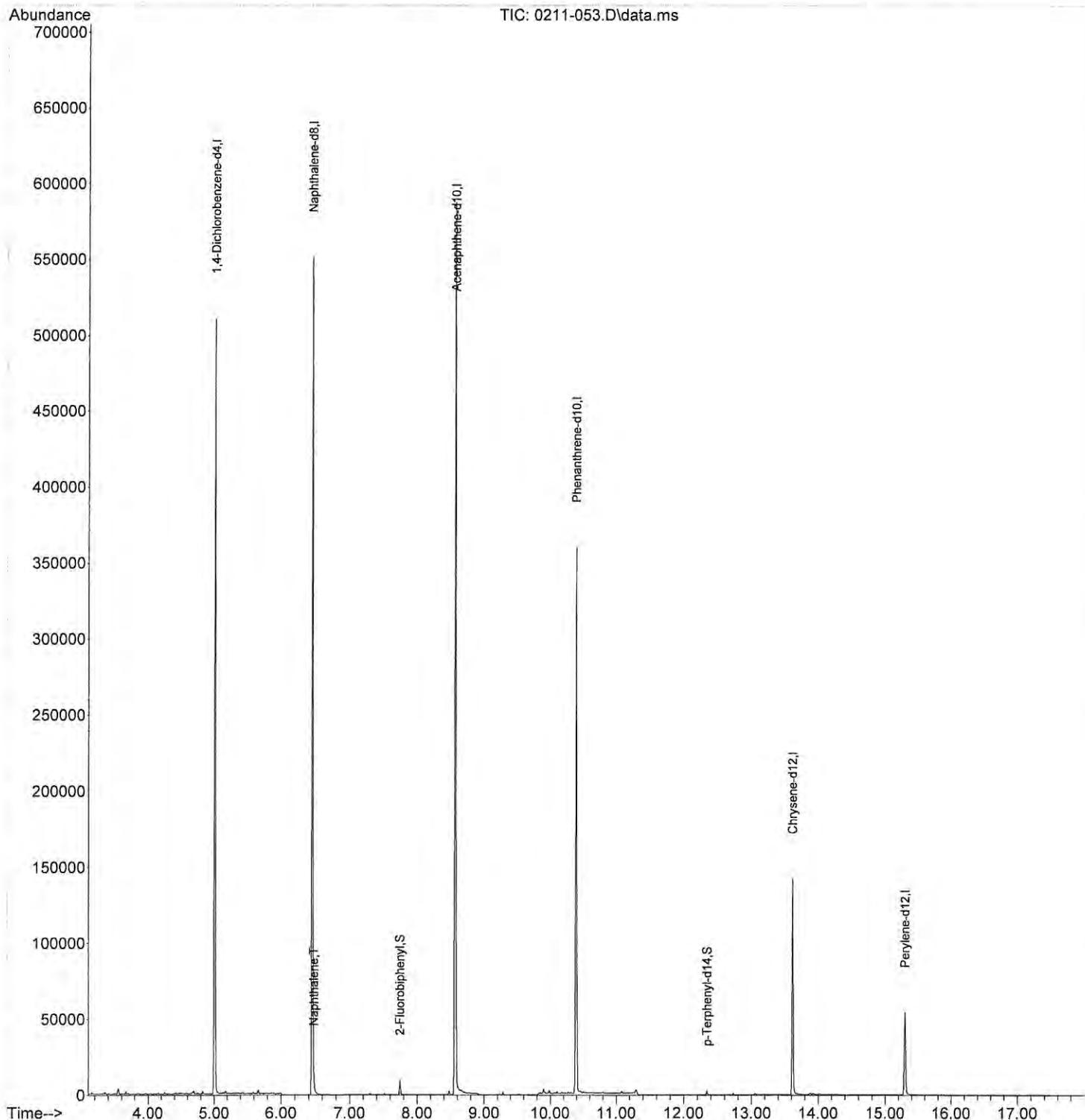
Data Path : J:\MS02\DATA\MS02 2013 DATA\MS02-131230\  
Data File : 1230-008.D  
Acq On : 30 Dec 2013 5:45 pm  
Operator : KF  
Sample : J1307883-006 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 31 09:32:27 2013  
Quant Method : J:\MS02\METHODS\MS02-131226SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Dec 27 08:23:00 2013  
Response via : Initial Calibration



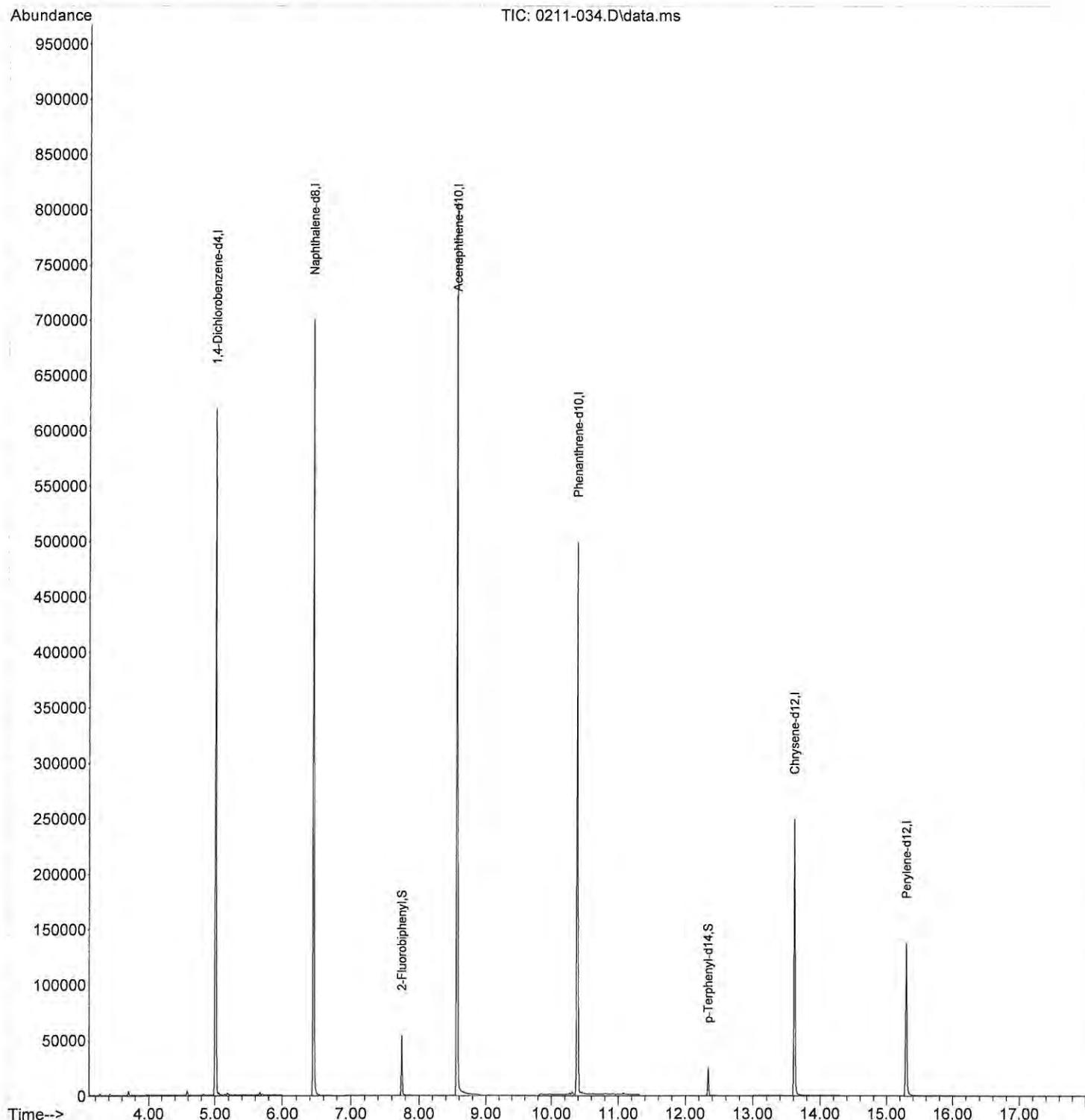
Data Path : I:\MS02\DATA\MS02-140211\  
Data File : 0211-053.D  
Acq On : 12 Feb 2014 9:39 am  
Operator : KF  
Sample : J1400817-001 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 48 Sample Multiplier: 1

Quant Time: Feb 12 13:17:10 2014  
Quant Method : J:\MS02\METHODS\MS02-140211SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Wed Feb 12 10:54:12 2014  
Response via : Initial Calibration



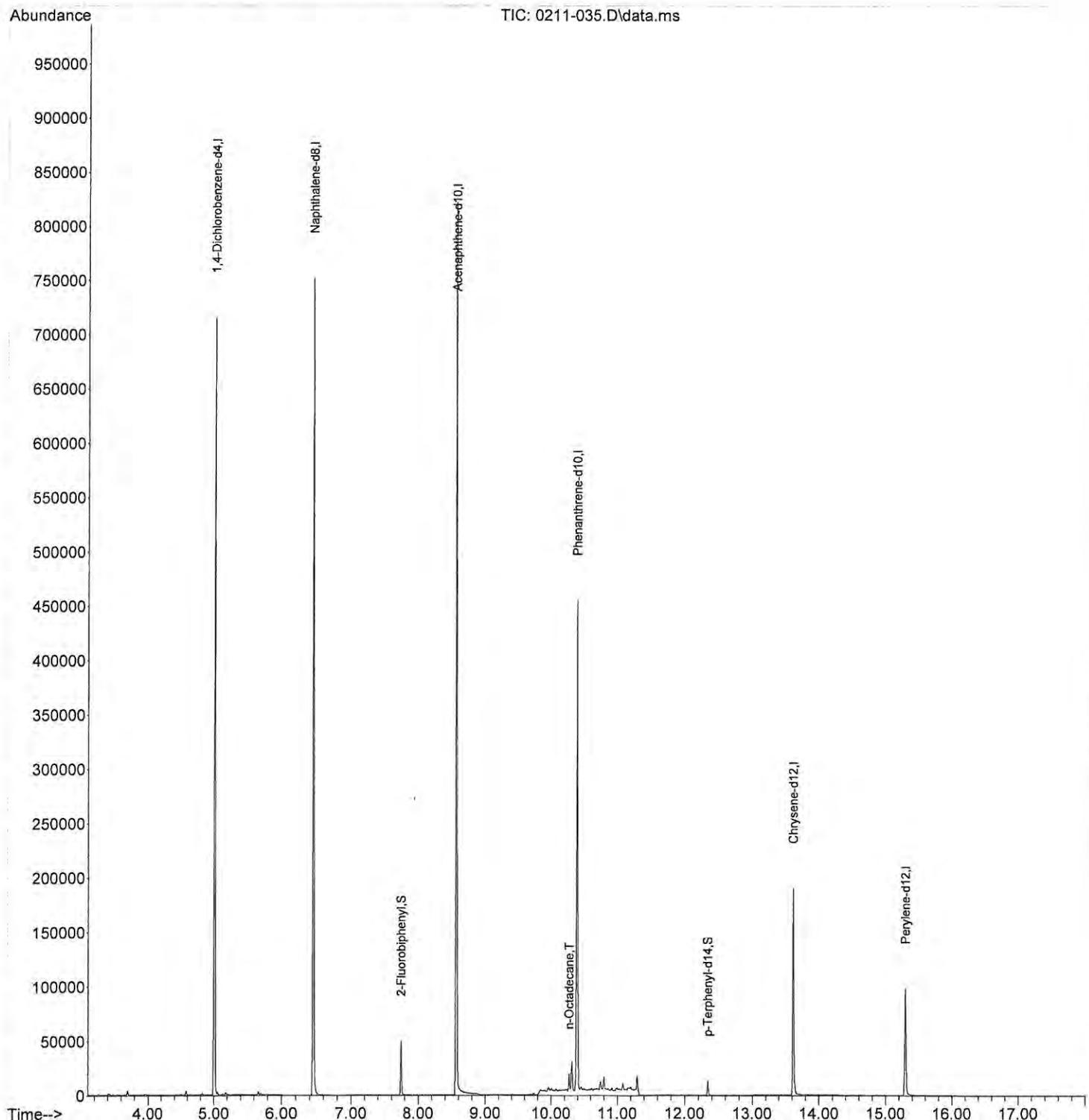
Data Path : I:\MS02\DATA\MS02-140211\  
Data File : 0211-034.D  
Acq On : 12 Feb 2014 1:50 am  
Operator : KF  
Sample : J1400817-002 SAMP  
Misc : 8270C SIM  
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Feb 12 12:59:22 2014  
Quant Method : J:\MS02\METHODS\MS02-140211SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Wed Feb 12 10:54:12 2014  
Response via : Initial Calibration



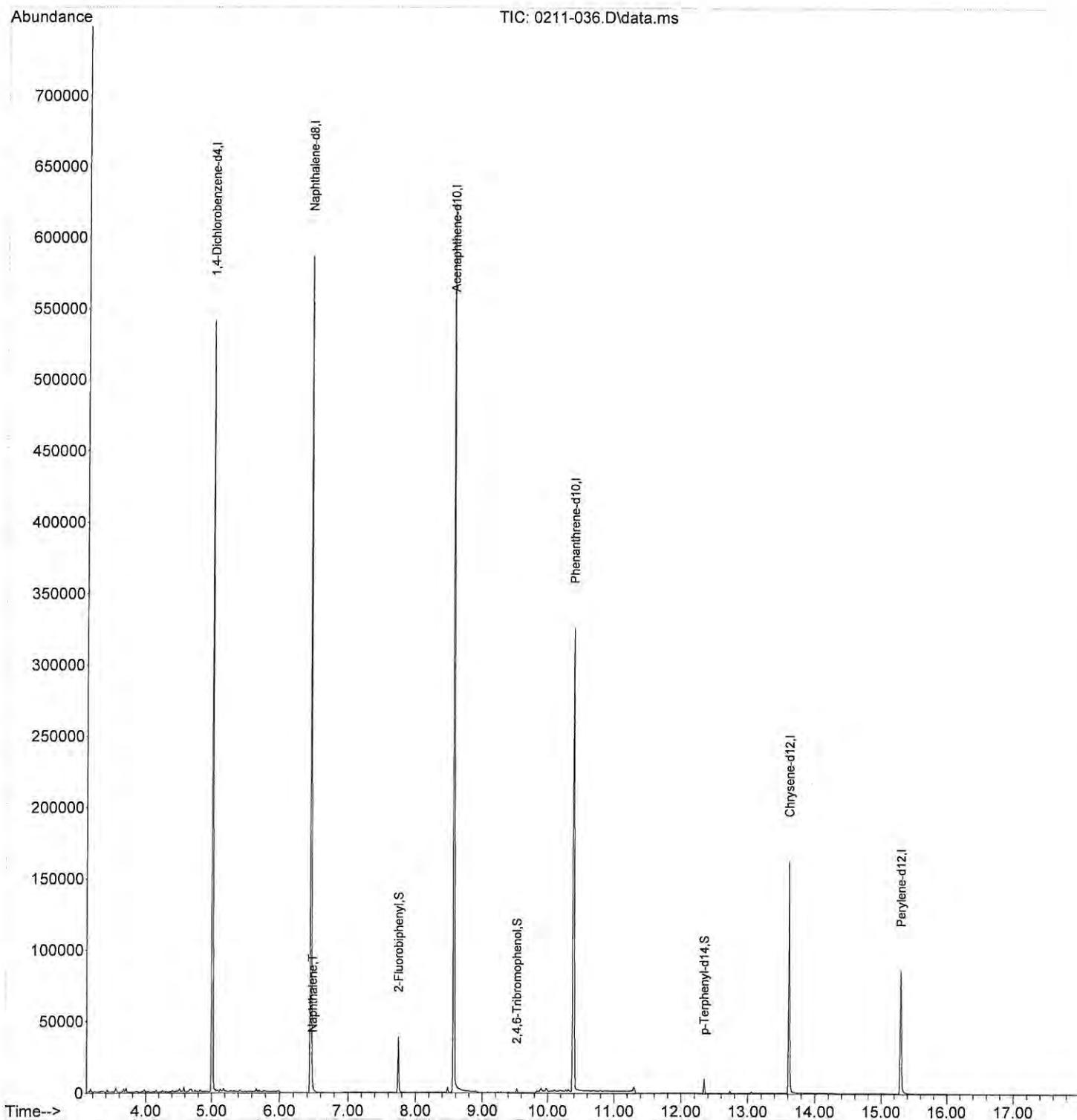
Data Path : I:\MS02\DATA\MS02-140211\  
Data File : 0211-035.D  
Acq On : 12 Feb 2014 2:14 am  
Operator : KF  
Sample : J1400817-003 SAMP  
Misc : 8270C SIM  
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Feb 12 12:59:57 2014  
Quant Method : J:\MS02\METHODS\MS02-140211SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Wed Feb 12 10:54:12 2014  
Response via : Initial Calibration



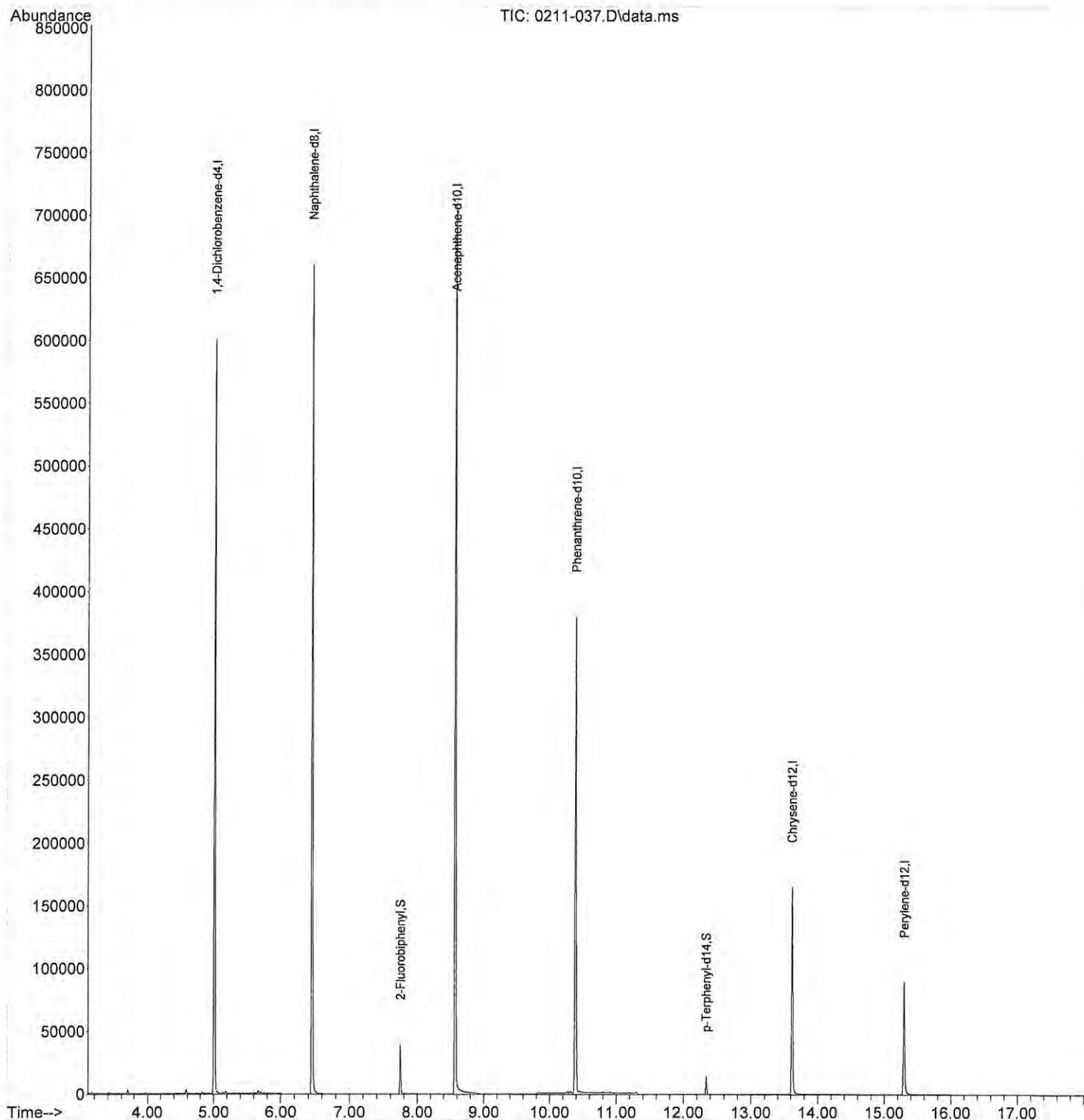
Data Path : I:\MS02\DATA\MS02-140211\  
Data File : 0211-036.D  
Acq On : 12 Feb 2014 2:39 am  
Operator : KF  
Sample : J1400817-004 SAMP  
Misc : 8270C SIM  
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Feb 12 13:01:05 2014  
Quant Method : J:\MS02\METHODS\MS02-140211SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Wed Feb 12 10:54:12 2014  
Response via : Initial Calibration



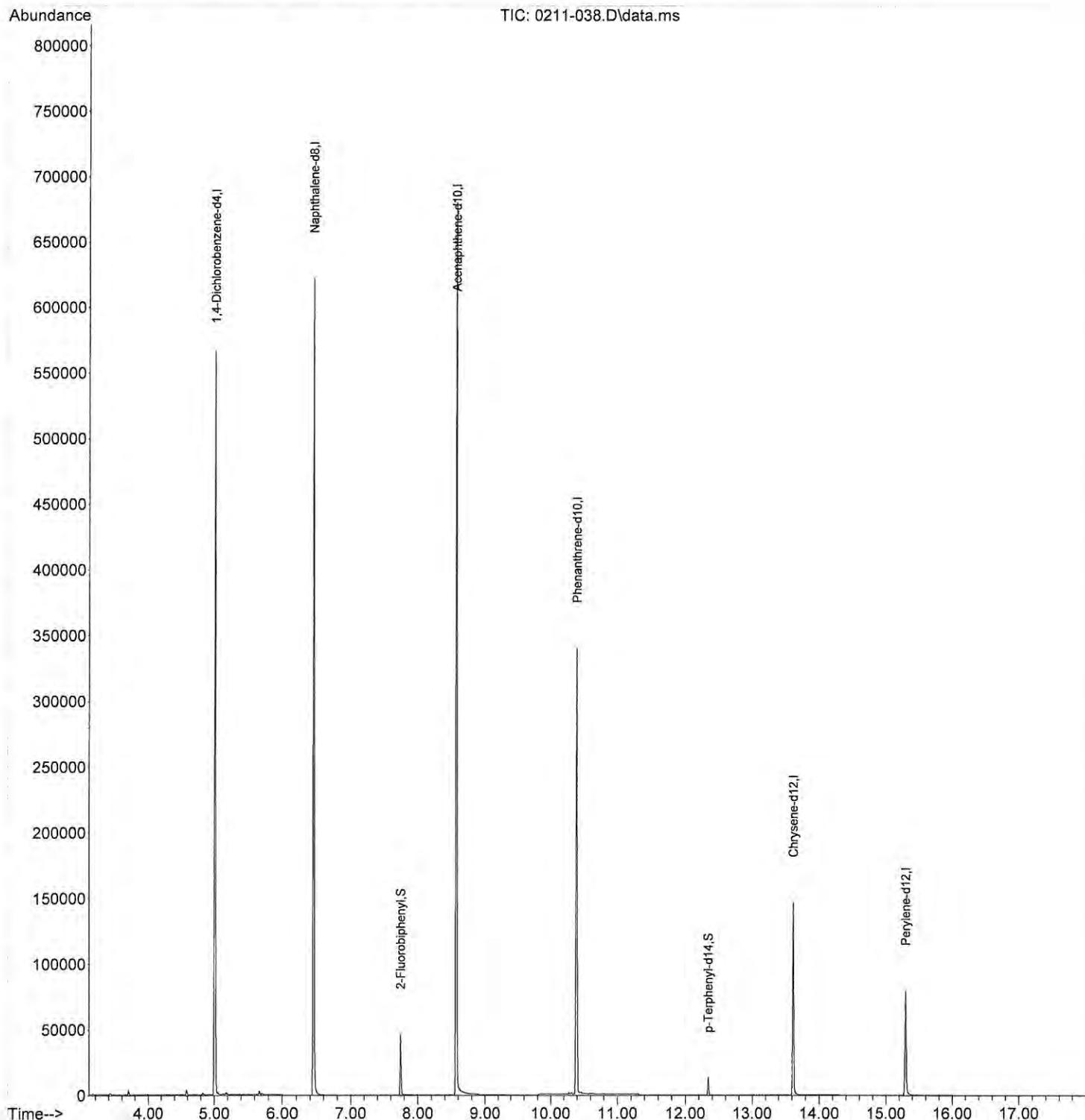
Data Path : I:\MS02\DATA\MS02-140211\  
Data File : 0211-037.D  
Acq On : 12 Feb 2014 3:03 am  
Operator : KF  
Sample : J1400817-005 SAMP  
Misc : 8270C SIM  
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Feb 12 13:01:40 2014  
Quant Method : J:\MS02\METHODS\MS02-140211SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Wed Feb 12 10:54:12 2014  
Response via : Initial Calibration



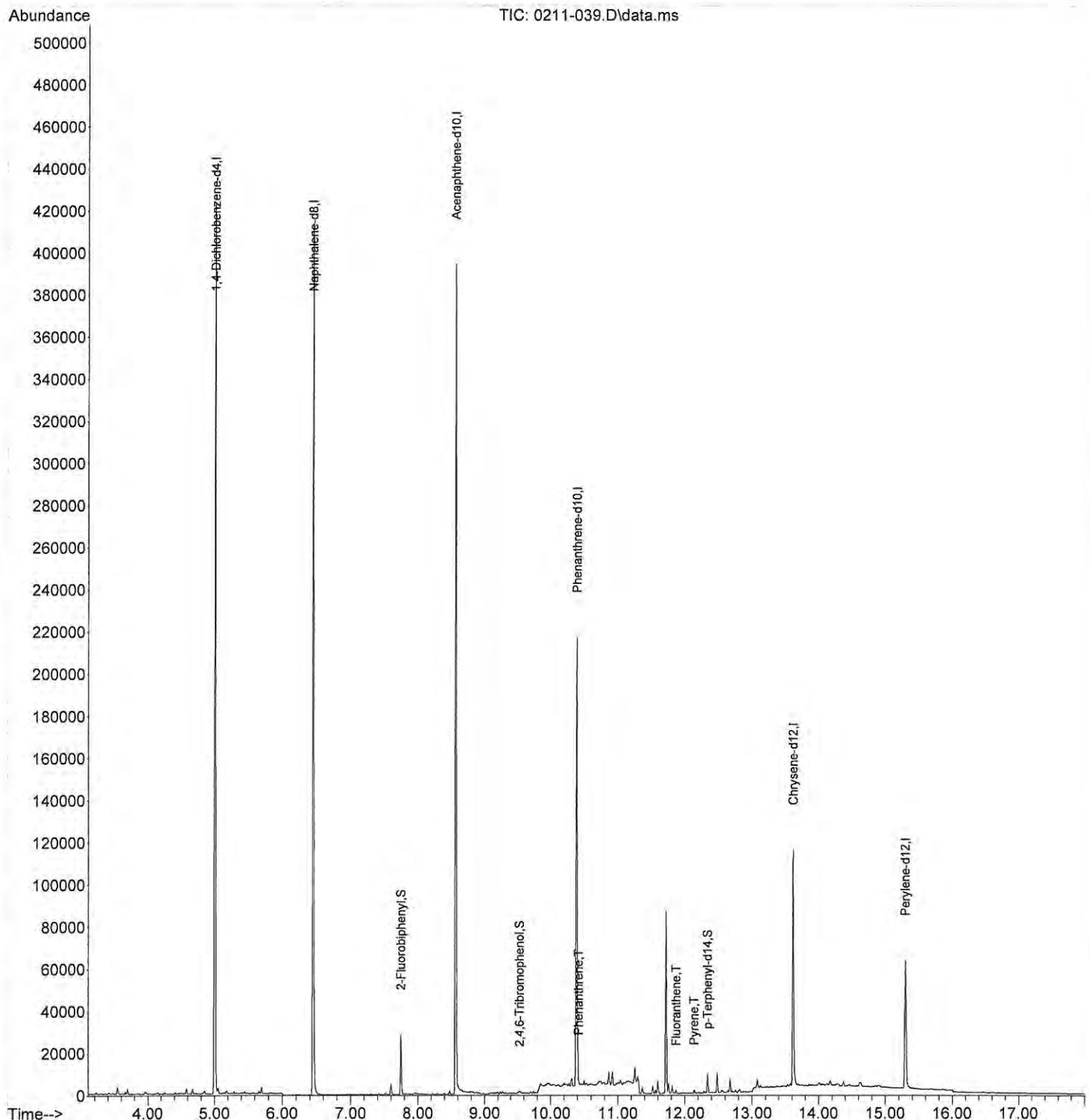
Data Path : I:\MS02\DATA\MS02-140211\  
Data File : 0211-038.D  
Acq On : 12 Feb 2014 3:28 am  
Operator : KF  
Sample : J1400817-006 SAMP  
Misc : 8270C SIM  
ALS Vial : 33 Sample Multiplier: 1

Quant Time: Feb 12 13:02:06 2014  
Quant Method : J:\MS02\METHODS\MS02-140211SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Wed Feb 12 10:54:12 2014  
Response via : Initial Calibration



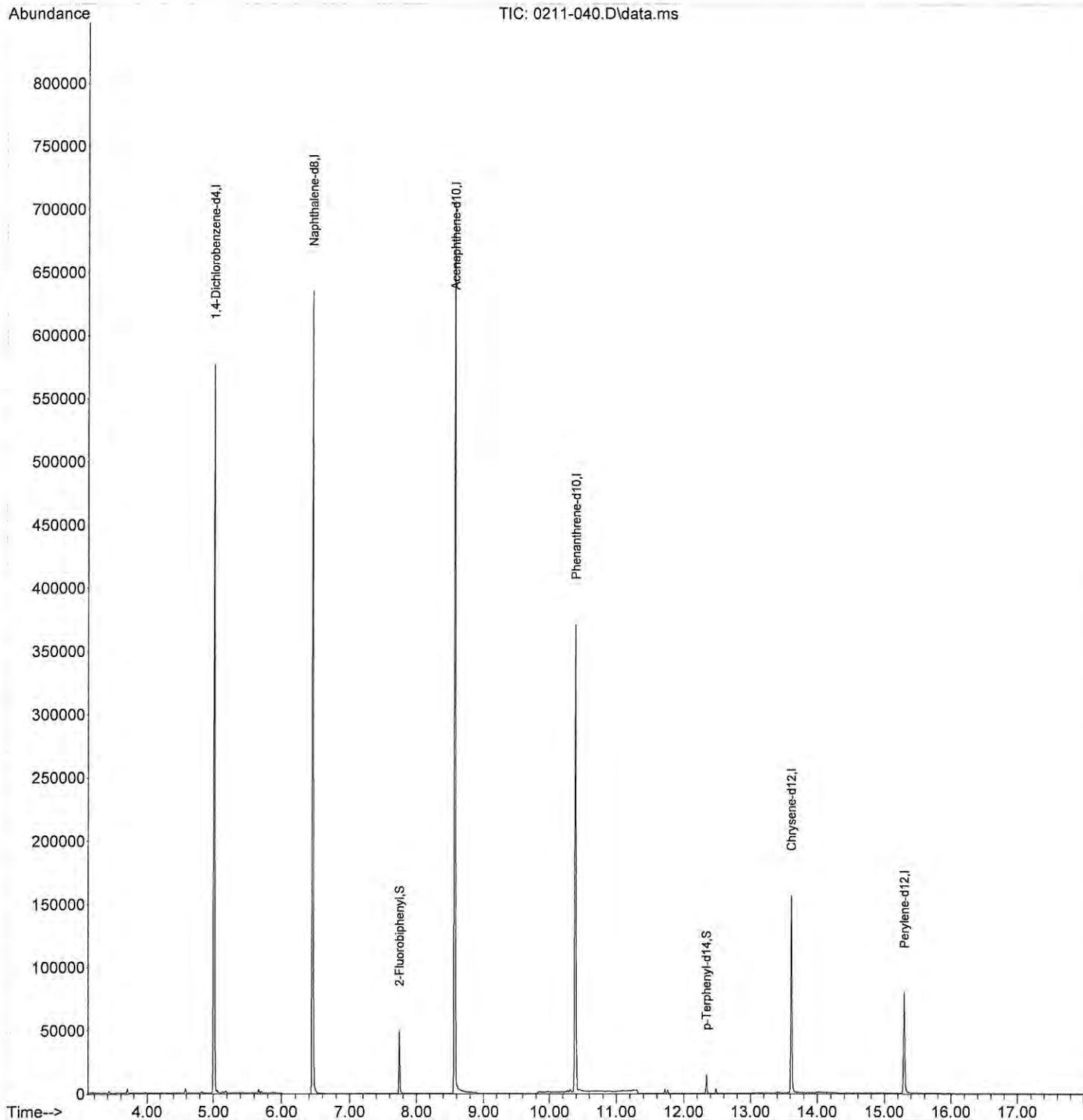
Data Path : I:\MS02\DATA\MS02-140211\  
Data File : 0211-039.D  
Acq On : 12 Feb 2014 3:53 am  
Operator : KF  
Sample : J1400817-007 SAMP  
Misc : 8270C SIM  
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Feb 12 13:02:53 2014  
Quant Method : J:\MS02\METHODS\MS02-140211SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Wed Feb 12 10:54:12 2014  
Response via : Initial Calibration



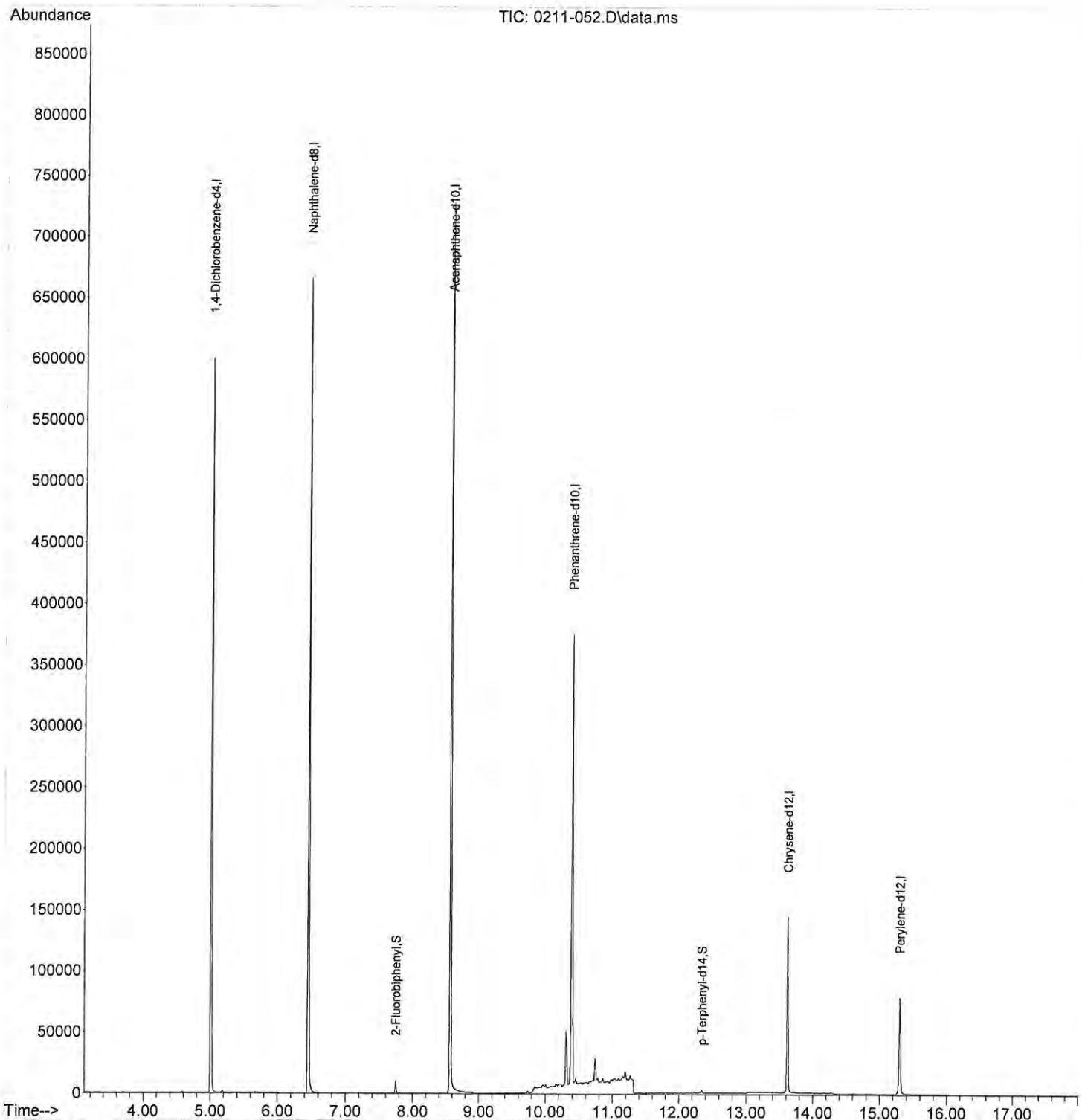
Data Path : I:\MS02\DATA\MS02-140211\  
Data File : 0211-040.D  
Acq On : 12 Feb 2014 4:17 am  
Operator : KF  
Sample : J1400817-008 SAMP  
Misc : 8270C SIM  
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Feb 12 13:03:27 2014  
Quant Method : J:\MS02\METHODS\MS02-140211SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Wed Feb 12 10:54:12 2014  
Response via : Initial Calibration



Data Path : I:\MS02\DATA\MS02-140211\  
Data File : 0211-052.D  
Acq On : 12 Feb 2014 9:14 am  
Operator : KF  
Sample : J1400817-009 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 47 Sample Multiplier: 1

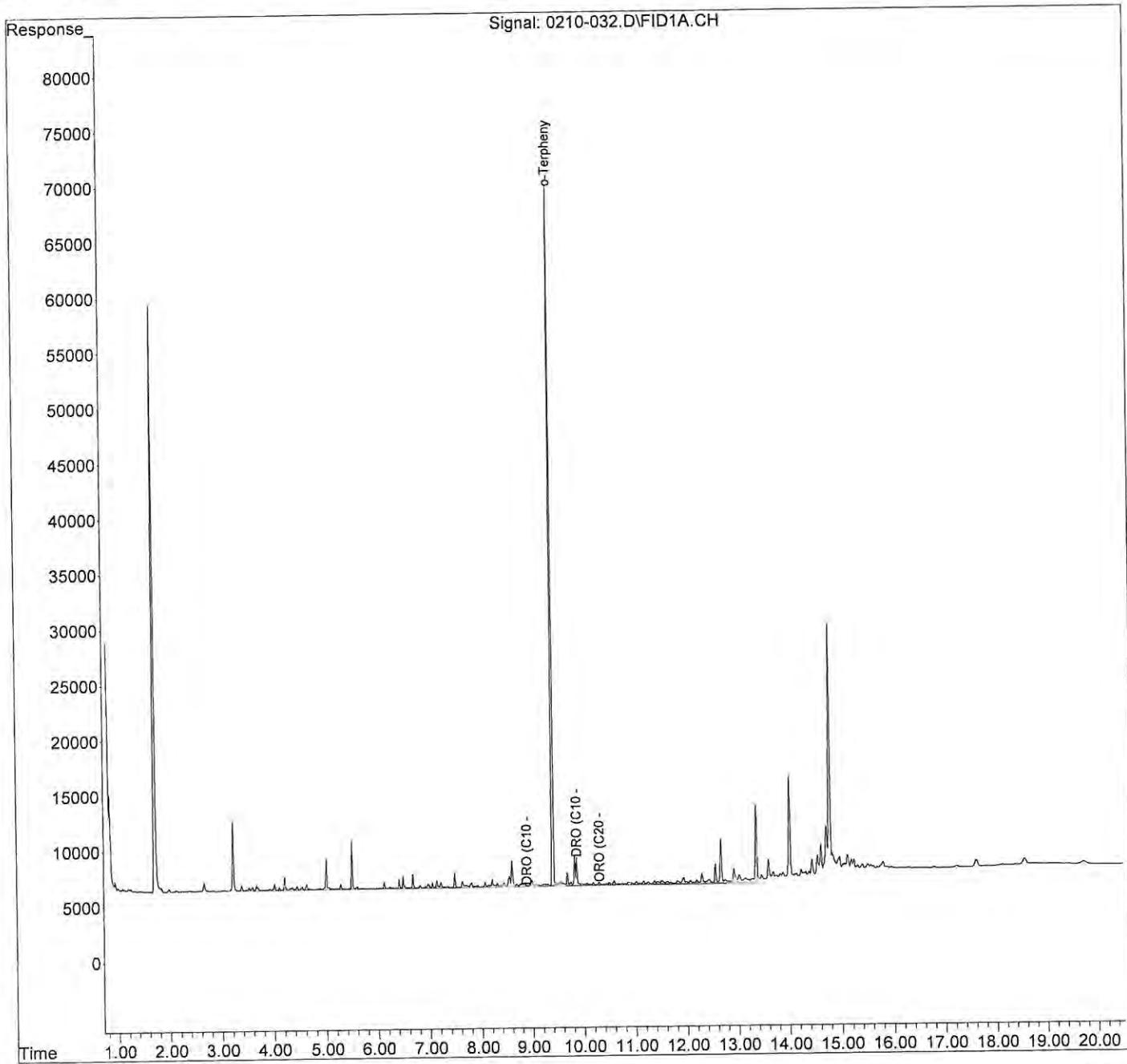
Quant Time: Feb 12 13:15:58 2014  
Quant Method : J:\MS02\METHODS\MS02-140211SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Wed Feb 12 10:54:12 2014  
Response via : Initial Calibration



Data Path : J:\GC05\DATA\GC05-140210\  
Data File : 0210-032.D  
Signal(s) : FID1A.CH  
Acq On : 10 Feb 2014 6:45 pm  
Operator : JS  
Sample : J1400817-001 SAMP  
Misc :  
ALS Vial : 16 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Feb 11 10:36:24 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140130F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Jan 31 07:57:49 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

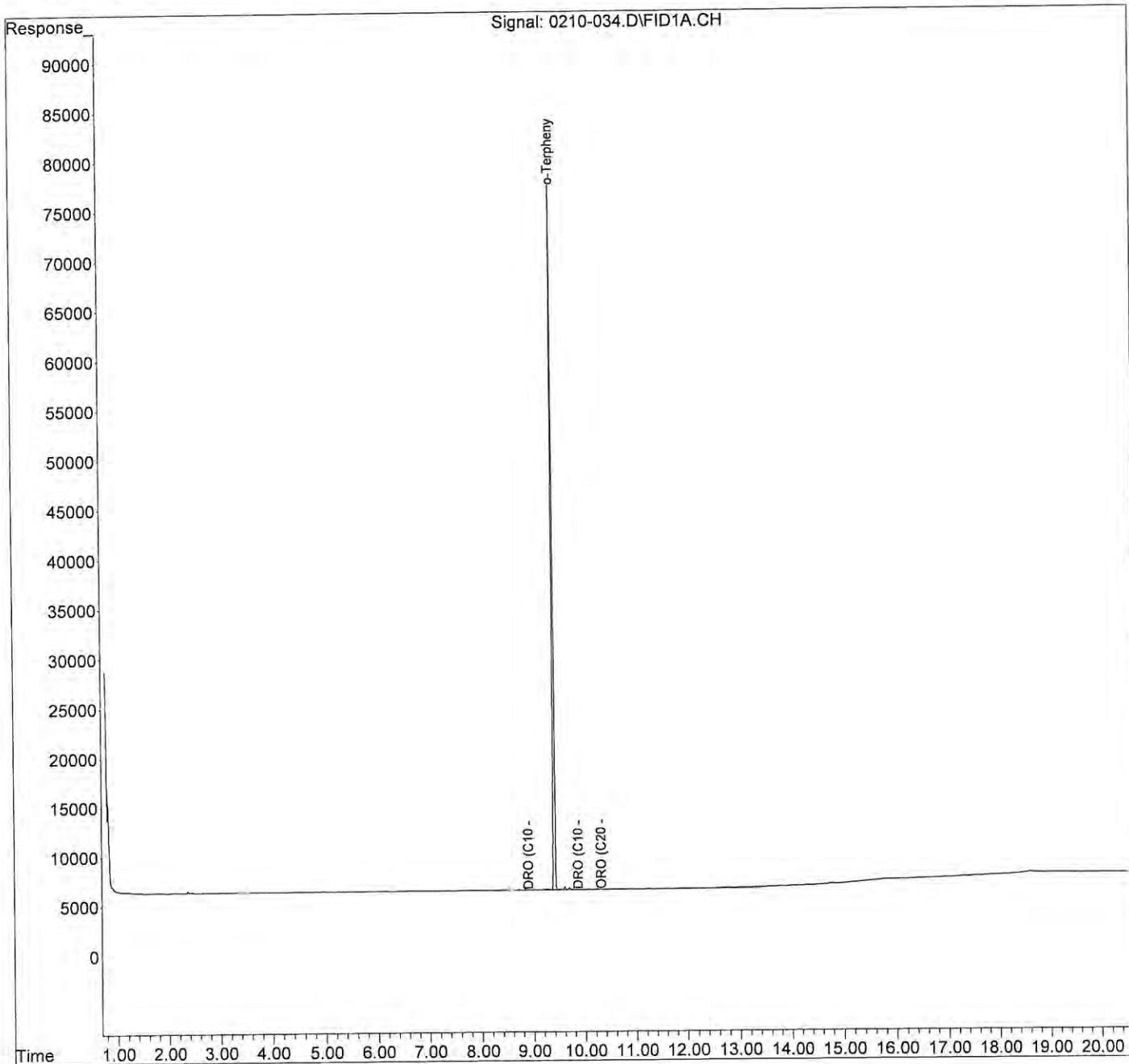
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140210\  
Data File : 0210-034.D  
Signal(s) : FID1A.CH  
Acq On : 10 Feb 2014 7:12 pm  
Operator : JS  
Sample : J1400817-002 SAMP  
Misc : DRO 8015B  
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Feb 11 10:36:27 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140130F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Jan 31 07:57:49 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

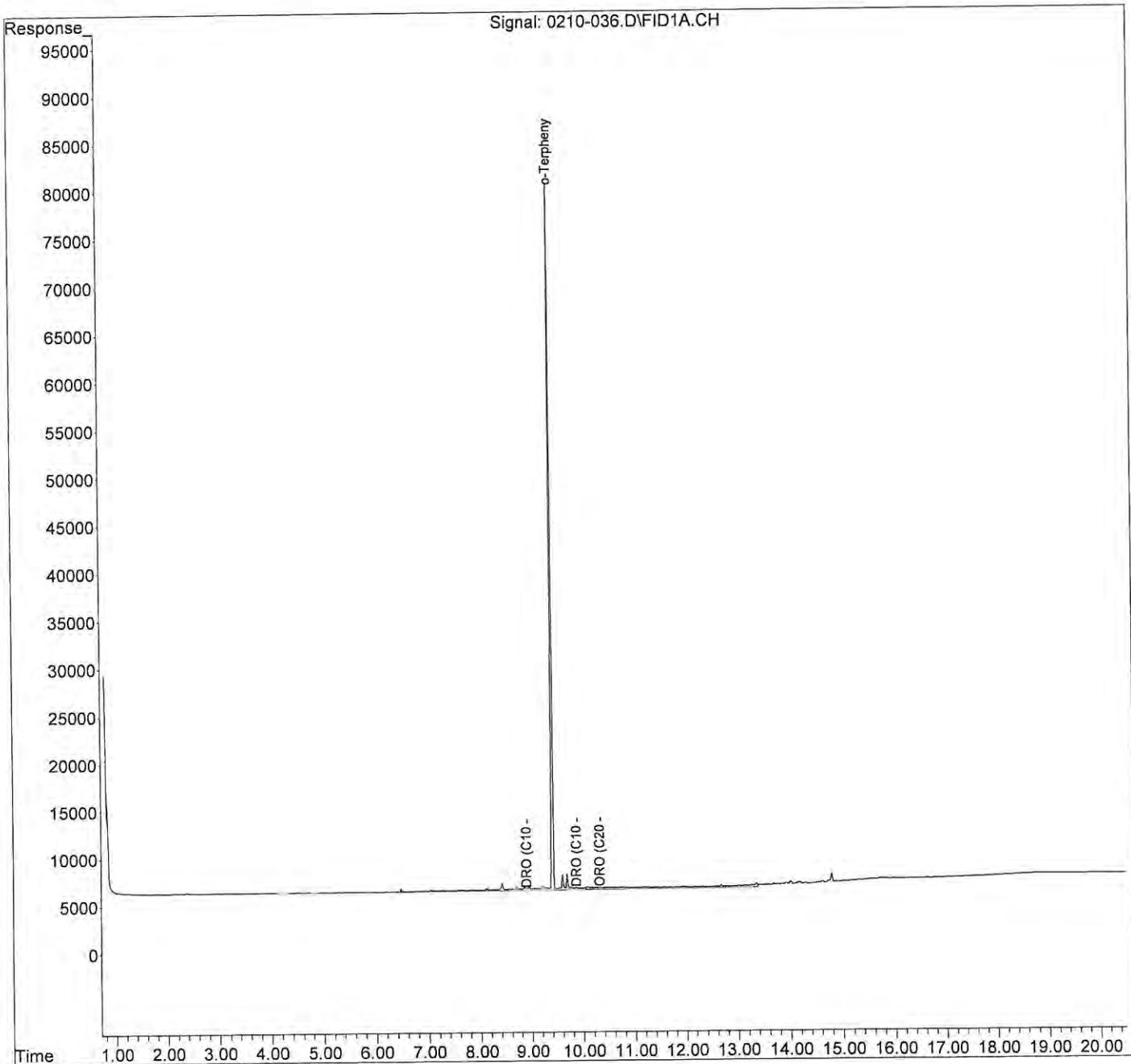
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140210\  
Data File : 0210-036.D  
Signal(s) : FID1A.CH  
Acq On : 10 Feb 2014 7:40 pm  
Operator : JS  
Sample : J1400817-003 SAMP  
Misc : DRO 8015B  
ALS Vial : 18 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Feb 11 10:44:11 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140130F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Jan 31 07:57:49 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

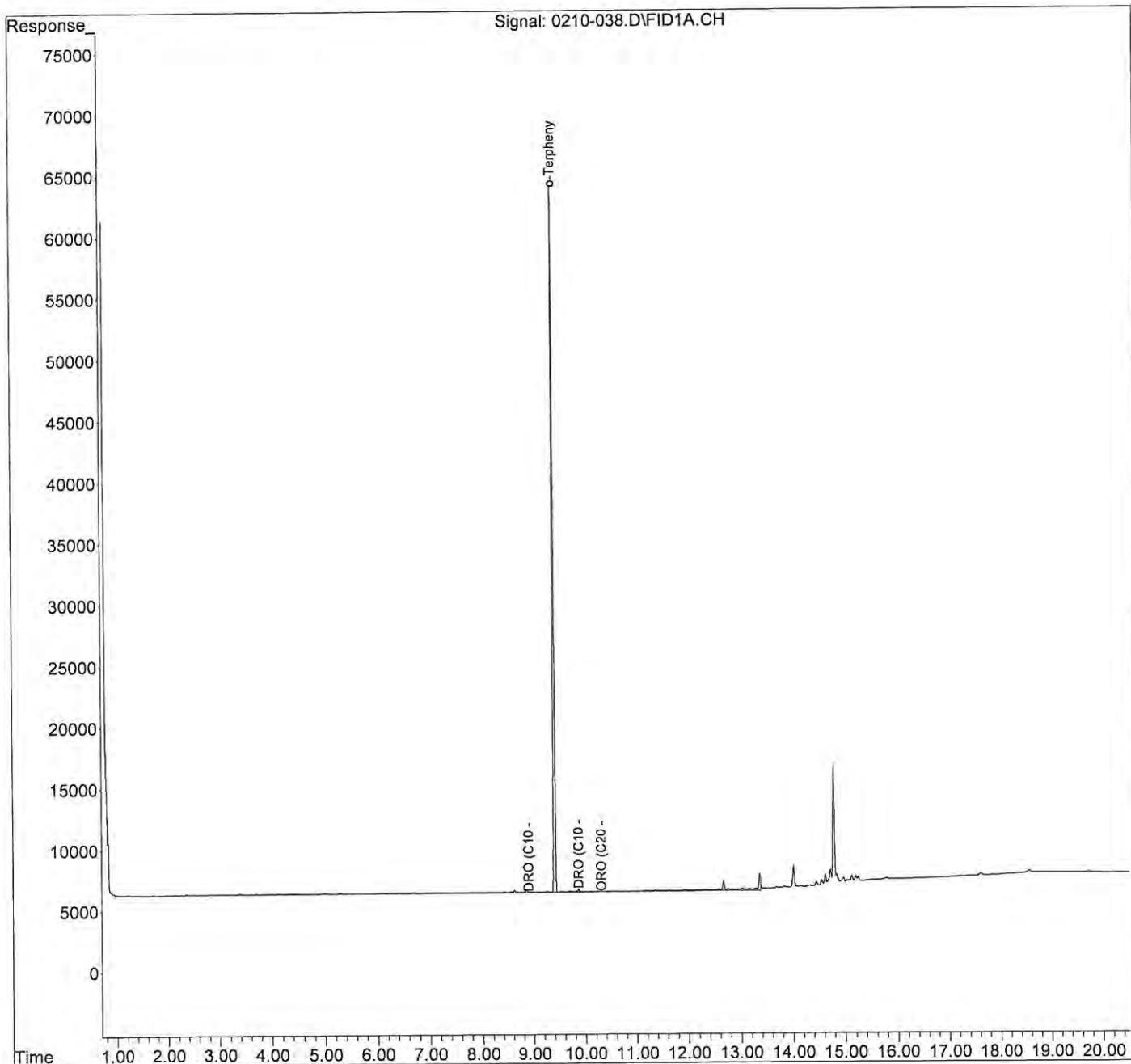
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140210\  
Data File : 0210-038.D  
Signal(s) : FID1A.CH  
Acq On : 10 Feb 2014 8:08 pm  
Operator : JS  
Sample : J1400817-004 SAMP  
Misc : DRO 8015B  
ALS Vial : 19 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Feb 11 10:36:32 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140130F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Jan 31 07:57:49 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

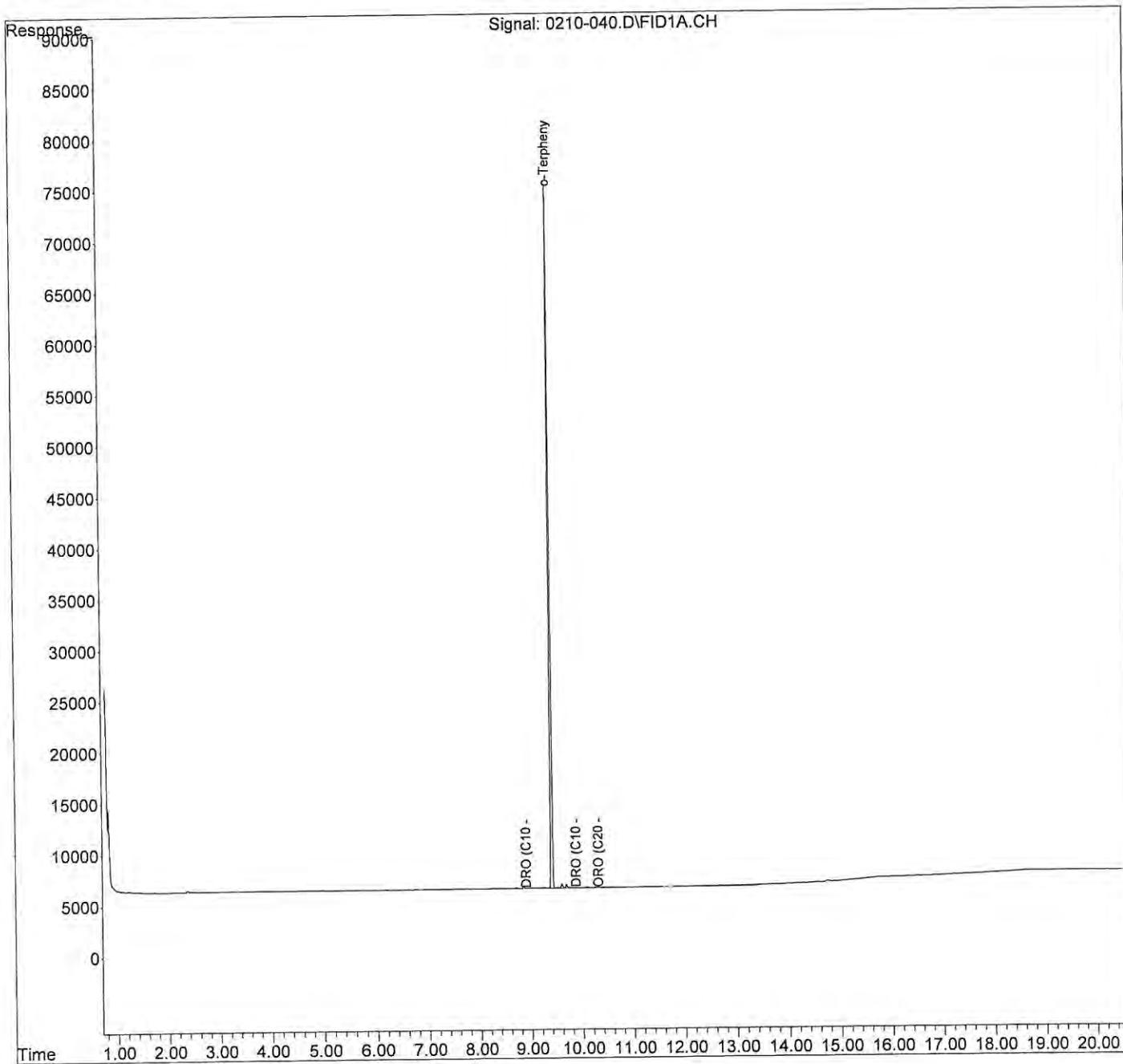
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140210\  
Data File : 0210-040.D  
Signal(s) : FID1A.CH  
Acq On : 10 Feb 2014 8:35 pm  
Operator : JS  
Sample : J1400817-005 SAMP  
Misc : DRO 8015B  
ALS Vial : 20 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Feb 11 10:36:35 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140130F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Jan 31 07:57:49 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

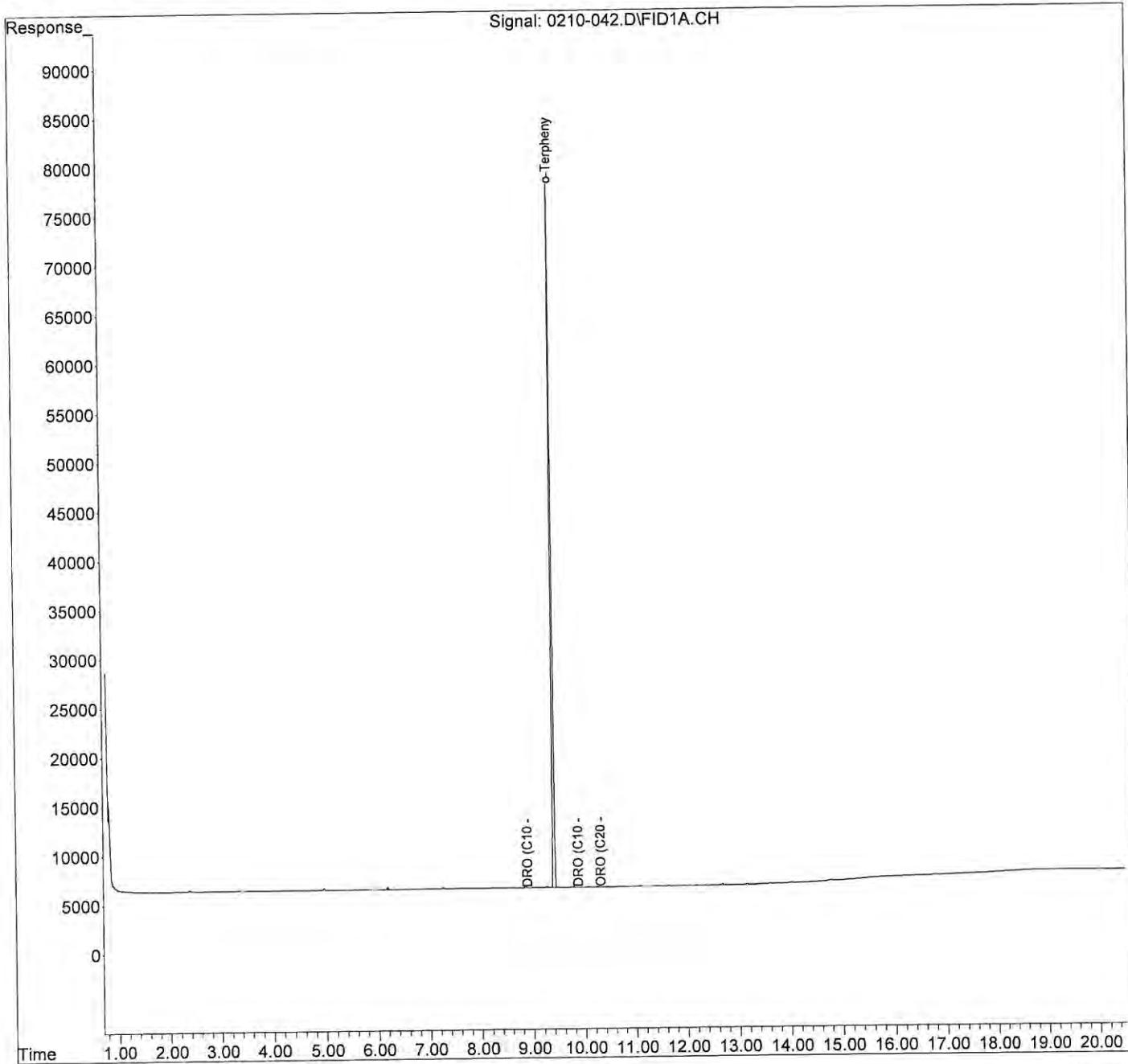
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140210\  
Data File : 0210-042.D  
Signal(s) : FID1A.CH  
Acq On : 10 Feb 2014 9:02 pm  
Operator : JS  
Sample : J1400817-006 SAMP  
Misc : DRO 8015B  
ALS Vial : 21 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Feb 11 10:36:38 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140130F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Jan 31 07:57:49 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

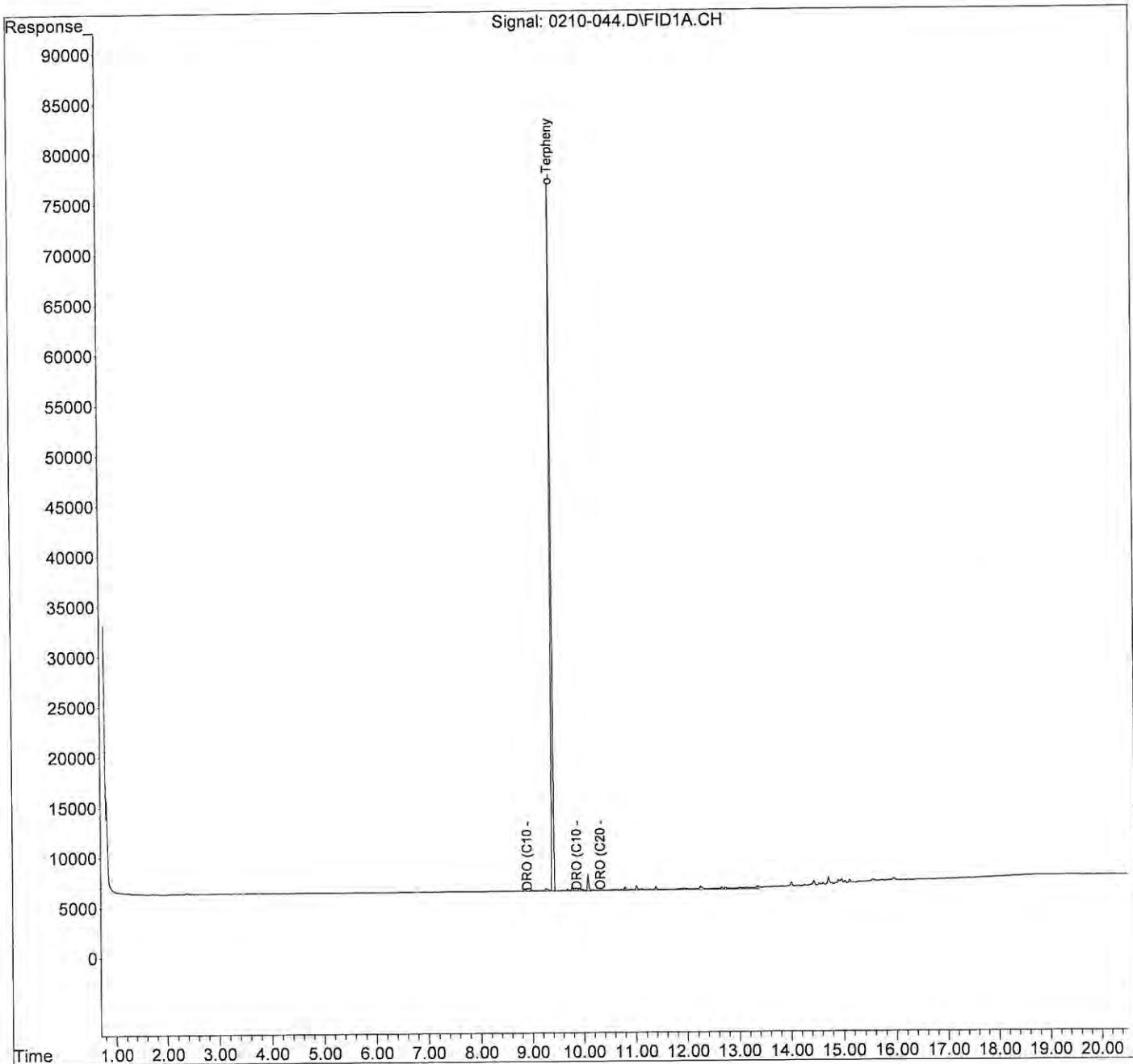
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140210\  
Data File : 0210-044.D  
Signal(s) : FID1A.CH  
Acq On : 10 Feb 2014 9:30 pm  
Operator : JS  
Sample : J1400817-007 SAMP  
Misc :  
ALS Vial : 22 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Feb 11 10:36:40 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140130F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Jan 31 07:57:49 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

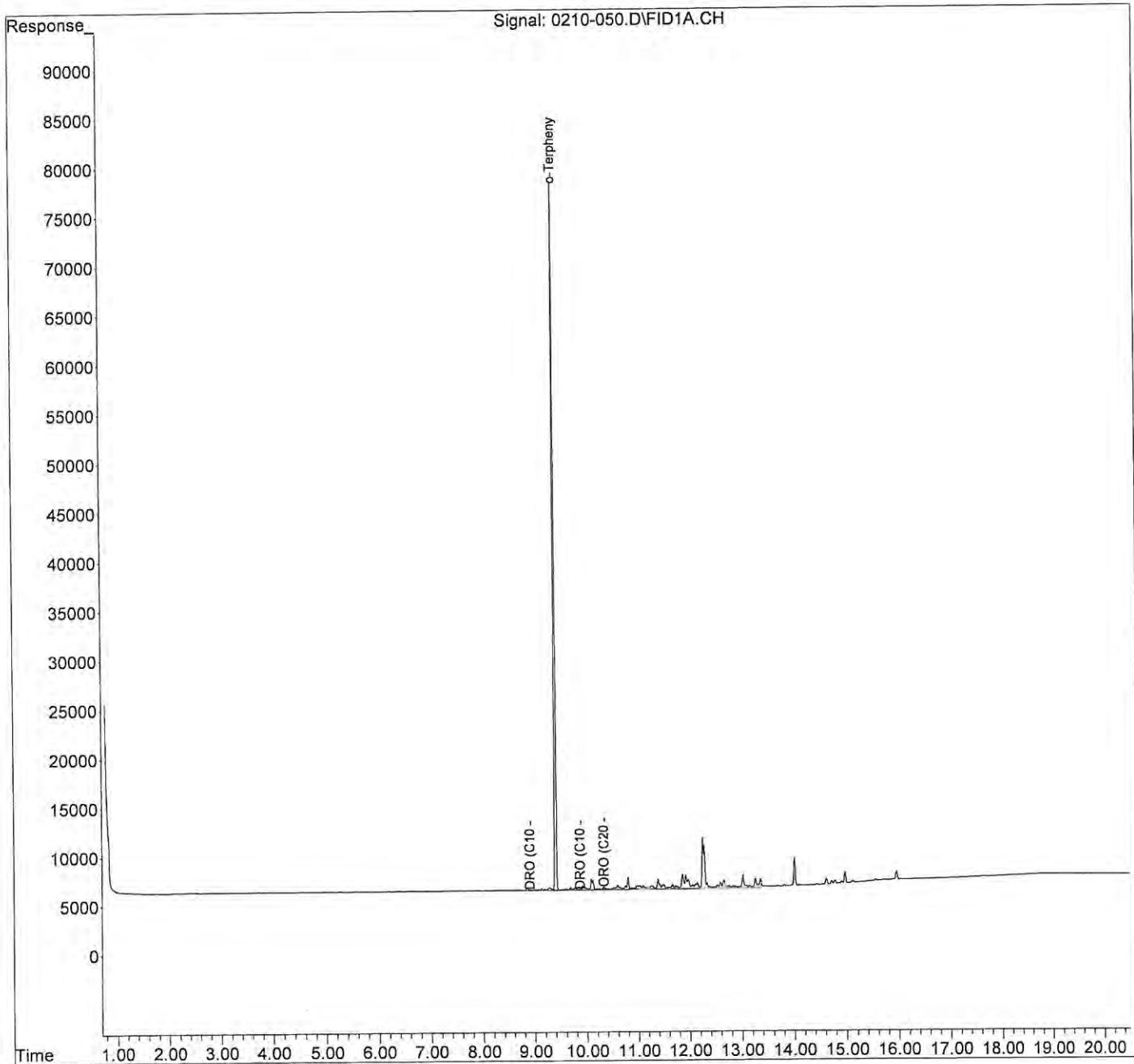
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140210\  
Data File : 0210-050.D  
Signal(s) : FID1A.CH  
Acq On : 10 Feb 2014 10:53 pm  
Operator : JS  
Sample : J1400817-008 SAMP  
Misc : DRO 8015B  
ALS Vial : 25 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Feb 11 10:36:47 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140130F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Jan 31 07:57:49 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

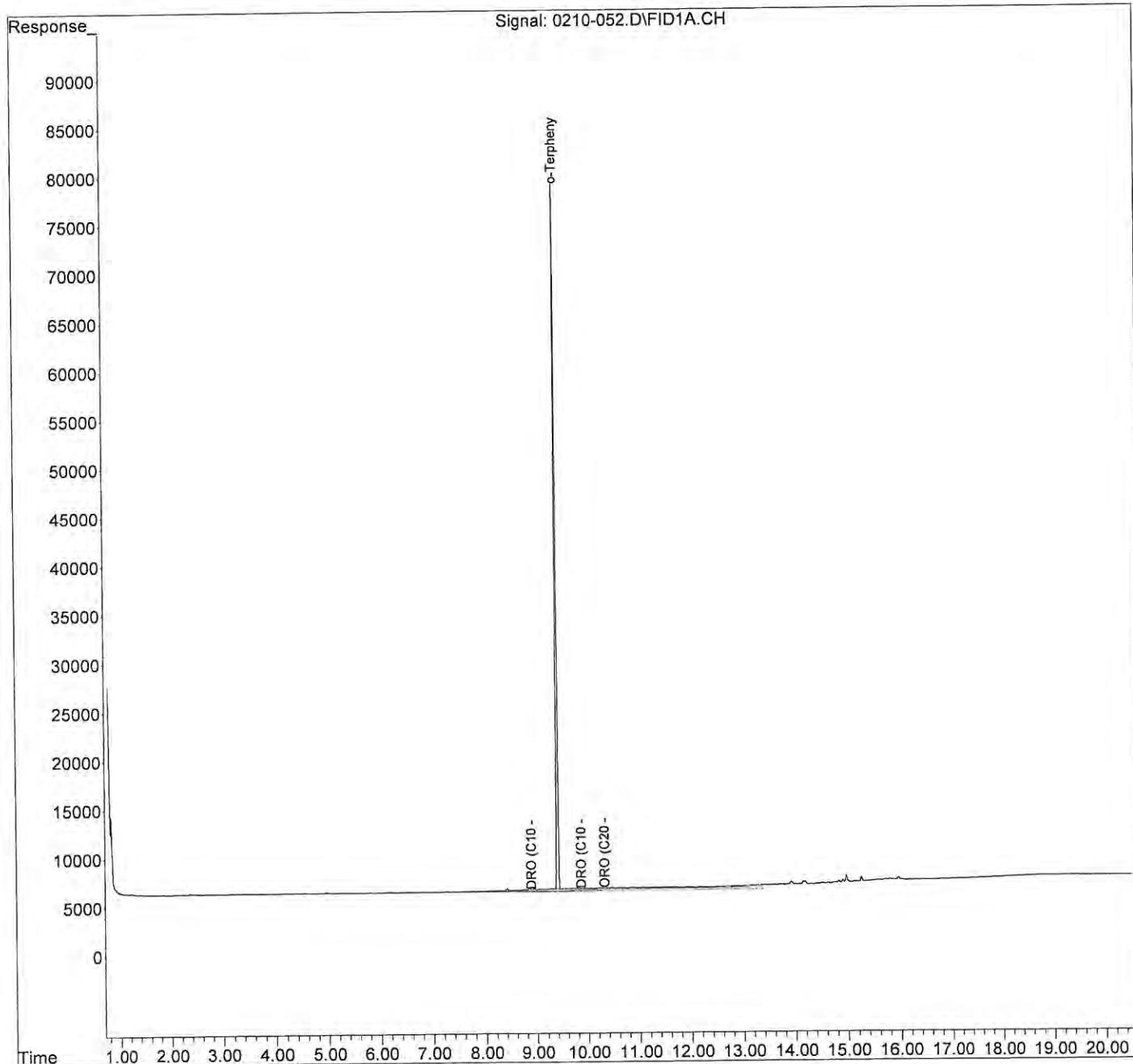
Volume Inj. :  
Signal Phase :  
Signal Info :



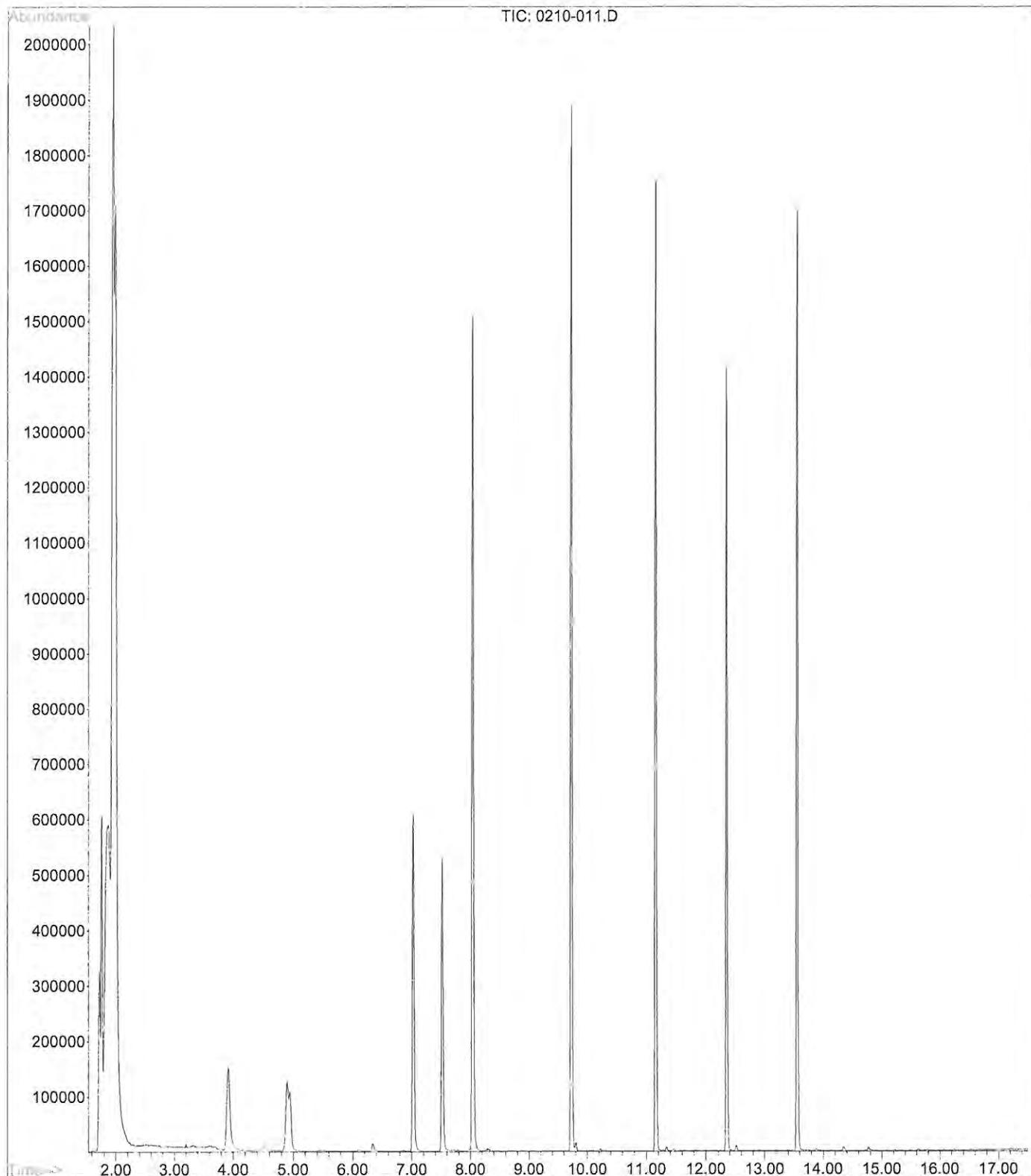
Data Path : J:\GC05\DATA\GC05-140210\  
Data File : 0210-052.D  
Signal(s) : FID1A.CH  
Acq On : 10 Feb 2014 11:20 pm  
Operator : JS  
Sample : J1400817-009 SAMP  
Misc : DRO 8015B  
ALS Vial : 26 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Feb 11 10:49:29 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140130F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Jan 31 07:57:49 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

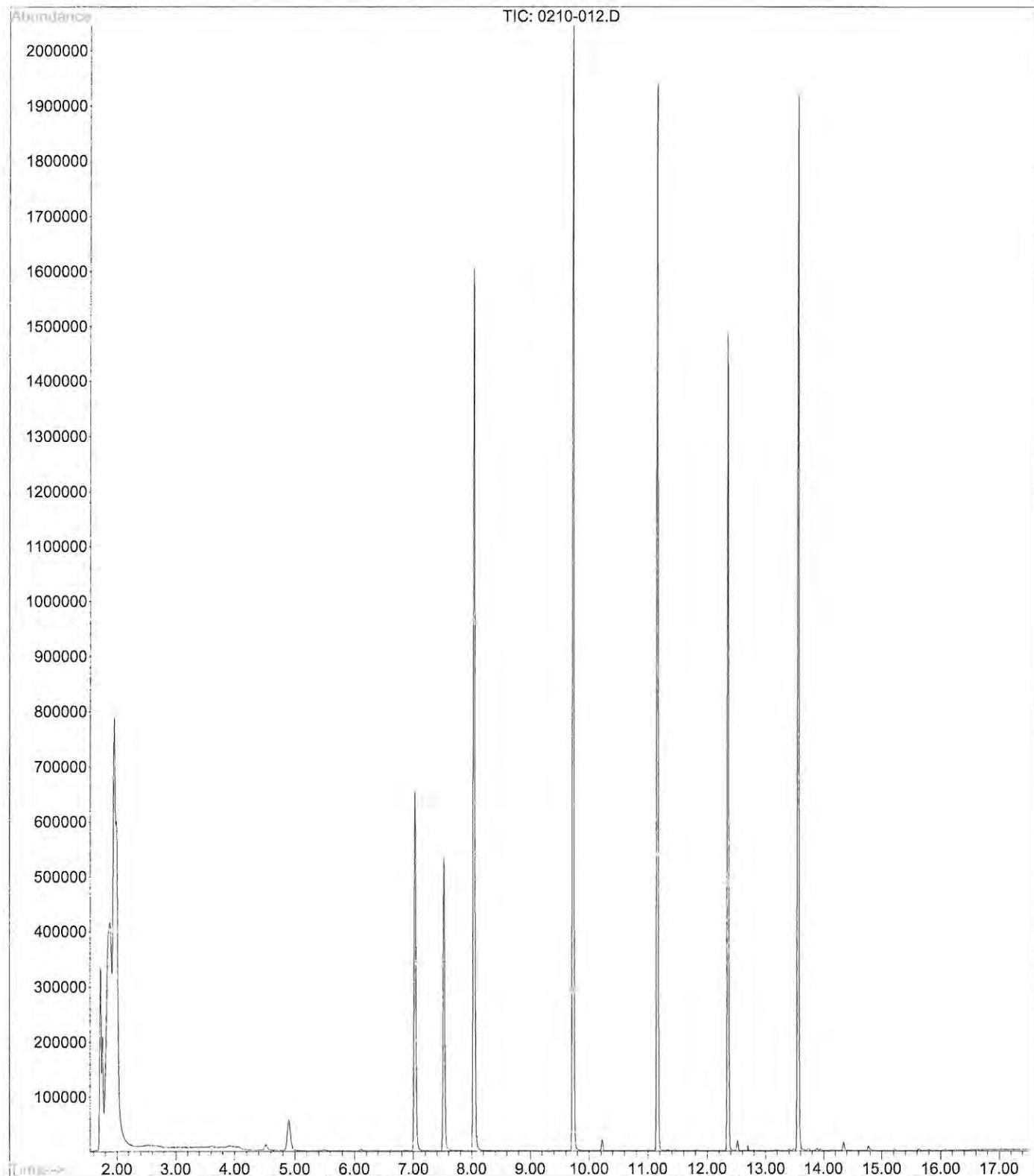
Volume Inj. :  
Signal Phase :  
Signal Info :



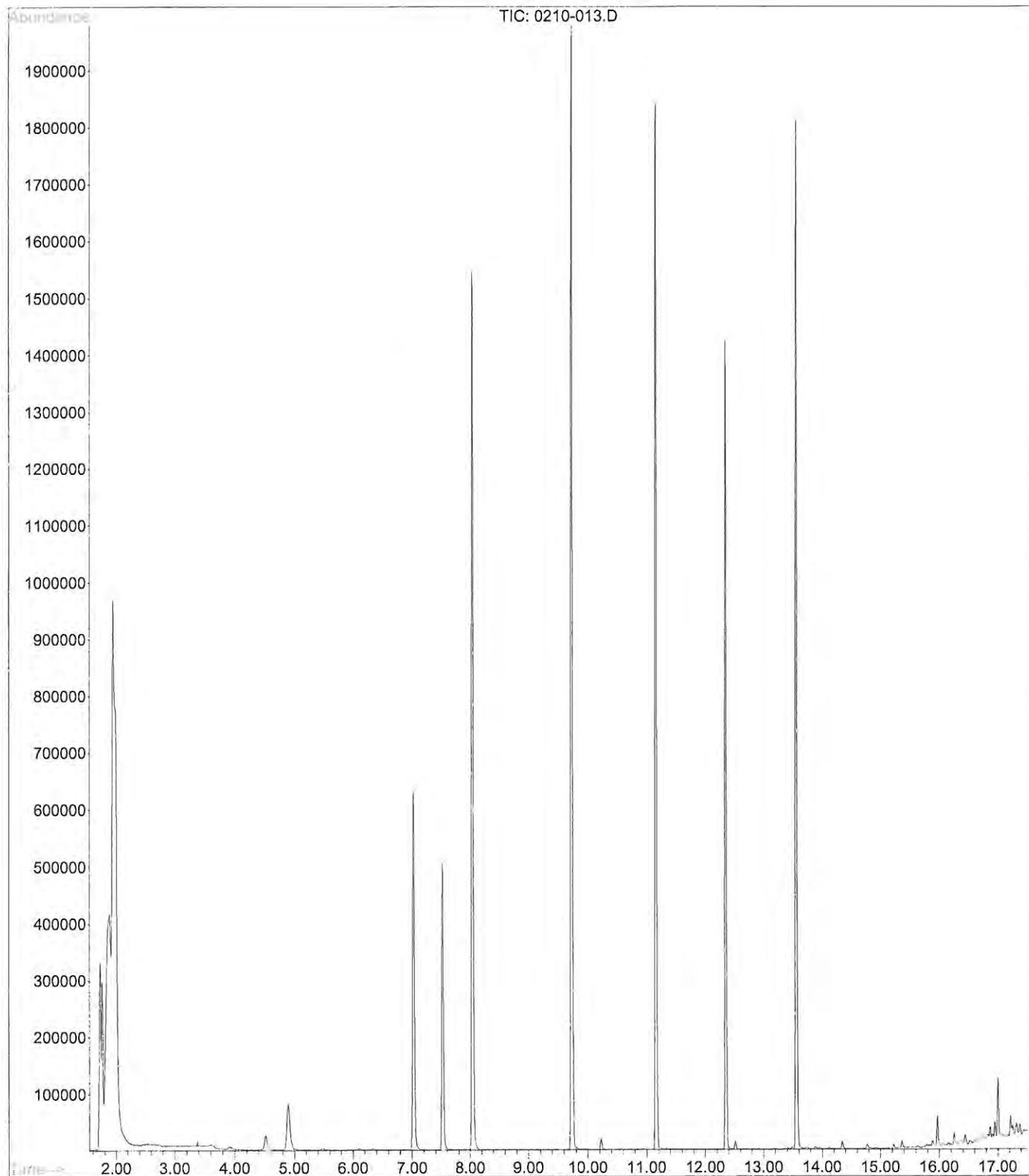
File : I:\MS54\DATA\MS54-140210\0210-011.D  
Operator : JDB  
Acquired : 10 Feb 2014 4:38 pm using AcqMethod 140125S  
Instrument : ms54  
Sample Name: J1400817-001 SAMP  
Misc Info : 8260  
Vial Number: 11



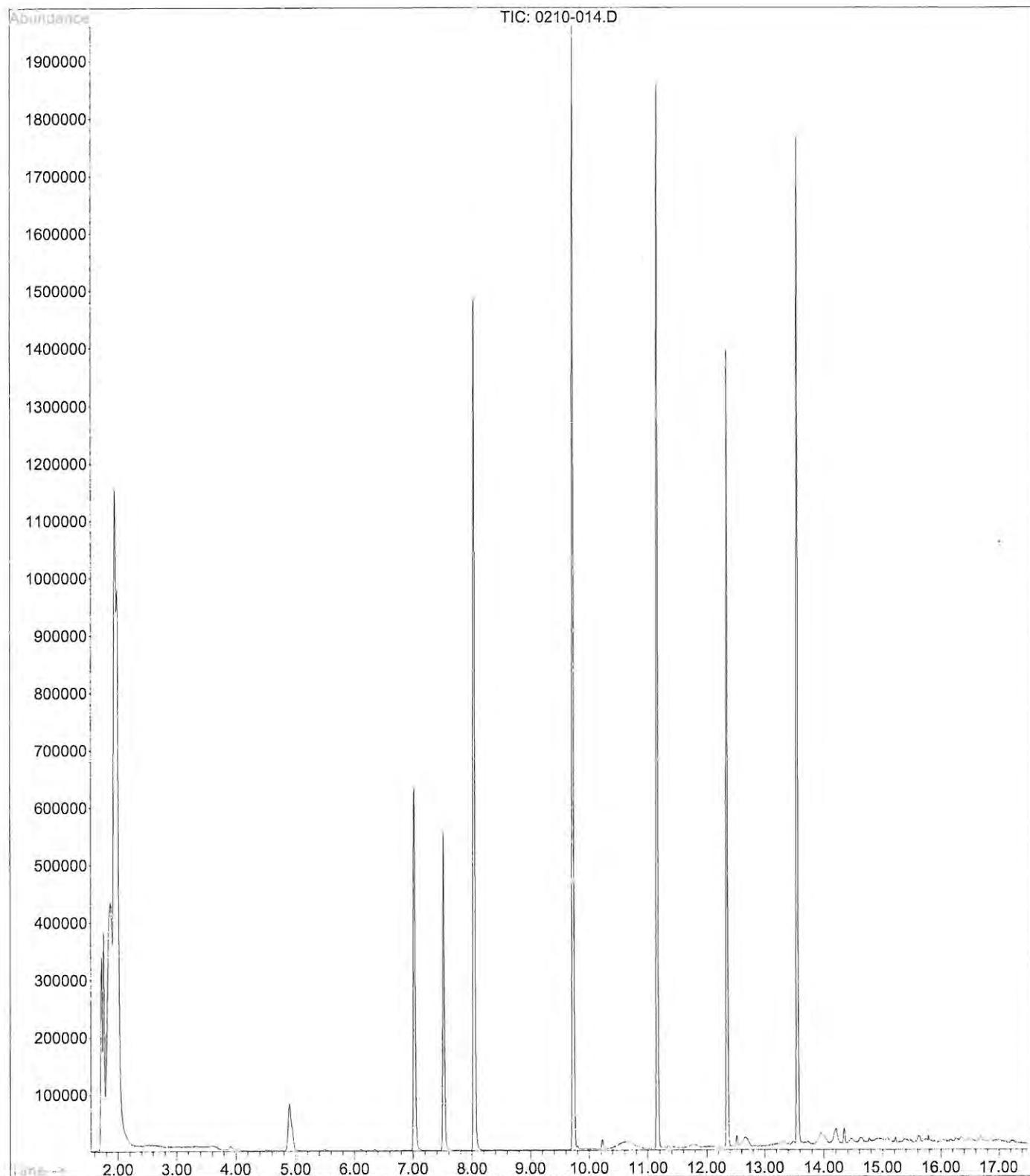
File : I:\MS54\DATA\MS54-140210\0210-012.D  
Operator : JDB  
Acquired : 10 Feb 2014 5:08 pm using AcqMethod 140125S  
Instrument : ms54  
Sample Name: J1400817-002 SAMP  
Misc Info : 8260  
Vial Number: 12



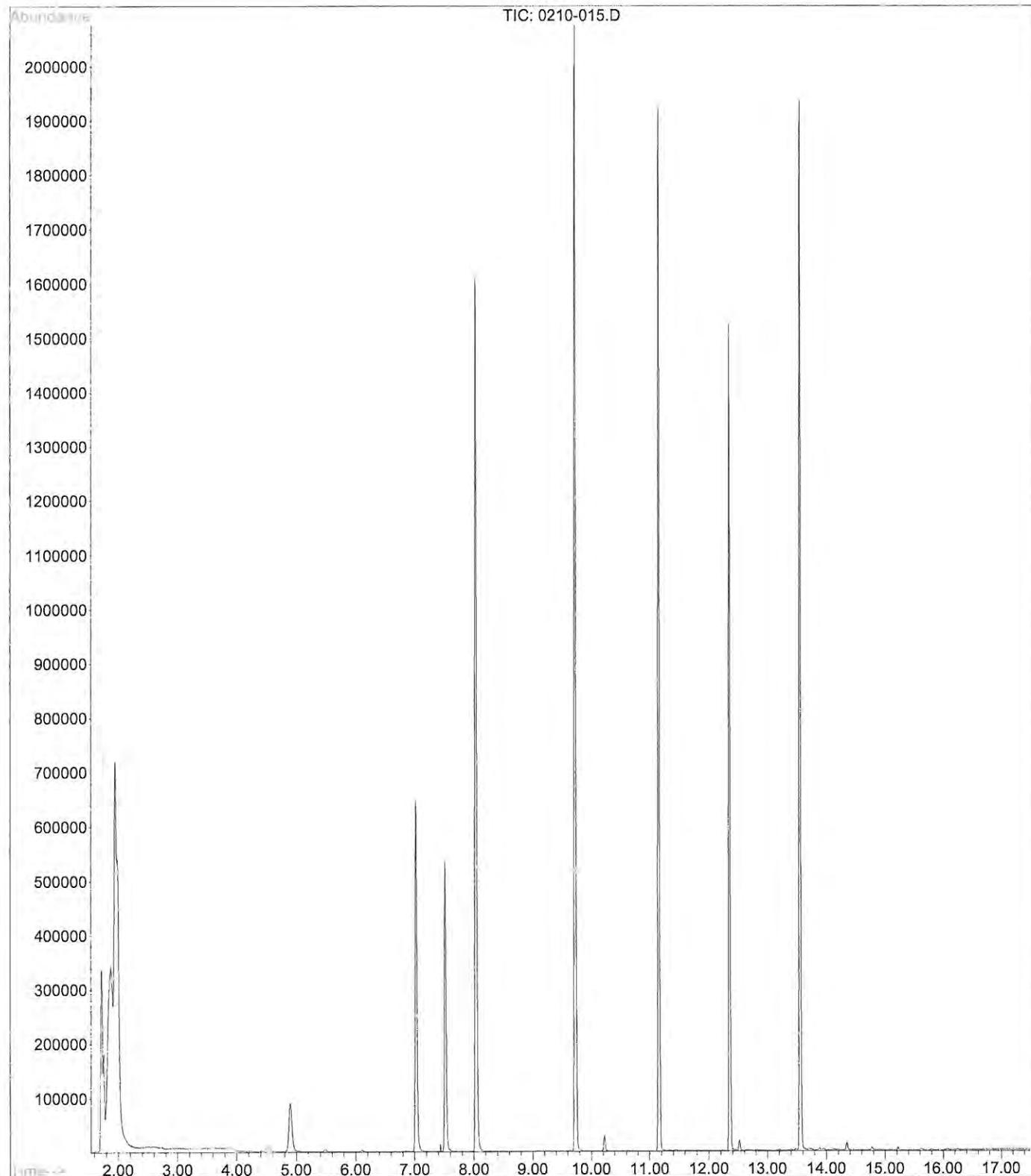
File : I:\MS54\DATA\MS54-140210\0210-013.D  
Operator : JDB  
Acquired : 10 Feb 2014 5:38 pm using AcqMethod 140125S  
Instrument : ms54  
Sample Name: J1400817-003 SAMP  
Misc Info : 8260  
Vial Number: 13



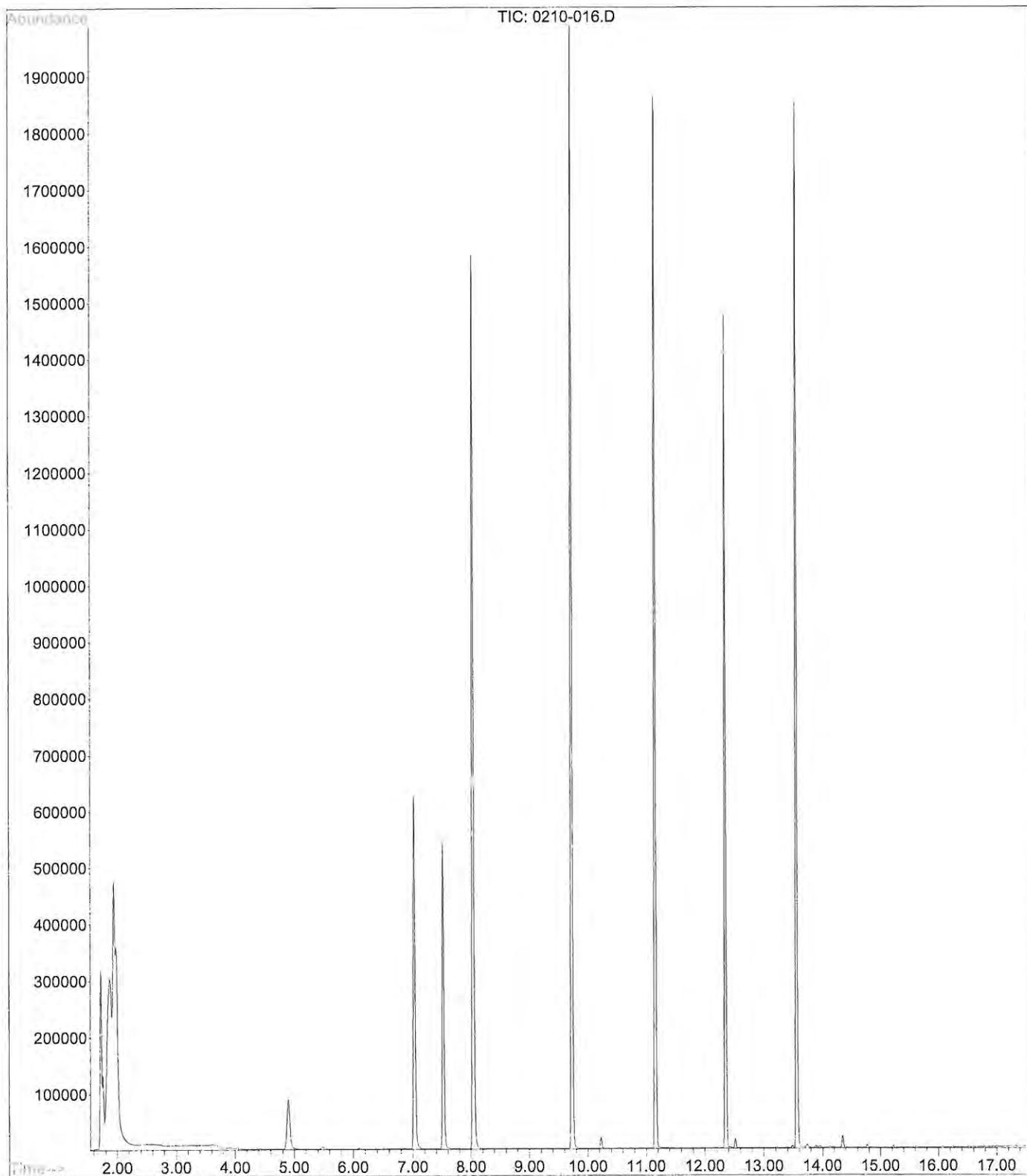
File : I:\MS54\DATA\MS54-140210\0210-014.D  
Operator : JDB  
Acquired : 10 Feb 2014 6:08 pm using AcqMethod 140125S  
Instrument : ms54  
Sample Name: J1400817-004 SAMP  
Misc Info : 8260  
Vial Number: 14



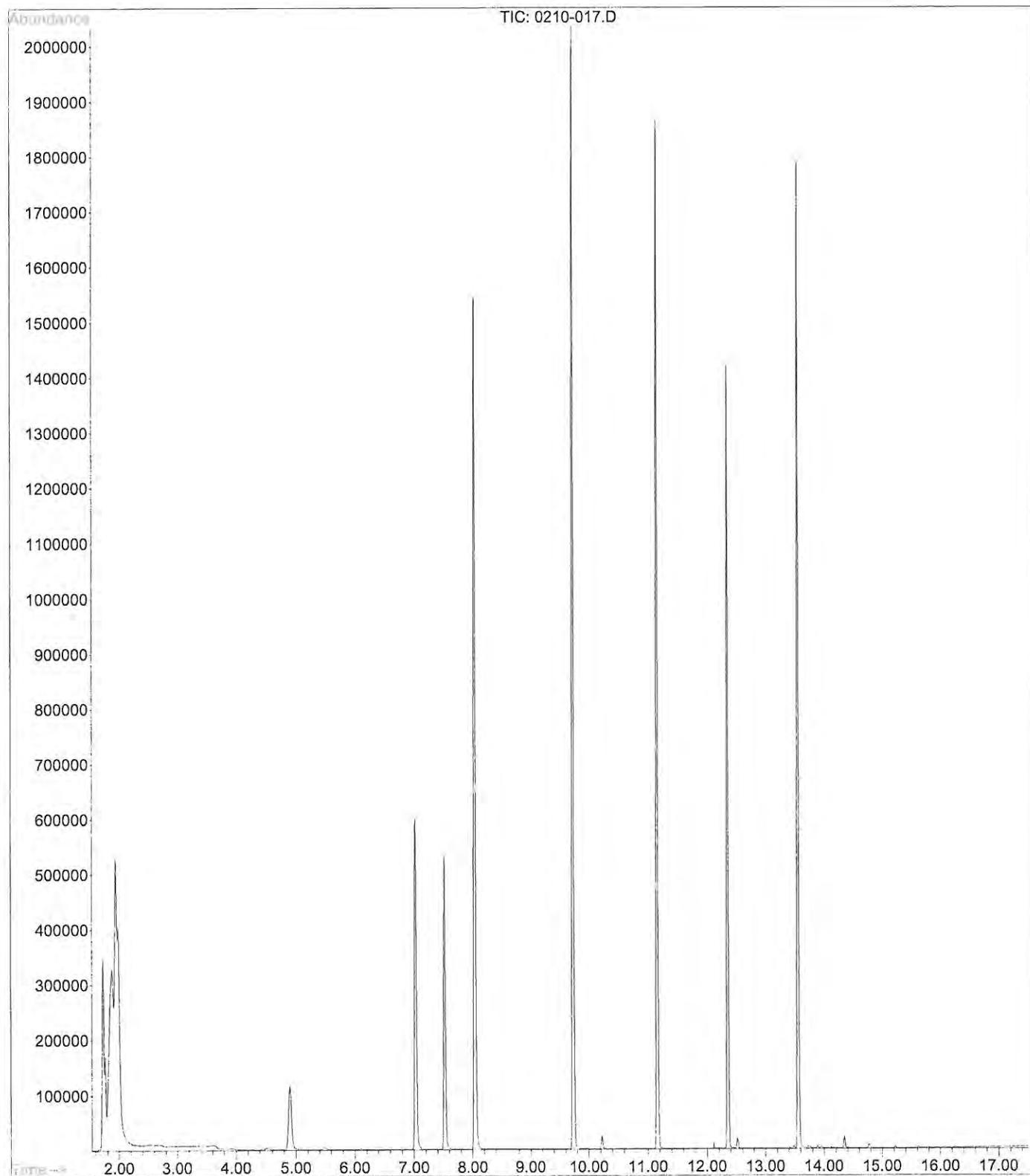
File : I:\MS54\DATA\MS54-140210\0210-015.D  
Operator : JDB  
Acquired : 10 Feb 2014 6:38 pm using AcqMethod 140125S  
Instrument : ms54  
Sample Name: J1400817-005 SAMP  
Misc Info : 8260  
Vial Number: 15



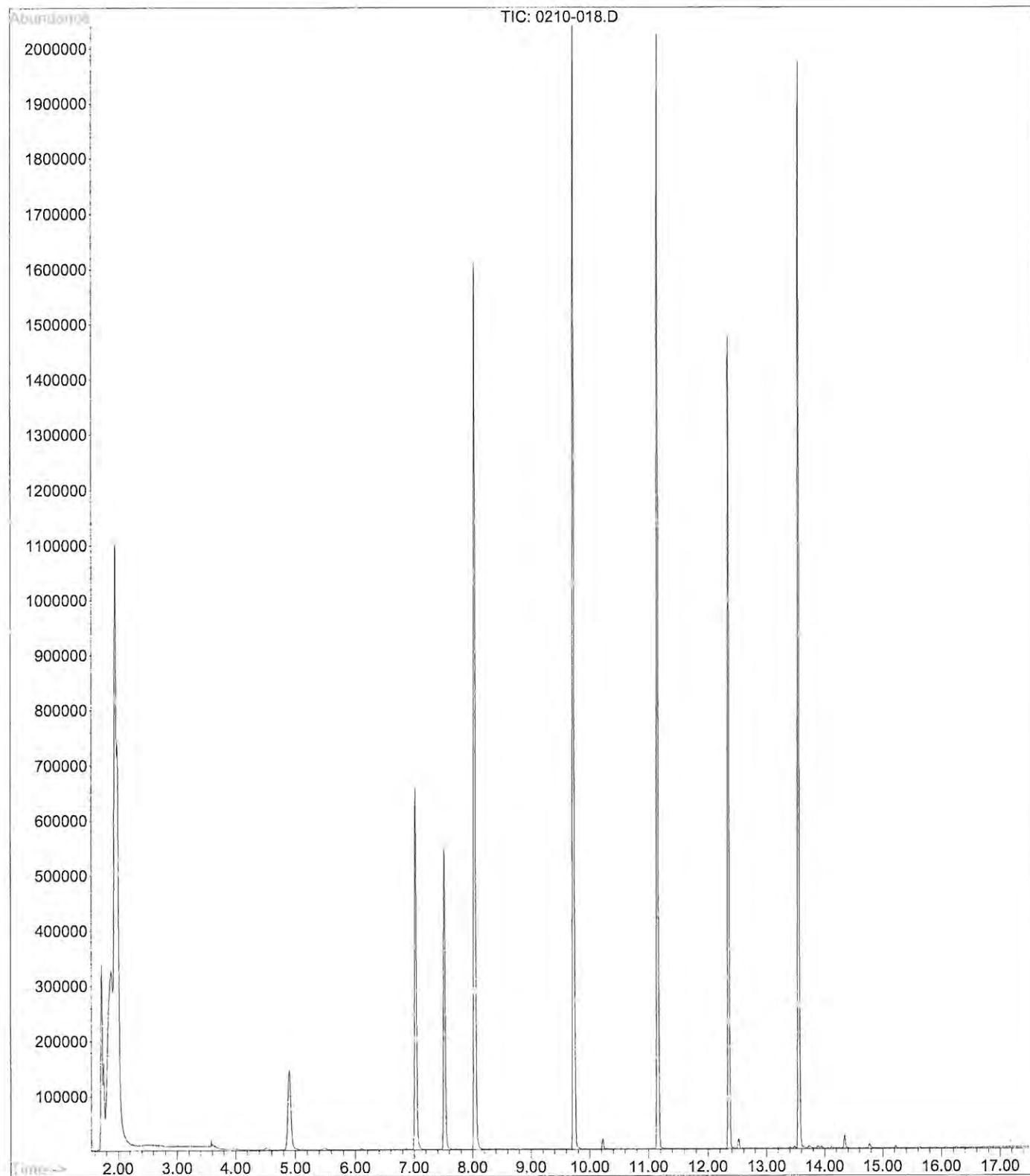
File : I:\MS54\DATA\MS54-140210\0210-016.D  
Operator : JDB  
Acquired : 10 Feb 2014 7:08 pm using AcqMethod 140125S  
Instrument : ms54  
Sample Name: J1400817-006 SAMP  
Misc Info : 8260  
Vial Number: 16



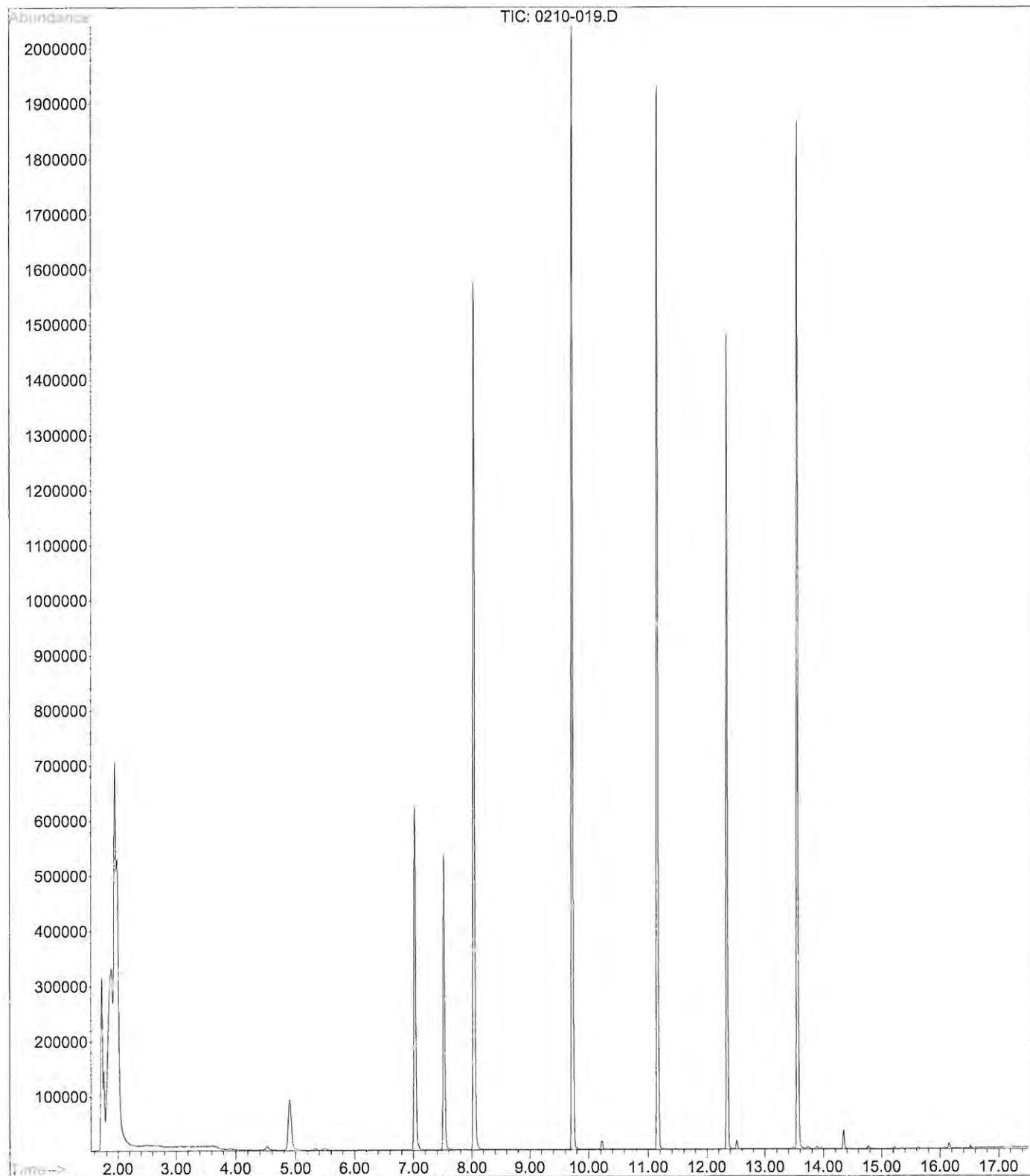
File : I:\MS54\DATA\MS54-140210\0210-017.D  
Operator : JDB  
Acquired : 10 Feb 2014 7:38 pm using AcqMethod 140125S  
Instrument : ms54  
Sample Name: J1400817-007 SAMP  
Misc Info : 8260  
Vial Number: 17



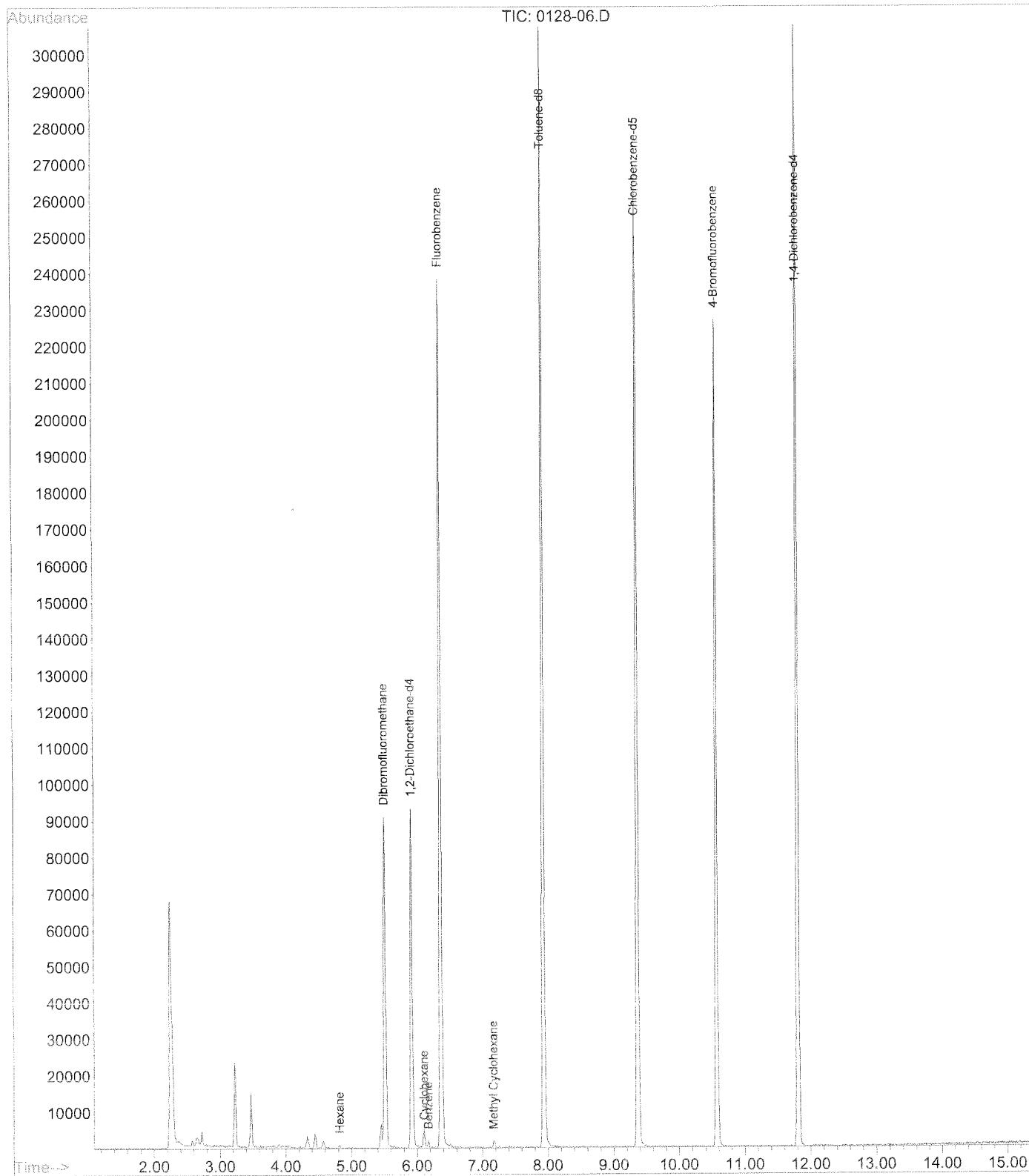
File : I:\MS54\DATA\MS54-140210\0210-018.D  
Operator : JDB  
Acquired : 10 Feb 2014 8:08 pm using AcqMethod 140125S  
Instrument : ms54  
Sample Name: J1400817-008 SAMP  
Misc Info : 8260  
Vial Number: 18



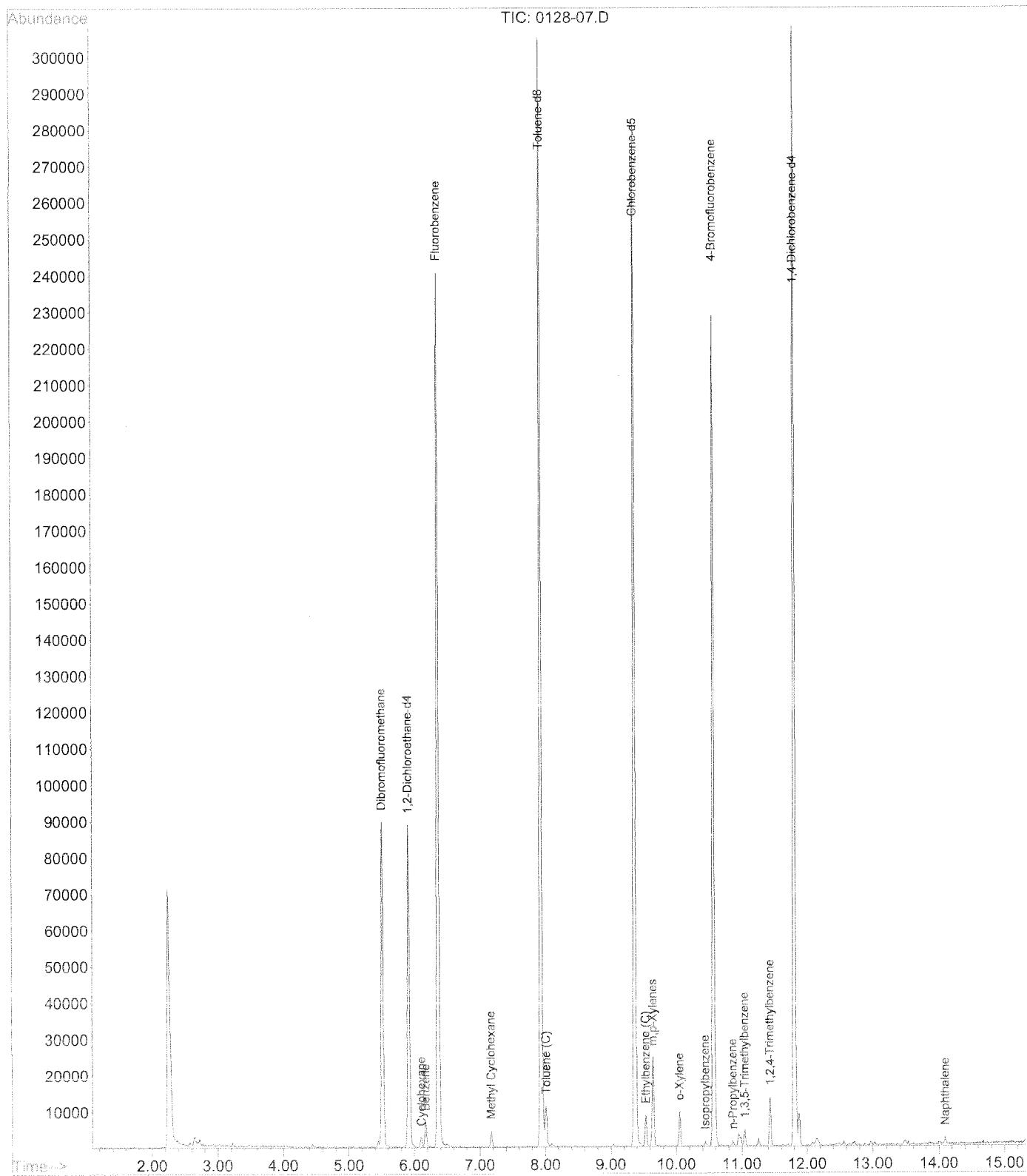
File : I:\MS54\DATA\MS54-140210\0210-019.D  
Operator : JDB  
Acquired : 10 Feb 2014 8:38 pm using AcqMethod 140125S  
Instrument : ms54  
Sample Name: J1400817-009 SAMP  
Misc Info : 8260  
Vial Number: 19



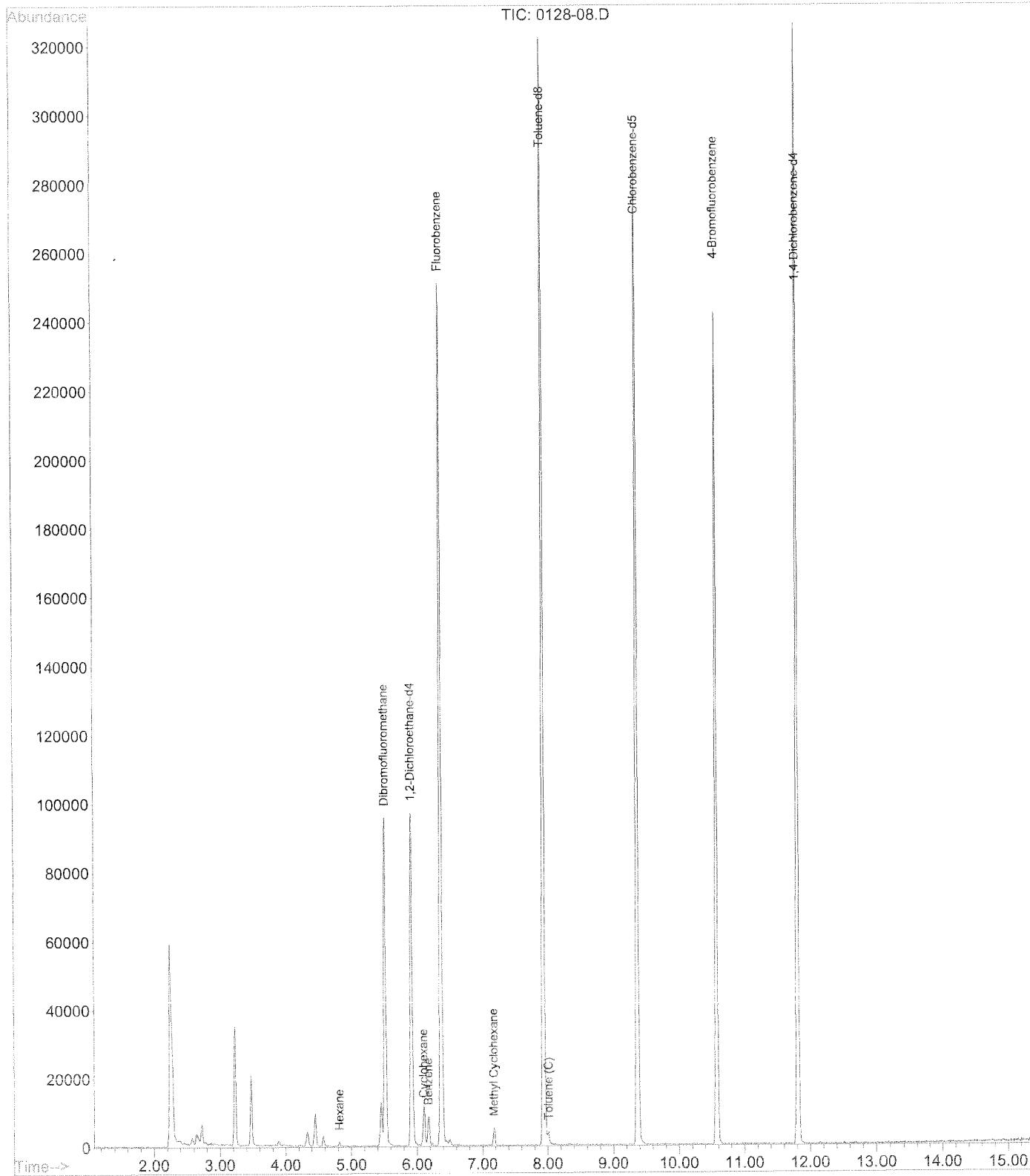
File : I:\MS52\DATA\MS52-140128\0128-06.D  
Operator : SGA  
Acquired : 28 Jan 2014 1:01 pm using AcqMethod VOL  
Instrument : MS52  
Sample Name: J1400482-001 SAMP  
Misc Info : 8260B  
Vial Number: 6



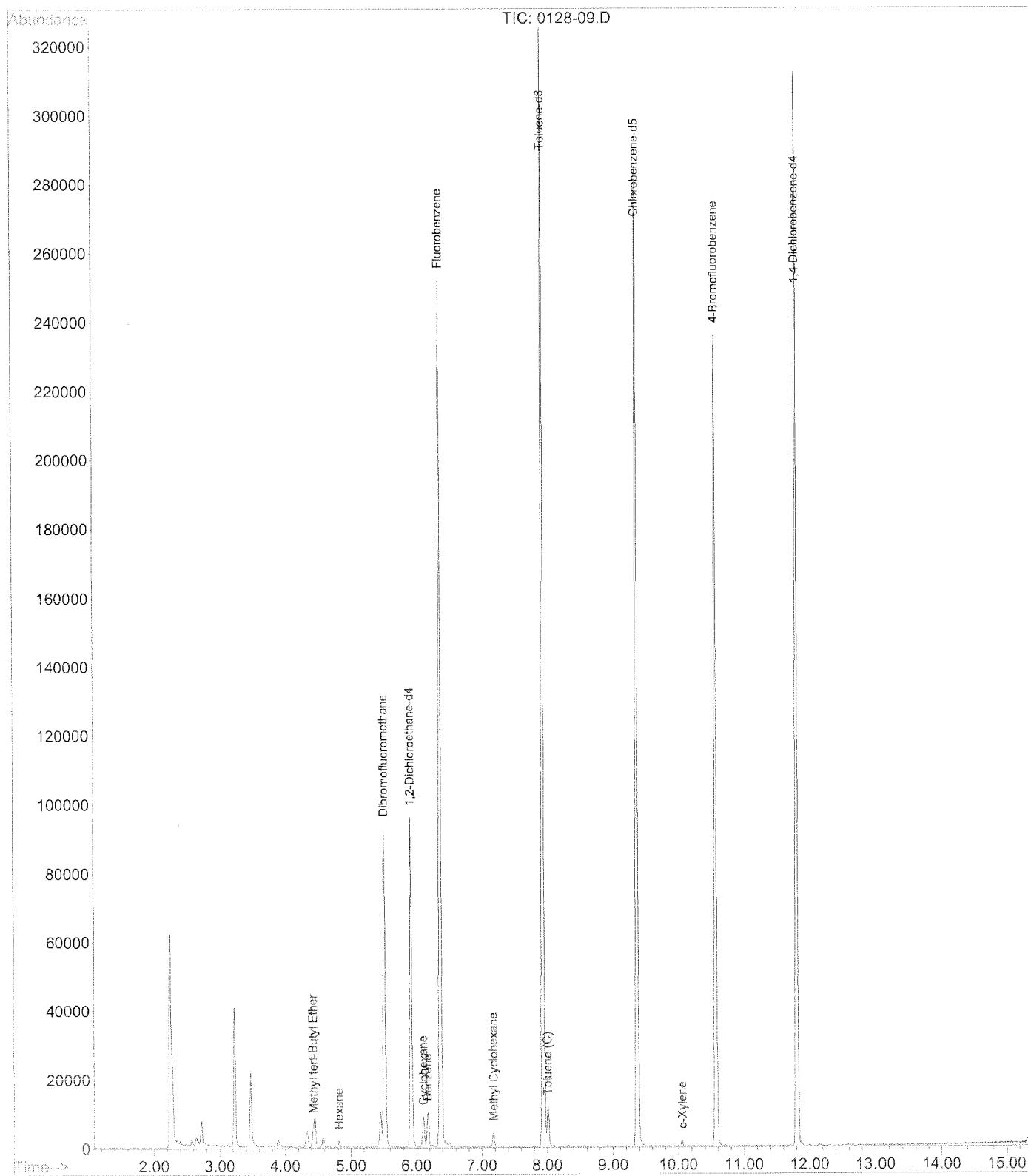
File : I:\MS52\DATA\MS52-140128\0128-07.D  
Operator : SGA  
Acquired : 28 Jan 2014 1:27 pm using AcqMethod VOL  
Instrument : MS52  
Sample Name: J1400482-002 SAMP;50X  
Misc Info : 8260B  
Vial Number: 7



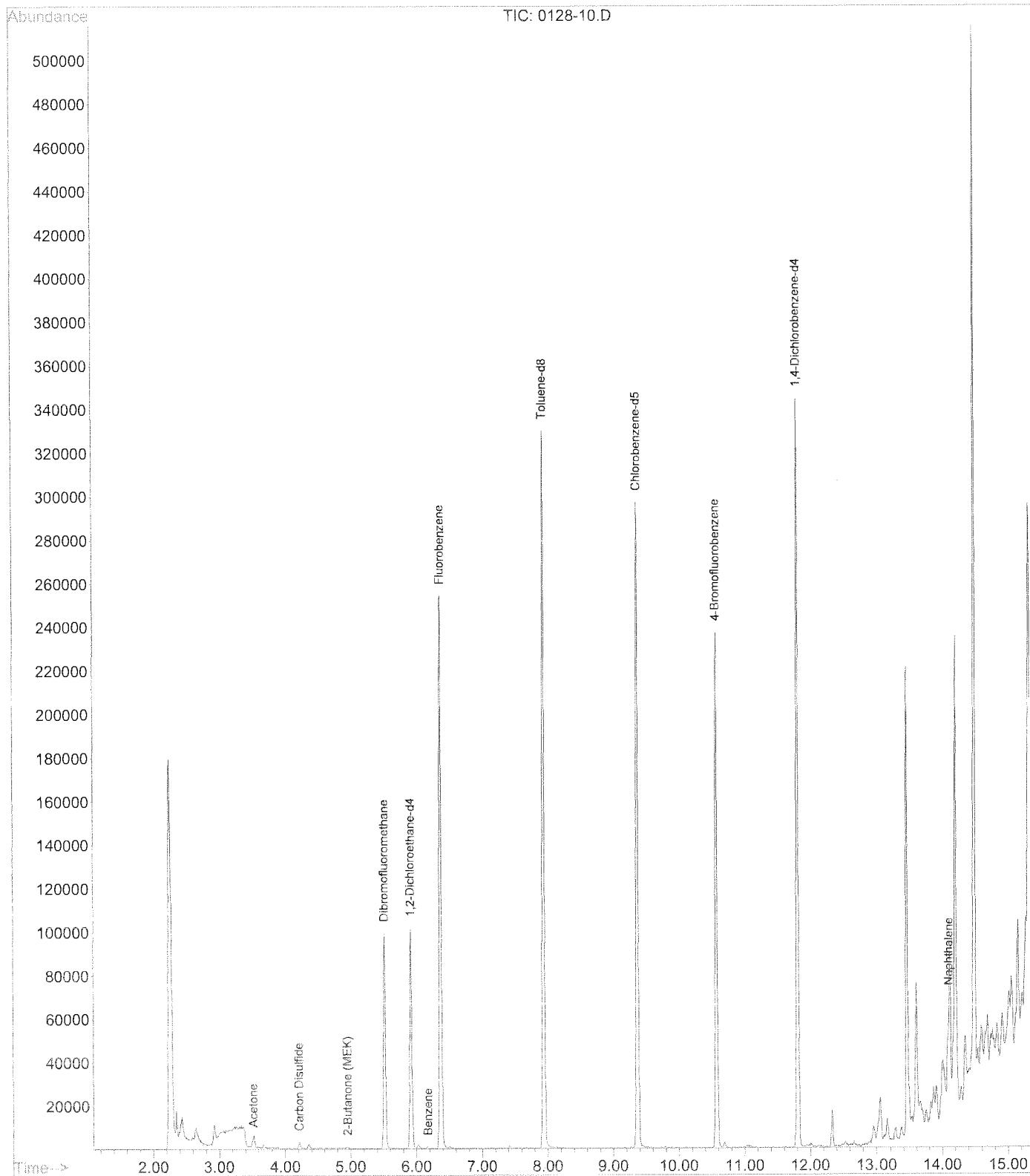
File : I:\MS52\DATA\MS52-140128\0128-08.D  
Operator : SGA  
Acquired : 28 Jan 2014 1:52 pm using AcqMethod VOL  
Instrument : MS52  
Sample Name: J1400482-003 SAMP  
Misc Info : 8260B  
Vial Number: 8



File : I:\MS52\DATA\MS52-140128\0128-09.D  
Operator : SGA  
Acquired : 28 Jan 2014 2:18 pm using AcqMethod VOL  
Instrument : MS52  
Sample Name: J1400482-004 SAMP  
Misc Info : 8260B  
Vial Number: 9



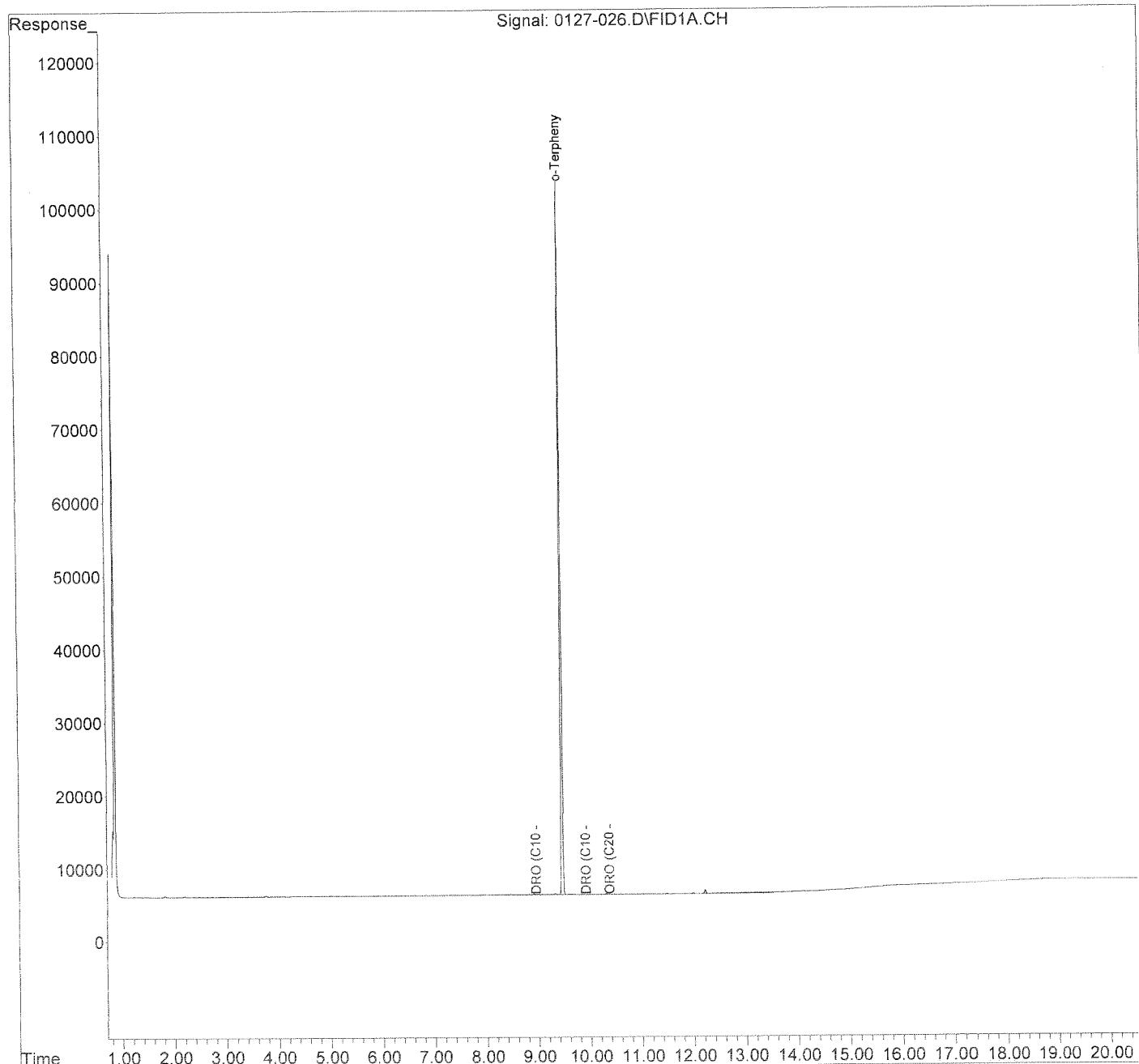
File : I:\MS52\DATA\MS52-140128\0128-10.D  
Operator : SGA  
Acquired : 28 Jan 2014 2:43 pm using AcqMethod VOL  
Instrument : MS52  
Sample Name: J1400482-005 SAMP  
Misc Info : 8260B  
Vial Number: 10



Data Path : J:\GC05\DATA\GC05-140127\  
Data File : 0127-026.D  
Signal(s) : FID1A.CH  
Acq On : 27 Jan 2014 4:17 pm  
Operator : JS  
Sample : J1400482-001 SAMP  
Misc : DRO 8015B  
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Jan 28 08:58:53 2014  
Quant Method : I:\GC05\Methods\GC05-DRO-8015B-140124F.M  
Quant Title : 8015B DRO  
QLast Update : Mon Jan 27 08:29:41 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

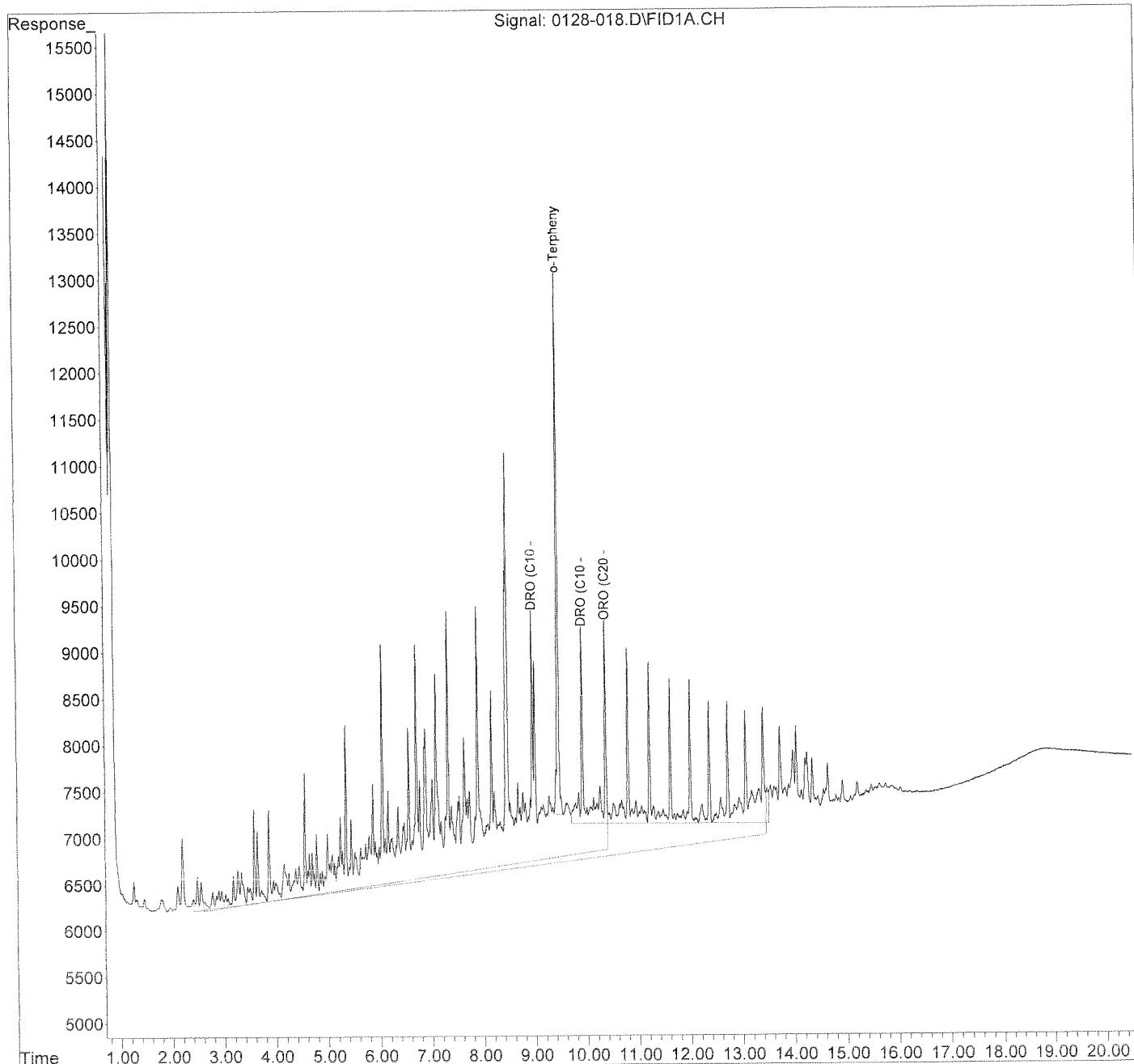
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140128\  
Data File : 0128-018.D  
Signal(s) : FID1A.CH  
Acq On : 28 Jan 2014 2:31 pm  
Operator : JS  
Sample : J1400482-002 SAMP; 20X  
Misc : DRO 8015B  
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Jan 29 09:12:34 2014  
Quant Method : I:\GC05\Methods\GC05-DRO-8015B-140124F.M  
Quant Title : 8015B DRO  
QLast Update : Mon Jan 27 08:29:41 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

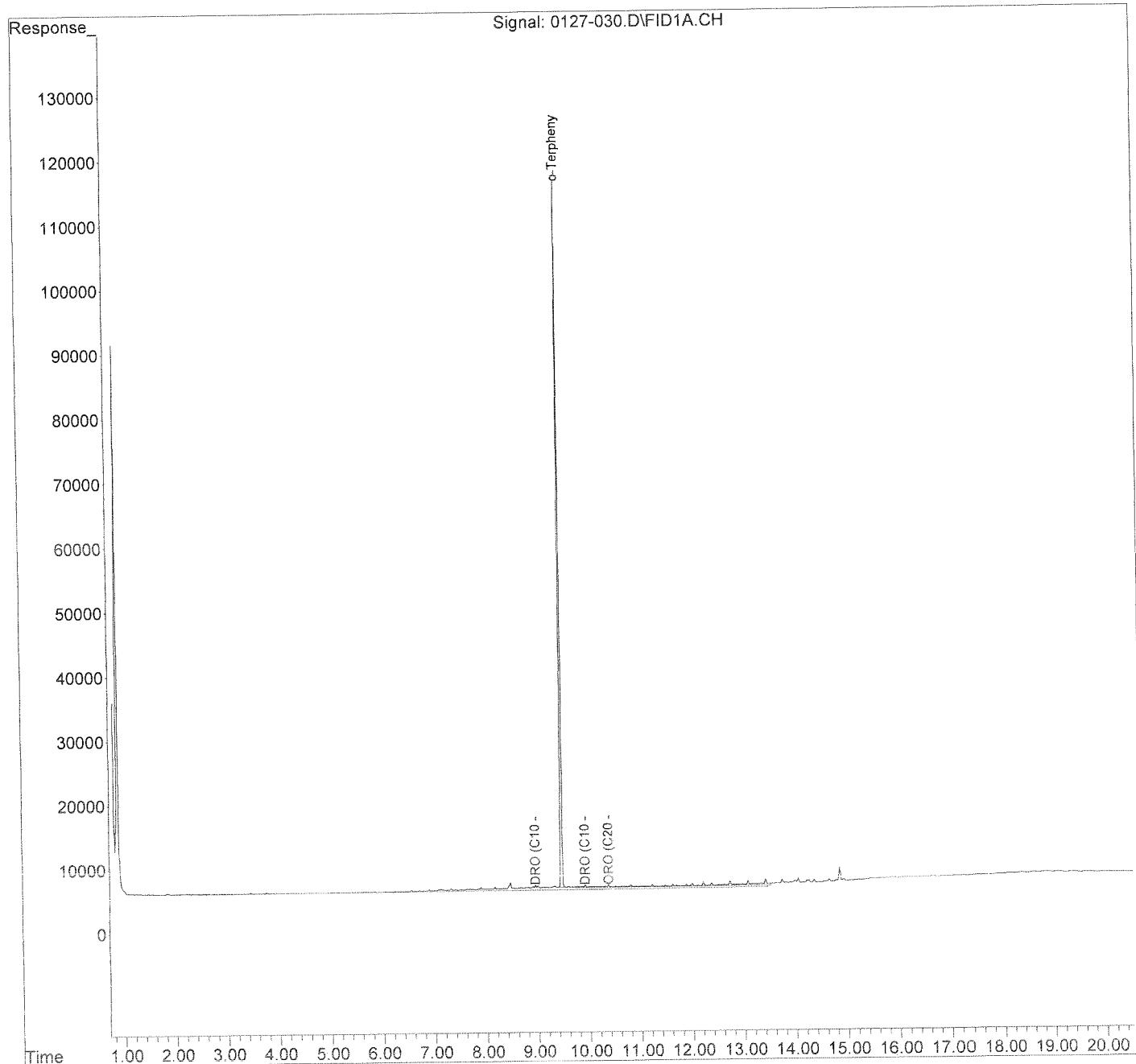
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140127\  
Data File : 0127-030.D  
Signal(s) : FID1A.CH  
Acq On : 27 Jan 2014 5:13 pm  
Operator : JS  
Sample : J1400482-003 SAMP  
Misc : DRO 8015B  
ALS Vial : 15 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Jan 28 09:08:43 2014  
Quant Method : I:\GC05\Methods\GC05-DRO-8015B-140124F.M  
Quant Title : 8015B DRO  
QLast Update : Mon Jan 27 08:29:41 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

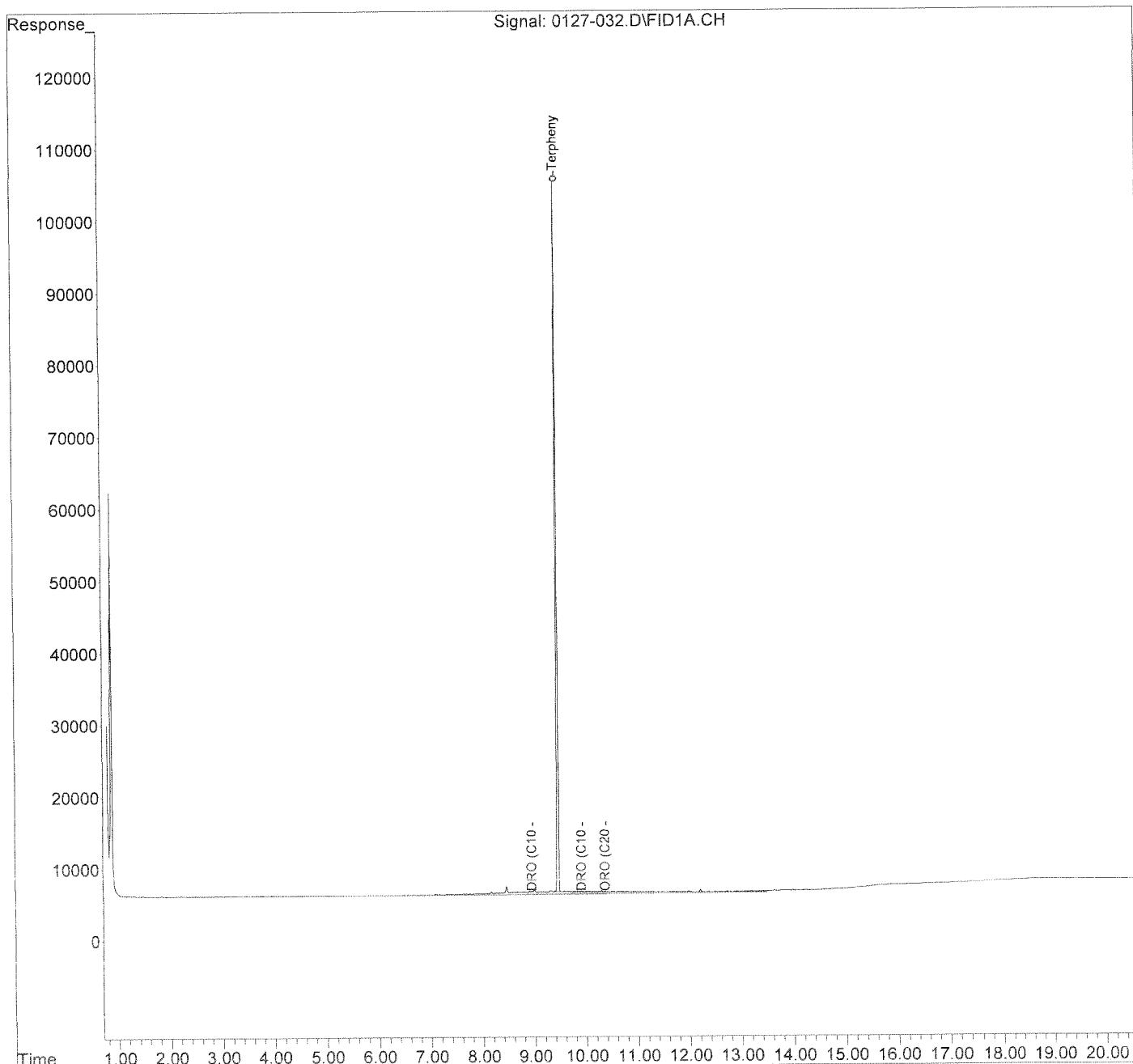
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140127\  
Data File : 0127-032.D  
Signal(s) : FID1A.CH  
Acq On : 27 Jan 2014 5:40 pm  
Operator : JS  
Sample : J1400482-004 SAMP  
Misc :  
ALS Vial : 16 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Jan 28 09:10:08 2014  
Quant Method : I:\GC05\Methods\GC05-DRO-8015B-140124F.M  
Quant Title : 8015B DRO  
QLast Update : Mon Jan 27 08:29:41 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

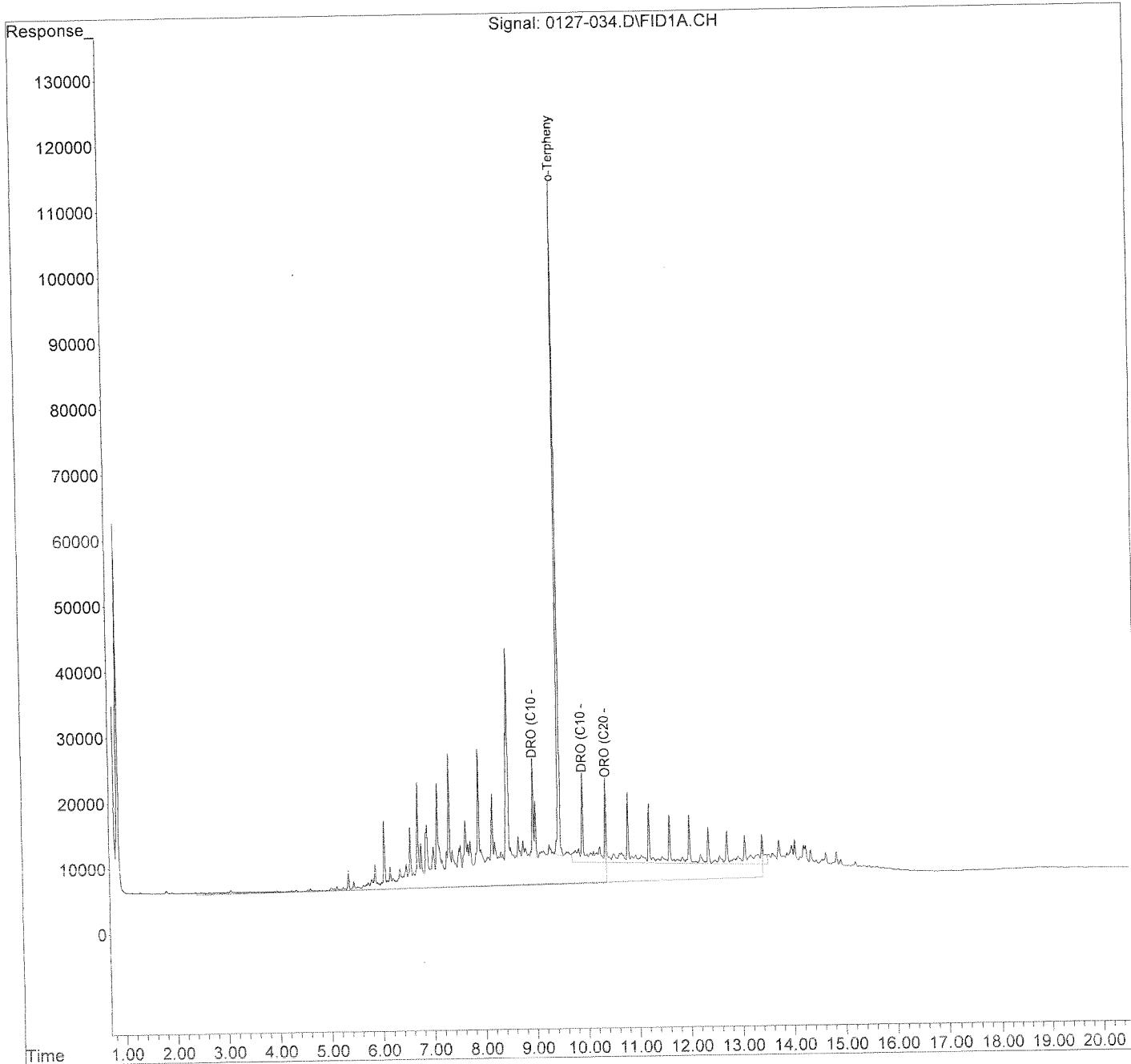
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140127\  
Data File : 0127-034.D  
Signal(s) : FID1A.CH  
Acq On : 27 Jan 2014 6:08 pm  
Operator : JS  
Sample : J1400482-005 SAMP  
Misc : DRO 8015B  
ALS Vial : 17 Sample Multiplier: 1

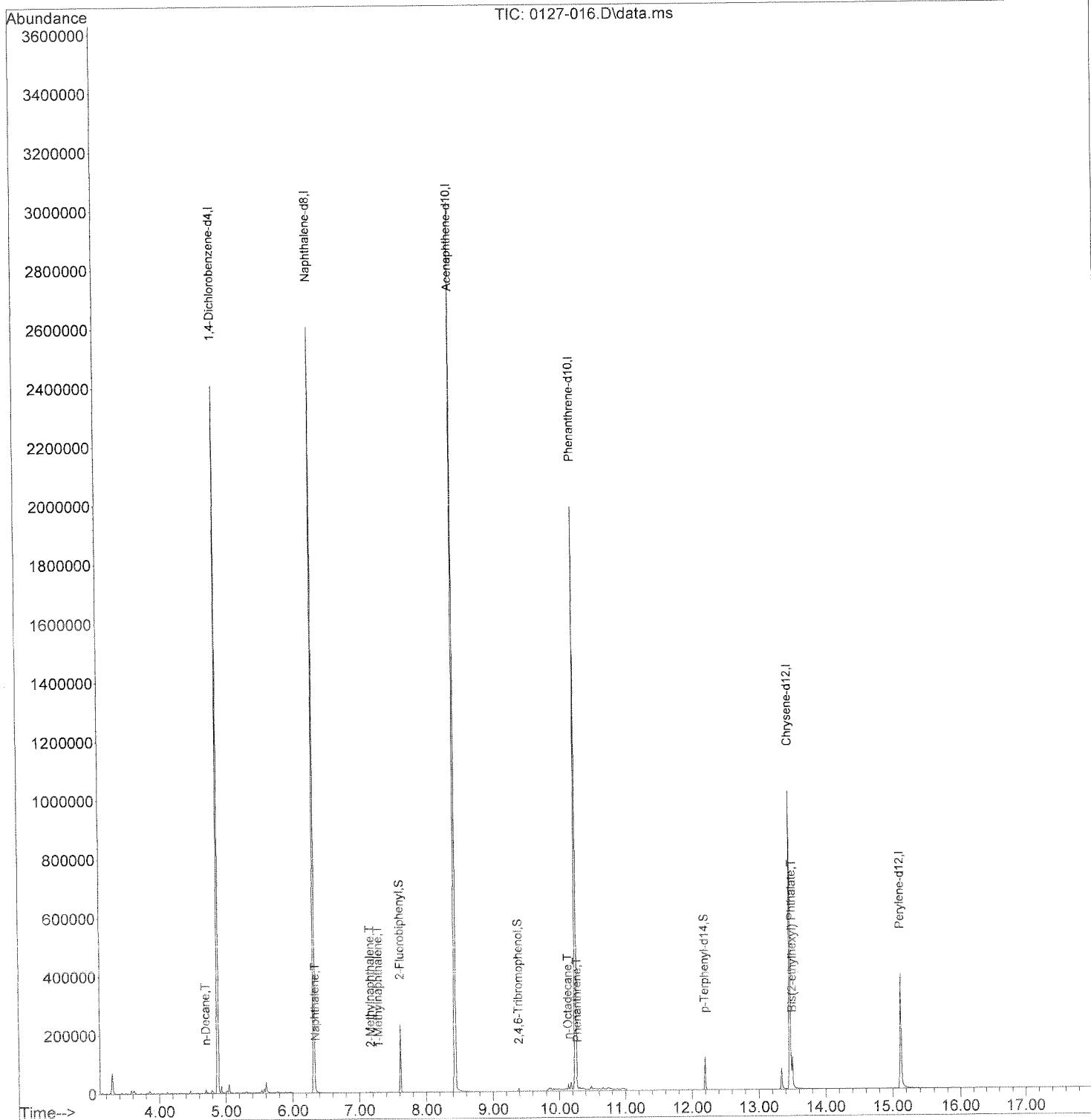
Integration File: autoint1.e  
Quant Time: Jan 28 09:12:18 2014  
Quant Method : I:\GC05\Methods\GC05-DRO-8015B-140124F.M  
Quant Title : 8015B DRO  
QLast Update : Mon Jan 27 08:29:41 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :  
Signal Phase :  
Signal Info :



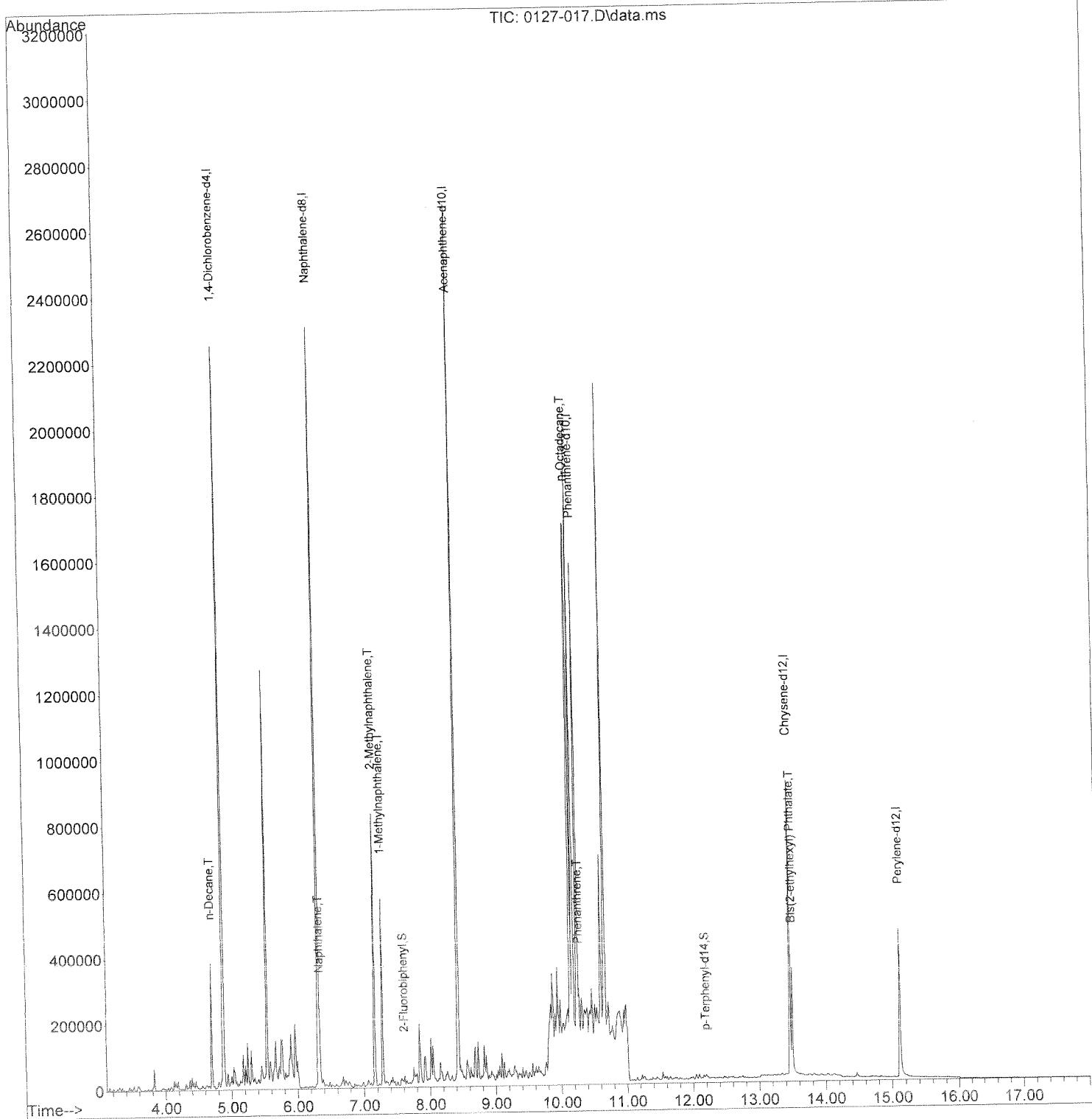
Data Path : J:\MS02\DATA\MS02-140127\  
Data File : 0127-016.D  
Acq On : 27 Jan 2014 10:10 pm  
Operator : KF  
Sample : J1400482-001 SAMP  
Misc : 8270C SIM  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 28 11:22:41 2014  
Quant Method : J:\MS02\METHODS\MS02-140123SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Jan 24 08:39:05 2014  
Response via : Initial Calibration



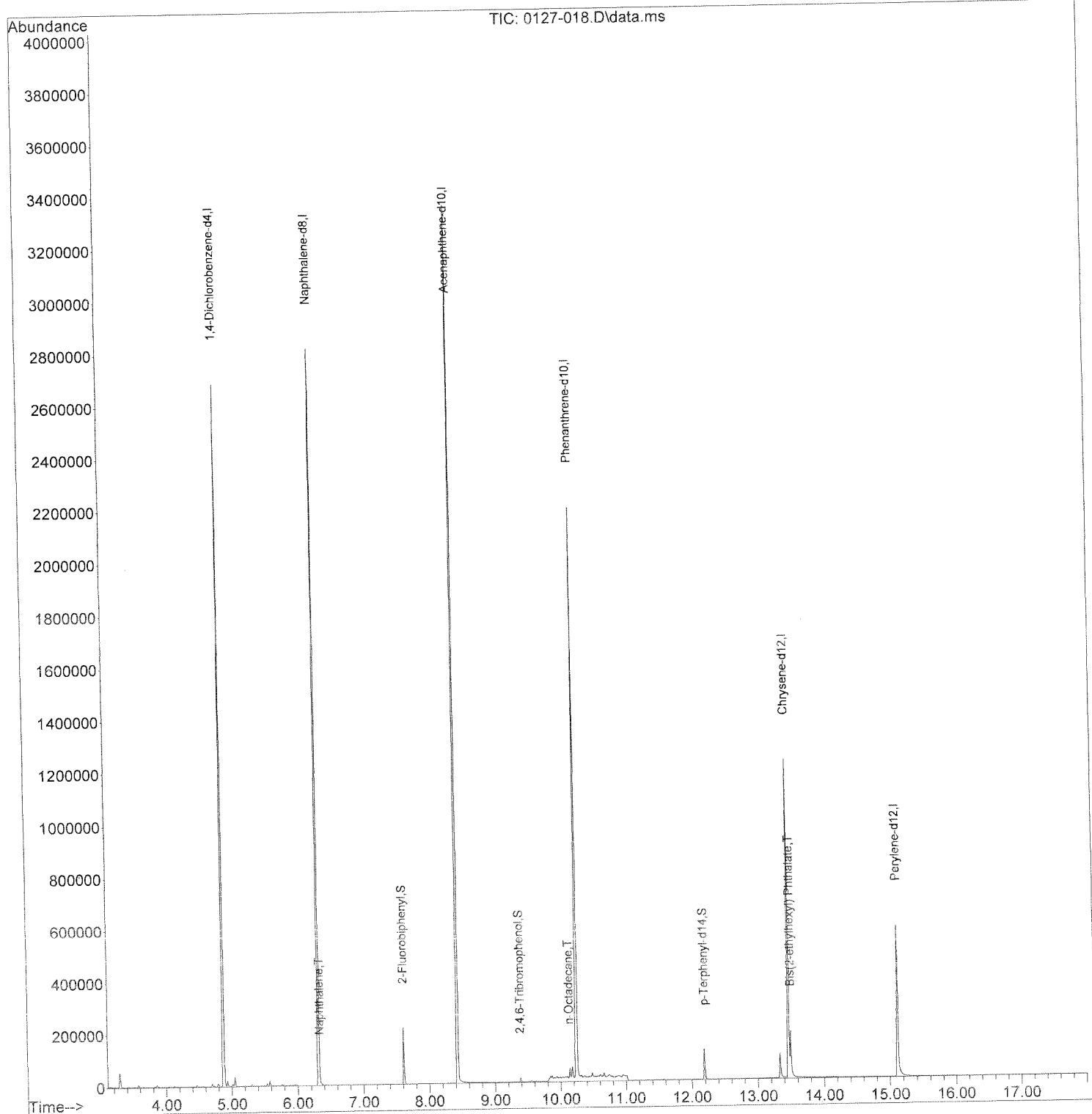
Data Path : J:\MS02\DATA\MS02-140127\  
Data File : 0127-017.D  
Acq On : 27 Jan 2014 10:34 pm  
Operator : KF  
Sample : J1400482-002 SAMP; 10X  
Misc : 8270C SIM  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jan 28 11:23:49 2014  
Quant Method : J:\MS02\METHODS\MS02-140123SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Jan 24 08:39:05 2014  
Response via : Initial Calibration



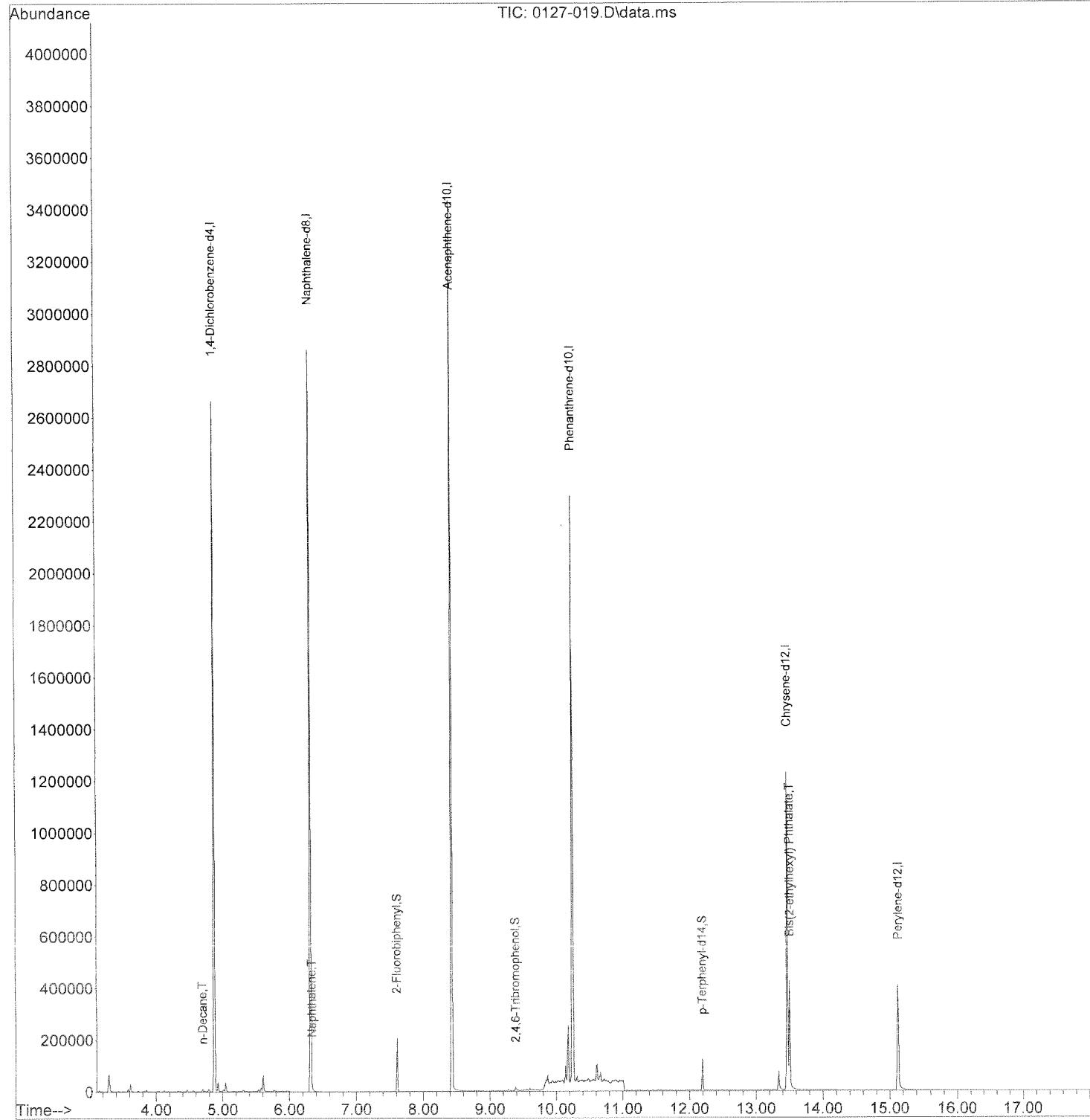
Data Path : J:\MS02\DATA\MS02-140127\  
Data File : 0127-018.D  
Acq On : 27 Jan 2014 10:59 pm  
Operator : KF  
Sample : J1400482-003 SAMP  
Misc : 8270C SIM  
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jan 28 11:24:45 2014  
Quant Method : J:\MS02\METHODS\MS02-140123SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Jan 24 08:39:05 2014  
Response via : Initial Calibration



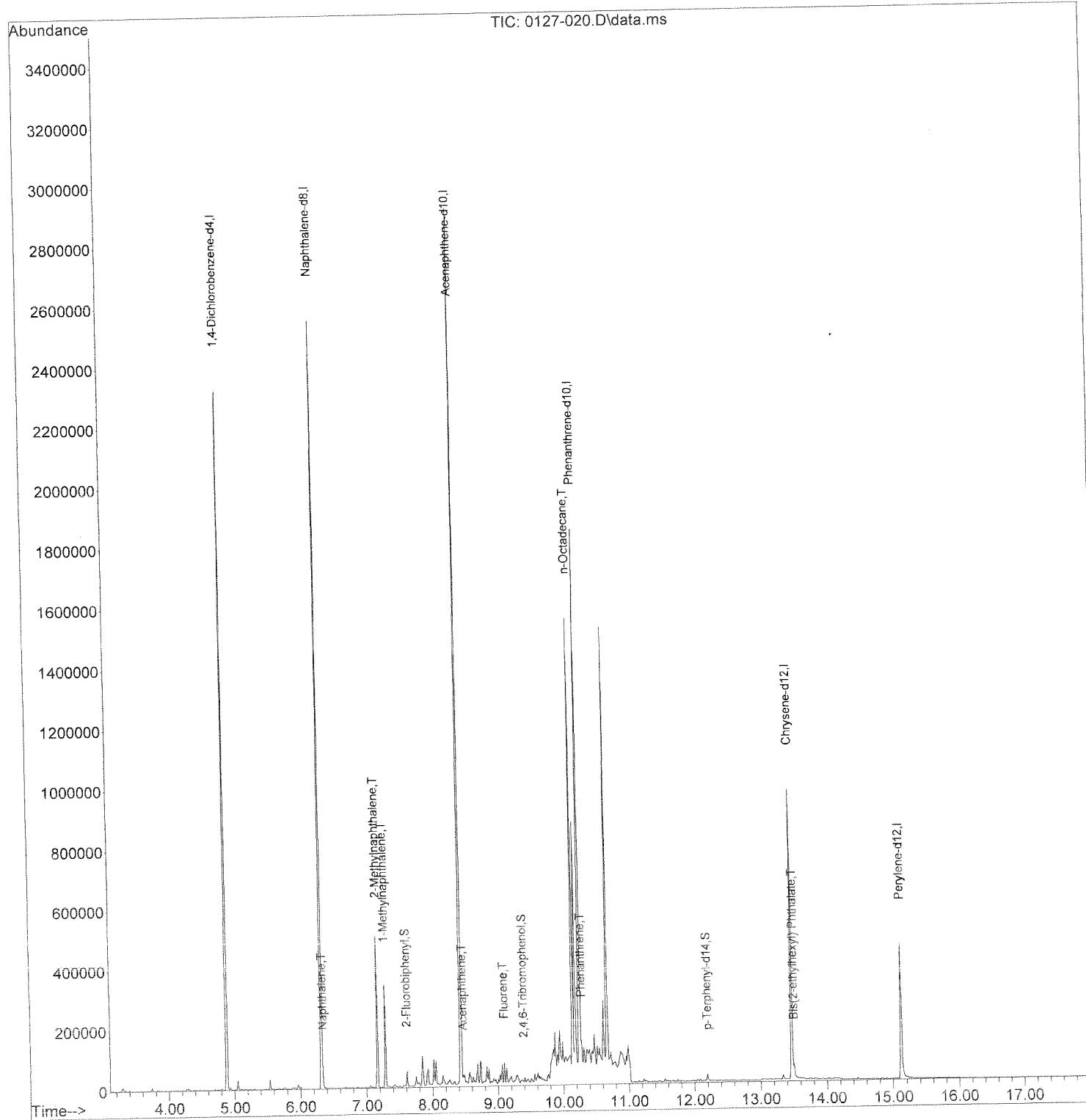
Data Path : J:\MS02\DATA\MS02-140127\  
Data File : 0127-019.D  
Acq On : 27 Jan 2014 11:24 pm  
Operator : KF  
Sample : J1400482-004 SAMP  
Misc : 8270C SIM  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jan 28 11:25:35 2014  
Quant Method : J:\MS02\METHODS\MS02-140123SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Jan 24 08:39:05 2014  
Response via : Initial Calibration



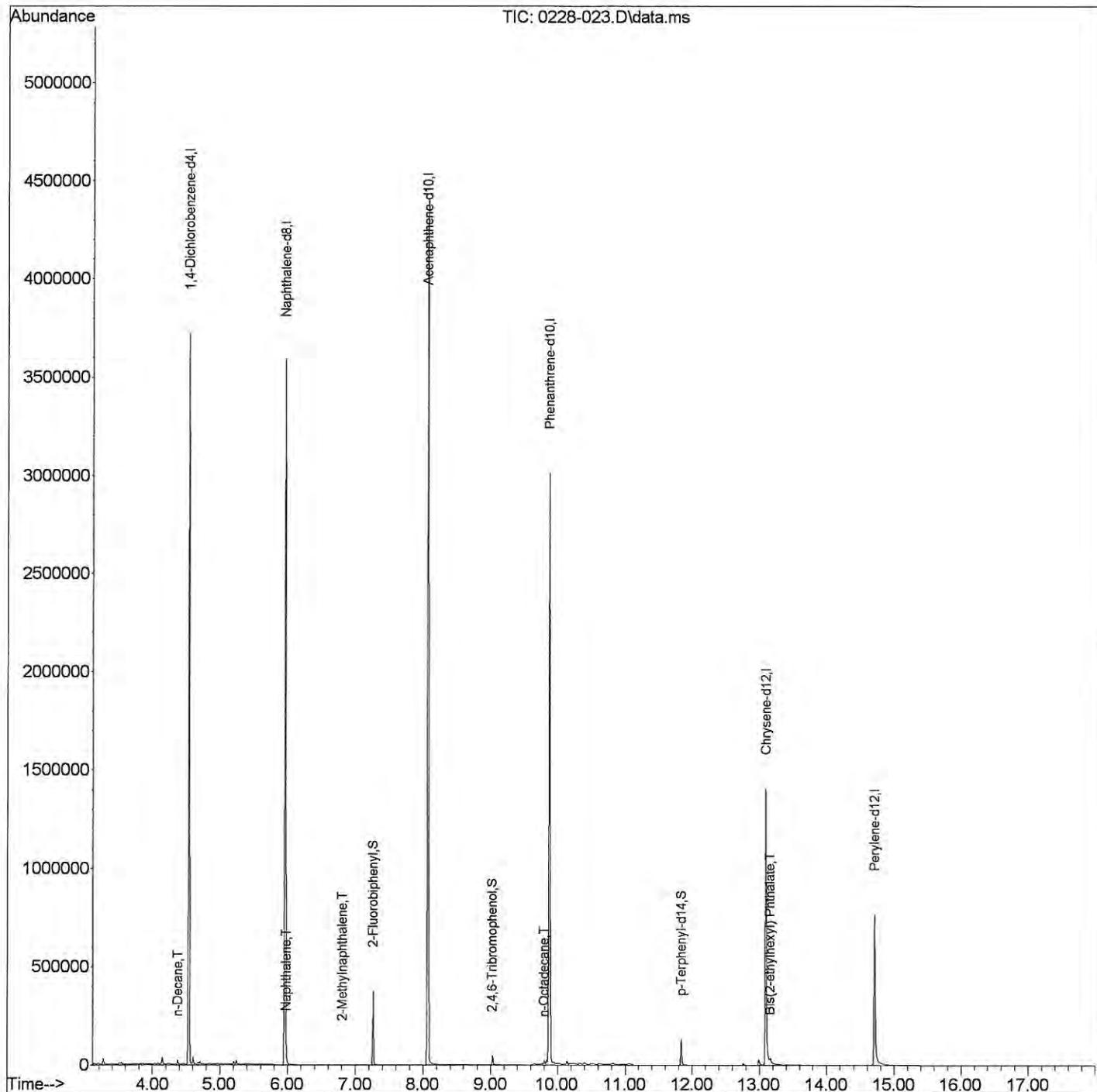
Data Path : J:\MS02\DATA\MS02-140127\  
Data File : 0127-020.D  
Acq On : 27 Jan 2014 11:49 pm  
Operator : KF  
Sample : J1400482-005 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jan 28 11:28:35 2014  
Quant Method : J:\MS02\METHODS\MS02-140123SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Jan 24 08:39:05 2014  
Response via : Initial Calibration



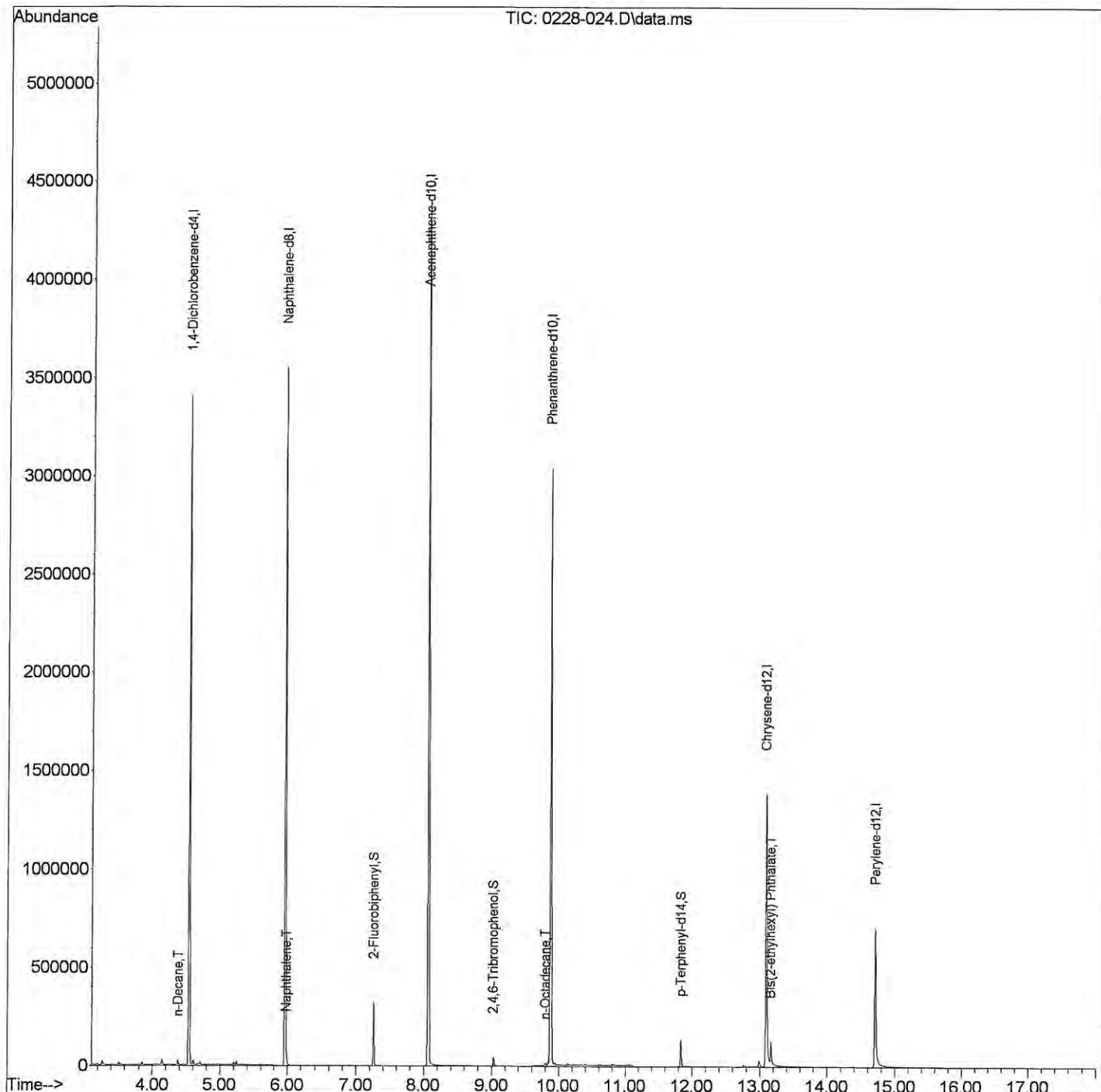
Data Path : J:\MS02\DATA\MS02-140228\  
Data File : 0228-023.D  
Acq On : 28 Feb 2014 7:29 pm  
Operator : KF  
Sample : J1401327-001 SAMP  
Misc : 8270C SIM  
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Mar 03 11:55:24 2014  
Quant Method : J:\MS02\METHODS\MS02-140228SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Mon Mar 03 10:41:07 2014  
Response via : Initial Calibration



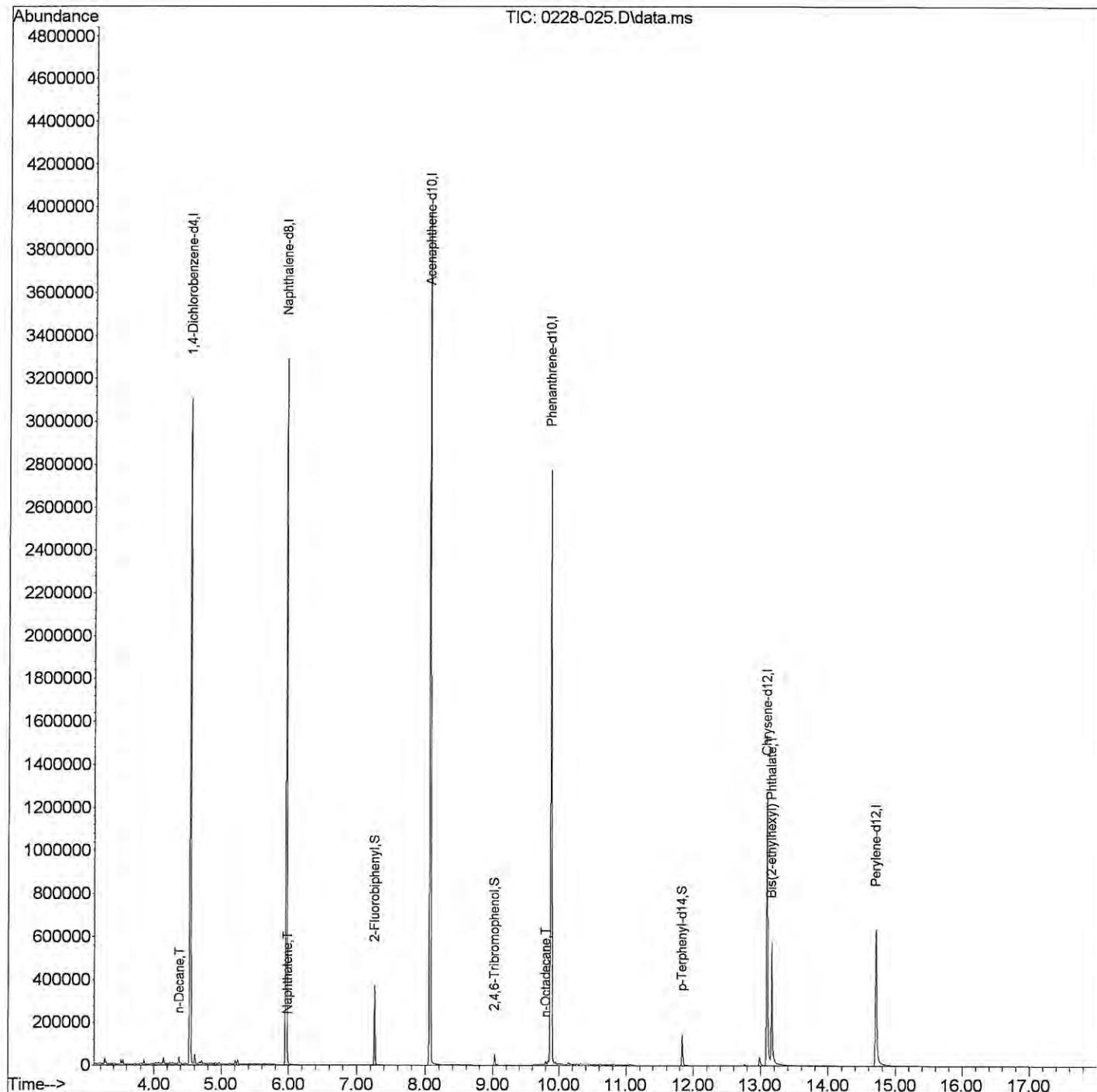
Data Path : J:\MS02\DATA\MS02-140228\  
Data File : 0228-024.D  
Acq On : 28 Feb 2014 7:54 pm  
Operator : KF  
Sample : J1401327-002 SAMP  
Misc : 8270C SIM  
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Mar 03 11:56:22 2014  
Quant Method : J:\MS02\METHODS\MS02-140228SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Mon Mar 03 10:41:07 2014  
Response via : Initial Calibration



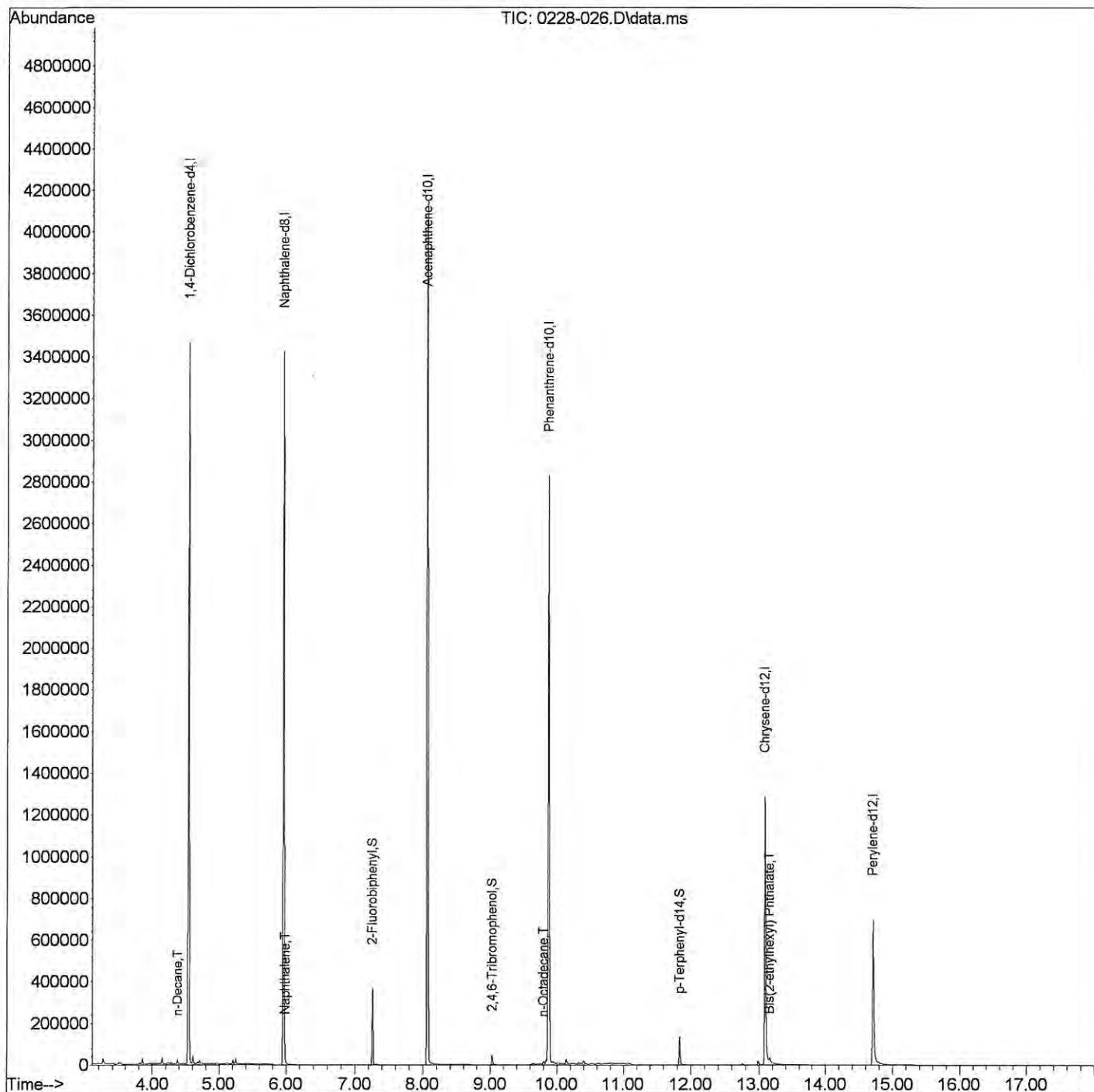
Data Path : J:\MS02\DATA\MS02-140228\  
Data File : 0228-025.D  
Acq On : 28 Feb 2014 8:19 pm  
Operator : KF  
Sample : J1401327-003 SAMP  
Misc : 8270C SIM  
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Mar 03 11:57:15 2014  
Quant Method : J:\MS02\METHODS\MS02-140228SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Mon Mar 03 10:41:07 2014  
Response via : Initial Calibration



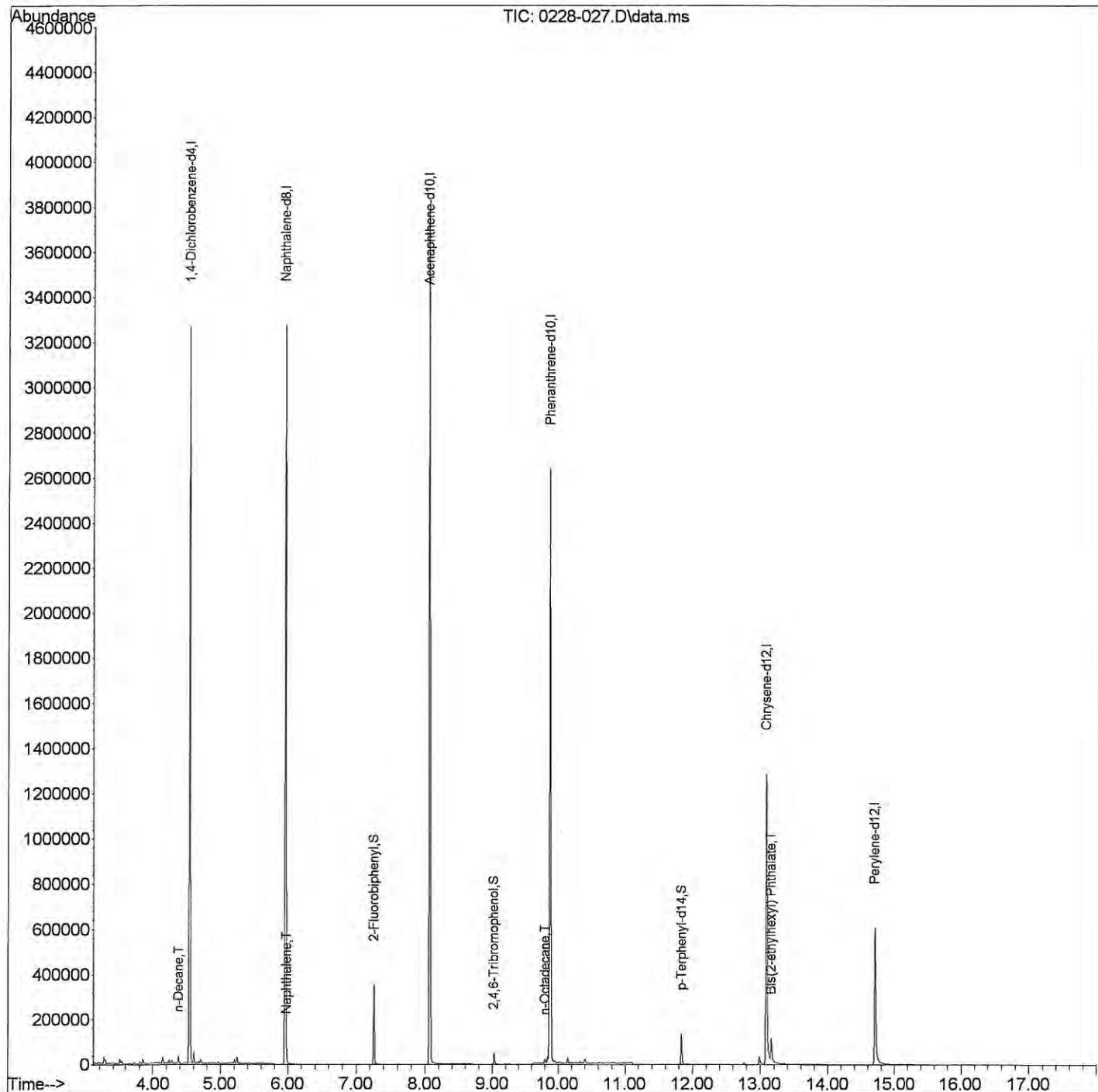
Data Path : J:\MS02\DATA\MS02-140228\  
Data File : 0228-026.D  
Acq On : 28 Feb 2014 8:44 pm  
Operator : KF  
Sample : J1401327-004 SAMP  
Misc : 8270C SIM  
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Mar 03 11:58:17 2014  
Quant Method : J:\MS02\METHODS\MS02-140228SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Mon Mar 03 10:41:07 2014  
Response via : Initial Calibration



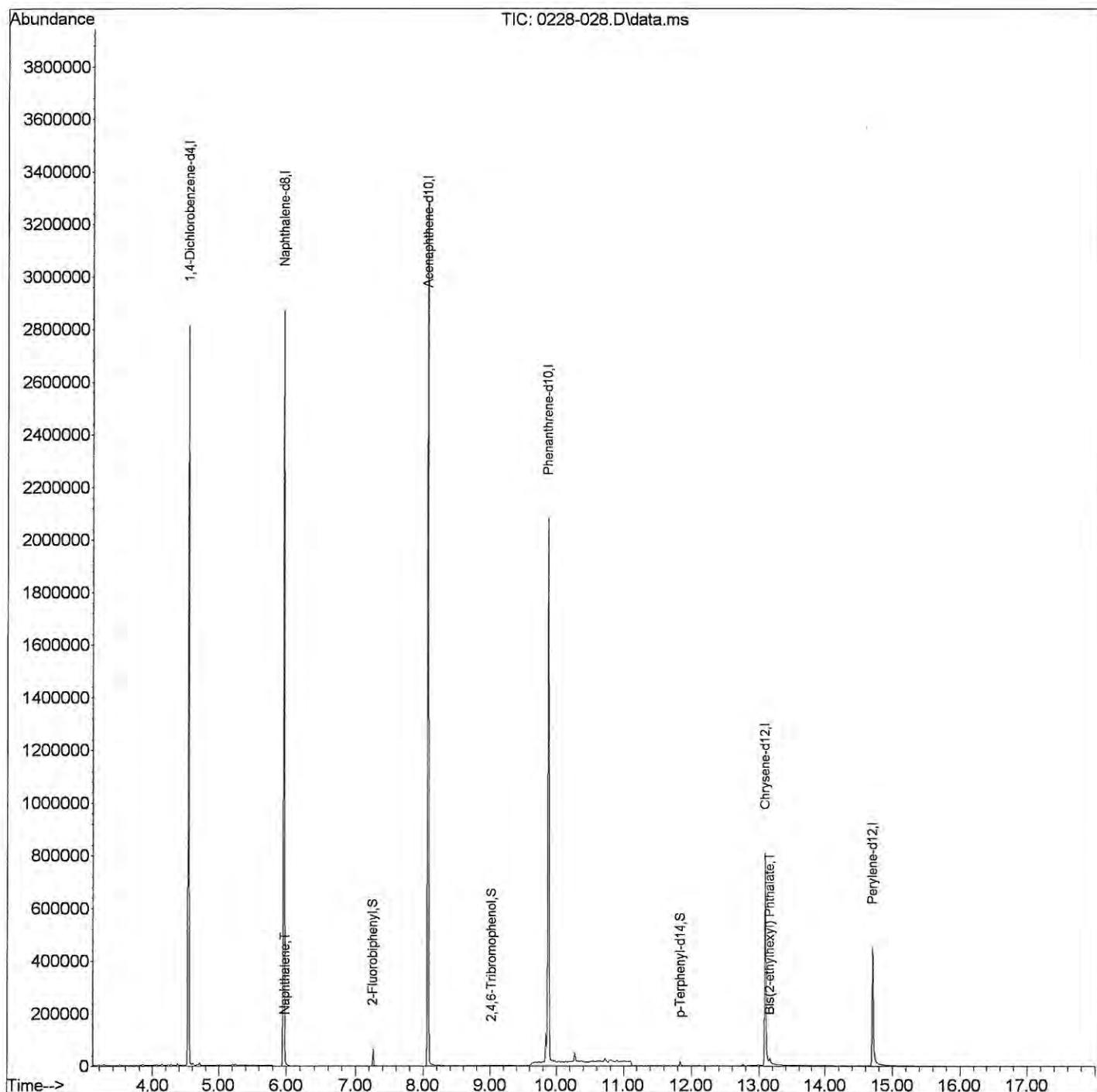
Data Path : J:\MS02\DATA\MS02-140228\  
Data File : 0228-027.D  
Acq On : 28 Feb 2014 9:08 pm  
Operator : KF  
Sample : J1401327-005 SAMP  
Misc : 8270C SIM  
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Mar 03 11:59:17 2014  
Quant Method : J:\MS02\METHODS\MS02-140228SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Mon Mar 03 10:41:07 2014  
Response via : Initial Calibration



Data Path : J:\MS02\DATA\MS02-140228\  
Data File : 0228-028.D  
Acq On : 28 Feb 2014 9:33 pm  
Operator : KF  
Sample : J1401327-006 SAMP; 5X  
Misc : 8270C SIM  
ALS Vial : 27 Sample Multiplier: 1

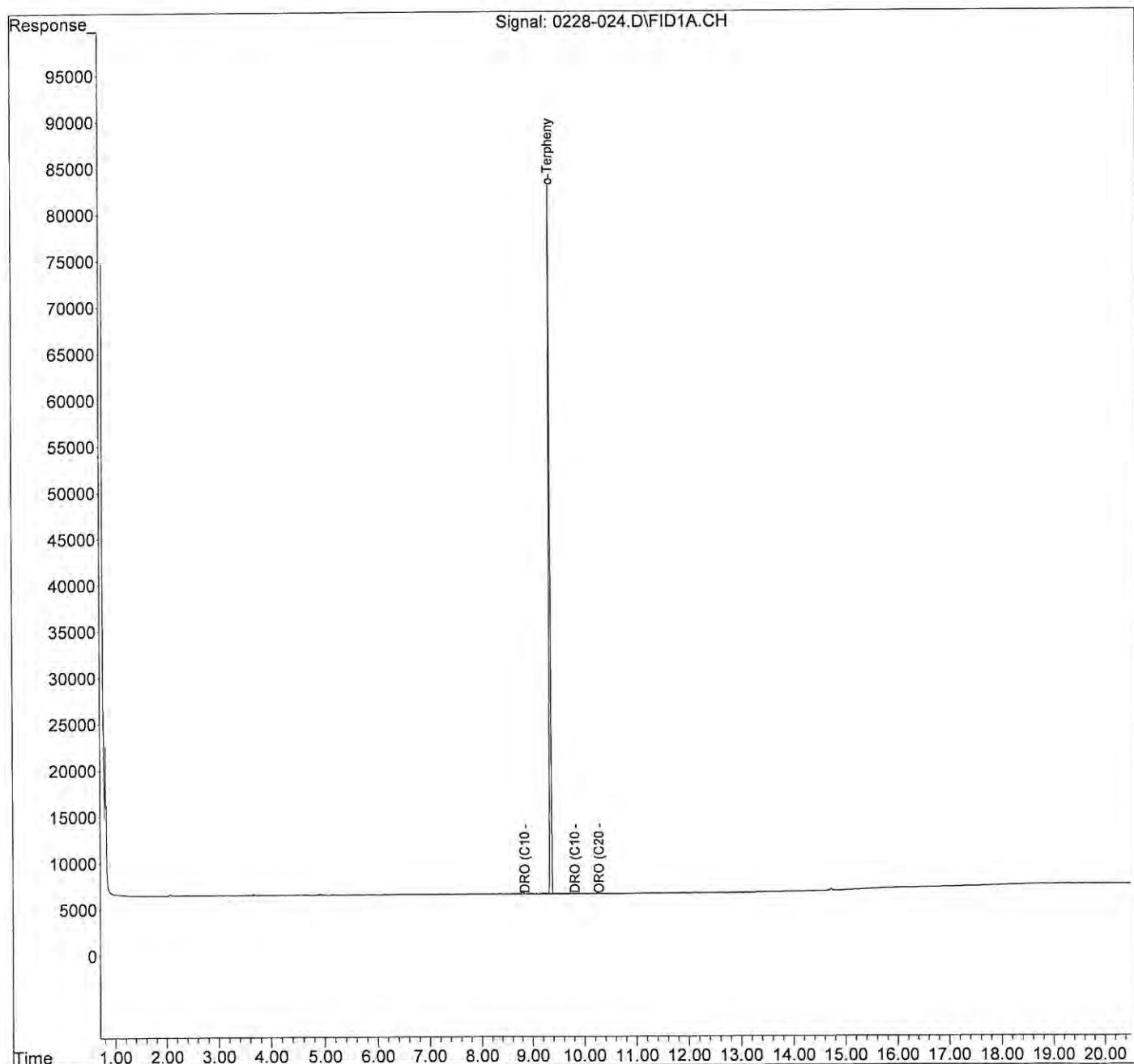
Quant Time: Mar 03 12:00:00 2014  
Quant Method : J:\MS02\METHODS\MS02-140228SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Mon Mar 03 10:41:07 2014  
Response via : Initial Calibration



Data Path : J:\GC05\DATA\GC05-140228\  
Data File : 0228-024.D  
Signal(s) : FID1A.CH  
Acq On : 28 Feb 2014 2:42 pm  
Operator : JS  
Sample : J1401327-001 SAMP  
Misc : DRO 8015B  
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Mar 03 08:40:39 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140220F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Feb 21 10:19:58 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

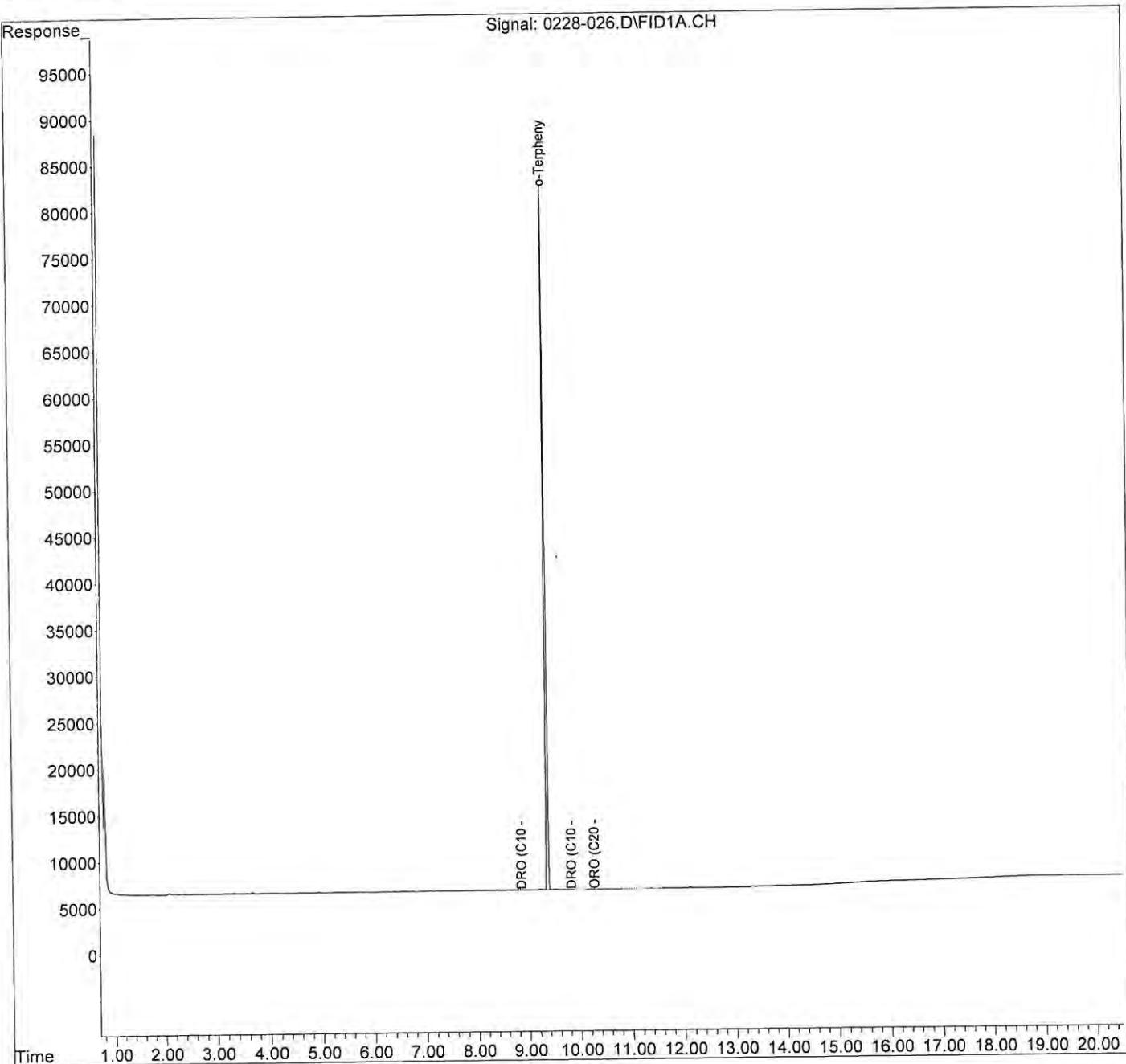
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140228\  
Data File : 0228-026.D  
Signal(s) : FID1A.CH  
Accq On : 28 Feb 2014 3:09 pm  
Operator : JS  
Sample : J1401327-002 SAMP  
Misc : DRO 8015B  
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Mar 03 08:40:42 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140220F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Feb 21 10:19:58 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

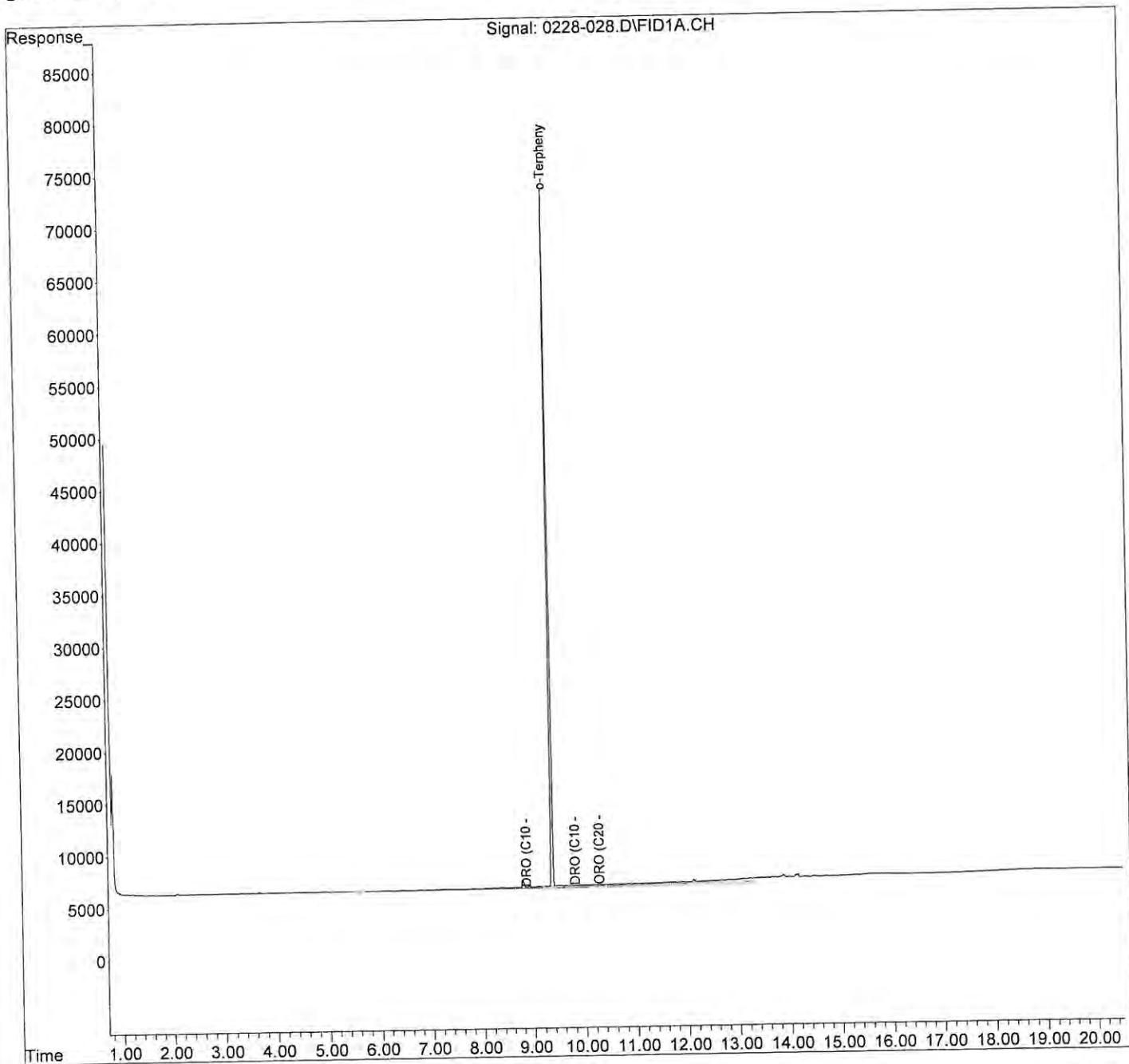
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140228\  
Data File : 0228-028.D  
Signal(s) : FID1A.CH  
Acq On : 28 Feb 2014 4:25 pm  
Operator : JS  
Sample : J1401327-003 SAMP  
Misc : DRO 8015B  
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Mar 03 08:40:45 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140220F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Feb 21 10:19:58 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

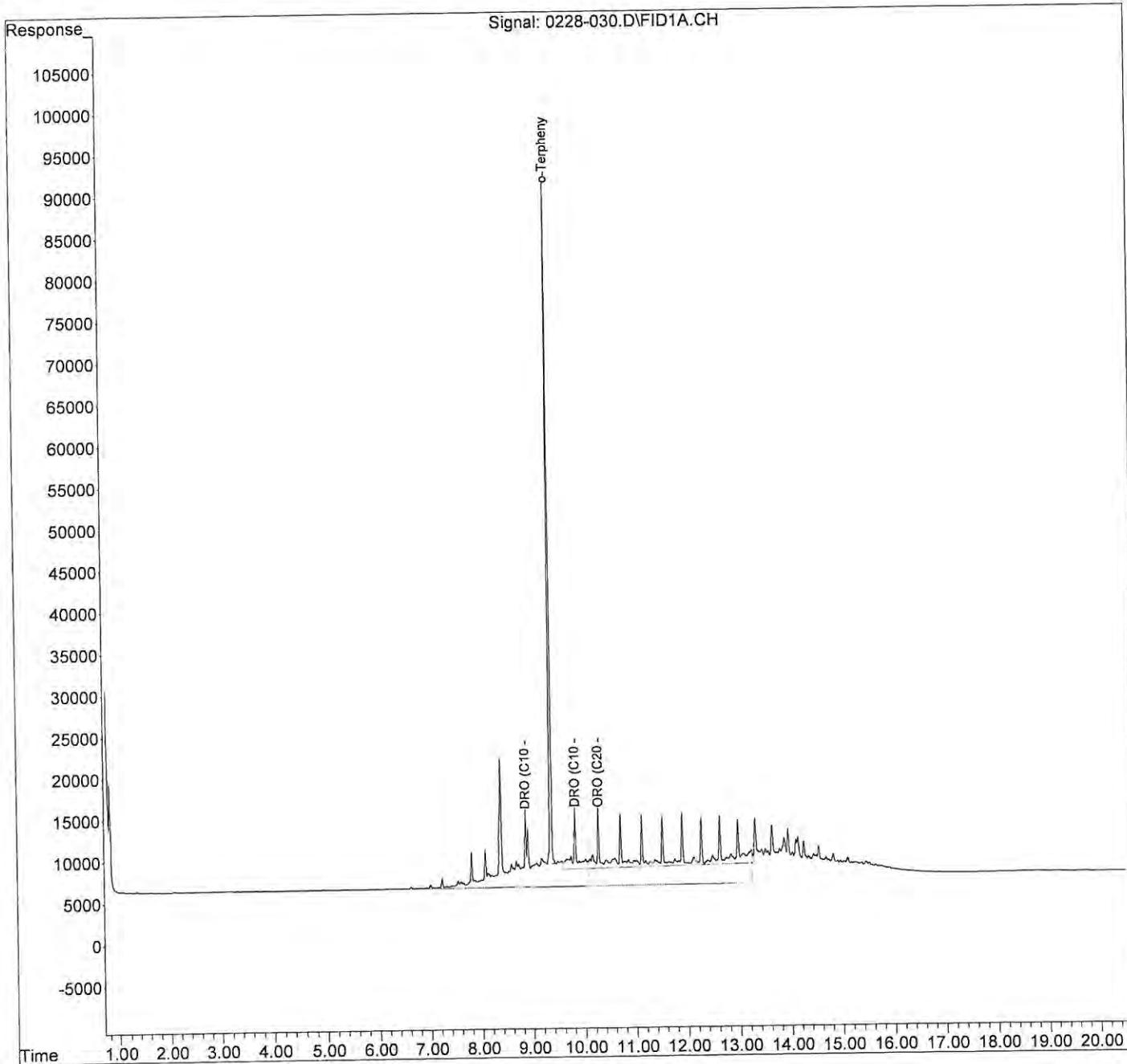
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140228\  
Data File : 0228-030.D  
Signal(s) : FID1A.CH  
Acq On : 28 Feb 2014 4:53 pm  
Operator : JS  
Sample : J1401327-004 SAMP  
Misc : DRO 8015B  
ALS Vial : 15 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Mar 03 08:57:57 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140220F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Feb 21 10:19:58 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

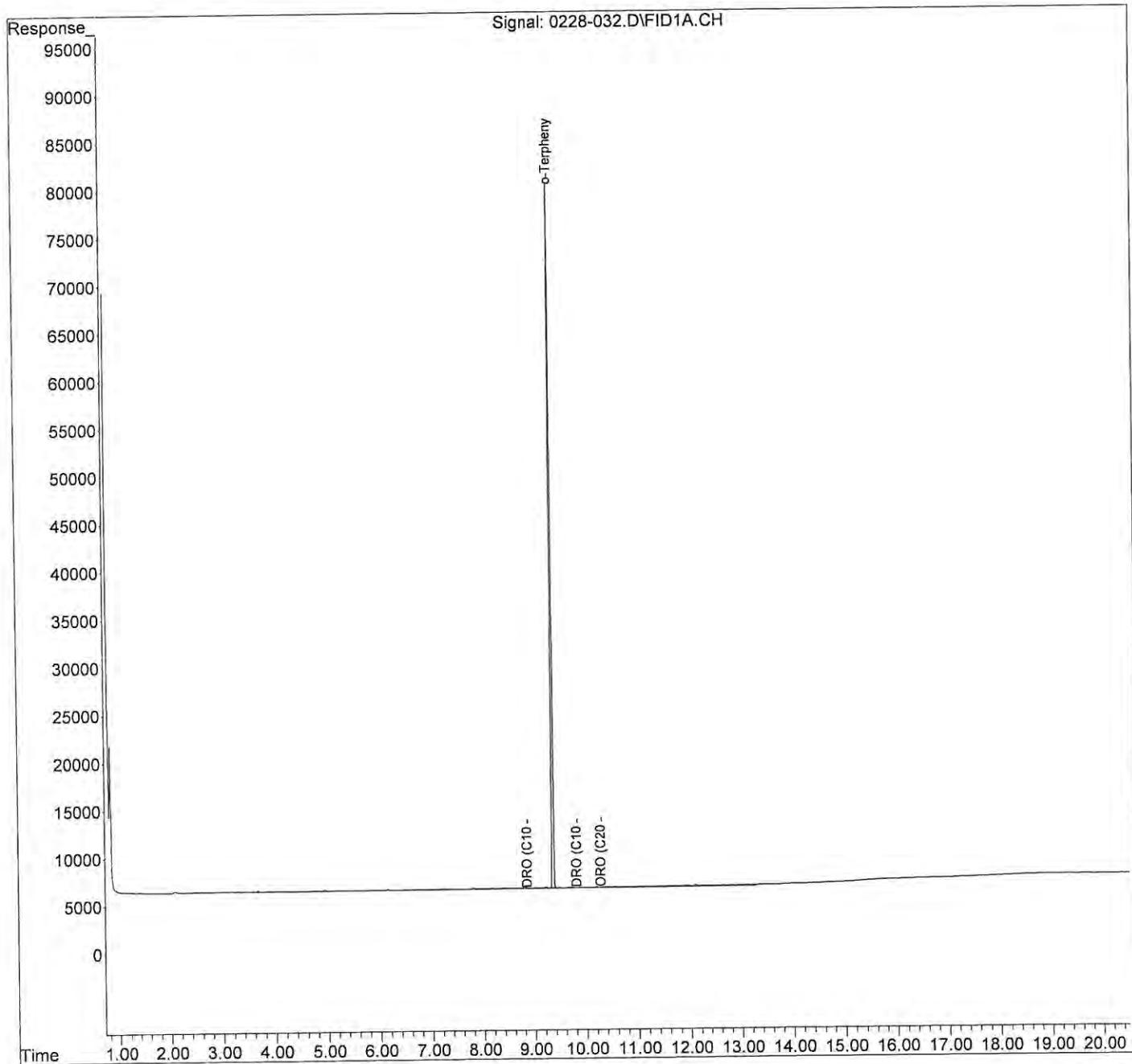
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140228\  
Data File : 0228-032.D  
Signal(s) : FID1A.CH  
Acq On : 28 Feb 2014 5:20 pm  
Operator : JS  
Sample : J1401327-005 SAMP  
Misc :  
ALS Vial : 16 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Mar 03 08:40:51 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140220F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Feb 21 10:19:58 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

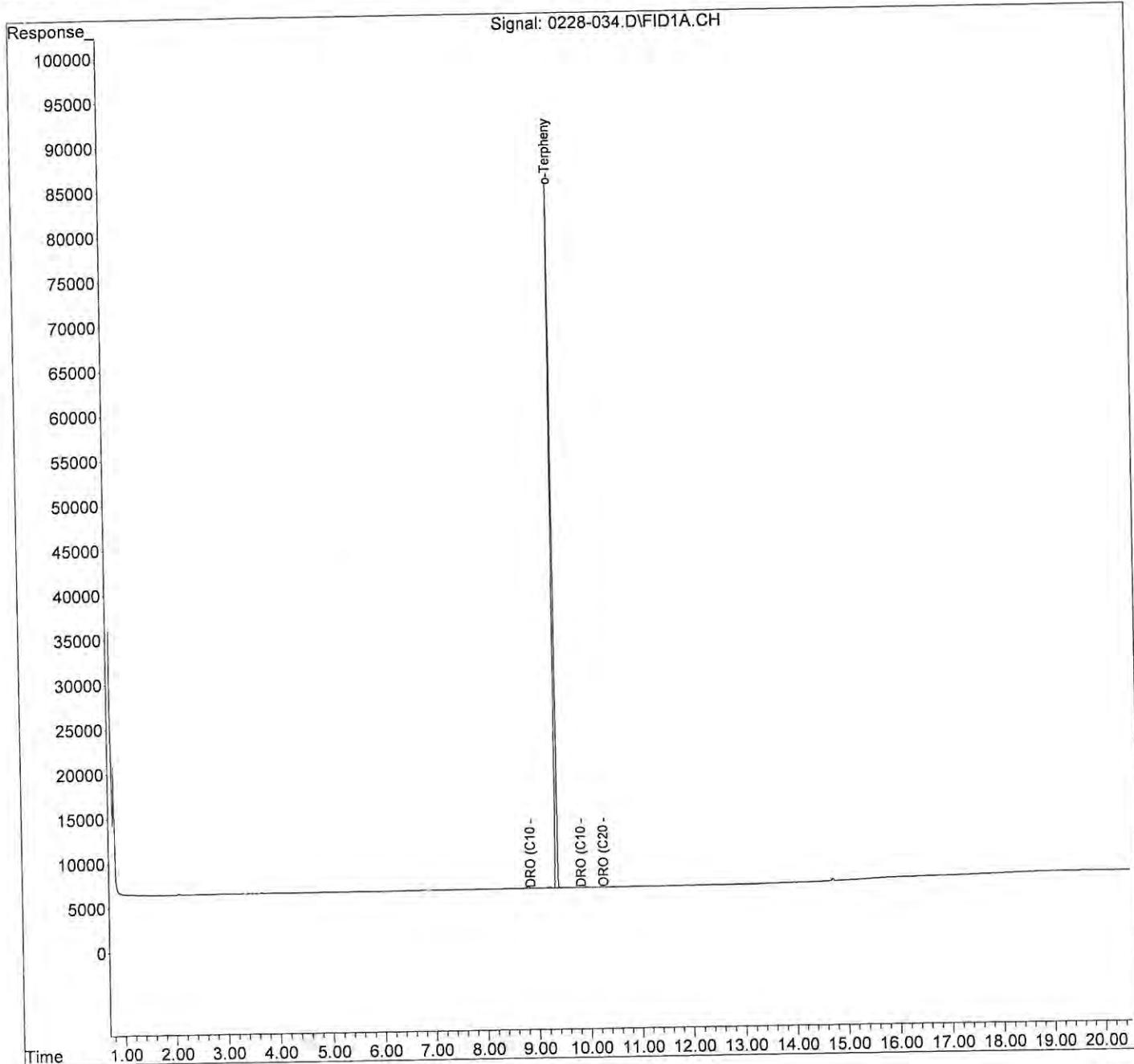
Volume Inj. :  
Signal Phase :  
Signal Info :



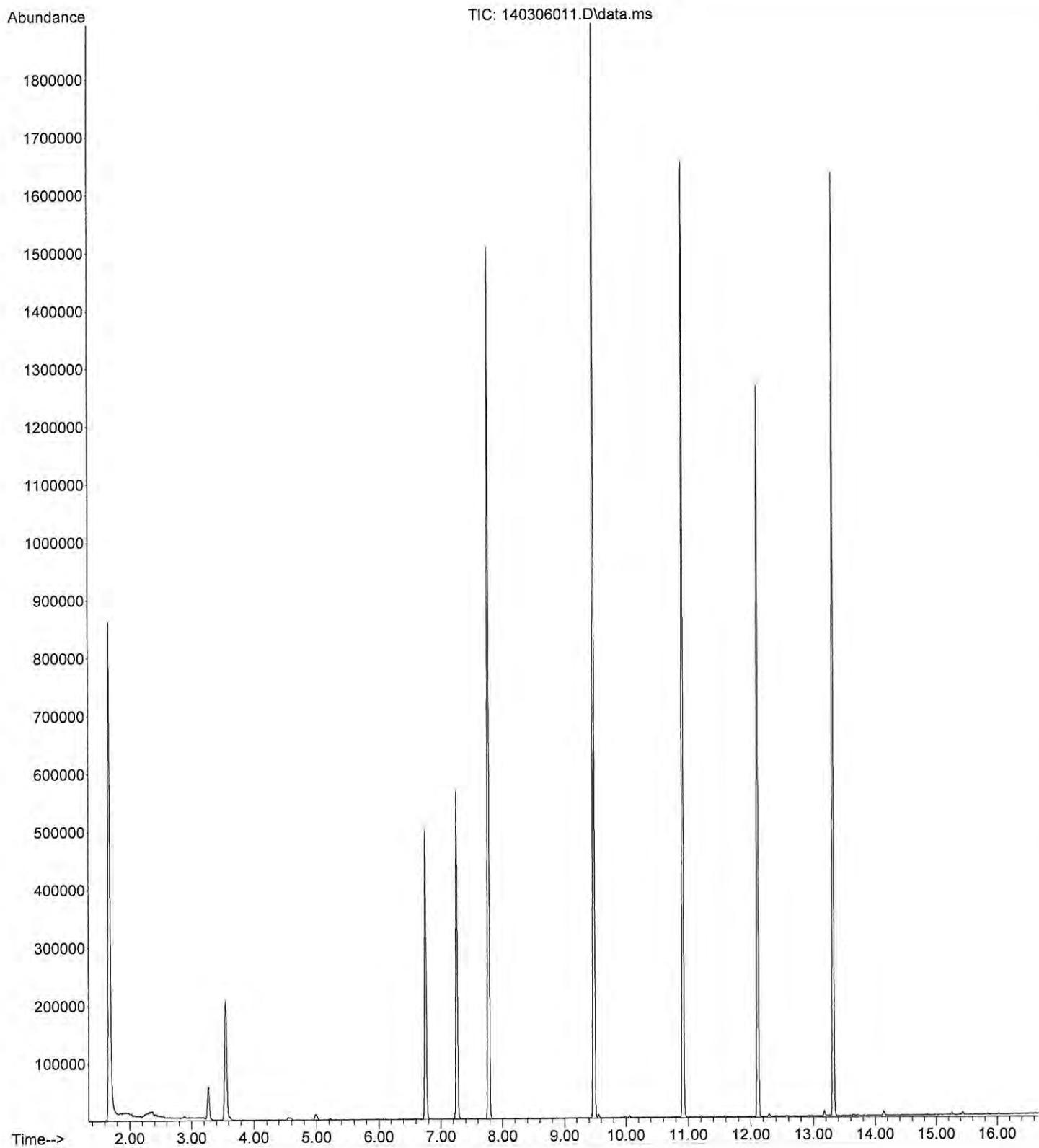
Data Path : J:\GC05\DATA\GC05-140228\  
Data File : 0228-034.D  
Signal(s) : FID1A.CH  
Acq On : 28 Feb 2014 5:48 pm  
Operator : JS  
Sample : J1401327-006 SAMP  
Misc : DRO 8015B  
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e  
Quant Time: Mar 03 08:40:54 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140220F.M  
Quant Title : 8015B DRO  
QLast Update : Fri Feb 21 10:19:58 2014  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

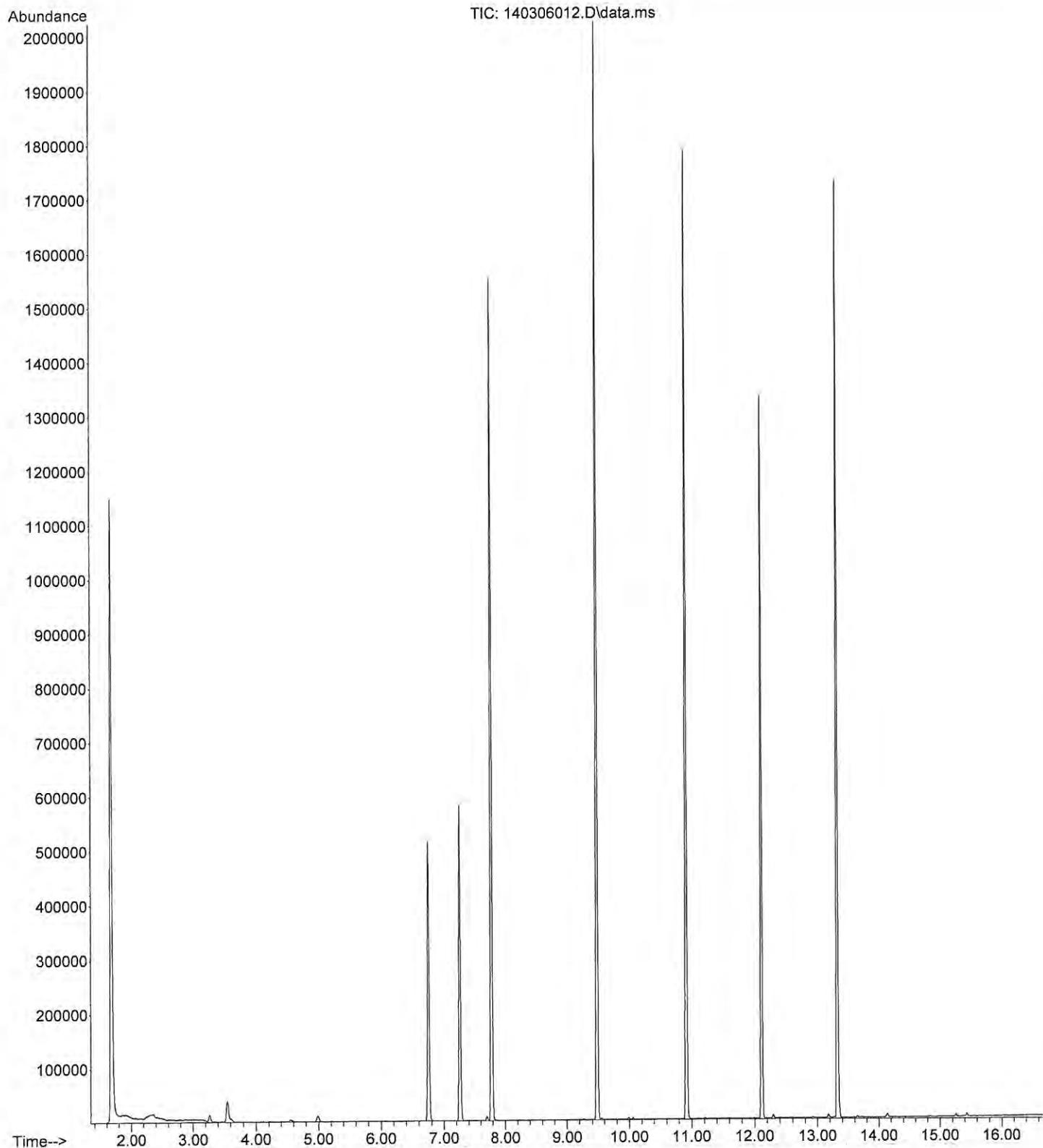
Volume Inj. :  
Signal Phase :  
Signal Info :



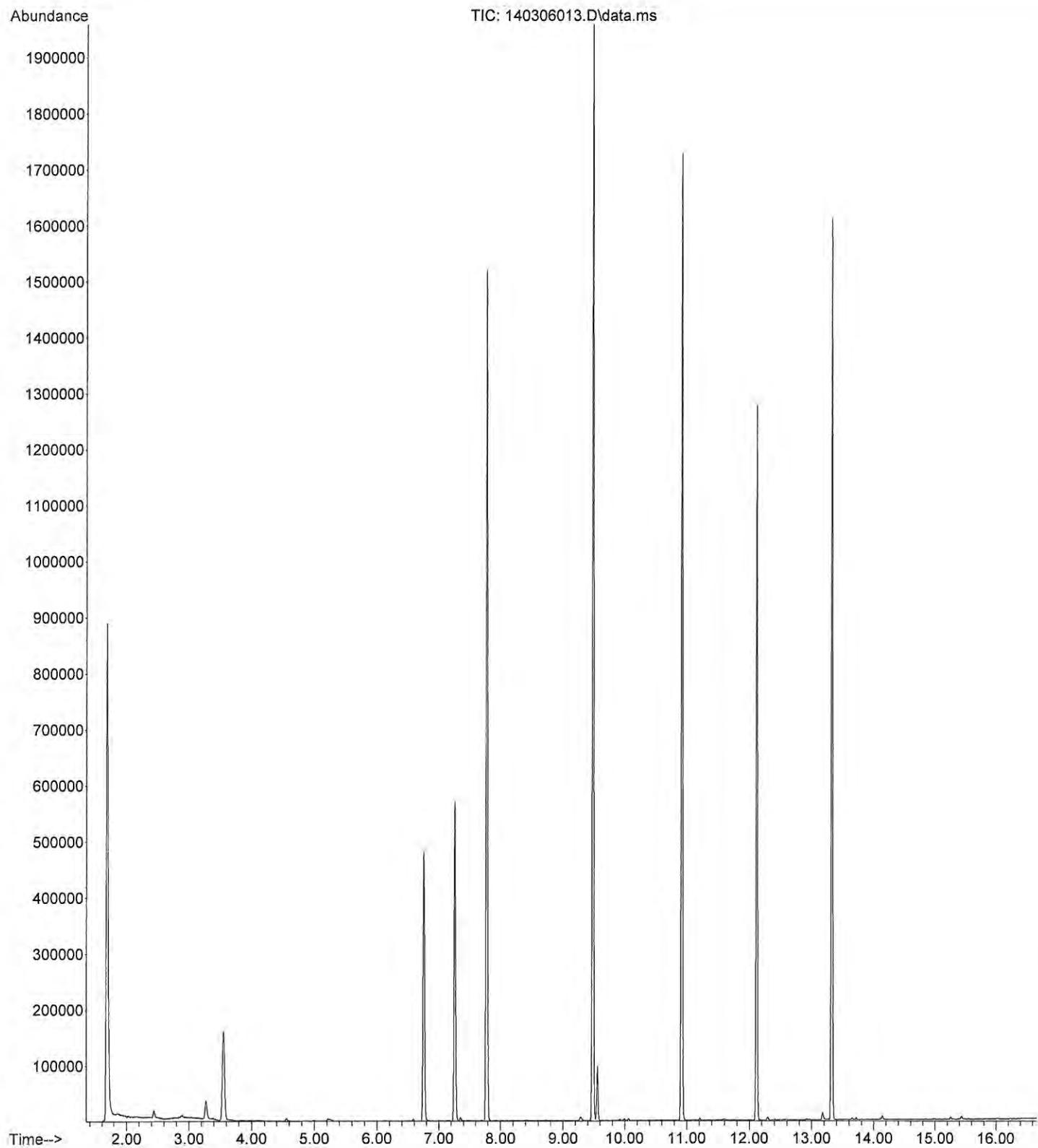
File : D:\MassHunter\GCMS\1\data\140306\140306011.D  
Operator : jdb  
Acquired : 06 Mar 2014 18:33 using AcqMethod ms55-140304.M  
Instrument : ms55  
Sample Name: J1401327-001 SAMP  
Misc Info :  
Vial Number: 11



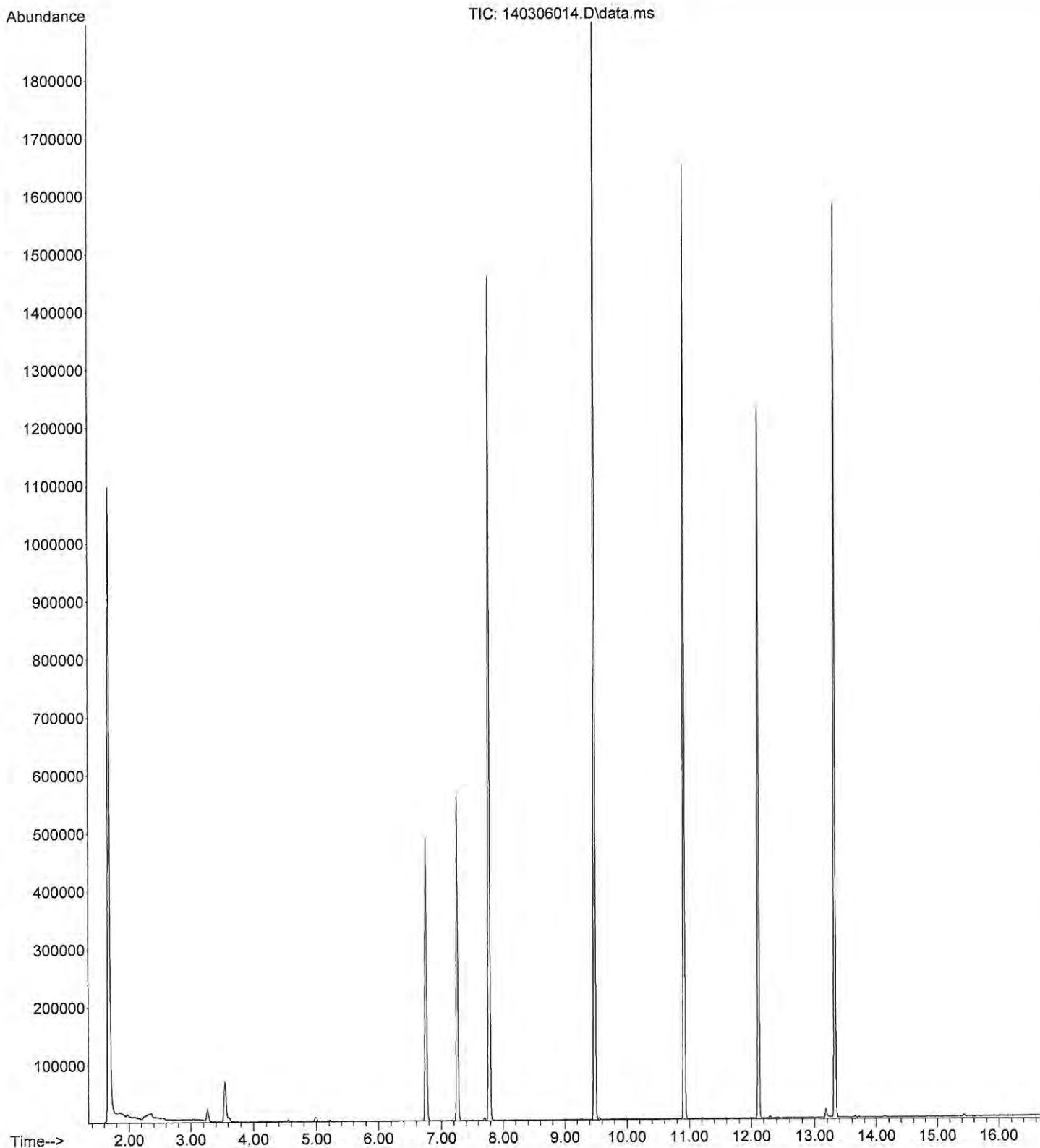
File : D:\MassHunter\GCMS\1\data\140306\140306012.D  
Operator : jdb  
Acquired : 06 Mar 2014 18:55 using AcqMethod ms55-140304.M  
Instrument : ms55  
Sample Name: J1401327-002 SAMP  
Misc Info :  
Vial Number: 12



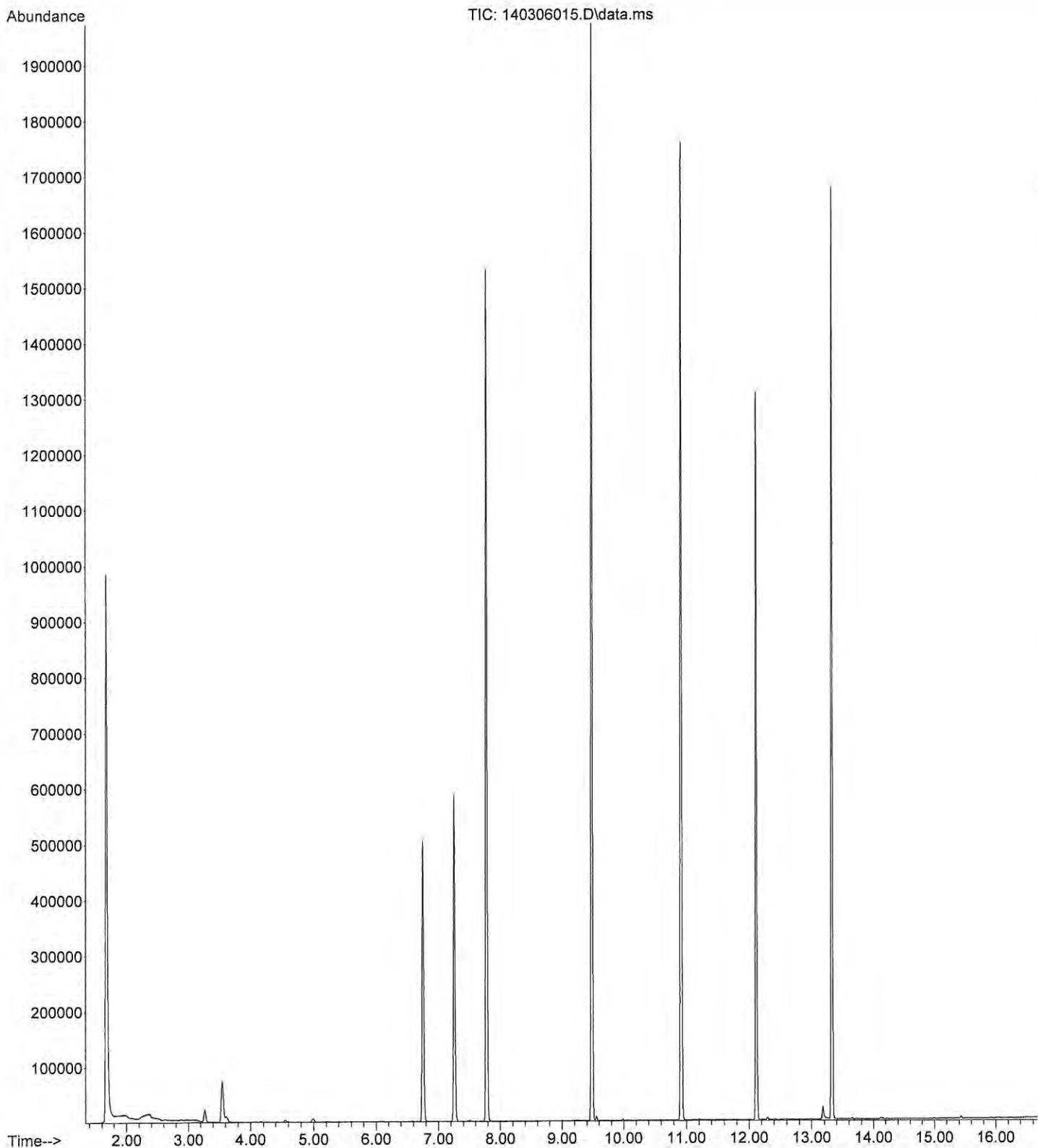
File : D:\MassHunter\GCMS\1\data\140306\140306013.D  
Operator : jdb  
Acquired : 06 Mar 2014 19:16 using AcqMethod ms55-140304.M  
Instrument : ms55  
Sample Name: J1401327-003 SAMP  
Misc Info :  
Vial Number: 13



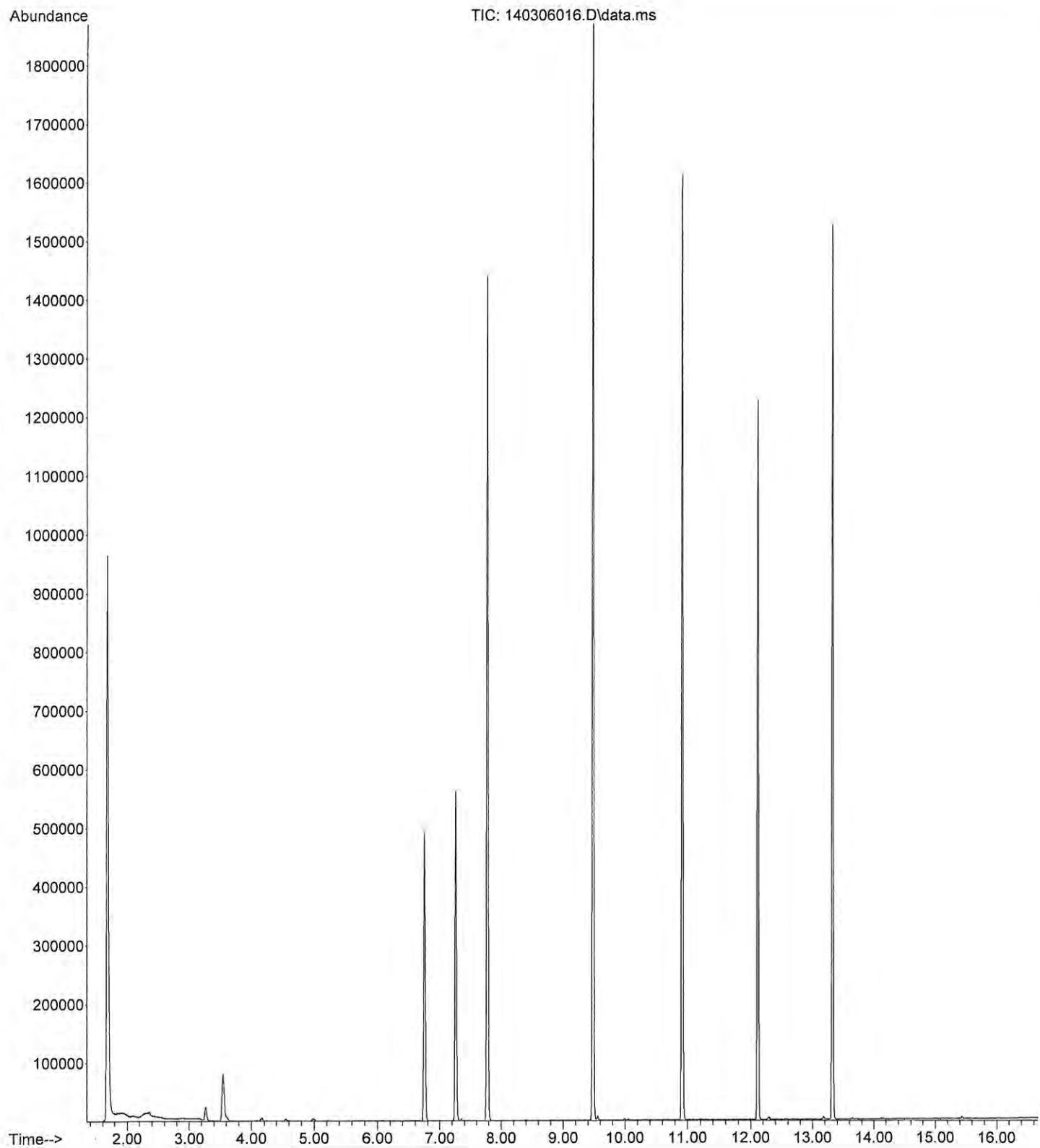
File : D:\MassHunter\GCMS\1\data\140306\140306014.D  
Operator : jdb  
Acquired : 06 Mar 2014 19:38 using AcqMethod ms55-140304.M  
Instrument : ms55  
Sample Name: J1401327-004 SAMP  
Misc Info :  
Vial Number: 14



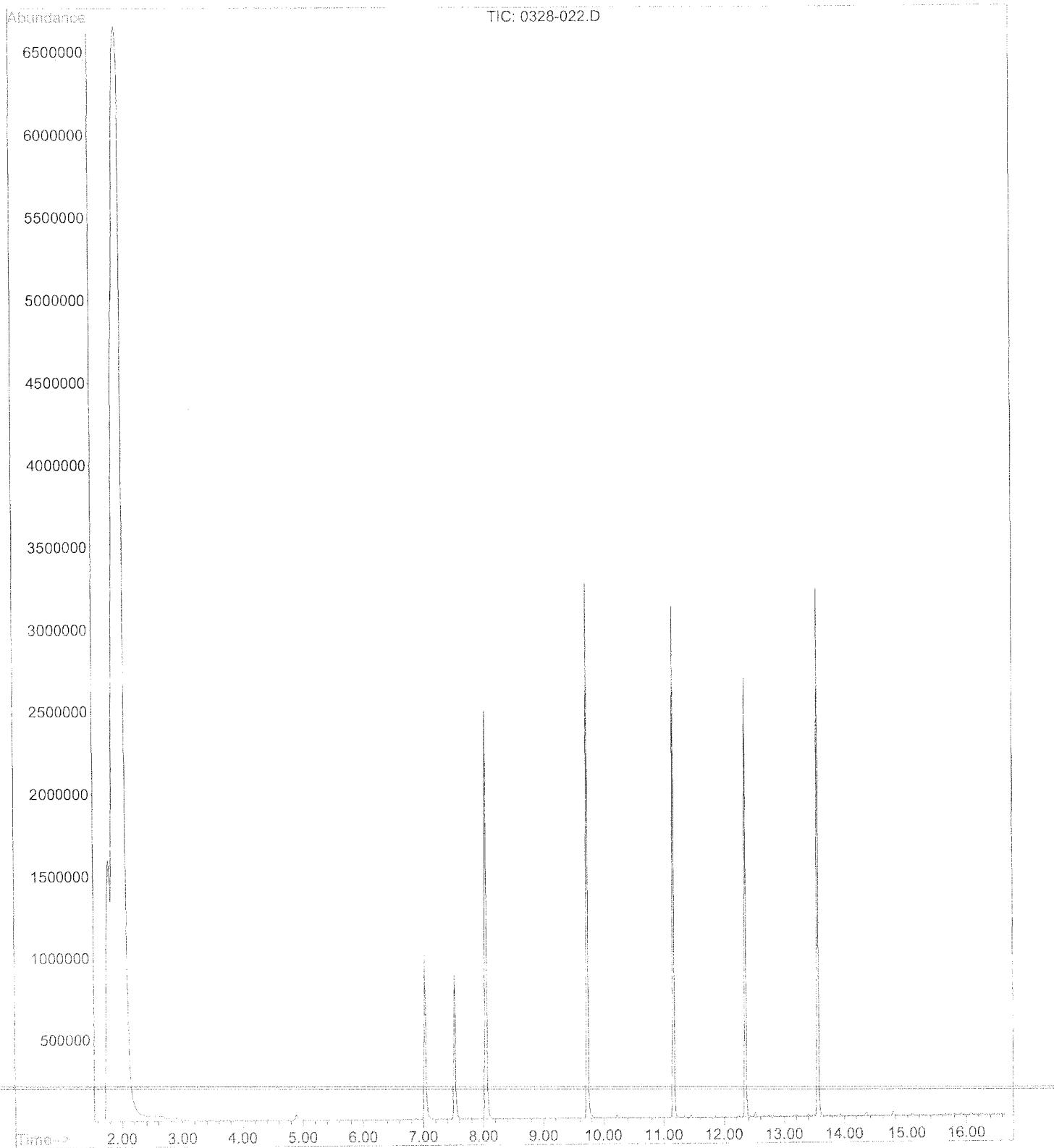
File : D:\MassHunter\GCMS\1\data\140306\140306015.D  
Operator : jdb  
Acquired : 06 Mar 2014 19:59 using AcqMethod ms55-140304.M  
Instrument : ms55  
Sample Name: J1401327-005 SAMP  
Misc Info :  
Vial Number: 15



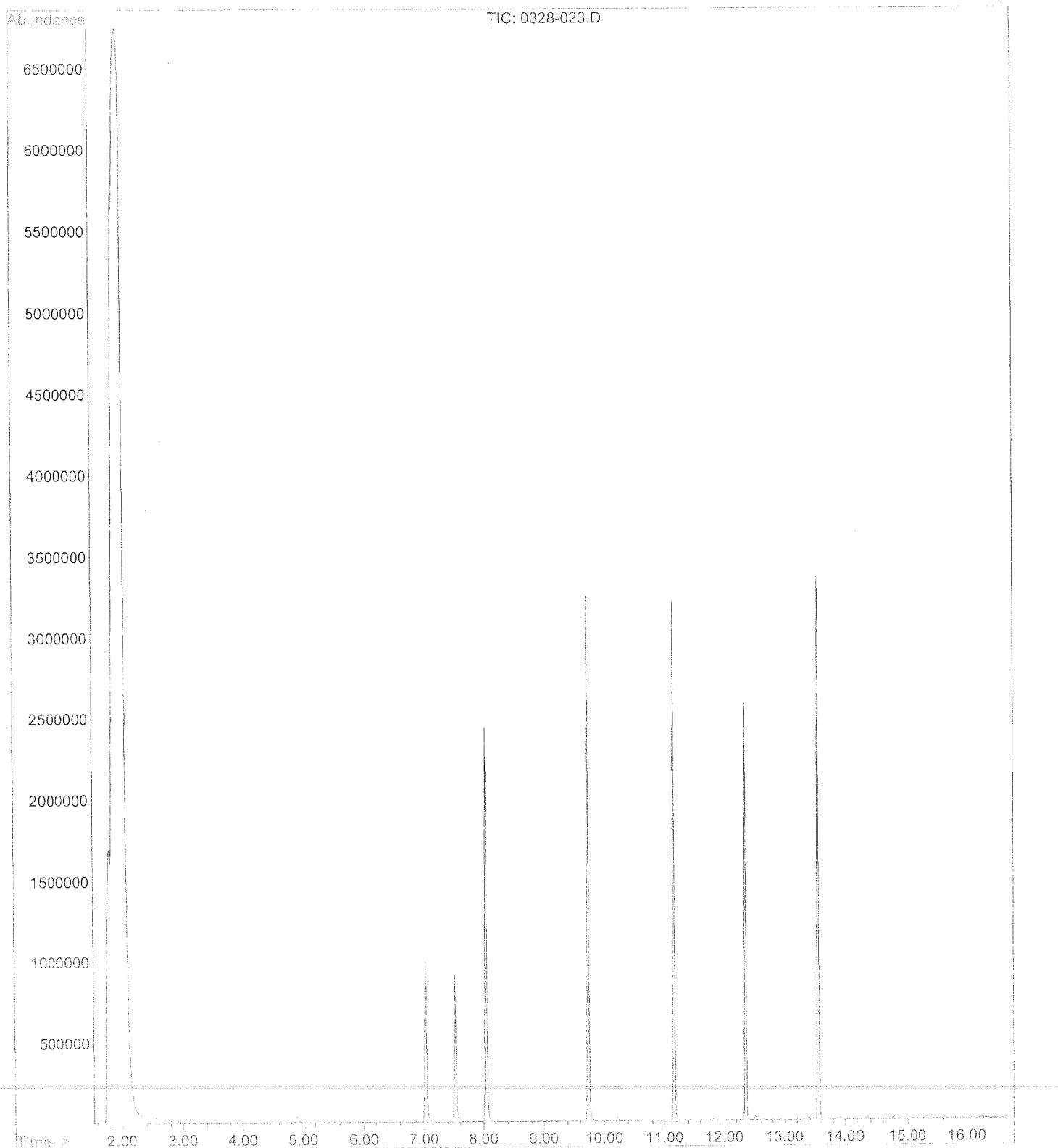
File : D:\MassHunter\GCMS\1\data\140306\140306016.D  
Operator : jdb  
Acquired : 06 Mar 2014 20:21 using AcqMethod ms55-140304.M  
Instrument : ms55  
Sample Name: J1401327-006 SAMP  
Misc Info :  
Vial Number: 16



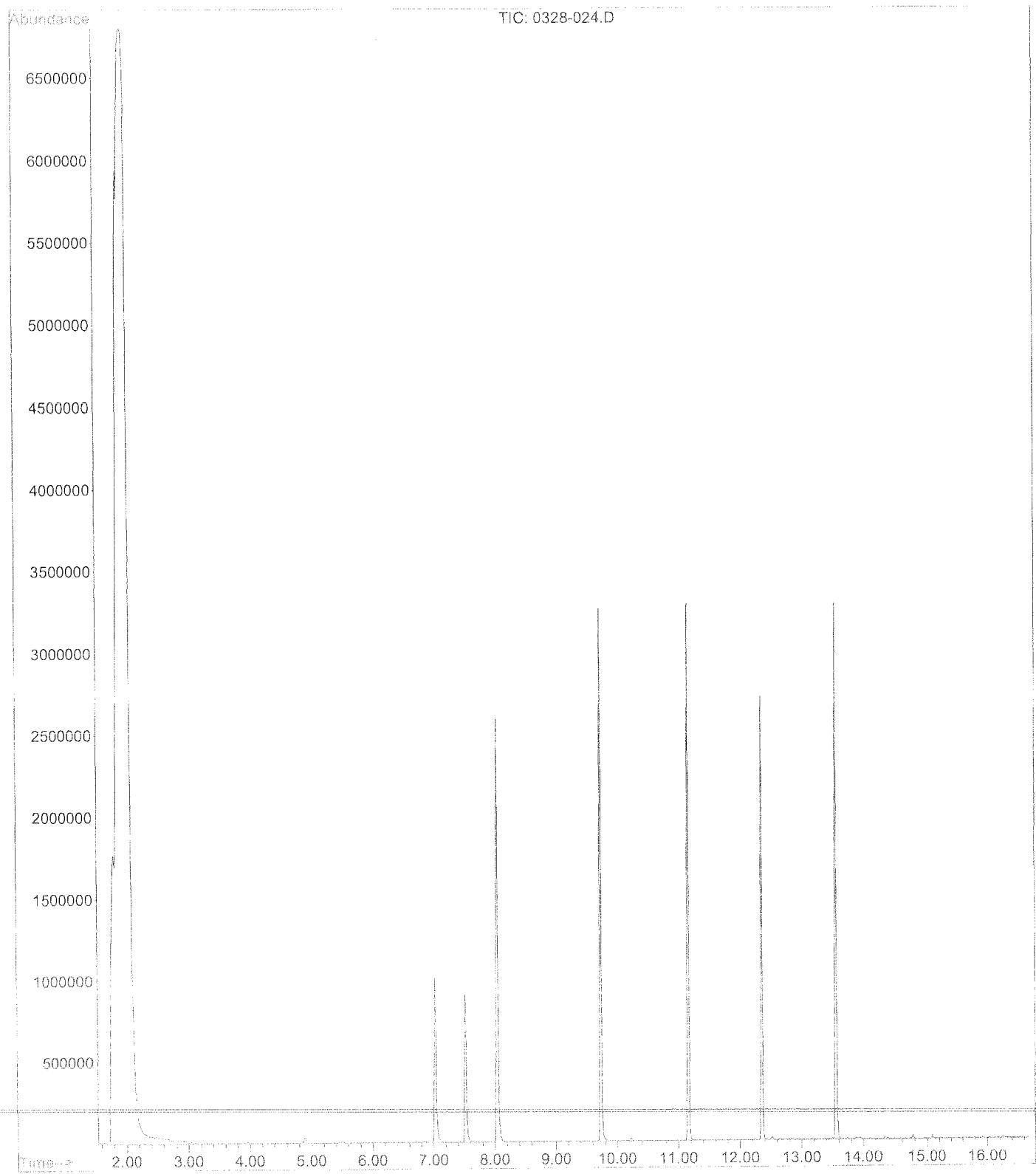
File : C:\HPCHEM\1\DATA\140328\0328-022.D  
Operator : JDB  
Acquired : 28 Mar 2014 10:13 pm using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-001 samp  
Misc Info : 8260  
Vial Number: 10



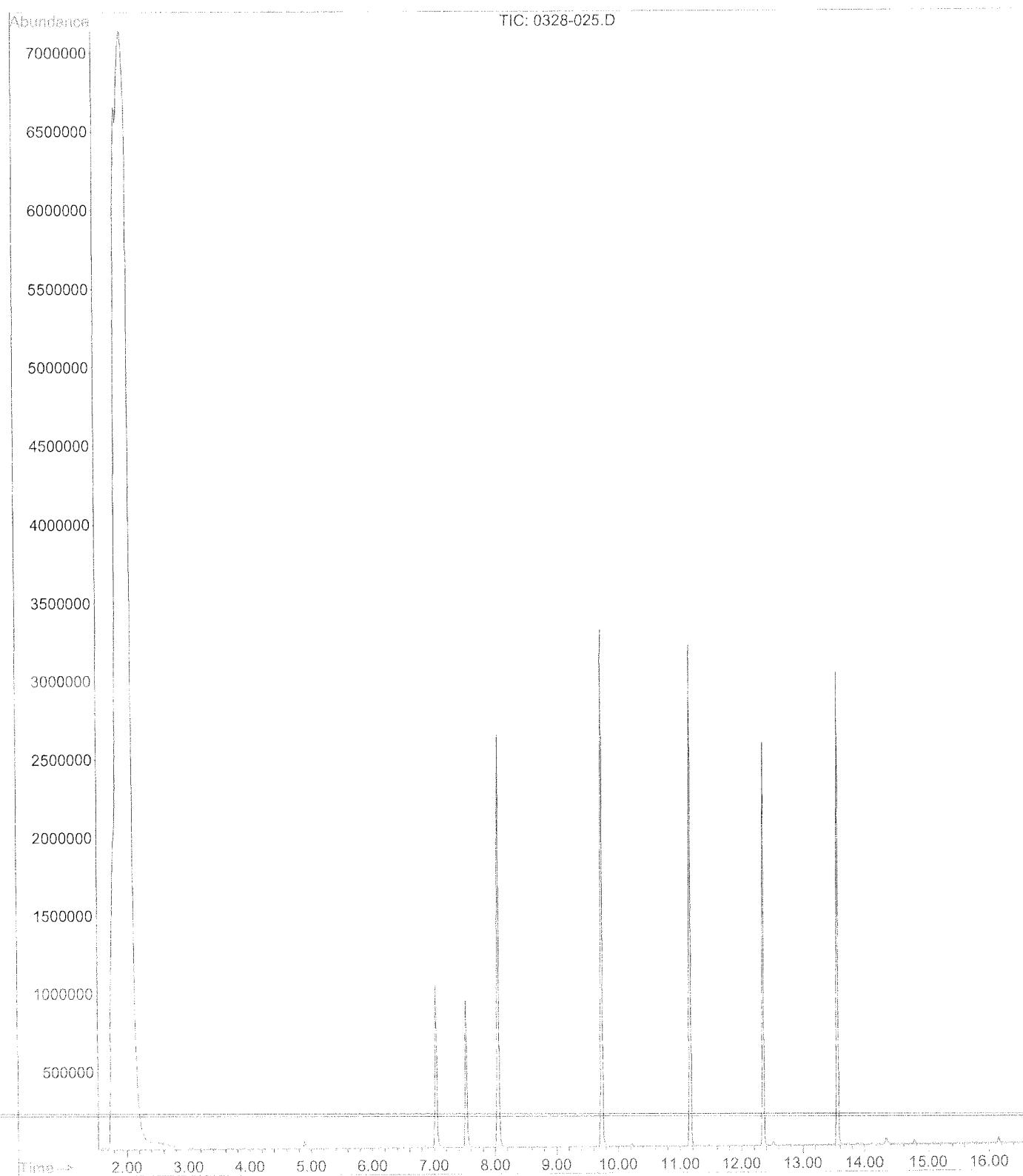
File : C:\HPCHEM\1\DATA\140328\0328-023.D  
Operator : JDB  
Acquired : 28 Mar 2014 10:38 pm using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-002 samp  
Misc Info : 8260  
Vial Number: 11



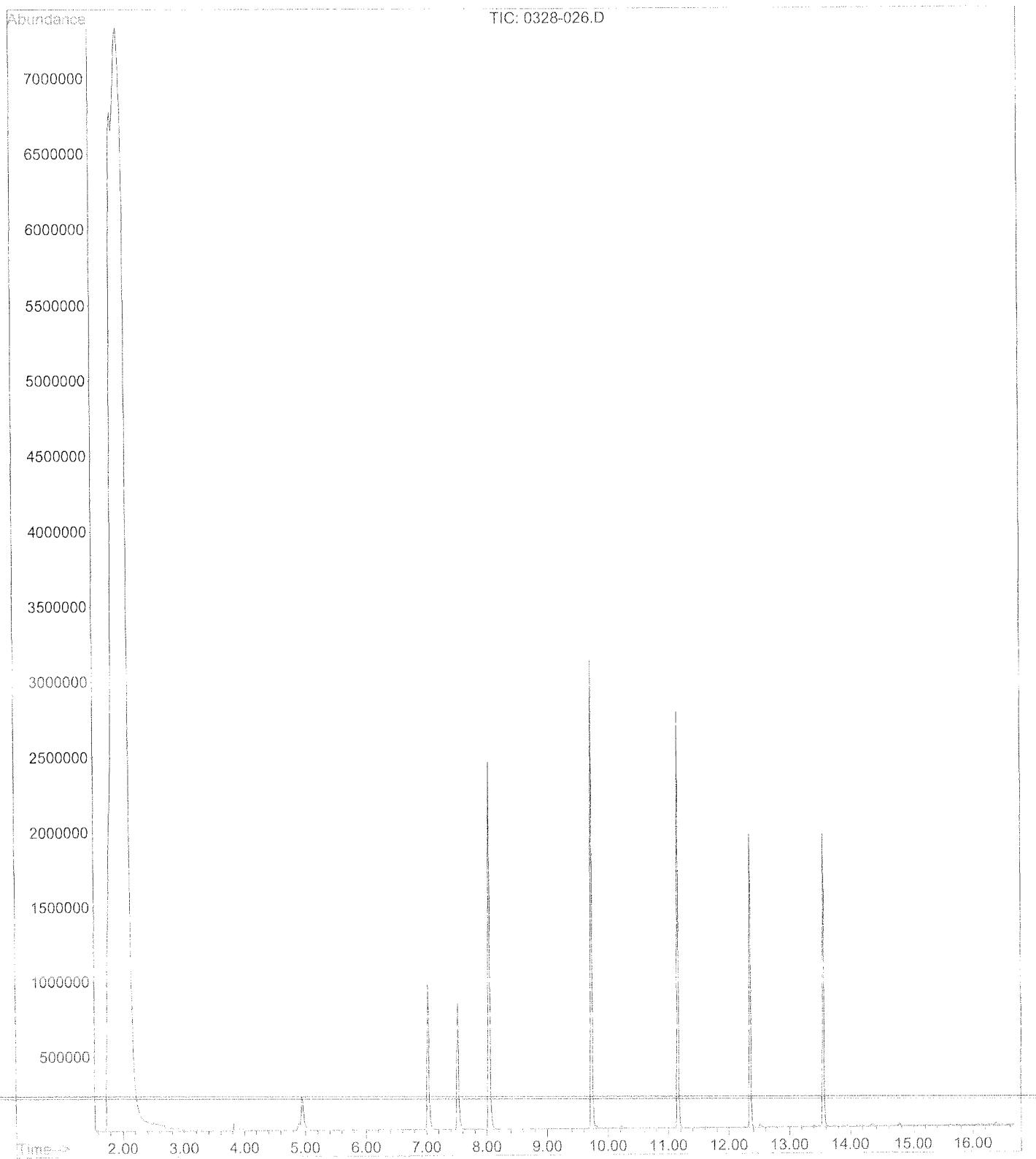
File : C:\HPCHEM\1\DATA\140328\0328-024.D  
Operator : JDB  
Acquired : 28 Mar 2014 11:03 pm using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-003 samp  
Misc Info : 8260  
Vial Number: 12



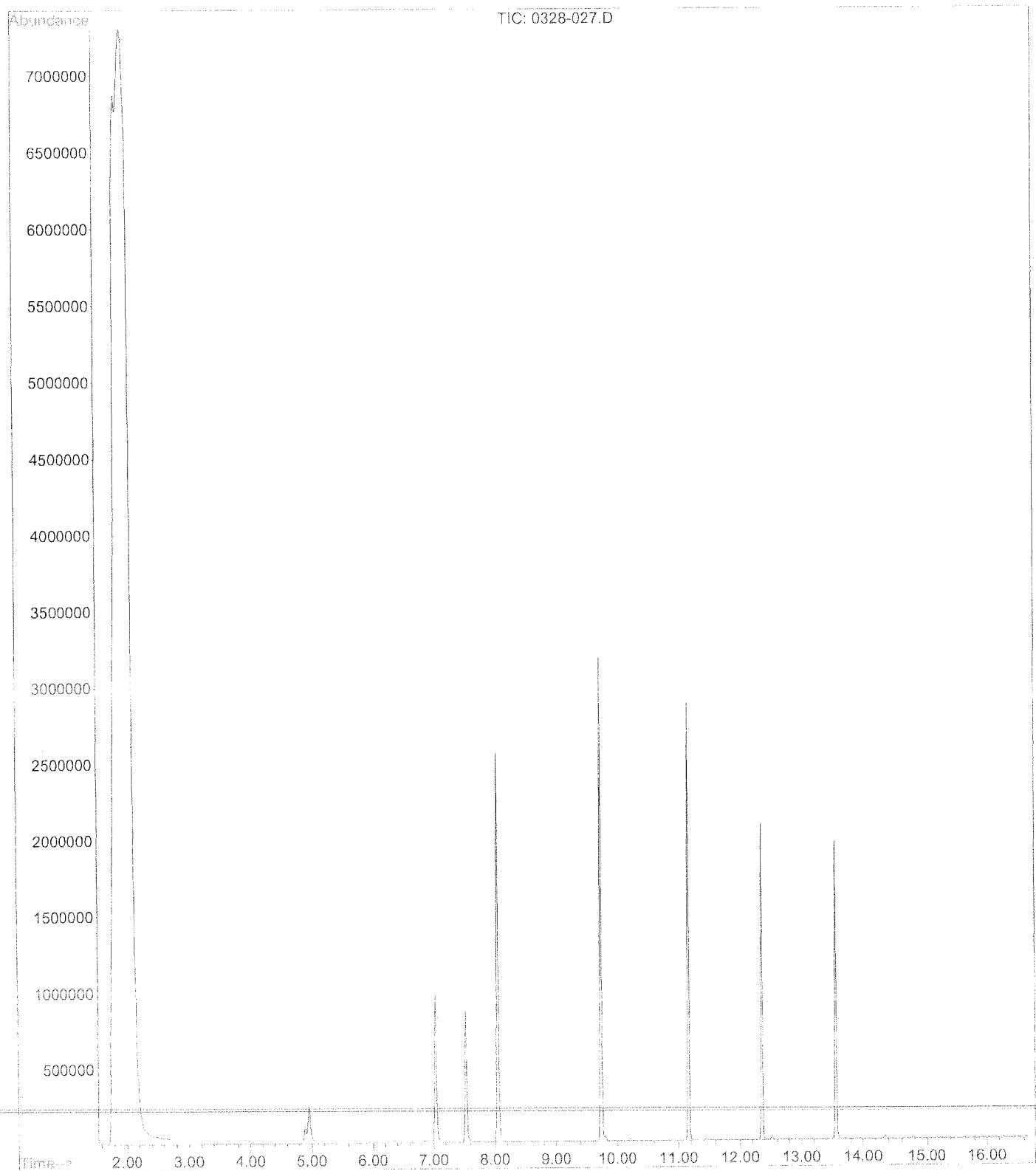
File : C:\HPCHEM\1\DATA\140328\0328-025.D  
Operator : JDB  
Acquired : 28 Mar 2014 11:28 pm using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-004 samp  
Misc Info : 8260  
Vial Number: 13



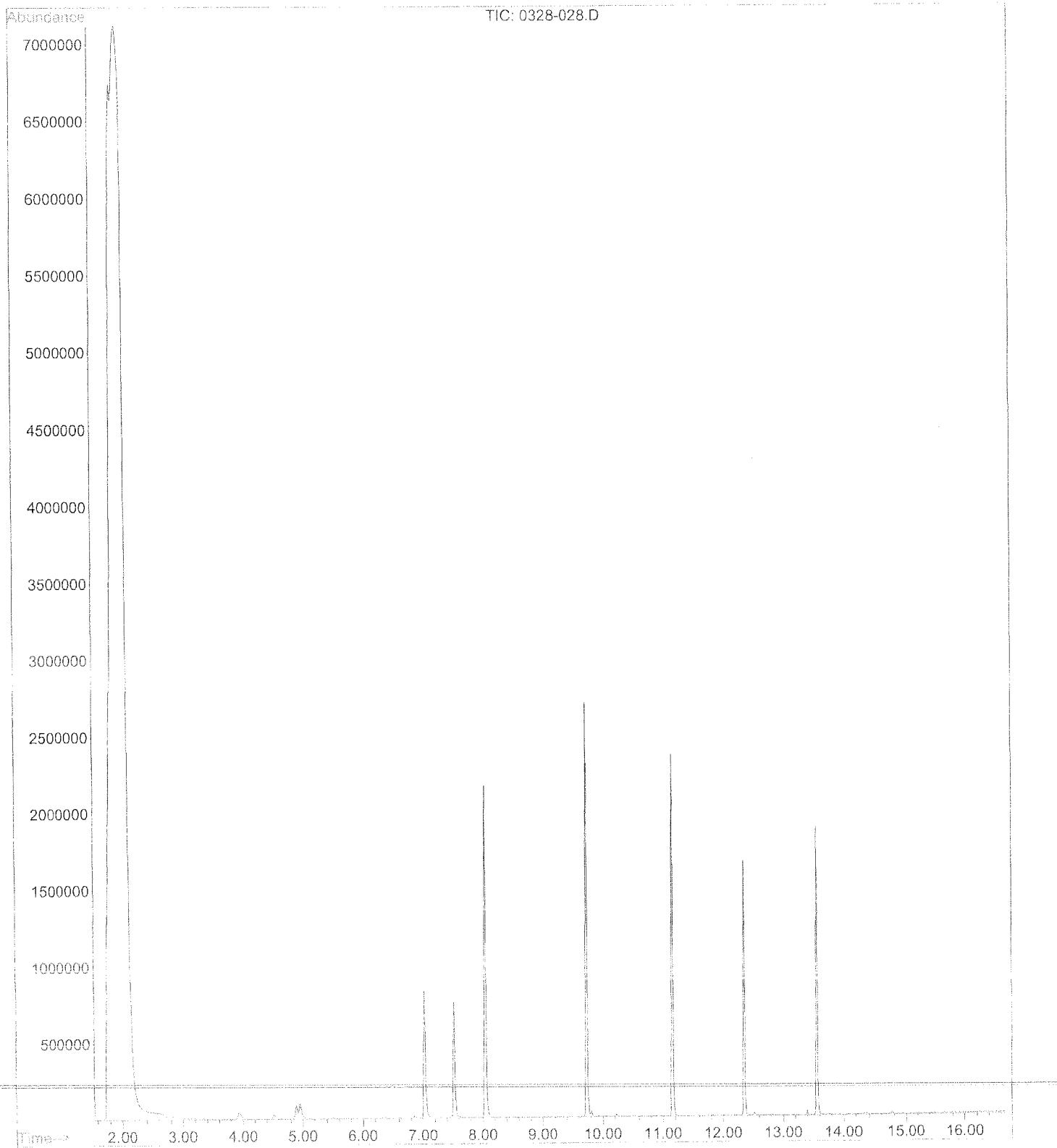
File : C:\HPCHEM\1\DATA\140328\0328-026.D  
Operator : JDB  
Acquired : 28 Mar 2014 11:52 pm using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-005 samp  
Misc Info : 8260  
Vial Number: 14



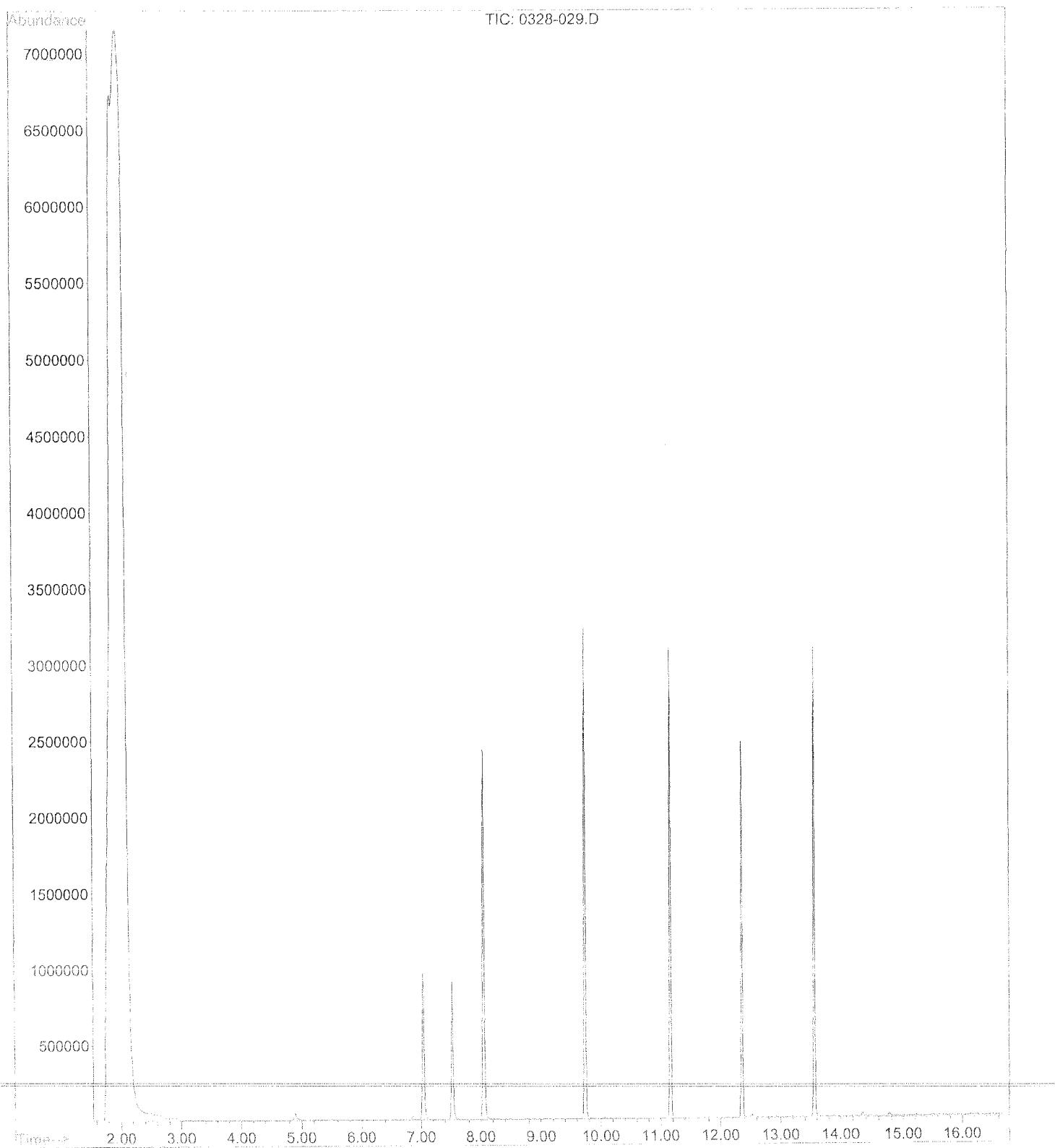
File : C:\HPCHEM\1\DATA\140328\0328-027.D  
Operator : JDB  
Acquired : 29 Mar 2014 12:17 am using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-006 samp  
Misc Info : 8260  
Vial Number: 15



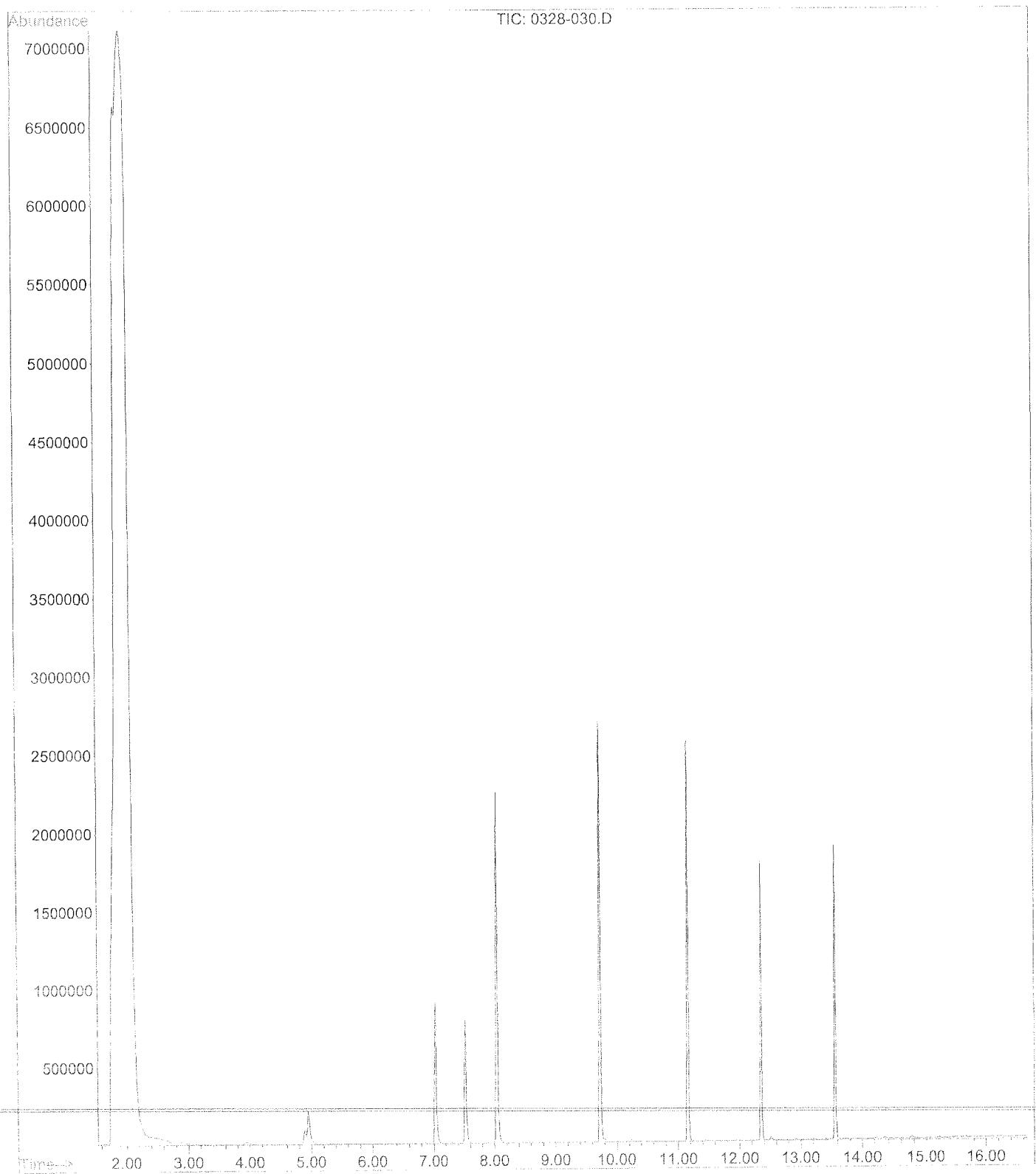
File : C:\HPCHEM\1\DATA\140328\0328-028.D  
Operator : JDB  
Acquired : 29 Mar 2014 12:42 am using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-007 samp  
Misc Info : 8260  
Vial Number: 16



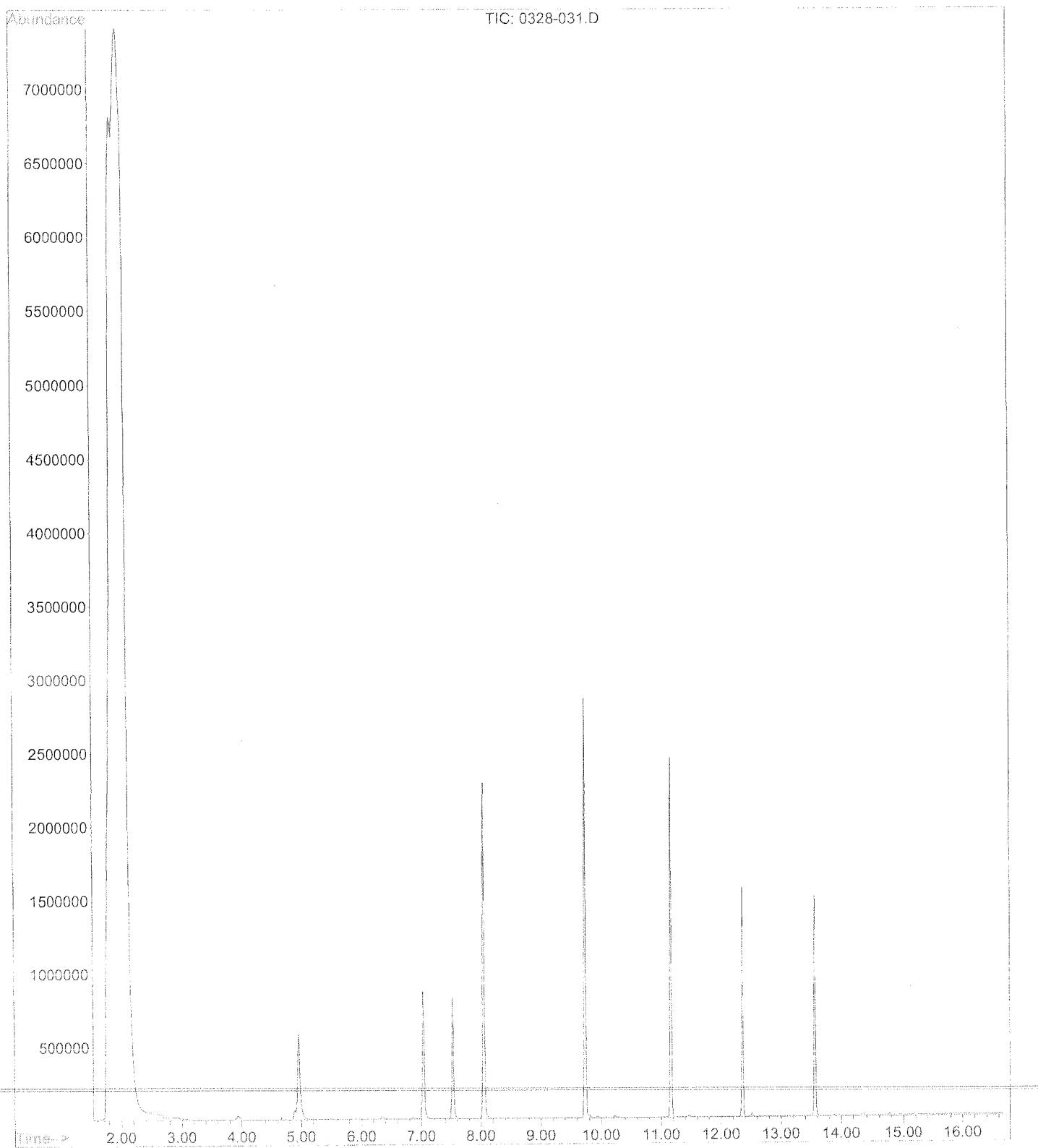
File : C:\HPCHEM\1\DATA\140328\0328-029.D  
Operator : JDB  
Acquired : 29 Mar 2014 1:07 am using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-008 samp  
Misc Info : 8260  
Vial Number: 17



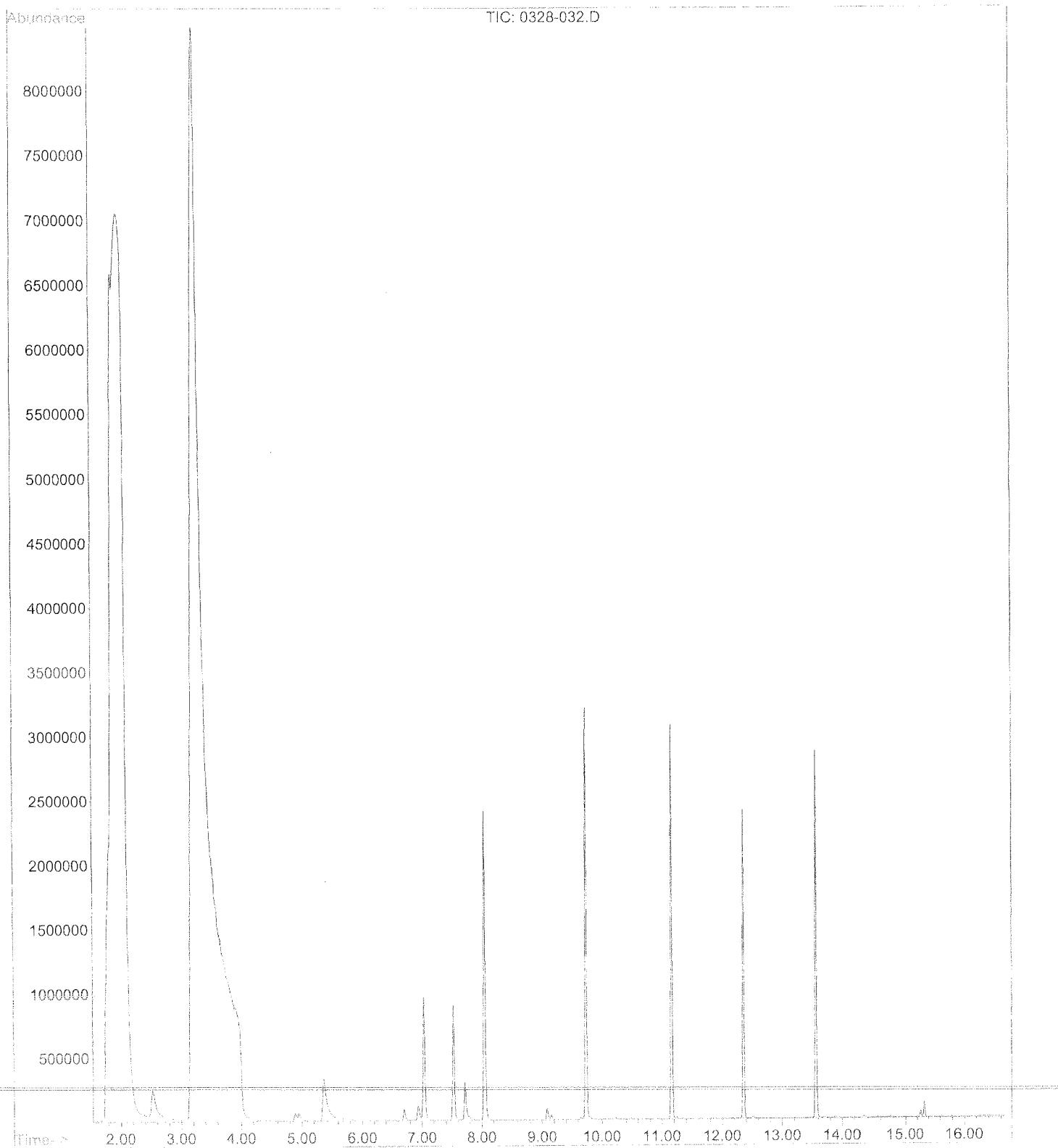
File : C:\HPCHEM\1\DATA\140328\0328-030.D  
Operator : JDB  
Acquired : 29 Mar 2014 1:31 am using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-009 samp  
Misc Info : 8260  
Vial Number: 18



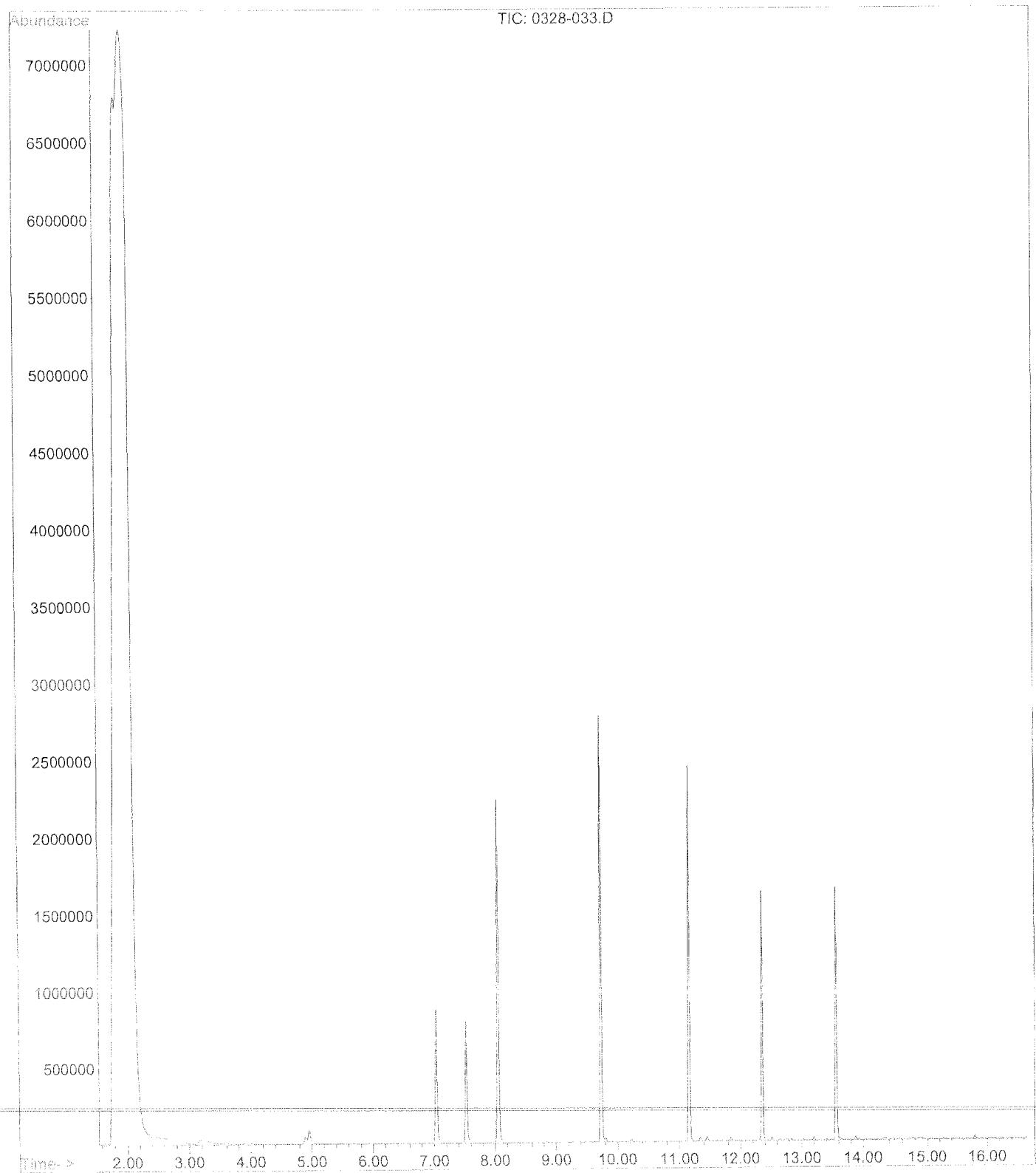
File : C:\HPCHEM\1\DATA\140328\0328-031.D  
Operator : JDB  
Acquired : 29 Mar 2014 1:56 am using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-010 samp  
Misc Info : 8260  
Vial Number: 19



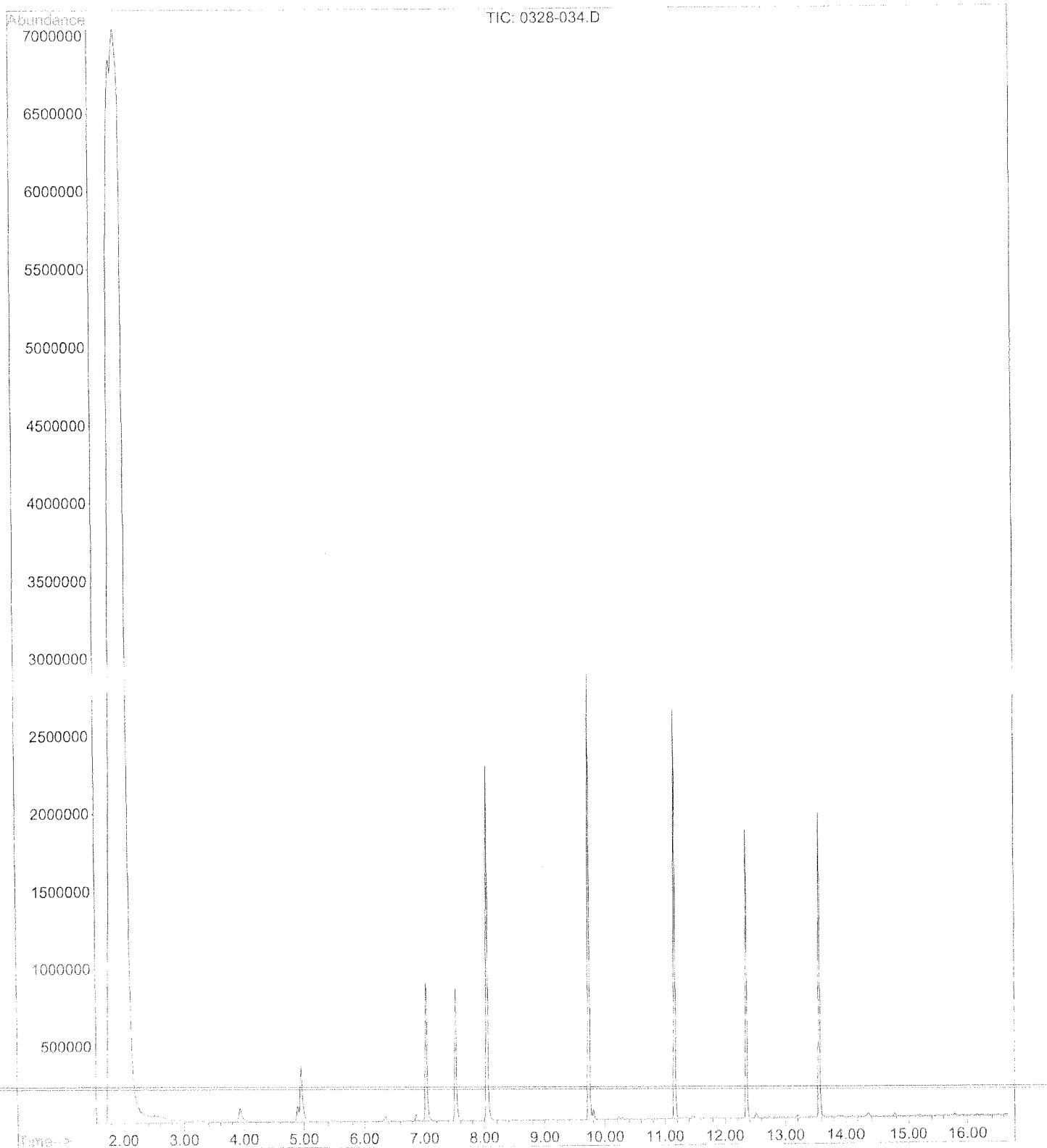
File : C:\HPCHEM\1\DATA\140328\0328-032.D  
Operator : JDB  
Acquired : 29 Mar 2014 2:21 am using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-011 samp  
Misc Info : 8260  
Vial Number: 20



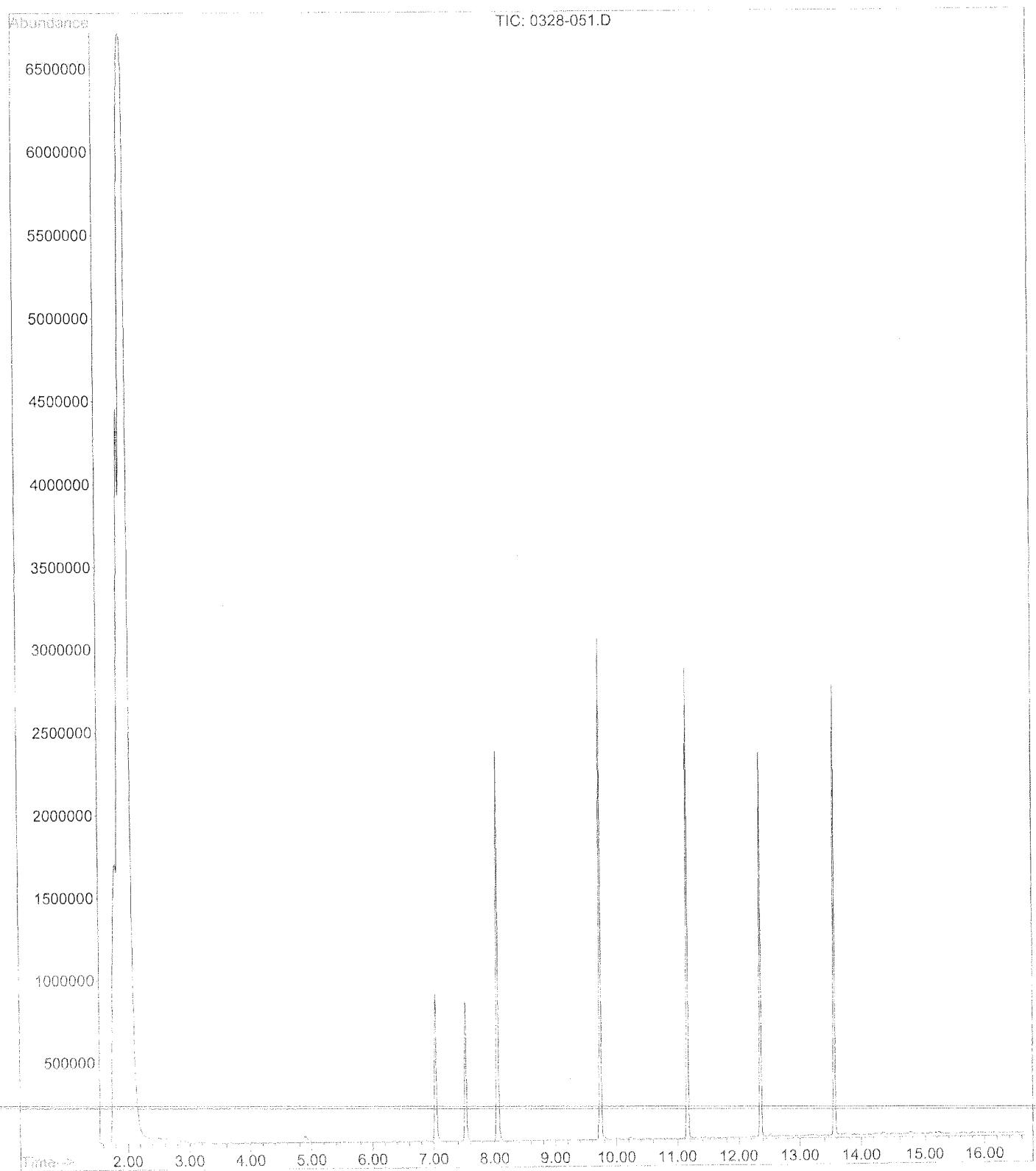
File : C:\HPCHEM\1\DATA\140328\0328-033.D  
Operator : JDB  
Acquired : 29 Mar 2014 2:46 am using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-012 samp  
Misc Info : 8260  
Vial Number: 21



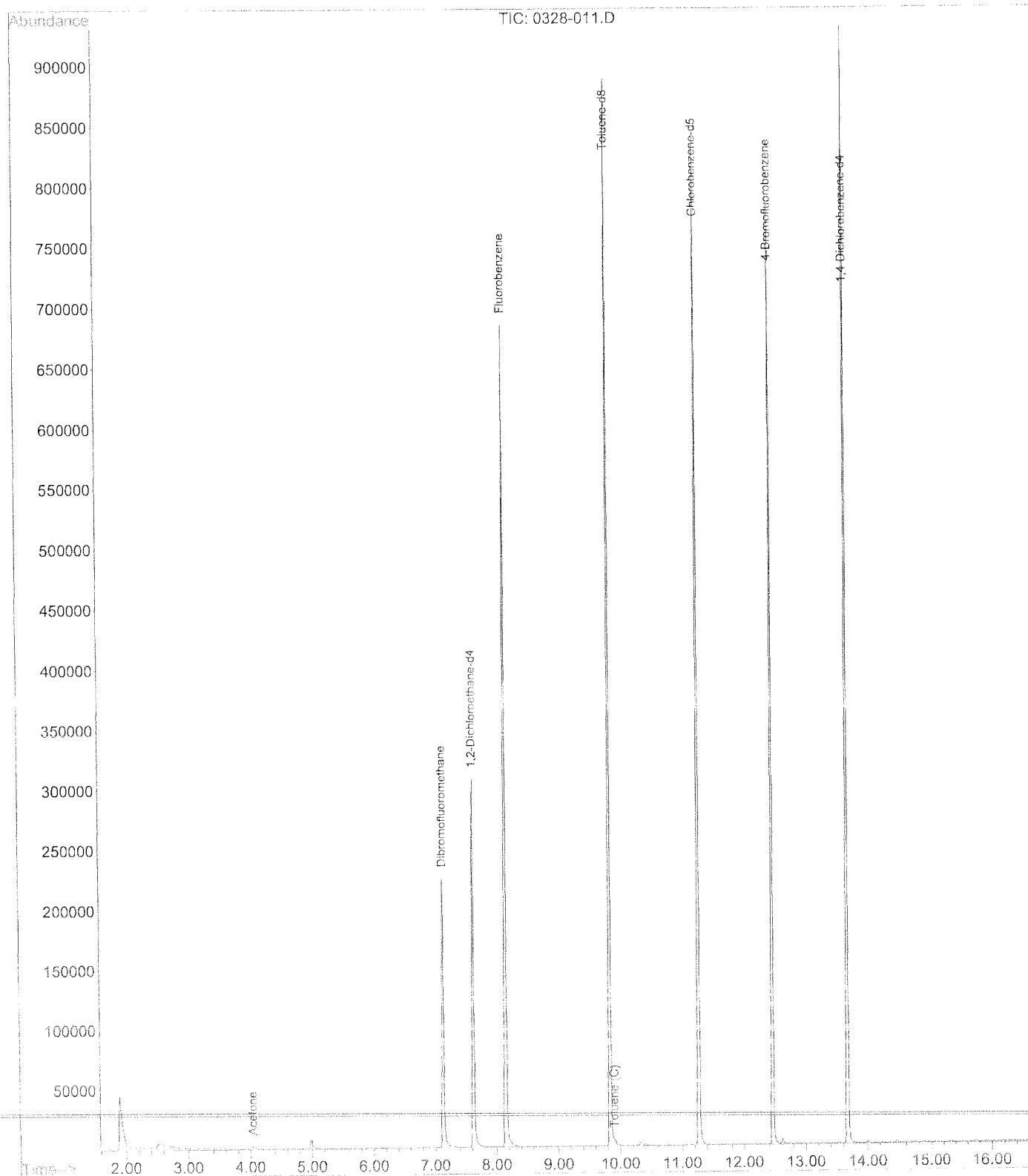
File : C:\HPCHEM\1\DATA\140328\0328-034.D  
Operator : JDB  
Acquired : 29 Mar 2014 3:11 am using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-013 samp  
Misc Info : 8260  
Vial Number: 22



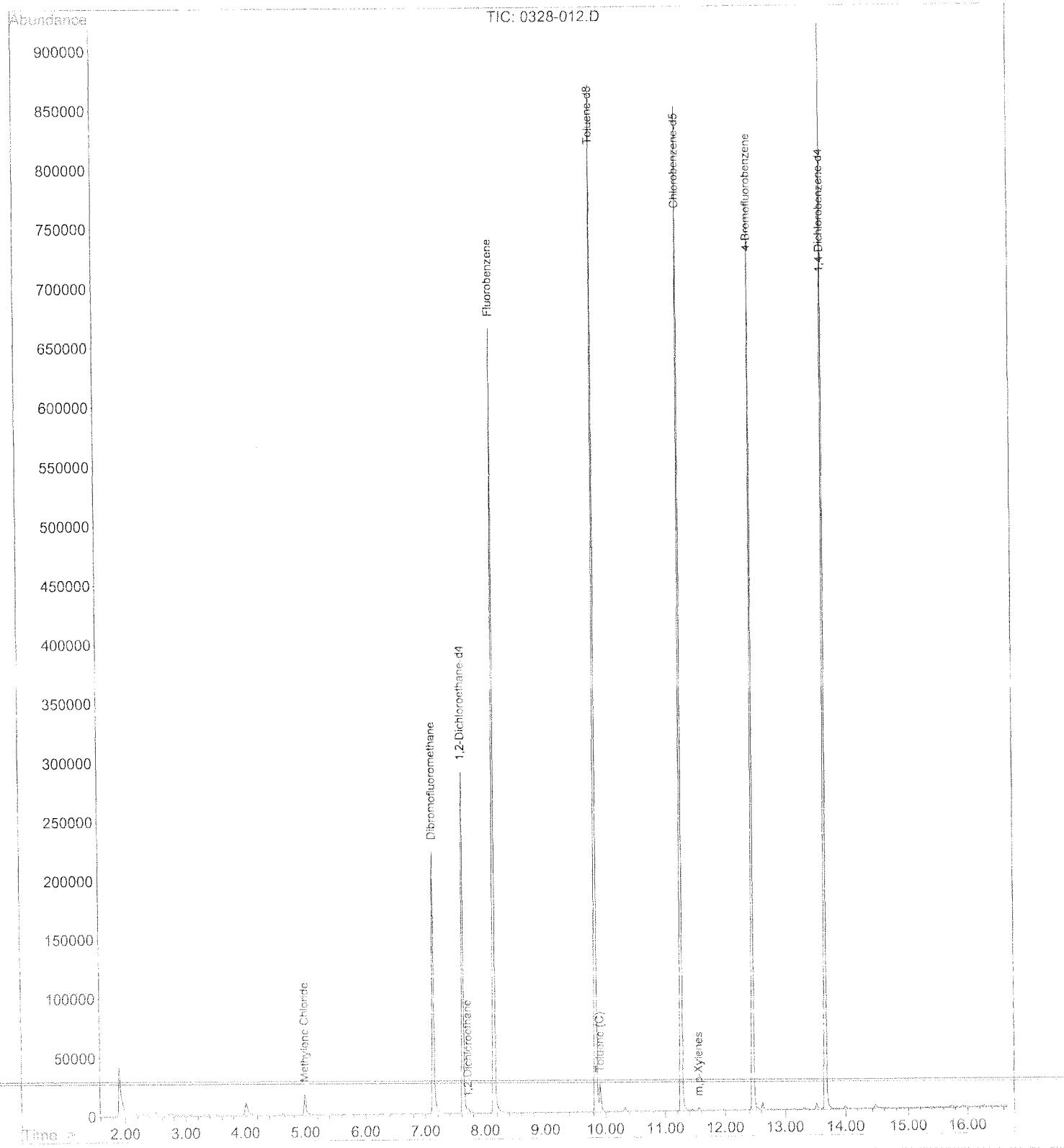
File : C:\HPCHEM\1\DATA\140328\0328-051.D  
Operator : JDB  
Acquired : 29 Mar 2014 10:13 am using AcqMethod 140326S  
Instrument : ms54  
Sample Name: j1402115-021 samp  
Misc Info : 8260  
Vial Number: 39



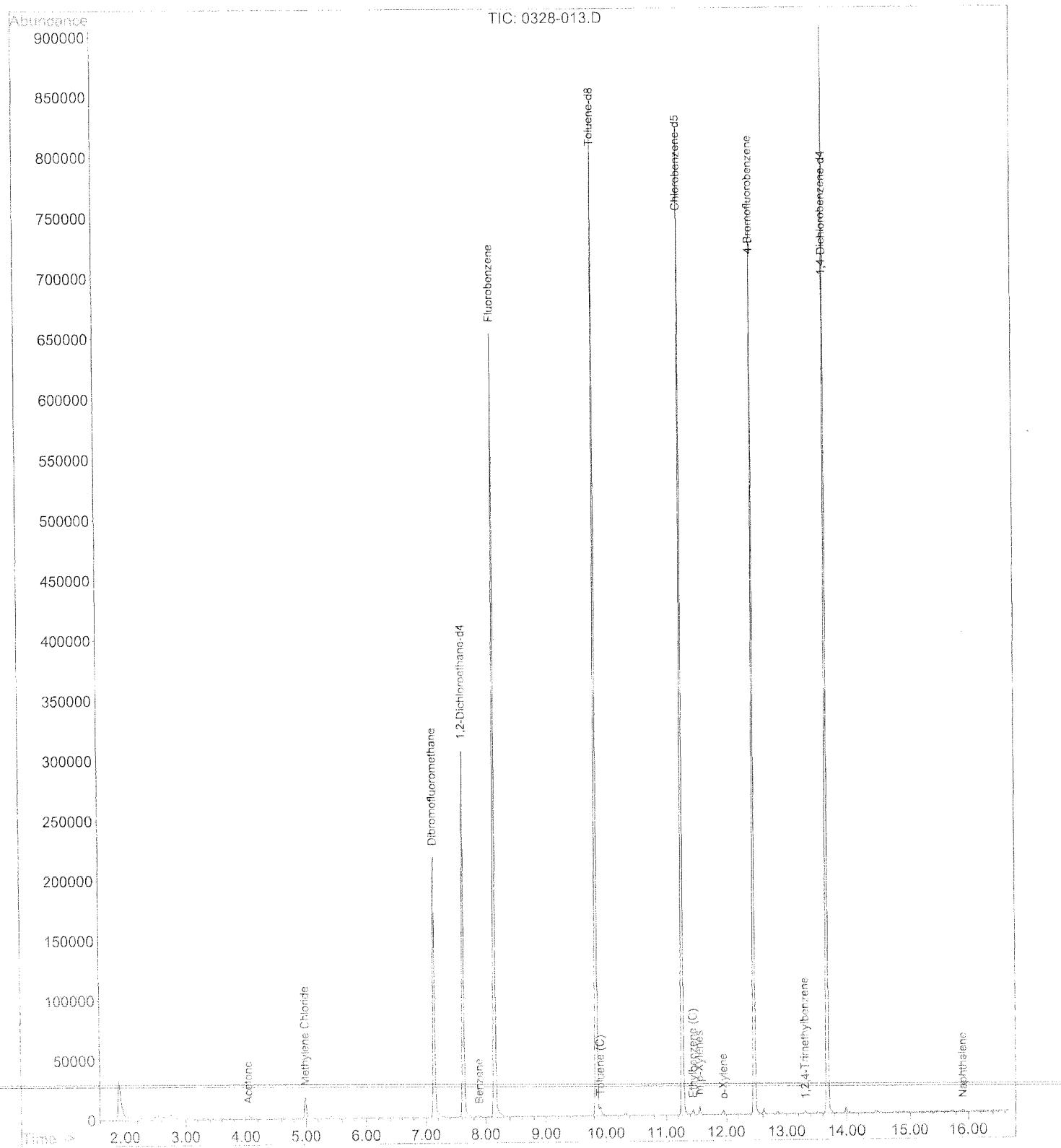
File : I:\MS52\DATA\MS52-140328\0328-011.D  
Operator : jdb  
Acquired : 28 Mar 2014 5:03 pm using AcqMethod 140321W  
Instrument : MS52  
Sample Name: J1402115-022 SAMP  
Misc Info : 8260B  
Vial Number: 11



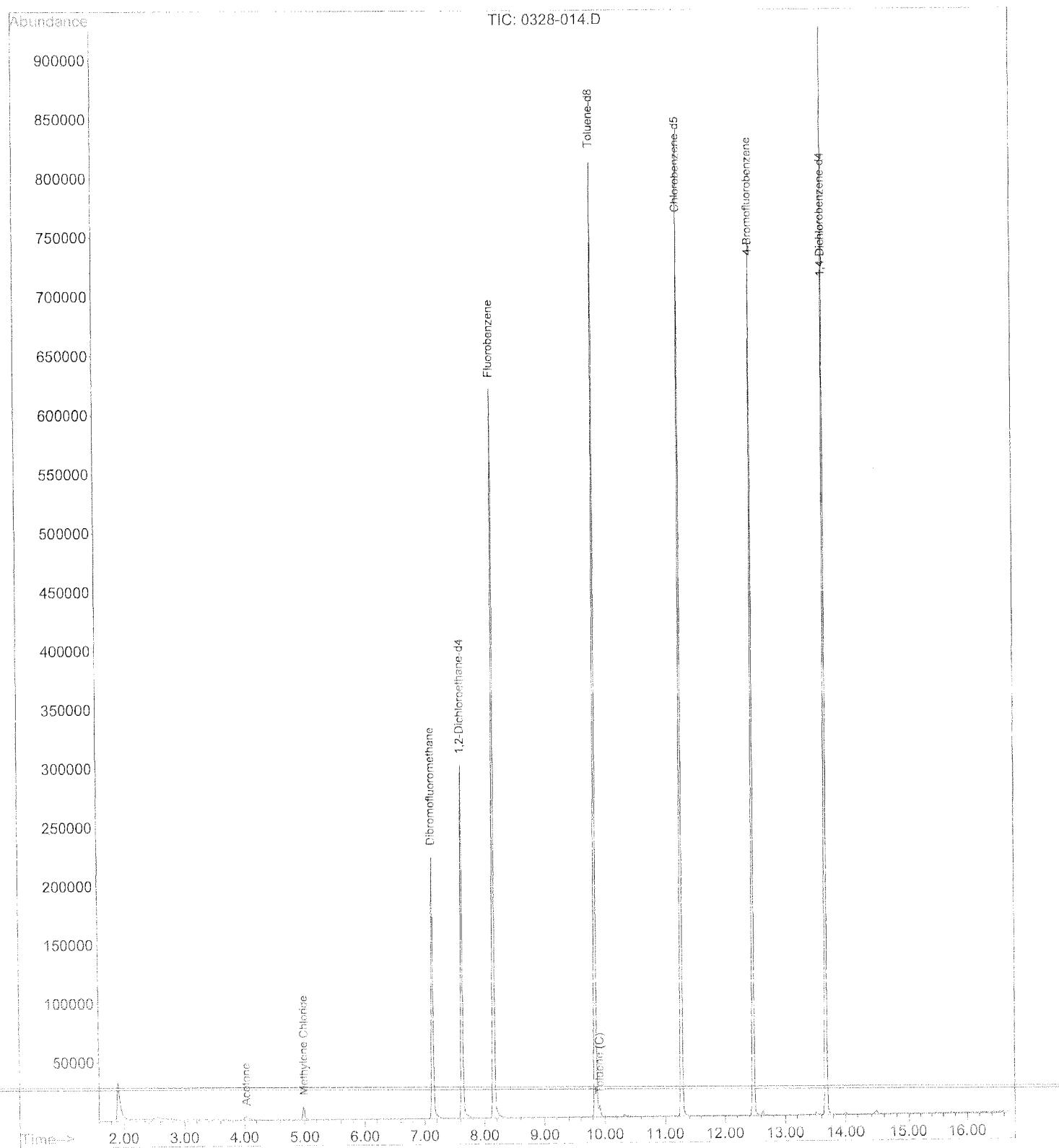
File : I:\MS52\DATA\MS52-140328\0328-012.D  
Operator : jdb  
Acquired : 28 Mar 2014 5:29 pm using AcqMethod 140321W  
Instrument : MS52  
Sample Name: J1402115-023 SAMP  
Misc Info : 8260B  
Vial Number: 12



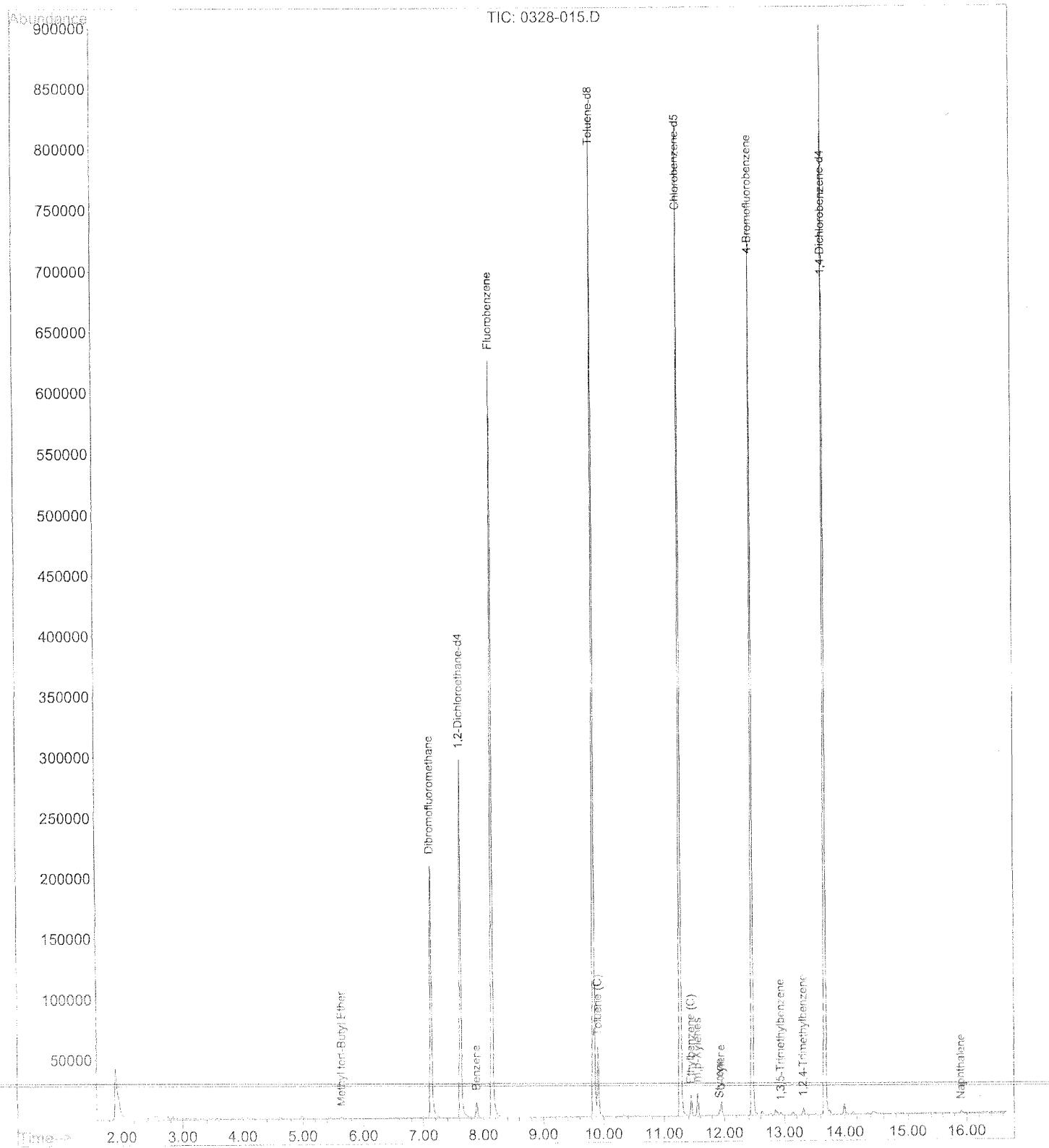
File : I:\MS52\DATA\MS52-140328\0328-013.D  
Operator : jdb  
Acquired : 28 Mar 2014 5:55 pm using AcqMethod 140321W  
Instrument : MS52  
Sample Name: J1402115-024 SAMP  
Misc Info : 8260B  
Vial Number: 13



File : I:\MS52\DATA\MS52-140328\0328-014.D  
Operator : jdb  
Acquired : 28 Mar 2014 6:20 pm using AcqMethod 140321W  
Instrument : MS52  
Sample Name: J1402115-025 SAMP  
Misc Info : 8260B  
Vial Number: 13



File : I:\MS52\DATA\MS52-140328\0328-015.D  
Operator : jdb  
Acquired : 28 Mar 2014 6:46 pm using AcqMethod 140321W  
Instrument : MS52  
Sample Name: J1402115-026 SAMP  
Misc Info : 8260B  
Vial Number: 14

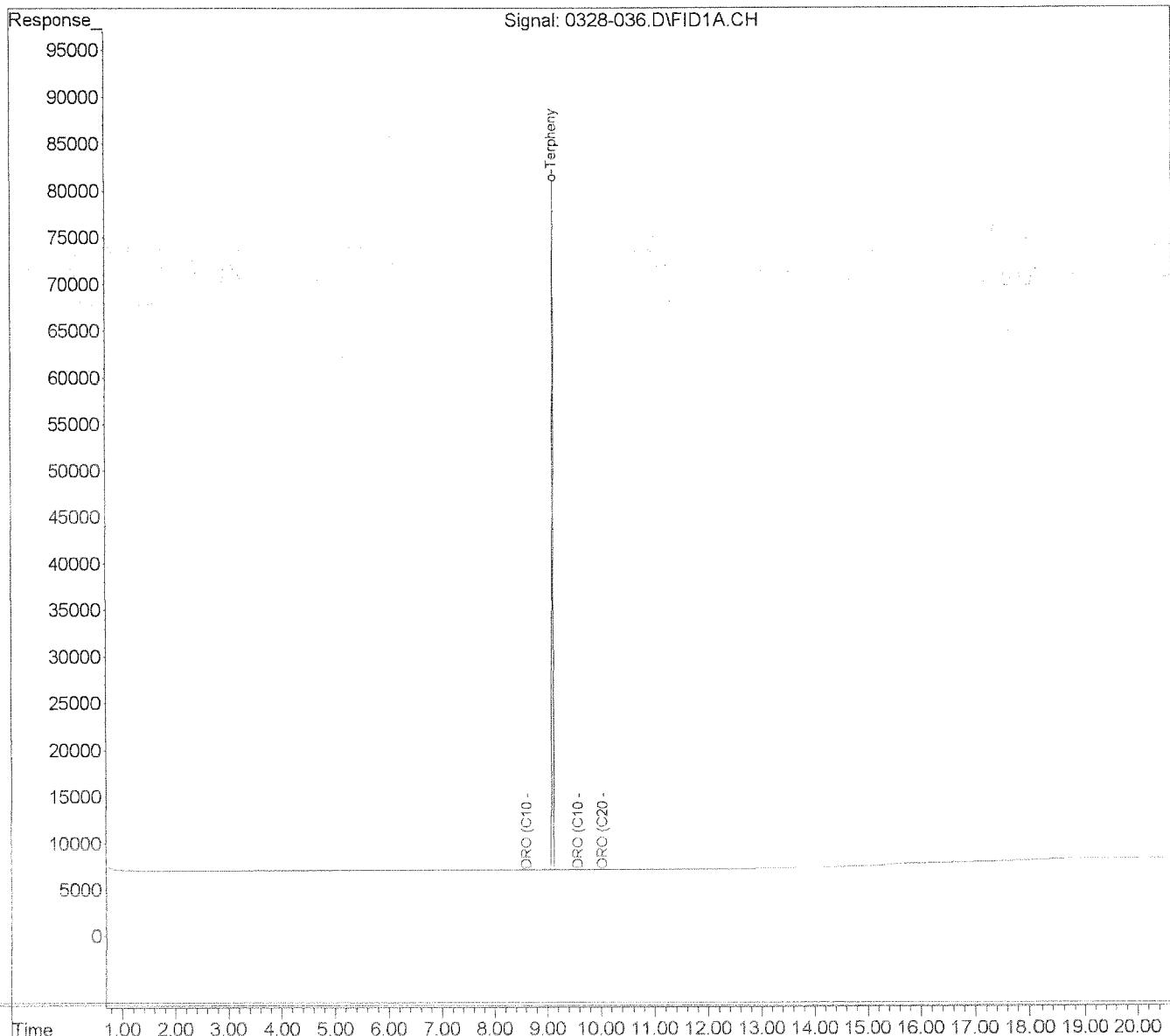


## Quantitation Report (QT reviewed)

Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-036.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 4:45 pm  
Operator : JS  
Sample : J1402115-001 SAMP  
Misc : DRO 8015B  
ALS Vial : 11 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:02 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

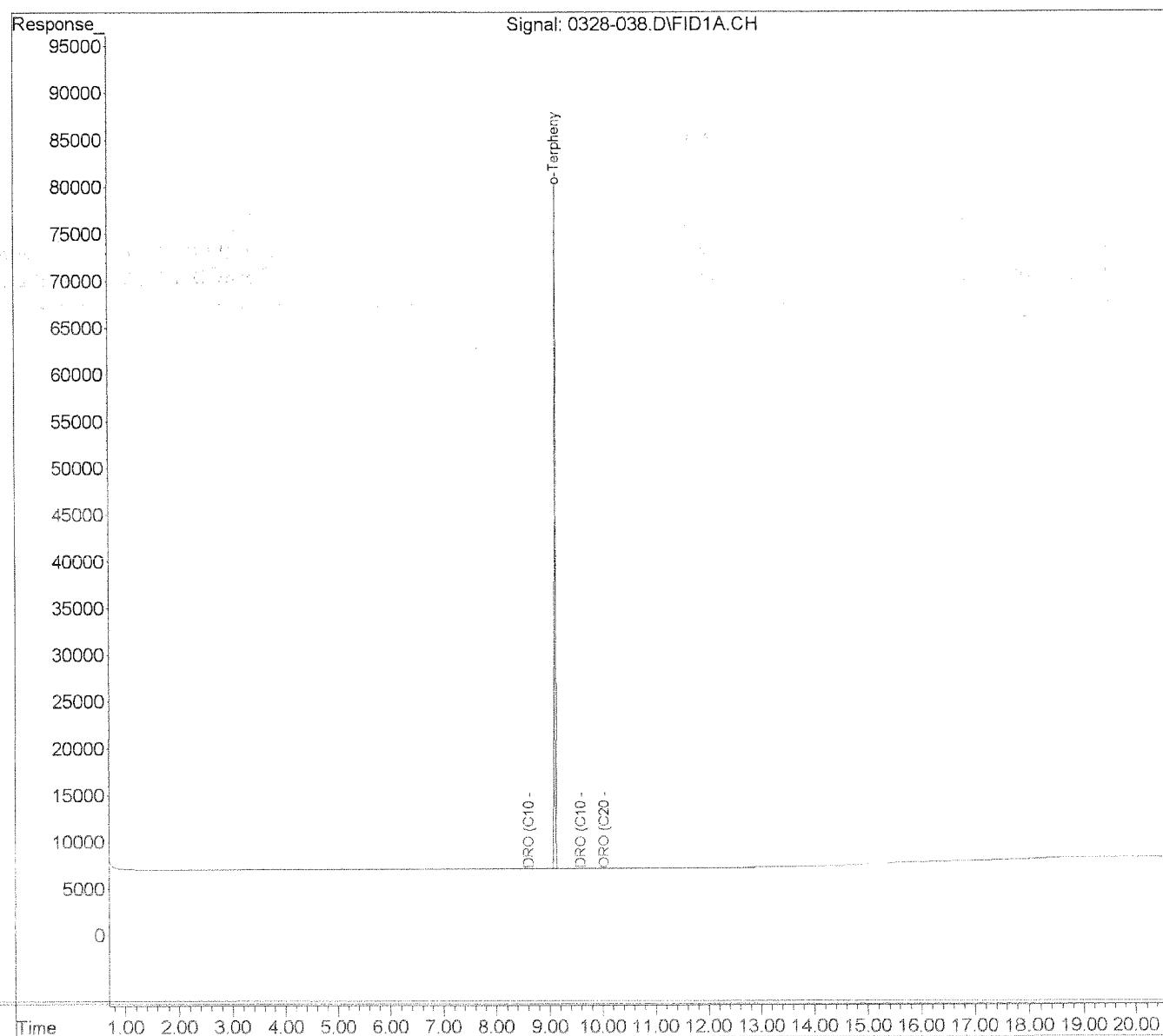
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-038.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 5:13 pm  
Operator : JS  
Sample : J1402115-002 SAMP  
Misc : DRO 8015B  
ALS Vial : 12 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:04 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

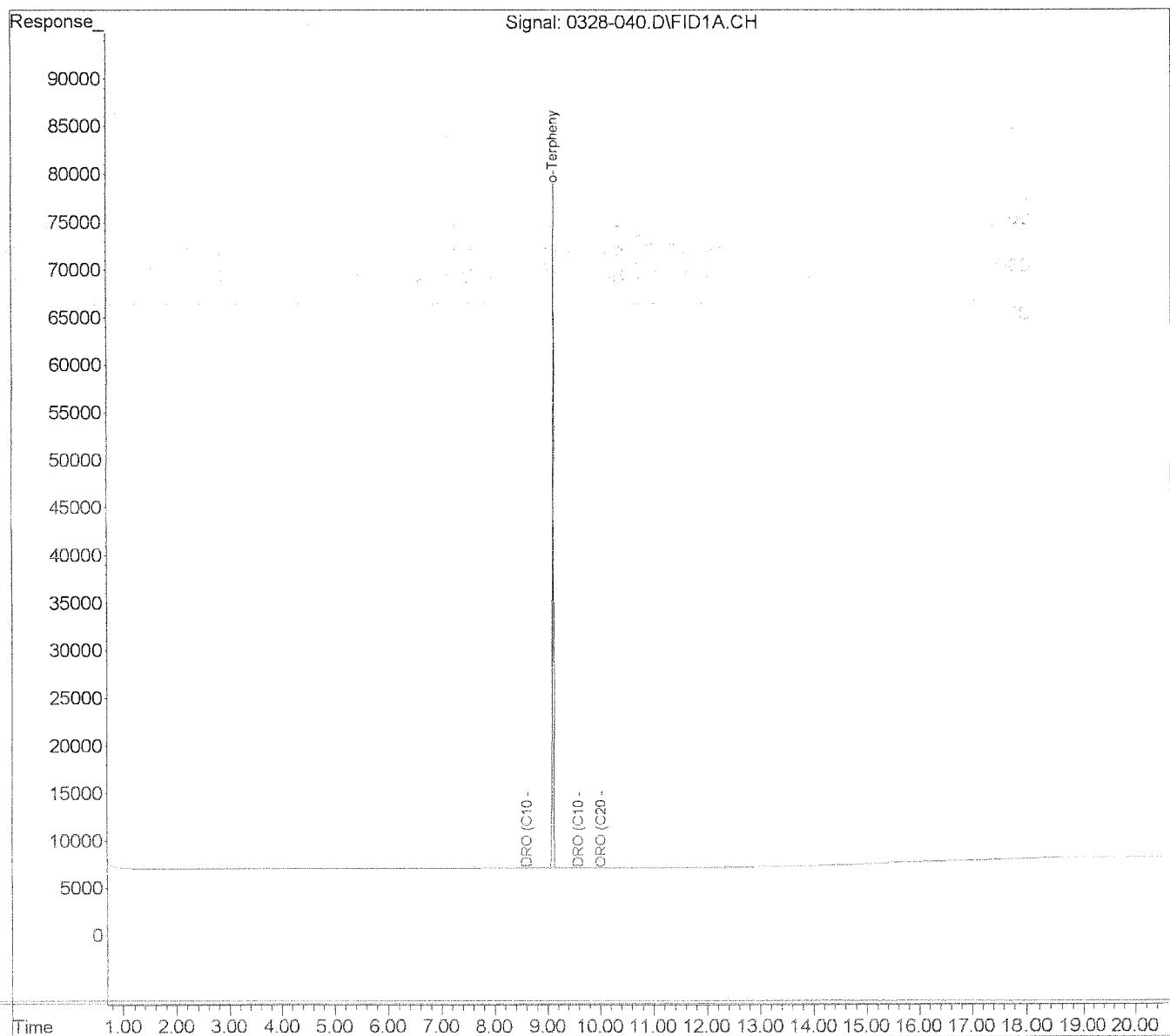
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-040.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 5:40 pm  
Operator : JS  
Sample : J1402115-003 SAMP  
Misc : DRO 8015B  
ALS Vial : 13 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:07 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

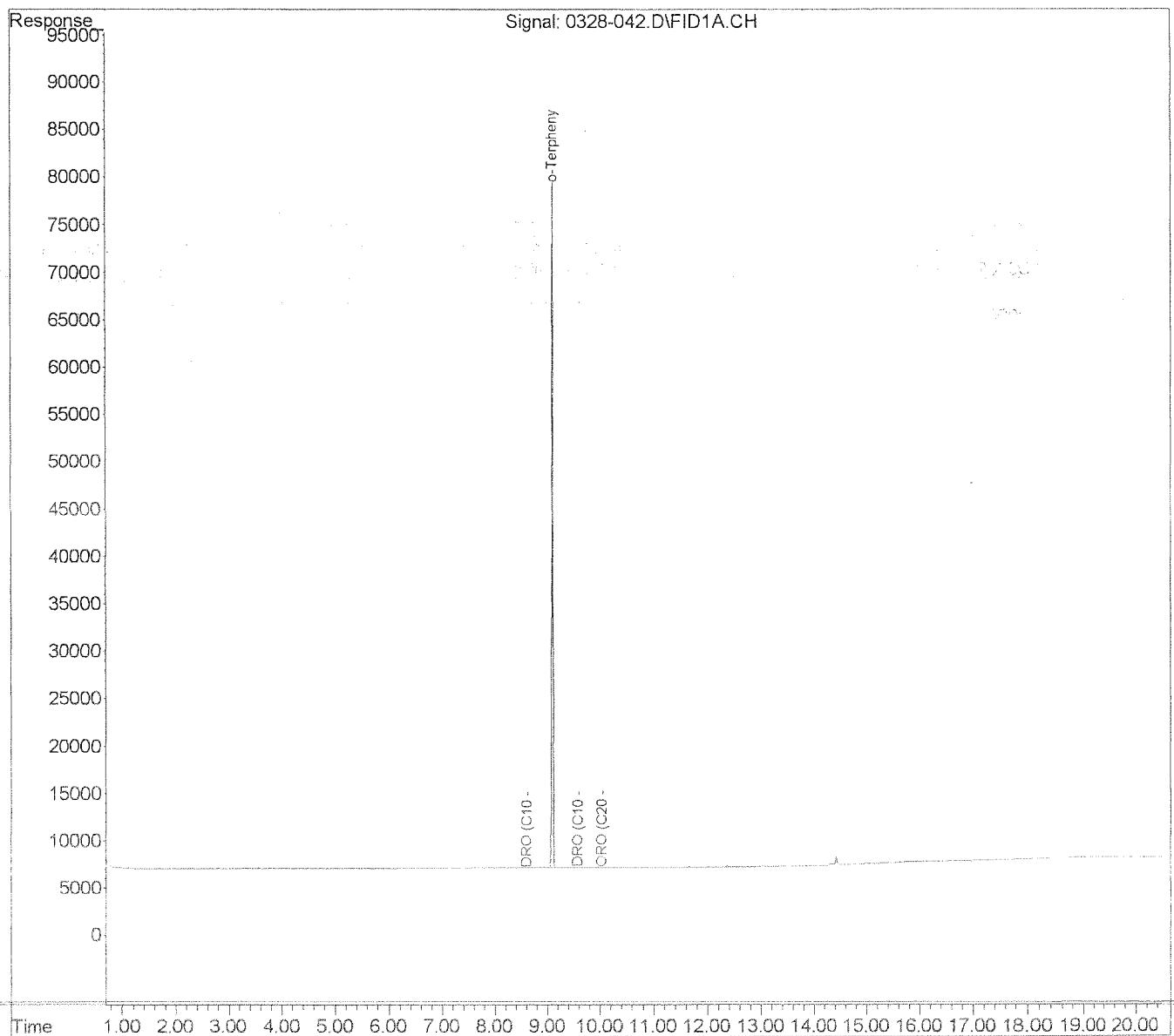
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328  
Data File : 0328-042.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 6:08 pm  
Operator : JS  
Sample : J1402115-004 SAMP  
Misc : DRO 8015B  
ALS Vial : 14 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:10 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

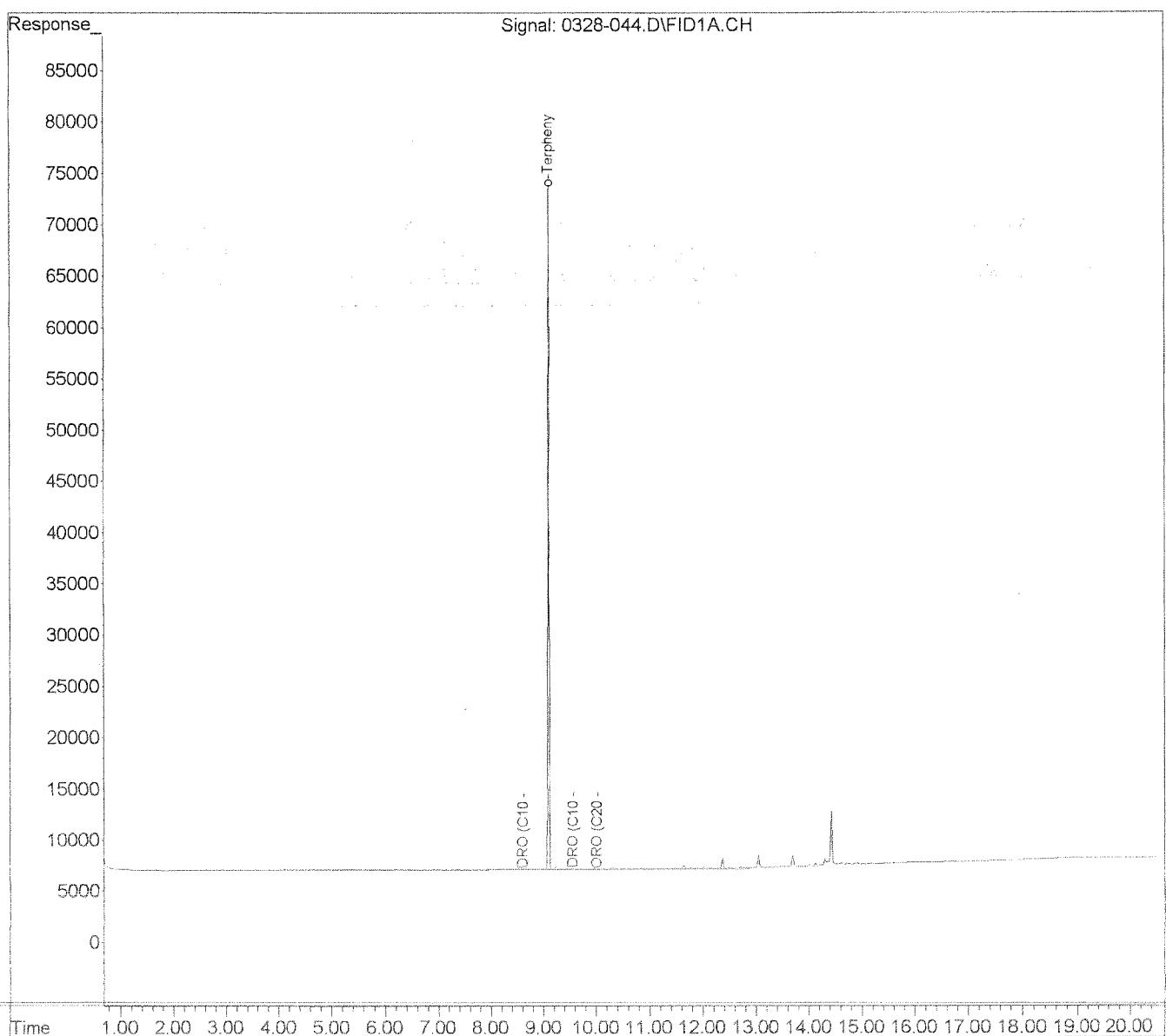
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-044.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 6:35 pm  
Operator : JS  
Sample : J1402115-005 SAMP  
Misc : DRO 8015B  
ALS Vial : 15 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:13 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

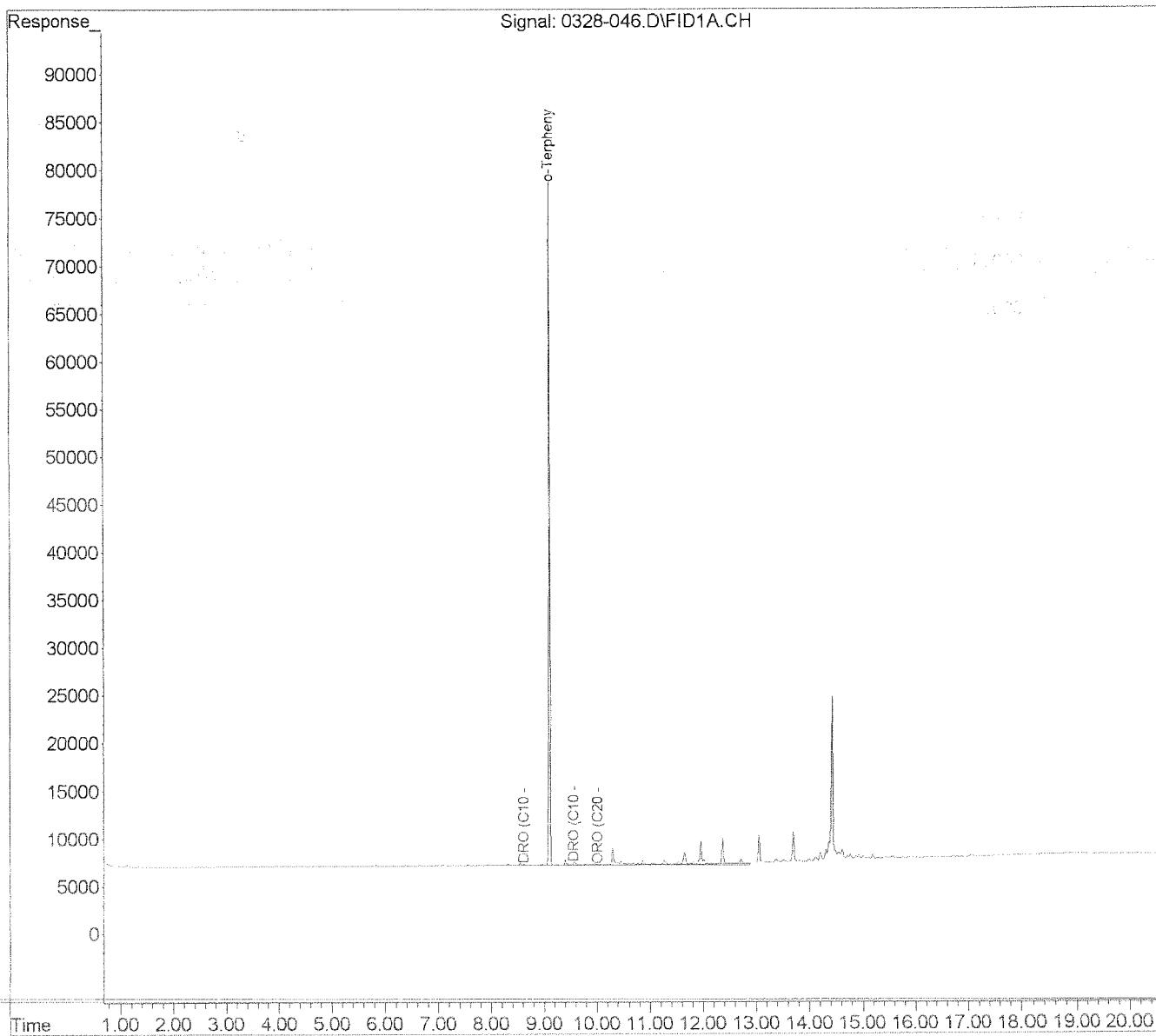
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-046.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 7:03 pm  
Operator : JS  
Sample : J1402115-006 SAMP  
Misc : DRO 8015B  
ALS Vial : 16 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:16 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

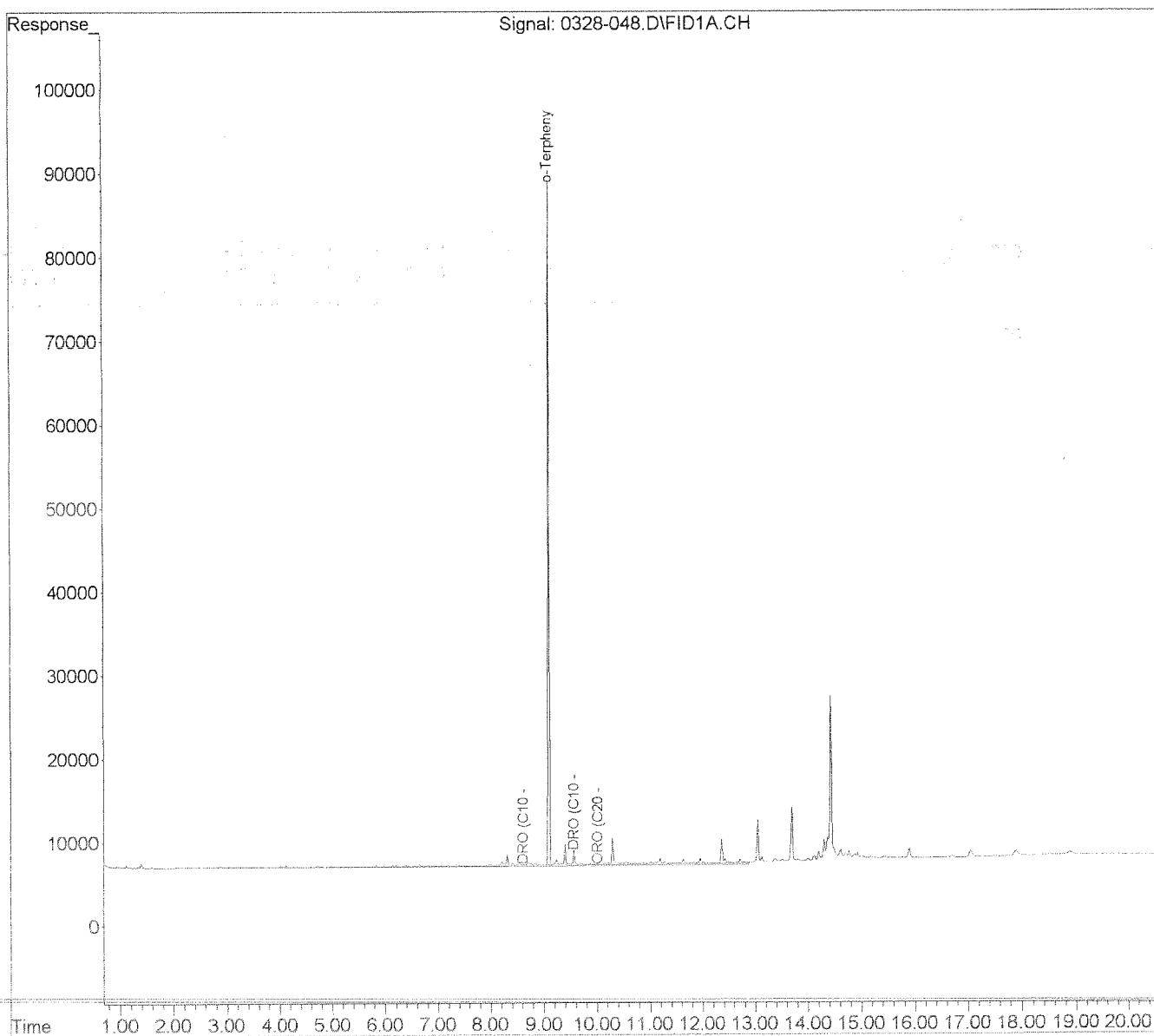
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-048.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 7:30 pm  
Operator : JS  
Sample : J1402115-007 SAMP  
Misc : DRO 8015B  
ALS Vial : 17 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:19 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

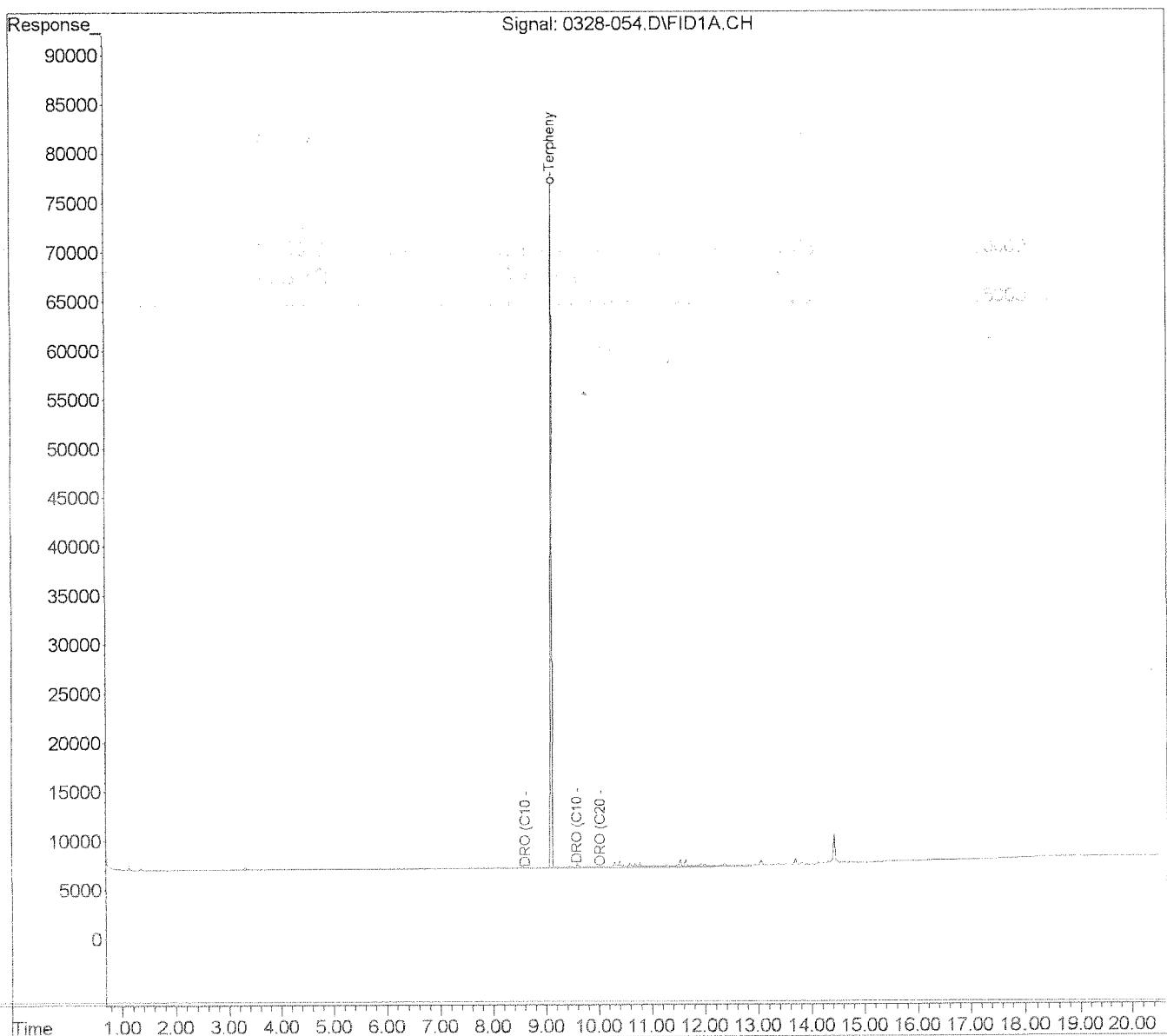
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-054.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 8:53 pm  
Operator : JS  
Sample : J1402115-008 SAMP  
Misc : DRO 8015B  
ALS Vial : 20 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:28 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

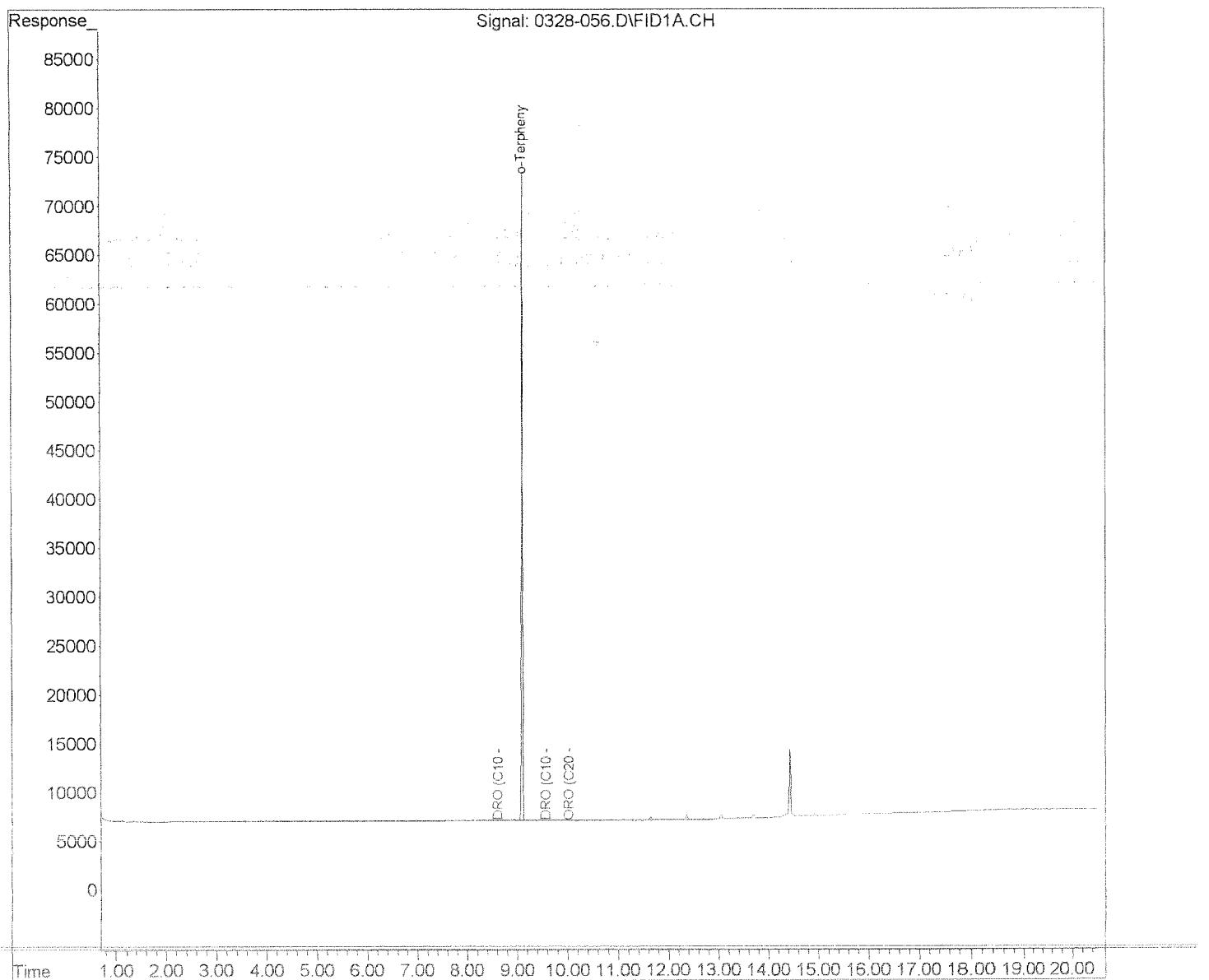
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-056.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 9:20 pm  
Operator : JS  
Sample : J1402115-009 SAMP  
Misc : DRO 8015B  
ALS Vial : 21 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:31 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

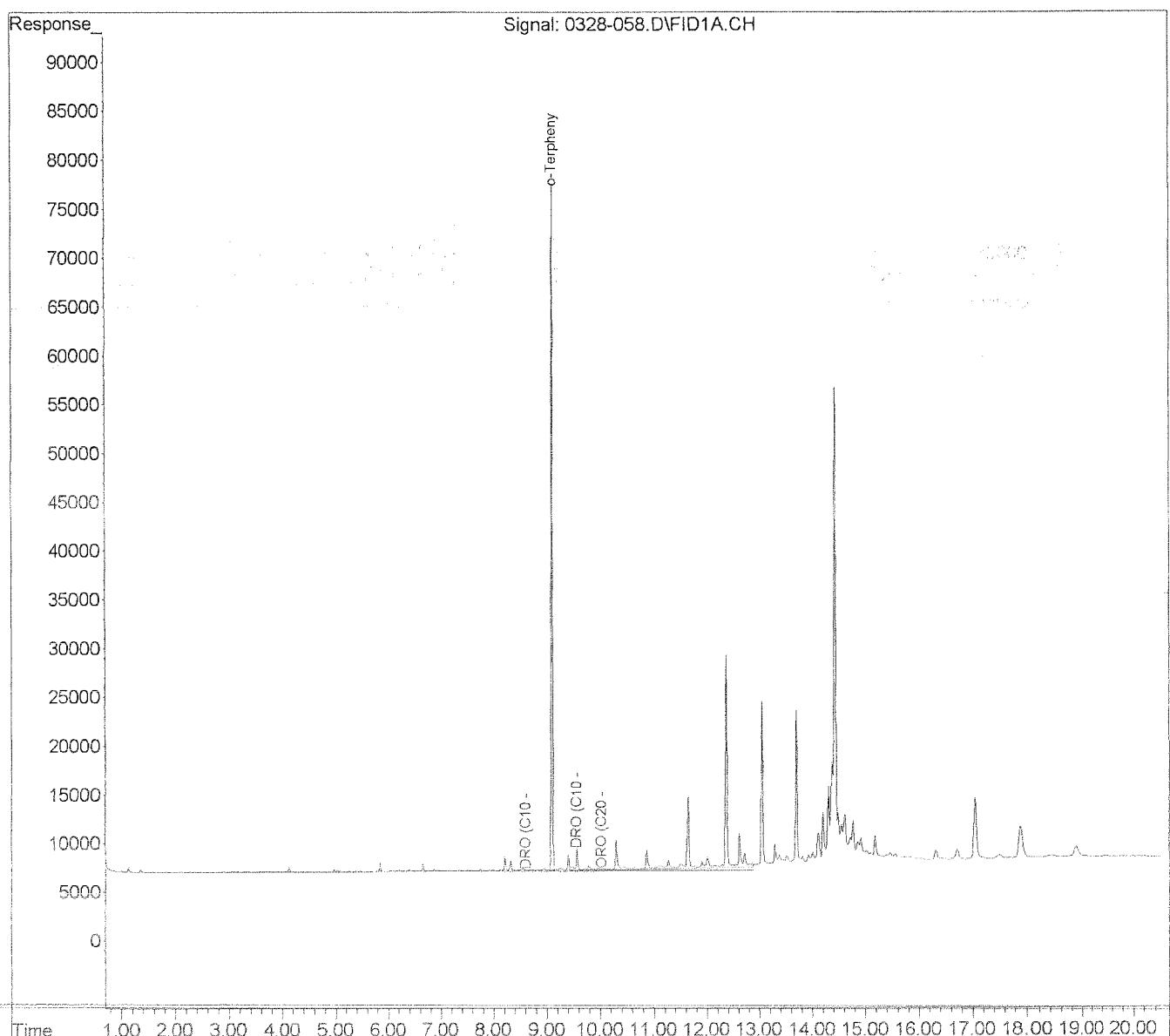
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-058.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 9:47 pm  
Operator : JS  
Sample : J1402115-010 SAMP  
Misc : DRO 8015B  
ALS Vial : 22 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:34 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

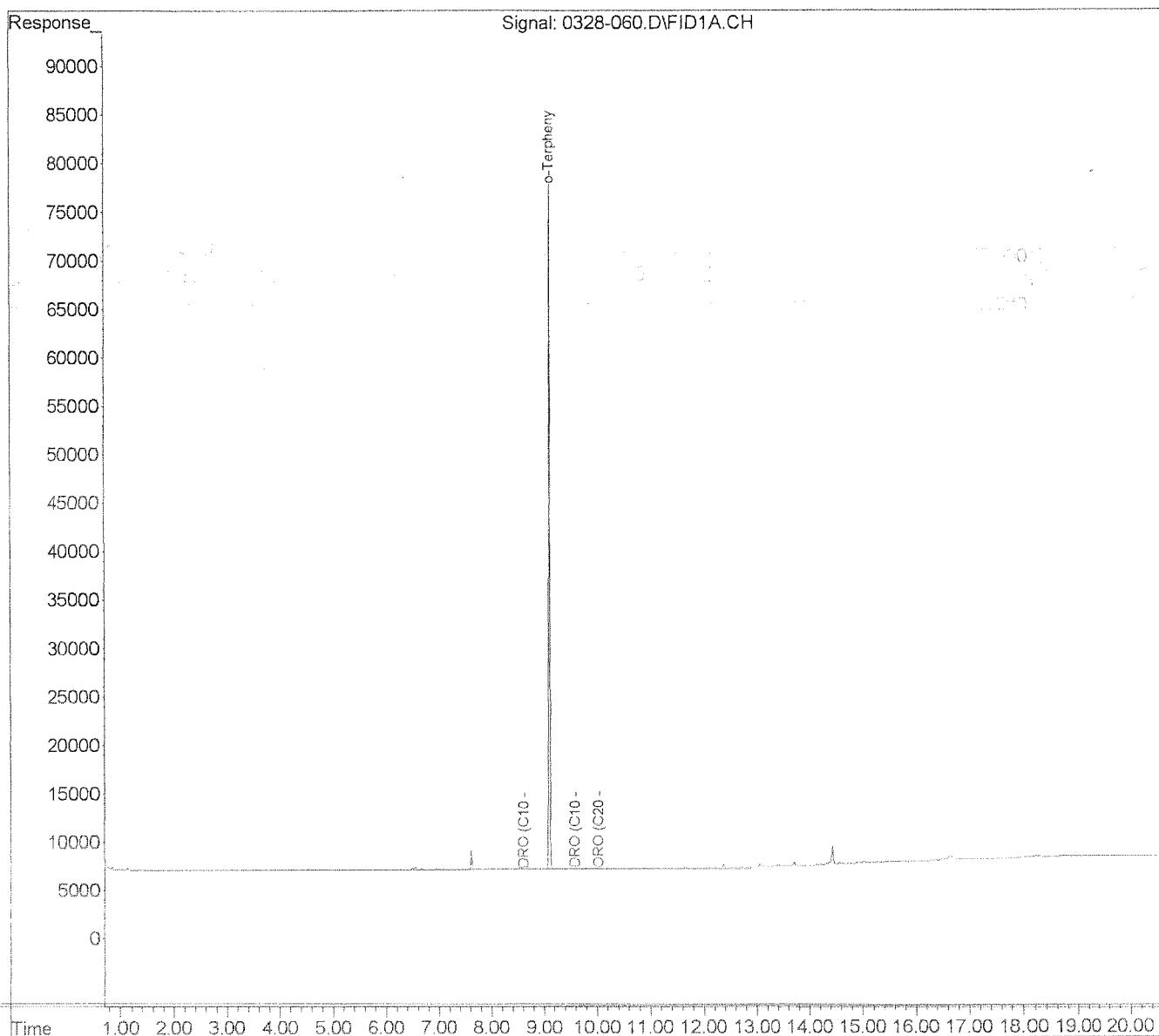
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-060.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 10:15 pm  
Operator : JS  
Sample : J1402115-011 SAMP  
Misc : DRO 8015B  
ALS Vial : 23 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:37 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

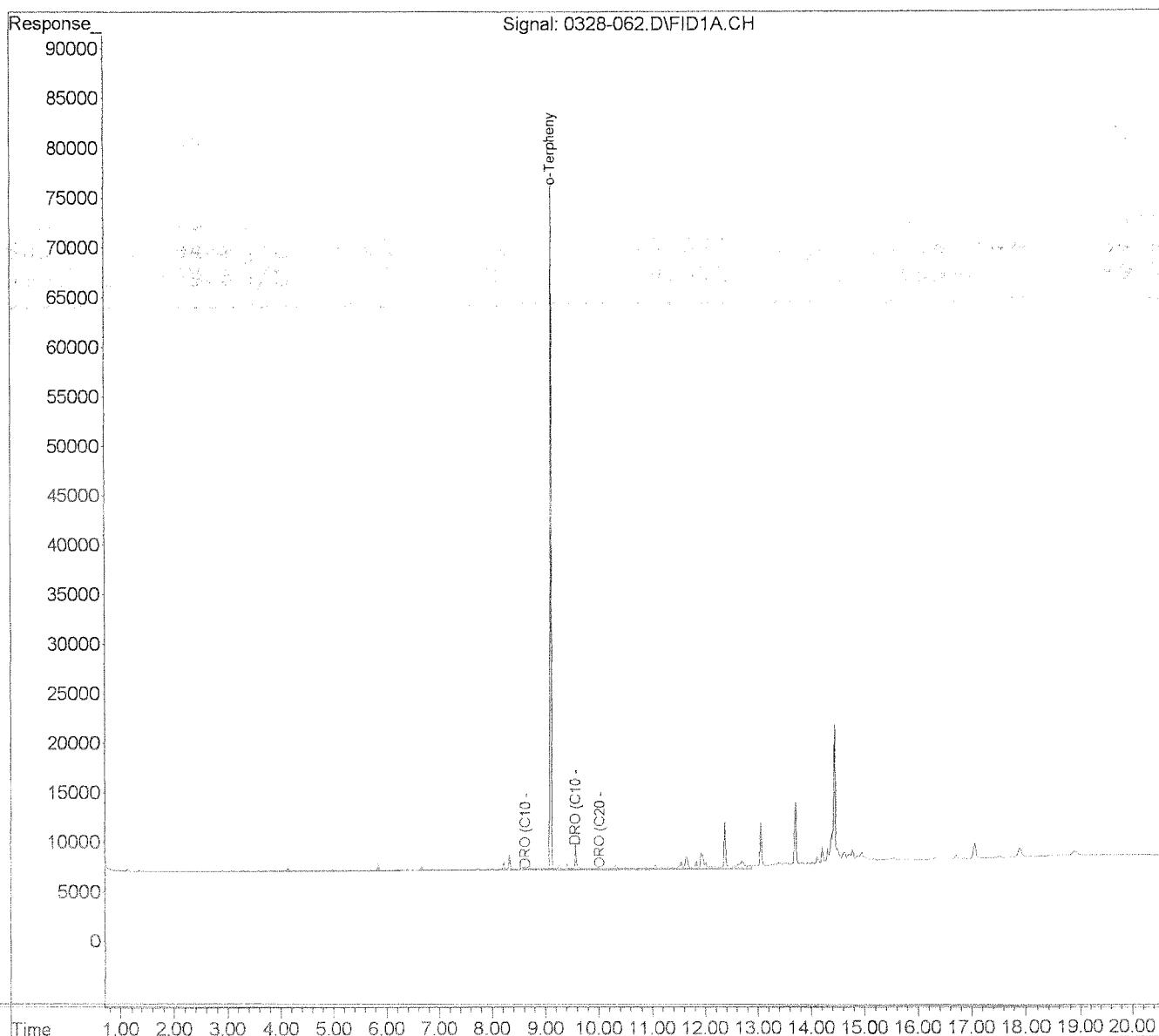
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-062.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 10:42 pm  
Operator : JS  
Sample : J1402115-012 SAMP  
Misc : DRO 8015B  
ALS Vial : 24 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:40 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

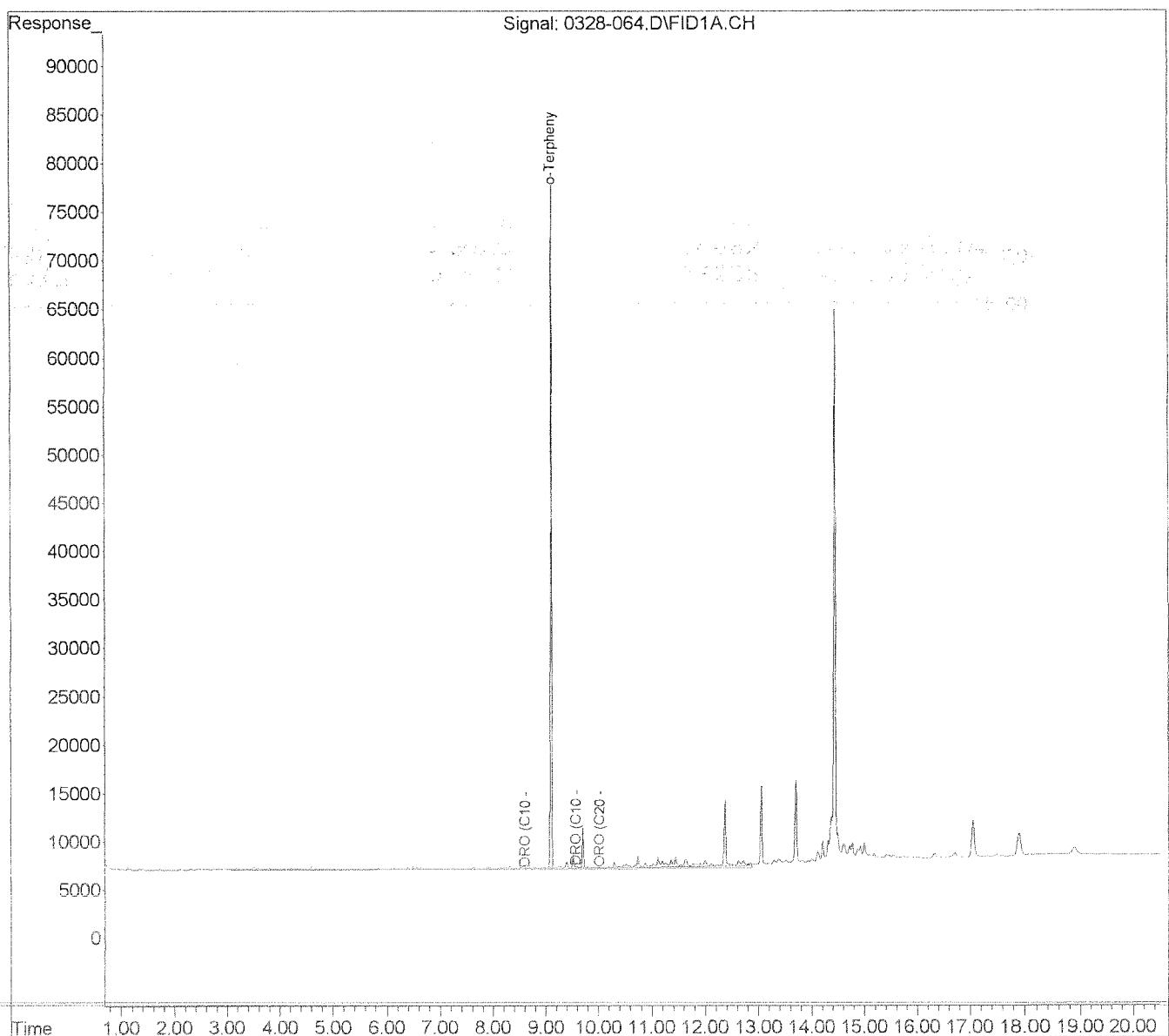
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-064.D  
Signal(s) : FID1A.CH  
Acq On : 28 Mar 2014 11:10 pm  
Operator : JS  
Sample : J1402115-013 SAMP  
Misc : DRO 8015B  
ALS Vial : 25 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:26:43 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

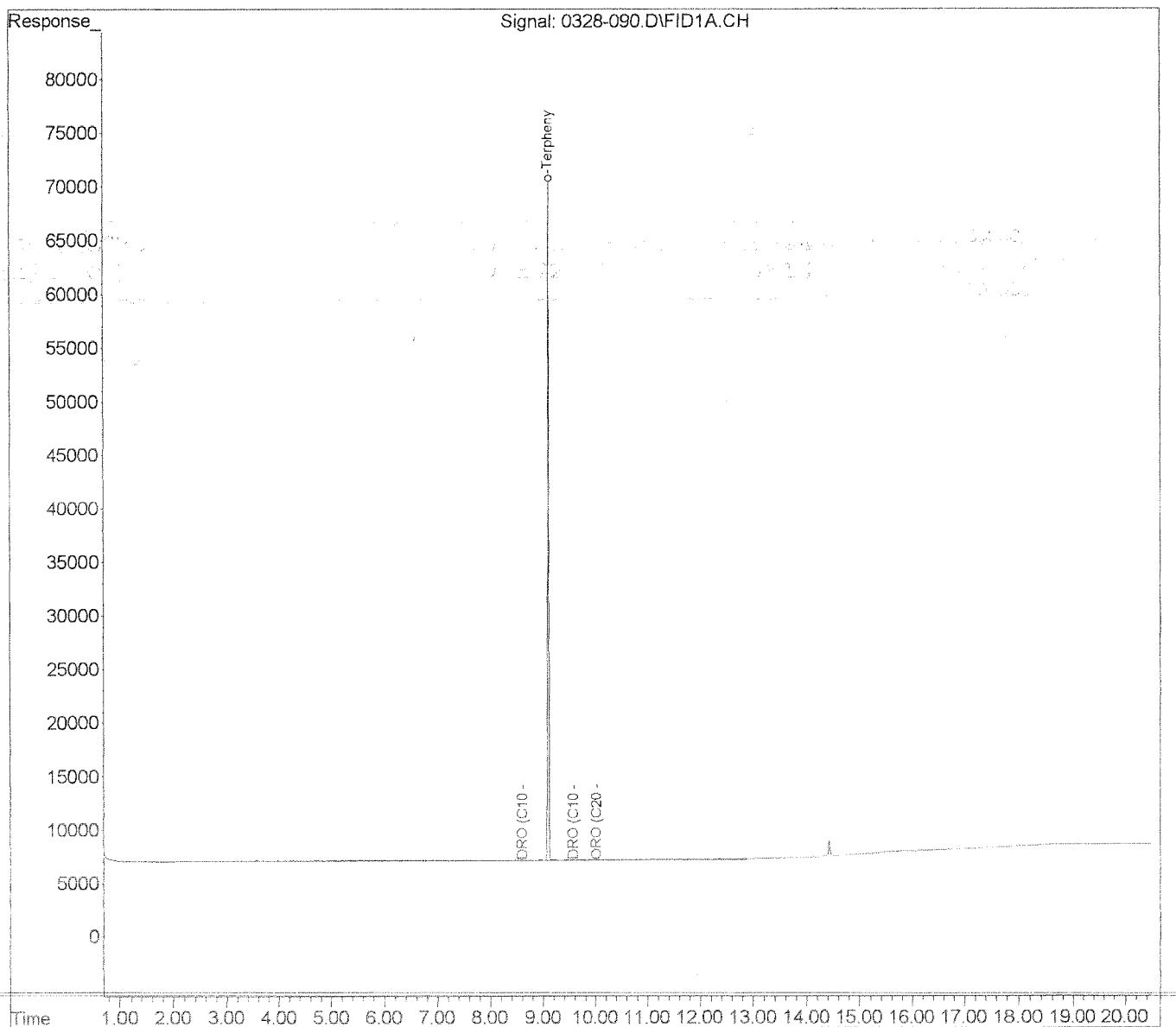
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-090.D  
Signal(s) : FID1A.CH  
Acq On : 29 Mar 2014 5:08 am  
Operator : JS  
Sample : J1402115-021 SAMP  
Misc : DRO 8015B  
ALS Vial : 38 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 09:27:20 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

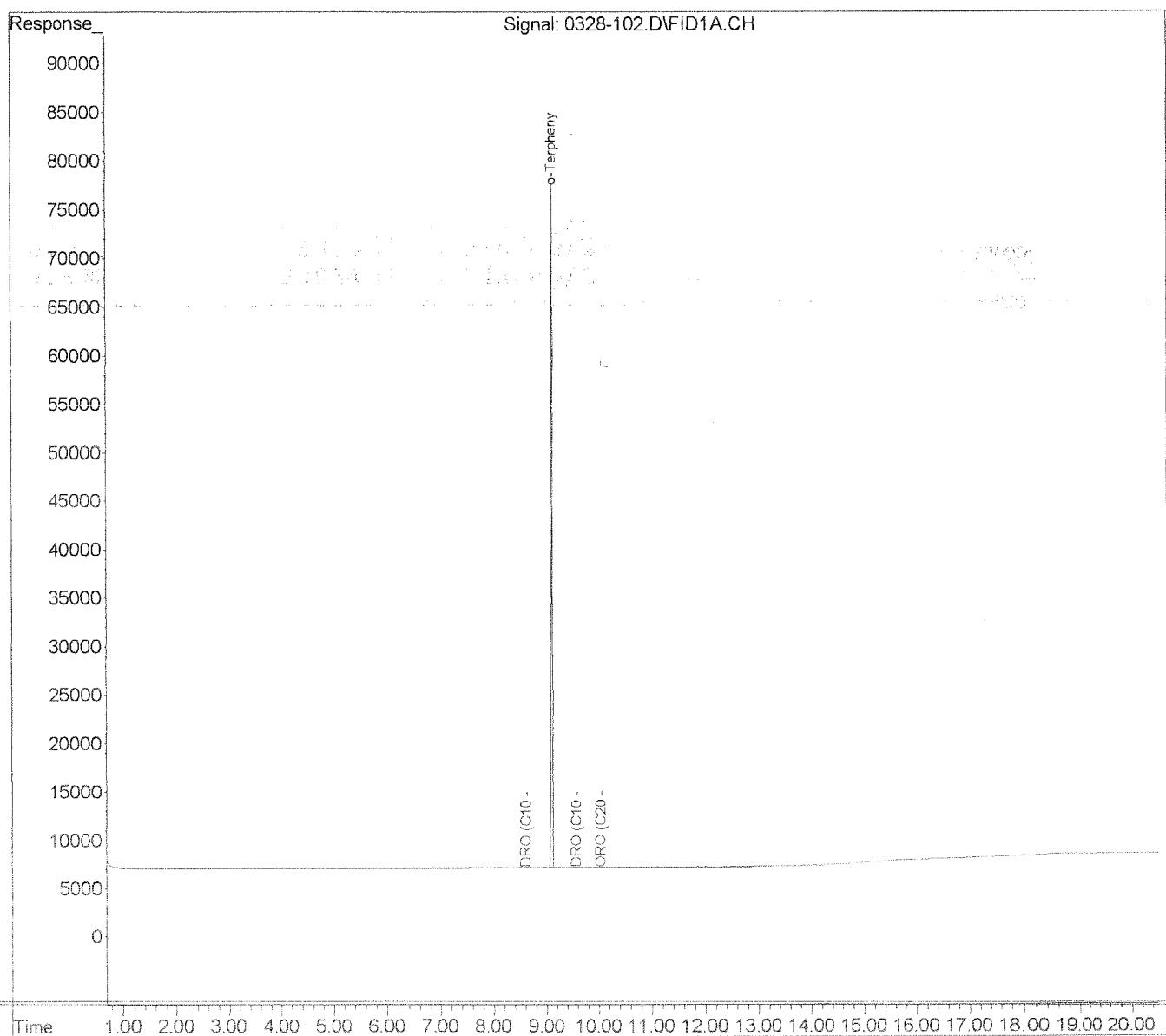
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
 Data File : 0328-102.D  
 Signal(s) : FID1A.CH  
 Acq On : 29 Mar 2014 7:54 am  
 Operator : JS  
 Sample : J1402115-022 SAMP  
 Misc : DRO 8015B  
 ALS Vial : 44 Sample Multiplier: 1

Integration File: erica.P  
 Quant Time: Mar 29 09:27:35 2014  
 Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
 Quant Title : 8015B DRO  
 QLast Update : Thu Mar 20 13:57:33 2014  
 Response via : Initial Calibration  
 Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

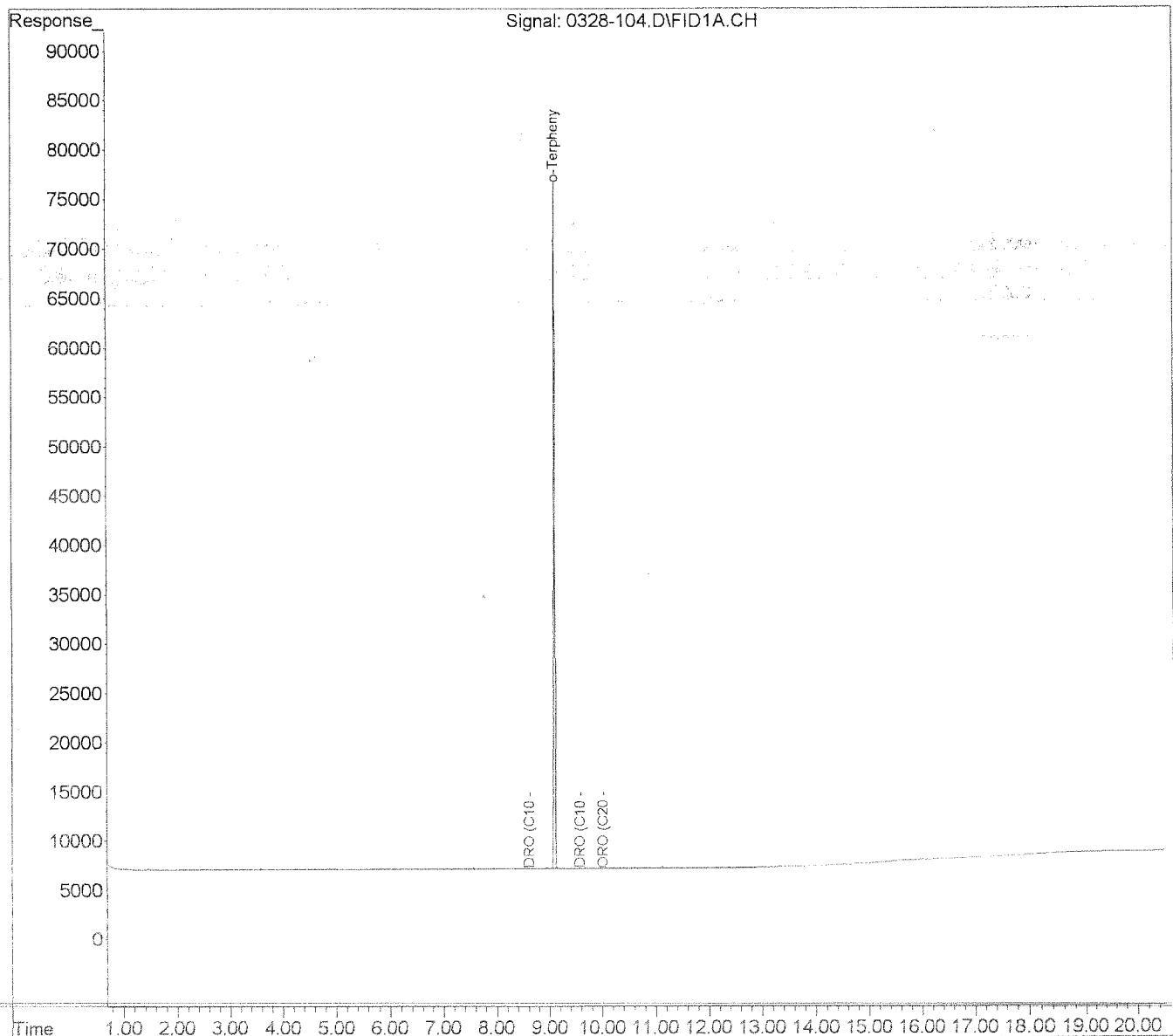
Volume Inj. :  
 Signal Phase :  
 Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-104.D  
Signal(s) : FID1A.CH  
Acq On : 29 Mar 2014 8:22 am  
Operator : JS  
Sample : J1402115-023 SAMP  
Misc : DRO 8015B  
ALS Vial : 45 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 10:04:12 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

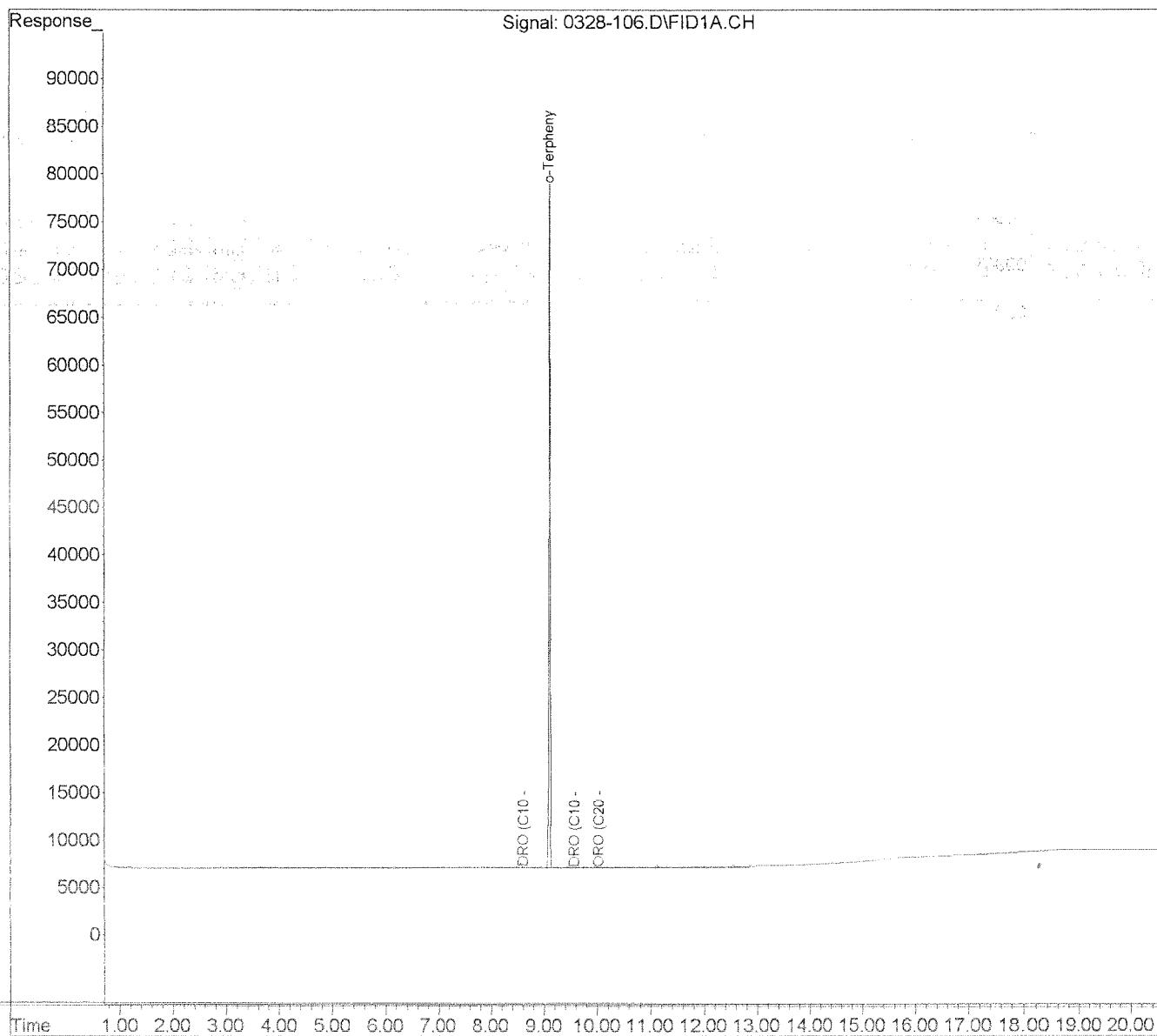
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-106.D  
Signal(s) : FID1A.CH  
Acq On : 29 Mar 2014 8:50 am  
Operator : JS  
Sample : J1402115-024 SAMP  
Misc : DRO 8015B  
ALS Vial : 46 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 10:51:29 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

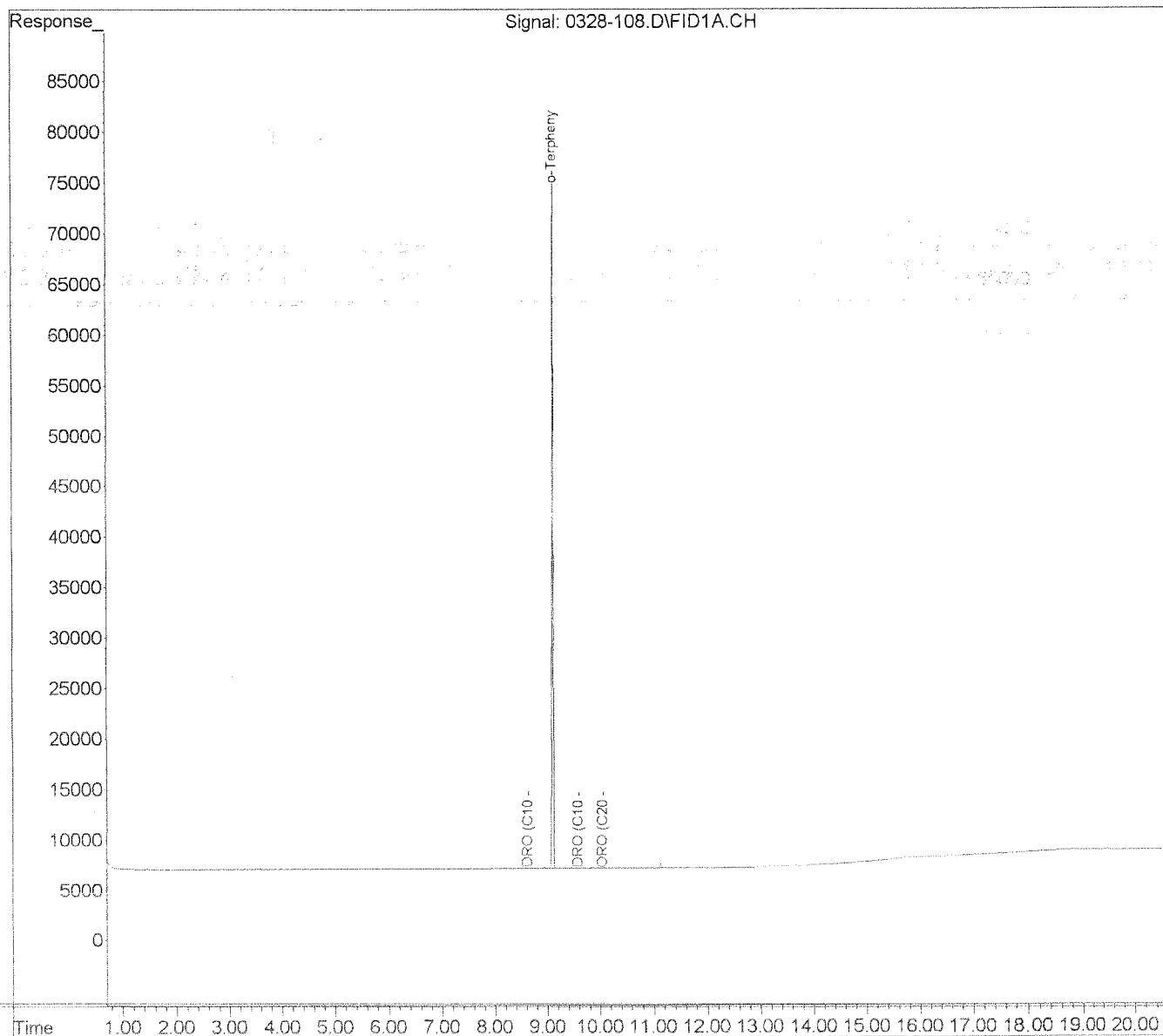
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-108.D  
Signal(s) : FID1A.CH  
Acq On : 29 Mar 2014 9:17 am  
Operator : JS  
Sample : J1402115-025 SAMP  
Misc : DRO 8015B  
ALS Vial : 47 Sample Multiplier: 1

Integration File: erica.P  
Quant Time: Mar 29 10:51:55 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

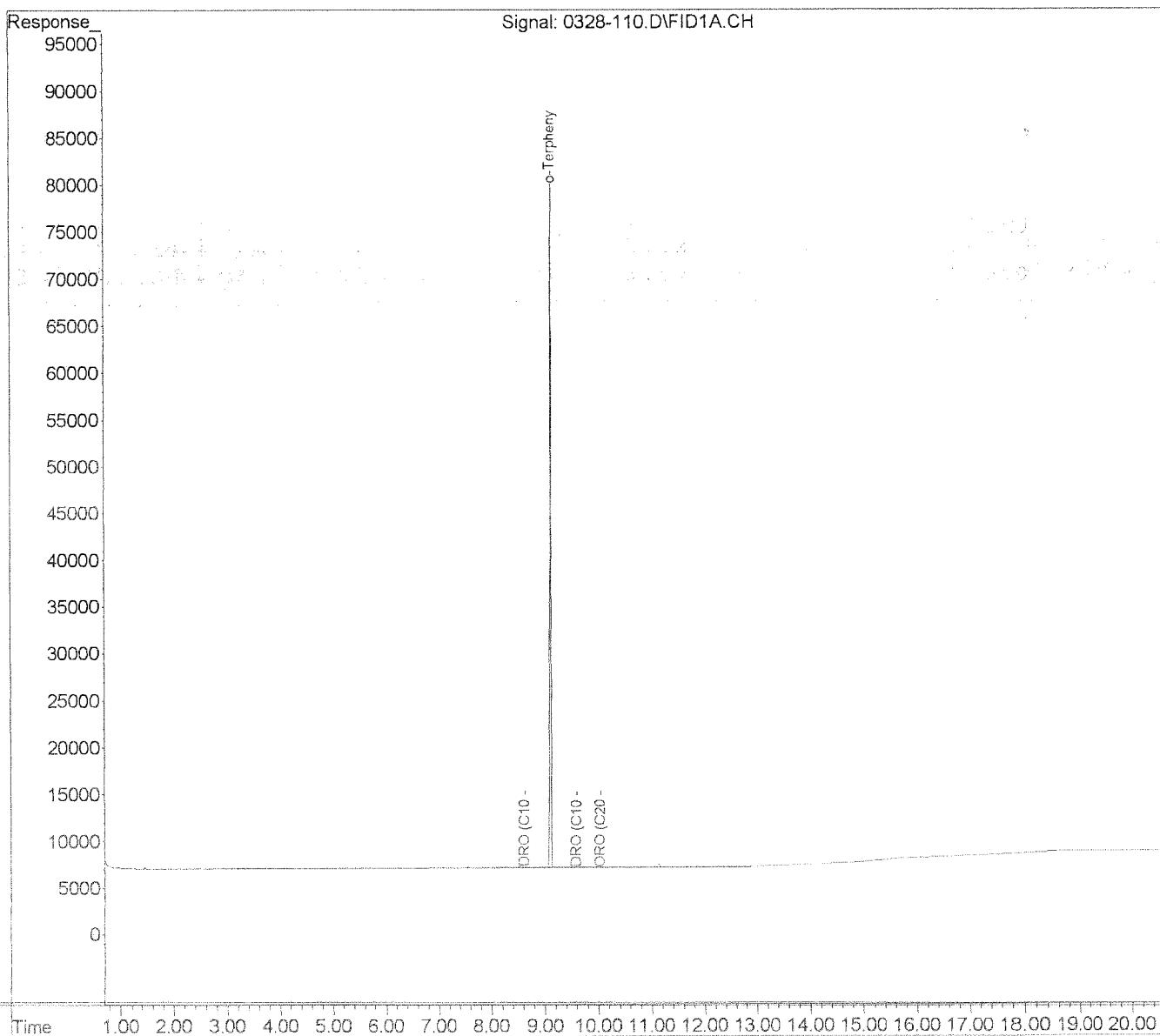
Volume Inj. :  
Signal Phase :  
Signal Info :



Data Path : J:\GC05\DATA\GC05-140328\  
Data File : 0328-110.D  
Signal(s) : FID1A.CH  
Acq On : 29 Mar 2014 9:45 am  
Operator : JS  
Sample : J1402115-026 SAMP  
Misc : DRO 8015B  
ALS Vial : 48 Sample Multiplier: 1

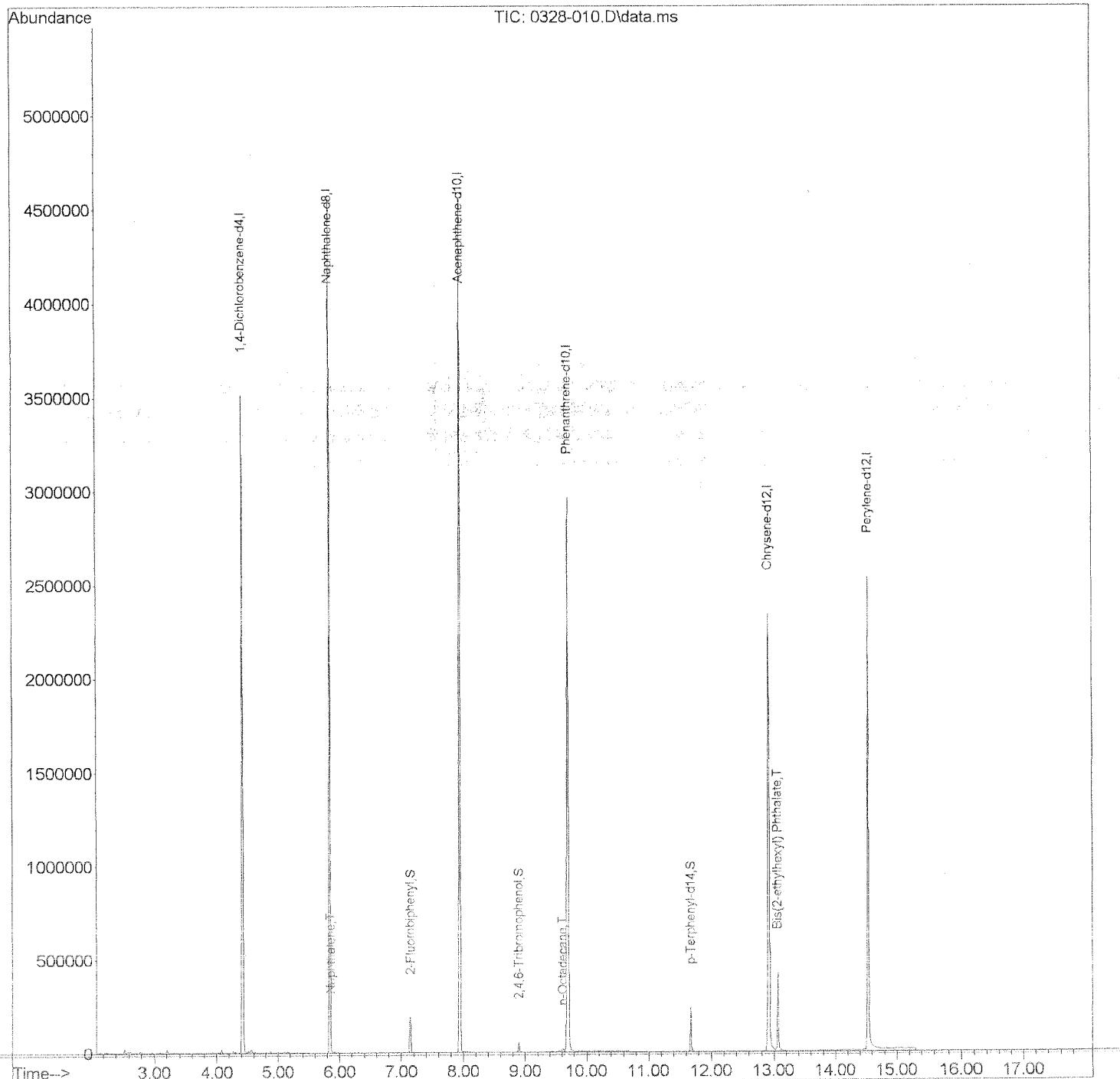
Integration File: erica.P  
Quant Time: Mar 29 11:10:41 2014  
Quant Method : J:\GC05\Methods\GC05-DRO-8015B-140319F.M  
Quant Title : 8015B DRO  
QLast Update : Thu Mar 20 13:57:33 2014  
Response via : Initial Calibration  
Integrator: RTE 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :  
Signal Phase :  
Signal Info :



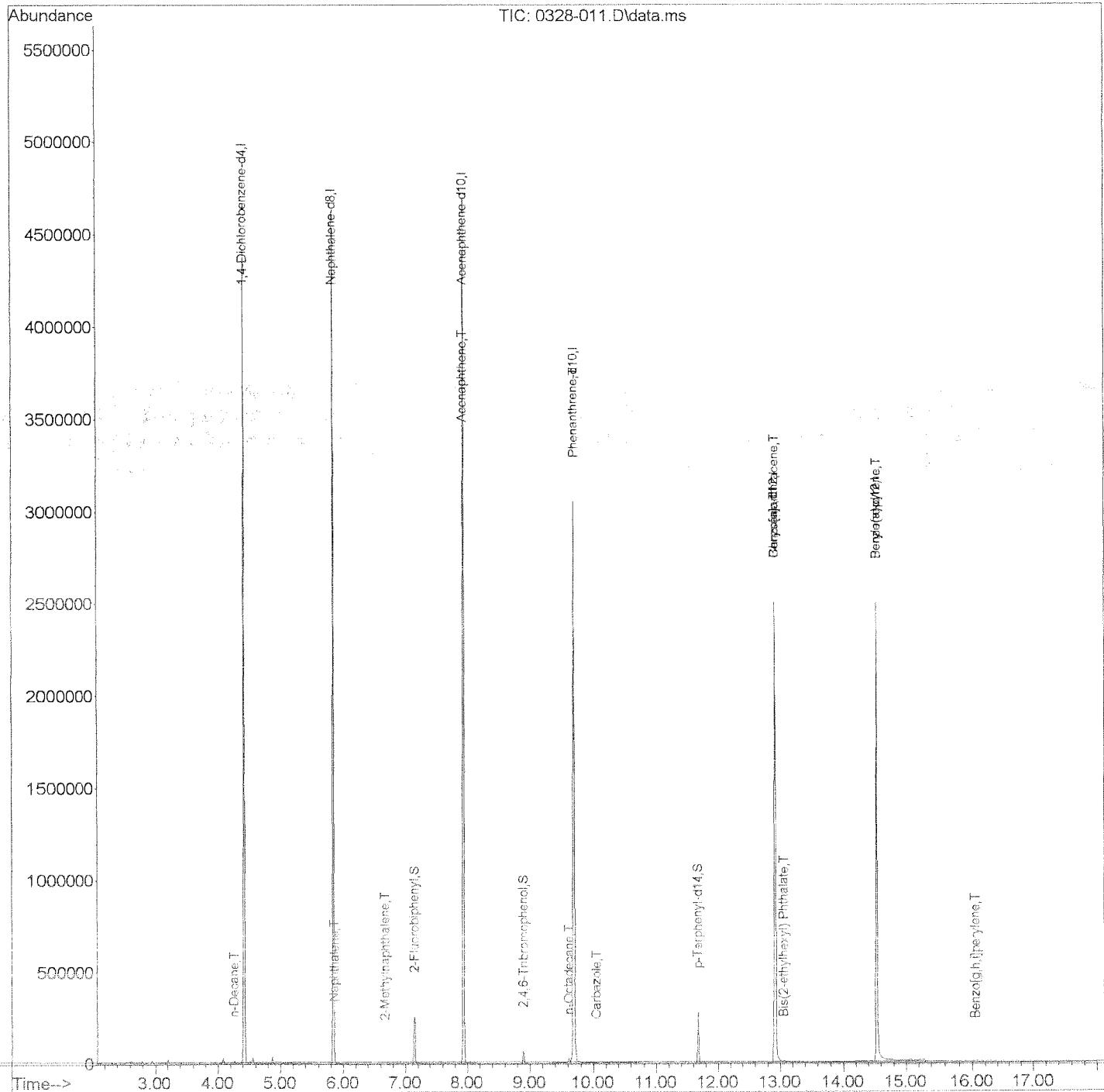
Data Path : J:\MS04\DATA\MS04-140328\  
 Data File : 0328-010.D  
 Acq On : 28 Mar 2014 3:15 pm  
 Operator : JLY  
 Sample : J1402115-001 SAMP  
 Misc : EPA 8270C SIM  
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 31 11:40:57 2014  
 Quant Method : J:\MS04\Methods\MS04-140327SIM.M  
 Quant Title : PAH/PCP by GC/MS SIM  
 QLast Update : Fri Mar 28 08:09:55 2014  
 Response via : Initial Calibration



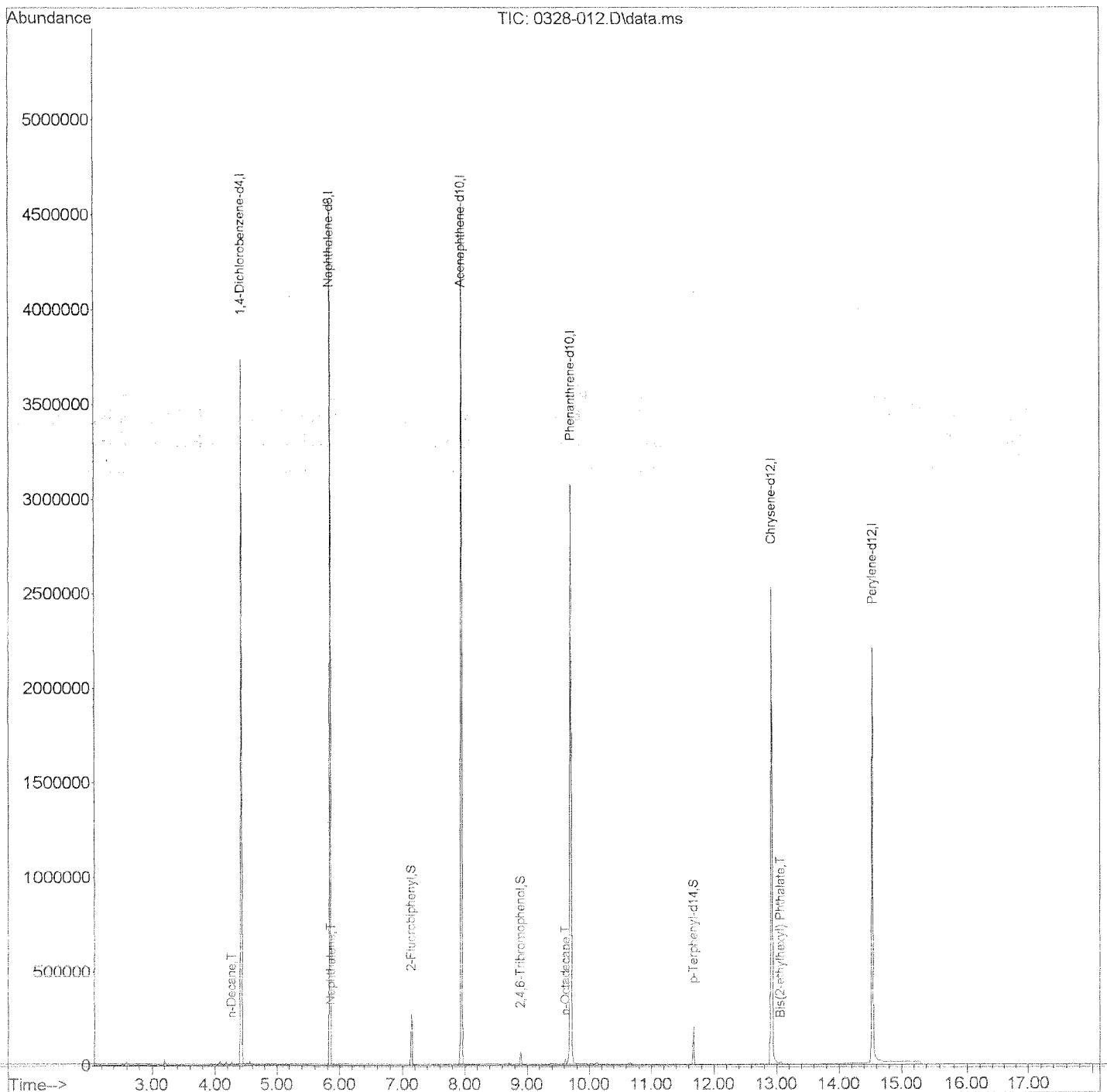
Data Path : J:\MS04\DATA\MS04-140328\  
 Data File : 0328-011.D  
 Acq On : 28 Mar 2014 3:38 pm  
 Operator : JLY  
 Sample : J1402115-002 SAMP  
 Misc : EPA 8270C SIM  
 ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 31 11:20:41 2014  
 Quant Method : J:\MS04\Methods\MS04-140327SIM.M  
 Quant Title : PAH/PCP by GC/MS SIM  
 QLast Update : Fri Mar 28 08:09:55 2014  
 Response via : Initial Calibration



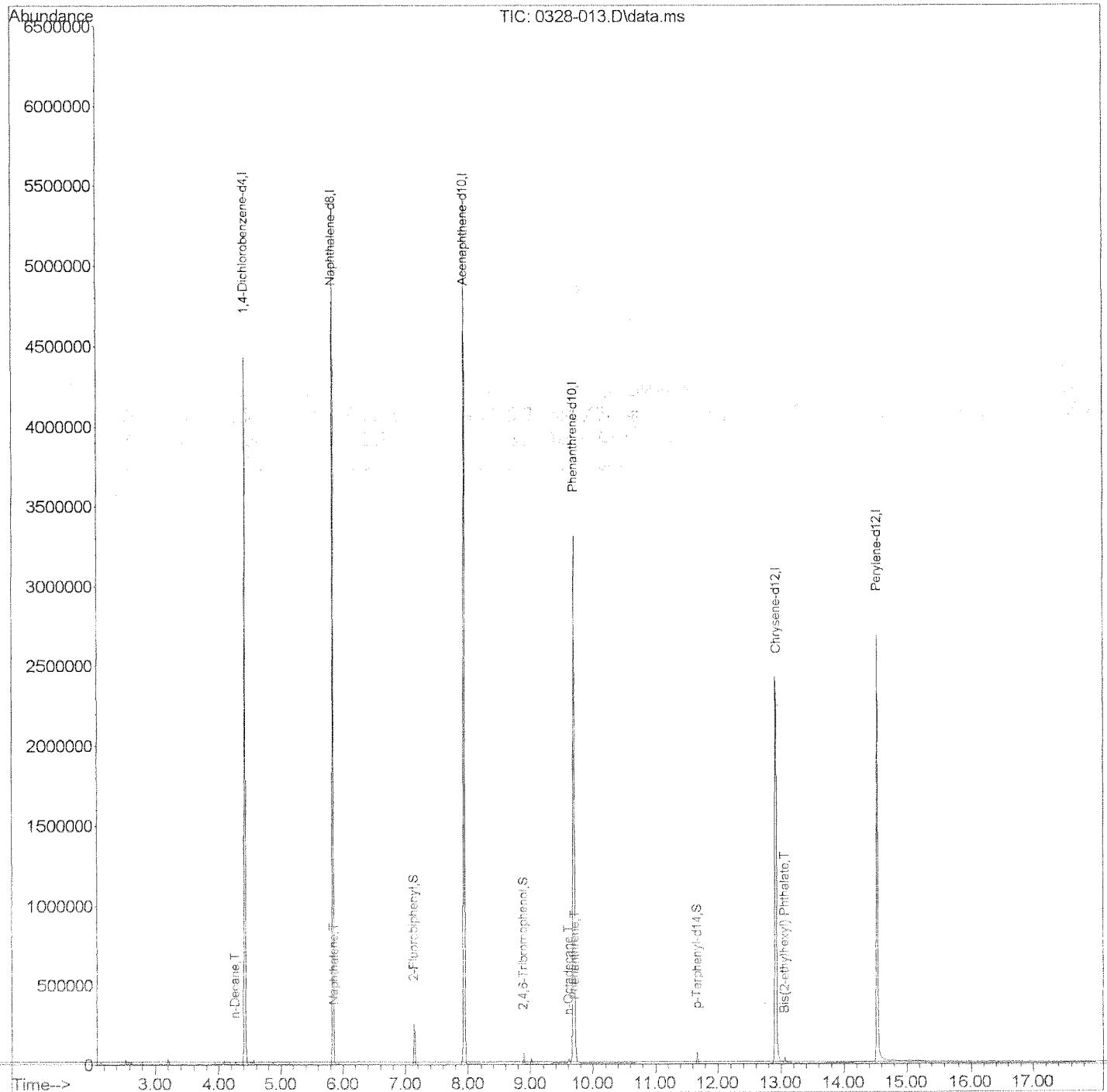
Data Path : J:\MS04\DATA\MS04-140328\  
Data File : 0328-012.D  
Acq On : 28 Mar 2014 4:01 pm  
Operator : JLY  
Sample : J1402115-003 SAMP  
Misc : EPA 8270C SIM  
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 31 11:42:44 2014  
Quant Method : J:\MS04\Methods\MS04-1  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Mar 28 08:09:55 2014  
Response via : Initial Calibration



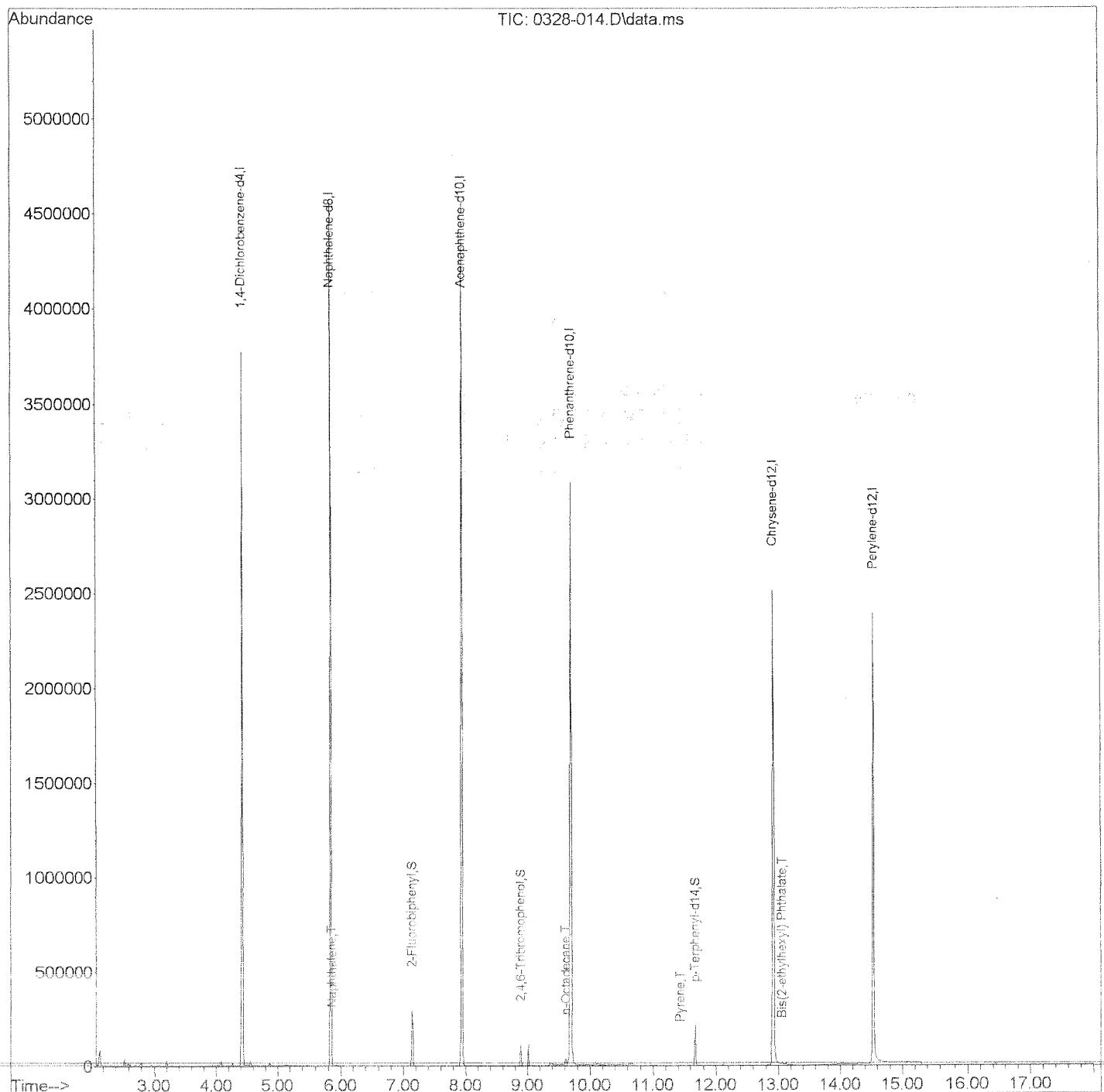
Data Path : J:\MS04\DATA\MS04-140328\  
Data File : 0328-013.D  
Acq On : 28 Mar 2014 4:24 pm  
Operator : JLY  
Sample : J1402115-004 SAMP  
Misc : EPA 8270C SIM  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 31 11:43:46 2014  
Quant Method : J:\MS04\Methods\MS04-140327SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Mar 28 08:09:55 2014  
Response via : Initial Calibration



Data Path : J:\MS04\DATA\MS04-140328\  
 Data File : 0328-014.D  
 Acq On : 28 Mar 2014 4:46 pm  
 Operator : JLY  
 Sample : J1402115-005 SAMP  
 Misc : EPA 8270C SIM  
 ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 31 11:44:49 2014  
 Quant Method : J:\MS04\Methods\MS04-140327SIM.M  
 Quant Title : PAH/PCP by GC/MS SIM  
 QLast Update : Fri Mar 28 08:09:55 2014  
 Response via : Initial Calibration



Data Path : J:\MS04\DATA\MS04-140328\

Data File : 0328-015.D

Acq On : 28 Mar 2014 5:09 pm

Operator : JLY

Sample : J1402115-006 SAMP; 5X

Misc : EPA 8270C SIM

ALS Vial : 15 Sample Multiplier: 1

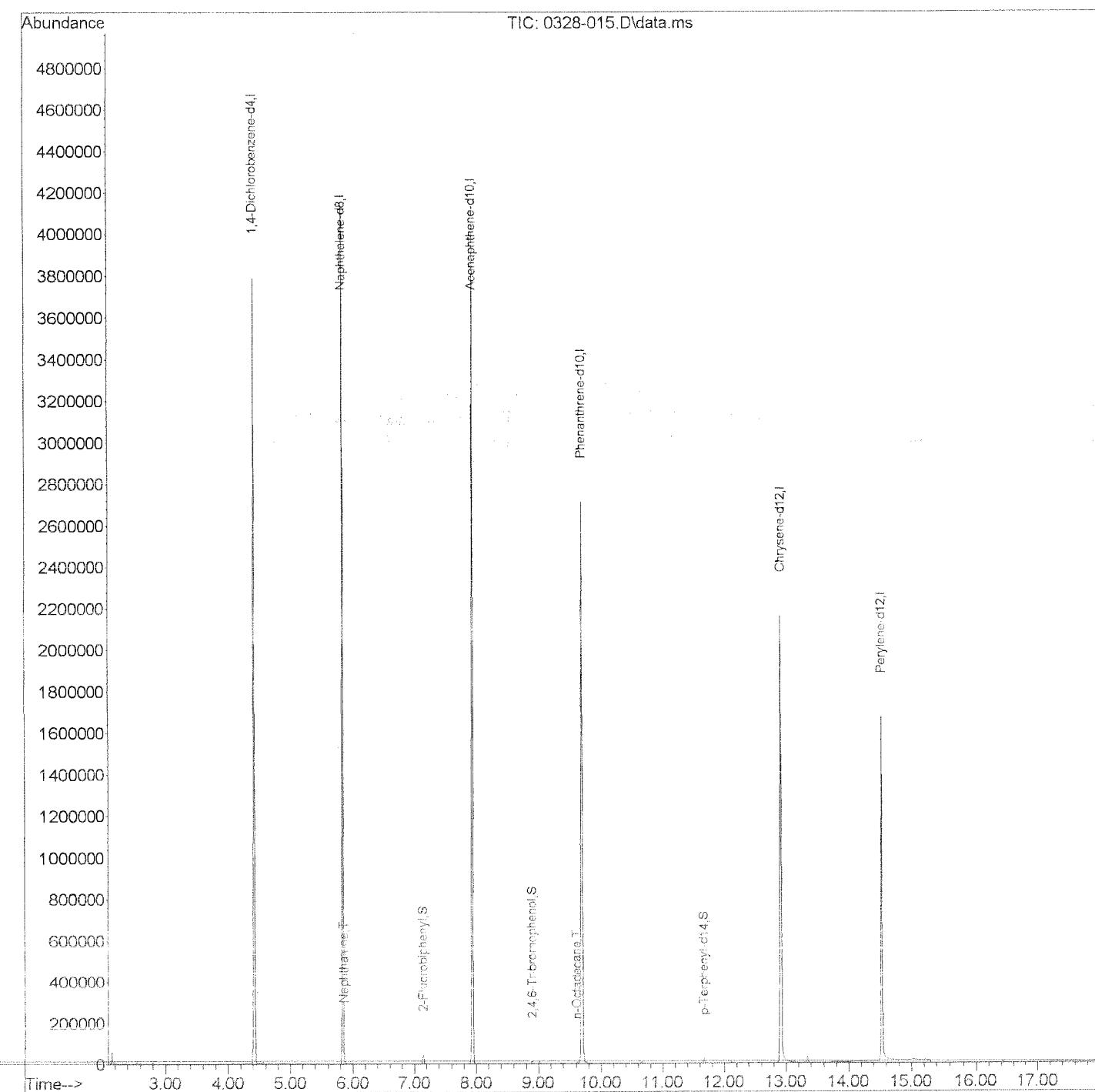
Quant Time: Mar 31 11:45:36 2014

Quant Method : J:\MS04\Methods\MS04-140327SIM.M

Quant Title : PAH/PCP by GC/MS SIM

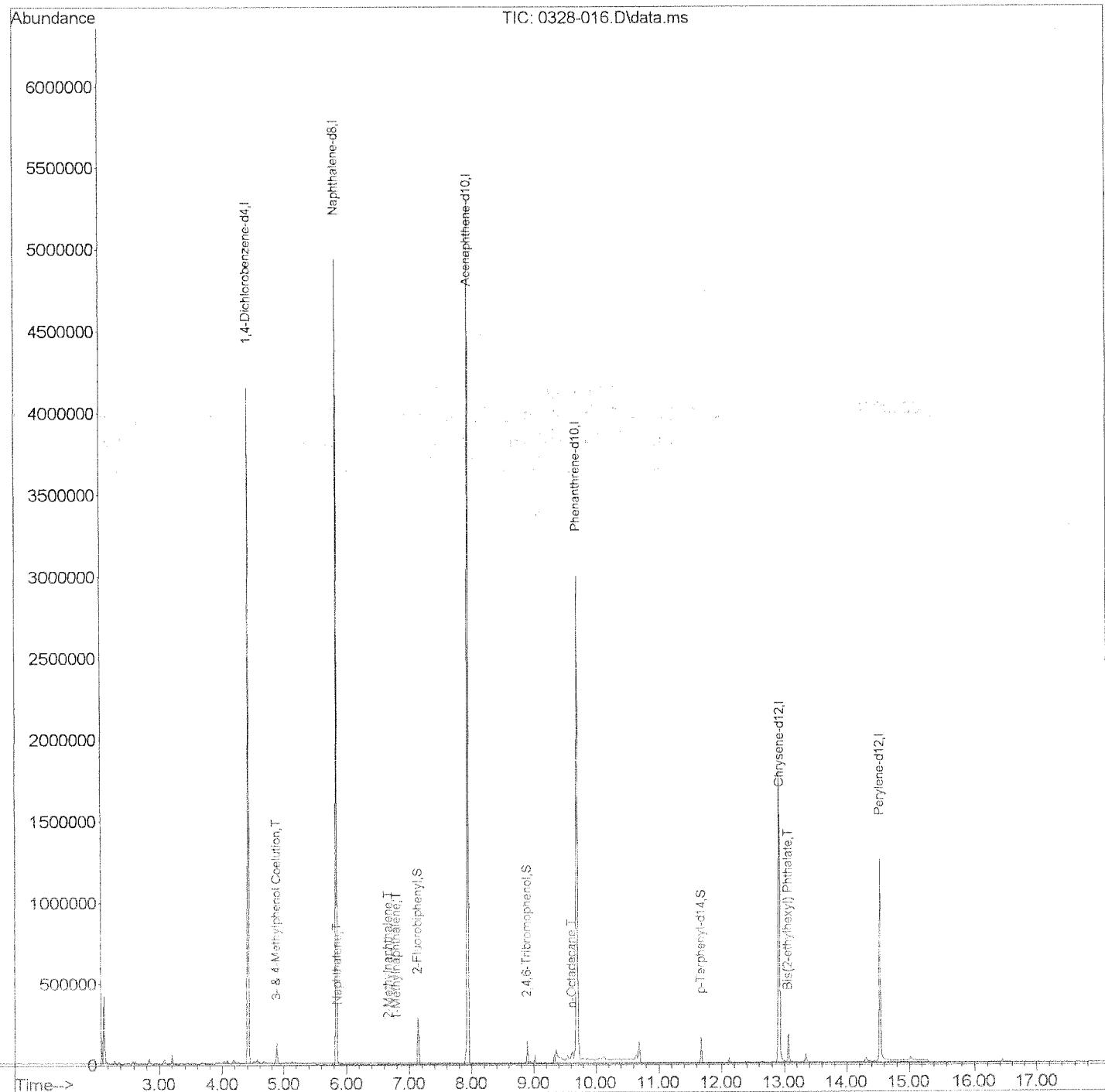
QLast Update : Fri Mar 28 08:09:55 2014

Response via : Initial Calibration



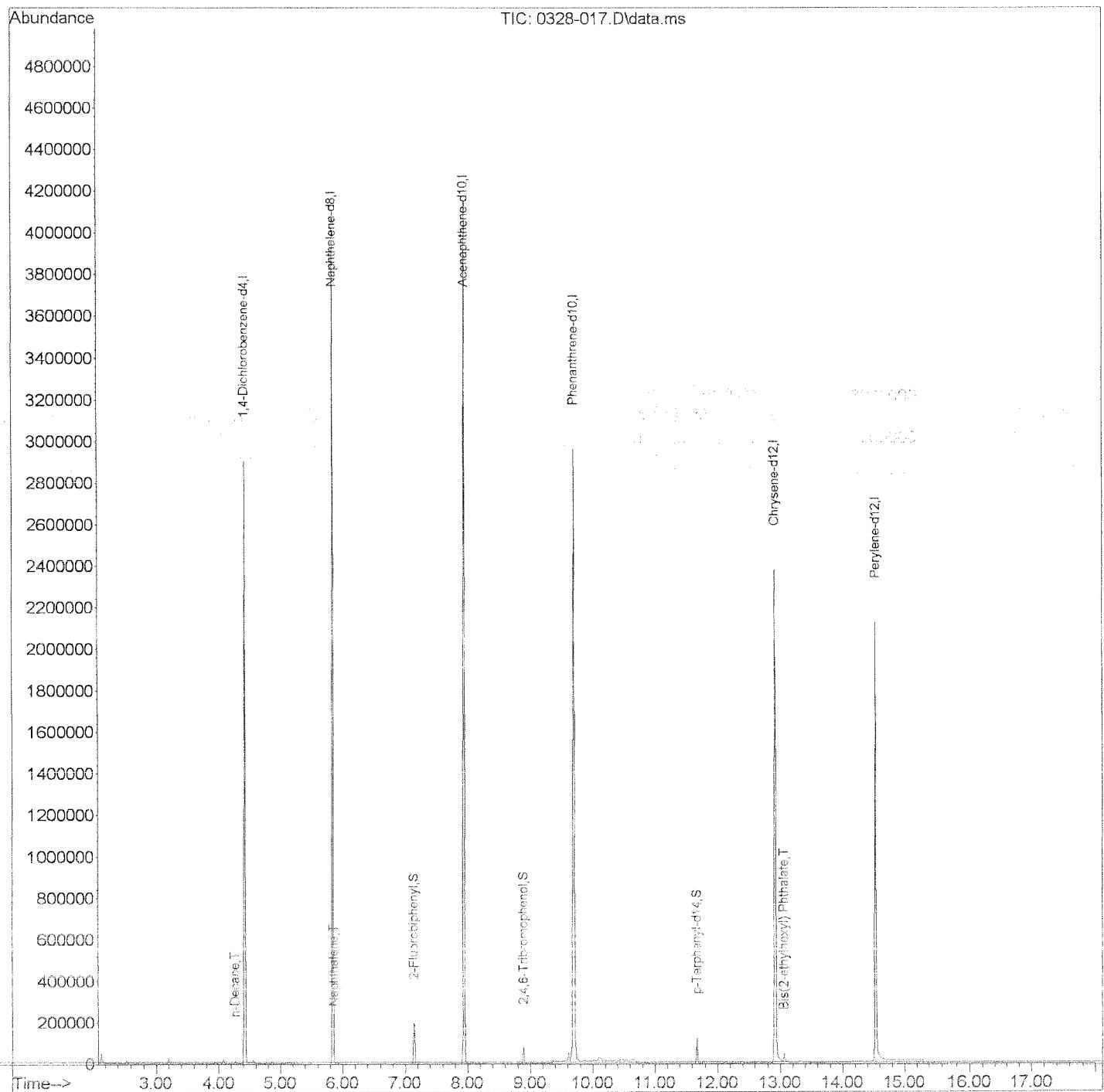
Data Path : J:\MS04\DATA\MS04-140328\  
Data File : 0328-016.D  
Acq On : 28 Mar 2014 5:32 pm  
Operator : JLY  
Sample : J1402115-007 SAMP  
Misc : EPA 8270C SIM  
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 31 11:46:32 2014  
Quant Method : J:\MS04\Methods\MS04-140327SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Mar 28 08:09:55 2014  
Response via : Initial Calibration



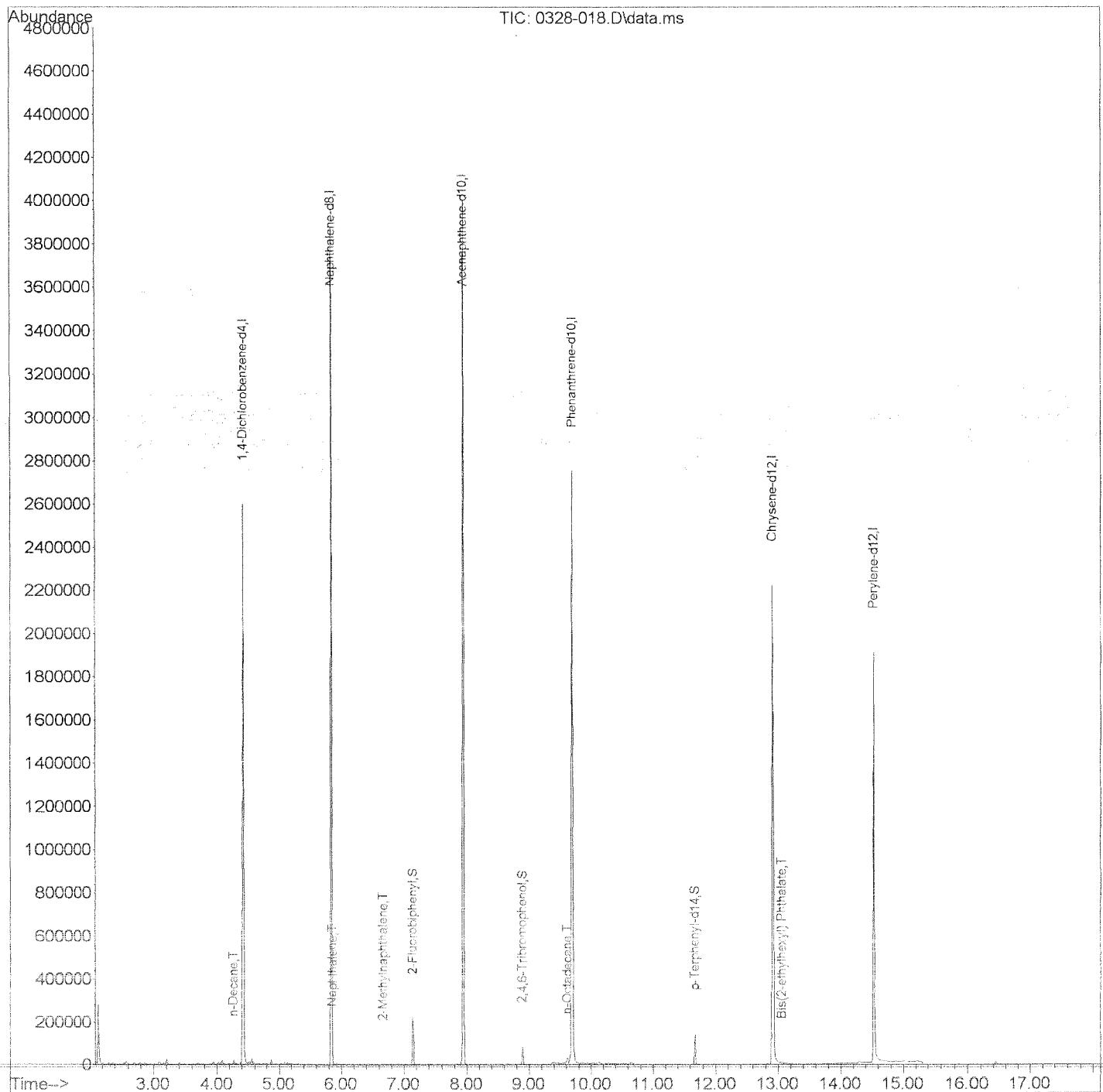
Data Path : J:\MS04\DATA\MS04-140328\  
Data File : 0328-017.D  
Acq On : 28 Mar 2014 5:55 pm  
Operator : JLY  
Sample : J1402115-008 SAMP  
Misc : EPA 8270C SIM  
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Mar 31 11:47:22 2014  
Quant Method : J:\MS04\Methods\MS04-140327SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Mar 28 08:09:55 2014  
Response via : Initial Calibration



Data Path : J:\MS04\DATA\MS04-140328\  
 Data File : 0328-018.D  
 Acq On : 28 Mar 2014 6:18 pm  
 Operator : JLY  
 Sample : J1402115-009 SAMP  
 Misc : EPA 8270C SIM  
 ALS Vial : 18 Sample Multiplier: 1

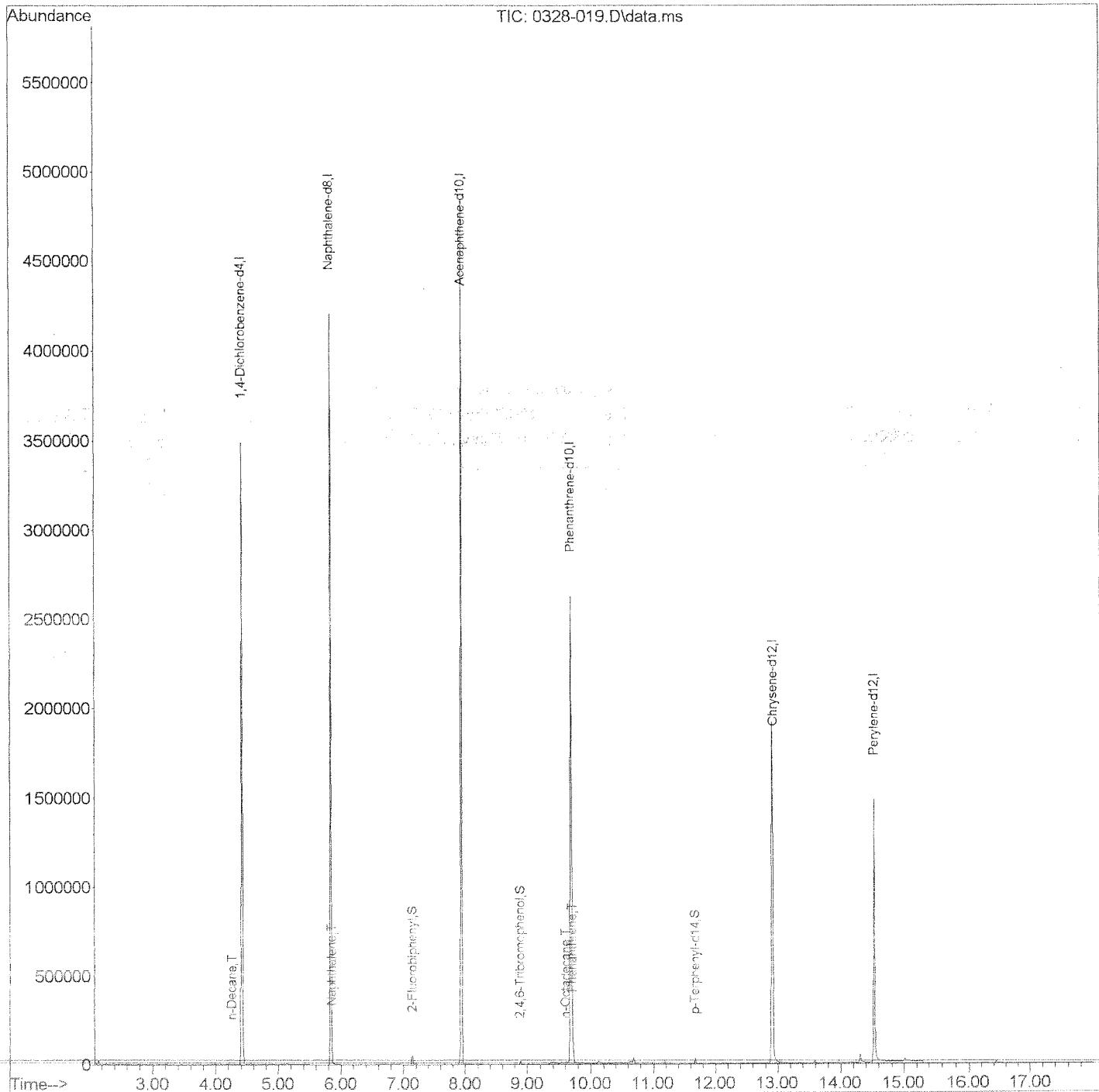
Quant Time: Mar 31 11:49:15 2014  
 Quant Method : J:\MS04\Methods\MS04-140327SIM.M  
 Quant Title : PAH/PCP by GC/MS SIM  
 QLast Update : Fri Mar 28 08:09:55 2014  
 Response via : Initial Calibration



## Quantitation report (QT reviewed)

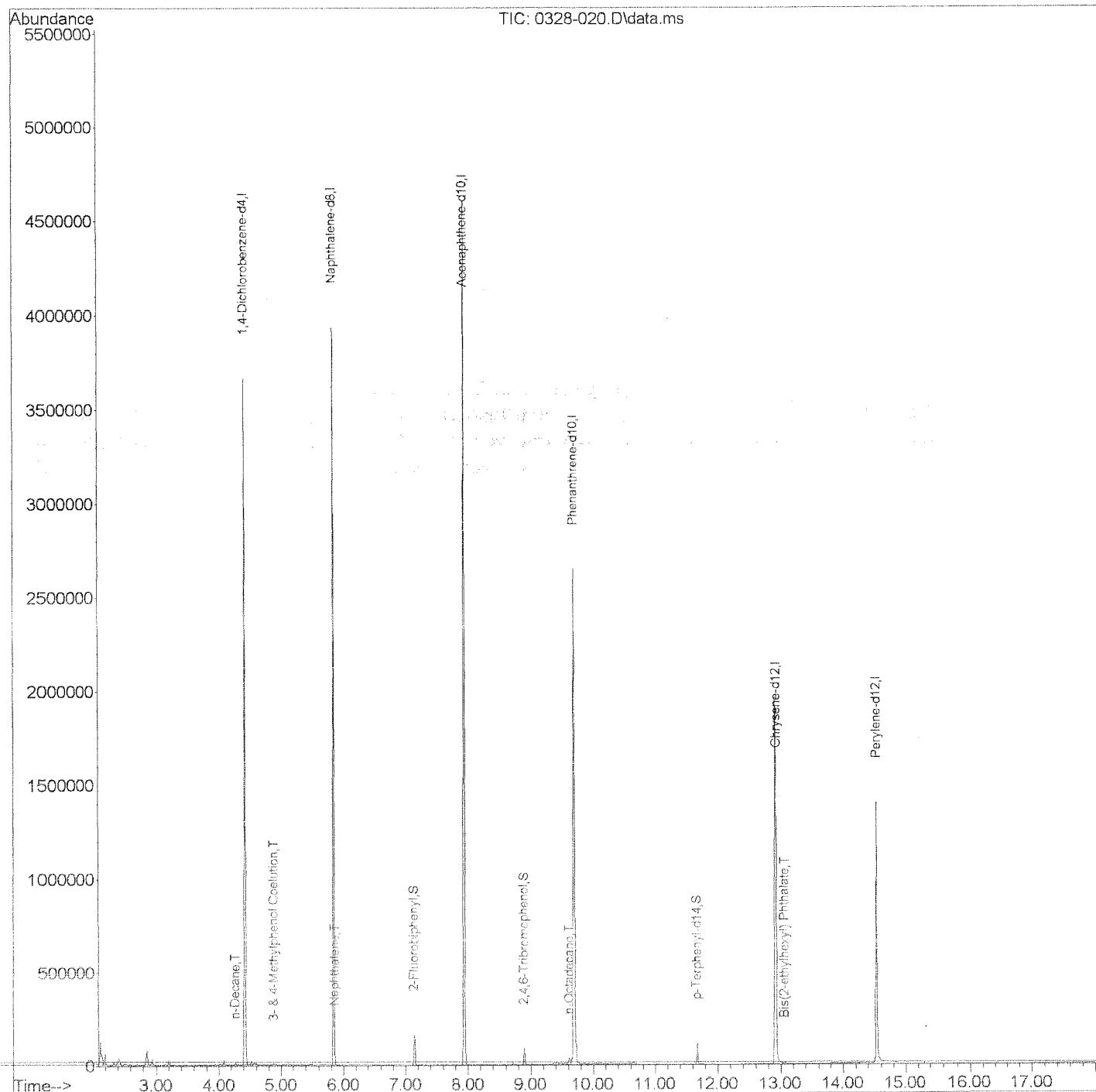
Data Path : J:\MS04\DATA\MS04-140328\  
Data File : 0328-019.D  
Acq On : 28 Mar 2014 6:41 pm  
Operator : JLY  
Sample : J1402115-010 SAMP; 5X  
Misc : EPA 8270C SIM  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Mar 31 11:50:37 2014  
Quant Method : J:\MS04\Methods\MS04-140327SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Mar 28 08:09:55 2014  
Response via : Initial Calibration



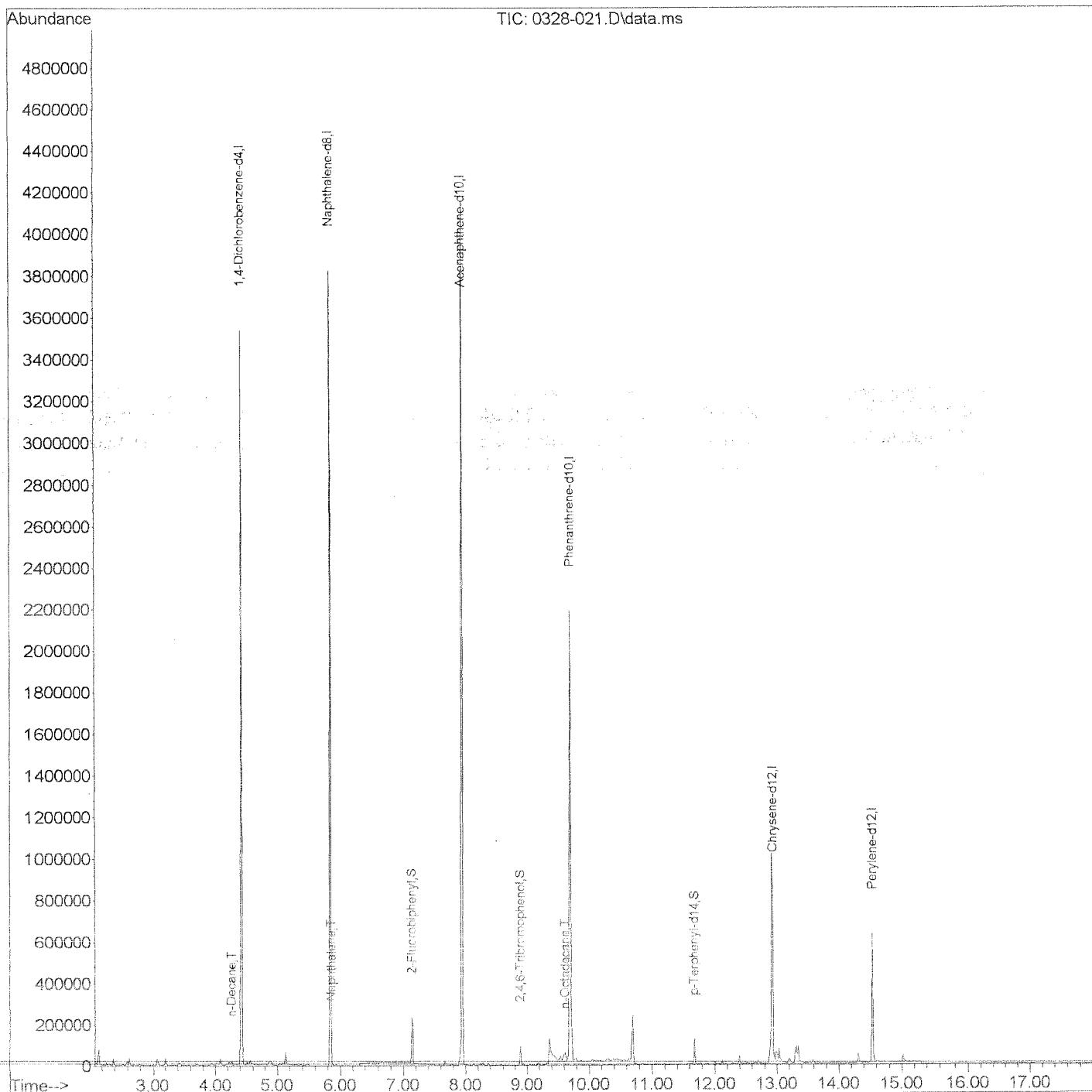
Data Path : J:\MS04\DATA\MS04-140328\  
Data File : 0328-020.D  
Acq On : 28 Mar 2014 7:04 pm  
Operator : JLY  
Sample : J1402115-011 SAMP  
Misc : EPA 8270C SIM  
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Mar 31 11:51:33 2014  
Quant Method : J:\MS04\Methods\MS04-140327SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Mar 28 08:09:55 2014  
Response via : Initial Calibration



Data Path : J:\MS04\DATA\MS04-140328\  
Data File : 0328-021.D  
Acq On : 28 Mar 2014 7:27 pm  
Operator : JLY  
Sample : J1402115-012 SAMP  
Misc : EPA 8270C SIM  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Mar 31 11:53:03 2014  
Quant Method : J:\MS04\Methods\MS04-140327SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Mar 28 08:09:55 2014  
Response via : Initial Calibration



Data Path : J:\MS04\DATA\MS04-140328\

Data File : 0328-022.D

Acq On : 28 Mar 2014 7:50 pm

Operator : JLY

Sample : J1402115-013 SAMP; 5X

Misc : EPA 8270C SIM

ALS Vial : 22 Sample Multiplier: 1

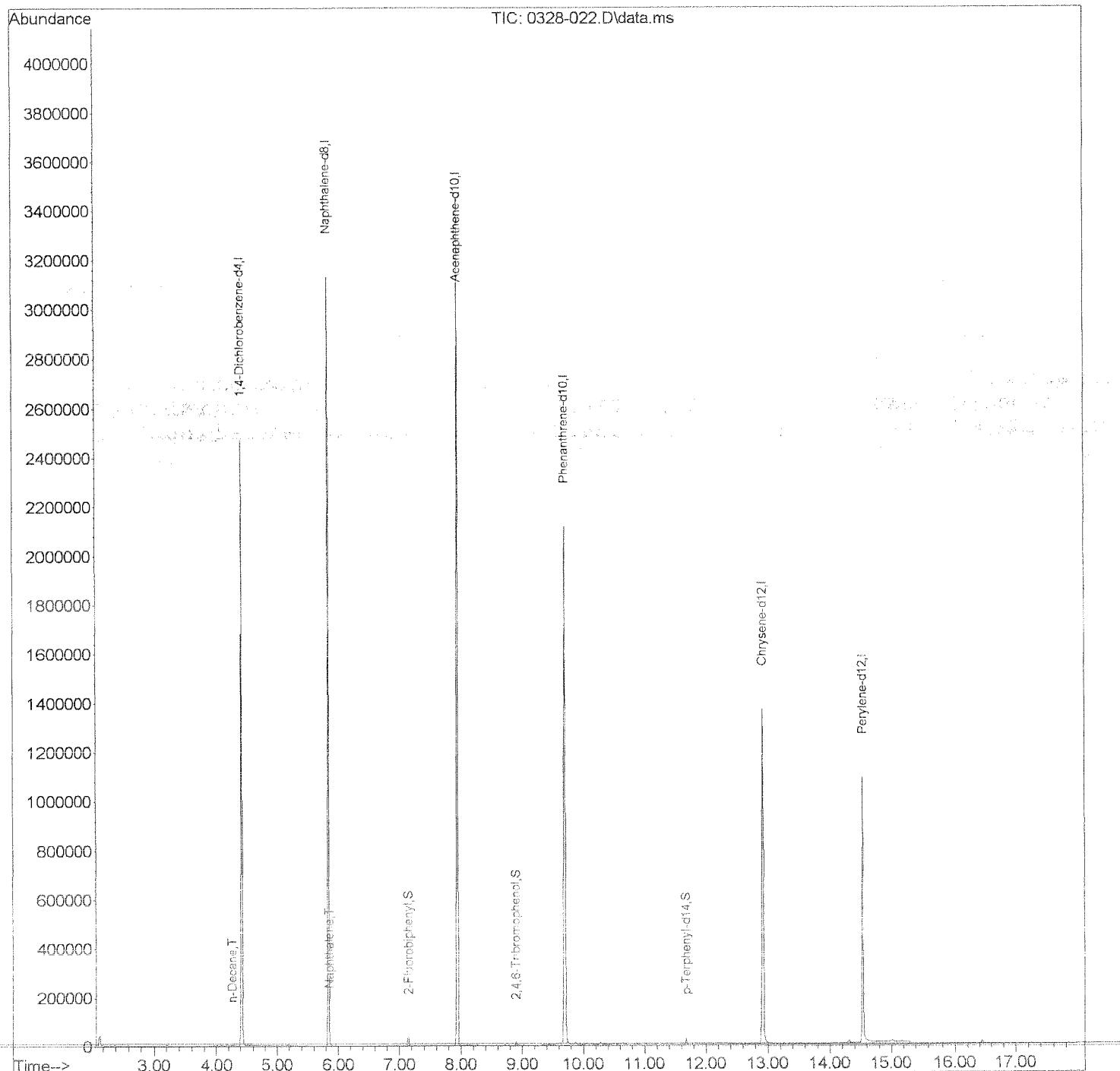
Quant Time: Mar 31 11:54:04 2014

Quant Method : J:\MS04\Methods\MS04-140327SIM.M

Quant Title : PAH/PCP by GC/MS SIM

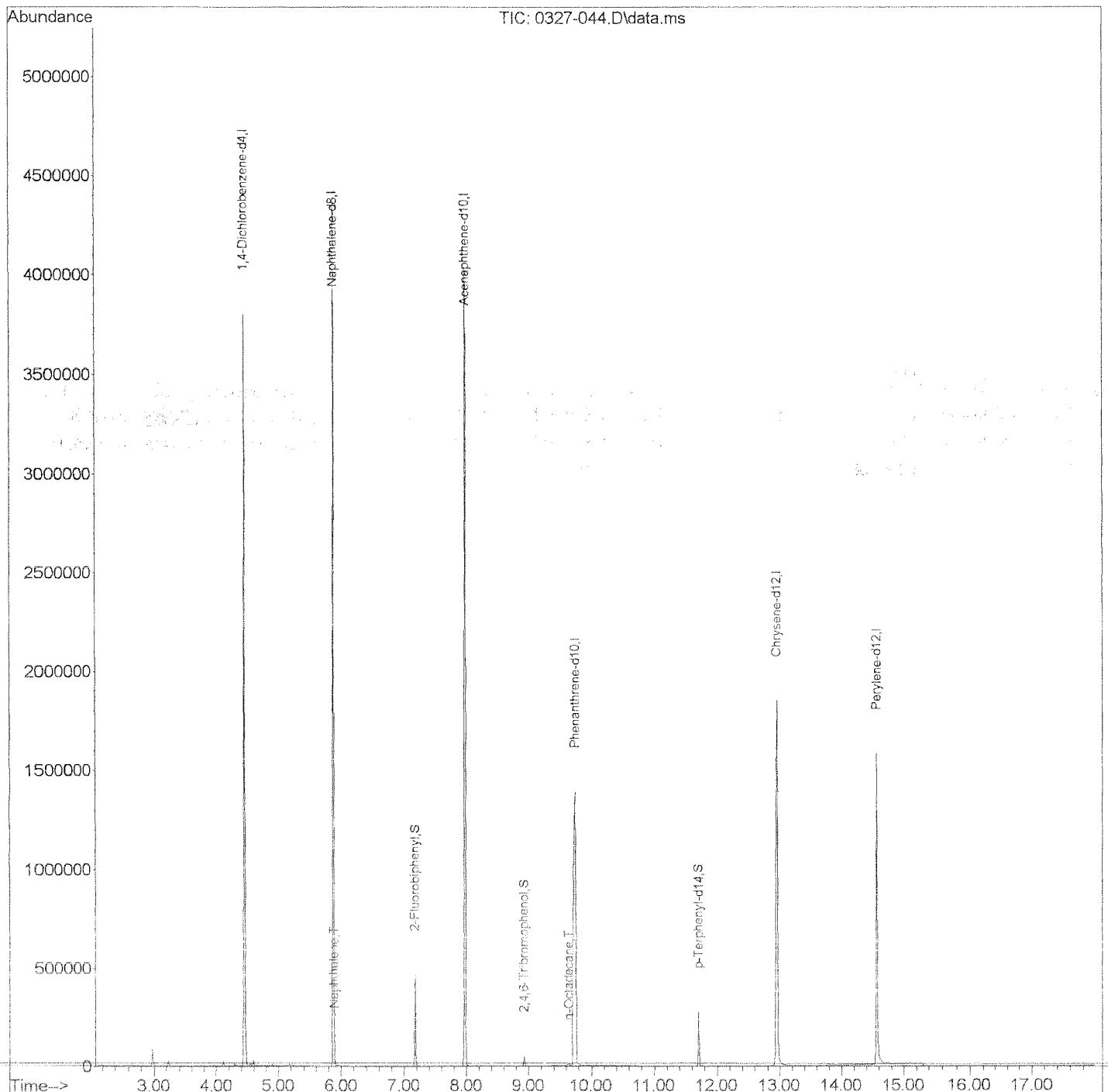
QLast Update : Fri Mar 28 08:09:55 2014

Response via : Initial Calibration



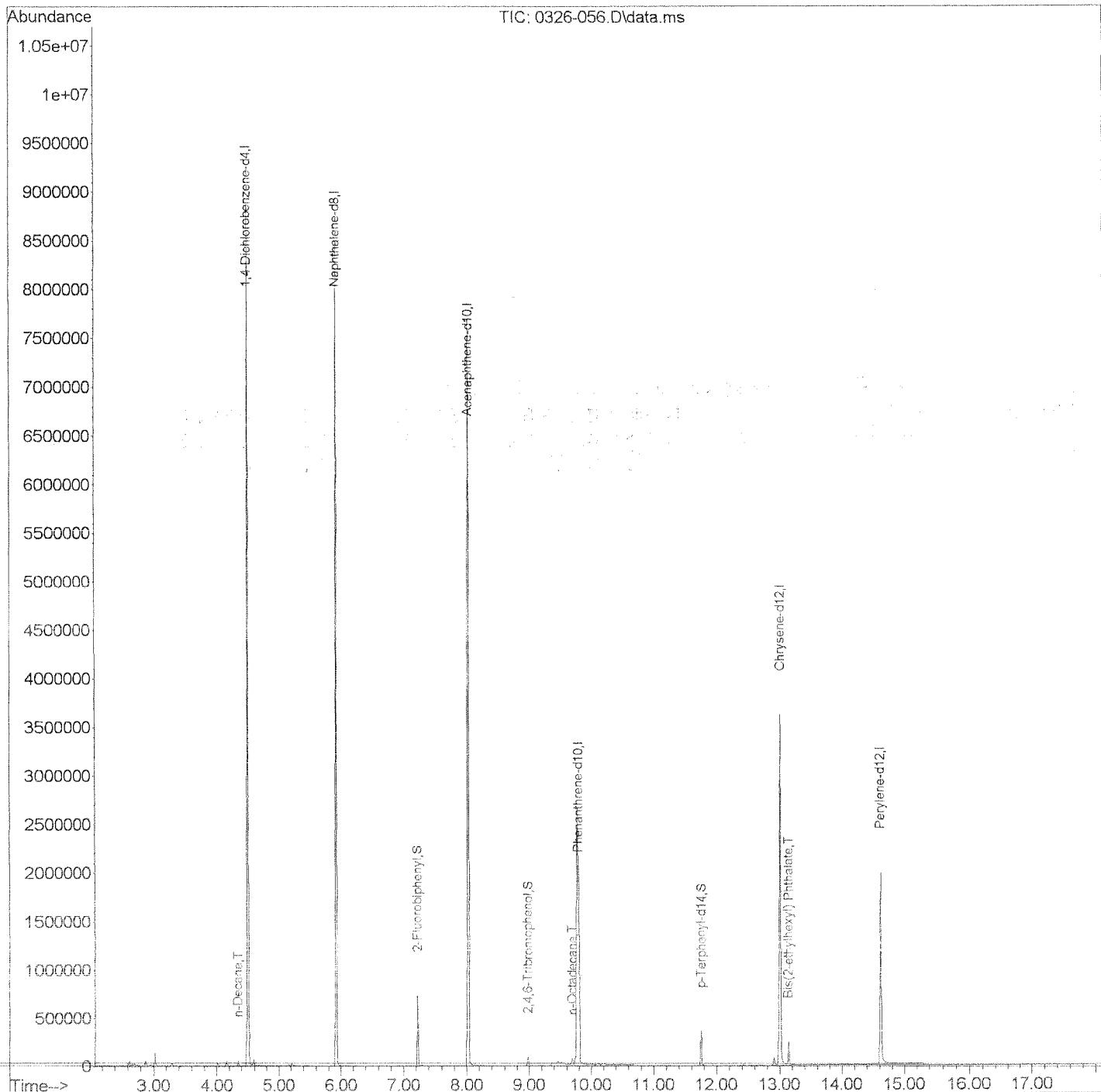
Data Path : J:\MS04\DATA\MS04-140327\  
Data File : 0327-044.D  
Acq On : 28 Mar 2014 9:04 am  
Operator : JLY  
Sample : J1402115-021 SAMP  
Misc : EPA 8270C SIM  
ALS Vial : 44 Sample Multiplier: 1

Quant Time: Mar 28 09:48:20 2014  
Quant Method : J:\MS04\Methods\MS04-140327SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Fri Mar 28 08:09:55 2014  
Response via : Initial Calibration



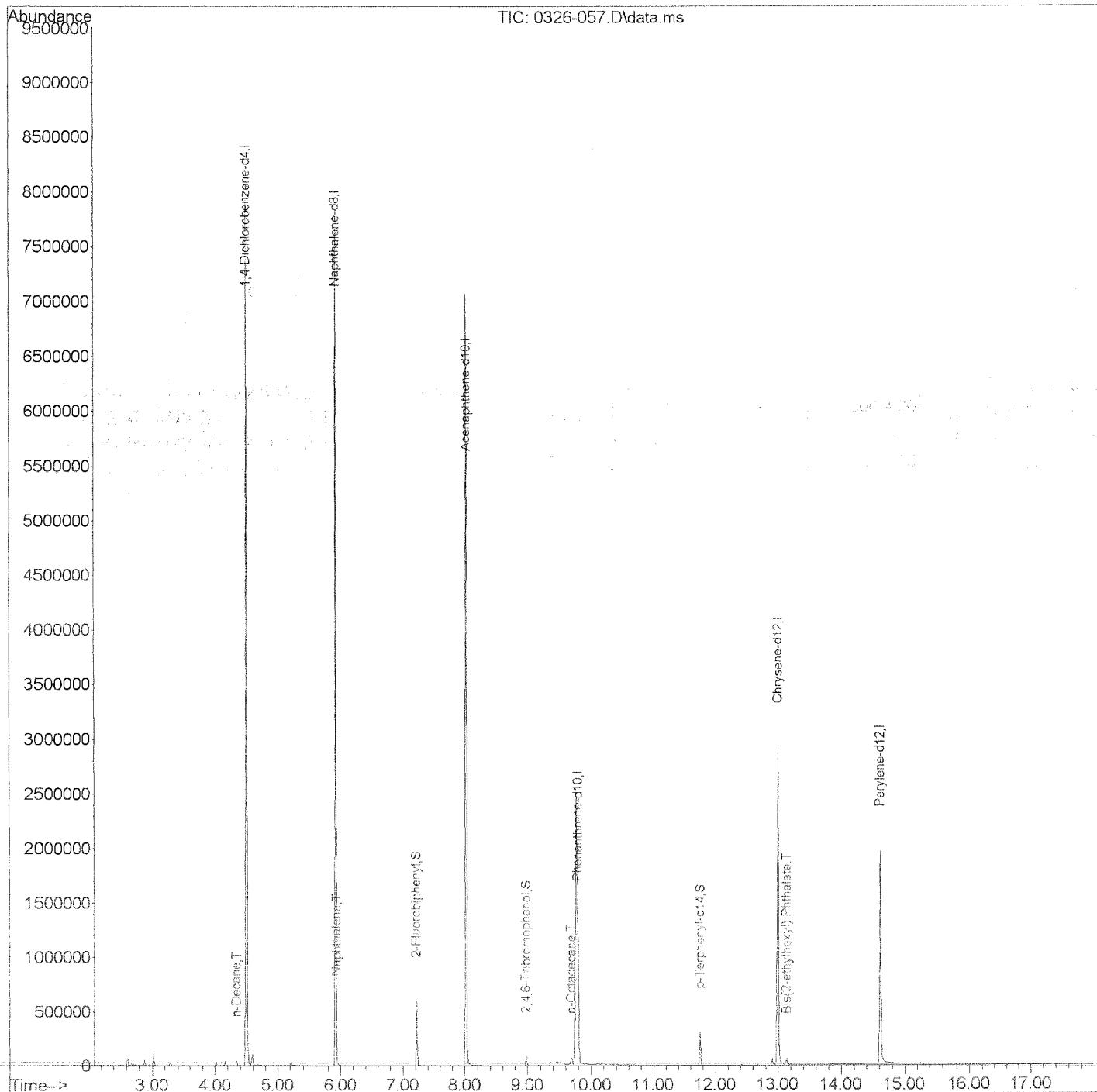
Data Path : J:\MS04\DATA\MS04-140326\  
 Data File : 0326-056.D  
 Acq On : 27 Mar 2014 10:46 am  
 Operator : JLY  
 Sample : J1402115-022 SAMP  
 Misc : EPA 8270C SIM  
 ALS Vial : 53 Sample Multiplier: 1

Quant Time: Mar 27 15:44:08 2014  
 Quant Method : I:\MS04\Methods\MS04-140326SIM.M  
 Quant Title : PAH/PCP by GC/MS SIM  
 QLast Update : Thu Mar 27 08:55:30 2014  
 Response via : Initial Calibration



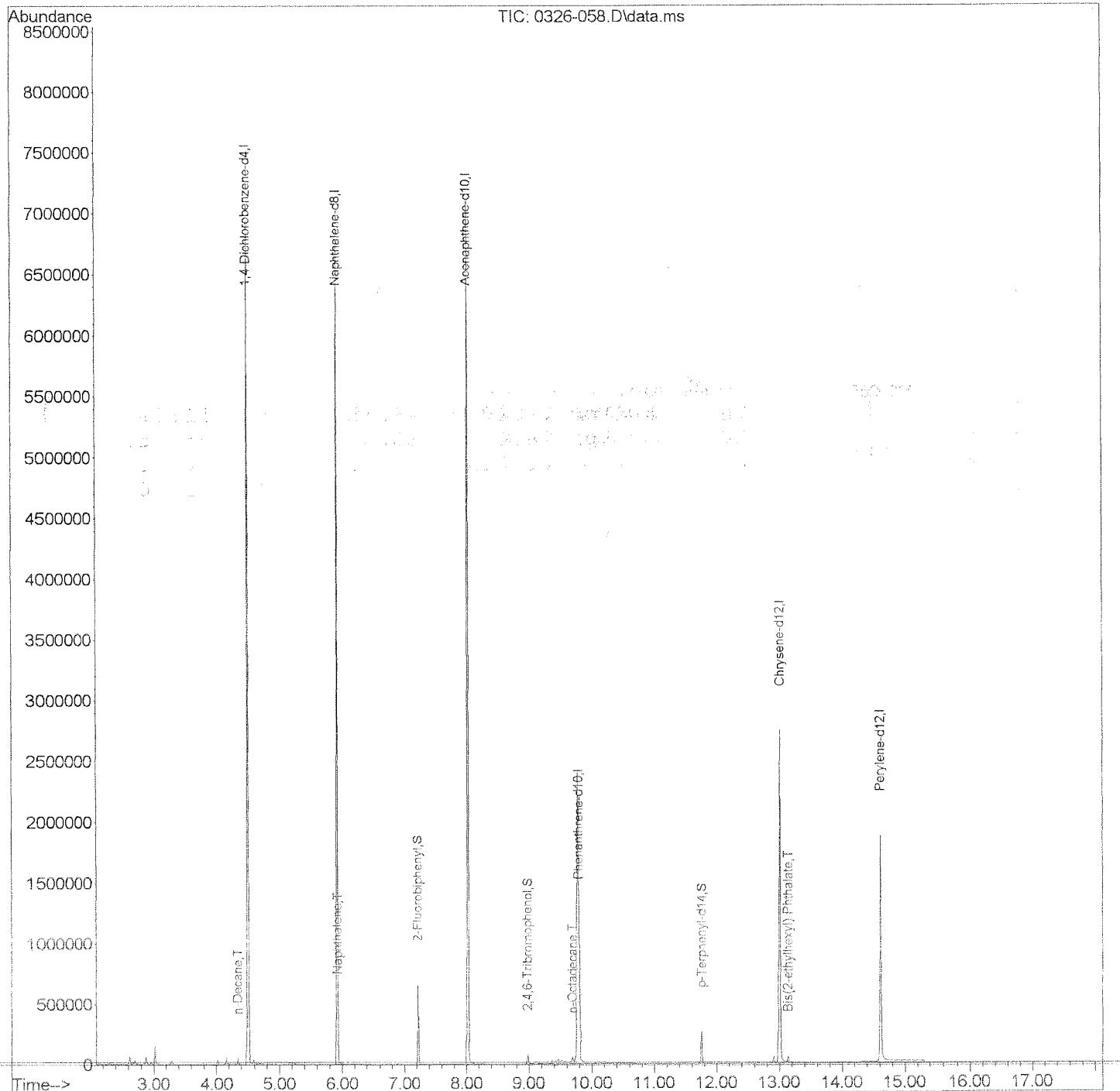
Data Path : J:\MS04\DATA\MS04-140326\  
 Data File : 0326-057.D  
 Acq On : 27 Mar 2014 11:09 am  
 Operator : JLY  
 Sample : J1402115-023 SAMP  
 Misc : EPA 8270C SIM  
 ALS Vial : 54 Sample Multiplier: 1

Quant Time: Mar 27 15:45:04 2014  
 Quant Method : I:\MS04\Methods\MS04-140326SIM.M  
 Quant Title : PAH/PCP by GC/MS SIM  
 QLast Update : Thu Mar 27 08:55:30 2014  
 Response via : Initial Calibration



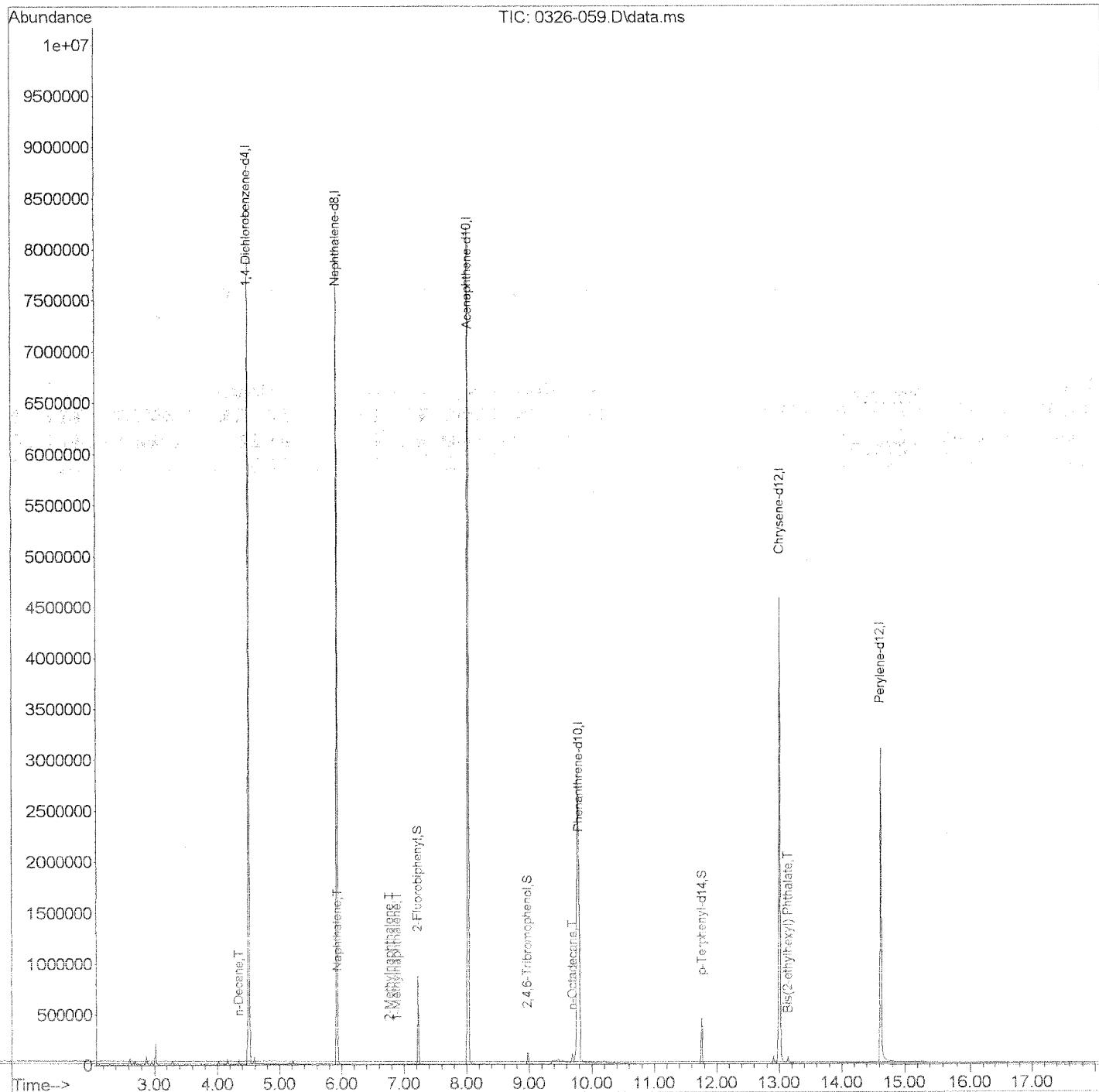
Data Path : J:\MS04\DATA\MS04-140326\  
Data File : 0326-058.D  
Acq On : 27 Mar 2014 11:32 am  
Operator : JLY  
Sample : J1402115-024 SAMP  
Misc : EPA 8270C SIM  
ALS Vial : 55 Sample Multiplier: 1

Quant Time: Mar 27 15:45:53 2014  
Quant Method : I:\MS04\Methods\MS04-140326SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Thu Mar 27 08:55:30 2014  
Response via : Initial Calibration



Data Path : J:\MS04\DATA\MS04-140326\  
 Data File : 0326-059.D  
 Acq On : 27 Mar 2014 11:55 am  
 Operator : JLY  
 Sample : J1402115-025 SAMP  
 Misc : EPA 8270C SIM  
 ALS Vial : 56 Sample Multiplier: 1

Quant Time: Mar 27 15:46:44 2014  
 Quant Method : I:\MS04\Methods\MS04-140326SIM.M  
 Quant Title : PAH/PCP by GC/MS SIM  
 QLast Update : Thu Mar 27 08:55:30 2014  
 Response via : Initial Calibration



Data Path : J:\MS04\DATA\MS04-140326\  
Data File : 0326-060.D  
Acq On : 27 Mar 2014 12:18 pm  
Operator : JLY  
Sample : J1402115-026 SAMP  
Misc : EPA 8270C SIM  
ALS Vial : 57 Sample Multiplier: 1

Quant Time: Mar 27 16:42:29 2014  
Quant Method : I:\MS04\Methods\MS04-140326SIM.M  
Quant Title : PAH/PCP by GC/MS SIM  
QLast Update : Thu Mar 27 08:55:30 2014  
Response via : Initial Calibration

